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The Effect of Corruption on Migration, 1985-2000

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Abstract

We examine the influence of corruption on migration for 111 countries between 1985 and 2000. Robust evidence indicates that corruption is among the push factors of migration, especially fueling skilled migration. We argue that corruption tends to diminish the returns to education, which is particularly relevant to the better educated.

JEL Classification: D73; F22; O15

Keywords: corruption; migration; skilled migration; push factors of migration

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1. Introduction

Previous empirical research suggests that, besides socio-economic and demographic factors (e.g., underdevelopment and demographic pressures), politico-institutional conditions (e.g., political instability) are among the push factors of international migration (cf., e.g., Hatton and Williamson, 2003; Mayda, 2010; Dreher et al., 2011; Docquier and Rapoport, 2012). We argue that a related important push factor, which has so far been mostly neglected in both theoretical and empirical research, is *corruption*.

Corruption is associated with a number of unfavorable outcomes. For one, corruption tends to negatively affect a country's (short-run) level of economic activity.¹ Economies plagued by high levels of corruption grow more slowly, e.g., as corruption contributes to an inefficient allocation of resources (Jain, 2001; Campos et al., 2010). For another, corruption may also worsen a country's (structural) socio-economic situation. For instance, Gupta et al. (2002) find that high levels of corruption promote income inequality and the spread of poverty. Furthermore, corruption may also lead to suboptimal patterns of social mobility when it matters more strongly to upward mobility than actual merits.

In sum, the prevalence of corruption is likely to worsen individual working and living conditions for the majority of citizens. It may therefore also matter to the calculus of a potential migrant. Individual education is a particularly important factor influencing migration decisions. Here, corruption tends to lower the returns to education, e.g., by contributing to slow economic growth and unemployment, widespread inequality and the lack of social advancement. Given the irreversibility of human capital investment, corruption may make it more attractive to migrate to recoup one's individual education investment. Here, we expect the highly skilled to

¹ Note, however, that this assessment does not rule out that corruption may actually yield positive economic effects under specific circumstances (Dreher and Gassebner, 2013).

be particularly responsive to the prevalence of corruption, given their high level of human capital investment and subsequent need for particularly high (i.e., cost-effective) skill premiums.² Based on these lines of reasoning, we hypothesize that corruption is among the push factors of migration and particularly relevant to skilled migration.

2. Data and methodology

To empirically examine this hypothesis, we compile data on (skilled and average) migration, corruption and further controls for 111 countries between 1985 and 2000. The summary statistics and the operationalization of the controls are reported in Table 1.³ Data on our dependent variables, the migration rates, are drawn from Defoort (2008) who provides estimates of the rates of skilled and average migration to six main receiving countries (Australia, Canada, France, Germany, the U.K. and the U.S.). Here, the *skilled migration rate* refers to the ratio of the number of skilled emigrants (who exhibit a post-secondary certificate) to the total number of skilled natives aged 25 or older, while the *average migration rate* is defined as the ratio of the total number of emigrants to the total number of natives aged 25 or older (Defoort, 2008).

² In addition to that, the increase of income inequality and poverty caused by corruption (Gupta et al., 2002) may foster the political demand for redistribution. As the better skilled are typically the typical net payers of (progressive) income taxes, this may further fuel skilled emigration.

³ The migration data is available only for three points in time (1990, 1995 and 2000). Therefore, we use five-year averages of the explanatory variables (for the 1986-1990, 1991-1995 and 1996-2000 periods) to estimate their influence on migration.

Variable	Observations	Mean	SD	Minimum	Maximum	Operationalization	Source
Skilled Migration	333	0.143	0.179	0.001	0.910		
Average Migration	333	0.035	0.061	0.001	0.419		
Corruption	333	2.669	1.294	0	5.983		
Per Capita Income	333	8.625	1.179	5.576	10.908	Real, PPP-adjusted per capita income, logged	(a)
Population Size	333	9.380	1.487	6.028	14.038	Population size in thousands, logged	(a)
Regime Type	333	2.169	7.072	-10	10	Revised Combined Polity Score, ranging from -10 (autocracy) to +10 (democracy)	(b)
Political Instability	333	0.300	0.758	0	3.766	Number of battle deaths in civil wars (defined as a conflict with at least 25 battle deaths per year), logged+1	(c)
Youth Burden	333	0.260	0.030	0.174	0.333	Number of people between the ages of 15 and 29 as share of total population	(d)
Quality of Bureaucracy	333	1.890	1.200	0	4	Index of institutional strength and quality of a country's bureaucracy	(e)
Trade Openness	333	4.026	0.644	0.486	5.811	Sum of exports and imports as a share of real GDP, logged	(a)
Former Colony	333	0.495	0.501	0	1	Time-invariant dummy variable (1=country has colonial links to one of the six major receiving countries)	(f)
Distance	333	7.943	1.066	4.456	9.093	Time invariant variable that measures the distance between country's capital and the nearest capital of one of the six major receiving countries, logged	(f)

Notes: Source refers to (a) PENN World Tables (<https://pwt.sas.upenn.edu/>); (b) Polity4 Dataset (<http://www.systemicpeace.org/polity/polity4.htm>), (c) PRIO Battle Deaths Data (<http://www.prio.no/Data/Armed-Conflict/Battle-Deaths/>), (d) United Nations Population Division (<http://esa.un.org/unpd/wpp/Excel-Data/population.htm>), (e) ICRG (2009), (f) CEPII GeoDist Dataset (http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6).

Table 1: Summary Statistics and Data Operationalization and Sources

Corruption data are drawn from the *International Country Risk Guide* (ICRG, 2009).⁴ Surveying experts, the ICRG issues a *corruption index* that we use as our main explanatory variable. Here, corruption refers to financial corruption associated with conducting business (e.g., bribes) as well as other forms of political corruption such as excessive patronage, nepotism and close ties between politics and business. Note that we rescaled the ICRG corruption index, so that higher values correspond to higher corruption levels.

To avoid detecting only spurious effects of corruption on migration, we also consider a number of *confounding controls* that may simultaneously affect corruption and migration. For instance, we control for the effect of economic development, as richer countries are both less susceptible to corruption and less likely to have high migration rates. Following the empirical literature on the determinants of corruption (Serra, 2006) and migration (Docquier and Rapoport, 2012), in our baseline specification we control for the effect of *per capita income*, *population size*, *regime type* and *political instability*. As robustness checks, we amend this model with additional controls for demographic pressure (*youth burden*), *institutional quality* (the quality of a country's bureaucracy), *trade openness* and certain country-specific traits that may affect migration costs (*colonial ties* and *distance* between sending and destination countries).⁵

⁴ We use the ICRG data because it is available since 1984, making a panel estimation approach to the corruption-migration nexus possible. Other corruption measures are available only for shorter time periods. Jain (2001: 77) notes that the various corruption measures are usually highly correlated.

⁵ Our findings are also robust to the inclusion of further controls for religious fractionalization, oil production, government size, further geographic and historic country characteristics (landlocked location, common language) and education (years of schooling).

Initial tests indicate the presence of autocorrelation, heteroskedasticity and cross-sectional dependence, as it is common for panel data with country-year observations. We therefore run a series of pooled OLS and fixed-effects regressions with Driscoll-Kraay standard errors that are robust to these data characteristics (Driscoll and Kraay, 1998).⁶

3. Empirical results

The pooled OLS estimates are reported in Table 2. We find that corruption has a positive and statistically significant effect on both skilled and average migration. However, the marginal effect of corruption on skilled migration tends to be approximately three to four times higher than its effect on average migration. This finding provides first support for our hypothesis that corruption is among the push factors of migration and especially matters to the migration decisions of the highly skilled.

The fixed-effects estimates—which truly consider the panel structure of our dataset—are reported in Table 3.⁷ We find that corruption only has a positive, statistically significant and specification-robust effect on skilled migration, but has no significant impact on average migration. This result further strengthens our previous finding that the decision of the highly skilled to emigrate is strongly affected by the disincentive of corruption at home.

⁶ We also experimented with instrumental variable (IV) estimations, as reverse causation may be an issue. However, pooled and fixed-effects IV-estimations (where corruption is instrumented by the quality of judicial institutions and the degree of democratic participation) do not indicate that corruption is endogenous to migration. Also, Durbin-Wu-Hausman tests suggest that any endogeneity among the regressors does not bias our estimates.

⁷ Note that all constant influencing factors (colonial ties, distance etc.) are now subsumed under the fixed effects.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Skilled Migration (1)-(5)					Average Migration (6)-(10)				
Corruption	0.025 (0.006)**	0.022 (0.004)**	0.036 (0.005)**	0.024 (0.006)**	0.035 (0.006)**	0.009 (0.001)***	0.005 (0.001)**	0.009 (0.001)**	0.008 (0.001)***	0.012 (0.001)***
Per Capita	-0.046	-0.043	-0.057	-0.048	-0.045	0.003	0.005	0.002	0.002	0.002
Income	(0.002)***	(0.003)***	(0.007)**	(0.003)***	(0.002)***	(0.001)**	(0.001)**	(0.002)	(0.001)	(0.001)
Population	-0.044	-0.044	-0.047	-0.040	-0.041	-0.014	-0.013	-0.014	-0.012	-0.013
Size										
Regime Type	(0.001)***	(0.001)***	(0.002)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.002)**	(0.001)**	(0.001)***
	0.006	0.007	0.006	0.007	0.007	0.003	0.003	0.003	0.003	0.003
Political	(0.001)**	(0.001)**	(0.001)**	(0.001)**	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Instability	0.002	0.002	0.007	0.005	0.004	-0.003	-0.003	-0.003	-0.002	-0.003
Youth	(0.005)	(0.005)	(0.005)	(0.005)	(0.007)	(0.003)	(0.003)	(0.002)	(0.003)	(0.004)
Burden		0.389				0.403				
		(0.361)				(0.041)**				
Quality of			-0.027					-0.002		
Bureaucracy			(0.010)					(0.005)		
Trade				0.020					0.009	
Openness				(0.001)***					(0.001)***	
Former					0.068					0.019
Colony										
Distance					(0.001)***					(0.001)***
					-0.026					-0.010
					(0.003)**					(0.002)**
R ²	0.252	0.254	0.262	0.255	0.294	0.200	0.225	0.200	0.206	0.237
N*T	333	333	333	333	333	333	333	333	333	333

Table 2: Corruption and Migration (Pooled OLS Estimates)

Notes: Constant not reported. Driscoll-Kraay standard errors in parentheses. **p<0.05, ***p<0.01.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Skilled Migration (1)-(4)				Average Migration (5)-(8)			
Corruption	0.005 (0.001)***	0.005 (0.001)***	0.004 (0.001)**	0.005 (0.001)**	-0.003 (0.001)	-0.003 (0.001)	-0.002 (0.001)	-0.003 (0.001)
Per Capita Income	-0.048 (0.010)**	-0.043 (0.010)**	-0.045 (0.010)**	-0.051 (0.008)**	0.002 (0.003)	-0.001 (0.003)	0.001 (0.002)	0.001 (0.003)
Population Size	0.001 (0.009)	-0.001 (0.009)	0.002 (0.010)	-0.002 (0.011)	0.012 (0.002)**	0.013 (0.002)**	0.012 (0.002)**	0.011 (0.002)**
Regime Type	0.002 (0.001)*	0.002 (0.001)*	0.002 (0.001)*	0.002 (0.001)*	0.001 (0.001)**	0.001 (0.001)**	0.001 (0.001)**	0.001 (0.001)**
Political Instability	0.008 (0.001)**	0.008 (0.001)**	0.007 (0.001)**	0.008 (0.001)***	-0.002 (0.001)*	-0.002 (0.001)**	-0.002 (0.001)**	-0.002 (0.001)*
Youth Burden		0.190 (0.028)**				-0.087 (0.018)**		
Quality of Bureaucracy			0.003 (0.001)				-0.001 (0.005)	
Trade				0.006 (0.006)				0.003 (0.001)**
Openness								
Within-R ²	0.174 333	0.182 333	0.176 333	0.176 333	0.145 333	0.145 333	0.132 333	0.130 333
N*I								

Notes: Constant not reported. Driscoll-Kraay standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Table 3: Corruption and Migration (Fixed-Effects Model Estimates)

Finally, note that the results for the control variables are largely in line with previous research. For instance, both the pooled OLS and fixed-effects estimates suggest that skilled migration is less common in richer countries, as previously reported in Docquier and Rapoport (2012). As another example, the positive effect of political instability on skilled migration in the fixed-effects regressions is in line with Dreher et al. (2011).

4. Conclusion

We examine the impact of corruption on migration for a panel of 111 countries between 1985 and 2000. Our empirical results indicate that corruption especially drives skilled migration, while its effect on average migration is less pronounced and not statistically robust. Our main finding is consistent with the hypothesis that corruption lowers the returns to education and consequently matters most to the calculus of (prospective) highly skilled migrants. Corruption control may therefore be an important policy tool to rein the brain drain, particularly when this brain drain is associated with predominantly poor development outcomes.

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Appendix

Albania	Dom. Republic	Italy	Papua N. Guinea	Tunisia
Algeria	Ecuador	Jamaica	Paraguay	Turkey
Angola	Egypt	Japan	Peru	Uganda
Argentina	El Salvador	Jordan	Philippines	U. Arab Emirates
Australia	Ethiopia	Kenya	Poland	United Kingdom
Austria	Finland	Kuwait	Portugal	United States
Bahrain	France	Liberia	Qatar	Uruguay
Bangladesh	Gabon	Libya	Romania	Venezuela
Belgium	Gambia	Madagascar	Saudi Arabia	Vietnam
Bolivia	Germany	Malawi	Senegal	Zambia
Botswana	Ghana	Malaysia	Sierra Leone	Zimbabwe
Brazil	Greece	Mali	Singapore	
Bulgaria	Guatemala	Mexico	Somalia	
Burkina Faso	Guinea	Mongolia	South Africa	
Cameroon	Guinea-Bissau	Morocco	South Korea	
Canada	Guyana	Mozambique	Spain	
Chile	Haiti	Netherlands	Sri Lanka	
China	Honduras	New Zealand	Sudan	
Colombia	Hungary	Nicaragua	Sweden	
Congo (Republic)	India	Niger	Switzerland	
Costa Rica	Indonesia	Nigeria	Syria	
Cote d'Ivoire	Iran	Norway	Tanzania	
Cuba	Iraq	Oman	Thailand	
Cyprus	Ireland	Pakistan	Togo	
Denmark	Israel	Panama	Trinidad	

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