

Brain drain and home country institutions

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- This paper aims at investigating the relationship between migration and source country institutions and governance
- Previous works focus mainly on the economic impacts of migration networks (trade, FDI, technology transfer etc.)

Motivation and Related literature

- Migrants can engage in economic and political activities that affect the institutional evolution of their home country (e.g., lobbying authorities of host countries in order to affect their policy towards their home country).
- Migrants can directly expend resources in the home country (e.g., through funding of political parties, various types of associations, etc.)
- The existence of migration networks abroad increases the home country population's exposure to foreign political norms (Spilimbergo, 2009)

- Migration can affect the incentive structure faced by individuals at home and modify their choices in terms of allocation of talent between productive and unproductive activities (Mariani, 2007) or in terms of education (McKenzie and Rapoport, 2006, Beine et al., 2008) which can in turn impact on the evolution of home country institutions
- If no incentive effects, skilled migration can lower human capital at home
- Almost no studies on the effect of emigration on institutions (Li and McHale, 2006))

Theoretical framework

- Consider

$$l = \alpha m + \beta h + X \quad (1)$$

- Both m and h depend, on their turn, on $H = \frac{N_s}{N}$, the pre-migration fraction of skilled labor force:

$$m = \frac{M_s + M_u}{N} = \frac{M_s}{N_s} \frac{N_s}{N} + \frac{M_u}{N_u} \frac{N_u}{N} = m_s H + m_u (1 - H) \quad (2)$$

and

$$h = \frac{N_s - M_s}{N - M_s - M_u} = \frac{H(1 - m_s)}{H(1 - m_s) + (1 - H)(1 - m_u)} \quad (3)$$

- The fraction of skilled labor force may depend on the skilled emigration rate (incentive effect due to migration prospects):

$$H = H(m_s) \quad (4)$$

- Derivatives of institutional quality with respect to skilled and unskilled emigration rate:

$$\begin{aligned} \frac{dl}{dm_s} &= \alpha \frac{dm}{dm_s} + \beta \frac{dh}{dm_s} \\ &= \alpha H - \beta \frac{H(1-H)(1-m_u)}{[H(1-m_s) + (1-H)(1-m_u)]^2} + \\ &+ H'[\alpha(m_s - m_u) + \beta \frac{(1-m_s)(1-m_u) + Hm_s(m_s - m_u)}{[H(1-m_s) + (1-H)(1-m_u)]^2}] \end{aligned}$$

and

$$\begin{aligned} \frac{dl}{dm_u} &= \alpha \frac{dm}{dm_u} + \beta \frac{dh}{dm_u} \\ &= \alpha(1-H) + \beta \frac{H(1-H)(1-m_s)}{[H(1-m_s) + (1-H)(1-m_u)]^2} \end{aligned}$$

- **Proposition 1:** If $\alpha > 0$, $\beta > 0$ and $H < \frac{1}{2}$, then $\frac{dl}{dm_u} > \frac{dl}{dm_s}$,
- **Proposition 2:** If $\alpha > 0$, migration without selection improves the quality of institutions, as $\frac{dl}{dm} = \frac{dl}{dm_u}|_m + \frac{dl}{dm_s}|_m = \alpha$
- **Proposition 3:** The marginal impact of skilled emigration rate on institutional quality will be positive if $\alpha(1 - m) > \beta(1 - h)$, where $(1 - m)$ and $(1 - h)$ are respectively the average staying rate and the share of low-skilled migrants among residents.

The econometric model

- Following Acemoglu et al. (2005), Bobba and Coviello (2007), Amparo Castello-Climent (2008), and Spilimbergo (2009), we estimate the following dynamic (panel) model:

$$\begin{aligned} Democracy_{i,t} = & \beta_0 Democracy_{i,t-1} + \beta_1 h_{i,t-1} + \beta_2 emrate_{i,t-1} + \\ & + \beta_3 X_{i,t-1} + \eta_i + \alpha_t + \varepsilon_{i,t} \end{aligned} \quad (5)$$

where i is the country, t is the period. All explanatory variables are lagged five years.

Data

- **Democracy:** Freedom House data set (Political Rights and Civil Liberties indicators) and POLITY IV data set (Polity2 indicators). Normalized 0-1.
- **Migration and Human Capital:** Defoort (2008). Skilled emigration stocks and rates by educational attainment from 1975 to 2000 (one observation every 5 years). Six major OECD destination countries (USA, Canada, Australia, Germany, UK and France). Data on human capital from Barro and Lee (2001) data set.
- **Other data:** taken from the PWT and from the World Development Indicators.

	Pool.OLS.	F.E.	SYS	SYS	SYS	SYS	SYS	SYS	SYS
L.clnorm	0.754*** (0.0368)	.0.374*** (0.0546)	.0.601*** (0.0629)	.0.640*** (0.0626)	.0.605*** (0.0593)	.0.590*** (0.0563)	.0.629*** (0.0653)	.0.648*** (0.0641)	.0.632*** (0.0620)
L.h	0.635*** (0.182)	-.0.175 (0.483)	.0.676*** (0.240)	.0.661** (0.259)	.0.470* (0.264)	.0.117 (0.301)	.0.768*** (0.246)	.0.547** (0.265)	.0.883*** (0.240)
L.emrtot	0.237*** (0.0742)	0.0985 (0.414)	.0.315** (0.144)	.0.786*** (0.264)	.0.646* (0.347)	.0.338* (0.189)	.0.620*** (0.222)	.0.520** (0.221)	.0.591*** (0.221)
L.lpop	.	.	.	.0.0344** (0.0166)	.0.0184 (0.0200)	.	.0.0284** (0.0139)	.0.0215 (0.0153)	.0.0135 (0.0141)
L.pop. struct.	.	.	.	.	yes	.	.	.	.
L.lrgdpch	.	.	.	.	.	.0.0486** (0.0222)	.	.	.
L.SHM	.	.	.	.	.	.	-.0.175 (0.106)	.	.
L.SMM	.	.	.	.	.	.	.	0.208 (0.129)	.
L.SLM	.	.	.	.	.	.	.	.	0.117 (0.0865)
Time dumm.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	466	466	466	466	464	416	466	466	466
ar2p	.	.	.0.595	.0.557	.0.621	.0.852	.0.520	.0.612	.0.502
Hansenp	.	.	.0.0660	.0.238	.0.136	.0.231	.0.137	.0.181	.0.142
Diff. Hansen	.	.	.0.362	.0.727	.0.324	.0.419	.0.521	.0.742	.0.61
N.instr.	.	.	57	74	79	74	76	76	76
N. count.	.	87	87	87	85	81	87	87	87

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered by country and based on t-statistics in parentheses. The sample is an unbalanced sample comprising data at five interval between 1980 and 2005. All the pre-determined variables are instrumented for using their own first to third lags from column 3-6. They are instrumented for using their own first to second lags from column 7-9, to avoid instrument proliferation.

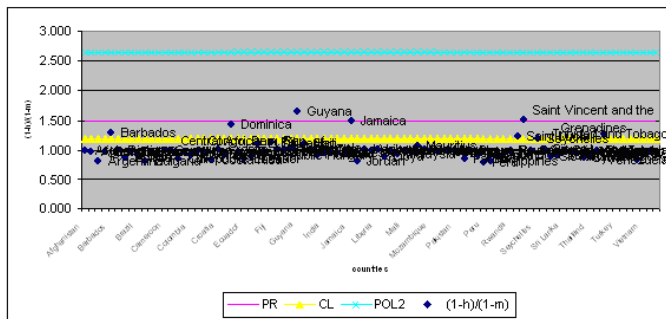
	Pool.OLS.	F.E.	SYS	SYS	SYS	SYS	SYS	SYS	SYS
L.pnorm	0.703*** (0.0388)	.0.386*** (0.0550)	.0.633*** (0.0645)	.0.652*** (0.0638)	.0.602*** (0.0612)	.0.620*** (0.0612)	.0.630*** (0.0617)	.0.645*** (0.0654)	.0.630*** (0.0607)
L.h	0.830*** (0.235)	-.0.429 (0.678)	.0.773** (0.304)	.0.725** (0.348)	.0.570 (0.378)	-.0.0478 (0.409)	.0.993*** (0.340)	.0.771* (0.392)	.1.188*** (0.348)
L.emrtot	0.320*** (0.0793)	.0.0733 (0.636)	.0.317* (0.167)	.1.085*** (0.351)	.0.960* (0.558)	.0.208 (0.252)	-.0.823*** (0.278)	.0.659** (0.279)	.0.711** (0.270)
L.lpop	.	.	.	.0.0609** (0.0263)	.0.0332 (0.0354)	.	.0.0433** (0.0206)	.0.0290 (0.0231)	.0.0170 (0.0205)
L.pop. struct.	.	.	.	.	yes	.	.	.	.
L.lrgdpch	.	.	.	.	.	.0.0760** (0.0311)	.	.	.
L.SHM	.	.	.	.	.	.	-.0.228 (0.146)	.	.
L.SMM	.	.	.	.	.	.	.	.0.226 (0.187)	.
L.SLM	.	.	.	.	.	.	.	.	.0.183 (0.116)
Time dum.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	466	466	466	466	464	416	466	466	466
ar2p	.	.	.0.551	.0.565	.0.414	.0.432	.0.648	.0.560	.0.658
hansenp	.	.	.0.245	.0.392	.0.221	.0.476	.0.390	.0.351	.0.256
diff. hansen	.	.	.0.843	.0.939	.0.641	.0.916	.0.699	.0.894	.0.604
Ng	.	87	87	87	85	81	87	87	87
j	.	.	57	74	79	74	76	76	76

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered by country and based on t-statistics in parentheses. The sample is an unbalanced sample comprising data at five interval between 1980 and 2005. All the pre-determined variables are instrumented for using their own first to third lags from column 3-6. They are instrumented for using their own first to second lags from column 7-9, to avoid instrument proliferation.

	Pool.OLS.	F.E.	SYS	SYS	SYS	SYS	SYS	SYS	SYS
L.polity2	0.710*** (0.0413)	.0.385*** (0.0560)	.0.584*** (0.0676)	.0.600*** (0.0653)	.0.574*** (0.0682)	.0.593*** (0.0696)	.0.609*** (0.0619)	.0.613*** (0.0679)	.0.585*** (0.0662)
L.h	0.714*** (0.214)	-.0.566 (0.666)	.0.634** (0.307)	.0.573* (0.341)	.0.491 (0.425)	.0.116 (0.397)	.0.706** (0.317)	.0.479 (0.332)	.0.982*** (0.364)
L.emrtot	0.314*** (0.116)	.0.0244 (0.831)	.0.553** (0.225)	.1.512*** (0.433)	.1.407** (0.619)	.0.465** (0.224)	.1.029*** (0.323)	.0.828** (0.316)	.1.071*** (0.343)
L.lpop	.	.	.	.0.0917*** (0.0324)	.0.0615 (0.0417)	.	.0.0527** (0.0257)	.0.0465* (0.0257)	.0.0385 (0.0245)
L.pop. struct.	.	.	.	.	yes	.	.	.	.
L.lrgdpch	.	.	.	.	.	.0.0566* (0.0288)	.	.	.
L.SHM	.	.	.	.	.	.	-.0.203 (0.151)	.	.
L.SMM	.	.	.	.	.	.	.	.0.355** (0.176)	.
L.SLM	.	.	.	.	.	.	.	.	.0.182 (0.145)
Time dum.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	450	450	450	450	450	406	450	450	450
ar2p	.	.	.0.692	.0.687	.0.507	.0.656	.0.735	.0.716	.0.744
hansenp	.	.	.0.0394	.0.300	.0.186	.0.321	.0.291	.0.376	.0.265
Diff.	.	.	.0.07	.0.471	.0.319	.0.903	.0.694	.0.721	.0.797
j	.	.	.57	.74	.79	.74	.76	.76	.76
N. of count.	.	.82	.82	.82	.82	.76	.82	.82	.82

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered by country and based on t-statistics in parentheses. The sample is an unbalanced sample comprising data at five interval between 1980 and 2005. All the pre-determined variables are instrumented for using their own first to third lags from column 3-6. They are instrumented for using their own first to second lags from column 7-9, to avoid instrument proliferation.

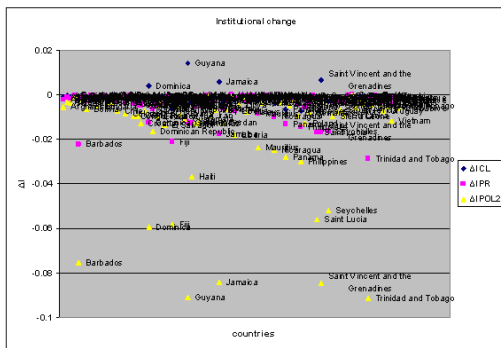
Country specific results

$$\frac{\partial I}{\partial m_s} > 0 \text{ if } \alpha/\beta > (1-h)/(1-m) \text{ (proposition 3)}$$


Country specific results

Considering $m_s = m_u$, then the change in institutional quality is:

$$\Delta I = \alpha(m_u - m) + \beta(h - \tilde{h})$$



Conclusion

- We show that the total emigration rate improves institutional quality.
- Unskilled migration has always a positive effect on institutional quality
- Skilled migration has an ambiguous impact on institutional quality.
- Using some simulations, we show that skilled emigration rate has a general positive impact on institutional quality (except for some small Caribbean countries)