

Emigrants and Institutions

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Abstract

A country's endowment of human capital can affect its institutions through various channels. This raises the possibility that skilled emigration can leave its mark on a country's institutional development. We combine new World Bank datasets on emigrant stocks and institutional quality to explore the impacts of mobile human capital on economic and political institutions. We find that larger emigrant human capital stocks (as a share of domestic population) are associated with higher quality political institutions but with lower quality economic institutions. On balance, skilled emigration – the movement from the domestic to the emigrant stock – is associated with weaker economic institutions but with stronger political institutions. These results are robust to the use of geography-based instruments for emigrant human capital.

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1. Introduction

How does emigration affect institutional development? Given the emphasis placed on the links between human capital and institutions, the relative neglect of the implications of internationally mobile human capital is surprising. One possible reason for the neglect is the long list of plausible causal channels that could be at work, ranging from the role of emigration as a safety valve for conflict to the loss of scarce institution-building skills. The question is further complicated by the possibility of quite different impacts on political and economic institutions. In this paper, we attempt a first pass at the question by making use of recently available datasets to examine the associations between emigrant stocks and measures of both political and economic institutions, and tentatively exploring whether the observed correlations reflect a causal role for emigration.

The broader question of the role of human capital in institutional development has received considerable attention in theoretical and empirical research. In an early contribution, Martin Lipset (1960) argues that human capital leads to more benign politics, less violence and greater political stability. More recently, Barro (1999) and Glaeser et al. (2004) show that institutional outcomes are related to human capital endowments. Acemoglu and Robinson (2005) develop a theory of institutional change in which the *de facto* political power to alter institutions depends in part on the distribution of endowments and efficient institutional outcome depends on the bargaining power of different political interest groups. And at a more micro level, Fukuyama (2004) focuses on the importance of human and social capital in meeting the challenge of providing public services that are both transaction intensive and require discretion by providers (e.g., judges and doctors) to respond to specific circumstances.

Emigration could affect institutional development through various channels. Most obviously, the *absence* of talented individuals could alter both the demand for productivity-supporting institutions and the supply of institution builders. But there are other mechanisms at work as well. The simple *prospect* of emigration could affect the extent and nature of investments in human capital, or put pressure on governments

to deliver the institutions and associated performance valued by potentially mobile individuals. Emigrant *diasporas* could be both a resource to help with building modern institutions, or a source of angry exiles intent on overturning the existing political structures. And finally *returnees* could come back with valuable skills, savings and social connections, or disgruntled and disruptive challengers to the status quo.

We distinguish throughout the paper between the effects of emigration on political and economic institutions, drawing on a number of theoretical approaches of different vintages to better understand the differential effects. The first is Albert Hirschman's comparison of "exit" and "voice" as mechanisms to influence organization (including state) performance (Hirschman, 1970). We draw on Hirschman's rich treatment of how exit and voice can be both substitutes and complements in bringing about institutional change, and in particular Hirschman's own application his framework to the links between emigration and state reform (Hirschman, 1978). The second is Alberto Alesina and Enrico Spolaore's work on the number and size of nations (see Alesina and Spolaore, 2005). Central to their framework is a trade-off between the disadvantages of heterogeneity across groups with different preferences and the advantages of scale in providing public goods. Although they do not specifically focus on emigration, having an option to leave the country can remove the disaffected, but also reduce the numbers available to spread the fixed costs of national-level institutions. The third is Simeon Djankov et al's (2003) explanation of institutional outcomes as chosen points on an Institutional Possibility Frontier (IPF). The frontier shows the institutional possibilities in the space of disorder and dictatorship – i.e. the level of dictatorship required to achieve a given level of order. The position of the frontier is determined by what they call "civic capital."² It is easy to imagine skilled emigration affecting the position of the frontier (say by reducing available skills but also by

² Civic capital is the capability of a society to achieve cooperation among its members. Djankov et al. (2003) treat it as related to but broader than social capital.

reducing heterogeneity), and possibly also the politics through which the actual point on the frontier is determined.³

The overall impact of skilled emigration on any given measure of institutional quality is clearly an empirical question given these many channels of influence. Our goal in this paper is to combine new World Bank data on emigrant stocks (Docquier and Marfouk, 2005), the Barro-Lee measures of domestic human capital and the World Bank governance-indicator measures of institutional quality to explore how emigration affects institutional development. Needless to say, as with other work using this type of cross-national data, it is difficult to credibly identify the key causal relationships of interest. In our case, the greatest empirical challenge comes from the likely reverse causality from institutional quality to emigration. Put simply, bad institutions are likely to drive good people out. Although we use a number of strategies to deal with the problem, our main solution is to use geography-based instruments for the emigrant human capital stock in the regressions.

Although the empirical literature on the impact of emigration on Institutions is limited, there have been a number of recent important contributions. Antonio Spilimbergo (2007) shows that foreign-educated individuals foster democracy at home, but only when the foreign education is acquired in democratic countries. Catia Batista and Pedro Vicente (2009) offer experimental evidence that international migration promotes improved institutions by raising the demand for political accountability. [Reference to Lodigiani et al. (2009) here]

The remainder of the paper is structured as follows. In the next section we provide a simple framework that captures the main channels through which emigration could affect economic and political institutions. We describe our empirical

³ It is possible that emigration also alters the balance of political power in a way that affects the chosen point on the IPF – e.g., by improving the “threat point” of highly productive individuals that are disadvantaged by current institutions. Djankov et al. (2003), however, argue that the chosen point on the frontier is determined by social efficiency; i.e. the institutional choice minimizes the combined social costs of disorder and dictatorship. In contrast, Acemoglu and Robinson (2005) place more emphasis on political conflicts between vested interests where there are limited opportunities to make credible commitments to compensate those in power for giving up efficiency-reducing privileges.

methodology in Section 4 and our data in Section 3. We then present and discuss our results in Section 5. Section 6 concludes.

2. Emigrants and institutions: A Framework

In this section, we outline an eclectic framework for thinking about how skilled emigration affects sending country’s political and economic institutions. Given the range of potential effects, we eschew a formal model and instead attempt a broad taxonomy. Table 1 summarizes the framework. As noted in the introduction, emigration can affect both political and economic institutions through four main channels—absence, prospect, diaspora, and return.⁴

Table 1 Emigrants and Institutions: Possible Causal Channels

Channels	Effects	
	Political Institutions	Economic Institutions
Absence	Reduces “voice” for reform by removing more productive citizens; may also serve as a “safety valve” for disaffected citizens and thus limit civil unrest	Reduces the supply of individuals capable of designing and staffing key institutional functions; reduces demand for productivity-enhancing institutional reforms
Prospect	The prospect of “exit” can increase the bargaining power of more productive citizens	The prospect of emigration can change the level and mix of human capital investments
Diaspora	“Exiles” can support for opponents to the ruling regime, leading to either institutional concessions or civil unrest	A diaspora with enduring connections can be a source of ideas and resources for economic development and institutional reform
Return	Returning emigrants demand better institutions; returnees might also be a source of destabilizing heterogeneity	Returning emigrants may have acquired capabilities (e.g., running modern hospitals) that are in short supply domestically

Absence Channel

⁴ This framework builds on Kapur and McHale (2005)

Skilled emigration affects the supply of institutional builders and is a source of demand for better institutions. Considering the supply side first, a useful way of thinking about the provision of key public services is provided by Michael Woolcock and Lant Pritchett (2004) and developed further by Francis Fukuyama (2004). Woolcock and Pritchett distinguish between public services along two dimensions: transactional intensity and the discretion required by the provider. Classroom teaching or judicial rulings are examples transaction-intensive and high discretion activities. In contrast, central banking tends to have low transaction intensity (e.g. interest rates are changed infrequently) but requires considerable discretion, while administering welfare programs will often have high transaction intensity (e.g. frequent checking entitlement to state pensions) but limited discretion. Clearly, devising policies or designing programs require access to specialized skills that could be hollowed out by emigration. However, the greatest institutional challenge typically comes with solving the pervasive agency problems associated with high transaction intensity and discretion. An effective judiciary requires a well-designed legal system *and* an adequate supply of competent, non-corrupt judges. Emigration is likely to be most damaging when specialized skills are lost.

Skilled individuals are also likely to be an important source of demand for better institutions. In terms of Albert Hirschman's exit-voice dichotomy, skilled emigration (i.e. exit) can remove the demanding residents—the ones with the most to gain from good public services such as protection from theft or corruption. Focusing specifically on the example of emigration, Hirschman (1992, p. 90) describes emigration as depriving the “geographic unit that is left behind . . . of many of its more activist residents, including potential leaders, reformers or revolutionaries,” and thus “weakens voice and thus reduces the prospects for advance, reform, or revolution in the unit that is being left.”

Emigration can also be a “safety valve” for institutional harmful political conflicts. Quoting Hirschman again (1978, p. 102): “With exit available as an outlet for the disaffected, they were less likely to resort to voice: the ships carrying the migrants

contained many actual or potential anarchists and socialist, reformers and revolutionaries.”

While the emigration safety valve might allow a society to blow off steam, it might also relieve pressure for democratic reform. Hirschman raises the intriguing possibility that emigration might create space for a more peaceful democratic transition, pointing as possible beneficiaries the Greece, Portugal and Spain in the 1960s and 1970s. Each experienced large-scale emigration, which may have made it easier to “negotiate the difficult passage to a democratic order than would have been the case otherwise” (Hirschman, 1978, p. 103). In our later statistical analysis, we separately explore the relationship between emigrant human capital and measures of both political stability and democratic voice and accountability.

Prospect Channel

While absent voices can undermine reform, the prospect of exit through emigration can also strengthen the political voice of productive members of society. In terms of Hirschman’s “Voice and Exit” framework (1970, p. 83), “The willingness to develop and use the voice mechanism is reduced by exit, but the ability to use it with effect is increased by it.”

In terms of Acemoglu and Robinson’s (2005) framework, the exit option can create *de facto* political power by increasing the bargaining power of the productive vis-à-vis powerful ruling elites. The possibility that rulers are forced to provide better services to productive members of society as a means of averting their exit has clear antecedents in the work of Douglas North (1981, p. 27).

The ruler always has rivals: competing states or potential rulers within his own state... The opportunity cost of each of the various constituents will be different and will dictate the bargaining power each group has in the specification of property rights, as well as the tax burden it will incur. Opportunity costs will also dictate allocation of services provided by the ruler to the degree that they are not pure public goods, since the ruler will provide greater services to those with close alternatives than to those with none.

Two historical incidents may illustrate different responses to the prospect of emigration.

East Germany in the 1950s experienced a flood of (illegal) emigration toward West Germany. At first, the East Germany power holders thought it advantageous to be rid of disgruntled and irreconcilable “class enemies”; but soon, the flow of people among them many highly skilled members of the labor force was so large that the authorities simply closed its frontier by building the Berlin Wall in 1961 to stop the outflow. After they had substantially reduced exit by building the Wall, the authorities realized that they could weaken internal opposition by a selective policy of either permitting certain people to exit or outright expelling critical voices considered to be dangerous or obnoxious, besides, they resorted to overt acts of heightened domestic repression to consolidate dictation.

In the 1950s, Irish emigrants from rural districts surged and reached the highest level in a century. This outflow aroused deep concern and became an important public and political issue that led to a decisive turn in economic policy. The increasing concerns that “Ireland was a dying country . . . led to calls for new economic policies, the adoption of various plans by the different political parties, the appearance of emigration as an issue in a parliamentary election for the first time, and finally the unopposed acceptance (in 1958) of a national economic plan designed to develop Ireland and prevent emigration”⁵

In East Germany’s case, initial emigration help stabilize its political environment but later massive emigration began to deplete its institutional builders. The authorities responded through drastic measures to prevent its institutions from falling apart. In the case Ireland, mass emigration initiated a series of reforms that further restored and strengthen its institutions.

Having a prospect of emigrating can also change the expected return to investing in different forms of human capital. Recent work has emphasized the possibility of “brain gain” through this channel. The central idea is that a greater prospect of emigration increases the expected return to human capital investment. Assuming that some of the individuals who are induced to make greater investments end up staying, it

⁵ Hirschman (1981)

is possible that easier access to emigration could end up increasing the country's stock remaining human capital. The possibility of such an investment induced "brain gain" has been a major focus on the recent theoretical literature on migration and development (e.g. Stark et al., 1997, Mountford, 1997, and Beine et al., 2001).⁶ More recently, the possibility of an overall positive effect on domestic human capital has received qualified empirical support. Beine et al. (2008) find that countries with low levels of human capital and low emigration rates experience a "beneficial brain drain," but that more countries are net losers than net gainers.

In the context of institutional reform, however, a more important effect may be in how the *mix* of human capital investments is changed. With a strong prospect of emigration, young people will be induced to invest in skills that are internationally marketable. This is likely to make them shy away from investments in skills relevant to public sector institutions, which are likely to be less transferable between countries. For example, the skills developed as a university administrator in India may be considered to be of little relevance to university administration in the United States. In contrast, software development skills are likely to have high international transferability. Thus even the prospect of emigration can help thin a country's supply of talented institution builders.

Diaspora channel

The diaspora channel captures how absent nationals can influence domestic institutions. Hirschman's concept of "loyalty" is helpful in seeing this role of the diaspora. Many emigrants retain connections—not the least of which is citizenship—with their former homes. These enduring connections lead to an increased willingness to trade, invest, remit, share information and participate in domestic politics. With advances in transportation and communications technology, these connections are typically much stronger than in the past. The expanding permissibility of dual nationality has also facilitated enduring connections. Many skilled emigrants are now

⁶ See Commander et al. (2004) and Schiff (2005) for critical reviews of the brain gain hypothesis.

truly what Huntington (2004) refers to (disapprovingly) as ampersands (e.g. Indian & American). These enduring connections help shape sending country's economic and political landscape.

Rauch and Trindade (2002) observe that ethnic business and social networks can have a considerable impact on international trade, especially through promoting bilateral trade by providing market information and by supplying matching and referral services. Using data on ethnic Chinese population shares to proxy for the ethnic networks, the authors show that diaspora has a quantitatively important impact on bilateral trade through the mechanisms of market information and matching and referral services, in addition to their effect through community enforcement of sanctions that deter opportunistic behavior. Annalee Saxenian (2006, p. 5) calls the skilled and entrepreneurial immigrants who have strong connections in both home and host regions "the new Argonauts," after the Greeks who sailed with Jason after the Golden Fleece. She argues that they can be a powerful source of economic advantage.

In a case study of Czech and Slovak diaporas in the United States, Shain (1994) recounts the effect of Czech and Slovak Americans in the creation of modern Czechoslovakia.

Czech and Slovak Americans . . . played a pivotal role in the dissolution of the Hapsburg Empire and the creation of modern Czechoslovakia in 1918. From the beginning of the war, Czech and Slovak groups provided much of the anti-Hapsburg agitation, furnished material assistance for domestic agitation, and lobbied forcefully both the president and Congress on behalf of Czechs' and Slovaks' liberation. These efforts were particularly effective following the American entry into the war. The Slovak League of America and other emigre Slovak Associations in the United States were vital in reaching an agreement on the nature of independent Czechoslovakia with Tomas G. Masaryk- the Czech exiled nationalist leader who at that time traveled to the United States to mobilize his compatriots and Woodrow Wilson's support. The so-called Pittsburgh Agreement, signed on 30 May 1918, represented Slovak retreat from an early Slovak-Czech document (the Cleveland Agreement) that advocated the federal union of the Slovak and Czech nations in an independent state.⁷

⁷ Shain (1994), pp.81.

Not all diaspora agitation is beneficial, however. Increasingly, a country's minorities living abroad press their claim to justice not in the country of origin but in the country of settlement. Political turmoil both spurs international migration as well as activates diasporic nationalism. Global trends can weaken the cover of national sovereignty – and diasporic minorities in particular are playing a more activist role in their country of origin, especially where the community faces the threat of violence. “Long distance” nationalism associated with diasporas has often amplified political tensions and conflict in the country of origin. There is also evidence that the problems faced by countries with internal strife are amplified if they have substantial diasporas abroad (Kapur and McHale, 2005).

Return channel

Finally, the return channel captures how returning emigrants can be a force for institutional change. Returnees can be both a source of supply and demand for better institutions to the extent that they come back with knowledge of better practices and limited patience for older, less effective ways of doing things. Examples of such sort abound, especially in emerging economies.

Central to the return effect is how time spent abroad affects productivity relative to time spent at home. Where an individual spent their past might matter because: (i) there are more opportunities to acquire general capital (skills, savings and social connections) abroad; (ii) there are fewer opportunities to acquire home-country specific capital while abroad; or (iii) simply spending time in developed economies changes expectations and motivations that affect how individuals behave when they return. There are again many case studies of individuals returning to have transformative effects on their home economies. However, as with the diaspora evidence, systematic evidence is less plentiful.⁸

⁸ Since his return to Taiwan in 1981, Ma Ying-jeou, who obtained his S.J.D. degree from Harvard Law School, has been a popular figure because he injected fresh air into Taiwan's politics. He first became

In Latin America, the quality of top-level economic technocrats has grown significantly over the past generation, as a result of their schooling in North America and Europe. They bring with them professional values regarding transparency and accountability that have spillover effects in their countries. A noted example is the Bolivian President Gonzalo Sanchez de Lozada. He was raised and educated in the U.S before returning to Bolivia where he played a key role in stopping hyperinflation in 1985 as a finance minister and he was elected President in 1993. In an interview by Public Broadcasting Service (PBS) in 2001, when asked “what did your time living abroad teach you”, He commented: “It was very positive because I knew I received a number-one grade education. And I knew I was very connected to the rest of the world ... We had a deep devotion and affection towards Bolivia that had been kept alive in my family... made me a Bolivian patriot, but with a view through a window onto the world.”⁹ Other well-known foreign leaders who studied in the US include: Benazir Bhutto (Pakistan), Carlos Salinas de Gortari, Vicente Fox (Mexico), Ehud Barak (Israel), Corazon Aquino (Philippines), Hamid Karzai (Afghanistan), and Michelle Bachelet (Chile).¹⁰

Returning emigrants can also be a destabilizing force. Even if the returnee was not very different from the natives before the original departure, their time abroad might have increased not just their economic potential but also their potential to be disruptive. This “disruptiveness” will often be a source of creative energy for reform, but sometimes insert a new source of conflict-creating heterogeneity. In his classic study of Irish emigration, Arnold Schrier (1958 [1997]), describes the phenomenon of the “returned yank” – often someone who has only been away for a few years – but fits uneasily back in their home society. The possibility for conflict between natives and returnees is dramatized in John B Keane’s play *The Field*. In the movie adaptation,

mayor of Taipei in 1998, was elected Chairman of the Kuomintang (KMT) Party in 2005, and subsequently won the presidency in the presidential election of 2008. In his victory speech, Ma said: “This is a victory for people who hope for change and openness and reform, to march forward.”

⁹ Commanding Heights: Gonzalo Sanchez de Lozada, from http://www.pbs.org/wgbh/commandingheights/shared/minitextlo/int_gonzalodelozada.html

¹⁰ Spilimbergo (2007).

which earned an Oscar nomination for Richard Harris' portrayal of an Irish farmer obsessed by land, a returned Irish-American attempts to out-bid the native farmer for a field. The returnee has big plans for hydro-electric power and a mine. But this conflict between native and returnee ends in murder and a community turned upside down.

3. Empirical Methodology

Our basic empirical approach is simple. Controlling for a range of standard determinants of institutional outcomes, we additionally include measures of the domestic human capital stock and the emigrant human capital stock. The domestic stock is measured as the domestically resident population aged 25 and over with tertiary educational attainment, and expressed as a share of the total population aged 25 and over. The emigrant stock is correspondingly measured as the domestically born but foreign resident population aged 25 and over with tertiary attainment, again expressed as a share of the *domestic* population aged 25 and over.

Our basic specification is:

Institutional Outcome_{*i*}

$$= \beta_0 + \beta_1 \text{Domestic Human Capital}_i + \beta_2 \text{Emigrant Human Capital}_i + \text{Conrols}_i + u_i. \quad u_i \sim N(0, \sigma_i^2)$$

A crude interpretation of the coefficients is that β_1 represents the net benefit for institutional quality of domestic human capital, and β_2 the net benefit for institutional quality of emigrant human capital. The difference, $\beta_2 - \beta_1$, is a measure of the overall gain of moving an educated individual from the domestic to the emigrant human capital stocks.

While we report this difference as suggestive of the overall impact of emigration on institutional quality, it is important to bear in mind that the steady-state domestic and emigrant human capital stocks are the result of a complicated dynamic process of (anticipated and actual) emigration and return. However, even this basic specification

can capture a number of the more dynamic causal mechanisms discussed in the previous section.

For the prospect channel, we discussed how the prospect of emigration could affect the type of human capital invested in, with those anticipating emigration more likely to choose internationally marketable skills over country-specific institutional knowledge. If we make the reasonable assumption that a larger diaspora is associated a higher ex ante probability of emigration, then, holding constant the level of domestic human capital, part of the coefficient on the emigrant human capital variable could reflect the impact of the prospect of emigration on the appropriateness of investments in domestic human capital stock for the support of domestic institution building.¹¹

For the return channel, for a given return rate from the emigrant stock, a larger stock is associated with more (and/or more recent) returnees in the domestic population. Since we control for the size of the domestic human capital stock, the coefficient on the emigrant stock should again pick up the effect of emigration through the return channel on the quality of the steady-state *domestic* human capital stock.¹²

In addition to the challenges of uncovering the various causal channels through which emigration could affect institutions, we also face the usual statistical challenges of uncovering causality using observational data. The most obvious relate to reverse causality and omitted variables. While we argue that emigration can affect institutions, it is also likely that institutions will affect emigration. Moreover, economic and social variables such as the level of income per capita or the degree of ethnic diversity are likely to be correlated with both emigration and institutional quality.

We use a three-part strategy to attempt to uncover the underlying causal relationships. First, we use lagged values of the domestic and emigrant human capital variables. Our human capital variables are from 1990, whereas our institutional

¹¹ We also noted that the prospect of emigration could affect the steady level of domestic human capital. Unfortunately, our specification cannot capture this effect as we level of domestic human capital is directly controlled for in the regression.

¹² Once again care must be taken with this interpretation. Another reason why a country might have a large diaspora is that few of its emigrants return. In this case, the observation of a large diaspora is associated with fewer rather than more returnees in the domestic population.

measures relate to 2000 or are averages for the period 1996 to 2006. Owing the persistence of both institutions and emigration, however, this only goes a small way to allaying fears of reverse causality.

Second, we include as controls a number variables that have been found to be important determinants of institutional and/or emigration outcomes: GDP per capita (adjusted for purchasing power parity); openness to trade (defined as exports plus imports as a share of GDP), shares with Catholic and Muslim affiliations, English or French legal origins, and ethno-linguistic fractionalization (La Porta et al. 1999).

Finally, we use a geography-based instrument for the emigration human capital stock. The basic idea that a country's geography (e.g. size of land mass, island location, distance to major emigrant destinations, etc.) affects the ease of emigration without directly affecting institutional quality other than through income levels and openness to trade (which are included as controls in the second-stage regression). The first geographical variable we use is the country's land area. As a country becomes bigger, people who intend to migrate can choose to move internally from one place to another. A second variable is a dummy variable that records whether a country is an island or not. Island countries are generally very open to trade and migration. The last variable we consider is the country's distance to the United States. Distance matters because it reduces the costs of emigration. Caribbean and Central America countries exhibit extremely high rates of skill emigration primarily due to their closeness to the United States. For example, the fact that Barbados is an island country close to the U.S. significantly facilitates emigration.

4. Data

4.1 Human capital stocks

Countries around the world publish international migration data based on various definitions, which presents a great challenge to systematic cross country empirical study. Under the auspices of the World Bank, Docquier and Marfouk (2005)

have assembled survey and census data on immigrants' educational attainment¹³ and country of origin from all OECD receiving countries. Using these data, they provide new estimates of emigration stocks by educational attainment for 195 origin countries in 2000, and 174 countries and 36 territories in 1990.¹⁴ We rely on these data set to construct our human capital stock variables.

4.2 Institutional Quality

Our measures of institutional quality mainly come from the World Bank governance indicators by assembled by Kaufman, Kraay and Mastruzzi (2008). The result of a massive data gathering exercise, these indicators measure six dimensions of institutions: Voice and Accountability (VA), Political Stability and absence of Violence/Terrorism (PS), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL) and Control of Corruption (CC). The data covers 212 countries and territories between 1996 and 2007. The summary indicators are compiled based on hundreds of specific and disaggregated individual variables measuring various dimensions of governance, taken from a variety of data sources and different organizations. These governance indicators are widely used by economists and political scientists to measure institutions. Most researchers tend to select one (often rule of law) dimension to proxy for institutional quality.¹⁵ We opt to look at all six dimensions of institutions to provide a more nuanced view of institutions.

We can roughly group the six dimensions into two clusters – political institutions and economic institutions. Political institutions include the first two dimensions – VA PS. VA measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association,

¹³ They draw domestic human capital stock data from two sources: data are taken from De La Fuente and Domenech (2002) for OECD countries and from Barro and Lee (2000) for non-OECD countries.

¹⁴ The authors construct three skill levels based on education attainment: Low-skilled workers are those with primary education (or with 0 to 8 years of schooling completed); medium-skilled workers are those with secondary education (9 to 12 years of schooling); high-skilled workers are those with tertiary education (13 years and above). Unfortunately, this data set cannot distinguish education obtained in sending country from receiving country.

¹⁵ See, for example, Glesear et al. (2006) and Rodrik et al. (2002).

and free media. In contrast, PS looks at the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including political violence and terrorism. We can see that both all three dimensions focus a country's macro-political environment and structures, and we use them as our measures of the quality of a country's political institutions.

Economic institutions are measured by the remaining four dimensions –Law RL, GE, RQ and CC. RL measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. GE focuses on the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. RQ evaluates the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. CC measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. These four dimensions summarize the ability of government to formulate and implement sound policies and deliver public goods. Collectively they focus on a country's micro- economic infrastructure and policy implementation, and we take them as measures of the quality of a country's economic institutions.

4.3 Controls

Economists, sociologists, and political scientists have developed many theories of institutional development.¹⁶ But each strand of literature tends to focus on one aspect while overlooking others (La Porta et al., 1999). To prevent the specification from

¹⁶ See, among others, North (1981, 1990), Putnam (1993), Fukuyama (1995), and Landes (1998)

omission of relevant variables, we follow LaPorta et al. and include as controls measures of the economic, political, and cultural characteristics.¹⁷

First, we control for GDP per capita to capture the impact of wealth on institutional possibilities. Second, we include a country's openness to trade (defined as exports plus imports divided by GDP) as a proxy for the openness of the country to international best practice. Data for both GDP per capita and openness are from the World Bank Development Indicators. Third, following Landes (1998), we use the percentage of population in each country with Muslim and Catholic affiliations. Other things equal, these affiliations have been found to be negatively associated with economic and political development. Fourth, we include dummies for a country's legal origin. Legal origin can determine political allocation of power thereby influence the institution development. Finally, we follow Easterly and Levine (1997) in using a country's ethno-linguistic fractionalization to proxy for ethnic conflict. They argue that, as ethnic heterogeneity increases, social capital and trust fall, leading to more interventionist governments and greater limits on political freedoms. Data on legal origin, religious affiliations and ethno-linguistic fractionalization are all from La Porta et al. (1999).

Summary statistics for all variables are shown in Table 2.

< Insert Table 2 Here >

5. Results

5.1 Ordinary Least Squares

Tables 3 and 4 record our OLS results for the six World Bank measures of institutional quality (the IV results are discussed below). Table 3 contains results for a stripped down specification with domestic human capital, emigrant human capital and

¹⁷ Our methodology follows closely La Porta et al. (1999). That paper empirically investigate the determinants of the quality of government in a large cross section of countries.

GDP per capita. Table 4 adds controls for trade openness, legal origins, religious affiliations and ethno-linguistic heterogeneity.

The results are consistent with the well-established association between *domestic* human capital and institutional quality. The coefficient on the domestic human capital is positive and statistically significant for all institutional quality measures except political stability.

The results for *emigrant* human capital show a decidedly more varied pattern. In both specifications, emigrant human capital comes through as a strong determinant of the quality of political institutions. The coefficients are positive and statistically significant for the VA measure in both specifications. The coefficient on the PS measure is positive and significant at the one-percent level in the stripped down regression (Table 3), but positive and insignificant in the extended regression (Table 4). The effects are also appear as economically significant. For example, the OLS point estimate of 3.41 on emigrant human capital in the VA regression implies that a one standard deviation increase in this variable results in an approximately one-fifth of a standard deviation increase in the measure of institutional quality.

Turning to the measures of the quality of economic institutions, we find that emigrant human capital generally has a negative effect, though it is statistically insignificant in the majority of cases. The inclusion of the additional controls tends to make the coefficient on emigrant human capital more negative, and it becomes statistically significant for the GE and RQ measures.

Turning to the difference between the coefficients on domestic and emigrant human capital – our overall measure of the overall effect of skilled emigration – we find that skilled emigration is generally associated with higher quality political institutions but lower quality economic institutions. That is, moving one person from the domestic to the emigrant stock is associated with higher quality political institutions and lower quality economic institutions. While our two political and four economic measures each show this pattern, in a number of cases the difference is not significant at conventional significance levels.

< Insert Table 3 Here >

< Insert Table 4 Here >

5.2 Instrumental Variables

The OLS results provide a useful summary of the basic associations between human capital stocks and emigrant quality. But as emphasized already, great care must be taken in giving these findings a causal interpretation. To tentatively explore the possibility of emigration affecting institutional quality we utilise geography-based instruments. The basic idea is that geography – e.g. nearness to major rich-country labor markets – affects the opportunities for emigration holding the characteristics of the sending country constant. Thus geography gives us a plausibly exogenous source of variation in the emigrant human capital stock. Of course, geography could also affect the ease of international trade (and thus the level of income⁰ and potentially both emigration and institutional quality. We attempt to minimize this concern, however, by including both GDP per capita and a measure of trade openness (imports and exports as a share of GDP) in our second stage regression.

Our first-stage regression includes the three geographical variables discussed in Section 3: the logarithm of a country's land mass, a dummy variable for an island country, and the surface distance from the country's capital to the capital of the United States. We also include domestic human capital and GDP per capita, which are also included in the second-stage regression.

Table 5 reports the first-stage results. The results are generally as expected. Coefficients on all three geographical variables are statistically significant at 1 percent level. Other things equal, an island country has about 4 percent more residents with tertiary education living abroad than a non-island country. The high first-stage R-square (0.43) and F statistic (21.54) indicate the strong correlation between geography

and emigration.¹⁸ We also use Hansen’s J test of the overidentifying restrictions, which assesses whether test whether some summary statistics of the geographical factors influencing emigration can be excluded from the second stage regression. Under the joint null hypothesis that the excluded instruments (i.e., the instruments not included in the second stage regression) are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation, the Hansen test statistic is distributed χ^2 in the number of over-ID restrictions. Failure to reject the null hypothesis implies a failure to reject the “validity” of the instruments. In the tables we provide the p-value of the test of the over-ID restrictions.

< Insert Table 5 Here >

The instrumental variable results are broadly in line with the OLS results. Emigrant human capital continues to be positively associated with measures of the quality of political institutions, and negatively associated with measures of the quality of economic institutions. The magnitudes of the coefficients on emigrant human capital for the political measures are larger than in the corresponding OLS regressions. They are also all statistically significant except for the PS measure in the extend regression in Table 4. In contrast, the coefficients on emigrant human capital are generally negative for the economic measures, but statistically insignificant in all cases.

Turning finally to the difference between the coefficients on emigrant and domestic human capital in the IV regressions, the pattern of positive effects of skilled emigration on political institutions and negative effects on economic institutions continues to hold.¹⁹

5.3 Robustness Checks

¹⁸ Staiger and Stock (1997) recommend a threshold value of 10 for the F-statistic to be confident that the instruments retain their validity.

¹⁹ The difference is statistically significant for both measures of political institutions and the GE and RQ measures of economic institutions in Table 3. The difference is statistically significant only for the GE and RQ measures in Table 4.

The World Bank governance indicators are constructed mainly from survey or poll data, so they may be influenced by some policy outcomes or political and economic environment in a particular. Table 6 reports the results when we use the average values from 1996 to 2006 as our dependent variables for the various measures of institutional quality. The results are similar to results in Tables 3 and 4. However, we lose some significance level on the coefficients of emigrant human capital and the difference between domestic and foreign human capital.

< Insert Table 6 Here >

Possibly our most interesting finding is that skilled emigration is positively associated with the quality of political institutions. To check whether this finding is robust to other measures of institutional quality, we use a country's democracy score and executive constraint score in 1990s from another popular institutional quality data source - Polity IV Project to estimate the same equation (Jagers and Marshall, 200).²⁰ We focus on countries' "democracy" and "executive constraint" which may capture some other aspects of political institutions. The variable "Executive Constraint" refers to "the extent of institutionalized constraints on the decision-making powers of chief executives, whether individuals or collectivities." The variable "Democracy" reflects the extent to which "the presence of institutions and procedures through which citizens can express effective preference about alternative policies and leaders, the existence of institutional constraints of the exercise of power by the executive (see above), and the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation." These two variables measure checks and balances between the various parties in the political decision making process in a country. We use both the country's average scores from 1991 to 2000 and the score of 2000 as our dependent variables in the regression. The regression results in Table 7 confirm our earlier findings that foreign

²⁰ Glaeser et al (2004) argue that World Bank governance variable is an outcome measure, highly correlated with the level of economic development, rather than political constraints per se. The authors state that Polity IV data aims to measure directly the limits of executive power.

human capital is positively associated with political institutional quality while the difference between coefficients on domestic human capital and on foreign human capital is negative but not significant.

< Insert Table 7 Here >

We perform several other robustness checks. First, we replace the emigrant stock measures with measures limited to those who emigrated after the age of 22 (see Beine, Docquier and Rapoport (2007)). This limits the emigrant stock measure to those who are likely to have obtained their education in the home country. Second, we use human capital stock measures for 2000 instead of 1990 and also use the most recent governance indicators. Third, we use with a country's global ranking in institutional quality instead of raw scores as dependent variables. Our basic findings on the effects of skilled emigration on political institutions are robust to these changes.

6. Concluding Remarks

Recent work on economic growth and development has highlighted the importance of institutions. Going back to the pioneering work of Albert Hirschman and Douglas North, international mobility has been hypothesized as a potential determinant of institutions through a range of mechanisms. However, the link between emigration and institutions has received surprisingly little attention. In this paper, we have discussed a range of channels through which internationally mobile human capital could influence domestic institutional development. We also laid out a simple empirical framework for examining the effects of emigrant human capital on institutional development, and more tentatively the overall impact of having educated individuals abroad rather than at home.

Our findings show a positive association between emigrant human capital and standard measures of the quality of political institutions, and a negative (but weaker) association between such capital and measures of the quality of economic institutions.

Moreover, these associations remain when we use geography-based instruments for emigrant human capital. Although our review of potential causal mechanism points to possible differences in effects for political and economic institutions, our most striking finding may be the extent of the difference. Skilled emigration is associated higher quality political institutions, most notably political stability. This is consistent with Hirschman's safety valve hypothesis and may also reflect a reduction in destabilizing heterogeneity. In contrast, our results show skilled emigration to be harmful to the quality economic institutions. Although we are at an early stage in understanding the precise mechanisms involved, the most plausible explanation is that emigration thins the ranks of individuals that are both a key sources of demand for productivity enhancing institutions and direct suppliers of institution-building skills.

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Table 2. Summary statistics for key variables

Variable	N	mean	sd	min	max
Domestic human capital	169	.0730	.0743063	.001	.438
Emigrant human capital	169	.0263	.0513835	.0001	.314
Voice & Accountability (VA)	193	-0.027	1.003	-2.070	1.740
Political Stability (PS)	183	-0.089	1.008	-2.730	1.550
Rule of Law (RL)	188	-0.068	0.998	-2.260	1.950
Government Effectiveness (GE)	188	-0.016	1.001	-2.250	2.210
Regulatory Quality (RQ)	188	-.0381	.9919222	-2.67	2.01
Control of Corruption (CC)	188	-.0257	.9986451	-1.91	2.34

Table 3. Human Capital and Institutional Quality: Ordinary Least Squares and Instrumental Variable Regressions

	VA2000		PS2000		RL2000		GE2000		RQ2000		CC2000	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Domestic Human capital	2.73*** (0.87)	3.42*** (1.12)	-0.13 (0.83)	0.41 (1.16)	2.02*** (0.67)	2.10** (0.90)	2.26*** (0.74)	2.13** (0.87)	2.13*** (0.69)	2.09** (0.84)	2.25*** (0.80)	2.31*** (0.88)
Emigrant Human capital	3.41*** (0.84)	7.65*** (1.81)	2.33*** (0.89)	6.50*** (2.12)	0.77 (0.64)	1.25 (1.45)	-0.29 (0.69)	-1.04 (1.40)	-0.03 (0.55)	-0.24 (1.36)	-0.27 (0.60)	0.10 (1.41)
GDP per capita	0.29*** (0.06)	0.24*** (0.06)	0.41*** (0.04)	0.37*** (0.06)	0.43*** (0.04)	0.42*** (0.05)	0.45*** (0.04)	0.45*** (0.04)	0.40*** (0.04)	0.40*** (0.04)	0.45*** (0.04)	0.45*** (0.04)
Obs.	150	150	145	145	150	150	150	150	150	150	150	150
R-squared	0.50		0.48		0.67		0.70		0.67		0.70	
Hansen's J		2.37		4.41		7.69		1.15		0.20		2.68
P value of J test		0.31		0.11		0.02		0.56		0.91		0.26
Emigrant human capital – Domestic human	0.68 (0.98)	4.23** (1.86)	2.46** (1.18)	6.09*** (2.16)	-1.25 (0.86)	-0.84 (1.49)	-2.54*** (0.86)	-3.18** (1.45)	-2.16*** (0.76)	-2.34* (1.40)	-2.52*** (0.84)	-2.22 (1.46)

Standard errors or in parentheses. *** denotes significance at 1-percent level. ** denotes significance at 5-percent level. * denotes significance at 10 percent level.

Table 4. Human Capital and Institutional Quality: Regression Results with Additional Controls

	VA2000		PS2000		RL2000		GE2000		RQ2000		CC2000	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Domestic Human capital	1.76*** (0.66)	2.06** (1.03)	0.50 (0.88)	0.70 (1.13)	1.89*** (0.61)	2.01** (0.88)	1.58*** (0.59)	1.53* (0.84)	1.29*** (0.49)	1.21 (0.79)	1.99*** (0.74)	2.12** (0.88)
Emigrant Human capital	2.04** (1.01)	5.33*** (1.98)	1.26 (1.15)	4.04 (2.48)	-0.76 (0.81)	0.52 (1.69)	-1.90** (0.95)	-2.43 (1.63)	-1.57** (0.75)	-2.38 (1.53)	-1.55 (1.01)	-0.23 (1.71)
GDP per capita	0.32*** (0.06)	0.31*** (0.06)	0.30*** (0.05)	0.29*** (0.06)	0.40*** (0.04)	0.40*** (0.05)	0.46*** (0.04)	0.46*** (0.05)	0.42*** (0.03)	0.43*** (0.04)	0.44*** (0.05)	0.44*** (0.05)
Openness	0.04 (0.11)	-0.04 (0.13)	0.52*** (0.11)	0.46*** (0.14)	0.25** (0.10)	0.22** (0.11)	0.14 (0.11)	0.16 (0.10)	0.18** (0.08)	0.20** (0.10)	0.16 (0.11)	0.13 (0.11)
UK legal origin	-0.24 (0.18)	-0.28 (0.21)	-0.33* (0.19)	-0.33 (0.23)	-0.33** (0.16)	-0.35* (0.18)	-0.34** (0.15)	-0.34* (0.17)	-0.16 (0.13)	-0.15 (0.16)	-0.17 (0.17)	-0.18 (0.18)
France legal origin	-0.13 (0.17)	-0.27 (0.20)	-0.33* (0.17)	-0.43* (0.22)	-0.08 (0.14)	-0.14 (0.17)	-0.04 (0.14)	-0.02 (0.17)	0.05 (0.12)	0.09 (0.16)	-0.03 (0.16)	-0.09 (0.17)
Catholic	0.14 (0.19)	0.11 (0.22)	-0.03 (0.23)	-0.09 (0.25)	-0.19 (0.17)	-0.20 (0.18)	-0.07 (0.16)	-0.07 (0.18)	0.05 (0.14)	0.05 (0.17)	-0.36* (0.18)	-0.37** (0.19)
Muslim	-0.47* (0.25)	-0.40* (0.24)	-0.34 (0.29)	-0.32 (0.26)	-0.11 (0.19)	-0.08 (0.20)	-0.02 (0.19)	-0.04 (0.19)	-0.01 (0.18)	-0.02 (0.18)	-0.22 (0.19)	-0.19 (0.20)
Ethnolinguistic	0.01 (0.24)	0.18 (0.23)	-0.31 (0.26)	-0.20 (0.25)	-0.21 (0.18)	-0.14 (0.20)	-0.13 (0.17)	-0.16 (0.19)	-0.07 (0.17)	-0.11 (0.18)	-0.21 (0.17)	-0.14 (0.20)
Obs.	135	135	132	132	135	135	135	135	135	135	135	135
R squared	0.64		0.57		0.74		0.77		0.75		0.76	
Hansen's J		5.62		0.52		7.92		1.72		1.11		1.48
P value of J test		0.06		0.77		0.02		0.42		0.57		0.48
Emigrant human capital – Domestic human	0.28 (1.08)	3.27 (2.07)	0.76 (1.43)	3.34 (2.56)	-2.65*** (1.00)	-1.48 (1.76)	-3.47*** (1.03)	-3.96** (1.70)	-2.86*** (0.81)	-3.60** (1.59)	-3.55*** (1.14)	-2.35 (1.78)

Standard errors or in parentheses. *** denotes significance at 1-percent level. ** denotes significance at 5-percent level. * denotes significance at 10 percent level.

Table 5. First Stage Regression of Foreign Human Capital on Geography Variables

	Foreign Human Capital
Domestic Human Capital	-0.071
	(0.071)
GDP per capita	0.001
	(0.003)
Island	0.038***
	(0.010)
Land Area	-0.006***
	(0.002)
Distance to USA	-0.036***
	(0.006)
Observations	150
R-squared	0.43
F statistic	21.54

Standard errors or in parentheses. *** denotes significance at 1-percent level.

** denotes significance at 5-percent level. * denotes significance at 10 percent level.

Table 6. Regression Results Using Means Values of Institutional Quality Variables as Dependent Variable

	VA96~06		PS96~06		RL96~06		GE96~06		RQ96~06		CC96~06	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Domestic Human capital	2.55*** (0.89)	3.30*** (1.11)	-0.95 (0.92)	-0.21 (1.19)	1.81*** (0.68)	1.94** (0.87)	2.29*** (0.74)	2.16*** (0.82)	1.84*** (0.66)	1.84** (0.78)	2.28*** (0.82)	2.40*** (0.87)
Emigrant Human capital	3.31*** (0.78)	7.87*** (1.79)	3.01*** (0.72)	7.58*** (1.91)	0.81 (0.68)	1.62 (1.40)	-0.58 (0.59)	-1.40 (1.33)	0.08 (0.52)	0.06 (1.26)	0.06 (0.58)	0.77 (1.40)
GDP per capita	0.29*** (0.06)	0.24*** (0.06)	0.39*** (0.05)	0.33*** (0.06)	0.44*** (0.04)	0.43*** (0.04)	0.45*** (0.04)	0.46*** (0.04)	0.41*** (0.04)	0.41*** (0.04)	0.45*** (0.04)	0.44*** (0.04)
Obs.	150	150	150	150	150	150	150	150	150	150	150	150
R-squared	0.50		0.43		0.69		0.73		0.70		0.70	
Hansen's J		1.90		12.20		13.34		2.59		1.45		4.66
P value of J test		0.39		0.00		0.00		0.27		0.48		0.10
Emigrant human capital – Domestic human	0.76 (0.91)	4.58*** (1.84)	3.97*** (1.08)	7.79*** (1.97)	-1.00 (0.89)	-0.32 (1.44)	-2.87*** (0.77)	-3.56*** (1.37)	-1.76** (0.74)	-1.78 (1.29)	-2.22*** (0.85)	-1.63 (1.44)

Standard errors or in parentheses. *** denotes significance at 1-percent level. ** denotes significance at 5-percent level. * denotes significance at 10 percent level.

Table 7. Regression Results Using Political Institutional Measures from Polity IV project

	Democracy 2000		Executive Constraints 2000		Democracy 1990s		Executive Constraint 1990s	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Domestic Human capital	15.10*** (5.41)	15.25*** (5.34)	7.78*** (2.76)	7.78*** (2.78)	18.15*** (6.22)	18.47*** (5.87)	8.56*** (2.91)	8.59*** (2.79)
Emigrant Human capital	25.65*** (9.10)	29.87 (19.69)	12.73** (4.93)	12.61 (10.25)	29.34*** (10.89)	38.20* (20.27)	12.99** (5.70)	13.94 (9.64)
GDP per capita	0.68** (0.32)	0.66** (0.28)	0.30* (0.16)	0.30** (0.15)	0.75* (0.38)	0.71** (0.32)	0.27 (0.17)	0.26* (0.15)
Obs.	119	119	119	119	101	101	101	101
R squared	0.38		0.34		0.40		0.34	
Hansen J test		2.21		2.93		0.50		0.93
P value of J test		0.33		0.23		0.78		0.63
Emigrant human capital – Domestic human	10.56 (9.20)	14.62 (19.72)	4.95 (4.98)	4.83 (10.27)	11.19 (11.08)	19.73 (20.38)	4.43 (5.85)	5.35 (9.70)

Standard errors or in parentheses. *** denotes significance at 1-percent level. ** denotes significance at 5-percent level. * denotes significance at 10 percent level.