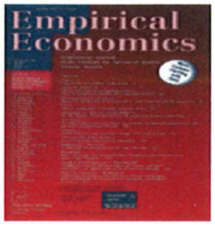
[**forthcoming** in  ***Empirical Economics***]

Financial Liberalization and the Selection of Emigrants: A Cross-national Analysis

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Abstract: This paper explores the impact of financial liberalization on the migration of high skilled labor from 46 countries to the OECD, taken at five year intervals over the period 1985-2000. Using an exploratory factor analysis, we are able to distinguish between two dimensions of financial liberalization, namely the *robustness* of the markets and their *freedom* from direct government control. We find that a standard deviation improvement in the robustness of the source country financial sector magnifies the extent of skilled emigration by a factor of about 3.9-5.1 percentage points on the average. However, a corresponding increase in the freedom of the source country financial sector from government control has a statistically insignificant impact. Further, the impact of improved financial sector robustness on selection is more pronounced for countries with a better quality of institutions in terms of the perceived credibility of the regime in terms of its ability to protect property rights.

Keywords: *financial liberalization, skilled migration, institutions, immigration*

JEL Codes: *F22, O15, P48*

Abbreviations: OECD: Organization for Economic Cooperation and Development; GDP: Gross Domestic Product; PPP: Purchasing Power Parity; WDI: World Development Indicators; ICRG: International Country Risk Guide; DPI: Database of Political Institutions; EFA: Exploratory Factor Analysis; OLS: Ordinary Least Squares; 2SLS: Two-Stage Least Squares.

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Introduction

The advent of globalization has led to profound changes in the global economic fabric and generated an ongoing debate on its consequences. Two themes have come to occupy central positions in the debate: First, as the volume of skilled migration has increased dramatically in the last decades of the twentieth century (Docquier and Rapoport, 2011), there has been a resurgence of scholarly interest in the causes and consequences of skilled migration (Docquier and Rapoport, 2008, 2011). Second, as countries have increasingly undertaken financial liberalization programs over the corresponding period (Abiad et al., 2010), there has been a great deal of interest in the consequences of such policies, especially for developing nations (Bekaert et al., 2005; Eichengreen, 2001; Eichengreen and Leblang, 2003; Levine, 2001, 2005).

Given the sheer volume of scholarly output generated on both of these questions, it is surprising that the two phenomena have seldom been examined in conjunction. This paper takes an initial step in filling the void by investigating the impact of financial liberalization on the selection of migrants from an economy. We emphasize the multidimensionality of financial liberalization and provide evidence that the various dimensions have differing impacts on the migration of skilled labor: an improvement in the robustness of the domestic financial sector, as captured by the development of security markets, improvement in the quality of banking supervision, and removal of stringent restrictions on interest rates and capital, is seen to have a significant positive impact on the selection of emigrants. However, an increase in economic freedom in the financial sphere, as captured by the relaxation of directed credit policies, credit ceilings, and reduced state presence in the banking sector, has a smaller and statistically insignificant impact.

Further, institutional quality in the country of origin plays a critical role; and analogous to financial reform, various aspects of institutional structure differ in their impact on the skilled emigration: the transparency of governance, as reflected by the quality of bureaucracy and the level of corruption, improves the selection of migrants from an economy. However, the level of democratization of society and the perceived credibility of a regime in terms of its ability to protect property rights, enforce contracts, and implement desired programs has no directly significant impact on selection.

Finally, consistent with the consensus that identifies the economic impact of financial liberalization as depending on the existing quality of institutions (Rajan and Zingales, 2003; Chinn and Ito, 2006; Claessens and Perotti, 2007, Ang, 2010), we find that the perceived credibility of a regime magnifies the positive impact of financial robustness on skilled migration. However, our analysis does not substantiate the existence of such threshold effects with respect to the other dimensions of institutional quality.

Our analysis contributes to several areas of inquiry: In addressing the multidimensionality of financial liberalization, we provide a nuanced analysis of the phenomenon itself and its relatively unexplored role in the international migration of skilled labor. Further, in documenting a robust positive impact of improved financial sector efficiency on the selection of emigrants, we identify a potential second order impact of financial reform on economic growth, namely, through the creation of skilled diasporas. Finally, in addressing the interplay of financial liberalization with the

institutional structure of an economy, it contributes to the literature on institutional determinants of skilled migration (Bang and Mitra, 2011; Bertocchi and Strozzi, 2008).
The paper is organized as follows: Section 2 presents the conceptual foundations of our analysis and a brief review of the relevant literature; Section 3 introduces the data; Section 4 outlines the methodological concerns and our responses to them; Section 5 reports our results; and Section 6 concludes.

Conceptual Foundations and Related Literature

The object of this paper is to explore the impact of financial liberalization on the selection of immigrants from a country. To do so, we pose two related questions: first, for a given volume of migration, will financial liberalization in the source country increase or decrease the fraction of immigrants that are highly skilled? Second, will various aspects of financial liberalization differ in their impacts on selection?
It is well documented that the individual decision to migrate is motivated by a comparison of the marginal benefit and the marginal cost of migration (Borjas, 1994; Chiswick, 2000) and the selection of emigrants depends on how these magnitudes compare for individuals at different points of the domestic skill distribution. The purpose of this section is to argue that financial liberalization may alter the benefit and cost of migration differently for high and low skilled workers and that these impacts are, in fact, theoretically ambiguous. Hence, the ultimate impact of liberalization on selection is essentially a subject of empirical analysis.
As summarized by Levine (2005), the financial system performs a number of functions critical to the economic prosperity of a nation: first, it improves the allocation of capital by reducing the cost of acquiring information on productive investment opportunities in the economy. Second, it enhances the quality of corporate governance and hence the utilization of capital by reducing the information and enforcement costs faced by the providers of capital that typically constrain efficient monitoring of firms. Third, it reduces the cost of capital and increases the availability of funds by facilitating the trading, diversification, and management of risk. Fourth, it helps to mobilize savings in the economy by reducing the transaction costs of collecting savings from disparate sources as also the informational asymmetries that prevent households from investing their savings. Finally, it facilitates the exchange of goods and services in the economy. Given the presence of sound institutions, the liberalization of equity and capital markets improves the ability of the financial system to perform its basic functions (Bekaert et al., 2005, 2011; Chinn and Ito, 2006). This, in turn, improves the accumulation of physical and human capital, enhances productivity, and leads to increased economic growth.[1]

[1] It should be mentioned that evidence on the investment impact of financial liberalization is ambiguous and most studies find that it stimulates growth primarily by increasing total factor productivity (Bekaert *et al.*, 2011). At the same time, it bears repetition that the impact of financial integration on economic growth depends critically on the existing quality of institutions (Chinn and Ito, 2006; Claessens and Perotti, 2007). In fact, there has been a concern that financial liberalization may promote economic growth only in economies that have attained a certain level of institutional and financial development (Kose *et al.*, 2009). However, while the literature is fairly unanimous in emphasizing the role of institutions in determining the ultimate impact of financial liberalization, the existence of threshold effects with respect to the existing level of financial development is by no means a consensus in the field.

The increase in economic prosperity as a result of financial liberalization may be expected to reduce the returns to migration over the entirety of the domestic skill distribution. However, there is reason to believe that the relative returns to migration are greater for the high skilled than the low skilled. In other words, the disincentive effect on migration induced by increased economic growth is less for high skilled workers than for the low skilled: As noted by Beck et al. (2007), imperfect credit markets characterized by significant informational asymmetries are particularly severe on the poor who lack collateral and may hence be denied access to credit. In reducing the cost of acquiring information and hence increasing the level of access enjoyed by the poor, financial development thus benefits the poor more than the rich. Indeed, the empirical evidence is fairly unanimous that financial development reduces poverty and improves the distribution of income (Clarke et al., 2006; Beck et al., 2007; Claessens and Perotti, 2007; Perez-Moreno, 2011). As such, if the net marginal benefit from migration was the sole determinant of selection, one would expect financial development in the source country to increase the fraction of high skilled immigrants.[2]

However, financial development will also impact the marginal cost of migration; and while it makes the migration venture easier to finance for both high and low skilled workers, it is not difficult to see that low skilled workers gain more with respect to this: high skill workers are *a priori* more likely to have accumulated savings that can defray the cost of relocation. Even if this was not so, they are more likely to own assets that can be advanced as collateral to borrow the funds needed to finance migration. In reducing the credit market imperfections that effectively deny the poor access to credit, financial liberalization is therefore likely to reduce the marginal cost of migration more for the low skilled than for the high skilled and hence exert a negative impact on selection. On the balance, therefore, it is not clear what the net impact on selection would be and it is this ambiguity that places the subject in the domain of empirical inquiry.

Further, as previously mentioned and as has been emphasized so often in the literature (Rajan and Zingales, 2003; Chinn and Ito, 2006; Claessens and Perotti, 2007), there is no reason to believe that liberalization will inevitably lead to financial development. Unsound institutions lead to financial sector reforms being captured by the ruling political elite, in which case liberalization may well reduce growth (Ang, 2011) and worsen the existing distribution of income (Ang, 2010). This, in conjunction with the fact that institutions in their own right play an important role in determining the selection of immigrants (Bang and Mitra, 2011), underlines the need to look at the impact of financial liberalization in conjunction with the institutional structure of an economy.

Description of Variables

To measure the impact of financial reform on the migration of high skilled labor, we estimate the following equation:

(1) $HIGH\ SKILL_{it} = \beta X_{it} + \gamma Z_{it} + \varepsilon_{it}$.

[2] Research has also emphasized the importance of the *bequest motive* in migration. Since financial development makes it easier for the poor to educate their children and reduces labor market discrimination that disproportionately affects poor minority groups (Levine, 2008), it reduces the need to migrate for the poor.

The dependent variable $HIGH\ SKILL_{it}$ denotes the fraction of tertiary educated immigrants from country *i* in year *t* in the *total combined* foreign born population from country *i* in the six major destination countries in the OECD, namely, Canada, Australia, United States, United Kingdom, France, and Germany.[3] The vector X_{it} contains a parsimonious set of source country characteristics commonly used in the empirical literature on the topic, as well as region dummies for Asia, Europe, Africa, Oceania, and South America. The vector Z_{it} contains the set of institutional and financial variables, and ε_{it} is the idiosyncratic error term.

Note that the dependent variable is essentially a stock measure. Since it is likely, if not inevitable, that some of the individuals being considered may have migrated prior to the year of measurement; we have taken non-overlapping five year averages of all time-dependent covariates. Thus, the value of an independent variable in any year *t* is taken as the average of its values in years *t* to *t - 4*.

Data on the dependent variable is taken from Defoort (2008) and is available at five-year intervals over the period 1985-2000, restricting us to a balanced sample of 184 observations taken over the four quinquennial periods under consideration.[4] A list of countries covered in our analysis is provided in Table A1 of the appendix and summary statistics for all variables are presented in Table 1. The remainder of this section is devoted to a description of the independent variables.

Standard Correlates of International Migration

In addition to region dummies for Asia, Europe, Africa, Oceania, and South America, the vector X_{it} includes for each of the four years in our sample (1) the natural logarithm of per capita GDP (PPP$); (2) population; and (3) fraction of tertiary educated population in a source country; the first two being taken from the World Development Indicators (WDI) and the last from Barro and Lee (2001). In order to control for network effects in international migration as also migration policies specific to the host countries, we also include (4) the total combined foreign-born population from each source country in the six recipient OECD countries, the data again being taken from Defoort (2008).

Finally, to control for the costs of migration, we include (5) a dummy variable that takes the value 1 if a source country lacks direct access to the sea and 0 if it does not (Bessey,

[3] Focusing on the six major OECD destinations is less restrictive than may appear to be: The six countries considered accounted for 77% of the OECD skilled immigration stock in the year 2000 (Beine et al., 2011a and 2011b). This is significant considering that 90 percent of all high skilled international migrants were found to be living in the OECD in that year (Docquier et al., 2007). Further, the United States, Germany, France, Canada, and the United Kingdom were, in descending order, the five largest remittance-sending countries in 2005; together accounting for approximately half of the global remittance flow (Ratha and Shaw, 2007). Australia was the ninth largest, being further superseded by Saudi Arabia, Spain, and Hong Kong in descending order. For other studies based on the Defoort (2008) dataset that gives us our dependent variable, see Beine et al. (2011a and 2011b) and Bang and Mitra (forthcoming).

[4] The original dataset accounts for migration from 147 source countries at five-year intervals over the period 1975-2000 and may be accessed from http://perso.uclouvain.be/frederic.docquier/oxlight.htm. The unavailability of financial and institutional variables restricts our sample to 52, 60, 53, and 59 countries for the years 1985, 1990, 1995, and 2000 respectively. Leaving out countries that emerged as autonomous political entities over the sample period and others with intermittent availability of data on the control variables gives us our present balanced sample comprising 46 countries in each of the four periods. It should, however, be mentioned that all of our results are confirmed with an unbalanced sample of 66 countries that yields 229 observations for the OLS and 220 observations for the 2SLS model.

2012) and (6) the absolute value of latitude for the source country. Data on the former is taken from the *Centre d'Etudes Prospectives et d'Informations Internationales* (CEPII) database while the latter comes from la Porta et al. (1999).

Prior to describing our variables of interest, it should be clarified that we include the natural logarithm of per capita GDP as a control rather than the variable itself, since recent evidence on international migration reveals a nonlinear impact of GDP per capita in the source country on the incentive to migrate (Vogler and Rotte, 2000; Hatton and Williamson, 2002).[5] It is also worth pointing out that the potential endogeneity between GDP and the institutional and financial variables described subsequently would require instrumentation of the natural logarithm of per capita GDP term. The choice of instruments will be discussed in the next section.

Institutional Determinants of International Migration

The institutional variables used in our analysis consist of three distinct sets of indices. The first set of indices capture the type and continuity of the regime: (5) The *Polity Index* quantifies the degree of democracy in a country, based on the openness and competitiveness of executive recruitment, constraints on the executive, and the regulation and competitiveness of participation in government and (6) C*hecks* counts the number of checks of power that exist within the government. By contrast, (7) *Regime Durability* captures the continuity of governance, based on the number of years since the last change in regime. Finally, (8) the *Government Stability Index* provides an alternative measure of continuity, using information on unity within the government, its legislative strength, and the level of popular support, to capture its ability to stay in office and ensure the continuity of declared programs. The first two variables are taken from the Polity IV Project of the Center for Systemic Peace and the last from the International Country Risk Guide (ICRG) published by the Political Risk Services Group.[6]

The second set of indices capture the state of electoral competition in the economy: (9) The *Legislative Index of Electoral Competition* reflects the extent to which multiple political parties were able to compete for seats in the most recent election. By contrast, (10) the *Executive Index of Electoral Competition* captures the extent to which popular preferences were reflected in the election of the chief executive. (11) The variable *Fraud* reflects incidents of voter intimidation and electoral fraud that affected the most recent electoral outcomes. Finally, (12) The *Political Fractionalization Index* measures the dispersion of party representation in the legislature and (13) the *Political Polarization Index* measures the distance between the executive and the four main parties in the legislature on an ideological scale. All of these variables are taken from the Database of Political Institutions (DPI) published by the World Bank.[7]

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[5] On one hand, an increase in GDP in the source country reduces international income differentials and hence the incentive to migrate. On the other hand, it increases the ability to incur the costs of migration and hence, increases the incentive to migrate. Together, the two effects induce a non-monotonic response of skilled migration to GDP per capita that typically takes the form of an inverted U-shaped relationship. See Vogler and Rotte (2000) for more on the issue.

[6] See Marshall *et al.* (2009) for a description of the Polity IV variables and the underlying methodology. The document can be accessed at http://www.systemicpeace.org/inscr/p4manualv2009.pdf. Corresponding information for the ICRG variables can be found at the homepage of the PRS Group: http://www.prsgroup.com/ICRG_Methodology.aspx

[7] See Beck *et al.* (2001) for a description of the variables and the underlying methodology.

The last set of indices capture political practices not directly reflected in the electoral process: (14) The *Corruption Index* measures the absence of corruption within the political system; (15) the *Bureaucratic Quality Index* reflects the autonomy of the bureaucracy from political control; and (16) the *Investment Profile Index* measures the security of property rights, based on the magnitude of expropriation risk, enforcement of contractual agreements, and delays in payments receivable.[8] All of these variables are taken from the ICRG.

Measures of Financial Liberalization

The indices used to measure financial liberalization come from the New Database of Financial Reforms compiled by Abiad *et al.* (2010) and include three distinct sets of variables. The first set of indices reflect the *absence* of policies that limit private enterprise in the financial sector: (17) *Privatization* captures the absence of state ownership in the banking sector based on the fraction of total sectoral assets controlled by state owned banks; and (18) *Entry Barriers* captures the absence of participatory constraints in the banking sector such as restrictions on entry, and the range of financial activities, the geographical area of operation, in addition to stringent license requirements faced by both foreign and domestic banks.

The second set of indices reflect the *absence* of policies that prevent key financial variables from being determined competitively in the relevant markets: (19) *Directed Credit* captures the absence of high reserve requirements and government mandates that ensure favored sectors a minimum amount of credit or allow them access to credit at subsidized rates; (20) *Credit Controls* captures the absence of ceilings on the expansion of credit in addition to the absence of directed credit policies;[9] (21) *Interest Rate Controls* reflects the absence of government intervention in the determination of deposit and lending rates; and (22) *Capital Controls* reflects the absence of separate exchange rates for capital and current account transactions in addition to restrictions on the inflow and outflow of international capital.

The last set of indices reflect the *presence* of policies designed to improve the operation of the financial sector: (23) *Banking Supervision* captures steps taken to ensure the independence of the banking supervisory agency from executive influence, grant it adequate legal power, and broaden the scope of its coverage; measures designed to improve the efficiency of bank examinations; and steps to enforce the adoption of minimum capital requirements for banks as per the Basle I Capital Adequacy Accord.[10] Lastly, (24) *Security Markets* reflects policies designed to encourage the development of security markets, including steps taken to open up domestic equity markets to foreign

[8] The risk of expropriation is perhaps the most commonly used measure of property rights used in the literature (Acemoglu *et al.*, 2005; Knack and Keefer, 1995; Rodrik *et al.*, 2004).

[9] We could alternatively include *Credit Ceilings* rather than the combined *Credit Controls* variable, but this leads to a considerable reduction of our sample. Nevertheless, both our Exploratory Factor Analysis and the final regression exercise yield identical results when we replace (20) with Credit Ceilings. These results are available on request.

[10] The Basel I Accord of 1988 was a set of recommendations on banking sector regulation published by a committee of central bank governors from the Group of Ten nations, called the Basel Committee on Banking Supervision. It was replaced by the more comprehensive Basel II in 2004 and the recent financial crisis has resulted in further modifications in the form of Basel III, though this remains a work in progress. See http://www.bis.org/publ/bcbsca.htm for the original Basel document and subsequent updates.

investors. This concludes our description of data. As previously mentioned, summary statistics for all variables are reported in Table 1.

Methodological Concerns

Estimating equation (1) confronts us with a number of concerns: First, per capita GDP may be endogenous and may, in fact, depend on the institutional variables (Acemoglu *et al.*, 2005; Glaeser *et al.*, 2004; Knack and Keefer, 1995; Rodrik *et al.*, 2004) and measures of financial liberalization (Beck and Levine, 2004; Bekaert *et al.*, 2005, 2011; Levine, 2001, 2005). Hence, estimating (1) using the classical regression model is inherently problematic and we therefore implement a two stage least squares (2SLS) procedure with life expectancy and per capita energy consumption from the WDI as excluded instruments for per capita GDP.

There are several reasons that motivate our choice of instruments: the energy consumption variable is typically taken as a measure of infrastructure and there is a significant literature that asserts causality from infrastructure to economic growth (Canning and Pedroni, 2008; Sahoo and Dash, 2012). Additionally, there is an increasing concern that energy by itself constitutes an impetus for growth (Lee and Chang, 2005; Apergis and Payne, 2010). As such, the instrument correlates well with per capita GDP; and indeed, the correlation coefficient between the two variables appears to bear this out. At the same time, there is no reason to believe that energy consumption has differential impacts for individuals at different points of the domestic skill distribution, as this would depend on whether energy-intensive sectors of production are relatively more intensive in the use of high or low skill labor. Since this is not clear, energy consumption should not *a priori* be expected to influence the selection of emigrants.

The same argument holds for the life expectancy variable: While there is considerable evidence both at the cross-national (Lorentzen *et al.*, 2008) and at the micro level (Jayachandran and Lleras-Muney, 2009) on the causal impact of life expectancy on economic performance, it is theoretically unclear how this variable would impact high and low skilled migration differently. As such, we are unable to draw any prior conclusion on the impact of life expectancy on selection. Finally, note that the Hansen J-Statistic reported at the foot of Table 3 confirms that the first stage equation is not over-identified.[11]

Second, the institutional variables used in our analysis are highly correlated with each other. The literature has typically addressed the problem of multicollinearity by constructing unidimensional indices of institutional structure from the available indicators (Alesina and Perotti, 1996; Perotti 1996).[12] However, this procedure ignores the argument that institutions are best regarded as multidimensional, since various aspects

[11] Given the inherent problem of heteroskedasticity in cross-country growth regressions (Durlauf *et al.*, 2005), we compute robust standard errors of our estimated coefficients, making the Hansen J-Test the appropriate test for over-identification.

[12] Other contributions (Acemoglu *et al.*, 2005; Hall *et al.*, 2011; Rodrik *et al.*, 2004) focus on the subset of institutions that preserve the security of property rights.

of institutional character may differ in their impact on economic outcomes (Bang and Mitra, 2011).[13]

Third, the same problem of multicollinearity arises from measures of financial liberalization. Again, this is usually addressed by focusing on specific components of financial liberalization (Beck and Levine, 2004; Bekaert *et al.*, 2005, 2011; Chinn and Ito, 2006) or by combining different aspects of financial liberalization into one aggregate index (Abiad and Mody, 2005; Abiad *et al.*, 2010).[14] While the first procedure is clearly unsuited to our purpose of tracing out how the global movement towards financial liberalization impacted skilled migration; note that the second procedure is, in principle, subject to the caveat of ignoring the multidimensionality of financial liberalization.

Finally, it may be argued that the financial variables of interest may be correlated with the set of institutional controls, since the adoption of a financial liberalization program may depend on the existing institutional structure (Rajan and Zingales, 2003) and such a program may, in turn, influence subsequent institutional development (Rajan and Zingales, 2003; Bekaert *et al.*, 2011).[15]

To address the last three concerns, we follow Bang and Mitra (2011) in conducting an Exploratory Factor Analysis (EFA) on the set of financial and institutional variables. This allows us to identify two distinct dimensions of financial liberalization and three distinct dimensions of institutional structure that are orthogonal to each other. These five factors are subsequently included in the vector X_{it} of regressors. The remainder of this section is devoted to a description of this procedure.

Multidimensionality of Institutions and Financial Liberalization

The methodology of EFA is based on the assumption that each of a set of potentially correlated variables is generated by a linear combination of a smaller set *latent factors* and an individual error term. The hypothesized latent factors include *common factors* that impact more than one observed variable and *specific factors* that are unique to each variable. Hence, variation in each of the observed variables can be decomposed into the part caused by variation in the common factors and the part unique to the variable in the form of specific factors and measurement error. The value of EFA thus lies in its ability to explore a theoretical structure underlying multivariate data: The common factors identified by the method ideally lend themselves to theoretical interpretation.

Further, being extracted by identifying common sources of variation in the observed variables, they are, by construction, free of high degrees of multicollinearity.[16] Finally, EFA has the convenient property that its solution for each of the underlying factors is only unique to a scaling constant. Thus, it is common to normalize the solution so that the

[13] Highlighting this problem, Langbein and Knack (2010) undertake a confirmatory factor analysis of the World Governance Indicators (WGI) to determine if these measures are causally related to single latent variable *good governance* and fail to confirm this hypothesis.

[14] Beck and Levine (2004) consider the impact of stock market development; Bekaert *et al.* (2005) the impact of equity market liberalization; while Bekaert *et al.* (2011) and Chinn and Ito (2006) consider both capital and equity market liberalization. See Levine (2005) for a survey of the finance and growth literature.

[15] See Abiad and Mody (2005) for a dissenting view on the role of institutions as determinants of financial liberalization.

[16] For studies using EFA, see Bang and Mitra (2011a) and Langbein and Knack (2010) in the context of institutions and Jong-A-Pin (2009) in the context of political instability.

predicted factors will all have a mean of approximately zero and a variance of approximately one, thereby simplifying the task of comparing the relative magnitudes of the factor variables' coefficients when they are inserted into a regression equation.[17]

In obtaining the underlying latent factors, one faces the choice between several extraction methods, the most prominent being principle component extraction, principle factor extraction, iterated principle factor extraction, and maximum likelihood extraction (Hair *et al.* 1998). Of these, the *principal component extraction* method is clearly inappropriate for our purpose since it seeks to explain *all* of the variance in the observed variables and not merely the *common* variance. Hence, it leads to highly correlated errors. While free of this caveat, *maximum likelihood extraction* requires the additional assumption of multivariate normality.[18] As such, the EFA conducted on the financial and institutional variables employs the *principle factor extraction* method with a *promax* rotation procedure and factor loadings from the exercise are reported in Panel A of Table 2. It should be mentioned, however, that we do replicate our analysis using the iterated principle factor extraction and maximum likelihood extraction methods and obtain virtually identical factors.

With respect to the rotation procedure, one faces the choice between *orthogonal* and *oblique* methods. Orthogonal methods, such as *orthomax or quartimax*, require the additional assumption of orthogonality between the latent factors. Since this would lead to considerable loss of information if the factors are, in fact, correlated, we have followed the prescription of Costello and Osborne (2005) in choosing an oblique rotation procedure, specifically the *promax* method. Again, we would like to clarify that we have obtained the exact same set of latent factors using the orthomax rotation method. However, a more comprehensive discussion of the various robustness checks will be postponed to the end of this section.

The EFA allows us to identify three common factors underlying the observed institutional variables that are interpreted as *Democracy*, *Transparency of Governance*, and *Credibility of the Regime*. We also identify two aspects of financial liberalization that are interpreted as *Financial Freedom* and *Financial Robustness* respectively. The remainder of this section will be devoted to clarifying the interpretations of the common factors.

The variables with the greatest weights in the *Democracy* factor are the *Legislative Index of Electoral Competition* (0.825), the *Executive Index of Electoral Competition* (0.807), the *Polity Index* (0.791), the *Political Fractionalization Index* (0.728), and *Checks* (0.615). Note that the first two variables reflect the extent to which the political leadership of a country is determined by free and fair elections as opposed to being determined by dictate; the last two variables capture formal and informal constraints on the exercise of autocratic power; and the *Polity Index* combines both dimensions. Hence, it is natural to interpret this factor as capturing the extent of democratization of a society.

The factor *Transparency* is primarily composed of the *Bureaucratic Quality Index* (0.766), the *Corruption Index* (0.755), and *Regime Durability* (0.624). The first two are clear indicators of the transparency of governance, while *Regime Durability* may be regarded as an indirect reflection of institutional transparency, since a regime may be

[17] This is why the latent financial factors described subsequently have a different range than the observed financial indices which range between 0 and 3.

[18] As demonstrated subsequently, this may not be an appropriate assumption in our context.

durable precisely because it is perceived as operating a transparent administration with an independent and efficient bureaucracy and freedom from corruption.

The factor *Credibility* is primarily determined by the *Investment Profile Index* (0.585) and the *Government Stability Index* (0.569). The former is a direct reflection of the credibility of a regime in terms of being able to protect property rights, enforce contracts, and minimize delays in payments receivable from the government. The *Government Stability Index*, on the other hand, reflects the credibility of declared policies in terms of their security against radical shifts within the government. As such, it is natural to interpret this factor as capturing the perceived credibility of the government.

The factor *Financial Freedom* is dominated by *Directed Credit* (0.956) and *Credit Controls* (0.947), while the other financial variables play a significant though less important role.[19] Note that both of the dominant variables reflect the absence of policies that curtail the freedom of privately owned banks to follow the profit maximization objective. This is also true of the variable *Privatization* (0.392), which ranks third in terms of weight. As such, we interpret this factor as capturing the freedom of private enterprise in the banking sector. The relevance of this interpretation is highlighted by the fact that our measure of property rights in the form of the *Investment Profile Index* (0.331) contributes significantly to this factor.

The last factor *Financial Robustness* is primarily determined by *Security Markets* (0.632), *Capital Controls* (0.610), *Interest Rate Controls* (0.531), and *Banking Supervision* (0.510). The *Security Markets* and *Banking Supervision* variables clearly reflect policies designed to improve the efficiency of the financial sector. Note that a similar case could be made about *Capital Controls*: Restrictions on the international flow of capital isolate the domestic financial sector from the global economy and compel domestic investors to hold portfolios comprised primarily of domestic securities. This may expose them to a greater degree of risk from shocks arising within the domestic economy, since any portfolio they can hold is likely to be dominated by domestic securities, all of which are subject to the shock. Compensation for the greater degree of risk takes the form of higher expected rates of return on investment, which in turn leads to a higher cost of capital for firms. As such, the absence of such isolating policies improves the efficiency of the financial sector.

The variable *Interest Rate Controls* lends itself to a similar interpretation: Recall that this variable reflects the absence of government intervention in the determination of interest rates. Such intervention causes a divergence between expected and actual returns on private investment and this may potentially lead to an adverse selection of investment projects. As such, the absence of such forms of intervention contributes to a more efficient financial sector and should be expected to contribute to *Financial Robustness*.

[19] Recall that *Credit Controls* combines the directed credit variable with the absence of credit ceilings. Since the variation induced by the former is already accounted for by including it separately from the combined variable, the weight of the combined variable is essentially capturing the impact of credit ceilings. Including these variables in tandem does not seriously compromise the stability of our EFA specification, even though they are very highly correlated for some countries. As an example, consider the most extreme case, in which two variables are perfectly correlated. In this case, the solution to the EFA that includes both of these will simply report a duplicate set of factor loadings corresponding to the correlated variables. In our case, the credit controls variable captures the additional impact on financial freedom that derives from the absence of credit ceilings.

Robustness of the EFA

We perform the following robustness checks on our analysis: First, we run the EFA separately for the institutional and financial variables, retaining both the principal factor extraction method and the promax rotation procedure. These exercises yield identical factors as the combined analysis and the corresponding factor loadings are reported in panels B and C of Table 2 respectively. Second, we retain the principle factor extraction method and replace the oblique promax rotation procedure with the orthogonal method of orthomax. As previously mentioned, this yields identical factors as the promax rotation and factor loadings from the exercise are reported in Table A2 of the appendix. Finally, we conduct the EFA with alternative methods of factor extraction. Table A3 presents factor loadings obtained using the iterated principle factor method of extraction and Table A4 presents results from maximum likelihood extraction. Note that while both methods of extraction yield virtually identical factors as the principal factor method used in the paper, maximum likelihood extraction leads to a *Heywood case*, leading one to question the validity of assuming multivariate normality.[20]

Results and Robustness

To ensure that the bifurcated impact of the two dimensions of liberalization reported subsequently are not confounded by the institutional principle factors, the choice of controls, and the choice of instruments for GDP per capita; we first run relatively uncontrolled OLS regressions of the dependent variable on each financial factor and subsequently include both factors in the same regression.[21]Given the cross-national panel structure of our data, all of the initial specifications reported in Table 3 further include dummies for geographic region and time.[22]

As seen from column (2) of Table 3, a standard deviation improvement in the factor reflecting *Financial Robustness* increases the fraction of tertiary educated migrants by approximately 3.7 percentage points on the average and the impact is significant at the 0.01 level. However, a corresponding improvement in the *Financial Freedom* factor has an insignificant impact on selection. Note also that we obtain the same bifurcated impact when we include both financial factors in the same regression.[23] With this as perspective, we now turn to an exposition of the model with the full complement of independent variables.

As mentioned in Section 4, we estimate equation (1) using a 2SLS procedure with life expectancy and per capita energy consumption as excluded instruments for per capita GDP. For the sake of comparison, however, we also include the OLS results for each of our specifications. Thus, even numbered columns in Table 4 present results from the 2SLS exercise and odd numbered columns present the OLS analogues.

As seen from columns (1) and (2) of Table 4, *Financial Robustness* has a significant positive impact on the fraction of tertiary educated immigrants: on average, a one

[20] A Heywood case occurs if the variance in an observed variable accounted for by the common factors or the *communality* of that variable equals or exceeds 1.

[21] We are grateful to an anonymous referee for this suggestion.

[22] It should be mentioned, however, that we get closely comparable results even when we exclude these dummies.

[23] This is not surprising since the financial principle factors obtained from the EFA are highly orthogonal.

standard deviation increase in this factor improves selection by approximately 4.6 - 5.1 percentage points on the average and the effect is significant at the 0.01 level. Again, by contrast, *Financial Freedom* has a statistically insignificant impact.

Recall that the robustness factor essentially reflects policies designed to enhance the development of security markets, improve supervision of banks, and remove stringent restrictions on the flow of international capital leading to reduced required rates of return on domestic securities. As such, an increase in this factor can be theoretically expected to promote a more favorable climate for economic activity in the domestic economy and hence increase the expected domestic returns to skill investment. Consistent with the existing literature (Clarke *et al.*, 2006; Beck *et al*., 2007), the positive impact of financial robustness on selection implies that the increase in expected domestic returns is less for the high skilled than the low skilled.

On the other hand, the freedom factor essentially represents the absence of interventionist policies curtailing the freedom of private sector banks, particularly with respect to the extension of credit. While a reduction of state intervention in the financial sector will undoubtedly have an impact on the expected returns to skill investment in the country of origin, it would not be wrong to claim that that the primary impact of this is to make the cost of migration easier to incur.

The relative salience of the robustness factor then suggests that the dominant impact of financial liberalization on emigration operates via reducing the expected marginal benefits from migration rather than the marginal costs. Further, the reduction in marginal benefit from migration is less for the high skilled than it is for the low skilled. This is consistent with the findings of Keeling (2007; 2008), which suggest that the expected benefits from migration have historically played a more significant role in determining the flow of immigrants.

With respect to the dimensions of institutional character, the only variable to have a statistically significant impact on the fraction of skilled emigrants is the *transparency of governance*. As seen from columns (1) and (2), a standard deviation improvement in transparency increases the fraction of tertiary educated immigrants by 3.3 – 4.2 percentage points on the average. Recall that a high value of the transparency factor reflects a high quality of the bureaucracy, a low level of corruption, and a greater perception of legitimacy of the government by virtue of its ability to deliver public services. This should predict a more favorable selection of migrants (Bang and Mitra, 2011), since an improvement in these components will reduce the marginal benefit from migration over the entire skill distribution, but more so for relatively unskilled workers, who depend more on the services provided by the state and at the same time, are less able to protect themselves from corruption and other forms of rent-seeking behavior.

As a robustness check, we now include dummies for the years 1985, 1990, and 1995. As seen from columns (3) and (4) of Table 4, a standard deviation improvement in robustness is again seen to improve selection by 4.0 – 4.6 percentage points on the average and the freedom factor remains statistically insignificant in both specifications. Of the institutional factors, transparency retains its positive impact at the 0.01 level and democracy and credibility remain insignificant. However, the year dummies themselves are not jointly significant, which may lead one to question their inclusion in the model.

Finally, it is natural to ask if the impact of financial liberalization on the outflow of skilled labor depends on the existing quality of institutions in the source country. To

address this concern, we introduce interaction terms between the three dimensions of institutional quality and the two financial factors. Columns (1) - (3) of Table 5 present the results of 2SLS regressions when we include the interaction terms individually for each dimension of institutional quality, while column (4) presents the full model with all six interaction variables. For the sake of economy, the OLS analogues are not included in the paper and may be available on request.

Financial freedom remains statistically insignificant and we detect no threshold effects with respect to any of the three dimensions of institutional quality. Robustness of the financial sector again retains its positive direct impact on selection and is significant at the 0.01 level in all four specifications. The interaction term between financial robustness and credibility is seen to be positively significant at the 0.05 level, both when we include the interaction terms specific to credibility alone (column (3)) and in the full model (column (4)). Interestingly, the interaction terms of robustness with democracy and transparency fail to achieve statistical significance in any of the relevant specifications. Note, therefore, that while our results are consistent with the existing consensus in that the impact of financial liberalization on selection does depend on the existing level of institutional quality, the only robust evidence of institutional threshold effects is with respect to the perceived credibility of a regime as captured by its ability to protect private property rights. At the same time, while the security of property rights appears to exert no direct influence on selection, it has a significant indirect impact in terms of magnifying the positive impact of financial robustness.

Conclusion

This paper investigated the role of financial liberalization as a determinant of skilled emigration. Using an exploratory factor analysis on twelve commonly used institutional variables and seven indices of financial liberalization, we were able to identify three distinct aspects of institutional character and two distinct dimensions of financial liberalization. The dimensions of institutional quality were seen to relate to the extent of democratization in a society, the transparency of governance, and the perceived credibility of a regime; while aspects of financial reform pertained to the increase of economic freedom in the financial sphere and improved robustness of the financial sector.

Our results reveal that the various aspects of financial liberalization and institutional character have significantly different impacts on the selection of emigrants: an improvement in robustness of the financial sector increases the fraction of tertiary skilled immigrants by about four percentage points on the average. However, an increase in economic freedom in the financial sector has an ambiguous impact on skilled emigration. Analogously, an improvement in the transparency of governance increases the magnitude of skilled emigration, but an increase in the extent of democratization and the credibility of a regime have no significant impact.

Further, the impact of financial liberalization on the selection of emigrants differs for countries at different levels of institutional quality and even then, the threshold effects differ with respect to the different dimensions of institutional quality: while the perceived credibility of a regime has no direct impact on selection, it serves to magnify the positive impact of financial robustness on the selection of migrants. By contrast, none of the other

dimensions of institutional character serve to magnify the impact of robustness on selection, even though the transparency of governance has a direct positive impact.

An insight that emerges from our analysis is that financial liberalization may have a second order impact on the growth prospects of developing economies by way of improving the selection of emigrants. There is reason to believe that the prospect of migration increases the expected returns to skill investment and contributes to human capital formation in the country of origin (Beine *et al.*, 2008). There is also evidence that skilled diasporas facilitate the flow of foreign direct investment (Kugler and Rapoport, 2007); help in the transfer of technology (Docquier and Lodigiani, 2010); and contribute towards the adoption of needed institutional reforms (Li and McHale, 2006) in the source countries. All these factors have documented positive impacts on economic growth.

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Tables

Table 1: Summary Statistics for Balanced Sample

Variable	Source	Mean	Std. Dev.	Min	Max
Skilled Immigration Rate	Defoort (2008)	0.120	0.142	0.000	0.850
Total Foreign Born Pop. (millions)	Defoort (2008)	2.547	3.689	0.021	17.946
ln(GDP per Capita)	WDI	8.418	1.461	5.114	10.500
Population (millions)	WDI	73.804	205.429	2.239	1241.188
Share of Tertiary-Educated Workers	Barro & Lee (2001)	13.189	10.462	0.100	53.000
Energy Cons. (1,000 kt oil equiv. p.c.)	WDI	128.789	327.007	1.668	2302.554
Life Expectancy (years)	WDI	70.419	7.720	42.796	80.555
Directed Credit	Abiad et al. (2010)	1.672	1.134	0.000	3.000
Credit Controls	Abiad et al. (2010)	1.729	1.087	0.000	3.000
Interest Rate Controls	Abiad et al. (2010)	2.136	1.124	0.000	3.000
Entry Barriers	Abiad et al. (2010)	1.857	1.053	0.000	3.000
Bank Supervision	Abiad et al. (2010)	0.790	0.925	0.000	3.000
Privatization	Abiad et al. (2010)	1.341	1.155	0.000	3.000
Capital Controls	Abiad et al. (2010)	1.888	1.038	0.000	3.000
Security Markets	Abiad et al. (2010)	1.753	1.104	0.000	3.000
Financial Freedom Factor		-0.111	1.041	-2.057	1.432
Financial Robustness Factor		-0.118	0.814	-1.859	1.575
Government Stability	ICRG	7.264	1.787	2.500	10.950
Investment Profile	ICRG	6.809	1.729	2.250	10.833
Corruption	ICRG	3.971	1.386	0.000	6.000
Bureaucratic Quality	ICRG	2.784	1.106	0.000	4.000
Democratic Accountability	ICRG	4.481	1.315	1.000	6.000
Polity Index	Polity IV	5.945	5.712	-8.000	10.000
Regime Durability	Polity IV	37.221	36.740	0.200	189.000
LIEC	DPI	6.570	0.956	3.000	7.000
EIEC	DPI	6.395	1.314	2.000	7.000
Electoral Fraud	DPI	0.141	0.349	0.000	1.000
Political Fractionalization	DPI	0.545	0.231	0.000	0.888
Political Polarization	DPI	0.777	0.863	0.000	2.000
Checks	DPI	3.482	1.720	1.000	12.200
Democracy Factor		0.219	0.789	-2.365	1.254
Transparency Factor		0.377	0.869	-2.255	1.930
Credibility Factor		-0.180	0.693	-2.279	1.288
Dist. from Equator (degrees Latitude)	La Porta et al. (1999)	31.775	16.796	0.233	60.133
Landlocked (dummy)	CEPII			0.000	1.000
Europe (dummy)				0.000	1.000
Asia (dummy)				0.000	1.000
Africa (dummy)				0.000	1.000
Oceania (dummy)				0.000	1.000
South America (dummy)				0.000	1.000
Number of Observations		184			

Table 2: Rotated Factor Loadings (Principle Factor Method; Oblique Promax Rotation).

Panel A: Combined Factor Analysis

Variable	Democracy	Freedom	Transparency	Robustness	Credibility	Factor 6	Factor 7	Factor 8	Uniqueness
Directed Credit	0.097	0.956	0.125	0.112	0.070	0.008	0.014	0.005	0.043
Credit Controls	0.124	0.947	0.084	0.191	0.107	0.039	0.007	-0.001	0.031
Interest Rate Controls	0.375	0.378	0.051	0.531	0.079	0.014	0.058	0.077	0.417
Entry Barriers	0.213	0.368	-0.032	0.475	0.171	0.034	0.021	0.261	0.494
Banking Supervision	0.164	0.382	0.173	0.510	0.330	0.153	0.188	0.018	0.369
Privatization	0.179	0.392	0.141	0.334	0.208	0.009	0.252	0.099	0.566
Capital Controls	0.318	0.342	0.217	0.610	0.142	-0.043	-0.018	0.003	0.340
Security Markets	0.262	0.339	0.352	0.632	0.174	0.127	-0.086	-0.100	0.231
Government Stability	-0.048	0.298	-0.008	0.221	0.569	0.023	-0.024	0.017	0.535
Investment Profile	0.121	0.331	0.226	0.302	0.585	0.016	0.023	-0.005	0.391
Corruption	0.174	0.123	0.755	0.014	-0.038	0.072	-0.064	0.104	0.364
Bureaucratic Quality	0.193	0.155	0.766	0.257	0.136	0.054	0.014	-0.038	0.264
Polity Index	0.791	0.076	0.329	0.200	0.003	0.065	-0.057	0.070	0.207
Regime Durability	0.071	0.236	0.624	0.093	0.081	0.010	0.171	-0.155	0.482
Legislative Electoral Competition	0.825	0.171	0.007	0.105	0.025	-0.076	0.064	0.021	0.269
Executive Electoral Competition	0.807	0.108	0.108	0.115	0.065	-0.050	0.038	-0.036	0.303
Electoral Fraud	-0.112	0.111	-0.405	-0.168	-0.080	-0.083	0.242	-0.080	0.704
Political Fractionalization	0.728	0.132	0.010	0.136	0.016	0.320	-0.047	0.039	0.328
Political Polarization	0.438	0.109	0.295	0.106	0.047	0.489	0.006	0.052	0.454
Checks	0.615	0.068	0.251	0.133	0.061	0.374	0.002	-0.153	0.370
Number of observations	335								

Panel B: Institutional Factor Analysis

Variable	Democracy	Transparency	Credibility	Factor 4	Factor 5	Factor 6	Uniqueness
Government Stability	0.093	0.039	0.665	0.007	0.014	-0.037	0.546
Investment Profile	0.252	0.275	0.669	0.042	-0.018	0.037	0.410
Corruption	0.166	0.756	0.013	0.067	-0.055	-0.032	0.392
Bureaucratic Quality	0.296	0.737	0.240	0.082	-0.006	0.015	0.350
Polity Index	0.800	0.344	0.050	0.056	-0.172	0.002	0.268
Regime Durability	0.051	0.583	0.154	0.070	0.072	0.097	0.614
Legislative Electoral Competition	0.871	0.036	0.128	-0.039	0.060	-0.042	0.217
Executive Electoral Competition	0.852	0.112	0.084	-0.024	0.035	0.125	0.238
Electoral Fraud	-0.015	-0.391	-0.043	-0.095	0.258	0.005	0.770
Political Fractionalization	0.788	0.057	0.120	0.270	0.009	-0.159	0.263
Political Polarization	0.448	0.363	0.056	0.452	-0.033	-0.034	0.458
Checks	0.667	0.263	0.046	0.359	-0.006	0.116	0.341
Number of observations	468						

Panel C: Financial Liberalization Factor Analysis

Variable	Freedom	Robustness	Factor3	Factor4	Uniqueness
Directed Credit	0.945	0.250	0.027	0.0350	0.421
Credit Controls	0.928	0.324	0.010	-0.015	0.340
Interest Rate Controls	0.465	0.617	0.005	-0.018	0.402
Entry Barriers	0.418	0.568	0.102	0.017	0.492
Banking Supervision	0.417	0.646	0.085	0.015	0.401
Privatization	0.393	0.476	0.066	0.082	0.608
Capital Controls	0.409	0.658	-0.016	0.036	0.398
Security Markets	0.432	0.687	-0.009	0.007	0.341
Number of observations	568				

Table 3: Baseline Regression Results (Dependent Variable: Tertiary-Educated Emigrants as a Proportion of the Total Emigrant Stock)

VARIABLES	(1)	(2)	(3)
Freedom	0.00683		0.00667
	(0.00705)		(0.00721)
Robustness		0.0366***	0.0366***
		(0.0114)	(0.0115)
Constant	0.370***	0.389***	0.397***
	(0.0667)	(0.0688)	(0.0693)
Observations	184	184	184
R-squared	0.345	0.380	0.381
F Statistic	13.32	15.47	13.56

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. All specifications include region dummies for Europe, Africa, Asia, Oceania, and South America, as well as time dummies for 1985, 1990, and 1995.

Table 4: Regression Results (Dependent Variable: Tertiary-Educated Emigrants as a Proportion of the Total Emigrant Stock)

VARIABLES	(1) OLS No Years	(2) 2SLS No Years	(3) OLS With Years	(4) 2SLS With Years
ln(GDP per Capita)	-0.0499***	-0.0347**	-0.0485***	-0.0299
	(0.0114)	(0.0172)	(0.0115)	(0.0196)
Population (millions)	-0.000255***	-0.000220***	-0.000265***	-0.000224***
	(4.68e-05)	(5.03e-05)	(5.68e-05)	(6.14e-05)
Total Number of Emigrants	-0.00368	-0.00385	-0.00338	-0.00350
(millions)	(0.00261)	(0.00263)	(0.00260)	(0.00258)
Share of Tertiary-Skilled Workers	-0.00733***	-0.00752***	-0.00761***	-0.00786***
	(0.00211)	(0.00211)	(0.00216)	(0.00216)
Landlocked	-0.0341	-0.0294	-0.0291	-0.0225
	(0.0224)	(0.0212)	(0.0232)	(0.0223)
Distance from Equator	-0.000704	-0.00107	-0.000592	-0.00101
	(0.000839)	(0.000831)	(0.000881)	(0.000876)
Democracy	-0.00253	-0.00472	-0.00527	-0.00863
	(0.0105)	(0.00950)	(0.0118)	(0.0105)
Transparency	0.0418***	0.0329***	0.0461***	0.0359***
	(0.0137)	(0.0127)	(0.0148)	(0.0138)
Credibility	0.00535	0.00157	-0.00534	-0.0113
	(0.0132)	(0.0139)	(0.0184)	(0.0201)
Freedom	0.00738	0.00564	0.00376	0.000677
	(0.00739)	(0.00730)	(0.00829)	(0.00852)
Robustness	0.0509***	0.0464***	0.0465***	0.0396**
	(0.0153)	(0.0144)	(0.0163)	(0.0157)
Constant	0.845***	0.728***	0.851***	0.709***
	(0.134)	(0.136)	(0.135)	(0.148)
Observations	184	184	184	184
R-squared	0.494	0.491	0.499	0.494
F Statistic	11.01	10.13	9.192	8.493
Hansen's J Stat		0.919		0.655
P(>J)		0.338		0.418
F (Year Dummies)			0.623	1.931
P-Value			0.537	0.587

Robust Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. All specifications include region dummies for Europe, Africa, Asia, Oceania, and South America (all of which were individually significant); specifications (3) and (4) include time dummies for 1985, 1990, and 1995; ln (GDP per Capita) is generated by instrumental variable method in specifications (2) and (4).

Table 5: Regression Results with Interactions (Dependent Variable: Tertiary-Educated Emigrants as a Proportion of the Total Emigrant Stock)

VARIABLES	(1)	(2)	(3)	(4)
ln(GDP per Capita)	-0.0288	-0.0326**	-0.0351**	-0.0272
	(0.0183)	(0.0166)	(0.0165)	(0.0176)
Population (millions)	-0.000208***	-0.000213***	-0.000217***	-0.000200***
	(5.13e-05)	(4.86e-05)	(4.92e-05)	(5.00e-05)
Total Number of Emigrants	-0.00397	-0.00384	-0.00364	-0.00368
(millions)	(0.00269)	(0.00260)	(0.00260)	(0.00259)
Share of Tertiary-Skilled Workers	-0.00774***	-0.00784***	-0.00770***	-0.00827***
	(0.00216)	(0.00209)	(0.00210)	(0.00216)
Landlocked	-0.0327	-0.0267	-0.0314	-0.0310
	(0.0223)	(0.0209)	(0.0218)	(0.0226)
Distance from Equator	-0.00123	-0.00101	-0.000844	-0.000989
	(0.000850)	(0.000848)	(0.000844)	(0.000864)
Democracy	-0.00131	-0.00310	-0.00353	0.00309
	(0.0101)	(0.00958)	(0.00967)	(0.0112)
Transparency	0.0300**	0.0354***	0.0331***	0.0333***
	(0.0121)	(0.0135)	(0.0120)	(0.0120)
Credibility	0.00191	0.00332	0.00419	0.00613
	(0.0137)	(0.0146)	(0.0144)	(0.0146)
Freedom	0.00270	0.00423	0.00570	0.00139
	(0.00738)	(0.00694)	(0.00680)	(0.00674)
Robustness	0.0467***	0.0446***	0.0496***	0.0476***
	(0.0151)	(0.0147)	(0.0143)	(0.0154)
Democracy X Freedom	0.0113			0.0127
	(0.0130)			(0.0138)
Democracy X Robustness	-0.000848			0.000542
	(0.0110)			(0.0115)
Transparency X Freedom		0.00128		0.00254
		(0.0113)		(0.0116)
Transparency X Robustness		0.0156		0.0159
		(0.0115)		(0.0115)
Credibility X Freedom			-0.00821	-0.00415
			(0.0130)	(0.0140)
Credibility X Robustness			0.0252**	0.0242**
			(0.0121)	(0.0119)
Constant	0.686***	0.708***	0.725***	0.665***
	(0.135)	(0.132)	(0.130)	(0.132)
Observations	184	184	184	184
R-squared	0.491	0.494	0.501	0.503
F Statistic	8.898	8.996	9.266	7.457
Hansen's J Stat	1.076	1.693	0.891	2.051
P(>J)	0.300	0.193	0.345	0.152

Robust Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. All specifications include region dummies for Europe, Africa, Asia, Oceania, and South America; ln (GDP per Capita) is generated by instrumental variable method across all specifications.

Appendix

Table A1: List of Countries[24]

Argentina	Kenya
Australia	Korea
Austria	Mexico
Belgium	Mozambique
Bolivia	Netherlands
Brazil	New Zealand
Canada	Norway
China	Paraguay
Colombia	Philippines
Costa Rica	Portugal
Denmark	Senegal
Dominican Republic	Singapore
Ecuador	South Africa
Egypt	Spain
El Salvador	Sri Lanka
Finland	Sweden
France	Tunisia
Greece	Turkey
India	Uganda
Ireland	United Kingdom
Israel	United States
Italy	Uruguay
Jamaica	Zimbabwe
Japan	

[24] The unbalanced sample further includes Algeria, Bangladesh, Bulgaria, Cameroon, Chile, Czech Republic, Germany, Ghana, Guatemala, Hungary, Indonesia, Jordan, Malaysia, Nicaragua, Pakistan, Poland, Romania, Thailand, Venezuela, and Vietnam.

Table A2: Rotated Factor Loadings (Principle Factor Method; Orthomax Rotation)

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Factor8	Uniqueness
Directed Credit	0.1268	0.9613	0.0968	-0.0726	-0.0320	-0.0093	-0.0171	-0.0153	0.0436
Credit Controls	0.1648	0.9678	0.0594	-0.0008	0.0130	0.0176	-0.0182	-0.0141	0.0317
Interest Rate Controls	0.4530	0.4603	0.0295	0.3891	0.0653	-0.0402	0.0451	0.0733	0.4173
Entry Barriers	0.2897	0.4537	-0.0347	0.3479	0.1641	0.0004	-0.0043	0.2631	0.4918
Banking Supervision	0.2798	0.4925	0.1837	0.3557	0.3199	0.1114	0.1875	0.0502	0.3664
Privatization	0.2412	0.4683	0.1203	0.2101	0.1810	-0.0165	0.2025	0.0656	0.5855
International Capital	0.4194	0.4426	0.2102	0.4642	0.1334	-0.1014	-0.0095	0.0178	0.3401
Security Markets	0.3932	0.4485	0.3438	0.4950	0.1634	0.0753	-0.0833	-0.1173	0.2281
Government Stability	0.0012	0.3844	0.0038	0.1198	0.5502	0.0207	-0.0493	-0.0088	0.5322
Investment Profile	0.2058	0.4261	0.2408	0.1386	0.5656	-0.0241	0.0188	0.0075	0.3780
Corruption	0.2479	0.1227	0.7399	-0.0741	-0.0815	0.0351	-0.0904	0.0992	0.3446
Bureaucratic Quality	0.3004	0.2124	0.7478	0.1487	0.1066	0.0111	-0.0046	-0.0613	0.2681
Democratic Accountability	0.6113	0.2157	0.5385	0.0394	0.0585	-0.0272	0.0869	0.1181	0.2626
Polity 2	0.8538	0.0823	0.2691	0.0438	-0.0283	-0.0471	-0.0561	0.0922	0.1752
Durability	0.1398	0.2617	0.6181	-0.0034	0.0414	-0.0186	0.1739	-0.1434	0.4770
Legislative Electoral Competition	0.8134	0.1658	-0.0778	-0.0361	-0.0188	-0.1658	0.0422	-0.0145	0.2737
Executive Electoral Competition	0.8082	0.1100	0.0265	-0.0211	0.0250	-0.1390	0.0253	-0.0656	0.3086
Electoral Fraud	-0.1763	0.0752	-0.3903	-0.1526	-0.0853	-0.0653	0.2733	-0.0298	0.7006
Political Fractionalization	0.7672	0.1331	-0.0593	0.0171	-0.0147	0.2389	-0.0605	0.0024	0.3289
Political Polarization	0.5267	0.1214	0.2585	0.0069	0.0214	0.4301	-0.0058	0.0322	0.4545
Checks	0.6855	0.0769	0.2029	0.0201	0.0334	0.2945	0.0159	-0.1670	0.3666

Table A3: Rotated Factor Loadings (Iterated Principle Factor Method; Oblique Promax Rotation)

Variable	Democracy	Freedom	Transparency	Freedom	Credibility	Factor6	Factor7	Factor8	Uniqueness
Variable	0.0982	0.9236	0.1278	0.1135	0.1352	0.0193	0.0476	0.041	0.0855
Directed Credit	0.1192	0.9733	0.0847	0.1663	0.1575	0.0481	0.0491	0.0077	-0.026
Credit Controls	0.3795	0.3752	0.0439	0.4172	0.1396	0.0306	0.3097	0.0199	0.4225
Interest Rate Controls	0.2099	0.3621	-0.0083	0.3002	0.2129	0.0476	0.4817	-0.1382	0.4359
Entry Barriers	0.151	0.3604	0.118	0.394	0.3715	0.1694	0.351	0.2161	0.3416
Banking Supervision	0.1746	0.3868	0.102	0.2182	0.2396	0.0411	0.3033	0.1859	0.5762
Privatization	0.3278	0.3255	0.1932	0.5221	0.2298	-0.0302	0.2654	0.0288	0.3517
Capital Controls	0.2308	0.3159	0.2667	0.8104	0.2176	0.1185	0.0373	0.0211	0.0558
Security Markets	-0.0621	0.284	-0.0579	0.1907	0.5257	0.0399	0.0843	-0.0181	0.5904
Government Stability	0.1222	0.275	0.1738	0.1821	0.8708	0.0297	0.052	0.024	0.0837
Investment Profile	0.137	0.1133	0.8446	0.046	0.0125	0.1	0.0124	-0.0914	0.2343
Corruption	0.1688	0.1282	0.7175	0.3264	0.2054	0.0837	0.014	0.1137	0.2714
Bureaucratic Quality	0.5137	0.1595	0.5719	0.1737	0.1776	0.1139	0.142	0.0874	0.2811
Polity Index	0.7965	0.0538	0.3612	0.1762	0.0594	0.1236	0.1077	-0.0372	0.1693
Regime Durability	0.0554	0.2182	0.5937	0.1418	0.1283	0.0285	-0.0546	0.4446	0.3589
Legislative Electoral Competition	0.8559	0.1716	0.014	0.0645	0.0559	-0.0205	0.0492	0.0284	0.2269
Executive Electoral Competition	0.8013	0.1022	0.1051	0.1151	0.0785	0.0371	0.0266	0.0528	0.3121
Electoral Fraud	-0.0873	0.124	-0.3748	-0.2335	-0.1012	-0.0977	0.0164	0.1417	0.7419
Political Fractionalization	0.6961	0.1333	0.0124	0.1499	0.0226	0.3761	0.0337	-0.0823	0.3252
Political Polarization	0.3679	0.1002	0.2843	0.1097	0.0629	0.648	0.0749	-0.0021	0.3323
Checks	0.5791	0.0533	0.2049	0.2186	0.0791	0.4423	-0.0992	0.1183	0.3463

Table A4: Rotated Factor Loadings (Maximum Likelihood Method; Oblique Promax Rotation)

Variable	Democracy	Freedom	Transparency	Robustness	Credibility	Factor6	Factor7	Factor8	Uniqueness
Directed Credit	0.0971	0.9402	0.122	0.1166	0.1444	0.0189	0.0428	0.0361	0.0538
Credit Controls	0.1193	0.9545	0.0813	0.18	0.1705	0.047	0.0659	0.0037	0
Interest Rate Controls	0.3832	0.3635	0.0507	0.4046	0.1359	0.0164	0.3387	-0.0348	0.4201
Entry Barriers	0.2106	0.3612	-0.0123	0.2946	0.2105	0.0364	0.4509	-0.1725	0.4596
Banking Supervision	0.1502	0.3567	0.1157	0.3786	0.3523	0.1636	0.4209	0.189	0.3297
Privatization	0.1734	0.3773	0.0996	0.21	0.2345	0.028	0.3184	0.1565	0.5919
International Capital	0.3256	0.3238	0.1835	0.4933	0.2528	-0.0334	0.2929	0.0052	0.3612
Security Markets	0.2259	0.3008	0.2526	0.8555	0.2183	0.1065	0.0566	0.0249	0
Government Stability	-0.0702	0.2815	-0.0615	0.189	0.4984	0.0459	0.1153	-0.0272	0.6118
Investment Profile	0.1157	0.2591	0.1552	0.1789	0.9268	0.0322	0.0552	0.0204	0
Corruption	0.1358	0.1113	0.853	0.0618	0.0184	0.099	-0.0096	-0.0931	0.2189
Bureaucratic Quality	0.1659	0.118	0.7163	0.3326	0.2074	0.0774	0.0397	0.1306	0.2672
Democratic Accountability	0.5176	0.1552	0.5714	0.174	0.207	0.1048	0.1533	0.0757	0.2681
Polity 2	0.7959	0.0645	0.3481	0.16	0.0721	0.1206	0.1274	-0.0185	0.1793
Durability	0.0574	0.22	0.5785	0.1486	0.1348	0.0238	-0.0012	0.4276	0.39
Legislative Electoral Competition	0.8437	0.1598	0.0166	0.082	0.0728	-0.0218	0.0308	-0.0007	0.2489
Executive Electoral Competition	0.8078	0.1034	0.1045	0.1142	0.0659	0.0251	0.033	0.0621	0.3028
Electoral Fraud	-0.0977	0.1354	-0.3738	-0.2267	-0.0979	-0.091	0.0093	0.1041	0.7522
Political Fractionalization	0.7018	0.1251	0.018	0.1593	0.0168	0.3682	0.0438	-0.0988	0.3186
Political Polarization	0.3706	0.0955	0.2823	0.1178	0.0765	0.6426	0.0718	-0.0154	0.3358
Checks	0.5812	0.0553	0.1938	0.2224	0.0826	0.4402	-0.0687	0.17	0.3379