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Migration and Cross-Border Financial Flows

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Abstract

Migration facilitates the flow of information between countries, thereby reducing informational frictions that potentially hamper cross-country financial flows. Using a gravity model, migration is found to be highly correlated with financial flows from the migrant's host country to her home country. The correlation is strongest where information problems are more acute (e.g., between culturally more distant countries), for asset types that are more informational sensitive, and for the type of migrants that are most able to enhance the flow of information on their home countries, namely, skilled migrants. These differential effects are interpreted as evidence for the role of migration in reducing information frictions between countries.

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Financial flows across countries have increased dramatically over the past decades (Bank of International Settlements 2010). Nevertheless, the global financial market is still far from being a fully integrated market due to pervasive frictions that hamper the flow of finance (Lane and Milesi-Ferretti 2008). The literature assigns a key role to informational frictions. In particular, gravity variables that affect the extent of informational frictions (e.g., lower distance, common language, common legal origin, etc.) have consistently been shown to increase bilateral financial flows and to mitigate home bias (Coeurdacier and Rey 2013). Portes and Rey (2005) and Lane and Milesi-Ferretti (2008) show this for cross-border equity flows. Aviat and Coeurdacier (2007) extend the analysis to bank loans, equity flows and bond holdings.[1]

This paper posits that the cross-border movement of people reduces informational frictions across countries and stimulates bilateral financial flows. The reason is that migration from country *i* to country *j* has the potential to reveal information on country *i* which is valuable for investors in country *j* that seek to invest in country *i* (e.g., information on the characteristics of the home country's financial and political institutions). In addition, migrants create or integrate into international business and financial networks, thereby enhancing financial transactions between their home and host countries.

Anecdotal evidence suggests that this channel is indeed operative. For instance, the Bank of China owns a subsidiary in the US. The core business of the US subsidiary is lending to Chinese firms. About 90% of the employees working at the New York branch are locals and most of them are ethnically Chinese (Wall Street Journal 2016). Similarly, the Turkish bank Akbank owns a subsidiary in Germany, which hosts a large community of migrants from Turkey. The CEO of the German subsidiary in Frankfurt was born in Turkey in 1963, and she moved to Germany as a young child (Frankfurter Rundschau 2015). The German subsidiary, named Akbank AG, lends mainly to "multinationals based in Turkey" (Akbank annual report 2015: 62). Akbank AG receives finance from international banking institutions (Global Trade Review 2015), which indicates that the bank funnels funds from a wide range of global investors into Turkey. This evidence is consistent with the view that migrants working in financial institutions at their host countries help to facilitate the transfer of financial flows to their home countries.

1. Historical perspectives are provided by Chitu, Eichengreen, and Mehl (2013) and Flandreau (2006).

In this paper, we present empirical results that support this argument. In doing so, we follow a growing literature demonstrating the role of migration in facilitating trade (Gould 1994, Head and Ries 1998, Rauch and Trindade 2002, Rauch and Casella 2003, Combes et al. 2005, Iranzo and Peri 2009, Parsons and Vezina 2017, Felbermayr and Toubal 2012, Felbermayr, Jung and Toubal 2010), FDI (Kugler and Rapoport 2007, Leblang 2010, Javorcik et al. 2011, Aubry et al. 2016), and the diffusion of knowledge (Kerr 2008, Agrawal et al. 2011, Bahar and Rapoport 2017).[2] The paper most closely related to ours is Leblang (2010) who proposes a comparative analysis of the effect of migration on FDI and portfolio asset flows. Regarding the latter, Leblang (2010) focuses on the main effect, which we believe is hard to properly identify, while we focus on differential effects by degree of information imperfection as discussed below.

We test the hypothesis that migration affects international financial flows. We proceed as follows. First, we introduce migration into an otherwise standard gravity model of financial flows, following Martin and Rey (2004) and Aviat and Coeurdacier (2007). As a general proposition, we expect the effect of migration on financial flows to be larger where informational imperfections are more pervasive. This is supposedly the case for country pairs that differ in terms of cultural proximity, or for investment in developing countries compared to developed countries. The effect of migration should also depend on migrants' skills. In particular, highly educated migrants are more likely to be part of international business and financial networks, and, hence, likely more able to transfer information and reduce bilateral transaction costs. Hence, we expect their influence on financial flows to be larger.

Our empirical strategy relies on the estimation of differential effects along a number of dimensions: a skill dimension, a cultural dimension, an asset-type dimension, and an income status dimension. We start by showing that migration has a significant positive impact on international bank loans. When we distinguish between skilled and unskilled migrants, we find consistently a larger coefficient for skilled migration. For example, when we introduce skilled and unskilled migrants jointly into a gravity model of international bank loans, we find a significant positive elasticity of skilled migrants of about 0.2 while no significant effect is found for unskilled migrants. We take this result as initial supportive evidence of our conjectures.

2. See Docquier and Rapoport (2012) and Rapoport (2016) for recent surveys of the literature on migration networks, globalization, and development.

Next, we allow for the effect of migration to vary with the degree of cultural proximity. We find that the effect of migration is nearly zero for country pairs that share common language, colonial history, or legal origin, and positive otherwise. These results are consistent with the view that the potential for migration to alleviate informational frictions is higher for culturally distant countries. In addition, we expect the effect of migration to be larger where information imperfections are more pervasive, that is, in developing countries. And indeed, when we interact our migration variables with a dummy for developing country status, we find a magnified effect coming mostly from the extensive margin. Furthermore, when we distinguish between investments in long- versus short-term bonds, we find a stronger impact on investment in long-term bonds issued by developing countries, which is arguably a riskier type of investment.

Taken together, these differential effects are in line with the theoretical arguments outlined above and provide supportive evidence that migration contributes to lower informational frictions across countries. The main concern in this analysis is the possibility of omitted variables governing the joint pattern of emigration and reverse financial flows. However, to be able to explain the entire set of results, a possible confounder should explain not just the main effect but also the differential effects for skilled versus unskilled migrants, culturally close versus distant country-pairs, developed versus developing countries, and long- versus short-term bonds, as well as the time structure of our results. We find the existence of such a variable unlikely.

I. Methodology

Our main assumption is that financial investments are informational sensitive. In other words, investors tend to invest more in places they know better. The well-known implication of this assumption is the home bias in financial flows, which has been found repeatedly in the literature (Coeurdacier and Rey 2013). Given these information frictions, the presence of migrants is expected to stimulate bilateral financial flows. Specifically, migrants facilitate the flow of information from their home countries to their host countries.

We build on the gravity model developed by Okawa and van Wincoop (2012). In particular, we assume that investors in foreign markets perceive higher volatility of

asset returns compared to domestic markets. This assumption gives rise to a gravity equation where the log of bilateral financial flows depends on the log of information frictions. As shown by Okawa and van Wincoop (2012), this specification depends on the assumptions that there are no borrowing constraints and that asset returns are uncorrelated across countries, except for global or regional shocks, against which investors can fully hedge their portfolios. To the extent that these assumptions do not fully hold in our context, we view the gravity model as an approximation of the true model. Importantly, our identification strategy, as explained in more detail below, builds on differential effects rather than main effects. In this regard, we assume that deviations from the conditions of Okawa and van Wincoop (2012) that bias the main coefficients do not affect the difference between the coefficients (i.e., the differential effect).

Information frictions depend on a set of bilateral variables such as distance, common language, etc. We test the hypothesis that the information frictions between country *j* and country *i* are alleviated by migration from country *i* to *j*. In particular, we posit that migrants from country *i* that live in country *j* convey important information about country *i* to investors in country *j*. This information reduces investment risk and enhances financial flows from country *j* to country *i*.

A simple gravity model is likely to suffer from an omitted variable bias. Hence, we focus our analysis on differential effects across a number of dimensions. The first dimension is the general level of education of the migrants. To become involved in the financial sector, migrants need to have high cognitive skills. First, they are expected to have deep knowledge about their home country economy and be able to gain new knowledge constantly. Second, they need to be able to exchange this knowledge with the financial sector of their host country in a credible way. This task requires high communication skills. Third, skilled migrants are more likely to serve as liaison agents, or reference, and allow for reaching out to the business and financial community in their home country. Hence, the migration effect is likely to be stronger when migrants are more skilled. We test this differential effect by the following regression:

$$\begin{aligned}\log\left(\text{Loans}_{ji}\right) &= \alpha_1 \log\left(\text{Skilled Migrants}_{ij}\right) + \alpha_2 \log\left(\text{Unskilled Migrants}_{ij}\right) \\ &+ \alpha_3 \log\left(\text{Distance}_{ij}\right) + \alpha_4 X_{ij} + c_i + c_j + \grave{o}_{ij}.\end{aligned} \tag{1}$$

$Loans_{ji}$ denotes the stock of international bank loans from country *j* to country *i* as of 2000. $Skilled\ Migrants_{ij}$ is the stock of skilled migrants (i.e., with college education) from origin country *i* living in destination country *j*, and $Unskilled\ Migrants_{ij}$ refers to unskilled migrants (i.e., with below-college education). Hence, our first empirical test is to estimate the differential effect of skilled-unskilled migration from country *i* to country *j* on financial flows in the reverse direction, namely, from country *j* to country *i*. The regression controls for the distance between the two countries as well as for other variables that are associated with cultural and economic proximity, denoted collectively by X_{ij}. In addition, we control for origin and destination-country fixed effects, which are denoted by c_i and c_j.

Identifying differential effects is a common strategy to deal with endogeneity problems (e.g., Rajan and Zingales 1998). The identification assumption in this case is that the estimate of the differential effect $\alpha_1 - \alpha_2$ is unbiased, while the estimates of α_1 and α_2 separately might be biased.[3] Indeed, this assumption implies that the bias of α_1 and α_2 is in the same direction and of the same magnitude. Moreover, if the bias is upward, we assume that it is not too large, so that the true effects are not negative. We deal with these limitations by exploring various dimensions of the data, as explained below. In most cases, we find that migration is associated with stronger financial flows between countries for which information is most needed. We find it unlikely that the overall set of results is produced by omitted variables.

The second dimension that we exploit is the cultural proximity between the two countries. Since migrants alleviate informational frictions, their impact on financial flows should be strongest for country pairs that exhibit high informational frictions. For instance, migrants are likely to have a stronger impact on financial flows between the US and Egypt than between the US and Canada, simply because informational frictions in the latter case are very weak. We test this dimension by the following regression:

$$\begin{aligned}\log\left(\text{Loans}_{ji}\right) &= \alpha_1 \log\left(\text{Migration}_{ij}\right) * \left(\text{Cultural Proximity}_{ij}\right) \\ &+ \alpha_2 \log\left(\text{Migration}_{ij}\right) + \alpha_3 \log\left(\text{Cultural Proximity}_{ij}\right) \\ &+ \alpha_4 \log\left(\text{Distance}_{ij}\right) + \alpha_5 X_{ij} + c_i + c_j + \grave{o}_{ij}.\end{aligned} \qquad (2)$$

3. We thank an anonymous referee for pointing out this issue.

Here, Cultural Proximity is an indicator for the cultural proximity of countries *i* and *j*. It is measured by three alternative variables: common language, colonizer, and legal origin.[4] Our hypothesis is that migration should have a stronger effect on financial flows between countries that are culturally more distant. We test this hypothesis in section III. As explained, we also expect stronger effects when the migrants' homecountry is a developing country, and, in a last set of regressions, reported in section IV, we interact our variable of interest with a non-OECD dummy.

Finally, we also look at differences in the underlying investment risk. Specifically, we examine investment in developing versus developed countries and find that the former is more sensitive to migration than the latter. We also examine investment in long- versus short-term bonds, assuming that the former is riskier than the latter. We find that the migration coefficient is most significant for investment in long-term bonds issued by developing countries.

Our empirical analysis focuses on the effects of migrants on financial flows from their host country to their home country. However, a similar effect may work in the opposite direction. Namely, a migrant coming from the US to Egypt may encourage US investors to invest in Egypt for the exact same reasons (i.e., by reducing the informational frictions between the two countries). Our sample is less suitable for testing this direction, because we have data on financial flows from the small set of OECD countries to the rest of the world, whereas the main migration flows are in the opposite direction. Indeed, when we reduce our sample to country pairs where migration and financial investments flow in the same direction, the sample size drops by around 75%. Therefore, in this study, we concentrate on the effects of migration on financial flows to their home countries.

To summarize, we estimate differential effects along four dimensions: (i) skilled versus unskilled migrants; (ii) cultural proximity; (iii) long- versus short-term bonds; and (iv) developed versus developing countries. These dimensions form the basis of our empirical strategy.

4. That is, in our paper, Cultural Proximity is not a composite index.

II. Data

The migration data come from Artuc, Docquier, Özden, and Parsons (2015) data set, the last extension of the Docquier and Marfouk (2006) dataset, which includes bilateral data on migration by country of birth,[5] skill category (skilled versus unskilled, the former having college education) and gender for 195 sending/receiving countries in 1990 and 2000. The main additional novelty is that the dataset now captures South-South migration based mainly on observations (taken from Özden et al. 2011) and occasionally on estimated data points (for the skill structure).[6]

Our financial data come from two commonly used sources. Data on international bank loans are from the Consolidated Banking Statistics published by the Bank of International Settlements (BIS). These data capture the worldwide consolidated positions of internationally active banking groups headquartered in the reporting countries. The data include the claims of reporting banks' foreign affiliates but exclude intragroup positions. Nationality of the borrower is determined by the immediate borrower with whom the bank contracts to lend (see Bank of International Settlements [2015] for more details). Our main specification refers to the year 2000, for which we have 17 lending countries, 175 borrowing countries, and a total of 1,628 country pairs (observations) with positive loan values, given missing data. In addition, we take data on investment in short-term bonds and long-term bonds from the International Monetary Fund (IMF) in its Coordinated Portfolio Investment Survey (CPIS).

Further details on the sample and summary statistics are reported in the supplemental appendix (tables S.1-S.4).

Our migration data include two years, 1990 and 2000. Ideally, we would like to estimate a panel equation, but since we only have two time periods, this is not feasible. Alternatively, we could run a difference equation. However, this would introduce a serious endogeneity problem. Specifically, the sample period is characterized by the formation of many new countries, mainly in Eastern Europe. These countries experienced strong outflows of migrants, and strong inflows of foreign investments, to build the new economies. This phenomenon introduces endogeneity to the sample, which is difficult to control for. In addition, both our main

5. For some countries for which information on immigrants' country of birth is missing, immigrants are defined by their citizenship.

6. See http://perso.uclouvain.be/frederic.docquier/filePDF/DMOP-ERF.pdf for further details.

dependent variable, loans, and main variable of interest, migration, suffer from a measurement error problem, which is exacerbated when moving to first differences. Since our data do not allow a proper panel data analysis or a difference regression, we choose to focus on the cross-section dimension of our data. As a result, the analysis concentrates on differential effects rather than on the main effects.

We construct a cross section that minimizes as much as possible endogeneity concerns. First, we take a lag of ten years between the migration data and the financial data. Hence, we regress financial flows in 2000 on migration data in 1990. This way we reduce short-term endogeneity, such as new countries that were established in the 1990s and experienced an outflow of migrants and an inflow of foreign investments.

Second, we choose as our benchmark results the regression of financial investments in 2000 on migration in 1990, although we also ran similar regressions for 2010 financial data on 2000 migration data. The reason we focus on the earlier period is that our dataset indicates that many country pairs had no financial investments in the 1980s and started their investment connections only in the 1990s. For instance, if we restrict our sample to 16 countries that were active in foreign lending in 1985, we obtain around 1,400 lending-borrowing country pairs between 1985 and 1992. The number of country pairs increased significantly during the 1990s and reached 1,877 by the end of the decade. By contrast, in the following decade, there was no significant change in the number of country pairs.[7] Part of the increase in lending-borrowing country pairs in the 1990s is due to new countries that were formed in the 1990s, and part is due to a rise in the volume of international loans. In this respect, the migration stock in 1990 can be regarded as a predetermined variable for country pairs that had no lending activity in the 1980s and started to lend in the 1990s.[8]

We complete our dataset with gravity variables taken from Aviat and Coeurdacier (2007) and CEPII (CHELEM dataset). Trade data are taken from Feenstra et al. (2005).

7. In 2010, the number of country pairs reached 1,908.

8. However, our results are fully robust to the use of data for the 2000-2010 period. Note that measurement errors might be larger for the earlier period due to the appearance of new countries in the 1990s.

III. Results

We build on the specification of Aviat and Coeurdacier (2007), who studied a similar regression without the migration variable. We include in the regression source and destination fixed-effects as advocated by Okawa and van Wincoop (2012). Table 1 presents the first set of results. Column (1) reports a standard gravity equation without migration, and column (2) introduces the migration variable. Country fixed-effects are included in columns (3) and (4). The migration variable is highly significant, implying a strong correlation of migration with international loans.[9] Following Okawa and van Wincoop (2012), column (5) drops the fiscal variables and stock market correlation. This does not affect much the results. On the other hand, we gain a much larger sample with 17 lending countries, 175 borrowing countries and a total of 1,628 observations (country pairs), given missing data and zeros, which is twice the original sample size. The migration coefficient remains highly significant in the Poisson regression proposed by Santos Silva and Tenreyro (2006), which is reported in column (6).[10] These results are robust to different sets of fixed-effects and further control variables, i.e., remittances and political institutions (appendix table S.5).

We now turn to heterogeneous effects along a number of dimensions.

Skilled Versus Unskilled Migration

The significance of migration in the gravity regressions of foreign loans suggests that migrants alleviate informational frictions between their host and home countries. Arguably, to be able to perform such a role, migrants should have the required skills and connections that allow them to communicate efficiently with the financial markets in their host country and connect them with their home countries. Hence, one would expect the migration effect to work mainly through skilled migrants. We test

9. The coefficients of the gravity variables change to some extent (compare column 1 with column 2), because the migration variable is correlated with the gravity variables (e.g., see Artuc et al. [2015]). In fact, Artuc et al. (2015), which is our source of migration data, use gravity regressions to interpolate missing data.

10. The Poisson estimator increases the sample size by adding observations with zero loans. However, the rise in the sample size is moderate for two reasons. First, we include only country pairs that have positive migration flows. Second, countries that do not borrow from at least two lending countries are dropped due to the fixed effects. Hence, conditional on having positive migration and at least two lending countries per each borrowing country, the share of country pairs with zero loans is roughly 11 percent of the sample. In addition, the Poisson estimator imposes adding-up constraints and gives a larger weight to larger observations (Fally 2015).

this hypothesis by comparing the coefficients of skilled migrants versus unskilled migrants in the gravity model.

Table 2 re-estimates the gravity model by distinguishing between skilled and unskilled migrants. Skilled migrants are defined as migrants with at least college education. The results strongly indicate that the migration effect is driven primarily by skilled migrants, because only skilled migration is significant. This holds for the OLS (column 1) as well as for the Poisson (column 2) regressions. The hypothesis that these coefficients are identical is rejected at significance levels of 5% for the OLS and 15% for the Poisson estimators. Note that the correlation between skilled migration and unskilled migration is 0.93, which is extremely high. Consequently, the standard errors of the estimated coefficients are large, which explains the relatively high P-values.

Columns (3)–(5) report the robustness of the results to interactions of the borrowing country dummy *i* with a dummy for groups of lending countries *g*. We consider three groups of lending countries: Anglo-Saxon countries, continental Western European countries, and the rest of the world. To do so, we introduce a fixed-effect specific to *i* and *g* in addition to the fixed effect of the lending country *j*. This is a highly demanding test, because it ignores all variations in loans to country *i* between lending countries from different groups. Namely, country *i* must borrow from at least two different countries that belong to the same group in order to contribute to the regression results. As a result, the size of the sample falls by about 10%.

The small sample size and limited within-group variation, together with the high correlation between skilled and unskilled migration, eliminate the skill differential effect obtained in columns (1) and (2). To resolve this problem, we extend the sample size as much as possible, by using $\log(1+x)$ instead of $\log x$ on both sides of the regression. This transformation introduces zero values for skilled and unskilled migration, which are omitted from the previous specifications. Consequently, the sample size increases from 1,303 to 1,833, as reported in column (5). In that extended sample, we are able to replicate our initial result that the skilled coefficient is positive, significant, and higher than the unskilled one.

One may be concerned that the effect of migration on financial flows captured in our regressions may, in fact, be mediated through trade. Since migrants stimulate trade and trade affects financial flows, a correlation between migration and financial

flows is expected even if there is no causal effect. However, to explain our differential effects for skilled versus unskilled migrants, it should be the case that skilled migration has a stronger effect on trade than unskilled migration. We tested this hypothesis by running the same regressions on export (instead of loans) and found no difference between skilled and unskilled migration (appendix table S.6).[11]

The skill dimension is explored further below.

Cultural Proximity

We next examine the migration effect on countries that are culturally close to each other compared to countries that are culturally distant. Our conjecture is that migration should have a stronger effect on financial flows between countries that are culturally more distant. We therefore add interaction terms between migration and cultural proximity variables, such as common language, common colonizer, and common legal origin. We expect a negative coefficient on these interaction terms. We also include interactions of migration with distance, because distance is also a proxy for information frictions. These interactions should have positive coefficients, as migration should be more important for distant countries.

Table 3 presents the results for the Poisson regressions (similar results are obtained with OLS, appendix table S.7). The results show clearly that the migration effect is smaller for countries that are culturally or physically closer to one another. Hence, the presence of migrants is mostly critical for financial flows between countries that are culturally/physically more distant. Interestingly, the interaction with language turns out the most significant and robust among the cultural interactions and remains significant when all the interactions are included together in column (4).

Financial Flows Versus Trade

The lower panel of table 3 presents similar regressions for exports (instead of loans). Overall, the interaction of migration with physical distance remains positive and significant in the export regressions as in the loan regressions. However, the interactions with the cultural variables are either insignificant or have the wrong sign. For instance, the interaction with language in the export regression (column 1) is positive rather than negative. This stands in contrast to the loan regressions where the interaction with language is significantly negative. This test indicates that the

11. Aubry et al. (2016) found a similar result on a much larger sample.

differential effect of migration on financial flows across different levels of cultural proximity reflects informational frictions that are stronger for financial flows than for exports.

Skill-Proximity Interaction

In this section, we ask whether the stronger effect of skilled migrants is magnified when home and host countries are more distant physically and culturally; that is, we look for the interaction between skill and distance (Grogger and Hanson 2011 and Beine et al. 2011).[12] Since informational frictions increase with (physical and cultural) distance, we expect that the presence of skilled migrants will be even more important when countries are more distant. We therefore introduce an interaction between the stocks of skilled and unskilled migrants, rather than the total stock of migrants, with our measures of physical and cultural distance. The results are shown in table 4. The coefficient of the interaction for skilled migration and distance is larger than for unskilled migration across all specifications (see columns [1]–[4]). Namely, the impact of skilled migration on financial flows is rising with distance faster than the impact of unskilled migration. Similarly, interactions between skilled/unskilled migration and common language/colonizer/legal are in general more negative for skilled migrants (except for one case in column [4]). These results suggest that skilled migration is more effective than unskilled migration between more distant countries. Similar findings are obtained in OLS regressions (appendix table S.8).

Short-Term and Long-Term Bonds

Table 5 replicates the baseline migration regression of table 1 (column 5) using different financial data. The dependent variable is cross-country investment in short-term bonds and long-term bonds instead of international bank loans. The migration coefficient is positive and significant in most specifications, which shows the robustness of the results to the use of various financial data. The results for short-term bonds are somewhat weaker, though not statistically different from the long-term bonds. We explore this point further in section IV, where we distinguish between developed and developing countries.

12. We thank one of the anonymous referees for this suggestion.

IV. Developed Versus Developing Countries

The migration effect is likely to be more pronounced for developing countries, where information imperfections are more pervasive. Migrants who move from these countries to other countries convey with them information on their origin countries that is otherwise hard to obtain. We test this hypothesis by adding interactions of the migration variable with a dummy variable for developing country status.[13]

Table 6 re-estimates the benchmark regression by allowing the migration coefficient to vary across developed and developing countries. Here we see a difference between the OLS estimator and the Poisson estimator. While the OLS estimator shows positive though not statistically significant effects for the interaction, the Poisson estimator is positive and highly significant. Recall that the OLS estimator omits country pairs with zero value for the dependent variable (loans, in this case). By contrast, the Poisson estimator accounts for the zero values. This suggests that the significance of the interaction in the Poisson regression is driven mostly by the extensive margin.

This is apparent from the composition of the sample. In the OLS regression there are 427 developed borrowing countries. This number hardly changes in the Poisson regression. However, the number of developing borrowing countries increases from 1,024 in the OLS sample to 1,157 in the Poisson sample. Namely, the main change between the two samples is the introduction of new country pairs, where the borrowing country is a developing country that does not borrow from the lending country (hence the value of loans is zero for that pair).

A similar result is obtained when we re-estimate the bond regressions by adding an interaction with a developing country dummy. The results are reported in table 7. Again, the OLS estimator does not reveal any pattern across developed/developing countries (see columns [1] and [2]). However, the Poisson estimator, presented in columns (3) and (4), shows clearly that investment in long-term bonds in a developing country is larger if the investing country hosts migrants from the developing country. This effect is mute when we look at short-term bonds, which we judge as less information sensitive than long-term bonds. Note that the Poisson regression

13. Developing countries are defined as non-OECD countries.

introduces 728 new country pairs with developing borrowing countries, compared to the OLS sample, and only 248 country pairs with developed borrowing countries. Hence, here again the main effect comes from the extensive margin.

Overall, these results are consistent with our hypothesis that migrants enhance the flow of information across countries, which facilitates cross-border financial flows.[14]

V. Conclusion

This paper investigates the role of migration as a determinant of international financial flows. We introduce migration into a standard gravity model and find a strong correlation with financial flows. Our results are consistent with the view that migration affects bilateral financial flows through the information channel. Indeed, we find that the effect of migration on financial flows is strongest where informational problems are more acute. This is the case when we compare country pairs characterized by different levels of cultural proximity (e.g., countries sharing versus not sharing a common language), migrants' source countries characterized by more information imperfections (i.e., developing countries), asset types that differ in terms of informational sensitivity (e.g., short-term versus long-term bonds issued by developing countries) and types of migrants that differ in their ability to disseminate information across borders (e.g., high-skill versus low-skill migrants). Overall, our results suggest that migration contributes to reduce home bias and information frictions across countries.

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14. When we interact the dummy variable of developing countries with skilled and unskilled migration separately, the main result is preserved, mainly in the Poisson regressions. Namely, migration is more important a determinant of financial flows for developing countries. However, we cannot identify robust differences between skilled and unskilled migrants. These results are available upon request.

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Table 1: International bank lending and migration

Dependent Variable:	log (Loans$_{ji}$)					Loans$_{ji}$
	(1)	(2)	(3)	(4)	(5)	(6)
log Migration$_{ij}$		0.185***		0.128**	0.150***	0.177***
		(0.038)		(0.051)	(0.038)	(0.031)
log Distance$_{ij}$	−0.353***	−0.229**	−0.790***	−0.676***	−0.790***	−0.246***
	(0.088)	(0.092)	(0.139)	(0.137)	(0.115)	(0.052)
(Colonial Link)$_{ij}$	0.899***	0.780***	1.335***	1.164***	1.335***	0.181
	(0.238)	(0.238)	(0.267)	(0.271)	(0.204)	(0.164)
(Language)$_{ij}$	0.291	0.041	0.195	0.117	0.294*	−0.212
	(0.206)	(0.225)	(0.182)	(0.184)	(0.160)	(0.245)
(Legal origin)$_{ij}$	0.689***	0.574***	0.501***	0.425***	0.156	0.449***
	(0.108)	(0.116)	(0.124)	(0.116)	(0.111)	(0.120)
(Border)$_{ij}$	0.157	0.181	−0.430	−0.453	−0.551*	0.042
	(0.212)	(0.211)	(0.292)	(0.290)	(0.305)	(0.154)
(Fiscal Treaty)$_{ij}$	0.010*	0.007	0.000	−0.002		
	(0.005)	(0.005)	(0.004)	(0.004)		
(Dividend Tax)$_{ij}$	−0.012	−0.015	−0.022*	−0.024**		
	(0.011)	(0.011)	(0.011)	(0.011)		
(Interest Tax)$_{ij}$	−0.014	−0.014	0.014	0.014		
	(0.012)	(0.012)	(0.011)	(0.010)		
(Correlation)$_{ij}$	2.227***	1.922***	0.319	0.375		
	(0.471)	(0.509)	(0.530)	(0.542)		
Country fixed effects	No	No	Yes	Yes	Yes	Yes
N	824	824	824	824	1,628	1,827
L	16	16	16	16	17	17
B	62	62	62	62	175	178
Estimator	OLS	OLS	OLS	OLS	OLS	Poisson

Analysis is based on data described in section II. Columns (1)-(5) are estimated by OLS. Column (6) is estimated by the Poisson estimator. Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries. Columns (1) and (2) include in addition the following country specific variables that are not reported: the log of GDP of countries i and j, the average stock return of country i, a dummy if country i is a tax haven and corruption dummies for countries i and j. These variables are dropped out in columns (3)-(6) which include country fixed effects for countries i and j.

Table 2: Skilled versus unskilled migration - OLS and Poisson

Dependent Variable:	log(Loans) (1)	Loans (2)	log(Loans) (3)	Loans (4)	log(1+Loans) (5)
log(Skilled)	0.204***	0.234**	0.108	0.088	
	(0.066)	(0.093)	(0.072)	(0.102)	
log(1+Skilled)					0.182**
					(0.078)
log(Unskilled)	−0.022	−0.002	0.035	0.135	
	(0.054)	(0.076)	(0.060)	(0.085)	
log(1+Unskilled)					−0.010
					(0.058)
log(Distance)	−0.832***	−0.253***	−0.846***	−0.318***	−0.665***
	(0.120)	(0.053)	(0.157)	(0.084)	(0.213)
Fixed effects	i and j	i and j	ig and j	ig and j	ig and j
P-value	0.0470	0.1508	0.5574	0.7926	0.1273
N	1,424	1,546	1,303	1,406	1,833
L	17	17	17	17	17
B	155	157	153	156	158
Estimator	OLS	Poisson	OLS	Poisson	OLS

Columns (1) and (2) include country fixed effects for countries i and j. Columns (3)-(5) include fixed effects for lending country j and for the interaction ig, where ig implies that country i is the borrowing country and the lending country belongs to group g. We distinguish between three groups of lending countries indexed by g: Anglo-Saxon countries, continental Western European countries and other. Standard errors are clustered at the borrowing country level. P-value refers to the test that the coefficients of log(Skilled) and log(Unskilled) are identical. N, L and B denote number of observations, number of lending countries and number of borrowing countries, respectively. All columns include colonial link, language, legal origin and common border as additional controls. The data is described in section II.

Table 3: Comparison between culturally closer/more distant countries (Poisson results)

	(1)	(2)	(3)	(4)
Dependent Variable: Loans				
$\log \text{Migration}_{ij} * \log \text{Distance}_{ij}$	0.056^{**}	0.079^{***}	0.081^{***}	0.058^{***}
	(0.023)	(0.019)	(0.017)	(0.022)
$\log \text{Migration}_{ij} * \text{Language}_{ij}$	-0.301^{***}			-0.242^{**}
	(0.083)			(0.102)
$\log \text{Migration}_{ij} * \text{Colonizer}_{ij}$		-0.252^{***}		-0.128
		(0.097)		(0.112)
$\log \text{Migration}_{ij} * \text{Legal}_{ij}$			-0.103^{*}	-0.008
			(0.053)	(0.053)
$\log \text{Migration}_{ij}$	-0.293	-0.458^{***}	-0.467^{***}	-0.291
	(0.206)	(0.168)	(0.151)	(0.191)
$\log \text{Distance}_{ij}$	-0.837^{***}	-1.027^{***}	-1.084^{***}	-0.829^{***}
	(0.228)	(0.207)	(0.184)	(0.221)
Dependent Variable: Export				
$\log \text{Migration}_{ij} * \log \text{Distance}_{ij}$	0.082^{***}	0.072^{***}	0.075^{***}	0.081^{***}
	(0.016)	(0.015)	(0.015)	(0.015)
$\log \text{Migration}_{ij} * \text{Language}_{ij}$	0.099^{**}			0.122^{*}
	(0.047)			(0.066)
$\log \text{Migration}_{ij} * \text{Colonizer}_{ij}$		-0.007		-0.057
		(0.056)		(0.058)
$\log \text{Migration}_{ij} * \text{Legal}_{ij}$			0.021	-0.003
			(0.029)	(0.031)
$\log \text{Migration}_{ij}$	-0.490^{***}	-0.413^{***}	-0.441^{***}	-0.476^{***}
	(0.137)	(0.130)	(0.127)	(0.114)
$\log \text{Distance}_{ij}$	-1.421^{***}	-1.332^{***}	-1.361^{***}	-1.403^{***}
	(0.159)	(0.160)	(0.157)	(0.144)
N	1,588	1,588	1,588	1,588
L	17	17	17	17
B	158	158	158	158
Estimator	Poisson	Poisson	Poisson	Poisson

This table reports the Poisson estimates of interaction terms of migration with the following measures of cultural proximity: (1) common language, (2) common colonizer (3) common legal origin. Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries, respectively. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. Samples for the Loans and Export regressions are the same. The data is described in section II.

Table 4: Skill-proximity interactions (Poisson)

Dependent Variable:	Loans_{ji}			
	(1)	(2)	(3)	(4)
$\log \text{Skilled}_{ij} * \text{Distance}_{ij}$	0.039	0.085**	0.051	0.068*
	(0.034)	(0.038)	(0.031)	(0.035)
$\log \text{Unskilled}_{ij} * \text{Distance}_{ij}$	0.019	−0.001	0.027	0.002
	(0.036)	(0.036)	(0.032)	(0.036)
$\log \text{Skilled}_{ij} * \text{Language}_{ij}$	−0.200			0.108
	(0.178)			(0.175)
$\log \text{Unskilled}_{ij} * \text{Language}_{ij}$	−0.096			−0.233
	(0.188)			(0.168)
$\log \text{Skilled}_{ij} * \text{Colonizer}_{ij}$		−0.624***		−0.512***
		(0.162)		(0.150)
$\log \text{Unskilled}_{ij} * \text{Colonizer}_{ij}$		0.372*		0.365*
		(0.193)		(0.192)
$\log \text{Skilled}_{ij} * \text{Legal}_{ij}$			−0.310***	−0.207**
			(0.100)	(0.082)
$\log \text{Unskilled}_{ij} * \text{Legal}_{ij}$			0.173*	0.144*
			(0.103)	(0.082)
$\log \text{Skilled}_{ij}$	−0.160	−0.573*	−0.191	−0.382
	(0.278)	(0.295)	(0.289)	(0.287)
$\log \text{Unskilled}_{ij}$	−0.131	0.027	−0.263	−0.036
	(0.297)	(0.277)	(0.282)	(0.303)
$\log \text{Distance}_{ij}$	−0.816***	−1.004***	−1.032***	−0.894***
	(0.234)	(0.203)	(0.185)	(0.218)
N	1,546	1,546	1,546	1,546
L	17	17	17	17
B	157	157	157	157
Estimator	Poisson	Poisson	Poisson	Poisson

Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. The data is described in section II.

Table 5: long-term versus short-term bonds - OLS and Poisson

Dependent variables:	log(Long bonds) (1)	log(Short bonds) (2)	Long bonds (3)	Short bonds (4)
log(Migration)	0.169**	0.071	0.161***	0.143**
	(0.076)	(0.100)	(0.029)	(0.071)
log(Distance)	−0.471***	−0.800***	−0.329***	−0.145
	(0.107)	(0.156)	(0.083)	(0.094)
N	541	541	1,517	1,517
L	31	31	32	32
B	85	85	92	92
Estimator	OLS	OLS	Poisson	Poisson

In this table the dependent variable is investment in long-term bonds and short-term bonds. N, L and B denote number of observations, number of lending (investing) countries and number of borrowing (issuing) countries, respectively. Regressions are estimated by OLS and Poisson. Standard errors are clustered at the borrowing country level. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. The data is described in section II.

Table 6: Comparison between Developed and Developing countries - OLS and Poisson

Dependent variables:	log(Loans) (1)	Loans (2)
$\log \text{Migration}_{ij}$	0.112**	0.126***
	(0.049)	(0.041)
$\log \text{Migration}_{ij} * (\text{Developing Country})_j$	0.045	0.145***
	(0.044)	(0.039)
$\log \text{Distance}_{ij}$	−0.837***	−0.266***
	(0.121)	(0.052)
Obs.	1,451	1,588
No. of Lending Countries	17	17
No. of Borrowing Countries	158	158
Obs.	1,451	1,588
Obs with Developed Borrowing Countries	427	431
Obs with Developing Borrowing Countries	1,024	1,157
No. of Lending Countries	17	17
No. of Borrowing Countries	158	158
Estimator	OLS	Poisson

This table adds an interaction of migration with developing countries. N, L and B denote number of observations, number of lending (investing) countries and number of borrowing (issuing) countries, respectively. Regressions are estimated by OLS and Poisson. Standard errors are clustered at the borrowing country level. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. The data is described in section II.

Table 7: Long versus Short Bonds, Developed versus Developing countries - OLS and Poisson

Dependent variables:	log(Long bonds) (1)	log(Short bonds) (2)	Long bonds (3)	Short bonds (4)
$\log \text{Migration}_{ij}$	0.152*	0.050	0.134***	0.142**
	(0.078)	(0.109)	(0.028)	(0.072)
$\log \text{Migration}_{ij} * (\text{Developing Country})_j$	0.047	0.057	0.177***	0.010
	(0.072)	(0.124)	(0.033)	(0.054)
$\log \text{Distance}_{ij}$	−0.463***	−0.790***	−0.332***	−0.144
	(0.110)	(0.153)	(0.087)	(0.095)
Obs.	541	541	1,517	1,517
Obs. with Developed Borrowing Countries	395	395	643	643
Obs. with Developing Borrowing Countries	146	146	874	874
No. of Lending Countries	31	31	32	32
No. of Borrowing Countries	85	85	92	92
Estimator	OLS	OLS	Poisson	Poisson

This table estimates the effect of migration on investment in long-term bonds and short-term bonds, with interaction with developing countries. N, L and B denote number of observations, number of lending (investing) countries and number of borrowing (issuing) countries, respectively. Regressions are estimated by OLS and Poisson. Standard errors are clustered at the borrowing country level. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. The data is described in section II.

Online Appendix of "Migration and Cross-Border Financial Flows"*

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Table S.1: Country Sample - General

Lending countries	Borrowing countries						
Austria (73)	Afghanistan (3)	Cambodia (5)	Eq. Guinea (3)	Ireland (15)	Mali (7)	Poland (13)	Switzerland (15)
Belgium (134)	Albania (6)	Cameroon (9)	Estonia (11)	Israel (12)	Malta (10)	Portugal (13)	Syria (7)
Canada (40)	Algeria (13)	Canada (15)	Ethiopia (9)	Italy (16)	Mauritania (6)	Qatar (7)	Taiwan (10)
Denmark (16)	Angola (9)	Cape Verde (3)	Fiji (4)	Jamaica (8)	Mauritius (8)	Romania (14)	Tajikistan (6)
Finland (82)	Argentina (15)	Central Africa (3)	Finland (14)	Japan (15)	Mexico (15)	Russia (15)	Tanzania (8)
France (164)	Armenia (5)	Chad (2)	France (16)	Jordan (11)	Moldova (6)	Rwanda (6)	Thailand (15)
Germany (131)	Australia (16)	Chile (14)	Gabon (7)	Kazakhstan (11)	Mongolia (2)	Samoa (4)	Togo (6)
Italy (103)	Austria (15)	China: Mainland (15)	Gambia (4)	Kenya (10)	Morocco (13)	Sao Tome (3)	Tonga (2)
Japan (33)	Azerbaijan (7)	China: Hong Kong (7)	Georgia (8)	Korea (15)	Mozambique (8)	Saudi Arabia (13)	Trinidad and Tob. (6)
Netherlands (155)	Bahamas (9)	Colombia (14)	Germany (16)	Kuwait (8)	Myanmar (7)	Senegal (9)	Tunisia (13)
Portugal (66)	Bahrain (7)	Comoros (2)	Ghana (11)	Kyrgyz Rep. (6)	Namibia (4)	Seychelles (6)	Turkey (13)
Spain (91)	Bangladesh (8)	Congo, Dem (7)	Greece (14)	Lao Dem.Rep (5)	Nepal (8)	Sierra Leone (5)	Turkmenistan (6)
Sweden (70)	Barbados (7)	Congo, Rep. (8)	Grenada (5)	Latvia (11)	Netherlands (14)	Singapore (13)	Uganda (8)
Switzerland (145)	Belarus (9)	Costa Rica (9)	Guatemala (11)	Lebanon (12)	New Zealand (15)	Slovak Rep. (12)	Ukraine (11)
Turkey (25)	Belgium (15)	Croatia (12)	Guinea (7)	Lesotho (5)	Nicaragua (8)	Slovenia (13)	U. A. Emirates (7)
UK (155)	Belize (7)	Cuba (9)	Guinea-Bissau (3)	Liberia (12)	Niger (7)	Somalia (2)	UK (16)
US (145)	Benin (7)	Cyprus (11)	Guyana (5)	Libya (6)	Nigeria (12)	South Africa (13)	US (16)
	Bolivia (10)	Czech Republic (13)	Haiti (5)	Lithuania (12)	Norway (15)	Spain (15)	Uruguay (11)
	Bosnia (12)	Cote dIvoire (9)	Honduras (9)	Luxembourg (14)	Oman (6)	Sri Lanka (11)	Uzbekistan (9)
	Botswana (4)	Denmark (14)	Hungary (13)	Macau SAR (6)	Pakistan (14)	St. Lucia (2)	Vanuatu (2)
	Brazil (15)	Dominica (3)	Iceland (13)	Macedonia, Fyr (10)	Panama (11)	St. Vincent G. (4)	Venezuela (11)
	Brunei (5)	Dominican Rep. (9)	India (15)	Madagascar (6)	Papua N. Guinea (6)	Sudan (8)	Vietnam (12)
	Bulgaria (14)	Ecuador (9)	Indonesia (14)	Malawi (5)	Paraguay (8)	Suriname (4)	Yemen (6)
	Burkina Faso (5)	Egypt (13)	Iran (13)	Malaysia (12)	Peru (14)	Swaziland (3)	Zambia (6)
	Burundi (4)	El Salvador (8)	Iraq (12)	Maldives (3)	Philippines (14)	Sweden (14)	Zimbabwe (8)

This table presents the country sample of the regression in Table 1, Column (5). The other OLS regressions use subsets of this sample, depending on missing data. Poisson regressions may include few more borrowing countries due to the inclusion of zero values. The sample of Table 5 is different and presented in Table S.2. The parentheses show the number of observations where the country is a lending country (the left column) or a borrowing country (the other columns). For example, the US is a lender in 145 observations and a borrower in 16 observations. Since the number of lending countries is much smaller than the number of borrowing countries, a lending country lends to many borrowers but a borrowing country borrows from few lenders in this sample.

Table S.2: Country Sample for Bond Regression

Lending countries		Borrowing countries	
Australia (90)	Argentina (19)	Greece (16)	Pakistan (16)
Austria (61)	Australia (23)	Guatemala (12)	Panama (12)
Belgium (88)	Austria (20)	Honduras (11)	Peru (16)
Brazil (13)	Bahamas, The (8)	China: Hong Kong (11)	Philippines (18)
Canada (14)	Bahrain (6)	Hungary (17)	Poland (17)
Chile (34)	Bangladesh (14)	Iceland (14)	Portugal (19)
Czech Republic (69)	Belgium (22)	India (18)	Qatar (5)
Denmark (85)	Bolivia (14)	Indonesia (17)	Romania (18)
Finland (22)	Bosnia and Herzegovina (15)	Iran (15)	Russian Federation (20)
France (89)	Botswana (7)	Ireland (21)	Saudi Arabia (9)
Germany (81)	Brazil (19)	Israel (16)	Senegal (11)
Greece (5)	Bulgaria (15)	Italy (25)	Singapore (14)
Hungary (5)	Cote d'Ivoire (12)	Jamaica (12)	Slovak Republic (17)
Iceland (5)	Canada (23)	Japan (21)	Slovenia (14)
Ireland (33)	Chile (15)	Jordan (14)	South Africa (15)
Italy (76)	China (20)	Kazakhstan (14)	Spain (24)
Japan (30)	Colombia (15)	Kenya (13)	Sweden (23)
Korea, Rep. (17)	Costa Rica (13)	Korea, Rep. (17)	Switzerland (22)
Luxembourg (78)	Croatia (16)	Lebanon (16)	Taiwan (13)
Netherlands (89)	Cyprus (13)	Luxembourg (18)	Thailand (17)
New Zealand (41)	Czech Republic (16)	Malaysia (16)	Trinidad and Tobago (12)
Norway (83)	Denmark (19)	Malta (13)	Tunisia (15)
Poland (32)	Ecuador (14)	Mexico (18)	Turkey (19)
Portugal (14)	Egypt, Arab Rep. (14)	Morocco (15)	Ukraine (16)
Slovak Republic (3)	El Salvador (11)	Namibia (10)	United Arab Emirates (7)
South Africa (7)	Estonia (14)	Netherlands (23)	United Kingdom (28)
Spain (22)	Finland (20)	New Zealand (17)	United States (29)
Sweden (14)	France (27)	Nicaragua (12)	Uruguay (15)
Switzerland (89)	Georgia (12)	Nigeria (15)	Venezuela, RB (13)
Turkey (4)	Germany (27)	Norway (20)	Vietnam (16)
United Kingdom (89)			Zimbabwe (13)
United States (81)			

This table presents the country sample of the Poisson regressions in Table 5. The parentheses show the number of observations where the country is a lending country (the left column) or a borrowing country (the other columns).

Table S.3: Summary statistics

	units	mean	std	skewness
Loans	USD millions	4,895	25,012	12
	logs	5.0	3.0	0.1
Migrants	thousands	19.7	94.6	16.0
	logs	7.0	2.6	0.0
Distance	thousands km	5.8	4.0	0.6
	logs	8.3	0.9	-0.9
Language	dummy	0.1	0.4	2.0
Colonizer	dummy	0.1	0.3	2.9
Legal origin	dummy	0.3	0.5	1.0
Border	dummy	0.03	0.18	5.27

The sample corresponds to the benchmark regression reported in column (5) in Table 1. Loans are as of 2000 and migration is as of 1990. The variables language, colonizer, legal origin and border get the value 1 if they are identical for countries i and j, and zero otherwise.

Table S.4: Summary statistics of long-term and short-term bonds by issuer type - ECB data

	Total	Financials	Non-Financials	Government
	EUR bn		*ratios of total*	
Short term	1,599	.505	.049	.445
Long term	14,924	.536	.053	.411

Data refers to outstanding bonds issued by residents in the Euro area, as of 2011. Source: ECB, Monthly Bulletin, April 2013.

Table S.5: Robustness checks for Table 1

Dependent Variable:	$\log(\text{Loans}_{ji})$				$\log(1+\text{Loans}_{ji})$
	(1)	(2)	(3)	(4)	(5)
$\log \text{Migration}_{ij}$	0.150^{***}	0.134^{***}	0.203^{*}	0.162^{***}	
	(0.038)	(0.042)	(0.105)	(0.036)	
$\log(1+\text{Migration})_{ij}$					0.236^{***}
					(0.036)
$\log \text{Distance}_{ij}$	-0.790^{***}	-0.711^{***}	-1.271^{***}	-0.833^{***}	-0.235
	(0.115)	(0.151)	(0.367)	(0.120)	(0.155)
$\log(1+\text{remittances})_{ij}$			0.015		
			(0.032)		
$\lvert\text{polity}_i - \text{polity}_j\rvert$				-0.427^{***}	
				(0.103)	
$(\text{Colonial Link})_{ij}$	1.335^{***}	1.422^{***}	0.673	1.155^{***}	1.027^{***}
	(0.204)	(0.224)	(0.543)	(0.201)	(0.182)
$(\text{Language})_{ij}$	0.294^{*}	0.722^{***}	-0.266	0.440^{**}	0.094
	(0.160)	(0.228)	(0.635)	(0.165)	(0.138)
$(\text{Legal origin})_{ij}$	0.156	0.414^{***}	0.041	0.168	0.018
	(0.111)	(0.134)	(0.309)	(0.117)	(0.114)
$(\text{Border})_{ij}$	-0.551^{*}	-0.702^{**}	0.966^{**}	-0.752^{**}	-0.007
	(0.305)	(0.321)	(0.409)	(0.305)	(0.354)
Fixed-Effects	i and j	ig and j	i and j	i and j	i and j
N	1,628	1,628	213	1,512	2,362
L	17	17	16	17	17
B	175	175	45	154	181
Estimator	OLS	OLS	OLS	OLS	OLS

Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries. All columns, except for column (2), include country fixed effects for countries i and j. Column (2) includes fixed effects for lending country j and for ig, where ig implies that country i is the borrowing country and the lending country belongs to group g. We distinguish three groups of lending countries indexed by g: Anglo-Saxon countries, continental Western European countries and other. Data on remittances is taken from Docquier, Rapoport and Salomone (2012). Polity is the Polity 2 indicator of the Polity IV dataset.

Table S.6: Skilled versus unskilled migration - OLS and Poisson

Dependent Variable:	log(Loans)	log(Export)	log($\frac{\text{loans}}{\text{export}}$)	Loans	Export
	(1)	(2)	(3)	(4)	(5)
log(Skilled)	0.204***	0.072**	0.132**	0.234**	0.097*
	(0.066)	(0.035)	(0.065)	(0.093)	(0.059)
log(Unskilled)	−0.022	0.084**	−0.106**	−0.002	0.095*
	(0.054)	(0.033)	(0.053)	(0.076)	(0.054)
log(Distance)	−0.832***	−0.809***	−0.023	−0.253***	−0.581***
	(0.120)	(0.062)	(0.098)	(0.053)	(0.059)
N	1,424	1,424	1,424	1,546	1,546
L	17	17	17	17	17
B	155	155	155	157	157
Estimator	OLS	OLS	OLS	Poisson	Poisson

Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries, respectively. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. For the placebo tests, the samples for loans and export regressions are the same.

Table S.7: Comparison between culturally closer/more distant countries (OLS results)

	(1)	(2)	(3)	(4)
Dependent Variable: log(Loans)				
$\log \text{Migration}_{ij} * \log \text{Distance}_{ij}$	0.094^{***}	0.093^{***}	0.101^{***}	0.092^{***}
	(0.023)	(0.024)	(0.023)	(0.023)
$\log \text{Migration}_{ij} * \text{Language}_{ij}$	-0.133^{**}			-0.149^{***}
	(0.054)			(0.056)
$\log \text{Migration}_{ij} * \text{Colonizer}_{ij}$		-0.126^{*}		-0.079
		(0.073)		(0.075)
$\log \text{Migration}_{ij} * \text{Legal}_{ij}$			0.042	0.089^{**}
			(0.036)	(0.038)
$\log \text{Migration}_{ij}$	-0.612^{***}	-0.595^{***}	-0.687^{***}	-0.617^{***}
	(0.190)	(0.193)	(0.187)	(0.191)
$\log \text{Distance}_{ij}$	-1.652^{***}	-1.624^{***}	-1.721^{***}	-1.636^{***}
	(0.228)	(0.235)	(0.224)	(0.234)
Dependent Variable: log(Export)				
$\log \text{Migration}_{ij} * \log \text{Distance}_{ij}$	0.051^{***}	0.047^{***}	0.051^{***}	0.047^{***}
	(0.014)	(0.013)	(0.014)	(0.013)
$\log \text{Migration}_{ij} * \text{Language}_{ij}$	-0.023			0.021
	(0.035)			(0.038)
$\log \text{Migration}_{ij} * \text{Colonizer}_{ij}$		-0.101^{**}		-0.108^{***}
		(0.040)		(0.039)
$\log \text{Migration}_{ij} * \text{Legal}_{ij}$			-0.018	-0.010
			(0.022)	(0.025)
$\log \text{Migration}_{ij}$	-0.254^{**}	-0.209^{*}	-0.252^{**}	-0.207^{*}
	(0.112)	(0.108)	(0.113)	(0.107)
$\log \text{Distance}_{ij}$	-1.239^{***}	-1.185^{***}	-1.240^{***}	-1.184^{***}
	(0.130)	(0.127)	(0.132)	(0.126)
Obs.	1,451	1,451	1,451	1,451
No. of Lending Countries	17	17	17	17
No. of Borrowing Countries	158	158	158	158
Estimator	OLS	OLS	OLS	OLS

This table reports the OLS estimates of interaction terms of migration with the following measures of cultural proximity: (1) common language, (2) common colonizer (3) common legal origin. Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries, respectively. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls. Samples for the Loans and Export regressions are the same.

Table S.8: Skill-proximity interactions (OLS)

Dependent Variable:	$\log(\text{Loans}_{ji})$			
	(1)	(2)	(3)	(4)
$\log \text{Skilled}_{ij} * \log \text{Distance}_{ij}$	0.099**	0.098**	0.090*	0.094**
	(0.047)	(0.048)	(0.047)	(0.046)
$\log \text{Unskilled}_{ij} * \log \text{Distance}_{ij}$	0.003	0.003	0.017	0.006
	(0.048)	(0.049)	(0.047)	(0.047)
$\log \text{Skilled}_{ij} * \text{Language}_{ij}$	−0.203*			−0.137
	(0.112)			(0.125)
$\log \text{Unskilled}_{ij} * \text{Language}_{ij}$	0.076			0.006
	(0.102)			(0.122)
$\log \text{Skilled}_{ij} * \text{Colonizer}_{ij}$		−0.224		−0.103
		(0.147)		(0.156)
$\log \text{Unkilled}_{ij} * \text{Colonizer}_{ij}$		0.083		0.000
		(0.128)		(0.151)
$\log \text{Skilled}_{ij} * \text{Legal}_{ij}$			−0.150	−0.065
			(0.101)	(0.102)
$\log \text{Unskilled}_{ij} * \text{Legal}_{ij}$			0.188**	0.156
			(0.092)	(0.095)
$\log \text{Skilled}_{ij}$	−0.644	−0.635	−0.550	−0.585
	(0.399)	(0.403)	(0.397)	(0.389)
$\log \text{Unskilled}_{ij}$	−0.014	−0.001	−0.170	−0.077
	(0.396)	(0.398)	(0.380)	(0.386)
$\log \text{Distance}_{ij}$	−1.585***	−1.535***	−1.646***	−1.569***
	(0.222)	(0.226)	(0.214)	(0.224)
Obs.	1,427	1,427	1,427	1,427
No. of Lending Countries	17	17	17	17
No. of Borrowing Countries	158	158	158	158
Estimator	OLS	OLS	OLS	OLS

Standard errors are clustered at the borrowing country level. N, L and B denote number of observations, number of lending countries and number of borrowing countries. All columns include country fixed effects, colonial link, language, legal origin and common border as additional controls.

References

[1] Docquier, Frédéric, Hillel Rapoport and Sara Salomone, "Remittances, migrants, education and immigration policy: theory and evidence from new bilateral data," *Regional Science and Urban Economics*, 42 (2012), 817-828.