Beyond Culture: How does international migration affect cross-border mergers and acquisitions?

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Abstract

We show that a higher migrant stock from an acquiring country to a target country leads to greater deal frequency and dollar value in cross-border acquisitions after controlling for the differences in economic and financial development, regulatory environments, valuations, and cultural distance. Our results support the arguments that migration impacts cross-border deal activity by ameliorating the effect of cultural distance, facilitating post-merger integration, and mitigating information asymmetry between acquiring and target countries. Instrumental variables derived from the interactions of the push and pull factors of migrant flows mitigate endogeneity concerns in our study.

Keywords: Cross-border mergers and acquisitions; national culture; international migration

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1. Introduction

A successful merger of two companies involves a complex combination of physical assets and human capital to achieve potential synergies. Relative to deals involving same-country participants, cross-border mergers and acquisitions (M&As) are further challenged by additional barriers, such as diverse regulatory environments, different languages and religions, and distinctive national cultures. Failure to understand cultural differences, for instance, has often been blamed for the disastrous consequences in prominent cross-border deals.[1] Ahern, Daminelli, and Fracassi (2015) find that differences in national culture strongly hinder cross-border acquisition activity and the realization of synergies from those cross-border mergers that do occur involving firms from culturally distant countries.

In this paper, we show that the existence of a migrant stock can help counteract deal impediments stemming from national cultural differences. Higher stocks of migrants from the country of the acquiring firm to the country of the target firm leads to greater deal frequency and dollar value of deals, and a higher likelihood of deal completion. These results hold after controlling for the widely documented economic and social factors in the literature (Erel, Liao, and Weisbach, 2012; Ahern, Daminelli, and Fracassi, 2015), and particularly, national cultural distance.

Immigrants often foster host-country familiarity with, and acceptance of, their home country through their social contacts in both their destination and home countries. Immigrants possess knowledge of naitonal cultures and product and financial markets for both countries. The stock of migrants may also enlarge the potential pool of suitable employees, consultants, investment bankers, and other associated professionals who are likely to be directly involved in pre-merger negotiations or post-merger integration following a cross-border deal.

[1] For example, national cultural conflict was considered to have played a major role in the failure of the Daimler-Chrysler merger (Shelton, Hall, and Darling, 2003).

The presence of immigrants also increases cultural exchanges and casual encounters between citizens of the two countries, hence the familiarity brought by immigrants may indirectly narrow national or social gaps between acquirers and targets. All these factors might contribute to reduced transaction costs at various stages of acquisitions and post-merger integration. Thus, we expect that migrant networks could ameliorate the negative impact of the barriers that hinder cross-border mergers.

We evaluate the effect of inbound international migration at an ordered country-pair level, seen from the perspective of a recipient country that accepts both immigrants and capital from their country of origin. Using a large sample of deals across 52 countries, we find that increasing migration from the origin (acquiring) country to the destination (target) country enhances M&As between the two countries. In particular, an increase from the 25th percentile to the 75th percentile in the inbound migrant stock in 1990 is associated with substantial and significant increases in the ratio of country-pair-specific cross-border M&As to (target country) domestic M&As between 1995 and 2020.[2] Our findings hold after controlling for common country-level factors that have been demonstrated in the extant literature to significantly impact cross-border M&A, such as the differences in population growth, economic and financial developments, legal environments, bilateral trade, stock market valuation, currency appreciations, language, religion, cultural values, and geographical distance.

Although we match mergers with lagged migrant stock at the ordered country-pair level to mitigate reverse causality (one potential source of endogeneity), unobserved common factors

[2] In the untabulated estimations using the absolute cross-border deal number (value) as the dependent variable, additional 21,000 inbound migrants from an acquiring country to a target country in 1990 is associated with an annual increase of about one cross-border deal (or US$ 129 million cross-border deal value) from the acquiring country to the target country between 1995 and 2020. The country-pairs with the similar range of migrant stock (21,000) in 1990 are Singapore to Australia, India to France, China to U.K., or Finland to Germany. In other words, a sufficiently large number of migrant stock from an acquiring country to a target country is needed to identify an impact of migration stock on cross-border M&As.

could cause both acquiring capital and migrants to flow into a specific target country within the sample period. To identify the causal effect of migration stock on cross-border M&As, we construct a set of instrumental variables (IVs) by modifying the approach adopted in Burchardi, Chaney and Hassan (2019): the migrant stock for a country-pair is equal to the lagged migrant stock plus the migrant flow that is adjusted for biases caused by births and deaths. The migrant flow depends on the interaction between origin-nation specific push factors and destination-nation specific pull factors. When we exclude the country-pair specific factors of the focus country-pair from the calculations, the interaction terms generate quasi-random time-series variations in the allocation of migrants across the world.[3] These instruments are shown to satisfy the relevance condition. The deeply-lagged (at least ten years) push and pull factors ensure that the instruments are predetermined, hence likely satisfying the exclusion condition. With the help of the instrumental approach, our results support a casual effect from international migration to cross-border acquisitions.

Three possible channels through which international migration might affect cross-border mergers at the deal level are examined. Since cultural differences impose additional transaction costs on cross-border deals (Ahern, Daminelli, and Fracassi, 2015), we first test the effect of national cultural distance on our findings using several cultural measures constructed from both Hofstede (1980, 2001) and the World Value Surveys. We find that the inbound migrant stock positively affects the frequency and dollar volume of cross-border deals, especially when the two countries are culturally distant.

[3] For example, when considering Japanese firms acquiring American targets, we consider the interactions between the forces "pushing" people out of Japan to all other countries except America and the forces "pulling" people from all other countries except Japan into America. Such "leave-out" instruments are most likely independent of unobservable country-pair factors (i.e. Japan-US country-pair specific factors in the example) that drive both immigration and cross-border deals to move within the ordered country-pair simultaneously.

Secondly, the integration of human capital is particularly crucial in cross-border M&As[4]. Successful integration of a target to an acquirer requires managers and employees from two different countries to collaborate, and all the staff may need retraining to work effectively as a new team in post-merger environments. We argue that the impact of immigration is more pronounced if the target is in labor-intensive industries since the anticipated integration costs through restructuring and employee retraining are generally higher for these industries. Further, successful integrations of targets and acquirers rely on the specialized knowledge of key employees and managers of acquirers to improve the operational efficiency of the combined firms. This type of knowledge or "organization capital" is crucial in facilitating the effective combination of human capital and physical capital in production (Prescott and Michael, 1980, Evenson and Westphal, 1995, Eisfeldt and Papanikolaou, 2013), and has significant impact on M&As (Li, Qiu, and Shen, 2018). Thus, the impact of international migration is expected to be stronger if the acquirers operate in an industry with more organization capital since acquirers are more likely to depend on industry-specific organization capital for creating post-merger value. Our results validate both arguments.

Thirdly, information asymmetry resulting either from lack of information on a target or from unfamiliarity with a foreign country, especially in target selection and due diligence, increases uncertainties in mergers. Social networks between acquiring and target countries formed by migrants are likely to enhance the information available for cross-border M&As and hence mitigate information asymmetry. For example, acquiring firms seeking potential foreign deals may favor those nations that receive a higher number of immigrants from their home country since they could rely on the more established migrant networks between the two countries and trust people with stronger ethnic ties with them. We expect that the effect of

[4] Financial economists have studied the various aspects of human capital in mergers and acquisitions, see Fulghieri and Sevilir (2011), Chen, Gao, and Ma (2021), and Lee, Mauer, and Xu (2018) for examples.

migrant stock is stronger when information asymmetry during mergers is more severe. Using several information asymmetry proxies at both the deal and industry levels, we do find some limited evidence on this information asymmetry channel when the targets are privately held or when targets are in industries that are identified as informationally more complex.

We conduct a battery of the robustness checks. First, there may be a concern that our main results could be primarily influenced by those countries that are most attractive to both migrants and capital flows, such as the US, Canada, or Germany. Thus, we conduct the tests on various subsamples, for instance, one including deals with neither the US acquirers nor the US targets; the others having the deals completed either within or outside the EU (or OECD) countries. These subsample tests confirm our main results obtained from the whole sample. Secondly, we use a rolling window approach to generate migrant stock variables and related instruments in 1980, 1990, and 2000. This approach ensures our main finding is not limited only to migrant stock in 1990. Thirdly, we use Tobit, two-stage Tobit, and two-stage linear probability model specifications to address a potential survivorship bias caused by the data screening criteria in the sample.

We also show that migrant networks are associated with synergy gains at the deal level, but the finding is restricted to a small sample with both acquirers and targets being publicly listed. Nevertheless, we find that the increased migration is associated with higher cumulative abnormal returns post-merger announcements. Consistent with the M&As lierature, the positive effect is mainly identified on the cumulative abnormal returns from the targets.

Methodologically, our empirical approach is different from the gravity model widely used in the literature on the role of international migration on international trade and capital flows (e.g., Ahern, Daminelli, and Fracassi 2015; Fresard, Hege, and Phillips 2017). The traditional gravity model is symmetric: the country-pair observations of Australian firms acquiring US targets (Australia-US) are pooled with the observations of US firms acquiring

Australian targets (US-Australia). Thus, the gravity model can identify only the relationship within a specific country-pair but not the direction. By contrast, in our study, the Australia-US country-pairs are treated differently from the US-Australia country-pairs. Furthermore, we focus on the *inbound* effect of international migration on cross-border acquisitions, i.e., the impact of Australian migrants in the US on the frequency and dollar value of Australian firms' acquiring US targets. By contrast, Cohen et al. (2017) show that the "resident network" of migrants in the U.S. can act as an important economic conduit for *outbound* foreign investments from the U.S. to "connected" foreign countries[5].

Numerous studies have documented the effects of international migration on bilateral trade, investments, innovation, and economic growth.[6] Our paper contributes to this broad research theme by studying the impact of immigration on a specific form of international investments, namely, cross-border mergers and acquisitions[7]. We mainly contribute to the finance literature on the determination of cross-border M&As, and also to the literature on the effect of national culture on corporate decision-making. For the determination of cross-border M&As, Erel, Liao, and Weisbach (2012) find that geographical distance, bilateral trade, and differential stock valuation due to currency or stock market appreciations motivate cross-border deals. Based on data from the European Union, Dinc and Irel (2013) find that economic nationalism hinders cross-border M&As as nationalist governments prefer target companies to

[5] Similar to Cohen et al. (2017), we also find that the migrant stock has a significant "outbound" effect on cross-border M&As in our international sample, especially for countries with both large migration inflow and capital outflow. Our study focuses on the inbound effect and the results of the outbound effect are not reported but available upon request.

[6] For example, there are studies of immigration on bilateral trade flows (Rauch and Trindade, 2002; Combes, Lafourcade and Mayer, 2005; Hatzigeorgiou, 2010; Bailey et al. 2021), foreign direct investment (Kugler and Rapoport, 2007; Javorcik et al. 2011; Burchardi et al. 2019), innovations (Hunt and Gauthier-Loiselle, 2010; Bernstein et al. 2019), and economic growth (Boubtane et al. 2016; Borjas 2019; Burchardi et al. 2020), etc.

[7] In line with Erel, Liao, and Weisbach (2012), we choose to focus on cross-border M&As rather than foreign direct investment (FDI). FDI includes cross-border mergers plus other investments, such as "green field" investments, retained earnings and inter-company loans. As stated in Erel, Liao, and Weisbach (2012), data quality on FDI is not very good. While some countries collect the data based on the authorities' approvals of investment, others use the actual realized investments data. In addition, some countries do not report detailed breakdowns of inward and outward FDI flows. There are also concerns whether FDI data reflect genuine investments or money laundering, see Perez, Brada, and Drabek (2012).

remain domestically-owned rather than foreign-owned. Frésard, Hege, and Phillips (2017) show that acquirers from more specialized industries in a country are more likely to buy foreign targets in less specialized countries in these same industries. For industries that are more intellectual capital-intensive, Alimov and Officer (2017) document a significant rise in inbound cross-border M&As after a target country strengthens its legal protection for intellectual property rights. Ahmad, de Bodt, and Harford (2021) find that international trade networks propagate merger waves at domestic and cross-border levels. Cao, Li, and Liu (2019) show that political uncertainty in national elections affects the volume and outcome of cross-border acquisitions. Our research complements the literature by showing that the existence of migrant networks is one of the important determinants of cross-border acquisitions.

Bringing the role of culture into corporate acquisition decisions, Morosini, Shane, and Singh (1998), and Ahern, Daminelli, and Fracassi (2015) show that national cultural distance hinders cross-border acquisitions[8]. We consider the role of international migration in reducing the deal-impeding influence of cultural distance and find that the impact of international migration on cross-border acquisitions remains significant after controlling for cultural distances. The ordered country-pair analysis provides directional results that could mitigate the limitation in using symmetric measures of culture distance (Karolyi, 2016)[9], and thus captures the influence of migrant stock beyond cultural considerations.

This study is also closely related to two recent studies on the role of ancestral networks on cross-border trade and investments, namely, Cohen, Gurun, and Malloy (2017) and

[8] Guiso, Sapienza and Zingales (2006) give a general discussion regarding the impact of culture on economic outcomes. Research has shown that national culture has impacts on various aspects of corporate financial decisions, such as on financial contracting (Giannetti and Yafeh, 2012), executive compensation (Bryan, Nash, and Patel, 2015), cash holdings (Chen et al. 2015), cost of debt (Chui, Kwok, and Zhou, 2016), and target premium in cross-border M&As (Lim, Makhija, and Shenkar 2016), among others. Using US data of mergers and acquisitions, Bereskin et al. (2018) find that culturally similar firms can ease post-deal integration and are more likely to merge.

[9] The traditional measure of cultural distance suffers an illusion of symmetry (Shenkar 2001): an American firm investing in China is faced with the same cultural distance as a Chinese firm investing in the US. Karolyi (2016) suggests that there is little support for such an assumption and recommends to use the directional analysis to avoid the problem in cross-border research settings.

Burchardi, Chaney, and Hassan (2019). Both studies deal with one single recipient country (i.e., the U.S.), while our research covers 52 recipient countries. Our findings hold even if we exclude all deals associated with the U.S. Besides, these two studies focus mainly on the ancestry effect, while ours is on the impact of contemporary migrant networks[10]. Thirdly, Cohen, Gurun, and Malloy (2017) investigate the outbound effect, and Burchardi, Chaney, and Hassan (2019) study the combined outbound and inbound effects on international trade. Our study focuses on the inbound effect.

The paper is organized as follows. Section 2 describes data collection procedures and reports the sample characteristics. In Section 3, we state our main reduced-form regression equation, detail our identification approach, and present the main regression results. Section 4 then explores three potential channels through which international migration can affect cross-border M&As. Section 5 contains several subsample and robustness tests, as well as the results at the deal level. Concluding remarks are in Section 6.

2. Data Sample and Summary Statistics

2.1 Data Sample and Sources

Cross-border M&As data are collected from the Security Data Corporation's (SDC) Platinum database and require the deals to have been announced and completed between 1995 and 2020. Following Erel, Liao, and Weisbach (2012), we exclude leveraged buyouts (LBOs), spinoffs, splits and equity carve-outs, recapitalizations, self-tender offers, exchange offers, repurchases, partial equity stake purchases, acquisitions of remaining interest, and privatizations, as well as deals in which either the target or the acquirer is recorded as a government agency. We also exclude deals in financial or utilities industries since M&As in these industries are heavily regulated in many countries or deals in which the primary nation

[10] Although the ancestry of the citizens and migrant stock at the country-pair level are related, they are different. For example, Chinese Americans of the second generation who were born in the U.S. are not included in the migrant stock statistics, yet they have ancestral links with China.

of either the target or the acquirer is missing. Covering 52 countries from 1995 to 2020, our initial sample has 348,678 deals with a total nominal transaction value of US$23.82 trillion, of which 85,492 are cross-border deals with a total nominal value of US$7.88 trillion. For each deal, we collect the announcement and completion dates, names, public status, the four-digit Standard Industrial Classification (SIC) code, the country of domicile for both targets and acquirers, deal value, and the form of payment.

The global bilateral migration data comes from the United Nations (UN) Population Division's Global Migration Database[11], which covers 226×226 origin-destination migrant stock for each decade from 1960 to 2010. To perform the instrumental variable analysis detailed in the next section, we also need the migration flow data on the ordered country-pair basis. Due to the lack of comprehensive and reliable bilateral migration flow data, we use the inferred bilateral migration flow data produced by Abel and Sander (2014). The UN migrant stock data (and the derived migrant flow data) are based on the censuses or population registers of each country, which are available only once every ten years.

Various control variables are used in our analyses. The country-level social and economic statistics, such as population, financial development, real GDP growth, and GDP per capita, come from the World Bank Development Indicators. Unless otherwise specified, the control variables are defined as the difference of the variable of interest between the origin (acquirer) country i and the destination (target) country j. Thus, the variable *Population growth*[12] is the difference in population growth rates between country i and country j. *GDP per capita* and *Real GDP growth* are similarly defined. *Private credit* is the difference in the

[11] See the webpage http://data.worldbank.org/data-catalog/global-bilateral-migration-database.
[12] For ease of exposition, we use italics to denote the variable names in the text, but without italics in the tables and figures.

private sector credit to GDP ratio[13] between country i and country j, which has been used as a proxy for country-level financial development by Rajan and Zingales (2003).

The country level market-to-book ratios use stock market data from the Datastream. *Market-to-book* is the difference in the market-to-book ratio of the aggregate stock market between the acquiring country i and the target country j over the previous 12 months. The exchange rates are from Thomson Reuters I/B/E/S database. *Currency return* is the difference in real currency returns between the two countries over the previous 12 months. The consumer price index (CPI) for each country is collected to convert all nominal exchange rate returns into real exchange rate returns at the year 2000 price level. *Total import and export* data are collected from the UN commodity trade database.

Prior studies (Rossi and Volpin, 2004; Ahern, Daminelli, and Fracassi, 2015) find that geographic, cultural, and legal system differences can affect cross-border deals. We collect information on *Geographic distance*[14], and the binary variables of *Contiguity*, *Colony*, *Same country*[15], *Same language*, and *Same religion*. Following Djankov et al. (2008), the *Anti-self-dealing* is the difference between the index value of the acquirer nation and that of the target nation. All continuous variables have been winsorized at the 1st and 99th percentiles.[16] The detailed variable definitions are contained in Table A1 in the Appendix.

2.2 Summary statistics and stylized facts

The number of domestic and cross-border M&As at the ordered country-pair level between 1995 and 2020 is summarized in Table 1. One notable fact is that there are many missing data entries. In the primary analyses, we exclude any such country-pairs, as Erel, Liao,

[13] The private sector credit to GDP ratio is defined as the ratio of a country's domestic private credit to the real sector by depository money banks to its GDP.
[14] It is defined as the natural logarithm of geographic distance between the capitals of country i and country j. The database maintained by the Centre d'Études Prospectives et d'Informations Internationales (CEPII) is used to calculate the geographical distance between two countries.
[15] Due to historical reasons, Singapore and Malaysia, and Croatia and Slovenia in our dataset used to be in the same country. Hong Kong was returned to China in 1997 as a Special Administration Region and thus now is considered a part of China.
[16] Our results are qualitatively very similar if we truncate the distribution instead of winsorizing it.

and Weisbach (2012) have done. In Section 6, we will replace missing data with the value of 0, following Ahern, Daminelli, and Fracassi (2015).

[Please Insert Table 1 Here.]

To obtain some intuition from the initial sample, we assign the ordered country-pairs to a high migrant stock group (i.e. the top tertile) or a low migrant stock group (i.e., the bottom tertile) based on the inbound migrant stock at the country-pair level in the year 1990. Figure 1 displays the average annual difference in the number of deals and the aggregate value of transactions from 1995 to 2020 between the two groups, respectively. On average, the high migration-stock country-pairs have ten more completed deals and about US$1.1 billion more transaction value per year than the low migration-stock country-pairs, demonstrating that the number of cross-border deals is strongly associated with the inbound migrant stock.

[Please Insert Figure 1 Here.]

In line with Erel, Liao, and Weisbach (2012), the key variable of interest, *Cross-border deal,* is defined as the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. For further analysis, we also use an alternative definition, *Cross-border value,* which is defined similarly using the total dollar deal value.[17] The univariate summary statistics for our sample, including both key variables *Cross-border deal* and *Cross-border value*, and all control variables are reported in Table 2.

[Please Insert Table 2 Here.]

3. Model Specification, Instrumental Variables Approach, and Regression Results

[17] In addition to the univariate analysis, we also regress *Cross-border deal* and *Cross-border value* on *LN Stock1990* without controls but with acquiring and target country fixed-effects and year fixed-effects. The estimated coefficients are 0.0193 and 0.0190, respectively. The results are consistent with the patterns illustrated in Figures 1.

3.1. Model Specification

To investigate the impact of the inbound migrant stock on cross-border acquisition decisions, we run the following baseline reduced-form regression:

$$CB_{o,d}^{t} = \delta_o + \delta_d + \beta S_{o,d}^{t_0} + \gamma X_{o,d} + \mu Y_{o,d}^{t} + \eta_t + \varepsilon_{o,d}^{t} \quad (1)$$

where

$CB_{o,d}^{t}$: Cross-border M&A activities (frequency, dollar value, or synergy) at time t
δ_o : Origin (acquiring) nation fixed effects
δ_d : Destination (target) nation fixed effects
$S_{o,d}^{t_0}$: Migrant stock from the origin country to the destination country at time t_0, $t_0 < t$
$X_{o,d}$: Time-invariant country-pair difference, such as language and geographical distances
$Y_{o,d}^{t}$: Time-variant country-pair difference, such as macroeconomic variables
η_t : Year fixed effects
$\varepsilon_{o,d}^{t}$: The residuals

$CB_{o,d}^{t}$ is defined at the ordered country-pair level which has two variants: one is based on the number of deals *Cross-border deal*, and the other is based on the dollar value of deals *Cross-border value*. In the main specification, $t_0 = 1990$ and t_1 runs from 1995 to 2020. Regression analyses are also performed on alternative sample periods in Section 6.

3.2. Identification Strategy

Some policy or economic factor changes may simultaneously affect both cross-border acquisitions and migration between two countries. For instance, the "reform and opening-up" policy of China starting in the late 1970s has led to relative freedom for both capital and population movements. The withdrawal of the U.K. from the European Union (EU) may hinder free movements of both capital and population between the UK and the EU member countries. Another example is the gradual integration of Central and Eastern European countries into the EU in the 1990s and 2000s. To address this concern, we modify the instrumental variable (IV) approach developed by Burchardi, Chaney, and Hassan (2019). As detailed in Part 2 of the

Appendix, the construction of the IVs is based on the idea that the migrant flow depends on the interaction between origin-nation specific push factors and destination-nation specific pull factors. When we leave out the country-pair specific factors of the focus country-pair from the calculations, the interaction terms generate quasi-random time-series variations in the allocation of migrants across the world.

To check the validity of the IVs, we report the first-stage regression results in Table A2 in the Appendix. Following Burchardi, Chaney, and Hassan (2019), we use a sequential estimation method to generate the incremental coefficient for each instrument relative to all the instruments used in the previous estimations. The main regressions use the logarithm transformed migrant stock variable. To verify the relevance condition, we report the partial R-squared and the partial F statistics of the excluded instruments for each first-stage regression. The collective explanatory power of the instruments in addition to other regressors is indicated by the partial R-squared statistic, which is 52% in the main instrumental specification used in the subsequent second-stage estimations (Column (2) of Table A2) [18]. Based on the diagnostic tests, the instruments are less likely to be affected by the weak instrument problems[19]. For comparison, we also report the estimates using raw migrant stock data in Column (4) in Table A2. The tests also show that our instruments are less likely to be affected by the weak instrument problems under this alternative specification.

So far, regression (1) considers the impact of migrant stock in 1990 on the deals at the country-pair level in subsequent years from 1995 to 2020. The selection of the migrant stock

[18] Specifically, all of the five instruments used in the first-stage regression are positive and statistically significant at the 1% level. The incremental R-squared reported in Column (3) in Table A2 indicates that *LNStock1970* incrementally contributes 9 percentage points to the overall explanatory power, while the push-pull interaction terms, *LNStock1970*Pull1970-1980*[18] and *LNStock1970*Pull1980-1990,* contribute 12 and 2 percentage points, respectively. The results suggest that the initial stock in 1970 (migrant stock two decades earlier) does have a strong impact on the migrant stock in 1990, indicating that the diaspora factor has a strong impact on subsequent migrant stock. In addition, the sum of five incremental R-squared coefficients of the instruments is 24.3%.

[19] The first-stage F-statistics are 37.13, which is much higher than Stock-Yogo test critical values of 18.37 (5% maximal IV relative bias) recommended in the literature for detecting weak instrument problems (Stock, Wright and Yogo, 2002).

of 1990 as the starting point is necessary given that the international migration flow data needed to construct instruments in equation (3) are incomplete before 1970. Some may have concerns that the deeply lagged migrant stock, say in 1970 or 1960, might have an independent effect on cross-border M&As rather than through the migrant stock in 1990. We rerun the baseline estimations including the migrant stock in 1970 or 1960 as an additional control variable. As reported in Panel A of Table A3 in the Appendix, the impact of migrant stock in either 1970 or 1960 is not statistically significant. In addition, the estimated residuals from the baseline regression using the migrant stock in 1990 do not significantly correlate with either the migrant stock in 1970 or 1960 (Panel B of Table A3 in the Appendix), hence it is plausible to choose the 1990 stock in the regression. Using the deeply lagged and theory-based instruments reduces the likelihood that the acquisition activities more than ten years later are directly affected by the instruments. Hence, our instruments are largely predetermined relative to cross-border deals and most likely satisfy the exclusion condition. To further mitigate the endogeneity concerns, we also report later in this section an example of immigration policy changes that occurred in several European countries following the 1973 oil crisis and its lasting causal impact on cross-border M&As subsequently directly.

3.3. Estimation results

Table 3 reports the panel estimates of the ordinary least squares (OLS) (Columns 1-3) and the two-stage least square (2SLS) (Columns 4-6) regressions, respectively. The estimated coefficient of *LN Stock1990* is 0.005 (Column 1) using the OLS approach and 0.003 using the 2SLS approach (Column 4)[20]. Both coefficients are statistically significant at the 1% level. Economically, the coefficient of 0.003 on *LN Stock1990* in Column 4 implies that increasing the number of inbound migrant stock from the 25th (50th) percentile to the 75th percentile of the

[20] The first-stage regression for Column (4) corresponds to the estimation reported in Column (2) of Table A2 in the Appendix.

immigration country-pairs is associated with an increase of 1.02% (0.50%) in the relative cross-border deal ratio from the acquirer to the target country[21]. The number represents an increase of 17.2% (8.4%) relative to the mean cross-border deal ratio of 5.9%. Further, the Hansen J statistic consistently rejects the null hypothesis of over-identification in the 2SLS estimations.

The impacts of the control variables used to capture other factors that affect cross-border merger activities are largely consistent with previous studies (e.g., Erel, Liao, and Weisbach 2012). Acquirer countries with higher GDP per capita, higher stock market valuation, and higher currency appreciation relative to target countries are associated with greater deal flows. Two countries that have more bilateral trades, use the same language, and share the same border have a higher proportion of cross-border mergers measured either by deal number or by dollar value.

[Please Insert Table 3 Here.]

Some may suspect that companies could make acquisition deals in anticipation of an increased migrant level from the acquiring country to the target country, although it is doubtful that a company plans an acquisition by gambling on the policy change in the target country in 5 or 10 years. Nevertheless, we deal with this concern about reverse causality by using the deeply lagged inbound migrant number as an independent variable to directly test whether the inbound migrant stock at the country-pair level in 1990 would significantly affect subsequent cross-border deals. Thus, we match *LN Stock1990* with the acquisitions 15 years later (2005-2020). Compared to the earlier-year sample 1995-2010 in Columns (2) and (5) of Table 3, the coefficients on *LN Stock1990* in Columns (3) and (6) are smaller but remain statistically and economically significant in both the OLS and the 2SLS estimations, mitigating the concern for

[21] Table 2 presents the data for the 25th percentile to the 75th percentile of the inbound migrant stock in 1990 at 824 and 24,370, respectively. With the estimated coefficient β at 0.003, the regression equation (6) indicates that the change in cross-border deal ratio equals to 0.003*[(ln(24370)-ln(824)]=1.02%.

the reverse causality. The corresponding diagnostic tests indicate that the problem of the weak instrument is not a concern in these 2SLS regressions.

We then change the dependent variable to *Cross-border value* and report the regression results of the panel analysis in Table 4. All the independent variables and the full set of controls included are identical to those in Table 3. The migrant stock in 1990 has a positive and significant impact on the dollar value of cross-border M&As at the country-pair level, although the statistical significance is somewhat weaker.

[Please Insert Table 4 Here.]

The baseline specification accounts for the acquiring country, target country, and year fixed effects. But if the changes in government policies that are associated with the mobility of capital or people happened in a specific year for a specific target or acquiring country, the baseline specification will fail to consider such unobserved but time-varying changes. For robustness checks, we run the following specification with *acquiring country* year* and *target country* year* fixed effects. That is,

$$CB_{o,d}^{t} = \delta_o \times \eta_t + \delta_d \times \eta_t + \beta S_{o,d}^{1990} + \gamma X_{o,d} + \mu Y_{o,d}^{t} + \nu_{o,d}^{t}, \quad t = 1995 \text{ to } 2020. \tag{4}$$

The estimated coefficient on *LN Stock1990* is 0.005 and statistically significant at 1% level, see Table 5[22]. The estimates for the migrant stock are almost identical to those in Table 3 and Table 4. In other words, accounting for time-dependent country-specific variations (such as national policy changes) makes no substantial difference to the estimates from our baseline specification.

[Please Insert Table 5 Here.]

3.4. Immigration policy change and cross-border M&As: An example

[22] To estimate such a high-dimensional fixed-effects model (with 1681 fixed-effects), we follow the suggestions proposed in Gormley and Matsa (2014) to use Stata user-written estimator REG2HDFE.

Although our IV approach can capture the exogenous variations in migrant flows, we have not addressed the direct causal impact of immigration policy change on cross-border M&A activities. In this subsection, we exploit largely exogenous immigration policy changes in three European countries (Spain, Italy, and Ireland) following the 1973 oil crisis to investigate such an impact.

European immigration policies between 1960 and 1990 can be divided into two different phases: a period of pro-immigration driven by the post-war adjustment and de-colonization or labor demand, and one of restricted immigration due to increasing social tensions and the fear of recessions after the first oil crisis of 1973 (Zimmermann 1995; Bauer, Lofstrom, and Zimmermann 2000). In the first half of the 1970s, the traditional immigration-friendly countries such as West Germany started to restrict immigration, while Ireland, Italy, and Spain, which were historically emigration countries, reversed policies to increase the net inflow of migrants (Huntoon 1998). While immigration to West Germany was abruptly halted, Ireland, Italy, and Spain experienced positive net inflows caused by either returning emigrants, or strong domestic economic demand (Hollifield 1986; Bauer, Lofstrom, and Zimmermann, 2000). Figure 2 illustrates the dramatic changes in net immigration flows (in thousands) during the period 1970-1980. While significant changes in net immigration are observed from 1960 to 1970 and from 1970 to 1980 in Spain, Ireland, and Italy, in comparison the net inflow of migrants slowed down or even dropped in West Germany.

[Please Insert Figure 2 Here.]

We use a "change-in-change" approach to examine how the net inflow of immigrants to Spain, Ireland, and Italy between 1970 and 1980 affected the cross-border acquisitions of the targets domiciled in these three countries from 1995 to 2020. Columns (1) to (3) of Table 6 show the net migrant inflow to Ireland, Spain, and Italy in that period and the cross-border

deal ratios between these three country-of-destination (target country) and the respective origin countries (acquiring countries). Column (4) provides the results for the aggregated sample of these three countries with country fixed effects. The 1973 oil crisis and the subsequent immigration policy changes had a sizable impact on cross-border ratios ten years later (from 1991 onwards). This result shows a strong link between cross-border acquisitions and immigration inflows following an exogenous shock.

[Please Insert Table 6 Here.]

4. Channels of the impact

In this section, we investigate three potential channels through which the migrant stock could affect cross-border acquisitions within a country-pair: reducing cultural distance, facilitating post-merger integration, and mitigating information asymmetry.

4.1. Immigration counters the effects of cultural distance

Defining culture as "the collective programming of the mind distinguishing the members of one group or category of people from others," Hofstede (1980, 2001) developed six dimensions of national culture, namely power distance index (PDI), individualism (IDV) vs. collectivism, masculinity (MAS) vs. femininity, uncertainty avoidance index (UAI), long-term orientation (LTO) vs. short-term orientation, and indulgence versus restraint (IVR). National culture has been shown as an important factor affecting various business decisions in cross-country studies in the literature. Ahern, Daminelli, and Fracassi (2015) find that the similarity of national cultural values between acquirer and target countries affects cross-border acquisitions[23]. This finding raises concerns that the positive impact of migrant stock on cross-border M&As could be purely driven by the similarity in the national culture between the

[23] An alternative hypothesis is that cultural diversity may increase an organization's effectiveness. Similar to the findings in Ahern, Daminelli, and Fracassi (2015), our cross-border M&A sample does not support this alternative hypothesis.

acquiring and target countries since both migration and cross-border deals are more likely if two countries are culturally similar. Hence, we investigate whether the effect of immigration on cross-border deals remains significant after controlling for the cultural distance.

Besides the six dimensions of Hofstede's national culture, we also construct three additional national cultural measures from six waves of the World Values Survey (WVS)[24] carried out in 1990–1994, 1995–1998, 1999–2004, 2005–2009, 2010-2014, and 2017-2020, namely, trust versus distrust (*Trust_WVS*), hierarchy versus egalitarianism (*Hierarchy_WVS*), and individualism versus collectivism (*Individualism_WVS*). To examine whether the existence of migrant stock can bridge the cultural gap within country-pairs, we add the interaction terms of these nine cultural distance measures with the variable *LN Stock1990* in the estimates.

Table 7 reports the regression results for cross-border deal ratios using the nine different measures of cultural distance. Similar to Ahern, Daminelli, and Fracassi (2015), we find that cultural distance impedes cross-border acquisitions, and that all cultural distance measures are significant at the 5% level except the *Individualism* of Hofstede, and *Individualism_WVS*. After controlling for the cultural distance measures, the effect of inbound migrant stock on cross-border acquisitions remains positive and statistically significant. More importantly, the interaction terms between cultural distance and migrant stock are all positive and statistically significant, except for Long-term orientation (Column 5) and Trust_WVS (Column 7). These findings indicate that immigration can mitigate the deal-impeding effect of cultural distance on cross-border M&As, but itself is not merely a proxy for the cultural distance that affects cross-border acquisitions. While the existence of migrant stock can more effectively facilitate cross-border deals when the two countries are culturally distant, its role goes beyond counteracting

[24] The World Values Survey (www.worldvaluessurvey.org) is a long-term, world-wide study of values and their impact on social, political, and business life. The Survey began in 1985 and now covers 97 countries, representing almost 90% of the world's population.

the cultural distance alone. This result calls for further investigation of other potential channels through which immigration can affect cross-border M&A decisions.

[Please Insert Table 7 Here.]

4.2. Post-merger integration costs: the human capital factor

Realizing the expected post-merger synergy incurs significant uncertainties, especially when two firms are from different countries. According to transaction cost economics (Williamson 1975, Tadelis and Williamson 2013), a merger is the better way to transfer and share the knowledge or skills between acquirers and targets. Intense interaction among managers and employees is thus more critical for cross-border deals due to additional communication barriers. We use two industry level measures for potential integration costs related to the human capital factor. One is a direct measure related to labor intensity, and the other is an indirect measure that is related to the concept of organization capital.

We hypothesize that the potential integration costs of retaining, retraining, or firing employees in a foreign target will be much higher for targets that operate in a highly labor-intensive industry. If increased inbound migration can act as a catalyst in the success of M&As, then the impact should be more pronounced in high labor-intensive industries. For the measure of labor intensity at the industry level, we first use the proxy *EmpSale*, the past three-year average of the industry-median of employee numbers over sales in the Compustat full sample for each of Fama and French 48 industries[25]. High labor-intensive industries are those with the top 12 *EmpSale* values each year, while low labor-intensive industries are in the bottom 12 *EmpSale* values. The second proxy, *CapEmp*, is defined as the past three-year average of the industry median of invested capital over the total number of employees. The high labor-intensive industry is in the bottom 12 *CapEmp* values each year among Fama and French 48

[25] Specifically, for every industry in each year, we first calculate the industry median of *EmpSale* and then take the average of the past three-year industry median to mitigate the influence of outliers and the volatility in the measure over time.

industries, while a low labor-intensive industry is in the top 12 values each year[26]. Table 8 presents supportive evidence that the impact of inbound migration on cross-border acquisitions is more pronounced when the targets are in labor-intensive industries[27].

[Please Insert Table 8 Here.]

Another related measure is organization capital, which can be defined as "a production factor that is embodied in the firm's key talent and has an efficiency that is firm-specific" (Eisfeldt and Papanikolaou 2013). Li, Qiu, and Shen (2018) use the measure to study domestic M&As and find that high organization capital acquirers achieve better post-merger operating and stock performance than low ones. We accordingly conjecture that inbound migrant stock can mitigate concerns about post-merger integration costs of a cross-border deal by facilitating information-sharing in customs, regulations, business procedures, and technology know-hows between acquirers and targets based in different countries. This effect is expected to be more pronounced where the acquiring firms are in organization capital-intensive industries.

To test this hypothesis, we construct the stock of organization capital using the perpetual inventory method proposed by Eisfeldt and Papanikolaou (2013). We recursively estimate the stock of organization capital by cumulating the deflated value of the 30% of annual selling, general, and administrative (SG&A) expenses for each firm in each year using a depreciation rate of 15%. An industry-level organization capital is defined as the past three-year average of the industry median of organization capital over total assets at the firm-level in the Compustat full sample for each of Fama and French 48 industries. The high organization

[26] For the industry ranking based on these measures of labor intensity, please see Table A4 in Appendix.

[27] All our discussions on the comparisons between different subsample estimates reported in Tables 8 to 10 are purely based on the magnitude of the regression coefficients reported in these tables. It is challenging for us to conduct a statistical significance comparison of our subsample estimates for the following two reasons. First, our dependent variable, cross-border M&As, is measured at country-level, while the proxies for integration costs or information asymmetry are defined either at deal-level or at industry-level. In other words, each subsample consists of a completely different sample of delas with quite different deal-level characteristics. A statistical comparison between two fundamentally-different subsamples is not meaningful. Second, the coefficients reported in thes tables are estimated using a 2SLS approach and it is technically challenging to reconstruct the standard errors for each estimate.

capital industry is one of those industries with the top 12 organization capital to assets ratios each year, while the low organization capital industry is one with the bottom 12 organization capital to assets ratios. Alternatively, instead of using capitalized SG&A expense as a proxy for organization capital, we use the ratio of SG&A annual expense to sales directly, following Li, Qiu, and Shen (2018). The results reported in Table 9 are consistent with the conjecture that the impact of the inbound migrant stock is more prominent if the acquirer is in an industry with high organization capital[28].

[Please Insert Table 9 Here.]

4.3. Immigration reduces information asymmetry

Information asymmetry is a major concern when cross-border transactions are involved. Migrant networks can mitigate this asymmetry between the acquirer in the country of origin and the target in the destination country and therefore overcome informational barriers to a certain degree.

We use three different measures as proxies for information barriers between acquirers and targets in the cross-border setting. First, the impact of migration on cross-border deals should be more prominent for opaque (privately-held) targets than for relatively transparent (publicly-listed) targets.[29] We identify whether a target is privately held using the SDC database. For the dependent variables, we recalculate the proportion of cross-border deals from acquiring country i to target country j (where $i \neq j$) over the total number of all deals in the target country j for private and public targets. Second, the degree of information asymmetry will be greater for the deals where acquirers and targets are not in the same industry. We check

[28] Table 11 reports the regression results concerning the role of human capital in anticipated post-merger integration costs where the dependent variable is the number of deals. Complementary results related to the dollar value of the deals are obtained and available upon request.

[29] It is well recognized that there is likely to be substantially more information asymmetry concerning a privately held target's value relative to a publicly traded target, see Officer et al. (2009).

whether they have the same two-digit SIC industry code, and this classification constitutes our second measure. Our last proxy for information asymmetry between acquirers and targets during deal negotiation is the level of accounting complexity of the target firm based on the approach adopted by Francis and Gunn (2015)[30]. Of the 48 Fama-French industries, 18 are classified as complex, and the rest as less so. We hypothesize that information asymmetry issues are more severe if targets are in complex industries.

Table 10 reveals that the impact of migration is more pronounced if targets are privately held, in more complex industries, or not in the same industry as the acquirer[31]. Thus, the existence of inbound migrant stock appears to mitigate the impact of information asymmetry on cross-border M&As.

[Please Insert Table 10 Here.]

5. Additional Analyses

This section includes several robustness checks with differing subsamples, periods, and alternative model specifications. We also include deal level analysis to check the impact of migrant stock on the combined synergy as judged from the market reactions to the deal announcements.

5.1 Subsample tests

The country composition in our original sample is overly represented by US firms. Historically, the US has welcomed more people from anywhere around the world than other countries. Coupled with a robust economy and well-functioning capital markets, it has the strongest pulling power for both immigrants and capital. Thus, our findings could be driven

[30] Francis and Gunn (2015) construct an industry-level measure of accounting complexity and argue that industries with high accounting complexity require more effort from auditors to produce audited financial statements. Their measure is based on industry-specific accounting guidance contained in either the Financial Accounting Standards Board's (FASB) Topic 900: Industry Series or the American Institute of Certified Public Accountants' (AICPA 2014) Audit and Accounting Practice Guides.

[31] We also obtain similar unreported regression results of the impact of international migration on reducing information asymmetry based on the dollar value of cross-border deals.

mainly by the US factor. Secondly, due to close economic and social ties within many intergovernmental unions or organizations, both bilateral migration and cross-border acquisitions could flow in the same direction within these groups within the European Union (EU) or the Organization for Economic Co-operation and Development (OECD)[32]. The establishment of both organizations preceded our sample period, and our findings might change if we exclude either of them.

Table 11 reports the estimates for the subsamples consisting of different country groups. All of the estimates of migrant stock are significantly positive across different sample compositions. Column 1 shows that the impact of international migration remains for the subsample which includes neither US acquirers nor US targets. The impact of the migrant stock is weaker for the deals completed outside the OECD (or the EU) than for those within them, as shown in Columns 2 to 5. It appears that the influences of international migration are stronger when mergers are involved with countries that are more economically developed (such as the US), or more socially or economically connected through membership in an international organization such as the OECD or the EU.

[Please Insert Table 11 Here.]

5.2. Rolling-window analysis of immigration and cross-border M&As

The baseline regression in Equation (3) has specified the instrumental variable *LN Stock1990* and linked the migrant stock in 1990 to cross-border activities from 1991 onwards.

[32] Although the EU was formally created by the Maastricht Treaty in November 1993, it was the result of gradual integration since the end of the Second World War. As a political and economic union among European member countries, the EU makes its policies concerning the members' economies, societies, and laws. Thus, it is reasonable to expect that the flow of migrants and capital among the member countries may meet fewer hurdles than otherwise. Similarly, the OECD had been initially established in 1948 to run the US-financed Marshall Plan for the reconstruction of the European continent ravaged by the war. At the time of its establishment, the organization included 18 European countries plus the US and Canada. Later on, more countries joined, and today it has 35 members, which have a higher level of economic cooperation than otherwise. A detailed account of the history of the European Union can be found on the website: https://www.thoughtco.com/the-history-of-the-european-union-1221595. The history of the OECD is on the website: http://www.oecd.org/about/history/.

In all regressions so far, *LN Stock1990* is the static explanatory variable. To test whether the IV approach using migrant stock data of other sample periods remains valid, we also calculate *LN Stock1980* and *LN Stock2000* when the corresponding migration statistics are available. We then match migrant stock data with the cross-border M&A data lagged at least ten years at the country-pair basis. More specifically, M&A data from 1991 to 1999 are matched with migrant stock in 1980; M&A data from 2000 to 2009 are matched with migrant stock in 1990; M&A data beyond 2010 are matched with migrant stock in 2000. The first-stage specifications are adjusted accordingly for the migration data in 1980 and 2000 (the year 1990 specification is in Equation (3)). This sequential estimation approach captures the variations in the past (i.e., 1980) and the more recent (i.e., 2010) migrant stock data better. Our instruments for migrant stocks in 1980 and 2000 can exploit further the changes in immigration for the periods from 1960 to 2010 on a per decade basis.

For brevity, we report only the second-stage IV estimates and the related diagnostic statistics for the validity of instruments in Columns 1 and 3 of Table 12. Similarly, we also use the bilateral migrant flow data constructed by Abel and Sander (2014) (in Columns 2 and 4) to replace the stock data and employ the same instrumental specifications. This rolling-window specification approach shows that the link between immigration and M&As is robust.

[Please Insert Table 12 Here.]

5.3. Replacing missing observations

Our main sample consists of the country-pairs with at least one bilateral deal per year for each pair covered in the SDC database. As an alternative approach, we replace the missing country-pair observations with 0 to generate a more balanced panel dataset. The enlarged sample consists of 37,723 country-pair year observations over the sample period 1995-2020. Since the dependent variables have non-negative values, we apply a Tobit or a Tobit two-step

instrumental estimator with acquirer- and target-country fixed-effects and year fixed-effects. Consistent with the main results reported in Table 3, *LN Stock1990* is associated with significantly higher M&A activities (see Table 13). For comparison, we report in Column 3 the estimates from a two-stage linear probability model, with 1 indicating at least one bilateral deal happens per year for each country-pair and using the same set of instrumental variables for *LN Stock1990.* The finding that cross-border acquisitions increase with inbound migrant stock from the acquirer to target countries is robust to the sample selection bias.

[Please Insert Table 13 Here.]

5.4. Deal-level analysis

To investigate the impact of inbound migration on the value creation of cross-border mergers using the event study approach, we select samples for which both acquirers and targets are publicly listed. Unfortunately, there is a very limited number of cross-border deals that satisfy this condition. Of 85,492 deals from 1995 to 2020, we can identify only 2,324 public acquirers and 2,115 public targets. Within this subset, there are 928 deals for which both the acquirer and the target have non-missing deal-level control variables and 846 deals for which we have both the deal-level and the country-level relevant financial and economic information.

We collect daily stock prices for all public non-U.S. targets and acquirers from the Datastream and all U.S. firms from the CRSP Daily database. All international stock returns are converted to returns denominated in U.S. dollars[33]. We regress the value-weighted three-day CAR (-1, +1) and five-day CAR (-2, +2) on the raw inbound migrant *Stock1990* (in ten

[33] Appendix Table A5 reports the CARs for targets, acquirers, and combined acquirer and target pairs, where the CARs are adjusted relative to a firm's local stock market benchmark returns. The average CAR(-1,+1) is 18.8% for targets and 0.5 % for acquirers, which is consistent with the literature that the market value created around the deal announcement date is mostly captured by target shareholders even for cross-border deals.

thousands)[34] while controlling for target and acquirer characteristics, deal characteristics, country characteristics, year and industry (based on two-digit SIC industry classification) fixed-effects, and target and acquiring country-pair fixed-effect. Table 14 reports that the inbound migrant stock is associated with significantly higher CARs for the overall deal, including both acquirers and targets. Over the three-day announcement window CAR (-1, +1), a one-standard-deviation increase in migrant stock (which is equivalent to 256,102 immigrants within a country-pair in 1990) is associated with a 0.77 percentage point higher value-weighted CARs (Column 3 of Table A5 in the Appendix). The results are significant for both the OLS and the 2SLS estimations.

[Please Insert Table 14 Here.]

6. Conclusions

We have conducted a comprehensive study of the impact of international migration on cross-border M&As based on a large, cross-country sample. We find that a higher inbound migrant stock can lead to a significantly higher frequency, dollar value, and synergy gains after controlling for the differences between acquiring and target countries in economic and financial development, regulatory environments, stock market and currency valuations, and cultural distance. The ordered country-pair analysis provides directional results that mitigate the limitation in the symmetric measure of culture distance, and thus captures the influence beyond cultural considerations. The instruments derived from the interactions of the push and pull factors of migrant flows between acquiring (origin) and target (destination) countries mitigate endogeneity concerns. The results are robust to a variety of subsample tests and alternative regression specifications.

[34] Using *LN Stock1990* in OLS and 2SLS, estimates of the coefficients are economically significant but statistically insignificant. The insignificant results might be due to the log-transformation in the small sample with reduced variations in *LN Stock1990*. For brevity, these results are not reported here.

To summarize, our research shows that bilateral migrant networks can mitigate the deal-impeding effects of cultural differences. Their impacts are more pronounced in industries where the anticipated post-merger integration costs of human capital are likely to be crucial. Therefore, international migration helps firms to extend beyond national borders. This study contributes to our understanding of the determinants in cross-border mergers and acquisitions and shows the positive impact of international migration on corporate financial decision-making.

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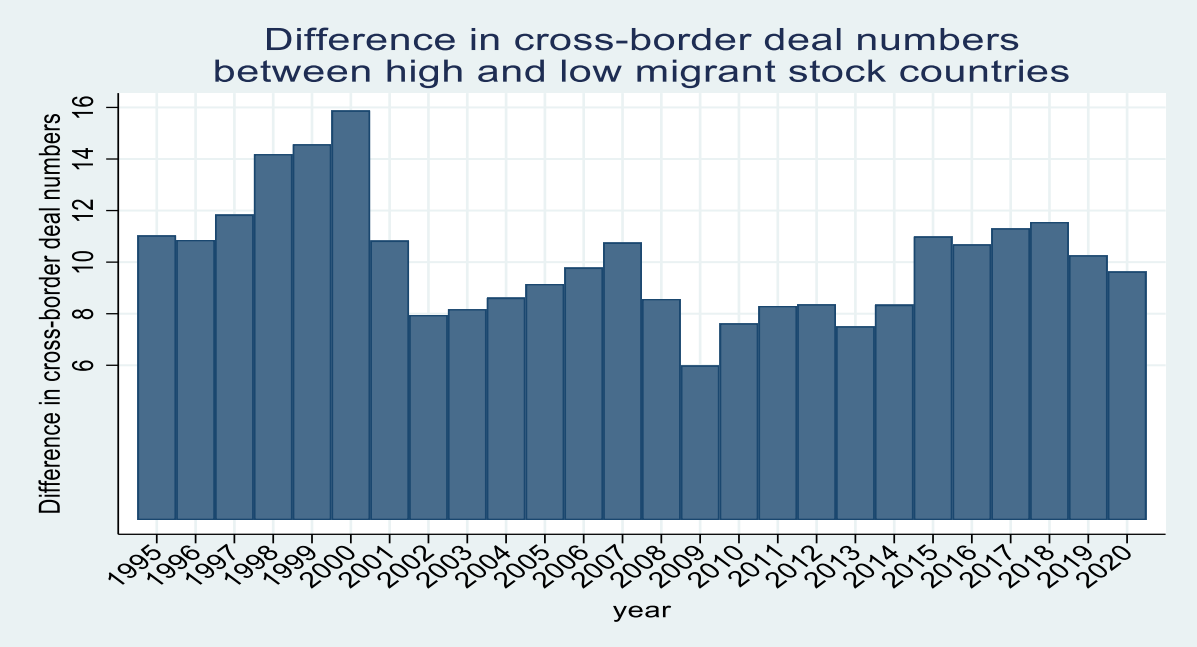
Figure 1 Difference in average cross-border deal numbers and dollar value between high and low migrant stock countries 1995-2020

This figure presents the average difference in total cross-border deal numbers and total value (in millions of US$) between the high and low inbound migrant stock groups by year, respectively. The high (low) inbound migrant stock country group contains the country-pairs whose migrant stock from the acquirer to the target country is in the top (bottom) tertile of the annual migrant stock in 1990. The migration stock data are from the Global Bilateral Migration Database of the World Bank. The sample covers 52 countries for the period 1995-2020.

Panel A Difference in cross-border deal numbers



Panel B Difference in cross-border value

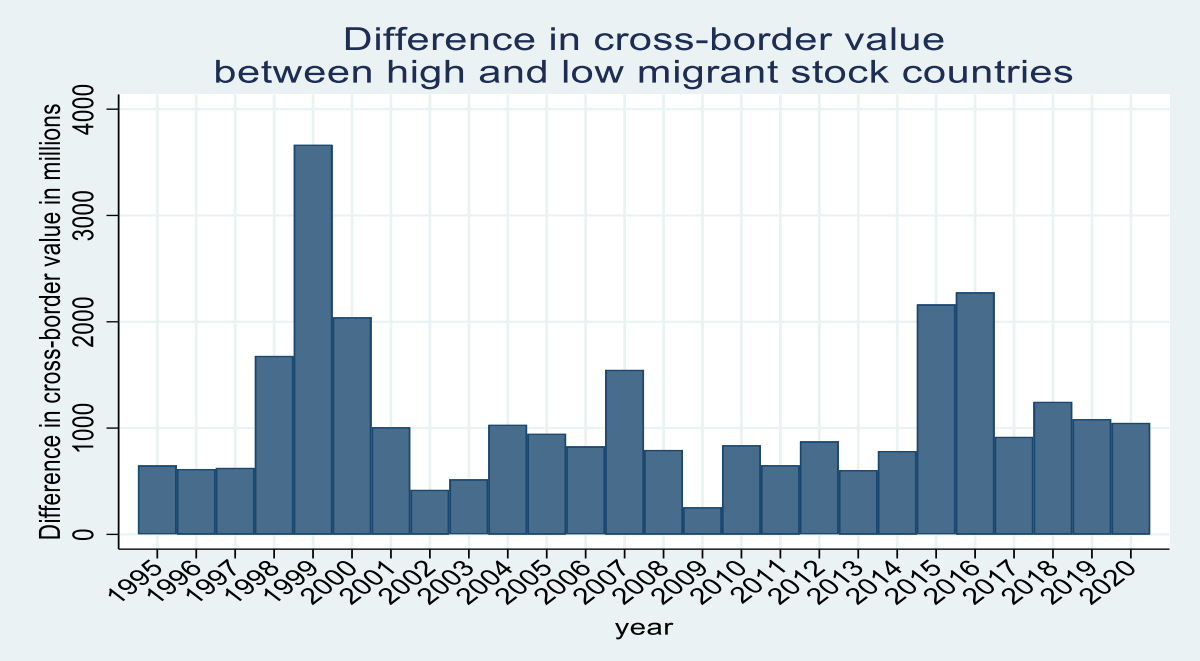


Table 1 Number of deals by target and acquiring country-pair, 1995-2020

The sample is from the Security Data Corporation's (SDC) Platinum database and includes the deals announced and completed between 1995 and 2020. We exclude LBOs, spinoffs, splits and equity carve-outs, recapitalizations, self-tender offers, exchange offers, repurchases, partial equity stake purchases, acquisitions of remaining interest, and privatizations, as well as deals in which the target or the acquirer is recorded as a government agency. Firms in financial or utilities industries, or deals of country location recorded as missing or unknown are also excluded. The target countries are listed in rows and acquiring countries are listed in columns.

Target nation	Code	ARG	AUS	AUT	BEL	BGR	BRA	CAN	CHE	CHL	CHN	COL	CZE	DEU	DNK	EGY	ESP	FIN	FRA	GBR	GRC	HKG	HRV	HUN	IDN	IND	IRL	ISL	ISR	ITA	JOR	JPN	KOR	LTU	LUX	MEX	MYS	NLD	NOR	NZL	PER	PHL	POL	PRT	ROM	RUS	SGP	SWE	THA	TUR	UKR	USA	ZAF	Total
ARGENTINA	ARG	488	17	4	2	0	72	76	10	26	6	7	0	17	5	0	74	0	48	39	2	2	0	0	0	5	1	0	0	17	0	9	1	0	2	22	0	22	2	2	4	0	0	1	0	1	0	15	1	0	0	256	2	1,258
AUSTRALIA	AUS	1	10,506	10	18	0	4	234	74	1	61	0	1	101	17	0	18	19	90	550	0	75	0	0	9	50	38	1	3	23	0	112	11	0	8	2	37	66	21	234	0	11	0	0	1	1	98	54	5	2	0	1,142	66	13,775
AUSTRIA	AUT	0	8	671	20	0	1	20	72	0	8	0	6	339	15	0	7	18	39	46	4	3	1	5	0	2	7	0	5	21	0	10	0	0	8	1	0	31	7	1	0	0	3	2	2	7	5	29	1	3	0	123	4	1,555
BELGIUM	BEL	0	22	21	1,135	1	4	29	41	1	5	0	2	132	23	0	21	15	359	166	4	1	0	0	0	13	30	3	6	30	0	21	2	0	26	2	1	288	8	1	0	0	4	2	0	4	8	67	1	3	0	283	3	2,788
BRAZIL	BGR	0	2	24	9	127	0	1	5	0	2	0	6	20	2	0	3	2	11	13	14	0	0	3	0	2	2	2	1	8	0	1	2	0	5	0	0	13	6	0	0	0	4	0	2	7	0	8	0	2	1	24	0	334
BULGARIA	BRA	30	42	9	16	0	2,850	90	51	40	10	8	0	92	21	0	107	13	199	119	0	11	0	1	0	15	17	1	10	67	0	51	6	0	13	39	0	53	22	4	1	0	0	29	0	7	10	27	1	0	0	597	7	4,686
CANADA	CAN	2	153	13	20	0	8	12,719	76	4	47	5	0	89	25	2	23	23	172	350	5	29	0	0	1	33	42	3	17	31	0	59	17	1	11	13	3	74	26	13	5	2	2	1	0	7	13	62	4	3	0	4,069	17	18,294
CHILE	CHE	0	18	78	48	0	2	42	1,952	0	13	0	2	481	33	0	15	25	193	145	0	9	3	1	0	15	12	0	10	59	0	43	3	0	9	0	3	62	13	0	0	1	3	0	0	12	14	72	5	2	1	400	3	3,802
CHINA	CHL	10	34	0	6	0	13	72	7	381	1	9	0	12	3	0	45	3	22	25	0	0	0	1	0	5	4	0	0	3	0	11	0	0	1	19	0	13	10	2	16	0	1	2	0	0	1	9	0	0	0	112	1	854
COLOMBIA	CHN	1	45	9	17	0	1	56	22	0	9,850	0	0	60	9	0	16	13	90	92	1	529	0	0	3	14	14	2	4	19	2	132	62	0	2	2	27	34	4	5	0	6	1	1	0	1	160	24	11	1	0	477	3	11,822
CROATIA	COL	11	7	0	1	0	17	72	15	22	4	180	0	5	2	0	43	1	24	19	0	0	0	0	0	2	6	0	0	7	0	2	0	0	3	31	0	12	0	1	14	0	0	0	0	0	0	5	0	0	0	90	1	597
CZECH REPUBLIC	CZE	0	2	48	16	1	2	7	29	0	3	0	679	120	8	0	12	14	48	63	1	1	2	8	0	10	4	2	9	15	0	13	4	0	4	0	0	39	8	0	0	0	24	3	1	15	1	39	1	0	3	115	0	1,374
DENMARK	DEU	1	60	378	164	4	2	135	579	2	122	0	25	11,002	165	3	106	140	623	782	15	39	2	7	2	72	56	4	34	197	1	140	25	4	77	11	8	509	68	8	0	1	31	14	0	24	28	262	4	14	1	1,833	24	17,808
EGYPT	DNK	0	10	16	24	1	0	19	49	1	8	0	1	140	1,513	0	11	58	71	130	1	1	1	0	0	5	15	11	7	25	0	15	2	0	9	1	2	92	160	2	0	0	3	0	0	2	10	345	1	0	1	263	1	3,027
FINLAND	EGY	0	2	1	1	0	0	6	6	0	2	0	0	5	0	101	2	0	10	23	1	1	0	0	0	6	1	0	0	3	3	1	0	0	0	1	0	9	0	0	0	0	0	1	0	1	1	1	1	1	0	27	1	219
FRANCE	ESP	10	28	19	73	0	8	46	72	8	27	2	4	232	46	2	5,176	19	452	325	14	4	1	0	0	24	25	2	14	154	0	45	1	2	16	30	1	161	16	3	2	2	12	82	1	7	6	78	1	6	0	442	7	7,708
GERMANY	FIN	0	7	11	18	0	0	28	36	0	7	0	3	76	71	0	17	2,145	39	68	1	5	0	1	1	9	10	3	2	11	0	14	0	1	13	0	0	50	85	0	0	0	0	1	0	5	3	407	0	0	0	167	1	3,316
GREECE	FRA	0	34	40	335	2	11	145	195	2	64	2	10	466	55	0	173	39	11,155	648	8	18	1	3	1	34	48	12	22	220	0	89	11	0	67	2	1	267	28	5	0	0	13	15	3	7	14	177	6	2	1	1,187	8	15,646
HONG KONG	GBR	1	274	61	134	0	11	433	178	0	63	1	13	577	135	2	103	86	657	24,049	14	68	2	3	1	161	589	23	42	163	1	167	15	2	37	2	22	369	119	28	1	4	11	14	3	14	63	329	14	4	0	4,544	93	33,700
HUNGARY	GRC	0	2	3	4	2	0	3	5	0	3	0	0	10	3	0	2	0	12	20	513	1	0	0	0	2	0	0	4	9	1	1	1	0	2	0	0	13	2	0	0	0	0	0	0	5	0	7	0	0	0	20	1	651
ICELAND	HKG	0	49	0	6	0	2	24	10	0	160	0	0	17	5	0	2	3	25	66	0	778	0	0	3	5	4	0	7	1	0	46	13	0	3	0	61	10	1	0	0	3	0	0	0	4	82	7	6	1	0	218	2	1,624
INDIA	HRV	0	2	17	3	0	1	0	6	0	0	0	3	13	2	0	2	3	12	11	1	0	124	2	0	3	0	0	0	6	0	1	0	0	0	0	0	13	0	0	0	0	1	5	0	1	4	1	9	0	0	12	0	258
INDONESIA	HUN	0	1	40	10	2	1	3	12	0	3	0	8	57	4	0	4	9	27	33	4	0	3	366	0	3	5	2	3	11	0	2	0	0	3	0	0	23	5	0	0	0	11	0	3	1	3	7	1	2	2	71	2	747
IRELAND	IDN	0	42	0	1	0	0	15	9	0	11	0	0	6	0	0	3	1	8	27	1	19	0	0	479	11	0	0	0	0	0	68	27	0	1	2	52	17	1	0	0	0	0	0	1	0	106	3	16	1	0	32	3	963
ISRAEL	IND	0	28	8	16	1	4	23	30	0	13	1	0	75	7	0	15	7	100	110	0	13	0	0	4	3,248	7	3	5	21	0	90	12	0	6	2	18	43	8	1	0	4	0	0	0	5	82	18	7	2	0	520	5	4,562
ITALY	IRL	0	13	4	11	0	0	38	13	0	3	0	0	26	10	0	9	5	42	425	2	5	0	0	0	9	700	3	2	6	0	8	1	0	5	0	1	19	9	5	0	0	3	2	0	4	2	18	2	0	0	367	3	1,775
JAPAN	ISL	0	1	1	0	0	0	3	0	0	1	0	0	0	4	0	1	1	1	4	0	0	0	0	0	0	0	44	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	3	0	0	0	16	0	85
JORDAN	ISR	0	13	4	4	0	1	32	10	0	12	0	1	25	2	0	3	0	25	40	0	2	0	0	0	0	7	8	0	333	5	1	8	3	0	0	1	0	6	0	0	1	0	0	0	0	1	4	5	0	2	0	392	2	953
KOREA	ITA	2	15	44	63	2	7	30	110	0	46	0	1	280	26	1	113	33	312	248	11	13	0	5	0	38	25	1	17	4,196	0	58	6	1	23	1	4	121	13	1	0	0	4	8	1	15	6	64	1	11	1	547	7	6,532
LITHUANIA	JOR	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1	1	0	2	2	0	1	0	0	0	2	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	2	0	42
LUXEMBOURG	JPN	0	5	2	4	0	2	9	12	0	43	0	0	29	3	0	4	2	24	32	1	27	1	0	2	9	5	0	6	6	0	16,013	35	0	5	0	5	14	1	0	0	2	0	0	0	1	17	6	5	2	0	228	0	16,562
MALAYSIA	KOR	0	13	3	7	0	1	13	14	0	15	0	0	31	3	0	3	2	33	26	0	18	0	0	0	6	3	0	6	4	0	78	3,185	0	1	1	2	19	2	0	0	0	0	0	0	2	19	8	0	0	0	161	2	3,681
MEXICO	LTU	0	1	0	1	1	0	3	1	0	0	0	1	7	20	0	1	26	8	10	1	0	0	0	0	0	2	0	1	0	0	0	0	140	0	0	0	5	9	0	0	0	11	0	0	6	1	25	0	0	0	13	0	294
NETHERLANDS	LUX	0	0	1	25	0	0	3	8	0	5	0	0	20	2	0	1	1	42	17	2	0	0	0	0	2	1	0	0	4	0	5	3	0	35	2	0	7	0	0	0	0	2	0	0	1	0	6	0	0	0	30	2	227
NEW ZEALAND	MEX	6	13	4	4	0	18	235	10	7	3	10	0	35	7	0	68	3	31	40	2	7	0	0	0	6	7	0	3	14	0	11	1	0	7	490	1	19	2	5	2	3	0	1	1	0	1	14	1	0	0	415	2	1,509
NORWAY	MYS	0	30	1	1	0	0	6	7	0	14	0	0	17	1	0	5	3	11	29	0	36	0	0	5	16	5	0	1	1	0	68	9	0	1	1	2,604	12	1	0	0	7	0	0	0	1	194	5	4	0	0	68	1	3,165
PERU	NLD	0	27	31	240	0	5	77	121	2	29	2	1	358	55	1	47	45	240	480	4	15	0	1	0	24	66	7	10	51	0	57	2	1	35	2	6	3,222	54	5	0	1	8	2	1	9	17	134	4	3	0	747	13	6,262
PHILIPPINES	NOR	0	10	10	18	0	4	29	29	1	4	0	1	68	147	0	13	77	37	155	3	1	0	0	1	2	10	4	3	10	0	10	1	2	7	1	4	50	1,768	0	0	1	1	1	0	2	9	424	1	1	0	189	2	3,111
POLAND	NZL	0	456	1	2	0	0	46	17	0	11	0	0	15	5	0	1	3	18	79	0	7	0	0	0	3	4	0	2	4	0	19	2	0	3	0	9	11	4	1,348	0	1	0	0	0	1	30	10	3	0	0	196	5	2,316
PORTUGAL	PER	4	15	0	0	0	11	106	6	20	4	6	0	5	0	0	33	0	8	9	0	0	0	1	0	1	2	0	2	1	0	1	0	0	0	16	2	4	0	0	243	0	0	0	0	1	1	0	0	0	0	64	2	568
ROMANIA	PHL	0	24	0	2	0	0	7	1	0	2	0	0	4	1	0	2	0	7	9	0	14	0	0	2	6	2	0	0	0	0	38	6	0	0	3	9	1	0	0	0	329	0	0	0	0	24	2	5	0	0	44	0	544
RUSSIAN FEDERA	POL	0	6	26	20	0	0	20	25	0	2	0	15	103	29	0	31	26	95	77	4	1	3	7	0	7	11	0	8	38	0	4	5	7	10	0	0	66	20	0	0	0	1,300	6	0	4	1	48	1	4	1	121	3	2,155
SINGAPORE	PRT	0	4	9	13	0	9	10	13	1	3	1	0	22	5	0	158	0	62	61	0	1	0	2	0	3	3	0	0	15	0	5	2	1	2	0	0	24	2	0	1	0	2	520	0	1	2	13	2	0	0	59	0	1,031
SOUTH AFRICA	ROM	1	1	36	11	1	1	5	13	0	1	1	6	47	4	0	8	4	36	35	12	0	3	12	0	9	4	2	6	17	0	2	1	0	5	1	0	27	7	0	0	0	12	4	244	4	2	12	0	9	0	42	1	649
SPAIN	RUS	0	5	16	9	3	0	20	25	0	9	0	5	71	6	0	8	41	45	63	4	3	1	4	1	4	6	1	1	17	0	15	9	4	9	0	0	50	13	1	0	0	13	0	1	4,800	2	35	1	4	17	100	6	5,448
SWEDEN	SGP	0	65	2	0	0	0	15	12	0	37	0	0	24	7	0	4	3	36	77	0	68	0	1	16	46	2	0	2	12	0	111	17	0	3	1	144	18	15	4	0	6	1	0	0	1	1,252	10	14	0	0	207	3	2,236
SWITZERLAND	SWE	0	17	22	27	0	1	59	56	0	12	0	4	165	258	0	14	305	115	252	2	6	0	1	0	16	17	7	4	28	0	29	2	4	9	0	1	108	301	0	0	1	5	3	0	1	8	4,272	0	4	0	420	3	6,559
THAILAND	THA	0	13	1	2	0	1	3	2	0	5	0	0	8	1	0	0	3	7	26	0	15	0	0	4	12	0	0	2	3	0	89	7	0	0	0	32	4	1	2	0	1	0	0	0	0	60	5	480	0	0	44	2	835
TURKEY	TUR	0	5	26	11	2	2	18	27	0	1	0	3	59	4	3	21	5	48	52	12	1	2	2	0	7	4	1	3	24	2	27	5	0	4	2	2	35	2	0	0	1	8	3	0	3	5	17	0	565	0	76	1	1,101
UKRAINE	UKR	0	6	9	6	2	0	5	14	0	2	0	2	8	4	0	0	3	15	14	0	2	0	2	0	0	4	0	2	2	0	3	0	4	2	2	0	9	4	0	0	0	5	0	1	49	0	4	0	2	349	17	0	553
UNITED KINGDOM	USA	19	590	75	158	1	56	4,343	495	15	233	20	10	965	155	2	189	179	910	3,172	13	158	1	8	5	430	496	14	281	232	2	766	155	0	75	124	21	470	109	60	0	18	11	8	2	41	163	462	27	11	5	111,143	58	126,956
UNITED STATES	ZAF	1	71	4	7	0	2	49	28	0	5	0	0	33	8	0	9	10	45	184	2	9	0	0	0	19	11	1	3	15	0	15	2	0	1	0	3	24	2	2	0	1	0	0	0	2	6	26	0	1	0	161	1,399	2,161
	Total	590	12,814	1,814	2,744	153	3,141	19,498	4,611	535	10,995	256	813	16,572	2,938	118	6,752	3,436	16,748	33,539	679	2,017	151	447	540	4,433	2,333	161	903	5,829	38	18,584	3,674	174	569	833	3,086	6,628	2,963	1,744	290	407	1,514	726	269	5,092	2,535	7,691	638	669	383	132,893	1,772	348,678

Table 2 Summary statistics

M&A data are collected from 1995 to 2020. *Crossborder_deal* is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. *Crossborder value* is the total aggregate value of cross-border transactions from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. Stock1990 is the total number of migrants who moved from the acquiring country i to the target country j up to the year 1990. All the other explanatory variables are based on the country-pair difference between the acquirer and the target countries except *Total import and export*, *Geographic distance* and the dummy variables. *Population growth* is the difference in population growth rates between country i and country j from World Bank Development Indicators. *Market-to-book* is the difference in market-to-book ratios of the aggregate stock markets between the acquiring country i to the target country j over the previous 12 months. *Currency return* is the difference in real currency returns between the acquiring country i and the target country j over the previous 12 months. *Total import and export* is the natural logarithm of total bilateral import and export between a country-pair from the UN commodity trade database. *GDP per capita* is the difference between GDP per capita of country i and country j from the World Bank Development Indicators. *Real GDP growth* is the difference in the real growth rate of GDP per capita of country i and country j from World Bank Development Indicators adjusted by an inflation deflector of 2000 US dollars. *Private credit* is the difference of domestic private credit to the real sector by deposit money banks to GDP between a country-pair. *Anti-self- dealing* is the difference between the acquiring country i and the target j country of domicile in the anti-self -dealing Index of Djankov, La Porta, Lopez-de-Silanes, and Shleifer (DLLS, 2008). *Same language* is a dummy variable that equals 1 if the target and acquirers' primary language (English, Spanish, German, Chinese, French, Portuguese, Arabic, Russian, or Other) are the same (CIA World Factbook 2008). *Same religion* is a dummy variable equaling 1 if the target and acquirers' primary religion (Protestant, Orthodox, Catholic, Muslim, Judaism, Buddhist, Hindu, Ethnoreligion, or Chinese universe) are the same (CIA World Factbook 2008). *Geographic distance* is the natural logarithm of geographic distance between the capitals of country i and country j from CEPII. *Contiguity* equals 1 if a country-pair shares the same border. Colony equals 1 if a country-pair has ever been in a colonial relationship. *Same country* equals 1 if a country-pair was or is the same country (CEPII).

Key variables	N	Mean	SD	Min	p25	p50	p75	Max
Crossborder_deal	14,310	0.059	0.086	0.000	0.008	0.026	0.071	0.813
Crossborder_value	14,310	0.096	0.218	0	0	0.001	0.050	1
Stock1990	14,310	60,119	256,102	0	824	4,638	24,370	4,662,233
Population Growth	14,310	0.000	0.009	-0.027	-0.006	0.000	0.005	0.029
Market-to-book	14,310	0.035	0.920	-2.74	-0.51	0.03	0.57	2.8
Currency return	14,310	0.086	0.841	-3.375	-0.315	0.000	0.458	4.469
Total import and export	14,310	22.69	1.58	16.41	21.64	22.74	23.77	25.62
GDP per capita	14,310	0.319	1.296	-3.673	-0.264	0.170	1.096	3.687
Real GDP growth	14,310	-0.002	0.034	-0.116	-0.020	-0.002	0.015	0.127
Private credit	14,310	0.001	0.006	-0.021	-0.003	0.001	0.006	0.021
Anti-self-dealing	14,310	-0.004	0.313	-0.741	-0.199	-0.006	0.198	0.715
Same_language	14,310	0.098	0.298	0	0	0	0	1
Same_religion	14,310	0.333	0.471	0	0	0	1	1
Geographic distance	14,310	8.092	1.149	5.701	7.117	8.437	9.097	9.829
Contiguity	14,310	0.110	0.312	0	0	0	0	1
Colony	14,310	0.075	0.263	0	0	0	0	1
Same country	14,310	0.020	0.140	0	0	0	0	1

Table 3 Migrant stock and cross-border mergers and acquisitions: A panel analysis

This table reports the panel analysis of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *Ln Stock1990* is the log-transformed total number of migrants who moved from the acquiring country i to the target country j up to the year 1990. All the other explanatory variables are based on the country-pair difference between the acquirer and the target countries except *Total import and export*, *Geographic distance* and the dummy variables. *Population growth* is the difference in population growth rates between country i and country j from World Bank Development Indicators. *Market-to-book* is the difference in market-to-book ratios of the aggregate stock markets between the acquiring country i to the target country j over the previous 12 months. *Currency return* is the difference in real currency returns between the acquiring country i and the target country j over the previous 12 months. *Total import and export* is the natural logarithm of total bilateral import and export between a country-pair from UN commodity trade database. *GDP per capita* is the difference between GDP per capita of country i and country j from the World Bank Development Indicators. *Real GDP growth* is the difference in the real growth rate of GDP per capita of country i and country j from the World Bank Development Indicators adjusted by inflation deflector of 2000 US dollars. *Private credit* is the difference of domestic private credit to the real sector by deposit money banks to GDP between a country-pair. *Anti-self-dealing* is the difference between the acquiring country i and the target j country of domicile in the anti-self-dealing Index of Djankov, La Porta, Lopez-de-Silanes, and Shleifer (DLLS, 2008). *Same language* is a dummy variable equal to 1 if the target and acquirers' primary language (English, Spanish, German, Chinese, French, Portuguese, Arabic, Russian, or Other) are the same (CIA World Factbook 2008). *Same religion* is a dummy variable which equals 1 if target and acquirers' primary religion (Protestant, Orthodox, Catholic, Muslim, Judaism, Buddhist, Hindu, Ethnoreligion, or Chinese universe) are the same (CIA World Factbook 2008). *Geographic distance* is the natural logarithm of geographic distance between capitals of country i and country j from CEPII. *Contiguity* equals 1 if a country-pair shares the same border. Colony equals 1 if a country-pair was ever in a colonial relationship. *Same country* equals 1 if a country-pair was or is the same country (CEPII). The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 2. The first stage regressions and weak instrument tests are presented in Table A2 in the Appendix. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Ordinary Least Squares (OLS)			Two-Stage Least Squares (2SLS)		
VARIABLES	1995-2020	1995-2010	2005-2020	1995-2020	1995-2010	2005-2020
LN Stock1990	0.005***	0.006***	0.005***	0.003***	0.005***	0.003***
	(2.87)	(2.72)	(2.64)	(4.37)	(4.33)	(3.14)
Population Growth	0.033	-0.002	-0.062	0.034	-0.002	-0.061
	(0.38)	(-0.02)	(-0.61)	(0.43)	(-0.02)	(-0.63)
Market-to-book	0.005***	0.006***	0.003***	0.005***	0.006***	0.003**
	(5.69)	(4.83)	(2.65)	(5.98)	(5.05)	(2.54)
Currency return	0.003***	0.003***	0.002***	0.003***	0.003***	0.002**
	(4.62)	(3.68)	(2.78)	(4.66)	(3.72)	(2.43)
Total import and export	0.010***	0.015***	0.011***	0.010***	0.015***	0.011***

	(3.88)	(4.95)	(3.81)	(9.94)	(9.51)	(9.38)
GDP per capita	0.052***	0.050***	0.042***	0.052***	0.050***	0.042***
	(8.38)	(5.12)	(5.84)	(15.72)	(7.30)	(8.53)
Real GDP growth	0.065***	0.095***	-0.027	0.065**	0.095**	-0.027
	(2.95)	(2.82)	(-1.31)	(2.57)	(2.56)	(-1.14)
Private credit	0.454*	0.565*	-0.073	0.462**	0.570**	-0.067
	(1.89)	(1.75)	(-0.25)	(2.46)	(2.11)	(-0.28)
Anti-self-dealing	-0.188	-0.329	-0.110	-0.179**	-0.327**	-0.099
	(-1.24)	(-1.30)	(-0.83)	(-2.18)	(-2.28)	(-1.25)
Same language	0.020***	0.015*	0.021***	0.021***	0.015***	0.022***
	(2.64)	(1.76)	(2.93)	(8.27)	(4.37)	(7.59)
Same religion	0.001	-0.000	0.001	0.001	-0.000	0.001
	(0.27)	(-0.14)	(0.39)	(0.80)	(-0.29)	(1.02)
Geographic distance	-0.008***	-0.005*	-0.006**	-0.008***	-0.005***	-0.007***
	(-2.81)	(-1.74)	(-2.15)	(-7.74)	(-3.35)	(-5.96)
Contiguity	0.022***	0.022***	0.017**	0.023***	0.023***	0.019***
	(3.01)	(2.95)	(2.55)	(9.61)	(6.76)	(6.95)
Colony	-0.003	-0.006	-0.002	-0.002	-0.005*	-0.001
	(-0.57)	(-0.98)	(-0.40)	(-0.78)	(-1.78)	(-0.26)
Same country	0.000	0.009	-0.002	0.000	0.009	-0.002
	(0.03)	(0.68)	(-0.20)	(0.09)	(1.19)	(-0.31)
Stock-Wright Weak instrument test				69.57***	37.84***	38.85***
Kleibergen-Paap Weak identification test				37.13***	19.96***	25.83***
Stock-Yogo 5% critical values				18.37	18.37	18.37
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,310	7,747	10,093	14,310	7,747	10,093
R-squared	0.58	0.59	0.59			
Centered R-squared				0.58	0.59	0.59

Table 4 Migrant stock and cross-border mergers and acquisitions: cross-border value

This table reports the panel analysis of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total value of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the total value of domestic deals in target country j and the total value of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *Ln Stock1990* is the log-transformed total number of migrants who moved from the acquiring country i to the target country j to the year 1990. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 2. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Ordinary Least Squares (OLS)			Two Stage Least Squares (2SLS)		
VARIABLES	1995-2020	1995-2010	2005-2020	1995-2020	1995-2010	2005-2020
LN Stock1990	0.010***	0.005*	0.011***	0.008***	0.006*	0.009***
	(2.70)	(1.81)	(2.87)	(2.92)	(1.72)	(2.96)
Population Growth	-0.047	0.282	-0.334	-0.046	0.282	-0.334
	(-0.15)	(0.65)	(-0.80)	(-0.15)	(0.64)	(-0.87)
Market-to-book	0.006**	0.003	0.006	0.006**	0.003	0.006
	(1.96)	(0.74)	(1.43)	(2.16)	(0.81)	(1.48)
Currency return	0.001	0.000	0.004	0.001	0.000	0.004
	(0.62)	(0.01)	(1.59)	(0.61)	(0.01)	(1.53)
Total import and export	0.005	0.008	0.005	0.005	0.008*	0.005
	(1.02)	(1.63)	(0.86)	(1.49)	(1.80)	(1.17)
GDP per capita	0.050***	0.047*	0.029*	0.050***	0.047**	0.029*
	(3.57)	(1.91)	(1.70)	(4.95)	(2.33)	(1.78)
Real GDP growth	0.081	0.010	0.003	0.081	0.010	0.003
	(1.10)	(0.10)	(0.03)	(1.04)	(0.09)	(0.03)
Private credit	0.661	0.007	1.075	0.667	0.003	1.077
	(0.97)	(0.01)	(1.09)	(1.02)	(0.00)	(1.15)
Anti-self-dealing	-0.395	-0.355	-0.554	-0.388	-0.357	-0.549
	(-0.81)	(-0.61)	(-0.97)	(-0.65)	(-0.49)	(-0.74)
Same language	0.028**	0.021	0.024	0.028***	0.021**	0.025***
	(2.01)	(1.63)	(1.61)	(3.62)	(2.05)	(2.70)
Same religion	0.016***	0.019***	0.015**	0.016***	0.019***	0.015***

	(2.65)	(2.89)	(2.28)	(3.97)	(3.40)	(3.11)
Geographic distance	-0.006	-0.005	-0.002	-0.006	-0.005	-0.002
	(-1.01)	(-0.94)	(-0.27)	(-1.59)	(-1.05)	(-0.42)
Contiguity	0.020*	0.028**	0.018	0.021***	0.028***	0.019**
	(1.68)	(2.25)	(1.47)	(2.62)	(2.59)	(1.98)
Colony	-0.018	-0.017	-0.021*	-0.017**	-0.017*	-0.020**
	(-1.53)	(-1.37)	(-1.71)	(-2.29)	(-1.74)	(-2.30)
Same country	-0.027	-0.001	-0.030	-0.026	-0.001	-0.030
	(-1.03)	(-0.03)	(-1.35)	(-1.50)	(-0.05)	(-1.50)
Stock-Wright Weak instrument test				37.68***	18.21***	31.16***
Kleibergen-Paap Weak identification test				37.13***	19.96***	25.83***
Stock-Yogo 5% critical values				18.37	18.37	18.37
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,310	7,747	10,093	14,310	7,747	10,093
R-squared	0.18	0.20	0.19			
Centered R-squared				0.18	0.20	0.19

Table 5 Migrant stock and cross-border mergers and acquisitions: High-dimensional fixed effects

This table reports the panel analysis of cross-border mergers and acquisitions for country-pairs from 1995 to 2020 with high-dimensional fixed effects. *Crossborder_deal* is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. *Crossborder_value* is the total aggregate value of cross-border transactions from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. International migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LnStock1990* is the natural logarithms of the raw number of migrants from the acquiring country i to the target country j up to the year 1990. The full set of controls is included as in Table 3. Robust t-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) *Cross-border Deal*	(2) *Cross-border Value*
LN Stock1990	0.005***	0.009**
	(9.06)	(2.32)
Full set of controls included	Yes	Yes
Target country * Year FE	Yes	Yes
Acquiring country * Year FE	Yes	Yes
Observations	14,182	14,182
Adjusted R-squared	0.70	0.27

Table 6 Exogenous immigration inflow and cross-border mergers and acquisitions: Three European Countries

This table reports the effects of the exogenous changes in immigration inflow on cross-border mergers and acquisitions in three European countries, Spain, Italy, and Ireland following the 1973 oil crisis. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. The bilateral immigration net inflow data is constructed by Abel and Sander (2014) using the migrant stock statistics published by the U.N. from 1970 to 2010. *Ln Inflow1980* is the log-transformed total number of migrants who move from the acquiring country *i* to the target country *j* (namely Spain, Italy, and Ireland) between 1970 and 1980. The control variables are defined in Table 3. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
VARIABLES	Ireland	Spain	Italy	Ireland, Spain, and Italy
LnInflow1980	0.027***	0.015***	0.015***	0.008***
	(3.46)	(5.77)	(7.45)	(5.75)
Target country FE	No	No	No	Yes
Acquiring country FE	Yes	Yes	Yes	Yes
Control variables	Included	Included	Included	Included
Observations	138	361	373	872
R-squared	0.89	0.58	0.66	0.64

Table 7 Migrant stock, cultural distance, and cross-border mergers and acquisitions

This table reports the 2SLS estimates of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LN Stock1990* is the log-transformed total number of migrants who move from the acquiring country i to the target country j up to the year 1990. Nine measures of culture are used as the main explanatory variable (Column names from (1) to (9)). Power distance index (PDI), Individualism (IDV) vs. collectivism, Uncertainty avoidance index (UAI), Masculinity (MAS) vs. femininity, Long-term orientation (LTO) vs. short-term orientation, and Indulgence versus restraint (IVR) are the six dimensions of the national culture obtained from Hofstede (1980, 2001). Trust_WVS, Hierarchy_WVS, and Individualism_WVS are constructed from the Longitudinal Multiple-Wave data available at the World Values Survey (WVS). The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 3. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1) Power distance	(2) Individualism	(3) Masculinity	(4) Uncertainty avoidance	(5) Long-term orientation	(6) Indulgence	(7) Trust_WVS	(8) Hierarchy_WVS	(9) Individualism_WVS
LNStock1990	0.0001*	0.0011**	0.0015**	0.0009**	0.0027**	0.0009*	0.0015**	0.0014**	0.0013**
	(1.93)	(2.15)	(2.60)	(2.83)	(2.29)	(1.86)	(2.46)	(2.29)	(2.19)
Cultural distance	-0.0134***	0.0071*	-0.0279***	-0.0118***	-0.0118***	-0.0268***	-0.0279***	-0.0115**	-0.0001
	(-3.28)	(1.73)	(-6.38)	(-3.01)	(-2.75)	(-5.22)	(-6.08)	(-2.37)	(-0.10)
*LNStock1990**Cultural distance	0.0158***	0.0115***	0.0060**	0.0118***	0.0035	0.0177***	0.0140***	0.0118***	0.0026***
	(5.00)	(4.63)	(2.01)	(3.31)	(1.37)	(5.91)	(3.21)	(4.55)	(3.52)
Full set of controls included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,723	13,723	13,723	13,723	14,310	13,934	14,310	12,442	14,310
R-squared	0.57	0.58	0.58	0.57	0.58	0.58	0.58	0.58	0.58

Table 8 Migrant stock and cross-border mergers and acquisitions: Labor-intensity

This table reports the 2SLS estimates of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LN Stock1990* is the log-transformed total number of migrants moving from the acquiring country i to the target country j up to the year 1990. The high capital-to-labor ratio industry is the top quartile of the Fama and French 48 industries each year based on their past three-year industry average of invested capital over the total number of employees while the low capital-to-labor industry is the bottom quartile of the Fama and French 48 industries each year. The high labor-intensive industry is the top quartile of the Fama and French 48 industries each year based on their past three-year industry average of total employee number over sales while the low labor-intensive industry is the bottom quartile of the Fama and French 48 industries each year. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 3. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
M&A Deals	Targets in high capital-to-labor ratio industry	Targets in low capital-to-labor ratio industry	Targets in low labor intensive industry	Targets in high labor intensive industry
LN Stock1990	0.0028	0.0029**	0.0033**	0.0058***
	(1.48)	(2.05)	(2.28)	(3.62)
Full set controls included	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes
Observations	5,599	9,049	9,107	7,592
R-squared	0.62	0.60	0.60	0.58

Table 9 Migrant stock and cross-border mergers and acquisitions: Organization capital

This table reports the 2SLS estimates of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LN Stock1990* is the log-transformed total number of migrants moving from the acquiring country i to the target country j up to the year 1990. The high organization capital industry is in the top quartile of the Fama and French 48 industries each year based on their past three-year industry average of estimated organizational capital scaled by total assets, constructed using selling, general, and administrative (SG&A) expenses and the perpetual inventory method following Eisfeldt and Papanikolaou (2013), while the low organization capital industry is the bottom quartile of the Fama and French 48 industries each year. The high SG&A expense industry is the top quartile of the Fama and French 48 industries each year based on their past three-year industry average of SG&A expense over sales while the low SG&A expense industry is the bottom quartile of the Fama and French 48 industries each year. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 2. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

M&A Deals	(1) acquirers in low organization capital industry	(2) acquirers in high organization capital industry	(3) acquirers in low SG&A expense industry	(4) acquirers in high SG&A expense industry
LN Stock1990	-0.0011	0.0028**	-0.0009	0.0023*
	(-0.43)	(2.08)	(-0.44)	(1.79)
Full set controls included	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes
Observations	4,493	9,986	5,194	9,526
R-squared	0.61	0.61	0.62	0.62

Table 10 Migrant stock and cross-border mergers and acquisitions: Information asymmetry

This table reports the 2SLS estimates of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LN Stock1990* is the log-transformed total number of migrants who moved from the acquiring country i to the target country j up to the year 1990. Different industry sample (Column 3) includes the deals that the target and the acquirer in a deal are not in the same 2-digit Standard Industry Classification (SIC) industry, while Same industry sample (Column 4) includes the deals that the target and the acquirer in a deal are in the same 2-digit SIC industry. The complex or less complex industry (Columns 5 and 6) is defined using industry accounting complexity measures constructed by Francis and Gunn (2015) for the Fama and French 48 industries based on industry-specific accounting guidance in the US The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 3. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) Private targets	(2) Public targets	(3) Different industry	(4) Same industry	(5) Targets in less complex industry	(6) Targets in more complex industry
LN Stock1990	0.0041***	0.0015*	0.0029*	0.0027**	0.0031**	0.0048***
	(3.44)	(1.72)	(1.94)	(2.03)	(2.46)	(4.33)
Full set of controls included	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,479	10,518	9,821	9,832	11,695	9,814
R-squared	0.56	0.58	0.58	0.58	0.57	0.59

Table 11 Migrant stock and cross-border mergers and acquisitions: Alternative samples

This table reports the 2SLS estimates of the cross-border mergers and acquisitions for several alternative country-pair samples: excluding the deals with the US; including deals within or outside the EU; including deals within or outside the OECD countries. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *Ln Stock1990* is the log-transformed total number of migrants who move from the acquiring country i to the target country j to the year 1990. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 2. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) Excluding deals with the US	(2) Within the EU	(3) Outside the EU	(4) Within the OECD	(5) Outside of the OEDC
LN Stock1990	0.003***	0.006***	0.003***	0.003***	0.002**
	(3.37)	(3.71)	(3.42)	(3.34)	(2.71)
Full set of controls included	Yes	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes	Yes
Observations	12,460	3,786	10,524	7,902	6,408
R-squared	0.55	0.62	0.58	0.59	0.58

Table 12 Migrant stock and cross-border mergers and acquisitions: Alternative immigration measures and model specifications

This table reports the OLS and the 2SLS estimates of cross-border mergers and acquisitions for country-pairs using alternative immigration measures from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LN UN Stock* is the log-transformed total number of migrants who moved from the acquiring country i to the target country j up to the year 1980, 1990, 2000, and 2010. *LN ABEL Flow* is the log-transformed total number of migrants who move from the acquiring country i to the target country j during the period from 1970 to 1980, from 1980 to 1990, from 1990 to 2000, and from 2000 to 2010. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are discussed in Section 4.3. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
VARIABLES	OLS		2SLS	
LN UN Stock$_{t-10}$	0.005***		0.004**	
	(2.89)		(2.00)	
LN ABEL Flow$_{t-10}$		0.006**		0.012*
		(2.12)		(1.83)
Stock-Wright Weak instrument test			21.17***	21.17***
Kleibergen-Paap Weak identification test			207.31***	22.42***
Stock-Yogo 5% critical values			18.37	18.37
Hansen J statistic for over-identification (*p*-value)			0.11	0.36
Full set of controls included	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes
Target country FE	Yes	Yes	Yes	Yes
Acquiring country FE	Yes	Yes	Yes	Yes
Observations	14,310	14,310	14,310	14,310
R-squared	0.58	0.57	0.58	0.57

Table 13 Migrant stock and cross-border mergers and acquisitions: Sample selection bias

This table reports the Tobit regressions of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. To address the sample selection bias, all missing cross-border deal and cross-border value observations are replaced with 0. Migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LN Stock1990* is the log-transformed total number of migrants moving from the acquiring country i to the target country j up to the year 1990. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Tobit IV and Linear probability IV approaches are derived in Section 3. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1) Tobit	(2) Tobit IV	(3) Linear probability IV
LN Stock1990	0.004***	0.003*	0.011***
	(4.36)	(1.85)	(2.74)
Full set of controls included	Yes	Yes	Yes
Acquiring country fixed effects	Yes	Yes	Yes
Target country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	37,723	37,723	37,723
Uncensored observations	14,310	14,310	
R-squared			0.3890

Table 14 Combined announcement abnormal returns and migrant stock

The table reports all completed cross-border mergers and acquisitions between 1995 and 2020 as listed by SDC where both acquiring firm and target firm are publicly traded. The target firm is acquired by an acquirer with a transaction value of over 1 million US$. The dependent variable is the three-day cumulative abnormal return CAR (-1, +1) and the five-day cumulative abnormal return CAR (-2, +2) measured using the market model, respectively. *Deal size* is the total value of the consideration paid by the acquirer, excluding fees and expenses. *Stock1990* is the total number of migrants (in ten thousands) who move from the acquiring country i to the target country j up to the year 1990. *Relative size* is the ratio of the transaction value over the target market capitalization of equity at the announcement date. *Acquirer size* is the acquirer's market capitalization of equity at the announcement date. *Percentage of cash* is the percentage of cash over total transaction value paid. *Tender-offer, hostile, A high-tech,* and *T high-tech* are dummy variables that take the value1 if the acquisition is a tender offer, if it is hostile according to SDC, if the acquirer is in a high-technology industry based on its four-digit SIC code, if the target is in a high-technology industry based on its four-digit SIC code following Loughran and Ritter (2004), respectively. *Percentage acquired* is the percentage ownership of the target shares acquired after the deal by the acquirer. *Diversify* is a dummy variable that equals one if the target and the acquirer are not in the same three-digit SIC industry. The full set of controls is included as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 3. *t*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	OLS		2SLS	
VARIABLES	Value-weighted CAR(-1,+1)	Value-weighted CAR(-2,+2)	Value-weighted CAR(-1,+1)	Value-weighted CAR(-2,+2)
Stock1990	0.0006***	0.0007***	0.0003*	0.0004*
	(4.12)	(4.06)	(1.81)	(1.94)
Deal size	0.0087***	0.0105***	0.0087***	0.0105***
	(3.61)	(3.94)	(3.91)	(4.25)
Relative size	0.0000	0.0000	0.0000	0.0000
	(0.20)	(0.02)	(0.21)	(0.02)
Acquirer size	-0.0093***	-0.0120***	-0.0093***	-0.0120***
	(-4.40)	(-5.14)	(-4.75)	(-5.55)
Percentage of cash	0.0004***	0.0005***	0.0004***	0.0005***
	(4.83)	(5.15)	(5.17)	(5.53)
Tender offer	-0.0056	-0.0118	-0.0057	-0.0119
	(-0.78)	(-1.49)	(-0.86)	(-1.62)
Hostile	0.0214	0.0285	0.0220	0.0290
	(1.05)	(1.26)	(1.16)	(1.38)
A high-tech	-0.0019	0.0039	-0.0017	0.0040
	(-0.18)	(0.35)	(-0.18)	(0.39)
T high-tech	-0.0224**	-0.0245**	-0.0230**	-0.0251**
	(-2.30)	(-2.27)	(-2.54)	(-2.50)
Percentage acquired	-0.0001	-0.0001	-0.0001	-0.0001
	(-0.56)	(-0.52)	(-0.57)	(-0.54)
Diversify	0.0008	0.0034	-0.0000	0.0026
	(0.13)	(0.48)	(-0.01)	(0.40)
Full set of controls included	Yes	Yes	Yes	Yes
Acquiring country fixed effects	Yes	Yes	Yes	Yes
Target country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	846	846	846	846
Adjusted R-squared	0.24	0.24	0.23	0.24

Appendix

Part 1: Additional Tables

Table A1 Description of Variables

Country-level control variables	
Cross-border deal	The total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. (Data source: the Security Data Corporation's database, SDC)
Cross-border value	The aggregate value of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the total value of domestic deals in the target country j and the total value of cross-border deals from the acquiring country i to the target country j in year t. (Data source: SDC)
LN Stock1990	The natural log-transformed total number of migrants originating from the acquiring country i into the target country j up to the year 1990. (Data source: the Global Bilateral Migration database 1960–2010 of the World Bank that is constructed from the UN Population Division's Global Migration Database)
LN UN $Stock_{t-10}$	The natural log-transformed total number of migrants originating from the acquiring country i into the target country j up to 1980, 1990, 2000, and 2010, respectively.
LN ABEL $Flow_{t-10}$	The natural log-transformed total number of migrant flow originating from the acquiring country i into country j during the periods from 1970 to 1980, from 1980 to 1990, from 1990 to 2000, and from 2000 to 2010. (Data source: the Bilateral migration flow dataset of Abel and Sander (2014))
Push T_1-T_2	The total number of migrants leaving country i but excluding those who settled in the target country j between time T_1 and T_2 (Data sources: the Global Bilateral Migration database 1960–2010 of the World Bank and the Bilateral migration flow dataset of Abel and Sander (2014))
Pull T_1-T_2	The ratio of the total number of migrants originating from country i into the target country j over the total number of migrants who settled in the target country j (excluding those migrants from country i who settled in the target country j) between time T1 and T2. (Data sources: the Global Bilateral Migration database 1960–2010 of the World Bank and the Bilateral migration flow dataset of Abel and Sander (2014))
Population growth	The difference in population growth rates between country i and country j (World Bank Development Indicators).
Market-to-book	The difference in market-to-book ratios of the aggregate stock markets between the acquiring country i and the target country j over the previous 12 months (Datastream)
Currency return	The difference in real currency returns between country i and country j over the previous 12 months. The consumer price index (CPI) for each country is collected to convert all nominal exchange rate returns into real exchange rate returns at the year 2000 price level.
Total import and export	The natural logarithm of total bilateral imports and exports between a country-pair (Data source: UN commodity trade database)
GDP per capita	The difference between GDP per capita (adjusted by GDP deflator) of country i and country j (Data source: World Bank Development Indicators)

Real GDP growth	The difference in the real growth rate of GDP per capita of country i and country j. (Data source: World Bank Development Indicators)
Private credit	The ratio of domestic private credit to the real sector by deposit money banks to GDP (Data source: World Bank Development Indicators)
Anti-self-dealing	The difference between acquiring country i and target j country of domicile in the anti-self-dealing Index (Data source: Djankov, La Porta, Lopez-de-Silanes, and Shleifer 2008)
Same language	Dummy variable that equals 1 if both the target and acquiring nation's primary language (English, Spanish, German, Chinese, French, Portuguese, Arabic, Russian, or Other) are the same, and 0 if otherwise (Data source: CIA World Factbook 2008)
Same religion	Dummy variable that equals 1 if both the target and acquiring nation's primary religion (Protestant, Orthodox, Catholic, Muslim, Judaism, Buddhist, Hindu, Ethnoreligion, or Chinese universe) are the same, and 0 if otherwise (Data source: CIA World Factbook 2008)
Geographic distance	The natural logarithm of the geographic distance between the capitals of country i and country j (Data source: CEPII).
Contiguity	Dummy variable that equals 1 if a country-pair shares the same border, and 0 if otherwise.
Colony	Dummy variable that equals 1 if a country-pair was ever in a colonial relationship, and 0 if otherwise.
Same country	Dummy variable that equals 1 if a country-pair was or is the same country, and 0 if otherwise.
Hofstede cultural distance	The six dimensions of national cultural measures of Hofstede, namely Power distance index (PDI), Individualism (IDV) vs. collectivism, Uncertainty avoidance index (UAI), Masculinity (MAS) vs. femininity, Long-term orientation (LTO) vs. short-term orientation and Indulgence versus restraint (IVR) of Hofstede (1980, 2001).
WVS cultural distance	Three cultural distance measures, Trust_WVS, Hierarchy_WVS and Individualism_WVS, constructed from the Longitudinal Multiple-Wave data available at the World Values Survey (WVS) following Ahern, Daminelli and Fracassi (2015).

Deal level control variables
Data source: SDC

Deal size	The total transaction value of a deal at the announcement date.
Relative size	The ratio of the transaction value over the target's market value at the announcement date.
Percentage of cash	Percentage of cash used for the payment of an acquisition.
Tender offer	Dummy variable that equals 1 if a merger is a tender offer and 0 if otherwise.
Hostile	Dummy variable that equals 1 if a deal is classified as hostile and 0 if otherwise.
T high-tech	Dummy variable that equals 1 if a target is in a high technology industry classified by their 4-digits Standard Industry Classification (SIC) code.
A high-tech	Dummy variable that equals 1 if an acquirer is in a high technology industry classified by its 4-digits SIC code following Loughran and Ritter (2004).
Percentage acquired	The percentage of target shares acquired after the deal.
Diversify	Dummy variable that equals 1 if the target and the acquirer in a deal are not in the same 3 digit SIC industry.

Table A2 First stage regression: The effect of past pull and push factors on migrant stock

This table contains the first-stage regression results of the IV approach reported in Table 3. *LN Stock1990* and *LN Stock 1970* are the natural logarithms of the raw number of migrant stock from the country of origin i to country j in 1990 and in 1970 respectively. *Stock 1970* and *Stock 1990* are the raw numbers of migrants from the origin country i to country j in 1970 and in 1990, respectively. The push factors *Push1970-1980* and *Push1980-1990* are defined as the total number of migrants leaving the country of origin i but excluding the migrants settled in the target country j between1970 and 1980, and between 1980 and 1990, respectively. The pull factors *Pull1970-1980* and *Pull1980-1990* are the ratio of the number of migrants moving from the country of origin i to the target country j over the total number of migrants settled in country j (but excluding the migrants settled in the target country) j between1970 and 1980, and between 1980 and 1990, respectively. All the other variables are defined in Appendix1 Description of Variables. All test statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	LN Stock1990	LN Stock1990	Incremental R-squared	Stock1990
LN Stock1970*Pull1970-1980	0.0003***	0.0002***	0.12	0.006***
	(18.91)	(25.92)		(13.59)
LN Stock1970*Pull1980-1990	0.0002***	0.0001***	0.02	0.003***
	(9.51)	(9.72)		(6.91)
Push1970-1980*Pull1970-1980	-0.002	-0.017***	0.01	0.002***
	(-1.17)	(-7.26)		(3.72)
Push1980-1990*Pull1980-1990	0.006**	-0.003	0.003	0.101***
	(2.24)	(-0.94)		(3.34)
LN Stock1970	0.289***	0.160***	0.09	
	(31.79)	(24.26)		
Stock1970				0.339***
				(4.91)
Year fixed-effects	Yes	Yes		Yes
Full set of controls	Yes	Yes		Yes
Target country FE	No	Yes		Yes
Acquiring country FE	No	Yes		Yes
Observations	14,310	14,310		14,310
R-squared	0.80	0.89		0.58

Table A3 Migrant stock in 1990 and deeply-lagged migrant stocks

This table reports the panel analysis of cross-border mergers and acquisitions for country-pairs from 1995 to 2020. The dependent variable is the total number of cross-border deals from the acquiring country i to the target country j (where i≠j) scaled by the sum of the number of domestic deals in the target country j and the number of cross-border deals from the acquiring country i to the target country j in year t. International migrant stock statistics are from the World Bank Global Bilateral Migration 1960–2010. *LnStock1990*, *LnStock1970*, and *LnStock1960* are the natural logarithms of the raw number of migrants from the country of origin i to country j up to the years 1990, 1970, and 1960, respectively. The full set of controls is included, as in Table 3. The instrumental variables used in the first stage regressions of Two-Stage Least Squares (2SLS) approaches are derived in Section 3. Robust *z*-statistics in parentheses are adjusted using heteroskedasticity-corrected clustered standard errors within each country-pair. The ∗∗∗, ∗∗, and ∗ denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A	(1)	(2)
LN Stock1990	0.010***	0.0055**
	(2.69)	(2.09)
LN Stock1970	-0.005	
	(-1.23)	
LN Stock1960		0.0005
		(0.17)
Full set of controls included	Yes	Yes
Year fixed-effects	Yes	Yes
Target country FE	Yes	Yes
Acquiring country FE	Yes	Yes
Observations	14,310	14,310
R-squared	0.57	0.57

Panel B Correlations

	Residuals from the OLS regressions using *LN Stock1990*
LN Stock1970	-0.0012
LN Stock1960	0.0002

Table A4 Industry median measures using the Fama-French classification

This table reports the industry median invested capital to employee ratio (CapEmp, million US$ capital per employee), the industry median employee number over sales (EmpSale, employee number per million US$ sales), and the industry median organizational capital scaled by total assets, constructed using selling, general, and administrative (SG&A) expense and the perpetual inventory method following Eisfeldt and Papanikolaou (2013) for the Fama and French 48 industries (FF48), constructed from the Compustat North America and Global full sample from 1995 to 2020.

Industry Code	Fama and French 48 industries	EmpSale	CapEmp	OrgA
1	Agriculture	4.0%	186.8	8.7%
2	Food Products	1.3%	262.4	20.6%
3	Candy & Soda	1.8%	195.1	32.4%
4	Beer & Liquor	1.5%	294.0	17.3%
5	Tobacco Products	1.7%	691.7	16.1%
6	Recreation	2.5%	130.3	24.8%
7	Entertainment	2.6%	184.9	8.8%
8	Printing and Publishing	2.2%	138.3	20.2%
9	Consumer Goods	2.1%	194.1	25.7%
10	Apparel	3.7%	96.9	25.6%
11	Healthcare	3.7%	72.7	18.0%
12	Medical Equipment	2.8%	104.5	26.1%
13	Pharmaceutical Products	2.4%	257.2	22.7%
14	Chemicals	1.8%	516.9	13.2%
15	Rubber and Plastic Products	2.4%	221.2	17.9%
16	Textiles	3.1%	360.5	12.0%
17	Construction Materials	2.2%	330.7	14.4%
18	Construction	1.8%	586.7	8.3%
19	Steel Works etc	2.1%	439.4	8.2%
20	Fabricated Products	1.8%	140.7	16.2%
21	Machinery	2.5%	167.8	17.8%
22	Electrical Equipment	2.9%	155.3	19.8%
23	Automobiles and Trucks	2.3%	205.0	14.7%
24	Aircraft	2.7%	75.6	10.2%
25	Shipbuilding, Railroad Equipment	2.9%	117.1	6.8%
26	Defense	2.7%	76.8	11.4%
27	Precious Metals	3.2%	342.2	6.4%
28	Non-Metallic and Industrial Metal Mining	2.2%	393.5	4.9%
29	Coal	2.0%	278.4	4.8%
30	Petroleum and Natural Gas	1.0%	912.6	5.6%
31	Utilities	1.7%	726.7	0.6%
32	Communication	3.0%	302.2	4.6%
33	Personal Services	3.3%	104.4	12.6%
34	Business Services	3.0%	103.0	14.7%
35	Computers	3.3%	125.9	19.3%
36	Electronic Equipment	3.2%	137.1	16.7%
37	Measuring and Control Equipment	3.3%	120.9	23.7%
38	Business Supplies	2.1%	277.4	12.3%
39	Shipping Containers	2.4%	185.9	11.6%

40	Transportation	2.6%	283.4	3.5%
41	Wholesale	1.5%	458.4	21.7%
42	Retail	2.0%	91.1	35.9%
43	Restaurants, Hotels, Motels	5.1%	216.4	8.5%
47	Trading	1.7%	1489.4	0.7%
48	Other	2.4%	685.5	8.1%

Table A5 Summary statistics of the cumulative abnormal returns of public targets and public acquirers upon the announcement

The table reports all completed cross-border mergers and acquisitions between 1995 and 2020 as listed by SDC where either a publicly-traded acquiring firm gains control of a target or a publicly-traded target firm is acquired by an acquirer with a transaction value over 1 million US$. The announcements of abnormal returns of three-day event window CAR(-1, +1) and five-day event window CAR (-2, +2) are reported for all public targets, all public acquirers, and their combined abnormal returns, respectively. The ∗∗∗, ∗∗, and ∗ denote the statistical significance of *t*-tests on the equality of means equal to 0 at the 1%, 5%, and 10% level, respectively.

Variable	Observations	Mean	Median	Standard Deviation
Target CAR(-1, +1)	2,115	0.188***	0.148	0.252
Target CAR (-2, +2)	2,115	0.201***	0.161	0.266
Acquiror CAR(-1, +1)	2,324	0.005**	0.003	0.067
Acquiror CAR (-2, +2)	2,324	0.007**	0.004	0.077
Equally-weighted combined CAR(-1, +1)	1,394	0.096***	0.080	0.120
Value-weighted combined CAR(-1, +1)	1394	0.032***	0.018	0.085
Equally-weighted combined CAR (-2, +2)	1,394	0.102***	0.088	0.127
Value-weighted combined CAR (-2, +2)	1,394	0.035***	0.021	0.094

Part 2: The Construction of IVs

Some factors may simultaneously affect both cross-border acquisitions and migrations between two countries. To address this endogeneity concern, we modify the methodology developed in Burchardi, Chaney, and Hassan (2019) to derive the instrumental variables.

Starting with a simple evolutionary migrant stock equation,

$$S_{o,d}^{t} = \alpha_t S_{o,d}^{t-1} + f_{o,d}^{t} \ , \qquad 0<\alpha_t<1 \qquad (A.1)$$

where $f_{o,d}^{t}$ is the migrant flow from the origin country *o* to the destination country *d* between time *t-1* and time *t*. The range of the parameter α_t reflects the fact that the offspring of migrants will usually not be included in migrant stock statistics, but the deaths of migrants will reduce the stock.

Further, the migrant flow for a country-pair (o, d) is determined by two interacting forces: a push factor and a pull factor, reflecting the demand and supply of migration for a given country-pair. The push factor can be quantified as the total number of migrants leaving country o at time t, I_o^t, perhaps due to reduced economic opportunities, deteriorating living conditions or worsening political stability in their country. The pull factor has two parts: one is related to the overall destination country's policy regarding accepting migrants as represented by the proportion of the destination country's intake of migrants to the world-wide migrant population, I_d^t / I^t. For historical, cultural, economic or geographical reasons, some countries such as the U.S., Canada, or Australia are more accepting of immigrants than others. The other part of the pull factor is the existence of diaspora social networks: a particular attraction of the destination country for the migrants is the level of earlier migration from that country of origin, $S_{o,d}^{t-1}$. Thus, we hypothesize that the country-pair migrant flow is the result of the interaction of the push and pull factors: $f_{o,d}^{t} = I_o^t \times \left(c_t \frac{I_d^t}{I^t} + d_t S_{o,d}^{t-1} \right)$, where c_t and d_t are coefficients.

Put together, Equation (A.1) becomes

$$S_{o,d}^{t} = \alpha_t S_{o,d}^{t-1} + I_o^t \left(c_t \frac{I_d^t}{I^t} + d_t S_{o,d}^{t-1} \right) = S_{o,d}^{t-1}(\alpha_t + d_t I_o^t) + c_t I_o^t \frac{I_d^t}{I^t}. \qquad (A.2)$$

Solving (A.2) recursively,

$$S_{o,d}^{t} = S_{o,d}^{0} \left[\prod_{s=1}^{t} (\alpha_s + d_s I_o^s) \right] + \sum_{s=1}^{t} c_s I_o^s \frac{I_d^s}{I^s}. \qquad (A.3)$$

To overcome the potential problem that some economic or political factors for a particular country-pair could jointly determine both the bilateral migration flows and cross-border acquisitions, we replace I_o^t by I_{o-d}^t, which is the total number of migrants from country o who settle not in country d at time t. Similarly, we replace I_d^t by I_{d-o}^t, the total number of migrants settled in country d, excluding those from country o. Finally, we replace the worldwide total number of migrants at time t, I^t by I_{-o}^t, the number that excludes those from country o. Such exclusions are a major feature of the identification strategy: the modified migrant flow between two countries is less likely to be correlated with the cross-border deals $CB_{o,d}^t$, yet still positively correlated with the migrant flow, $f_{o,d}^t$, and thus the migrant stock $S_{o,d}^t$ through the recursive evolutionary migrant stock equation (A.1). As argued by Burchardi, Chaney, and Hassan (2019), this approach can mitigate the impact of unobserved factors that make destinations the recipient of both migrants and capital, which is impossible to control in some recent single country studies which focus only on the U.S. as the country of destination for both migrants and capital.