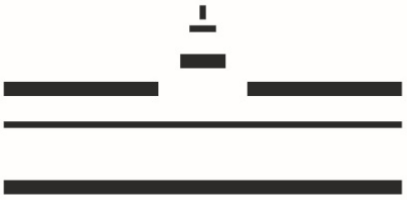

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Building Bridges: Bilateral Manager Connections and International Trade

Felix Hoch / Jonas Rudsinske

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Abstract
We investigate whether top managers with personal ties to a foreign country facilitate trade with that country by overcoming bilateral trade barriers that obstruct international business relationships. Using individual managers' nationality, we construct a novel database of bilateral top manager connections. We analyze the trade effects of these bilateral manager connections both on the firm and on the country level. On the country level, we provide evidence for a positive effect on both bilateral exports and imports. On the firm level, we find positive effects on destination-specific foreign sales. We show that this firm-level effect is especially pronounced for institutionally distant destinations, which we interpret as bridging the gap between institutionally dissimilar countries. Furthermore, the effect is stronger for destinations with less developed institutions indicating that manager connections help overcoming trade barriers created by low institutional quality. Moreover, we show that the strength of this effect also depends on characteristics of the individual manager. Namely, the effect differs between connections of male and female managers. Gender discriminating institutions in the destination country severely downsize the pro-trade effect of female managers' connections, which could give rise to an unintended importing of gender inequality regarding management positions.

JEL-Codes: F14, F22, F23, J16, J61, K38, M16
Keywords: International trade, gravity, international business, board composition, institutions, gender equality

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University of Münster
CIW – Center for Interdisciplinary Economics
Scharnhorststrasse 100
D-48151 Münster

phone: +49-251/83-25329 (Office)
e-Mail: clementine.kessler@uni-muenster.de
Internet: www.wiwi.uni-muenster.de/ciw

1 Introduction

Recent advances in both theoretical and empirical economics have stressed the importance of micro-level factors for macro-level outcomes. It is well established that both firm heterogeneity (Melitz, 2003) and network structures (Chaney, 2014) are crucial for our understanding of international trade flows. Likewise, the international business literature has recognized that characteristics of managers and board members affect entrepreneurial success and firm internationalization in terms of export performance (Peng, 2001; Nam et al., 2018). Cultural, legal and various other trade barriers make it costly for firms to establish and maintain international business relationships. Having a manager who is personally connected to a foreign country might facilitate exporting to or sourcing from that country. However, whether a manager actually benefits from such a connection can depend on individual characteristics like gender. Gender discrimination in female managers' country of origin might impair their ability to benefit from their connections. Despite the undisputed relevance of these relationships, the pro-trade effects of top manager connections, their size, and the way they are determined by the interplay between countries' institutional differences and individual manager characteristics remain gaps in the literature.

We combine data on international connections of individual managers due to nationality with country-level bilateral trade flows and firm-level foreign sales by destination. The resulting country-level data set comprises bilateral manager connections and trade for more than 2000 country-pair-year observations for the four 5-year periods between 2000 and 2015, and the firm-level data set comprises connections and foreign sales of 3,584 firms in 77 countries between 1999 and 2017. This unique database enables us to examine the pro-trade effect of bilateral manager connections both on the firm and on the country level. On the country level, our structural gravity estimates reveal a positive and economically meaningful effect. Connections appear to be of slightly higher relevance for the exporter than for the importer. Our results stress the macro-level importance of personal manager characteristics for overcoming trade frictions. On the micro level, we confirm this finding since manager connections to a foreign country increase foreign sales in this country. Furthermore, firms indeed benefit from manager connections in overcoming trade barriers as the pro-trade effect of connections is positively moderated by institutional distance but negatively moderated by institutional development in the destination. Moreover, the positive effect also depends on informal institutions in the destination, whereat connections are worth more in destination cultures with high uncertainty avoidance but less in the face of individualistic instead of collectivist cultures. This interplay between individual manager characteristics and the institutional environment is further highlighted by weaker effects of female connections in the face of gender-discriminating institutions. Notably, this gives rise to a spillover effect reducing

the pro-trade effect of female connections in otherwise non-discriminatory home countries. Our research is connected to multiple streams of the international trade and international business literature, which we highlight in the following.

First, we contribute to the gravity literature (e.g. Anderson, 1979; Eaton and Kortum, 2002; Anderson and Van Wincoop, 2003) that is concerned with explaining bilateral trade flows. Our results stress that bilateral trade barriers can be reduced by top managers' international connections. Bailey et al. (2021) use Facebook data to construct a measure of social connectedness between 180 countries. They find that bilateral trade in a gravity framework increases in social connectedness of a country pair and also in sharing social connections with a similar set of countries. Instead of social media connections, we utilize manager connections extracted from firm data. Managers are the economic agents that build and maintain international trade connections and should have a sizeable impact on aggregate outcomes. Analyzing the effect of firm-heterogeneity in destination-specific trade costs, our work is also related to the heterogeneous firms literature in international trade (Melitz, 2003; Bernard et al., 2007).

Our paper also adds to the rich literature on the trade-migration nexus, which originated with the seminal contributions of Gould (1994) and Head and Ries (1998).[1] Most closely related to us is a strand of this literature that focuses on the potential destination-specific trade effect of immigrants, although our focus is not on immigrants in general, but on top managers with foreign nationality. For instance, foreign managers might only work in another country for a certain period of time without ever immigrating. Furthermore, a manager who emigrates to a foreign country but keeps his management position in his home country also constitutes a foreign manager, but an emigrant rather than an immigrant. On the level of establishments in Germany, Andrews et al. (2017) find a pro-trade effect of foreign workers that is specific for broad geographic regions. On the level of Italian provinces, Bratti et al. (2020) find a positive effect of the regional stock of immigrant entrepreneurs, who individually own a small business, on regional manufacturing exports. Using country-level OECD data for the year 2010, Aleksynska and Peri (2014) find a pro-trade effect of immigrants who work in business network occupations and show that business networks are especially trade enhancing between countries with different legal origin and different official language. In contrast to the existing literature, we analyze the trade effects of top managers in a global panel of publicly listed firms, that likely account for a major part of global trade. We demonstrate this destination-specific pro-trade effect of foreign top managers both on the country level and the firm level. To develop a deeper understanding of the trade barriers that foreign top manager help overcoming, we utilize a broad set of countries' cultural and institutional characteristics. Moreover, we also account for heterogeneity in managers' abilities to utilize their connec-

[1] We refer the reader to Hatzigeorgiou and Lodefalk (2021) for a more comprehensive review of the extensive literature on the trade-migration nexus.

tion to a foreign country. To the best of our knowledge, we are the first to differentiate between male and female foreign managers and to demonstrate that female managers from countries with gender-discriminating institutions face a severe disadvantage in that respect.

This notion of individual manager characteristics such as nationality as determinants of firm behavior in general and internationalization in particular also gained much interest in the international business literature (e.g. Pisani et al., 2018). In this context, the crucial role of connections to the destination proposed by Chaney (2014) gains further empirical support as destination-specific knowledge and export experience of individual managers are identified as the most important manager characteristics for exporting behavior. However, the combination of data on destination-specific manager connections with destination-specific sales poses a serious challenge, which is why previous empirical studies almost exclusively concentrate on only one country of origin. For instance, Sala and Yalcin (2015) exploit employer-employee matched data to demonstrate a positive effect of manager export experience in a sample of Danish firms. Likewise, Mion and Opromolla (2014) focus on Portugal and show that this positive effect also holds for managers' export experience acquired in previous firms. Nam et al. (2018) rely on a sample of Korean firms to identify that international experience and government connections in the board of directors increase export performance. We attempt to overcome this restriction to a single country by combining individual manager characteristics and destination-specific sales for an international sample of firms. To the best of our knowledge, we construct the first data set that enables an investigation of the relationship between destination-specific manager connections and destination-specific firm-level sales in a multinational setting.

Our unique database also enables us to sharpen the institutional perspective on international trade and international business. Following the seminal work of North (1990, 1991), institutions constitute the 'rules of the game' that shape the behavior of market participants. In this sense, institutions play a crucial role for economic success by determining the transaction costs and uncertainty connected to virtually every economic activity (North, 1987). For instance, Nunn (2007) demonstrates that the provision of crucial market-supporting institutions like contract enforcement is an even more important determinant of a country's comparative advantage than physical capital and skilled labor combined. Accordingly, the role of weak institutions and institutional distance as trade barriers is well-documented (e.g. Álvarez et al., 2018; Dollar and Kraay, 2003). Likewise, the idea that trade networks in general and personnel connections in particular are utilized to overcome these barriers is not new (Combes et al., 2005). Accordingly, Hilmersson and Jansson (2012) demonstrate that firm networks reduce the uncertainty arising from institutional distance. In the same tradition, Egger et al. (2012) argue that migrants in the workforce provide institutional knowledge, and Bailey et al. (2021) pro-

vide evidence that private connections via online social networks mitigate institutional trade barriers for the same reason. However, to the best of our knowledge, we provide the first empirical investigation of the interplay between individual manager connections and institutional trade barriers. We provide evidence that firms benefit from manager connections in coping with weak institutions and bridging institutional distance.

Finally, we deliver new insights into the current and highly relevant debate on the relationship between gender and economic performance. Numerous recent studies deal with gender diversity and firm performance but provide mixed evidence (Ahern and Dittmar, 2012; Miller and del Carmen Triana, 2009; Triana et al., 2014). This combination of high relevance and conflicting results regarding the general relationship has led to a closer look at specific aspects of management. Despite this growing interest in gender diversity and the extensive literature on the determinants of export performance, the investigation of gender as a determinant for export performance has received surprisingly little attention (Chen et al., 2016). As noteworthy exceptions regarding the effects of female ownership, Orser et al. (2010) find that female majority-owned Canadian firms are less likely to export while Lee et al. (2016) also show a weaker export performance of female-owned ventures in a Korean sample. There is some evidence of similar effects for female managers (e.g. Lukason and Vissak, 2020), but this relationship is usually just mentioned as a statistical side note and not accompanied by efforts to provide evidence in favor of a specific explanation.[2] In this context, we offer one potential missing link by investigating the nexus between gender, manager connections, and trade. Namely, we again consult the institutional view and attempt to explain gender differences as a result of institutionalized gender discrimination. As a reaction to the mixed empirical evidence regarding gender effects on firm performance, research only recently started to consider the influence of institutional moderators (Zhang, 2020). We deliver further support for this new and promising approach as our results not only show gender differences but also provide evidence that these differences are largely driven by institutional constraints on women. More specifically, we find that both informal constraints due to cultural bias against and formal regulatory restrictions on female managers in the destination impede women's ability to utilize their connections to this destination. First of all, these findings indicate the existence and real economic impact of performance-reducing institutionalized discrimination against women in general. Beyond that, our findings constitute the first evidence of cross-boarder effects of these institutions we are aware of. If manager connections are a valuable resource but female connections are less beneficial for trade with discriminating countries, then female managers face a performance disadvantage. As a consequence, discriminatory institutions of trading partners have a negative spillover effect on the performance of female managers even in otherwise non-discriminatory coun-

[2]Qualitative research on female entrepreneurial behavior offers some explanatory approaches (e.g. Welch et al., 2008) but we are not aware of any quantitative investigations of specific explanations.

tries.

The rest of the paper is structured as follows. We provide some theoretical background for the concept of manager connections and its role in structural gravity in Section 2. In Section 3, we describe the data, set out how the bilateral measure of manager connections is constructed, and discuss descriptive statistics regarding the global prevalence of manager connections. Building upon this database, we line out our estimation strategy in Section 4. Section 5 presents the empirical results for both the firm- and the country-level analyses. Next to the general pro-trade effect of manager connections we also study how this effect is moderated by institutional factors, and how it differs by managers' gender under certain institutional conditions. Results of several robustness checks are discussed in Section 6. The final Section 7 concludes.

2 Theoretical Background

International trade faces many challenges from geographical distance over institutional and cultural differences up to asymmetric information and agency problems. On the other hand, connections between countries such as shared borders or common institutions foster trade. However, beyond these external connections, participants in international trade also utilize their own connections to other countries to mitigate the negative effects of distance and different environments (Chaney, 2014; White, 2007).

Our concept of manager connections draws on the idea of networks between trade participants and brings it down to the micro level of individual managers within potentially exporting firms. In this setting, a manager connection describes a connection between two countries in the person of a manager. Although many different constellations of such connections are conceivable, the most intuitive appearance of is a foreign manager since this manager naturally connects the country of his firm with his home country.

In this micro-level setting, especially top-level managers shape organizational behavior (Hambrick and Mason, 1984). Thus, from personality traits of individual managers (Chatterjee and Hambrick, 2007) to the overall composition of the top management team (Carpenter et al., 2004), manager characteristics are decisive determinants for a firm's strategic decisions and performance (Hambrick, 2007; Nielsen and Nielsen, 2013). Accordingly, it is no surprise that this crucial influence of individual manager characteristics also holds for export activities (Agnihotri and Bhattacharya, 2015; Halikias and Panayotopoulou, 2003). In this context, the intuition behind this relationship is that a manager's background affects his or her decision-making, which in turn determines firm behavior.

We can further explain this influence with the Resource-Based View (Wernerfelt, 1984), where manager characteristics can constitute a competitive advantage (Peteraf, 1993; Cockburn et al., 2000) as managers bring in personal resources such as knowl-

edge and skills (Castanias and Helfat, 1991). Thus, connected managers enhance export performance because they provide relational resources such as personal networks and human resources such as destination-specific skills or knowledge (İpek, 2018). For instance, managerial ties to a potential export destination enhance the quality of available information (Chung, 2012) and generate new information on export opportunities (Andersen, 2006; Ellis and Pecotich, 2001), which facilitates market entry (Peng, 2001). Moreover, connected managers promote export activities through valuable destination-specific skills such as language skills Williams and Chaston (2004), legal expertise (Bagley, 2008), or cultural sensitivity (Styles et al., 2008).

The value of these country-specific knowledge and skills depends on the institutional development in the destination. Information asymmetries and difficulties in contract enforcement constitute severe trade barriers (Ma et al., 2012), whereas well-developed institutions such as efficient law enforcement facilitate trade (Araujo et al., 2016). If connected managers provide additional information and are better in maintaining relationships with reliable trading partners, they can serve the same purpose. Thus, strong institutions and manager connections might constitute partial substitutes.

This effect should be even stronger when the institutional environments between origin and destination differ strongly. Regardless of the institutional development, information asymmetries also arise when important information regarding legal issues is scarce just because the legal system of the destination differs and its peculiarities are unknown to exporting firms (Jansen and Piermartini, 2009). Furthermore, informal mechanisms to overcome these issues, such as reputation, can only prevail between sufficiently close societies (Dixit, 2003). Accordingly, just like institutional development in the destination, institutional distance severely reduces export performance (He et al., 2013). Connected managers can mitigate these problems either by directly providing information or by building reputation and trust more easily, thus bridging the gap between two different institutional environments.

Because manager connections as micro-level phenomenon influence the costs of international trade between firms, they also have the potential to significantly affect macro-level bilateral trade flows. Chaney (2014) offers a model of trade frictions based on information frictions, where firms only export to markets, in which they have a contact. We argue that having a manager of foreign nationality constitutes a contact to that country and comes with knowledge regarding cultural, social, and legal characteristics of the country. In that respect, a foreign manager can reduce information asymmetries and, thus, trade frictions to the respective country. Accordingly, a higher number of bilaterally connected managers should facilitate bilateral trade also on the macro level. Egger and Kreickemeier (2012) develop a model of international trade with heterogeneous owner-managers that need to hire a local expert in the foreign market in order to serve that market. While their model does not allow for labor migration or foreign managers,

it is straightforward to imagine that some firms might send a former manager from their headquarter country to the foreign country in order to become a local expert managing the foreign affiliate. Likewise, firms might be inclined to hire someone who is already living in the foreign country but has ties to the headquarter country as an affiliate manager, because this comes with many beneficial effects like lower communication costs.

To assess whether bilateral manager connections are relevant for bilateral trade, we analyze their effect in a structural gravity model. Based on Armington (1969), Anderson (1979) offered a first theoretical derivation of the gravity equation in economics, which was empirically established by Tinbergen (1962).[3] An important insight from the subsequent theoretical side was that the simple gravity equation should be extended to account for multilateral resistance (e.g. Eaton and Kortum (2002); Anderson and Van Wincoop (2003)). The resulting structural gravity model can be summarized by the following equation:

$$TRADE_{odt} = \frac{Y_{ot}}{\Omega_{ot}} \frac{X_{dt}}{\Phi_{dt}} \phi_{odt} \tag{1}$$

The trade flow $TRADE_{odt}$ from country o to country d in period t is determined by the product of o's production Y and d's consumption X, both adjusted for exporter and importer multilateral resistance Ω_{ot} and Φ_{dt}. Additionally, there is an effect of what Head and Mayer (2014) call "bilateral accessibility", ϕ_{odt}, a combined measure of trade costs and the elasticity of the trade flow under consideration with respect to trade costs.

Often the distance elasticity is estimated by using bilateral distances as a proxy for ϕ_{od}. However, bilateral accessibility ϕ_{odt} includes more than the geographical distance between two countries. Therefore, controlling for other bilateral factors that determine accessibility such as a common language or former colonial ties emerged as standard practice. We introduce bilateral manager connections as a new factor affecting bilateral accessibility and analyze its effects on trade in a gravity framework. To do this, we specify $\phi_{odt} = exp(log(DIST_{od}) + log(CONO_{odt}) + log(COND_{odt}) + Z_{odt} + u_{odt})$, where $DIST_{od}$ is the geographical distance, $CONO_{odt}$ are bilaterally connected managers in the origin, $COND_{odt}$ are bilaterally connected managers in the destination, Z are bilateral control variables like being members of the same regional trade agreement, and u is an error term. We expect having more bilaterally connected managers to raise bilateral imports and exports on the country level, as more domestic firms can benefit from better abilities to engage in foreign markets. It is also possible that other firms without foreign managers benefit due to spillover-effects or facilitated network access. So we expect positive coefficient estimates for manager connections in both directions.

[3] See, e.g., Krugman (1980), Bergstrand (1985), Bergstrand (1989), Deardorff (1998), Eaton and Kortum (2002), Chaney (2008), Helpman et al. (2008), and Chaney (2018) for further theoretical foundations.

3 Data and Methodology

In this section, we describe our database and provide descriptive statistics. A list of all variables including their definitions and detailed sources is also provided in Appendix A.

3.1 Manager Connections

We construct manager connections based on data from BoardEx. BoardEx covers large, publicly listed companies around the world on a yearly basis (Fernandes et al., 2013) and constitutes a well-established database for manager characteristics (e.g. Adams and Kirchmaier, 2016; Cai et al., 2019). We then construct manager connections using manager nationality. Starting from the country the firm operates in as the country of origin, one manager has a connection to a destination if this destination is their nationality. We can formally capture this definition with the dummy variable CON_{miodt} that takes on the value 1 if a manager m of firm i in origin country o holds the nationality of destination country d at time t.

Building upon this definition, we can easily distinguish between female and male connections by considering the gender of the manager. That said, the dummy variable $MCON_{miodt}$ takes on a value of 1 only if CON_{miodt} equals one and the manager is male. The other way around, $FCON_{miodt}$ also requires a value of 1 for CON_{miodt} but in addition that the manager is female. As all managers in our sample identify as either male or female, the overall manager connections in each sample constitute the sum of male and female connections.

3.2 Firm-Level Manager Connections and Foreign Sales

To measure manager connections on the firm level, we construct two variables. The first measure is the dummy variable $i.CON_{iodt}$ that indicates whether at least one manager in the firm has a connection to the destination. As a second, more fine-grained measure, we aggregate the number of manager connections to a destination within a given company. Thus, our variable CON_{iodt} does not just indicate the presence of a connection as a dummy variable but rather counts the number of manager connections to a destination resulting in a discrete measure. Multiple connected managers in one firm result in more firm-level manager connections to one destination. We can formally define the firm-level manager connections to destination d, CON_{iodt}, as the sum of CON_{miodt} over managers m within firm i. In the same way, we define the firm-level female connections $FCON_{iodt}$ as the sum of $FCON_{miodt}$ over m and firm-level male connections $MCON_{iodt}$ as the sum of $MCON_{miodt}$ over m. In addition to these measures of the presence of manager connections, we also construct a dummy variables indicating the establishment of a new connection. More specifically, $i.ADDCON_{iodt}$ captures the establishment of a connection

between the firm and destination d as it equals one if $CON_{iodt} > CON_{iodt-1}$.

To investigate the effect of manager connections to a destination on the firm level, we link them with the foreign sales in this destination. However, usual data sources for firm-level exports are either not segregated by destination (e.g. Pisani et al., 2018) or only available for single countries (e.g. Hiller, 2013). Instead, we rely on firms' self-reported sales by geographic segments provided by Bureau van Dijk's database Osiris. Although geographic segments data were traditionally used to measure firm diversification (Muñoz-Bullón and Sánchez-Bueno, 2012) or geographic orientation (Banalieva and Dhanaraj, 2013; Rugman et al., 2012), recent studies employ them as a more fine-grained measure for internationalization in general (D'Angelo et al., 2016) and especially for export activities (e.g. Bauweraerts et al., 2019; Merino et al., 2015). This interpretation is reinforced by recent evidence that aggregated firm-level sales to foreign geographic segments are strongly correlated with traditional measures of the country-level export volume (Tito, 2019). Sales to a geographic segment that differs from the firm's home country clearly constitute foreign sales (Cahan et al., 2005). Thus, foreign sales derived from the reported sales to different geographic segments provide a suitable measure for our purpose that allows us to differentiate between distinct destinations.

However, company reports on geographic segments are not standardized, which creates a matching problem between destinations of foreign sales and destinations of manager connections. Whereas our manager connections always refer to a country as the destination, the names of reported geographic segments may include everything from country names over continents and regions up to broad terms such as 'non-US' or 'foreign'. To match the reported geographic segments with destination countries, we conduct a straightforward conceptual content analysis. Modern economic research primarily utilizes conceptual content analysis to extract meaning from text in a systematic and quantifiable way (Duriau et al., 2007). However, its most simplistic form of encoding communication in order to provide a literal description of its content (Krippendorff, 2018) is sufficient for our purpose of identifying countries in the reported geographical segments. Thus, we employ a machine-coding measurement approach based on a fixed, dictionary-like coding scheme (Gephart, 1993) developed in three steps. As a starting point, we construct a list of potential country names utilizing manager nationality and firm country of origin. Second, we manually search for alternative spelling including alternative terms as well as mistakes in the geographical segment names.[4] Third, we complete the code by manually searching the remaining geographical segment names for additional countries.

The resulting coding scheme allows us to parse and translate the geographical segment names into country names. Subsequently, we identify and exclude all geographical segment names that included characters clearly indicating a segment consisting of more

[4]For instance, our final list of identifiers for the iso3 country code USA included a variety of segment names such as 'united states', 'unites stades', 'usa', 'us', 'u.s.', or 'u s'.

than one country. Specifically, we exclude all entries featuring '/', '&', '+', and 'and'.[5] Furthermore, we exclude all entries featuring phrases such as 'non' and 'outside' to avoid misclassifications of segment names such as "non-US". In the next step, we exclude all identified countries that are equal to a firm's country of origin as we are only interested in foreign sales. We conclude our search by manually double-checking the coding results for misclassifications.

Since the foreign sales reported in the geographical segments only encompass the most important segments and not all reports refer to single countries, we cannot impute zero values for missing destinations. For the manager connections, however, we are confident that no observation of a connection between a firm and a destination actually means that no such connection exists. Thus, we substitute missing values for manager connections on the firm level with zeros. The resulting sample comprises 32,047 observations nested in connections between 3,584 firms in 77 origin countries and 147 destination countries.

Table B-1 provides summary statistics for the firm-level variables. Not surprisingly, $SALES_{iodt}$ shows a large range accompanied by a high standard deviation and a skewed distribution. The median of 0 for CON_{iodt} reveals that most of the destinations are not connected to the exporting firm. Indeed, as indicated by the mean of $i.CON_{iodt}$, around 28% of the firm-destination pairs are connected. Furthermore, most of the connections feature only one or two connected managers with multiple connections to one destination being the exception. This is not surprising as top management teams are limited in size and seldom feature multiple managers from the same foreign country. Likewise, it is not surprising that the clear majority of manager connections is established by male managers, as female managers still constitute a minority in the entire population of top managers.

Figure C-1 displays all combinations between CON_{iodt} and $SALES_{iodt}$. The positive slope of the simple linear regression line without any control variables serves as a first indication for a positive relationship between the two variables. While we observe a fairly large variance of sales in absence of connections, observations converge towards higher values of sales when more connections are present.

3.3 Country-Level Manager Connections and Bilateral Trade

As the focal explanatory variable for our country-level analysis, we construct an aggregated country-level measure for manager connections, $CONO_{odt}$ based on the individual manager characteristics. Similar to the firm-level measure, we compute this measure on the country level by counting the number of connections to a destination within one country of origin in the same year. Again, we also distinguish between female and male

[5] However, we preserved country names featuring 'and', namely Trinidad and Tobago as well as Bosnia and Herzegovina.

connections based on the gender of the connected manager. The other way around, we construct $COND_{odt}$ in a similar way by counting the number of connections within a destination to the country of origin.

In contrast to the firm-level data, however, one manager can establish multiple connections when they work for multiple companies establishing a connection for each firm. Another difference between the firm-level and the country-level measure is that we do not replace missing values with zeros. While we can be confident to capture all manager connections within one reporting firm, this assumption does not hold for entire countries, where missing values might just reflect missing firm-data instead of an actual absence of any connection.

For the gravity analysis we use data on countries and country-pair characteristics like bilateral distance and GDP as well as the BACI trade flows from CEPII's gravity database. BACI reconciles trade flows taken from the United Nations Comtrade database reported by both the exporter and the importer to provide a harmonized trade flow (Head et al., 2010; Mayer et al., 2014). We use the available bilateral migration data for the years 2000, 2005, 2010, and 2015 from the United Nations. The data set provides bilateral stocks of immigrants and emigrants. Missing country pairs can be assumed to have no sizeable stock of bilateral migrants, which is why we set missing values equal to zero. The migrant stock is measured as the number of persons. We add one person to each pair when using log transformations in order to avoid losing observations with zero values. We restrict our country-level analyses to the 5-year periods from 2000 to 2015.

Our country-level data features a total of 16,616 bilateral manager connections in the 4 years 2000, 2005, 2010 and 2015. The mean value of non-zero bilateral connections is 7.6. Table B-2 provides summary statistics for the main variables used in the country-level regressions. The table has three segments, the first contains data of complete observations (including control variables) that can be used in regressions where $COND_{odt}$ is not included, the second where $CONO_{odt}$ is not included, and the third where both are included simultaneously. Every export flow is an import flow at the same time, and the same holds for the movement of people. We employ the same data points, such that for two countries a and b we have that $CONO_{abt} = COND_{bat}$ and that $IMI_{abt} = EMI_{bat}$. Some aspects are interesting to observe when comparing the different segments of the table. Country pairs that have at least one connected manager in both directions are on average closer to each other, more likely to have a common regional trade agreement, they have larger bilateral stocks of migrants and they trade more with each other.

Figures C-2 illustrates the log number of all connected managers working in a certain country (log_number_o) and the log number of all managers connected to a certain country but working elsewhere (log_number_d) on a world map. Most manager connections are observed for managers working in the United States, but also Canada and the European countries exhibit high numbers. The picture looks similar for countries to which managers

working elsewhere are connected, although in this case more countries are covered as they do not need to be covered by BoardEx.

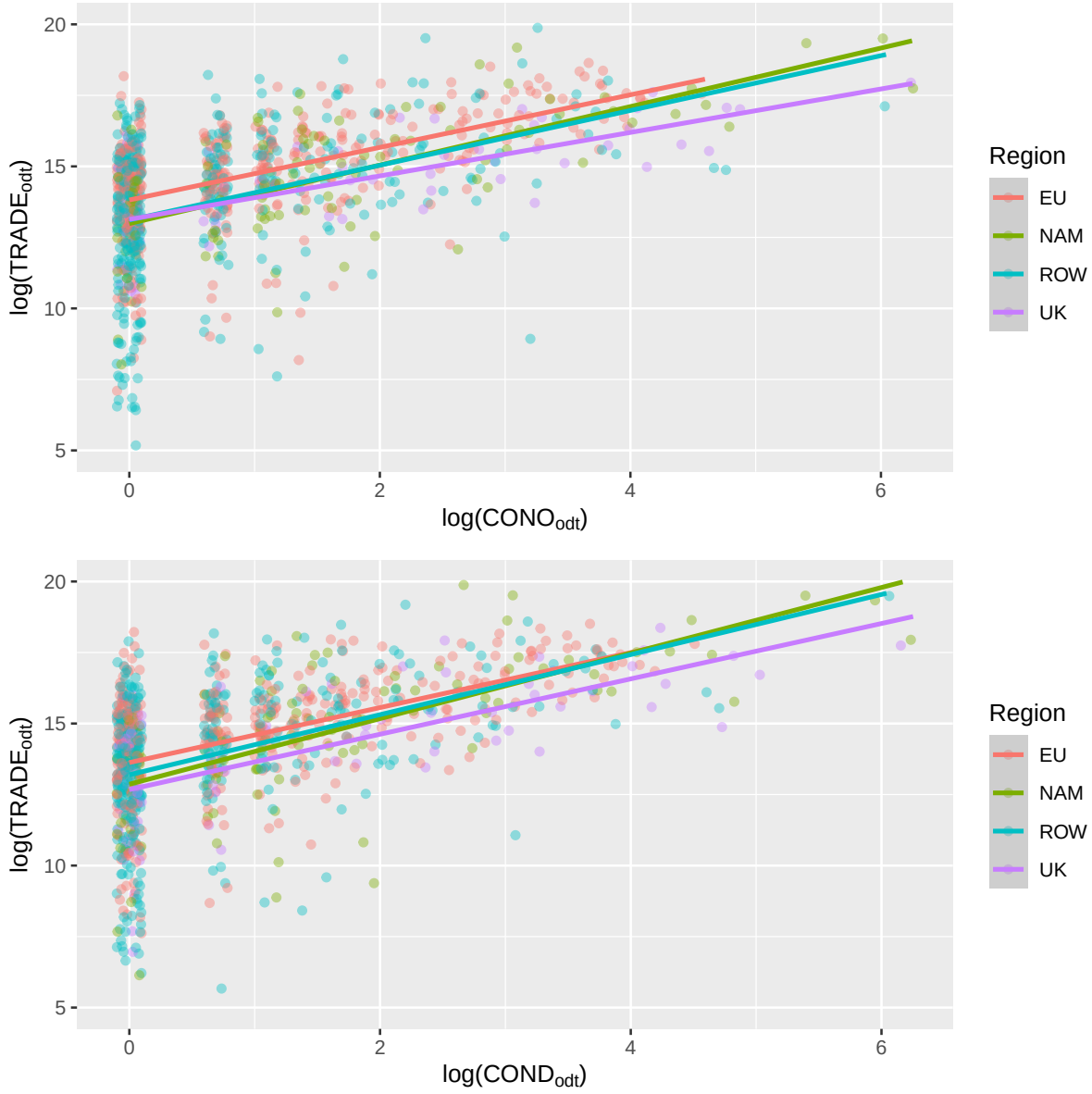

Figure 1: BoardEx Managers and Trade in 2015

Figure 1 plots bilateral manager connections and trade. The positive slopes of the simple linear regression lines for the four regional sub-samples indicate a positive relationship between manager connections and trade before controlling for any other factors. The relationship is very similar for connections of managers in the importing and in the exporting country. It is also similar across different regions of the world. The variability of the trade volume diminishes with an increasing number of managerial connections. While some countries trade a lot with each other despite having few manager connections, which might for example be related to trade in natural resources where connections could be of lower importance, we do not observe country pairs with many manager connections

that trade little with each other. This is a preliminary indication that trade costs might be lower when countries are well connected to each other. "Region" in Figure 1 states the geographic region where the connected managers are working.

3.4 Institutional Variables

To assess characteristics of the institutional environment, we use the Worldwide Governance Indicators (WGI) provided by the World Bank (Kaufmann et al., 2011). For the main analysis, we employ the Control of Corruption indicator in the destination, CC_{odt}, defined as "the extent to which public power is exercised for private gain, including both petty and grand forms of corruption" (Kaufmann et al., 2011, p. 223). While corruption seems to be a particularly relevant example for a characteristic of low institutional development that personal manager connections can help to overcome, we present the results for other indices in the robustness tests. However, we are not only interested in the institutions of the destination but also in the institutional distance $CCdis_{odt}$ between origin and destination. Thus, we compute our measure for the institutional distance between two countries as the difference between the index in the origin and the destination $CC_{ot} - CC_{dt}$ (Álvarez et al., 2018). Since the simple distance accounts for the direction of the distance by allowing negative values, we also calculate the absolute value of this distance $|CCdis_{odt}|$ in order to capture the institutional distance as a measure of institutional dissimilarities regardless of the direction.

To capture the informal institutional environment in the destination, we draw on Hofstede's cultural dimensions provided by Hofstede Insights. Hofstede's cultural dimensions (Hofstede, 1984, 2001) in general constitute the most-established database for cultural variables in international business research (Beugelsdijk et al., 2017). In particular, we utilize the dimensions Uncertainty Avoidance, $UNCAVOID$, and Individualism, $INDIVID$. Uncertainty Avoidance "indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in [...] situations [that] are novel, unknown, surprising, and different from usual" (Hofstede, 2011, p.10). Thus, we utilize Uncertainty Avoidance as a potential cultural influence on the value of manager connections as uncertainty reducing devices. "Individualism on the one side versus its opposite, Collectivism, as a societal, not an individual characteristic, is the degree to which people in a society are integrated into groups. On the individualist side we find cultures in which the ties between individuals are loose" (Hofstede, 2011, p.11). As such, in a more collectivist society personal connections are of higher importance, which might enhance the effect of manager connections in our framework.

Beyond these measures of institutional development and institutional distance, we are also interested in specifically gender-related institutions. As a source for formal regulatory restrictions on female managers, we draw on *Women, Business and the Law*

(WBL) provided by the World Bank as a source. The WBL index provides a measure for the "laws and regulations that restrict women's economic opportunities" (World Bank, 2021, p. 2). In addition to the overall index, WBL provides several indices, of which we are especially interested in the index for mobility. This "mobility indicator measures constraints on a woman's agency and freedom of movement, both of which are likely to influence her decision to enter the labor force and engage in entrepreneurial activity" (World Bank, 2021, p.73). We deem this indicator as particularly fitting for our purpose since such regulations directly constrain the ability to utilize international connections in a business environment.

Moreover, we are also interested in informal gender-related institutions grounded in culture and values. For this purpose, we rely on the Gender Social Norms Index (GSNI) provided by the United Nations Development Programme. More specifically, we utilize the economic dimension of the GSNI as this dimension specifically captures the bias against women in business. At that, the GSNI measures the percentage of individuals with a bias against women based on the questions of whether men should have more right to a job than women and whether men make better business executives than women (United Nations Development Programme, 2020, p. 8). Thus, the GSNI captures exactly the influences of informal institutions that might affect the ability of female managers to utilize cross-cultural connections.

Figures C-3 and C-4 provide an overview of the different levels of WGI and $UNCAVOID$ around the world by displaying the mean value for each destination country in our data. For WGI, we can see the typical pattern of indicators for institutional development. North America, Europe, and the mature democracies with market-based economies in Asia (most prominently South Korea, Japan, and Australia) show high values. Emerging economies such as the 'BRICS' states (i.e. Brazil, Russia, India, China, and South Africa) take a middle position. Less developed markets like in Sub-Saharan countries feature lower values and states where public institutions are challenged by civil war, such as Lybia or Afghanistan, are placed at the lower end of the scale. For $UNCAVOID$, however, the painted picture is different and less structured. For instance, Europe features cultures with a very high tolerance for uncertainty in Scandinavia alongside very uncertainty avoiding cultures in Western and Eastern Europe. Thus, a comparison between the two maps illustrates that cultural values differ within geographic regions as well as within groups of countries with the same level of formal institutional development.[6]

[6]See Figures C-5 and C-6 for similar overviews regarding WBL and GSNI.

4 Estimation Strategy

4.1 Country-Level Analysis

Building upon the data described in Section 3, the following equation specifies our estimation strategy based on the structural gravity model described in Section 2. After including origin-year (η_{ot}) and destination-year (ν_{dt}) fixed effects to control for all potentially time-varying exporter- and importer-specific characteristics, and with ϵ_{odt} as an error term absorbing u_{odt}, we can write the log of country o's exports to country d as

$$log(TRADE_{odt}) = \beta_1 log(CONO_{odt}) + \beta_2 log(COND_{odt}) + \beta_3 log(DIST_{od}) + \gamma C_{odt} + \eta_{ot} + \nu_{dt} + \epsilon_{odt}.$$

The fixed effects also capture cross-country differences in the aggregate number of managers, such that our estimates for the trade effect of bilateral manager connections are not biased by potentially unobserved differences in country size. After controlling for idiosyncratic shocks on the exporter-year and the importer-year level, we exploit the variation in trade flows within country pairs over time and between country pairs. We can use both directions of manager connections, $CONO_{odt}$ and $COND_{odt}$, simultaneously. When estimated over all country pairs, using $COND_{odt}$ without $CONO_{odt}$ on o's exports as dependent variable is equivalent to using $CONO_{odt}$ without $COND_{odt}$ on o's imports as dependent variable, because all bilateral control variables are non-directional except for immigrants and emigrants which are always considered simultaneously. Using both directions for bilateral manager connections simultaneously accounts for the fact that exporting managers and importing managers can be influential at the same time.

We do not include country-pair fixed effects in the country-level regressions as with four observations per country pair (2000, 2005, 2010, 2015)this would remove much of the variation that we want to use for identification, namely that between country pairs. Further variables included to control for country-pair specific factors that affect trade are the usual ones from CEPII's gravity database: being part of a common regional trade agreement, contiguity, having a common official or primary language, having a common language spoken by at least 9 percent, a religious proximity index, common legal origins before 1991, common legal origins after 1991, having ever had the same colonizer, and having ever been in a colonial relationship. We also control for the log number of bilateral immigrants and emigrants to make sure that results are not driven by a correlation between overall migration and trade.

We report ordinary least squares (OLS) estimates for comparison, but following Silva and Tenreyro (2006) our preferred estimator is Poisson pseudo maximum likelikhood (PPML), as it allows to include zero trade flows and avoids potential problems of biased estimates under heteroskedasticity in a log-linearized model. In our PPML regressions we use trade flows in levels, where missing trade values are replaced with zeros if both

countries exist in a given year.

4.2 Firm-Level Analysis

To investigate the relationship between manager connections and foreign sales on the firm level, we apply a linear fixed effects regression model. We include directional country-pair-year fixed effects to control for unobserved factors common to all firms in one country exporting to a certain other country in a given year. The residual variation is between firms from such an origin-destination-year group. Most importantly, however, our data structure also allows for firm-year fixed effects as we are able to observe foreign sales to multiple destinations within one firm. This controls for all general firm-level variance including factors such as firm size and size of the management team, but also all unobservable firm-level characteristics (Andrews et al., 2017). Since standard control variables could not achieve that, firm-year fixed effects are necessary to reliably isolate the effect of manager characteristics (Bertrand and Schoar, 2003). Accordingly, the former residual variation is adjusted for firm-year specific factors, which leaves that part of the variation that stems from sales across different destinations within a firm in a given year.

Thus, beyond the different fixed effects, the only variables included in the regression are the manager connections to the destination and the foreign sales to the same destination. This results in the equation

$$asinh(SALES_{iodt}) = \beta_1 asinh(CON_{iodt}) + \gamma_{odt} + \eta_{it} + \epsilon_{iodt}, \tag{2}$$

In addition to the dependent variable $asinh(SALES_{iodt})$ and our main explanatory variable $asinh(CON_{iodt})$, γ_{odt} represents country-pair-year fixed effects, η_{it} represents firm-year fixed effects. Note that η_{it} also accounts for fixed effects on higher levels such as industry and origin country and that destination-year effects are already captured as they constitute a linear combination of γ_{odt} and η_{it}.

Both the dependent variable foreign sales and the main explanatory variable manager connections are transformed using the inverse hyperbolic sine transformation ($asinh$) as an approximation of the natural logarithm (Bellemare and Wichman, 2020). We rely on $asinh$ since our manager connections include zero values (MacKinnon and Magee, 1990; Burbidge et al., 1988). In contrast to the alternative approach of adding a constant value before log-transforming to avoid the loss of zero values, the asinh-transformation keeps zeros without introducing a potential bias (Bellemare and Wichman, 2020).

To investigate the moderating effect of the institutional environment on the focal relationship between manager connections and foreign sales, we enrich Equation 2 with an interaction effect. The resulting equation exemplarily features one possible moderating effect, namely institutions in the destination country, although analogous equations can be formed with institutional distance or other factors as interaction terms. The main

effect of the moderating variable is captured by ν_{dt} for destination-specific moderators and by γ_{odt} for pair-specific moderators.

$$asinh(SALES_{iodt}) = \beta_1 asinh(CON_{iodt}) + \beta_2 asinh(CON_{iodt}) \times CC_{dt} + \gamma_{odt} + \eta_{it} + \nu_{dt} + \epsilon_{iodt}$$

5 Results

In the following, we provide the results of our empirical analysis. First, we provide the results for the main effect of manager connections on international trade both on the country and the firm level. Subsequently, we take a closer look at the firm level by introducing institutional moderators. We conclude our analysis by investigating gender differences on the effect of manager connections and how they are driven by gender-specific discriminatory institutions.

5.1 Manager Connections and International Trade

We start our analysis with the effects of bilateral manager connections on the country level in a gravity setting. Table 1 presents the country-level results for both OLS and PPML estimation. We find significant, positive, and economically relevant pro-trade effects of manager connections. OLS 1 and PPML 1 include only managers in the exporting country. Accordingly, the estimated effect is that of manager connections on export value. OLS 2 and PPML 2 include only managers in the importing country, such that the estimate can be interpreted as the effect of manager connections on import value. OLS 3 and PPML 3 include managers in both countries simultaneously. If manager connections in the importing and exporting country are related, both should be included to avoid biased estimates. Thus, and due to the arguments in favor of PPML discussed earlier, our preferred specification is PPML 3.

Using both directions of manager connections simultaneously also results in a loss of observations, because manager data for both countries has to be available. The resulting sample might have somewhat different properties, i.e. consist mostly of high-income countries, which are less institutionally distant from each other and might benefit less from manager connections as a result.

Manager connections have an additional, independent pro-trade effect, as they capture different information than migration, which has already been studied extensively.

It is not surprising that estimates are slightly larger in PPML 1 and PPML 2. This can be driven by both the sample selection including institutionally more distant country pairs and by exlucison of a potentially relevant variable, namely the bilateral manager connections in the other country.

We now proceed with the firm-level analysis and present the results in Table 2. We

Table 1: Country-Level Results

	$log(TRADE_{odt})$			$TRADE_{odt}$		
	OLS 1	OLS 2	OLS 3	PPML 1	PPML 2	PPML 3
$log(CONO_{odt})$	0.10***		0.16***	0.20***		0.15***
	(0.04)		(0.04)	(0.03)		(0.04)
$log(COND_{odt})$		0.08**	0.08**		0.17***	0.07*
		(0.04)	(0.04)		(0.04)	(0.04)
Origin-year FE	YES	YES	YES	YES	YES	YES
Destination-year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES
R^2	0.92	0.92	0.93			
Adj. R^2	0.89	0.89	0.89			
Within R^2	0.57	0.56	0.73			
Pseudo R^2				0.96	0.95	0.96
Observations	2,004	2,003	976	2,010	2,009	976

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (clustered on the country-pair level) in parentheses.

test the main effect of manager connections first with the discrete variable CON_{iodt} that counts the number of connections and second with the dummy variable $i.CON_{iodt}$ indicating the presence of at least one connection. Furthermore, we employ the dummy variables $i.ADDCON_{iodt}$, capturing the event of establishing an additional connection to a destination. The coefficients are positive and highly significant for all measures of manager connections. Thus, we find a positive relationship between manager connections to a destination and foreign sales to this destination reinforcing the country-level results on the firm level.

5.2 Manager Connections and Institutions

Table 3 presents the results of interactions between manager connections and institutional moderators, namely the institutional development in the destination, the institutional distance between destination and origin, and informal institutions in the destination. The results show a consistent pattern of significant interactions with all institutional variables providing evidence for the notion of institutional influences on the effect of manager connections.

First, the negative and significant interaction effect between CON_{iodt} and CC_{dt} indicates that strong institutions in the destination diminish the positive effect of manager connections. Figure C-7 illustrates this moderating relationship by plotting the average marginal effects of manager connections at different levels of WGI_{dt}. While the marginal effect of manager connections is largest at low levels of CC_{dt} it decreases at higher values.

Table 2: Firm-Level Results: Main Effect of Manager Connections

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)
$asinh(CON_{iodt})$	0.34***		
	(0.05)		
$i.CON_{iodt}$		0.45***	
		(0.06)	
$i.ADDCON_{iodt}$			0.17*
			(0.09)
Firm-year FE	YES	YES	YES
Country-pair-year FE	YES	YES	YES
Adj. R^2	0.74	0.74	0.70
Observations	32,047	32,047	21,077

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

Hence, our results provide evidence that manager connections indeed serve as a substitute for functioning institutions in the destination.

Second, the positive and significant interaction effect between CON_{iodt} and $|CCdis_{odt}|$ reveals that the effect of manager connections increases with larger institutional distance. Accordingly, the main effect of CON_{iodt} (i.e. the effect when $|CCdis_{odt}|$ equals zero) becomes smaller and also less significant. The marginal effects in Figure C-8 illustrate this connection indicating that the positive effect of manager connections continually increases with larger institutional distance. This observation fits the notion that manager connections serve as means to bridge institutional distances.

Third, the significant interaction between CON_{iodt} and $CCdis_{odt}$ reinforces the moderating effect of institutional distance, and the positive coefficient reveals that the bridging of institutional distance by manager connections is particularly valuable when the institutions in the origin are better developed than in the destination. This finding connects the two effects of manager connections, namely to bridge institutional distance and to compensate for weak institutions.

Fourth, the significant interaction terms between CON_{iodt} and $UNCAVOID_d$ as well as $INDIVID_d$ provides evidence that the effect of manager connections also depends on the informal institutional environment in the destination. Namely, the positive moderating effect of $UNCAVOID_d$ suggests that manager connections serve as means to reduce uncertainty, which makes them especially valuable in cultures with high uncertainty avoidance. Interestingly, the insignificant main effect (i.e. the effect when $UNCAVOID_d$ equals zero) suggests, that the positive effect of CON_{iodt} might even vanish in the face of uncertainty embracing cultures. In a similar fashion, cultures embracing individualism rely less on personal relationships, which diminishes the positive effect of manager

Table 3: Firm-Level Results: Moderating Effect of Institutions

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)	(5)
$asinh(CON_{iodt})$	0.43^{***}	0.20^{***}	0.28^{***}	0.10	0.51^{***}
	(0.09)	(0.07)	(0.05)	(0.13)	(0.11)
$asinh(CON_{iodt}) \times CC_{dt}$	-0.08^{*}				
	(0.04)				
$asinh(CON_{iodt}) \times CCabsdis_{odt}$		0.16^{***}			
		(0.05)			
$asinh(CON_{iodt}) \times CCdis_{odt}$			0.10^{**}		
			(0.04)		
$asinh(CON_{iodt}) \times UNCAVOID_{d}$				0.00^{**}	
				(0.00)	
$asinh(CON_{iodt}) \times INDIVID_{d}$					-0.00^{**}
					(0.00)
Firm-year FE	YES	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES	YES
Adj. R^2	0.74	0.74	0.74	0.69	0.69
Observations	31,474	31,416	31,416	31,210	31,210

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

connections as indicated by the negative moderating effect of $INDIVID_{d}$.

5.3 Manager Connections and Gender Discrimination

Table 4 provides the results for our analysis of gender differences in the effect of manager connections. The first model provides only the main effect of manager connections, now distinguished by gender. Subsequently, we include gender-related institutional moderators in the destination to further explore and contextualize gender differences. Overall, we find evidence that both male and female connections have a positive effect on foreign sales, but that the effect of female connections can be severely diminished by gender-related regulatory constraints and cultural bias against women in the destination.

Regarding the main effect of $MCON_{iodt}$, we find a positive and significant effect on foreign sales. For $FCON_{iodt}$ the effect is also positive, albeit smaller than the effect of their male counterparts. Taken alone, these differences do not provide enough information for a closer interpretation and might even only occur due to a smaller sample size of female connections. However, the results for the gender-related institutions presented in models (2), (3), and (4) provide further insights regarding gender differences in the effect of manager connections.

First, the positive and significant interaction between $FCON_{iodt}$ and WBL_{dt} indicates

Table 4: Firm-Level Results: Gender Differences in Manager Connections

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)
$asinh(MCON_{iodt})$	0.33^{***}	0.73	2.00^{**}	0.08
	(0.06)	(0.51)	(0.81)	(0.10)
$asinh(FCON_{iodt})$	0.24^{***}	-1.81^{*}	-5.03^{***}	0.53^{***}
	(0.08)	(0.95)	(1.26)	(0.16)
$asinh(MCON_{iodt}) \times WBL_{dt}$		−0.00		
		(0.01)		
$asinh(FCON_{iodt}) \times WBL_{dt}$		0.02^{**}		
		(0.01)		
$asinh(MCON_{iodt}) \times FMOBIL_{dt}$			-0.02^{**}	
			(0.01)	
$asinh(FCON_{iodt}) \times FMOBIL_{dt}$			0.05^{***}	
			(0.01)	
$asinh(MCON_{iodt}) \times GSNI_{d}$				0.01^{***}
				(0.00)
Firm-year FE	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES
Adj. R^2	0.74	0.75	0.75	0.74
Observations	32,047	31,667	31,667	27,037

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

that formal gender-related institutions in the destination affect male and female connections differently. More specifically, the effect of female connections becomes stronger, when the laws in the destination country restrict women less and promote gender equality instead. Figure C-9 visualizes this connection by plotting the marginal effects of $FCON_{iodt}$ over different levels of WBL_{dt} with the marginal effects of $MCON_{iodt}$ as a reference. Besides the positive moderating effect, the graph illustrates that in the absence of regulatory restrictions on female managers (i.e. when WBL_{dt} equals 100) male and female connections are roughly equally valuable. Likewise, the interaction effect of female mobility, $FMOBIL_{dt}$, as a moderator of $FCON_{iodt}$ is positive and significant. Thus, the effect of female connections becomes stronger with less constraints on the freedom of movement for women in the destination. The significant and negative main effect of $FCON_{iodt}$ in both models (i.e. the effect when WBL_{dt} or $FMOBIL_{dt}$ equals zero) indicates that female connections might even be detrimental for foreign sales, when the regulatory environment in the destination severely restricts female managers. Although we have to treat the exact estimates especially for very low values of WBL_{dt} and $FMOBIL_{dt}$ with caution since no destination actually shows such harsh restrictions, the significant and positive moderating effect clearly provides evidence for a detrimental

effect of institutional restrictions.

Second, the inclusion of $GSNI_d$ as a moderator for $FCON_{iodt}$ shows a negative and significant interaction effect. This implies that destinations with informal institutions biased against female managers diminish the generally positive effect of female connections. Furthermore, the main effect of female connections (i.e. the effect when $GSNI_d$ equals zero) becomes considerably larger than the effect of male connections, indicating that destinations with feminine informal institutions benefit female connections as compared to male connections. Figure C-10 depicts the marginal effect of $FCON_{iodt}$ conditional on the level of $GSNI_d$, together with the marginal effect of $MCON_{iodt}$ for comparison. This illustrates the observation that, depending on $GSNI_d$, the effect of $FCON_{iodt}$ can be larger or smaller compared to $MCON_{iodt}$. These results provide evidence for informal institutions as one driver of gender differences in the effect of manager connections.

If exporting is a crucial element for firm success and connected managers are able to raise bilateral exports to an important market, this would incentivize firms to hire connected managers. However, if important destination markets are discriminating against women, which reduces the connection effect of female managers, firms may find it optimal to hire male managers. In this sense, our results indicate that there might be an unintended importing of gender inequality from discriminating destination markets under a performance-based hiring system in an otherwise non-discriminating origin country.

6 Robustness Checks

We conduct several robustness tests both for the firm- and country-level analyses. First and foremost, we conduct subsample analyses to rule out the possibility of biased results due to imbalanced data coverage or extreme values. Furthermore, we test alternative measures for key variables as well as alternative model specifications. Last but not least, we construct manager connections from another source to show that our results are not driven by peculiarities of the BoardEx data. We present result tables for all robustness tests in the appendix.

First, we analyze several regional subsamples to test whether our results are driven by imbalances in the data coverage. Especially the worldwide scope of the manager database might come with the drawback of a bias towards Western industrialized economies and in particular the United States. To rule out this possibility on the country level, we construct different regional subsets. We do not include connections in both directions simultaneously, as this would reduce the number of observations considerably. Our results are robust in different regional subsets of the data, namely the European Union including the United Kingdom (see Table D-3) and a set of all countries except for the European Union and the United Kingdom (see Table D-4). As our firm-level dataset is more restricted, we cannot construct multiple regional subsets. Instead we construct only one

subset without the USA, which is the country of origin for most firms. Again, our results remain qualitatively unchanged (see Table D-9).

Furthermore, we conduct outlier analyses to ensure that our results are not driven by few uncommon observations. As we are mainly interested in outliers in the sense of unusual extreme values, we identified potential outliers in CON_{iodt} on the firm level and CON_{odt} on the country level via the interquartile range criterion (Aggarwal, 2017).[7] Since our results remain qualitatively unchanged when we exclude these outliers (see Tables D-10 and D-5) we are confident that neither certain subsamples nor outliers drive our results.

The effects of manager connections might not take place immediately but take some time to play out. Hence, we rerun our models with connections lagged by one period and obtain qualitatively similar results to our main analysis (see Table D-7). On the firm level, we also run two models with connections lagged by one and two years. In addition, we conduct a lead-lag analysis to address the concern of reversed causality and to investigate the timing of effects. The results indicate that manager connections increase destination-specific sales in the same and following years, while we find no evidence of lead effects (see Table D-11).

We run a robustness test where we include the squared value of log manager connections on the country-level. We do not find strong evidence for such higher-dimensional effects (see D-6). Although we consider the chosen clusters for our standard errors on the firm level to be appropriate, to the best of our knowledge, there is no consensus in the literature for our type of data and estimation structure. Hence, we provide the results with alternative standard error clusters for our main effect of manager connections. The positive effect remains highly significant in every specification regardless of the chosen cluster for standard errors (see Table D-12). Regarding our analysis of institutional moderators, we test the robustness against measurement error by including alternative variables that measure institutional development. Specifically, we test alternative subindices of the WGI, namely Rule of Law, Regulatory Quality, and Government Effectiveness.[8] Compared to our main measure, Corruption Control, these alternatives might more precisely capture other dimensions of institutional quality that are especially important for international trade (Álvarez et al., 2018). The results including these al-

[7] According to the interquartile range criterion, observations are defined as outliers when their value is larger than $Q3 + 1.5 * IQR$ or smaller than $Q1 - 1.5 * IQR$ with $Q1$ and $Q3$ representing the first and third quartile and IQR representing the interquartile range.

[8] Rule of law is defined as "the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence" (Kaufmann et al., 2011, p. 223). Regulatory Quality is defined as "the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development"(Kaufmann et al., 2011, p. 223). Government Effectiveness is defined as "the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies" (Kaufmann et al., 2011, p. 223).

ternative variables instead of CC_{dt}, as well as the institutional distances based on these variables, generally support the findings of our main analysis with the sole exception of the moderating effect of Regulatory Quality in the destination, which only comes close to significance (see Table D-13).

Finally, Table D-8 presents the results of our country-level analysis when we use completely different data on manager connections. We construct these for the year 2018 from Burau van Dijk's Amadeus database[9]. Amadeus also constitutes a well established source for manager data (Lel et al., 2019; Belenzon et al., 2016) capturing European companies of all sizes including small businesses (Burgstahler et al., 2006; Cucculelli et al., 2019). Apart from the small variation that we consider nationality and place of birth as factors that constitute a connection to another country, the process of aggregating connection on the country-level remains the same. The pro-trade effect of manager connections remains significant and even similar in magnitude when we use these alternative data.

7 Conclusions

We construct a novel database of bilateral manager connections and use it to analyze the effects of bilateral manager connections on the firm and on the country level. On the country level, we find positive effects on both bilateral exports and imports. In this context, connections appear to be of slightly higher relevance for the exporter than for the importer. On the firm level, we confirm these positive effects of manager connections for destination-specific foreign sales. Building upon these results, we also provide evidence that manager connections bridge institutional distance and compensate weak institutions, as their effect is stronger for institutionally distant destinations with weak institutions. Furthermore, we find gender differences in the effect of manager connections that are mainly driven by discriminatory institutions in the destination country. This could give rise to an unintended importing of gender inequality regarding management positions. Our results highlight the importance of individual manager connections for both firm- and macro-level outcomes.

There are some limitations specific to our approach of identifying manager connections. First and foremost, nationality constitutes by no means the only possible source of connections. Future research might extend our results to other origins of connections. Moreover, just like gender, other individual manager characteristics such as personality traits, educational background or language skills might moderate the effect of manager connections. The same could be true for firm-level characteristics such as firm-governance or industry.

Finally, we want to address the issue of endogeneity. On the one hand, we are confi-

[9] https://www.bvdinfo.com/en-gb/our-products/data/international/amadeus

dent that our results are robust to endogeneity due to omitted variable bias. On the other hand, we cannot claim to provide terminal evidence for causal effects due to the potential for reverse causality. This problem is less severe for our analysis of institutional moderators. Since it seems unlikely that firm-level relationships significantly affect country-level institutions in the short run, exogeneity is a reasonable assumption for these institutional variables. However, this assumption does not hold for the main relationship between manager connections and trade. Anderson and Yotov (2020) compare trade elasticities in a short-run gravity model with their long-run equivalents after efficient investment in bilateral capacities took place. Manager connections can be a firm-specific improvement in bilateral capacities that reduces bilateral trade costs. In such a framework, causality could run in both directions simultaneously and lead to an equilibrium situation where higher bilateral capacities in the form of manager connections are associated with more bilateral trade. While the intuition behind a causal effect of manager connections on trade is persuasive, it is also plausible that trade might lead to the establishment of connections. In this sense, our results do not disentangle the two distinct causal effects, but provide a proxy for the equilibrium relationship.

Similar to the productivity effect of high-skilled immigrant workers demonstrated by Malchow-Møller et al. (2019), the pro-trade effect of manager connections in our setting might constitute a comparable factor that raises firms' revenues and profits by reducing destination-specific effective trade costs, such that measured productivity would increase. Furthermore, alternative sources of manager connections such as working experience or personal ties might hold potential for further analysis. Likewise, gender most likely does not constitute the only relevant individual characteristic that interacts with manager connections and different institutional settings. Here, other demographic characteristics such as race or age as well as individual assets such as language skills or international experience provide promising avenues for further examination.

All in all, our measure for manager connections as well as our findings regarding the interplay between these connections, trade, institutions, and gender offer valuable insights and open up various opportunities for further investigation. We hope that future research might draw on more extensive data to dive deeper into these important interdependencies and further explore the role of individual-level factors for macro-level outcomes.

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A Codebook

Variable	Definition	Source
CON_{miodt}	Dummy variable equal to 1 if manager m is connected to d via nationality	BoardEx
$MCON_{miodt}$	Dummy variable equal to 1 if manager m is male and connected to d via nationality	BoardEx
$FCON_{miodt}$	Dummy variable equal to 1 if manager m is female and connected to d via nationality	BoardEx
CON_{iodt}	Number of manager connections from i to d, computed as the sum of CON_{miodt} in i	BoardEx, Authors' calculation
$i.CON_{iodt}$	Dummy variable equal to 1 if $CON_{iodt} > 0$	BoardEx, Authors' calculation
$i.ADDCON_{iodt}$	Dummy variable equal to 1 if $CON_{iodt} > CON_{iodt-1}$	BoardEx, Authors' calculation
$MCON_{iodt}$	Number of male manager connections from firm i to d	BoardEx, Authors' calculation
$FCON_{iodt}$	Number of female manager connections from firm i to d	BoardEx, Authors' calculation
$SALES_{iodt}$	Foreign sales of firm i in destination d in 1000 current USD	Osiris
$CONO_{odt}$	Number of manager connections to d in o	BoardEx, Authors' calculation
$COND_{odt}$	Number of manager connections to o in d	BoardEx, Authors' calculation
$TRADE_{odt}$	Trade flow from o to d in 1000 current USD	BACI, CEPII
$DIST_{od}$	Population-weighted distance between most populated cities in o and d in km	CEPII
IMI_{odt}	Number (or "stock") of international migrants from d in o	UN Int. Migrant Stock
EMI_{odt}	Number (or "stock") of international migrants from o in d	UN Int. Migrant Stock
CC_{dt}	Control of corruption index of the Worldwide Governance Indicators in d	WGI, Authors' calculation
$CCdis_{odt}$	Institutional distance between o and d computed as the difference between CC_{ot} and CC_{dt}	WGI, Authors' calculation
$\lvert CCdis_{odt}\rvert$	Absolute institutional distance between o and d computed as the absolute value of $WGIdis_{odt}$	WGI, Authors' calculation
WBL_{dt}	Absence of regulatory restrictions on women in d	WBL
$FMOBIL_{dt}$	Women's freedom of movement in d	WBL
$GSNI_{d}$	Economic dimension of the Gender Social Norms Index in d	United Nations
RTA_{odt}	Common regional trade agreement	CEPII
$COMLANG_{odt}$	Common official language	CEPII

Indices: Manager m; Firm i; Origin (country) o; Destination (country) d; Time t.
Detailed Sources:
Amadeus: Amadeus Managers, Bureau van Dijk, https://www.bvdinfo.com/en-gb/our-products/data/international/amadeus
BoardEx: https://www.boardex.com/
Osiris: Bureau van Dijk, Osiris Financials, https://www.bvdinfo.com/en-gb/our-products/data/international/osiris
CEPII's gravity database: (Head et al., 2010; Mayer et al., 2014), http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8
Int. Migrant Stock: United Nations, https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates15.asp
WGI: Worldwide Governance Indicators (Kaufmann et al., 2011), https://info.worldbank.org/governance/wgi/
WBL: Women in Business, and the law (World Bank, 2021), https://wbl.worldbank.org/en/wbl
Gender Social Norms Index (United Nations Development Programme, 2020), http://hdr.undp.org/en/gsni

B Summary Statistics

Table B-1: Firm-level Descriptive Statistics

	n	Mean	Sd	Min	p25	Median	p75	Max
$SALES_{iodt}$	32,047	938,584.53	4,209,780	0.79	18,332	107,807.50	497,459.51	131488000
CON_{iodt}	32,047	0.53	1.195	0	0	0	1	15
$i.CON_{iodt}$	32,047	0.28	0.45	0	0	0	1	1
$i.ADDCON_{iodt}$	21,077	0.05	0.21	0	0	0	0	1
$MCON_{iodt}$	32,047	0.47	1.096	0	0	0	1	15
$FCON_{iodt}$	32,047	0.06	0.27	0	0	0	0	4

Table B-2: Country-Level Descriptive Statistics

Variable	n	Mean	Sd	Min	P25	Median	P75	Max
$CONO_{odt}$	2,120	7.4	24.4	1.0	1.0	2.0	5.0	519.0
IMI_{odt}	2,120	115,247.8	545,158.0	0.0	2,566.5	14,936.5	65,370.5	12,168,662.0
EMI_{odt}	2,120	92,996.5	490,202.7	0.0	1,527.8	10,264.0	44,780.0	12,168,662.0
$COMLANG_{odt}$	2,120	0.3	0.4	0.0	0.0	0.0	1.0	1.0
$DIST_{od}$	2,120	5,329.1	4,501.2	59.6	1,297.7	4458.1	8,707.7	19,263.9
RTA_{odt}	2,120	0.5	0.5	0.0	0.0	1.0	1.0	1.0
$TRADE_{odt}$	2,120	10,175,400.7	26,457,852.2	0.0	557,851.7	2,526,845.1	8,170,714.9	428,574,812.2
$COND_{odt}$	2,120	7.4	24.4	1.0	1.0	2.0	5.0	519.0
IMI_{odt}	2,120	92,996.5	490,202.7	0.0	1,527.8	10,264.0	44,780.0	12,168,662.0
EMI_{odt}	2,120	115,247.8	545,158.0	0.0	2,566.5	14,936.5	65,370.5	12,168,662.0
$COMLANG_{odt}$	2,120	0.3	0.4	0.0	0.0	0.0	1.0	1.0
$DIST_{od}$	2,120	5,329.1	4,501.2	59.6	1,297.7	4,458.1	8,707.7	19,263.9
RTA_{odt}	2,120	0.5	0.5	0.0	0.0	1.0	1.0	1.0
$TRADE_{odt}$	2,120	10,707,773.5	26,786,177.9	0.0	566,890.8	2,764,486.0	9,176,300.5	428,574,812.2
$CONO_{odt}$ & $COND_{odt}$	1,014	13.0	34.1	1	2.0	4.0	12.8	519.0
IMI_{odt} & EMI_{odt}	1,014	149,448.0	671,359.1	0	9,406.2	26,556.0	110,059.2	12,168,662.0
$COMLANG_{odt}$	1,014	0.3	0.5	0	0.0	0.0	1.0	1.0
$DIST_{od}$	1,014	4,625.8	4,585.6	173	959.6	2,396.8	6,895.1	19,147.1
RTA_{odt}	1,014	0.6	0.5	0	0.0	1.0	1.0	1.0
$TRADE_{odt}$	1,014	17,650,897.2	35,559,098.2	0	2,281,982.3	6,645,530.6	19,596,733.0	428,574,812.2

C Supplementary Figures

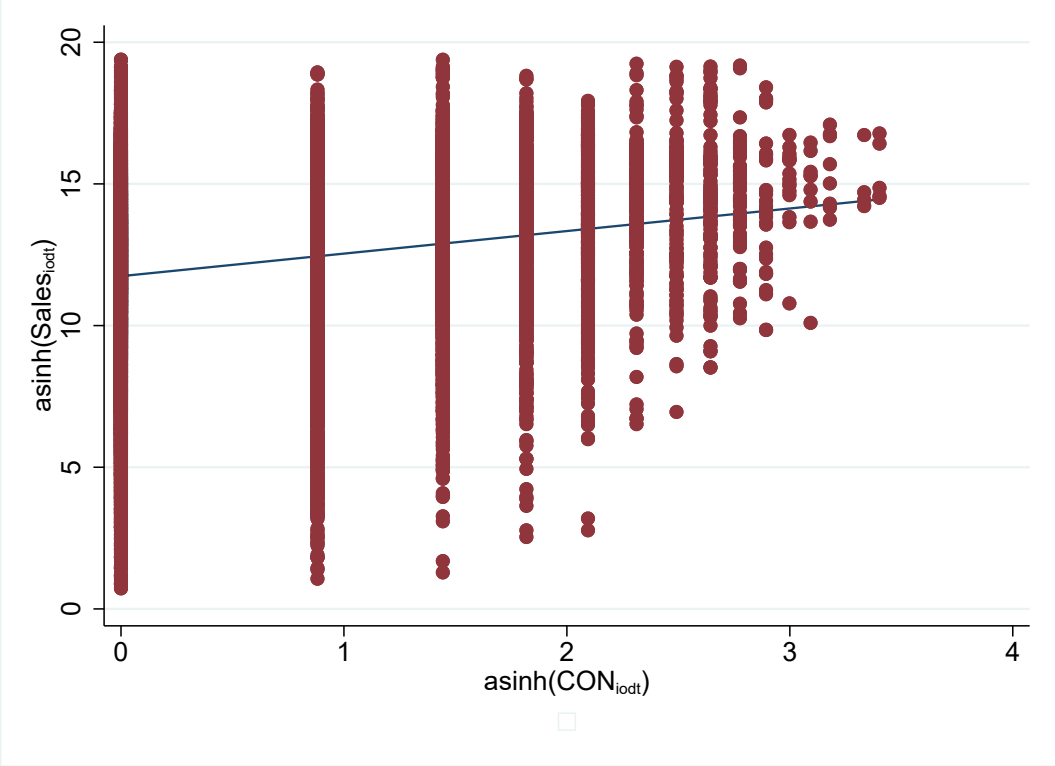

Figure C-1: Firm-Level Scatterplot

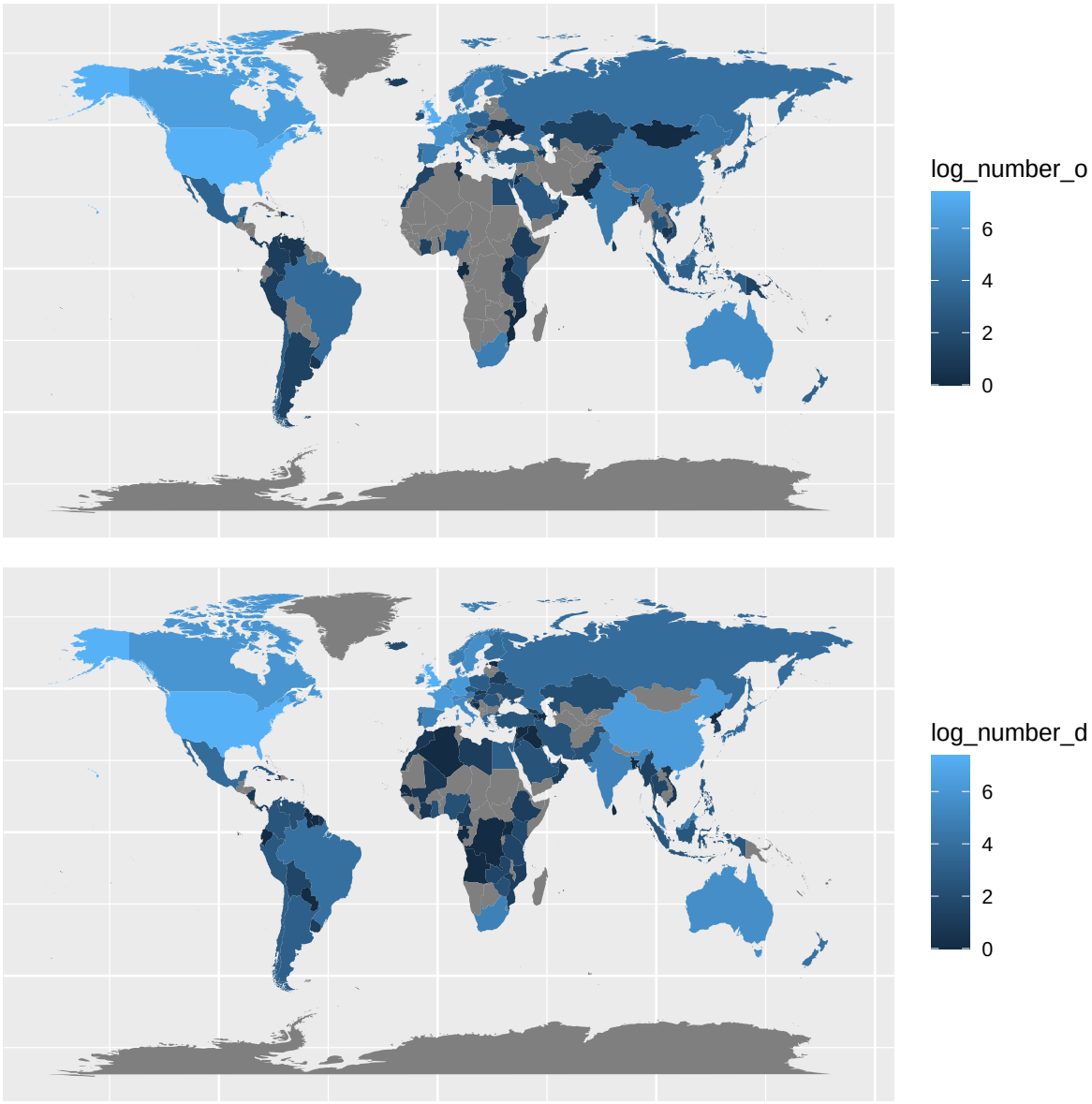

Figure C-2: Log Number of Manager Connections in BoardEx 2015

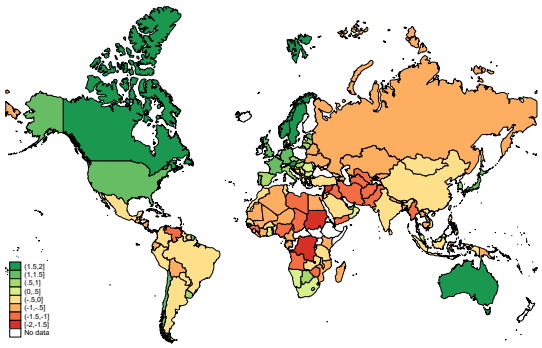

Figure C-3: Geoplot of WGI

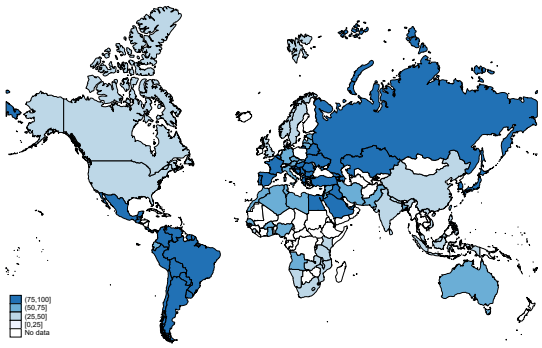

Figure C-4: Geoplot of UNCAVOID

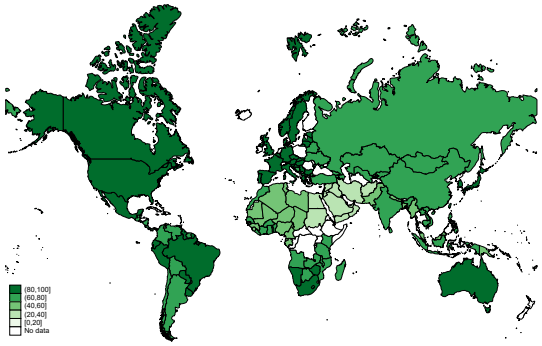

Figure C-5: Geoplot of WBL

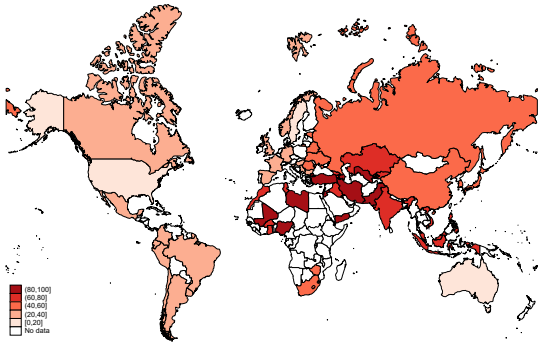

Figure C-6: Geoplot of GSNI

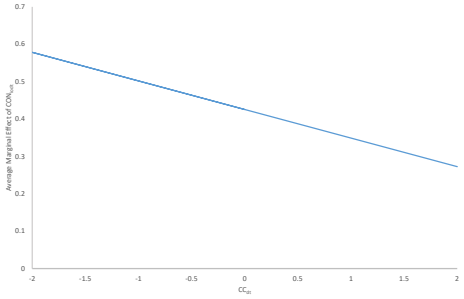

Figure C-7: Average Marginal Effects of Connections Dependent on CC_d

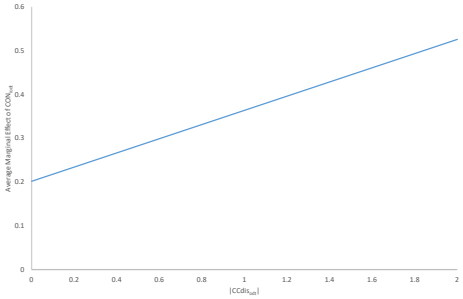

Figure C-8: Average Marginal Effects of Connections Dependent on $|CCdis_{odt}|$

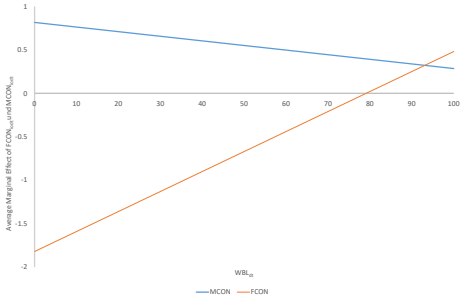

Figure C-9: Average Marginal Effects of $FCON_{iodt}$ Dependent on WBL_{dt}

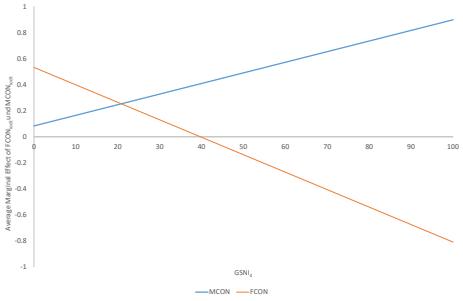

Figure C-10: Average Marginal Effects of $FCON_{iodt}$ Dependent on $GSNI_d$

D Robustness Checks

D.1 Country Level

Table D-3: Country-Level Results: Only Managers in EU or UK

	$log(TRADE_{odt})$		$TRADE_{odt}$	
	OLS 1	OLS 2	PPML 1	PPML 2
$log(CONO_{odt})$	0.07**		0.11***	
	(0.03)		(0.02)	
$log(COND_{odt})$		0.07*		0.10***
		(0.04)		(0.03)
Origin-year FE	YES	YES	YES	YES
Destination-year FE	YES	YES	YES	YES
Controls	YES	YES	YES	YES
R^2	0.96	0.95		
Adj. R^2	0.94	0.92		
Within R^2	0.64	0.57		
Pseudo R^2			0.97	0.95
Observations	1,131	1,131	1,131	1,131

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (clustered on the country-pair level) in parentheses.

Table D-4: Country-Level Results: Only Managers in NAM or ROW

	$log(TRADE_{odt})$		$TRADE_{odt}$	
	OLS 1	OLS 2	PPML 1	PPML 2
$log(CONO_{odt})$	0.11		0.22***	
	(0.07)		(0.08)	
$log(COND_{odt})$		0.08		0.14**
		(0.06)		(0.06)
Origin-year FE	YES	YES	YES	YES
Destination-year FE	YES	YES	YES	YES
Controls	YES	YES	YES	YES
R^2	0.93	0.94		
Adj. R^2	0.87	0.89		
Within R^2	0.43	0.42		
Pseudo R^2			0.97	0.97
Observations	873	872	879	877

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (clustered on the country-pair level) in parentheses.

Table D-5: Country-Level Results Without Outliers

	$log(TRADE_{odt})$			$TRADE_{odt}$		
	OLS 1	OLS 2	OLS 3	PPML 1	PPML 2	PPML 3
$log(CONO_{odt})$	0.07**		0.13***	0.18***		0.14***
	(0.04)		(0.04)	(0.03)		(0.04)
$log(COND_{odt})$		0.06*	0.07**		0.15***	0.05
		(0.04)	(0.04)		(0.04)	(0.04)
Origin-year FE	YES	YES	YES	YES	YES	YES
Destination-year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES
R^2	0.92	0.92	0.92			
Adj. R^2	0.89	0.89	0.89			
Within R^2	0.55	0.54	0.69			
Pseudo R^2				0.95	0.94	0.96
Observations	1,951	1,950	926	1,957	1,956	926

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (clustered on the country-pair level) in parentheses. Observations with extreme values for manager connections have been excluded.

Table D-6: Country-Level Results with Squared Connections

	$log(TRADE_{odt})$			$TRADE_{odt}$		
	OLS 1	OLS 2	OLS 3	PPML 1	PPML 2	PPML 3
$log(CONO_{odt})$	0.02		0.10*	0.16***		0.13**
	(0.05)		(0.06)	(0.04)		(0.05)
$log(CONO_{odt})^2$	0.02*		0.01	0.01		0.00
	(0.01)		(0.01)	(0.01)		(0.01)
$log(COND_{odt})$		0.01	0.02		0.11**	0.01
		(0.06)	(0.06)		(0.05)	(0.05)
$log(COND_{odt})^2$		0.02	0.02		0.01	0.01
		(0.01)	(0.01)		(0.01)	(0.01)
Origin-year FE	YES	YES	YES	YES	YES	YES
Destination-year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES
R^2	0.92	0.92	0.93			
Adj. R^2	0.89	0.89	0.89			
Within R^2	0.58	0.56	0.74			
Pseudo R^2				0.96	0.95	0.96
Observations	2,004	2,003	976	2,010	2,009	976

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (clustered on the country-pair level) in parentheses.

Table D-7: Country-Level Results with Lagged Connections

	$log(TRADE_{odt})$			$TRADE_{odt}$		
	OLS 1	OLS 2	OLS 3	PPML 1	PPML 2	PPML 3
$l.log(CONO_{odt})$	0.13***		0.18***	0.19***		0.17***
	(0.05)		(0.05)	(0.03)		(0.05)
$l.log(COND_{odt})$		0.12**	0.06		0.17***	0.05
		(0.05)	(0.05)		(0.04)	(0.05)
Origin-year FE	YES	YES	YES	YES	YES	YES
Destination-year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES
R^2	0.94	0.94	0.93			
Adj. R^2	0.91	0.91	0.89			
Within R^2	0.62	0.63	0.77			
Pseudo R^2				0.96	0.96	0.97
Observations	1,077	1,075	522	1,080	1,078	522

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (clustered on the country-pair level) in parentheses. "l." indicates a variable that is lagged by one period, i.e. 5 years.

Table D-8: Country-Level Results with Amadeus Data

	$log(TRADE_{odt})$			$TRADE_{odt}$		
	OLS 1	OLS 2	OLS 3	PPML 1	PPML 2	PPML 3
$log(CONO_{odt})$	0.15***		0.20***	0.19***		0.06
	(0.03)		(0.04)	(0.03)		(0.06)
$log(COND_{odt})$		0.15***	0.15***		0.19***	0.13***
		(0.04)	(0.04)		(0.04)	(0.05)
Origin FE	YES	YES	YES	YES	YES	YES
Destination FE	YES	YES	YES	YES	YES	YES
R^2	0.90	0.84	0.94			
Adj. R^2	0.89	0.83	0.93			
Within R^2	0.34	0.19	0.67			
Pseudo R^2				0.95	0.95	0.96
Observations	3,450	3,424	1,116	3,465	3,463	1,116

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (twoway-clustered on the importer and exporter level) in parentheses. Data is for the year 2018. All specifications include the following control variables: log(DIST), common regional trade agreement, contiguity, common official or primary language, common language spoken by at least 9 percent, religious proximity index, common legal origins before 1991, common legal origins after 1991, ever had same colonizer, ever in colonial relationship.

D.2 Firm Level

Table D-9: Firm-Level Results Without USA

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)	(5)	(6)
$asinh(CON_{iodt})$	0.36^{***}	0.46^{***}	0.20^{**}	0.58^{***}		
	(0.06)	(0.10)	(0.08)	(0.12)		
$asinh(CON_{iodt}) \times CC_{dt}$		-0.09^{*}				
		(0.05)				
$asinh(CON_{iodt}) \times \lvert CCdis_{odt} \rvert$			0.18^{***}			
			(0.06)			
$asinh(CON_{iodt}) \times INDIVID_{d}$				-0.00^{**}		
				(0.00)		
$asinh(MCON_{iodt})$					0.96^{*}	0.03
					(0.58)	(0.10)
$asinh(FCON_{iodt})$					-1.75^{*}	0.52^{***}
					(1.02)	(0.17)
$asinh(MCON_{iodt}) \times WBL_{dt}$					-0.01	
					(0.01)	
$asinh(FCON_{iodt}) \times WBL_{dt}$					0.02^{*}	
					(0.01)	
$asinh(MCON_{iodt}) \times GSNI_{d}$						0.01^{***}
						(0.00)
$asinh(FCON_{iodt}) \times GSNI_{d}$						-0.01^{*}
						(0.01)
Firm-year FE	YES	YES	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES	YES	YES
Adj. R^2	0.69	0.69	0.69	0.70	0.70	0.70
Observations	26,190	25,705	25,647	25,416	25,833	21,984

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

Table D-10: Firm-Level Results Without Outliers in $asinh(CON_{iodt})$

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)	(5)	(6)
$asinh(CON_{iodt})$	0.37^{***}	0.46^{***}	0.22^{***}	0.64^{***}		
	(0.05)	(0.09)	(0.07)	(0.12)		
$asinh(CON_{iodt}) \times CC_{dt}$		-0.08^{*}				
		(0.04)				
$asinh(CON_{iodt}) \times \lvert CCdis_{odt} \rvert$			0.17^{***}			
			(0.06)			
$asinh(CON_{iodt}) \times INDIVID_{d}$				-0.00^{***}		
				(0.00)		
$asinh(MCON_{iodt})$					0.76	0.07
					(0.52)	(0.10)
$asinh(FCON_{iodt})$					-2.52^{***}	0.62^{***}
					(0.84)	(0.17)
$asinh(MCON_{iodt}) \times WBL_{dt}$					-0.00	
					(0.01)	
$asinh(FCON_{iodt}) \times WBL_{dt}$					0.03^{***}	
					(0.01)	
$asinh(MCON_{iodt}) \times GSNI_{d}$						0.01^{***}
						(0.00)
$asinh(FCON_{iodt}) \times GSNI_{d}$						-0.02^{**}
						(0.01)
Firm-year FE	YES	YES	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES	YES	YES
Adj. R^2	0.74	0.74	0.74	0.75	0.75	0.74
Observations	31,458	30,892	30,834	30,621	31,078	26,484

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

Table D-12: Firm-Level Results: Different Levels for Standard Errors

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$asinh(CON_{iodt})$	0.34***	0.34***	0.34***	0.34***	0.34***	0.34***	0.34***
	(0.08)	(0.05)	(0.09)	(0.06)	(0.08)	(0.06)	(0.08)
Firm-year FE	YES	YES	YES	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES	YES	YES	YES
Cluster:							
Firm	YES	YES		YES			
Origin			YES		YES		
Destination	YES		YES				
Country-pair	YES	YES				YES	
Firm-destination							YES
Adj. R^2	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Observations	32,047	32,047	32,047	32,047	32,047	32,047	32,047

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors in parentheses are clustered as indicated. Multiple clusters indicate multiway-clustering.

Table D-11: Firm-Level Results: Lagged Connections and Lead-Lag Analysis

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)
$asinh(CON_{iodt-2})$		0.39***	0.31***	
		(0.06)	(0.07)	
$asinh(CON_{iodt-1})$	0.38***		0.10	0.22***
	0.06		(0.07)	(0.07)
$asinh(CON_{iodt})$				0.07
				(0.07)
$asinh(CON_{iodt+1})$				0.10
				(0.08)
Firm-year FE	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES
Adj. R^2	0.71	0.66	0.64	0.67
Observations	20,916	15,553	14,327	14,327

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

Table D-13: Firm-Level Results: Alternative Institutional Moderators

Dep. Var.: $asinh(SALES_{iodt})$	(1)	(2)	(3)	(4)	(5)	(6)
$asinh(CON_{iodt})$	0.43^{***}	0.28^{***}	0.42^{***}	0.29^{***}	0.47^{***}	0.28^{***}
	(0.09)	(0.05)	(0.09)	(0.05)	(0.11)	(0.05)
$asinh(CON_{iodt}) \times RL_{dt}$	-0.08^{*}					
	(0.04)					
$asinh(CON_{iodt}) \times RLdis_{dt}$		0.12^{***}				
		(0.04)				
$asinh(CON_{iodt}) \times RQ_{dt}$			-0.07			
			(0.05)			
$asinh(CON_{iodt}) \times RQdis_{dt}$				0.09^{**}		
				(0.04)		
$asinh(CON_{iodt}) \times GE_{dt}$					-0.10^{*}	
					(0.06)	
$asinh(CON_{iodt}) \times GEdis_{dt}$						0.13^{**}
						(0.06)
Firm-year FE	YES	YES	YES	YES	YES	YES
Country-pair-year FE	YES	YES	YES	YES	YES	YES
Adj. R^2	0.74	0.74	0.74	0.74	0.74	0.74
Observations	31,479	31,451	31,474	31,416	31,474	31,416

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. Standard errors (three-way clustered by firm-year, destination, and country pair) in parentheses.

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CIW – Center for Interdisciplinary Economics
Scharnhorststrasse 100
D-48151 Münster

phone: +49-251/83-25329
fax: +49-251/83-28429

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