Migrants and multinational firms: The role of institutional affinity and connectedness in FDI

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ABSTRACT

We examine how, and to what extent, migrants in a host country attract foreign direct investment (FDI) from firms based in their country of origin (CO). Introducing the notion of *institutional affinity*, we argue that increased *institutional affinity* and increased *connectedness* of institutional environments of migrants' CO and country of residence, make a location attractive to CO firms. Empirical analysis of FDI and migration panel data shows that in addition to the traditional factors influencing FDI patterns, there is a collective migrant effect on FDI, and this effect is statistically significant and economically meaningful for migrants from developing countries.

1. Introduction

The Department of Economic and Social Affairs at the United Nations estimates that 258 million people are living outside their country of birth worldwide as of 2017, up from 220 million in 2010 and 173 million in 2000 (UnitedNations, 2017). High-income countries host approximately two-thirds of all foreign-born population. As of 2017, 64% of all foreign-born population worldwide—165 million people—-lived in high-income countries (UnitedNations, 2017). The increased number of migrants (aka persons born in one country, but living permanently in another) and non-immigrants (or transient migrants as we call them) in the firms of many developed countries have prompted scholars to examine the effect of migration on the cross-border firm activities at micro (Foley & Kerr, 2012; Hernandez, 2014; Kerr, 2008; Shukla & Cantwell, 2016; Zaheer, Lamin, & Subramani, 2009) and macro levels (Buch, Kleinert, & Toubal, 2006; Javorcik, Özden, Spatareanu, & Neagu, 2011; Kugler & Rapoport, 2005).

From a global strategy perspective, migrants can be assets for firms seeking to expand overseas, as their idiosyncratic knowledge and prior home country experience (Shukla & Cantwell, 2016) can reduce the need for learning through operational experience in a foreign location (Johanson & Vahlne, 1977). So far, studies that have specifically examined the migration-foreign direct investment (FDI) link have emphasized the knowledge carrier channel as the mechanism by which migrants influence FDI activities between their country of origin (CO) and country of residence (CR). This stream of literature has ignored the notion that over time migrants also bring about *changes in the institutional environment* of a location, which makes the location *less foreign*

and *more attractive* for investing firms. Focusing on this locational aspect, in this study, we seek an answer to the following question—How and to what extent do foreign-born workers in a host country exert gravitational pull on the inward FDI activities of firms from their CO? We view the institutional environment as one that "includes political institutions such as the regime type, the national structure of policy-making and the judicial system, economic institutions such as the structure of the national factor markets and the terms of access to international factors of production and socio-cultural factors such as informal norms, customs, mores and religions" (Mudambi & Navarra, 2002), as well as the social, economic, educational, and legal organizations that are the creators and gatekeepers of institutions in the context of a country.

To seek an answer to our research question, we draw on North's theory of institutional change (1990, 1991) and Granovetter's notion of personal ties (1973, 1985) to propose a novel conceptual framework that provides a cohesive conceptualization of the migration –FDI relationship and elaborates on the mechanisms that influence this relationship. Using migrant roles as an anchor for this framework, we identify two roles: (1) Migrants as creators of institutional affinity; (2) Migrants as connectors of institutional environments. This conceptual framework lays the groundwork for our hypotheses. Our main argument is that in addition to the traditional determinants of FDI (geographic proximity, economic development, political stability, quality of formal institutions, government effectiveness, rule of law, and linguistic proximity) established in the extant international business (IB) literature, increased concentration of migrants, *collectively* through their interactions and exchange in the social and economic realm help in

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creating an *institutional variety* in a location, which makes the location relatively *less foreign*; we call this locational institutional effect: *institutional affinity*. Reduced foreignness through mechanisms of trust, bounded solidarity (Portes & Sensenbrenner, 1993), homophily (McPherson, Smith-Lovin, & Cook, 2001), familiar business practices and rules in the location and increased connectedness through knowledge flows, positively affects resource investment in that location by migrants' CO firms. Thus, in this paper, we use a socio-economic lens to view the migration-FDI phenomenon. However, we do not lose sight of the fact that the firms we observe are for-profit firms and that they engage in FDI to create and capture wealth, whether the motive for FDI is to seek resources, markets, efficiency, knowledge, strategic assets or a combination of these.

We test the relationship between migration-related variables and inward FDI using panel data in the context of United States (U.S.) as the host country. To reduce endogeneity concerns, we use a deep lag of twelve years between prior migration variables and subsequent inward FDI stock. Therefore, we examine the effect of migration-related variables in 1980, 1990, and 2000 in the U.S. on FDI stock in 1992, 2002, and 2012 respectively. Our findings show that migrant-induced institutional change (in a developed host country) is a predictor of future inward FDI by firms from migrants' CO into migrants' CR for *developing country migrants*, thereby supporting our proposed hypotheses for institutional affinity, although only for developing countries. Our findings also reveal that the connectedness provided by migrants positively affects future inward FDI from migrants' CO to their CR for *both* developed and developing countries.

These findings suggest the importance of migrants especially in the cross-border strategies of emerging market firms. Migrant communities in international locations can raise the attractiveness of the location and can help reduce its foreignness, thus providing *locational advantages* to developing country firms seeking growth through internationalization. These locational advantages arising from increased institutional diversity accrue in the form of access to human resources with a shared cultural heritage, which allows for more effective sharing, interpretation, and application of knowledge about business practices, regulations, financial resources, and business connections. Advantages also arise for expatriate managers and decision-makers of CO firms who come to view the regions as familiar (relative to other foreign locations) as these regions have more in common with their CO environment, in the form of access to relevant religious, cultural, and economic organizations.

This study has several implications for the IB literature, and in particular for the theories of FDI and the literature on the host-country institutional environment. First, it establishes the role of migrant-induced institutional affinity, resulting from increased concentration of migrants from a CO in a given geographic location, as a driver of FDI for firms from that CO. Second, the conceptual framework that we develop here links migration with FDI through institutional change, cross-border institutional connectedness, and the level of CO development. More importantly, we distinguish between migration-induced *institutional variety in a host location* and migrant-induced *connectedness between* the CO and CR. By proposing two distinct effects in this respect, which are supported by the data, our framework provides the foundation for future empirical research in this domain. Third, the notion of institutional affinity introduced in this study has implications for the literature on institutional distance, which focuses on the *average* distance between the institutional environments of countries. Institutional affinity, our interpretation, concerns a more *focused effect* within the distribution of institutional characteristics in a CR; we elaborate on this idea in the discussion section. Lastly, this study uses an original dataset and introduces some novel measures of migrant activity for the migration-FDI literature.

2. Migration and International Business: Taking Stock

Beginning with the seminal work of Hymer (1960), and the path-breaking work of scholars such as Caves (1971) and Dunning (1980, 1988), there is now a huge literature that examines the determinants and effects of FDI activities of multinational firms (Agarwal, 1980; Blomstrom, Kokko, & Globerman, 2001; Blonigen, 2005; Caves, 1996; Dunning, 1993; Ghemawat, 2001; Kim & Aguilera, 2016; Nielsen, Asmussen, & Weatherall, 2017). FDI determinants, broadly speaking, fall into four major groups—cultural factors, institutional factors, economic factors, and geographic factors (Ghemawat, 2001). Several scholars have examined the effects of these factors on the cross-border economic activities of firms. Conceptualizing them as distances along the four dimensions, namely – cultural distance (Beugelsdijk, Kostova, Kunst, Spadafora, & van Essen, 2018; Kogut & Singh, 1988), economic distance (Tsang & Yip, 2007), geographic distance (Grosse & Trevino, 1996), and institutional distance (Kostova & Zaheer, 1999; Kostova, 1999; Xu & Shenkar, 2002), various scholars have examined how these distances influence the propensity of firms to engage in FDI. Evidence from a few recent studies suggests that foreign-born workers may help to bridge the cultural, economic, administrative, and technological distance between countries (Devane, 2006; Kerr, 2008; Madhavan & Iriyama, 2009; Oettl & Agrawal, 2008), thereby influencing the trade and investment flows between them.

Of the existing migration-FDI studies, only a handful examine the effect of migrants in a host country on the *inward* investment patterns of firms from migrants' CO in that host country. Buch et al. (2006) examine state-level data for Germany to find that states that have a large population from a foreign country attract higher stocks of FDI from that foreign country, suggesting that cultural linkages play a role in international economic relations. Foad (2012) examines the regional distribution of FDI and immigrants from 10 countries (primarily OECD countries) in the 50 U.S. states in a cross-sectional setting to find that immigrants attract FDI from their respective countries of origin. Hernandez (2014) argues that co-nationality increases both the motivation to engage in exchange as well as the efficiency of exchange due to homophily (McPherson et al., 2001).

Thus, prior studies emphasize one or both of the following two factors in influencing the relationship between migration and FDI: (1) the role of idiosyncratic knowledge held by foreign-born workers, and (2) the role of social ties, drawing on the relational governance perspective (Burt, 2000; Granovetter, 1985; Uzzi, 1997). The underlying assumption is that international economic activities carry higher transaction costs (Coase, 1937; Williamson, 1981) due to an increased liability of foreignness (Hymer, 1960; Zaheer, 1995), and migrants help to lower transaction costs through increased knowledge flows (Ellis, 2011). We argue in this paper that there is another factor that influences the migration-FDI relationship; this factor brings the *location* to the fore. We argue that increased concentration of migrants from a CO bring about *changes in the formal and informal institutional environment* of their CR, which in turn make the *location attractive* for investment to CO firms seeking to expand in foreign locations. We elaborate on this idea in the next section, where we present our conceptual framework for examining the migration-FDI relationship.

3. Theoretical framework and hypotheses development

To understand *how* the foreign-born population in a host country influences the FDI activities of CO multinational firms, we propose a role-based framework to explain the migration-FDI relationship. We identify two roles for the foreign-born persons: (1) as *creators* of institutional variety, and (2) as *connectors* of cross-border institutional environments, by virtue of which they can influence the investment activities of firms from their CO. As *creators* of institutional variety, migrants from a CO *collectively* help in reducing the liability of foreignness (Hymer, 1960; Zaheer, 1995) through the process of local

institutional diversification. As *connectors*, migrants *collectively* help in facilitating increased knowledge exchange between their CO and CR. The presence of a migrant community in the CR provides a stimulus to the cross-border knowledge exchange process as it creates an increase in points of connectivity between the countries. It also allows for better absorption and more effective application of knowledge due to a shared understanding of goals and potential context of application. To arrive at this framework, we draw on North's theory of institutional change (1990, 1991) and on Granovetter's (1973, 1985) notion of personal ties, in addition to drawing on the mechanisms identified through our review of the extant IB literature.

3.1. Developing the theoretical framework

3.1.1. Migrants as creators of institutional variety

"Institutions provide the basic structure by which human beings throughout history have created order and attempted to reduce uncertainty in exchange." (North, 1990, p. 118)

Institutions, which consist of "formal constraints (e.g., rules, laws, constitutions), informal constraints (e.g., norms of behavior, conventions, self-imposed codes of conduct) and their enforcement characteristics", define how incentives are structured in societies (North, 1990, p. 360); they help reduce uncertainty in social and economic exchange. Institutional change, although incremental, comes about as a result of choices made by individual actors and entrepreneurs, each of who seek to make profit by restructuring political or economic exchanges (North, 1990, p. 361). Whether it is in the form of a new legislation that prevents collusion between firms or in the form of a petition for raising awareness about air pollution levels to capture a lawmaker's attention to jumpstart the legislative process, institutional change is a slow, path-dependent process. The underlying goal, as noted in North's quote above, is to create order and to reduce uncertainty in social and economic exchange.

Migration theorists note that the process of relocation of people from their CO to a new country is challenging (Massey et al., 1993). Foreign-born migrants, whether they are relocating for economic reasons (i.e. to seek better economic opportunities), or leaving their CO forcibly to escape war, religious or political persecution, or a natural disaster, need to adapt to the new environment of the CR, *socially* and *economically*. Social adaptation is needed because migrants typically do not transplant their entire social network to their adopted country when they migrate (White & Tadesse, 2011). Economic adaptation is needed because not all migrants have a guaranteed source of income, when they first arrive. The resulting social isolation for most migrants (Rangan & Sengul, 2009) and the lack of economic independence for some migrants raises uncertainty for them in the social and economic domains.

To reduce social and economic uncertainties, migrants from a CO form formal and informal associations based on kinship and dialect (Tong, 2005). Migrant entrepreneurs often establish religious and cultural organizations to protect and celebrate their linguistic and cultural heritage. These organizations, often in the form of temples, churches, mosques, and synagogues, among others provide some similarity, in sight and sound, with migrants' native country (Hirschman, 2004). Migrants need to adapt in the new CR economically as well. While many migrants have a guaranteed employment when they first arrive, many others do not. Lack of familiarity with the business practices and the formal institutional environment in the CR often requires them to rely on *migrant spaces*. Migrants create spaces for exchange and collaboration (Saxenian, 2006), where they can share experiences, challenges, and concerns with co-nationals of same ethnicity (Saxenian, 2006, p. 59–60). Since not all migrants relocate through a firm or to work for a firm in the CR, many migrants often start businesses in niche areas that serve the needs of the local ethnic community (Landolt, Autler, & Baires, 1999). Many others focus on specific business sectors

that have proven successful to other migrants in their community (Kerr & Mandorff, 2015). These social and economic interactions of migrants collectively bring about changes in the CR institutional environment. The use of native language in business transactions and in migrant spaces as well as celebration of native cultural heritage through social events adds to and so diversifies the local institutional environment of the location.

The resulting institutional variety in the form of new or adapted rules (such as availability of government forms in the native language of a migrant group in the host country) as well as existence of cultural, economic, and educational organizations serving the needs of migrant community, although marginal from the perspective of the national institutional structure of the host country, help create, over time, an environment that is somewhat similar to that of migrant group's CO. We call this social (group) effect—*institutional affinity*, where the term affinity comes from the psychology literature stream (Moreland & Beach, 1992) and is viewed here as a *combination of familiarity and similarity,* among other factors, "that strengthens social relations by fostering a sense of closeness among people" (Moreland & Beach, 1992, p. 255). Closeness among migrants from a CO leads to the emergence of a clearer sense of identity for the migrant group. While an *individual* migrant is more likely to abide by the generally prevailing rules of the game in the CR, *collectively*, a migrant groups' identity acts as a catalyst in the evolutionary process of institutional change in the CR environment. The social perception of indigenous people in the CR toward the migrant group can play an important role in this process. A positive social perception of the migrant group or some local interest in certain customs or practices of the group is more likely to facilitate this process of institutional change.

Institutions that are locally acceptable to an indigenous population are likely to become part of the institutional environment of the host location, thus increasing the institutional diversity of that location. For example, the state of California made the voter information guide for the General Election of 2016 available in eight languages including Chinese, Hindi, Japanese, Khmer, Korean, Thai, and Vietnamese.[1] Primary election ballots in many U.S states contain information in migrants' native languages. These examples illustrate how migrant institutions (such as use of native language in CR regions) can become embedded in the host country environment. That being said, not all institutions diffuse into the host country institutional environment. Some institutions co-exist alongside the existing host country institutional environment. For example, the credit-based exchanges of diamond merchants, the majority of whom speak Yiddish, still revolve around a closed network of trust in the Diamond district of New York City.[2] Their business practices and more importantly the terminology used in the transactions of these exquisite stones has changed little,[3] since the initial migrants arrived from Europe over seventy years ago.

Institutional change is a gradual and selective process that occurs over time. It could take the form of a rule change in a local school district of the CR to celebrate migrant groups' religious holidays or the form of adoption of migrants' native language in official documents in government offices. It could be in the form of modified business practices in exchange, or in the form of alternative means of financing available to migrant businesses that do not rely on financial intermediaries. The resulting institutional variety in migrants' CR locations creates *certain characteristic features* that are more *pronounced in migrants' CO*. These characteristic features, such as access to co-national human resources, the use of native language in exchange, access to religious and cultural organizations, access to migrant spaces for

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[1] http://voterguide.sos.ca.gov/.

[2] https://www.algemeiner.com/2014/05/21/new-yorks-diamond-district-and-jewish-tradition/

[3] https://www.nytimes.com/2015/04/26/magazine/the-secret-slang-of-the-diamond-district.html

business collaboration and knowledge exchange, better knowledge interpretation and better assessment of the potential usability of knowledge in the CR contribute to the locational advantages for firms from migrants' CO. As a result, CO firms are likely to view the region as relatively less foreign and more attractive because the institutional variety in these locations catalyzes the application of business ideas of CO firms.

3.1.2. Migrants as connectors of cross-border institutional environments

"The analysis of processes in interpersonal networks provides the most fruitful micro-macro bridge. In one way or another, it is through these networks that small-scale interaction becomes translated into large-scale patterns, and that these, in turn, feed back into small groups." (Granovetter, 1973, p. 1360).

Granovetter (1985, 1973) emphasizes the role of personal ties in "generating trust and discouraging malfeasance" (Granovetter, 1985, p. 490) in transactions. He argues that information obtained from a trusted person is better because it is less costly to obtain, and is more detailed, richer, and accurate, possibly due the economic and social motivations of the informant (Granovetter, 1985). As migrants often leave behind social and business connections in their CO, these cross-border connections can become valuable sources of knowledge both, for migrants as well as their compatriots back home. Building on this notion of ties, this role focuses on the idea that *collectively* migrants' cross-border connections (between their CO and their CR) act as conduits of knowledge, and that in turn facilitates foreign expansion of firms through flow of knowledge about business opportunities, niche markets, and ideas for niche products, among others.

Technological knowledge flows resulting from the international mobility of skilled workers (Agrawal, Kapur, McHale, & Oettl, 2011; Hornung, 2014; Kerr, 2008; Oettl & Agrawal, 2008) provide evidence that migrants act as connectors of institutional environments of their CO and CR. While individual migrant's ethnic ties have been shown to play a role in helping match buyers and sellers in international markets (Rauch & Trindade, 2002; Rauch, 2001), and in the location decisions of firms (Zaheer et al., 2009), linkages—in the form of personal relationships and *ethnic networks*—between migrants' CO and CR often provide valuable knowledge flows over a wide range of related industries and technologies between those countries (Lorenzen & Mudambi, 2013; Sonderegger & Taeube, 2010). Through participation in organizations that span cross-border locations, such as industry,[4] professional, alumni, cultural[5] (2006, Saxenian, 1999), inter-governmental organizations (Ingram, Robinson, & Busch, 2005), and multinational corporations, skilled migrants are often embedded in the institutional environment of their CO as well as their CR. This embeddedness, whether it is in the form of working for cross-country firms or in the form of organizing cultural, professional, and charitable events in their CO and CR, helps stimulate greater points of knowledge connectivity between migrants' CO and CR.

Cross-border connectivity between CO and CR is further strengthened by transient migrants, such as students, seasonal workers, business visa holders, among others in the CR. Return migrants (from the CR) to the CO (Saxenian, 2005) also help increase the points of knowledge connectivity between the two countries, as they often leave behind valuable connections (Choudhury, 2015). In other words, *institutional connectedness* results from the *collective* actions of migrants in the CR. By

tapping into these knowledge circuits, firms in migrants' CO can reduce their information, search and monitoring costs with regard to foreign investment in migrants' CR.

In sum, while the first role focuses on the *institutional changes* brought about by migrants collectively in a *location*, the second role focuses on the *cross-border stimulation* provided by migrants. We differentiate between institutional affinity and institutional connectedness because it is possible, in theory, to have high institutional affinity and low connectedness. This may occur in a situation where migrants from a country help create a socially and economically familiar institutional environment (with some characteristic features that are similar to their CO) in the host country location, but they keep minimal or no ties with their compatriots back in their CO (as in the case of refugees). Thus, while institutional affinity tends to be *location-bound* and relates to the *tangible* and *intangible migrant-induced changes* in the institutional environment of a location, connectedness relates to the collective knowledge flows between migrants' CO and their CR.

3.2. Hypotheses development

The theoretical framework described above forms the basis for our testable hypotheses. While the framework presented above can be used to derive many more testable hypotheses, in this paper, we focus primarily on the effect of institutional affinity and institutional connectedness on the one hand, with inward FDI on the other. We argue that institutional affinity and institutional connectedness positively affect inward FDI from migrants' CO to their CR. Institutional affinity contributes to the locational advantages for firms from migrants' CO; firms view these regions as more attractive and relatively less foreign; the reduced liability of foreignness (Hymer, 1960; Zaheer, 1995) arises from greater trust and superior monitoring (Rangan & Sengul, 2009) provided by same country migrants in the CR. Institutional connectedness facilitates increased knowledge flows between CO and CR, and help CO firms seeking to invest overseas *see* opportunities for business growth in the region.

In addition, we argue that the extent of economic development of migrants' CO impacts the migration-FDI relationship. Drawing on Dunning's notion of home country advantages, we argue that firms from developed countries (relative to developing country firms) are more likely to possess superior ownership advantages (especially financial resources, technological resources, and technological capabilities). As a result, they are less likely to rely on ethnic migrant resources for knowledge to help reduce transaction costs, when entering or expanding resource commitment in migrants' CR. Fig. 1 shows our understanding of the relationship between migration, institutional affinity, institutional connectedness, extent of economic development of migrants' CO, and FDI.

3.2.1. Institutional affinity and FDI

Based on our theoretical framework, we expect locations with greater institutional affinity to offer significant advantages that counter the liability of foreignness (Hymer, 1960; Zaheer, 1995) of that location. For a CO firm, these benefits accrue in the form of reduced information costs and increased familiarity relative to other investment locations. Locations with high institutional affinity provide CO firms access to knowledge from co-national individuals, who share a common cultural heritage and a shared understanding of the goals (Hernandez, 2014; Nahapiet & Ghoshal, 1998) and that allows better interpretation and application of knowledge.

Inability of managers and their spouses to adjust to a different physical or cultural environment, and family problems have been identified as the main reasons for expatriate failure (Hung-Wen, 2007; Tung, 1982) in foreign operations of multinational corporations (MNCs). Access to locations that have more pronounced CO institutional characteristics reduces the issue of social isolation for expatriate managers and their families (Rangan & Sengul, 2009). Thus, firms are

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[4] For example, the Chinese Biopharmaceutical Association—USA, founded in 1995, is one of the largest Chinese American professional associations in the United States. It is an independent, not-for-profit organization, whose primary mission is to connect biopharmaceutics between the U.S. and China. More than 80 percent of its members have doctoral degrees.

[5] The French Heritage Society is a non-profit organization founded in 1982, whose objectives include fostering cross-cultural exchange through lectures, conferences and other networking events in both the U.S. and France.
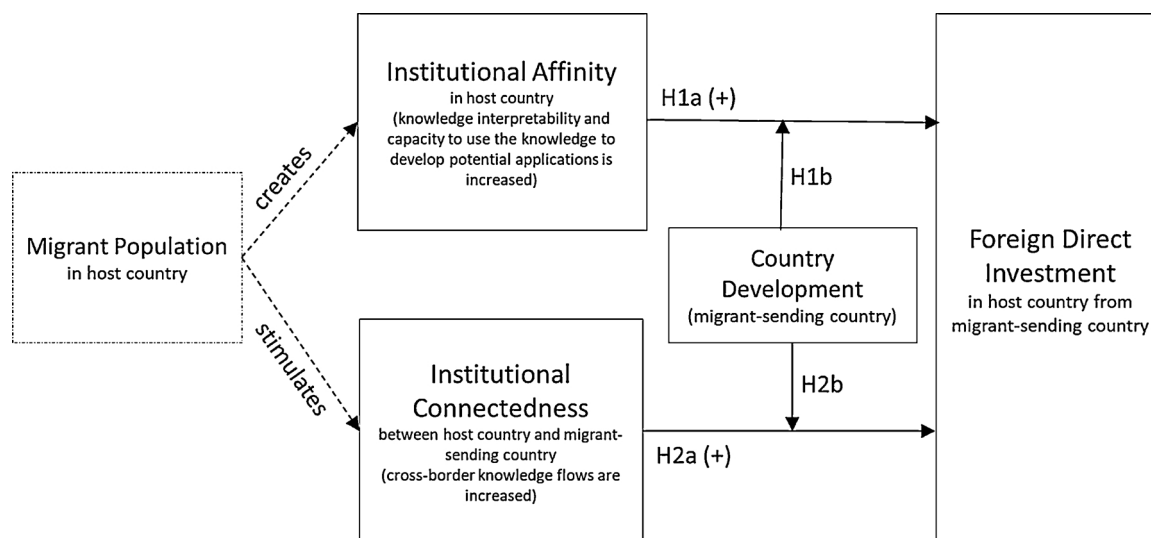
Fig. 1. Conceptual Model linking Migration and FDI.

more likely to locate or expand their operations in areas with increased institutional affinity with regard to their home-country to help alleviate problems related with expatriate failure. Moreover, locations where migrant community is embedded in the institutional environment through ownership of businesses and non-profit organizations in the social and economic domain, the perceived risk of appropriation of assets by the CR government tend to be lower (Foad, 2012), thus providing confidence to managers of CO firms seeking to enter or increase resource commitment in the country. Along these lines, we propose that -

Hypothesis 1a. *The greater is the institutional affinity in the migrants' country of residence with regard to the migrants' country of origin, the greater is the inward FDI from the migrants' country of origin.*

In addition, we expect that the extent of economic development of migrants' CO will have a differential impact on the institutional affinity-inward FDI relationship as proposed in Hypothesis 1a. Since home country advantages in the form of political stability, level of technological development, institutional development, and access to international knowledge networks, among others are drawn upon by MNCs seeking expansion to foreign locations, it is likely that firms from developed countries have a competitive edge over firms from less developed countries. Firms from countries that are relatively less economically and technologically developed often have lower quality firm-specific resources and weaker technological capabilities and that in turn raises the barriers to foreign entry for these firms. As a result, these firms draw upon their ethnic identity as a resource in order to establish themselves in a developed market and in doing so, they seek customers and competitors of similar ethnicity (Miller, Thomas, Eden, & Hitt, 2009).

Increased institutional affinity of a location, which offers economic and social benefits, is more likely to be viewed as advantageous for firms from economically less developed countries (as compared to developed country firms) that are seeking to expand or grow in foreign locations. Firms from developing countries are likely to rely on migrant resources in an effort to reduce uncertainty in transactions in a foreign location. Anecdotal evidence suggests that migrant businesses in a developed host country are sometimes acquired by firms from migrants' CO, as firms in less developed countries enter the world economy. For example, Chin, Yoon, and Smith, (1996) found that Korean migrants' wig businesses in California were vertically integrated by Korean manufacturing firms in that industry, suggesting that developing country firms enter the world economy, often, by specializing in niche areas.

In sum, we argue that the locational advantages offered by increased institutional affinity will have differential effect on inward investment from migrants' CO, contingent on the level of country development. We expect institutional affinity to have a stronger effect on attracting investments from developing countries in comparison to the effect observed for developed countries. Along these lines, we propose that –

Hypothesis 1b. *The effect of migrant-induced institutional affinity on attracting inward FDI from their respective CO is greater for migrants from developing countries in comparison with migrants from developed countries.*

3.2.2. Institutional connectedness and FDI

Based on the theoretical framework presented earlier, we expect that greater institutional connectedness between migrants' CR and CO will facilitate foreign expansion of firms through flow of knowledge about business opportunities, niche markets, ideas for niche products, business practices, value of investments, and search methods, among others. CO firms, when engaging in the formulation of strategy for foreign expansion, are likely to use these knowledge circuits that span cross-borders to help reduce their transaction costs in market exchange. In comparison to firms that only conduct a formal systematic search for opportunities to expand into a foreign country, firms that also tap into their skilled migrant connections are able to reduce information asymmetry and hence be able to assess the true value of their potential investment. Thus, we expect that firms from those countries whose emigrants are actively connected to their CO are more likely to engage in increased FDI. Along these lines, we propose that -

Hypothesis 2a. *The greater is the institutional connectedness between the migrants' country of residence and the country of origin, the greater is the inward FDI from the migrant's country of origin to the country of residence.*

In addition, we argue that the extent of economic development of migrants' CO will have a differential impact on the institutional connectedness-inward FDI relationship as proposed in Hypothesis 2a. We expect that the greater is the level of economic development of migrants' CO, the weaker is the effect of migrant-induced institutional connectedness on inward FDI from that CO and vice-versa. Since firms from developed countries tend to have superior ownership advantages and stronger technological capabilities, derived in part due to the higher level of country development, they may not need to rely on ethnic migrant resources for tapping into the intra-country knowledge networks in the host country.

Countries at weaker economic and technological development level,

on the other hand, tend to have firms with weaker capabilities, which makes it difficult for them to enter and survive in developed country locations. These firms are more likely to rely on social connections for information with regard to investment locations and business expansion. Knowledge obtained through inter-personal ties between countries at different levels of economic and technological development has been shown to be a useful source of business information (Levin & Barnard, 2013) for managers in less developed countries. The connectedness provided by migrants from less developed countries is likely to provide more valuable knowledge of business and investment opportunities to firms in migrants' CO, as developing country firms are less likely to be a part of the business networks in developed countries and thus face the liability of outsidership (Johanson & Vahlne, 2009) in these locations. Along these lines, we propose that -

Hypothesis 2b. *The effect of institutional connectedness on attracting inward FDI is greater for migrants from developing countries in comparison with migrants from developed countries.*

In the next section, we present a detailed description of our data, followed by the empirical model and the results.

4. Methodology

4.1. Research setting

We study the migration-FDI phenomenon in the context of the U.S., which we chose for several reasons. First, it is an active host country from an FDI perspective. Second, 13 percent of its population is foreign-born (OECD, 2012). Third, according to the U.S. Census Bureau, 62 percent of the foreign-born population entered the country in 1990 or later (Grieco et al., 2012). Fourth, it is a net immigrant-receiving country; in 2001–2009, 9.5 million immigrated to the U.S., while 2.8 emigrated out of U.S. (Shrestha & Heisler, 2011). Lastly, availability of FDI, migrant, and migrant organization data from reliable government sources makes the U.S., an ideal research context. Thus, in this study, we examine the role of migrants residing in the U.S. in influencing inward FDI into U.S. from their countries of origin at the country-level.

4.2. Data

4.2.1. Dependent variable

The dependent variable in this study is FDI from migrants' CO to the United States. We measure this variable as the direct investment position (available on a historical-costs basis) in the U.S. for each investing country. Direct investment position represents the cumulative value of financing provided by the foreign parent group and these data are made available by the U.S. Bureau of Economic Analysis (BEA). The BEA makes these data available as part of their balance of payments and direct investment position data, which are collected through surveys in benchmark years. We used data from three benchmark years—1992, 2002, and 2012—to construct our panel for the purposes of this study. We use lagged data for our independent variables. The rationale for using lagged data for independent variables was to address any endogeneity concerns as both migration and FDI tend to be influenced by similar factors. We wanted to use the longest lag possible that the data allowed for, and still have several panels in these data. Our investigation revealed that based on the availability of FDI data for benchmark survey years and migrant data for census years, a 12-year lag allowed us to have a deep lag and also have three panels. As a result we used the FDI data obtained from benchmark surveys conducted by the BEA for 1992, 2002, and 2012 and the census data made available by the U.S. Census Bureau for the years 1980, 1990, and 2000.

Using the Gross National Income per capita, the World Bank classifies all countries into four groups— (1) low-income; (2) lower-middle income; (3) upper-middle income; (4) high-income. In this study, developing countries (or emerging market economies or low-income countries) are those that are categorized by the World Bank as low-income and lower-middle income countries. Developed countries (or high-income countries), on the other hand, include all countries that are categorized by the World Bank as high-income and upper-middle-income countries. As the categorization for some countries changed during the observation period of this study, we use the categorization for 1990 to assign the 196 countries in our sample into their respective group.

4.2.2. Independent variables

4.2.2.1. Institutional affinity. Our main proxy for institutional affinity is *Migrant Org Stock*, which is a novel measure. To measure the changes in the institutional environment of the host country, we rely on the stock of migrant non-profit organizations founded in the U.S. per CO of migrants. Prior research (2006, Hirschman, 2004; Saxenian, 1999) shows that migrants are involved in the founding of religious, cultural, social, and professional organizations in their adopted country, and so the rationale here is that the greater is the number of organizations founded by migrants from a CO, the greater is the institutional affinity in the CR with regard to migrants' CO. For this proxy, we constructed a novel dataset using the data on tax-exempt organizations made available to the public by the United States Internal Revenue Service (IRS).

Of the over 1.5 million tax-exempt organizations in the IRS database, we identified 18,398 independent tax-exempt organizations (up until 2015) that belonged to migrants from various countries of origin. This process involved searching the organization names for the names of countries (such as China, Germany, Italy, etc.) as well as the names of people (Chinese, German, Italian, etc.) for the 218 countries on our list. For example, if the name of the organization is Chinese Association for Science and Technology USA Foundation Inc., then we assigned this organization to China. This name matching resulted in 39,727 tax-exempt organizations out of the over 1.5 million that we started out with. Of these 881 records were assigned to more than one country, as the names of more than one country were part of the organization name. We manually checked these and assigned them to the single most appropriate country. After several iterations of manual checks to eliminate organizations such as the Ireland Elementary PTO (clearly not a migrant organization for Ireland), which is a parent-teacher organization located in the town of Ireland in the state of Indiana in the U.S., and including organizations such as Chinese-Vietnamese Buddhist Association in the count for both China and Vietnam, we had 18,398 independent tax-exempt migrant organizations in our database which includes data up to 2015. Some of the oldest organizations go back to the early 1900s, for example, the Swedish- American Chamber of Commerce, BNAI Israel Congregation, and the American Associations of Teachers of French received tax-exempt status in 1918, 1920, and 1936 respectively.

As these data contain the information on the ruling year, meaning the year in which the IRS recognized the organization as tax-exempt, we use it to calculate the stock of migrant organizations for 1980, 1990, and 2000 to construct our panel. For the institutional affinity measure, we focused on those organizations that are engaged in religious, cultural, educational or health-related activities but with a domestic focus, as these organizations are likely to influence the institutional environment of migrants' CR.[6] For this purpose, we used the National Taxonomy of Exempt Entities (NTEE) code that the IRS uses to classify organizations in terms of their primary exempt activity. These activities could be in various areas such as arts &culture (NTEE code A), education (NTEE code B), health (NTEE codes E, F, and G), medical research (NTEE code H) and so on. Restricting our data to include only

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[6] Republic of Korea, China, Israel, India, Italy, Philippines, Japan, Poland, Germany, and Vietnam were the top ten countries with largest number of domestic organizations in our database.

independent domestic organizations for years up to 2000 resulted in 6719 migrant organizations for our observation period.

In addition to our main affinity measure, we use another proxy for measuring affinity as a robustness check—*Diaspora Age*. *Diaspora Age* is also a novel measure. We measure age of the diaspora (i.e. migrant community) as the age of the first migrant organization (for a CO), since its founding. We use founding year as the year in which migrant organization was granted tax-exempt status by the IRS. For example if the first migrant organization for a country was granted tax-exempt status in 1920, we consider the age of diaspora for that country as 60 years (1980 minus 1920) for the first cross-sectional unit in our panel data. The rationale for using this proxy is that the greater is the age of the diaspora in a location, the greater is the likelihood of institutional familiarity for the managers of CO firms seeking to invest in that location.

4.2.2.2. Institutional connectedness. Our main proxy for institutional connectedness is transient migrant stock in the U.S. for the census years. The data for *Transient Migrant Stock* come from the Integrated Public Use Microdata Series (IPUMS-USA), made available by the Minnesota Population Center (Ruggles et al., 2010). The IPUMS dataset has been created using the federal censuses and the American Community Surveys (ACS) conducted by the Census Bureau. We downloaded Census data for 1980, 1990, and 2000 from IPUMS-USA. We used the age, birthplace, citizenship, and year of immigration information in these data to calculate the number of foreign-born persons. We dropped all foreign-born persons less than 18 years of age from our data, as we are primarily concerned with adult population. All foreign-born persons who are not citizens and have been living in the U.S. for seven years or less are considered transient migrants in our study. *Transient Migrant Stock* includes temporary residents in the U.S. who may be students, business visitors, or others visiting on a temporary basis. The idea is to capture the connectedness provided by the circulation of transient migrants, many of whom return to their CO, while many others travel back and forth, thereby stimulating knowledge flows between their CO and CR.

The U.S. Census data on foreign-born persons includes authorized (i.e. having a valid entry visa) as well as unauthorized (i.e. migrants who enter the country illegally) persons. So far, Census surveys do not ask or differentiate between legal and illegal migrants. Hoefer, Rytina, and Baker, (2011) estimate that in January 2010 there were 10.8 million unauthorized migrants in the United States. For the purposes of our study, however, we do not differentiate between authorized and unauthorized foreign-born persons because institutional connectedness is likely to be affected by *all* migrants irrespective of their legal status in the country.

For robustness tests, we employ an additional proxy—*Skilled Migrant Stock*. Consistent with the prior literature (2006, Javorcik et al., 2011; Saxenian, 2005) that has argued that skilled migrants provide social networks that help facilitate knowledge flows between their countries of origin and residence, we use the stock of *skilled* migrants as an additional proxy for institutional connectedness. The data for this proxy for institutional connectedness also come from the IPUMS-USA database (Ruggles et al., 2010). Since we are interested in permanent residents for this alternate measure, we keep only those foreign-born persons who are naturalized citizens or have been living in the country for over seven years. Finally, we coded all foreign-born persons who have three or more years of college education as skilled migrants.

Investment position data (i.e. FDI stock data) for migrants' countries of origin were mapped to migrant organization stock and migrant stock data, after several steps for reconciling the data were undertaken. Thus, we began with 196 countries i.e. with 588 observations in our sample. The sample consisted of 70 developed (or high-income) countries and 126 developing (or low-income) countries.

4.2.3. Control variables

A review of the empirical studies on the determinants of FDI helped us in identifying the control variables for this study. As the unit of analysis is country, we control for factors that are likely to exert a gravitational pull on the investments of firms from foreign countries. Thus, we control for the physical distance of migrants' CO from the CR, and similarity in culture at the national level by using the language dummy following Brainard (1997). *Distance* represents the physical distance between the CO and the U.S., these data are taken from the GeoDist dataset, which is made available by CEPII, a French research center that focuses on research in international economics. *Language* represents the language dummy variable, which is set to one for countries where English is the language for business or the official language, as per the CIA World Factbook, and zero otherwise.

Population measures the population of the migrant-sending country. As countries with larger populations are likely to have larger number of emigrants living abroad and can provide a larger native population for networking and connectedness, we control for the population of the investor country. *Country Development* measures the level of economic development of migrant-sending country. We use GNI per capita for this purpose. We also use Human Development Index as an additional proxy for *Country Development*; these data were downloaded from the United Nations Human Development Reports database. *Total GDP* measures the relative performance of countries; the higher is the total GDP of migrants' CO, the greater is the propensity of its firms to engage in foreign investment, and so we control for GDP. GDP values in current U.S. dollars, GNI per capita data, and population data were downloaded from the World Bank database. Prior studies show that trade agreements may facilitate information flows, therefore, we control for regional trade agreements; these data come from the World Trade Organization database. *Trade Agreement* is a dummy variable, which is set to 1 for countries that have an agreement in force with the US, and zero otherwise.

Governance measures the business climate of migrants' CO. We control for governance as it is likely to influence the propensity of firms to grow as well as to invest overseas. Following Javorcik et al. (2011), we measure governance using the average of six governance indicators (voice and accountability, political stability and absence of violence, government and effectiveness, regulatory quality, rule of law, and control of corruption) developed by Kaufmann, Kraay, and Mastruzzi, (2013). These indicators are available for 1996–2014 and range from -2.5 to 2.5. We use the 1996 values for both 1980 and 1990 panels. Since the OECD countries tend to engage in FDI activities more actively, we include a dummy (*OECD*) for the OECD countries. Table 1 provides a list of variables used in this study, in addition to the variable descriptions and sources of data.

4.3. Empirical analysis

Motivated by prior studies (Brainard, 1997; Foad, 2012; List, 2001) that have examined the determinants of inward FDI in the context of U.S., we estimate the following panel regression model:

$$FDI_{i,t} = \beta_0 + \beta_1 Migrant\ Org\ Stock_{i,t-12} + \beta_2 Transient\ Migrant\ Stock_{i,t-12}$$
$$+ \beta_3 Country\ Development_{i,t-12} + \beta_4 Population_{i,t-12}$$
$$+ \beta_5 Total\ GDP_{i,t-12} + \beta_6 Governance_{i,t-12} + \beta_7 Distance_i$$
$$+ \beta_8 Language_i + \beta_9 TradeAgreement_{i,t-12} + \beta_{10} OECD_{i,t-12}$$
$$+ \mu_t + a_i + \varepsilon_{i,t} \tag{1}$$

In the model given by Eq. (1), $FDI_{i,t}$ for a country i is the investment position of firms from migrants' CO in year t in the U.S., *Migrant Org.* $Stock_{i,t-12}$ is the migrant organization stock in the U.S. at t-12 for country i. *Transient Migrant Stock$_{i,t-12}$* is the stock of non-immigrants at t-12 for country i. *Country Development$_{i,t-12}$* is the level of economic development as measured by GNI per capita for country i at t-12. *Population$_{i,t-12}$* is the total population of the investor country at t-12. *Total GDP$_{i,t-12}$* represents the total GDP for the investor country i at time

Table 1
Data definitions and sources.

Variable	Description	Source
FDI stock	Foreign parent's investment position in the U.S. at historical costs in U.S. dollars for 1992, 2002, and 2012	U.S. Bureau of Economic Analysis
Migrant Org Stock	Stock of migrant organizations in the U.S. focused on domestic activities in 1980, 1990, and 2000	Authors' calculation based on data from Internal Revenue Service
Transient Migrant Stock	Stock of non-immigrants i.e. persons who are non-citizens or have been living in the U.S. for seven years or less	Authors' calculation based on data from IPUMS-USA
Diaspora Age	Age of the first migrant tax-exempt organization for a CO as of 1980, 1990, and 2000	Authors' calculation based on data from Internal Revenue Service
Skilled Migrant Stock	Stock of tertiary-educated migrants in 1980, 1990, and 2000	Authors' calculation based on data from IPUMS-USA
Country Development	Gross National Income per capita for 1980, 1990, and 2000 for migrants' CO	World Bank
Country Development-HDI	HDI for 1980, 1990, and 2000 for migrants' CO	United Nations Development Programme – Human Development Reports
Total GDP	GDP of the investor country for various years	World Bank
Population	Population of the investor country for various years	World Bank
Governance	Business climate of the investor country	Worldwide Governance Indicators
Distance	Distance between capital cities of migrants' CO and US	Geodist dataset by CEPII
Language	Common Language dummy	CIA World Factbook
Trade Agreement	Trade Agreement dummy	World Trade Organization
OECD	OECD dummy	Organization for Economic Co-operation and Development
HIGHINCOME	Dummy set to 1 for high-income and upper-middle income countries based on 1990 classification	World Bank

t-12. *Governance* represents the business climate in migrants' CO. *Distance* represents the distance between capital city of the CO and the US. *Language*, *TradeAgreement* and *OECD* are dummy variables. Language and distance are time-invariant variables. a_i represents the unobserved time-invariant factors that affect $FDI_{i,t}$ and are captured by country fixed effects; $\varepsilon_{i,t}$ captures the time-varying factors that affect $FDI_{i,t}$. μ_t represents the time dummies in the model.

As data for several variables were highly skewed, natural logs of variables were taken (after adding 1 to avoid losing the 0 values) to eliminate the skewness and excess kurtosis (Cameron & Trivedi, 2010). Two reasons motivated us to estimate our model using Tobit. First, fixed effects estimator is inconsistent in short panels (Cameron & Trivedi, 2010). Second, the presence of a large number of zero values (approximately 56 percent of the observations) in our dependent variable encouraged us to estimate our panel model using random-effects Tobit regression. We ran Tobit regressions for the model specified in Eq. (1).

A scatter plot of our key explanatory variables showed that some observations for Mexico, China, Korea, Philippines, Haiti, Israel, and India were outliers in our sample. While Mexico, India, and Philippines have an extraordinarily large migrant population, China, Korea, Haiti and Israel have an extraordinarily large number of migrant organizations in the U.S. for 2000. Consequently, we drop the outlier country-year observations from our sample. In addition, FDI stocks from tax-havens (Hines, 2010) are likely to bias the results as these are not true indicators of productive activity (Beugelsdijk, Hennart, Slangen, & Smeets, 2010), therefore we drop tax havens from our sample. As the FDI stock for a few tax haven islands is included with the FDI stock data for Great Britain, we also exclude Great Britain from our sample. Thus, our final sample was reduced to an unbalanced panel consisting of 459 observations representing 155 countries. Since Tobit estimates are highly sensitive to heteroscedasticity, we compute and report robust standard errors (clustered on country) for all our models.

4.4. Results

The pairwise correlations including mean, standard deviations, minimum values, and maximum values for the key variables are shown in Table 2.

The Tobit estimates for the model specified in Eq. (1) are shown in Table 3. Model 1 is the base model with control variables only. Model 2 shows the estimation with variable *Migrant Org Stock*, which captures

the effect of institutional affinity. Model 2 shows that *Migrant Org Stock* is not significant, but has the expected sign. *Total GDP* ($\beta = 1.639$, $p < 0.01$), *Governance* ($\beta = 0.920$, $p < 0.05$), and OECD ($\beta = 1.343$, $p < 0.01$) are significant and have the expected sign. All other controls have the expected sign but are not significant. The Tobit estimates for our institutional connectedness measure is shown in Model 3 of Table 3. Model 3 shows that *Transient Migrant Stock* is statistically significant ($\beta = 0.281$, $p < 0.05$) and has the expected sign. Model 4 shows the estimates when both institutional affinity and institutional connectedness variables enter the model. Model 4 shows that while institutional affinity variable is not significant and has the opposite sign, the connectedness variable is highly significant ($\beta = 0.282$, $p < 0.05$). Thus, Model 4 provides statistical support to hypothesis 2a, but 1a is not supported.

To test the effect of institutional affinity and institutional connectedness on FDI from developed versus developing countries, we split our sample into high-income and low-incomes groups and estimated our model for these samples. The Tobit estimates of high- and low-income samples are shown in Tables 4 and 5 respectively. Model 4H in Table 4 shows the estimates when institutional affinity (*Migrant Org Stock*) and institutional connectedness (*Transient Migrant Stock*) variables enter the model. Model 4H shows that *Migrant Org Stock* is not significant for high-income countries and has the opposite sign. *Transient Migrant Stock* ($\beta = 0.425$, $p < 0.01$), on the other hand, is highly statistically significant with the expected sign. Thus 2a is strongly supported for high-income countries. Model 4L in Table 5 shows the estimates when institutional affinity (*Migrant Org Stock*) and institutional connectedness (*Transient Migrant Stock*) variables enter the model. Model 4L shows that *Migrant Org Stock* ($\beta = 0.339$, $p < 0.05$) and *Transient Migrant Stock* ($\beta = 0.212$, $p < 0.10$) are both significant with the expected sign. This provides support to both Hypothesis 1a and 2a for low-income countries.

To test our cross-model hypotheses—1b and 2b, we performed Wald-tests. Results for these are reported at the end of Table 5. Wald-test statistic shows that institutional affinity measured as *Migrant Org Stock* is significantly different between the high-income and low-income samples, providing support to Hypothesis 1b. However, the proxy for connectedness—*Transient Migrant Stock* does not differ significantly between the two samples. Thus, while hypothesis 1b is supported, 2b is not supported.

Table 2
Pairwise correlation matrix.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	FDI Stock (log)	1													
2	Migrant Org Stock (log)	0.47	1												
3	Diaspora Age	0.58	0.85	1											
4	Skilled Migrant Stock (log)	0.44	0.63	0.59	1										
5	Transient Migrant Stock (log)	0.40	0.50	0.46	0.80	1									
6	Country Development (log)	0.52	0.29	0.37	0.27	0.28	1								
7	Country Development-HDI	0.52	0.40	0.50	0.33	0.27	0.77	1							
8	Total GDP (log)	0.71	0.56	0.62	0.62	0.57	0.46	0.51	1						
9	Governance	0.59	0.37	0.45	0.27	0.20	0.56	0.64	0.41	1					
10	Population (log)	0.34	0.45	0.41	0.56	0.53	0.04	−0.01	0.74	−0.12	1				
11	Distance (log)	−0.16	−0.15	−0.22	−0.32	−0.31	−0.24	−0.22	−0.17	−0.23	0.03	1			
12	OECD	0.70	0.38	0.49	0.30	0.24	0.47	0.49	0.54	0.67	0.16	−0.19	1		
13	Language	−0.06	−0.12	−0.16	−0.02	0.02	−0.03	−0.14	−0.18	0.00	−0.10	0.15	−0.06	1	
14	Trade Agreement	0.16	0.14	0.15	0.08	0.07	0.09	0.10	0.09	0.10	0.02	−0.16	0.07	0.13	1
	Mean	1.85	1.41	18.26	6.41	7.10	7.67	0.56	22.94	−0.21	15.68	9.03	0.13	0.22	0.00
	S.D.	3.53	1.57	21.20	3.59	3.55	2.11	0.18	2.15	0.89	1.74	0.48	0.34	0.41	0.07
	Min	−1.61	0.00	0.00	0.00	0.00	0.00	0.00	17.15	−2.33	9.41	6.60	0.00	0.00	0.00
	Max	12.61	6.04	82.00	12.25	12.47	11.30	0.92	29.18	1.87	20.85	9.70	1.00	1.00	1.00
	Number of observations = 459														

Table 3
Tobit estimates with cluster-robust standard errors.

Variables	Base Model Model 1	Institutional Affinity Model 2	Institutional Connectedness Model 3	All variables Model 4
Migrant Org Stock (log)		0.089		−0.008
		(0.161)		(0.159)
Transient Migrant Stock (log)			0.281**	0.282**
			(0.117)	(0.120)
Country Development (log)	0.200	0.199	0.129	0.128
	(0.134)	(0.133)	(0.132)	(0.133)
Total GDP (log)	1.632***	1.639***	1.623***	1.622***
	(0.275)	(0.272)	(0.275)	(0.271)
Population (log)	−0.160	−0.217	−0.468	−0.464
	(0.268)	(0.266)	(0.297)	(0.289)
Governance	0.997**	0.920**	0.812*	0.818*
	(0.447)	(0.449)	(0.462)	(0.455)
Distance (log)	−0.282	−0.260	0.199	0.199
	(0.445)	(0.450)	(0.487)	(0.487)
OECD	1.324*	1.343*	1.655**	1.655**
	(0.751)	(0.761)	(0.732)	(0.732)
Trade Agreement	1.962	1.777	2.277**	2.296**
	(1.200)	(1.082)	(0.896)	(0.909)
Language	0.404	0.457	0.178	0.172
	(0.436)	(0.439)	(0.423)	(0.427)
Constant	−33.722***	−33.376***	−34.714***	−34.750***
	(4.976)	(5.147)	(5.065)	(5.241)
Observations	459	459	459	459
Log-Likelihood	−593.1	−592.9	−584.6	−584.6

The dependent variable is the natural log of FDI stock (plus 1). Time dummies were included for estimation. Cluster-robust standard errors (clustered on country) are provided in parentheses. This sample excludes tax-havens as well as outliers.
Notes:

  *** p < 0.01.
  ** p < 0.05.
  * p < 0.1.

4.4.1. Interpretation of coefficients

Unlike the coefficient interpretation for the case of ordinary least squares linear regression, the coefficients for the Tobit estimates do not represent the marginal effects, thus we calculate the average marginal effects for the estimated coefficients. We find that, on average, a 10 percentage point increase in transient migrant population from a CO at

Table 4
Tobit Estimates with cluster-robust standard errors (high-income country sample).

Variables	Base Model Model 1H	Institutional Affinity Model 2H	Institutional Connectedness Model 3H	All variables Model 4H
Migrant Org Stock (log)		−0.123		−0.179
		(0.242)		(0.224)
Transient Migrant Stock (log)			0.405**	0.425***
			(0.161)	(0.159)
Country Development (log)	0.342**	0.343**	0.183	0.175
	(0.153)	(0.153)	(0.155)	(0.153)
Total GDP (log)	2.079***	2.099***	2.079***	2.109***
	(0.424)	(0.435)	(0.418)	(0.427)
Population (log)	−0.542	−0.488	−0.949**	−0.893**
	(0.381)	(0.351)	(0.373)	(0.349)
Governance	1.405*	1.511*	1.114	1.251
	(0.764)	(0.777)	(0.777)	(0.788)
Distance (log)	−0.908*	−0.925*	−0.670	−0.679
	(0.522)	(0.535)	(0.450)	(0.455)
OECD	−0.933	−0.943	−0.451	−0.437
	(1.137)	(1.129)	(1.204)	(1.176)
Trade Agreement	−0.077	0.227	−0.013	0.427
	(0.935)	(0.911)	(0.753)	(0.733)
Language	0.495	0.403	0.058	−0.086
	(0.574)	(0.617)	(0.614)	(0.624)
Constant	−33.036***	−34.038***	−30.632***	−31.985***
	(7.042)	(7.577)	(6.862)	(7.268)
Observations	127	127	127	127
Log-Likelihood	−237.6	−237.3	−233.4	−232.9

The dependent variable is the natural log of FDI stock (plus 1). Time dummies were included for estimation. Cluster-robust standard errors (clustered on country) are provided in parentheses. This sample excludes tax-haven countries, outliers as well as low-income countries.
Notes:

  *** p < 0.01.
  ** p < 0.05.
  * p < 0.1.

time T in a host country increases inward FDI from that country at time T + 12 by 1.33 percentage points. For developed countries, a 10 percentage point increase in transient migrant population results in an increase in inward FDI at time T + 12 by 3.6 percentage points.

On average, a 10 percentage point increase in migrant organization

Table 5
Tobit Estimates with cluster-robust standard errors (low-income country sample).

Variables	Base Model Model 1L	Institutional Affinity Model 2L	Institutional Connectedness Model 3L	All variables Model 4L
Migrant Org Stock (log)		0.437***		0.339**
		(0.154)		(0.165)
Transient Migrant Stock (log)			0.257**	0.212*
			(0.123)	(0.121)
Country Development (log)	0.312	0.322*	0.302	0.317*
	(0.229)	(0.190)	(0.191)	(0.170)
Total GDP (log)	0.327	0.247	0.332	0.270
	(0.346)	(0.310)	(0.324)	(0.308)
Population (log)	1.102***	0.926***	0.770**	0.689*
	(0.355)	(0.330)	(0.373)	(0.351)
Governance	0.427	−0.001	0.194	−0.104
	(0.455)	(0.438)	(0.454)	(0.429)
Distance (log)	−0.839	−0.755	−0.125	−0.184
	(0.621)	(0.629)	(0.706)	(0.706)
OECD	1.438	1.626	1.491	1.627
	(0.976)	(1.054)	(0.956)	(1.017)
Language	0.043	0.256	−0.188	0.021
	(0.472)	(0.468)	(0.448)	(0.463)
Constant	−20.405***	−17.674***	−23.675***	−21.038***
	(6.295)	(6.332)	(6.914)	(7.107)
Observations	332	332	332	332
Log-Likelihood	−321.4	−316.2	−314.8	−311.7
Wald test: $\chi 2$		3.85	0.54	
Wald test: Significance level		0.05	0.46	

The dependent variable is the natural log of FDI stock (plus 1). Time dummies were included for estimation. Cluster-robust standard errors (clustered on country) are reported in parentheses. This sample excludes tax-haven countries, outliers as well as high-income countries.
Notes:
*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$.

stock for a low-income country at time T in a host country increases inward FDI from that country at time T + 12 by 1.08 percentage points. With regard to the institutional connectedness measure, on average, a 10 percentage point increase in the transient migrant population from a low-income country at time T in a host country increases inward FDI from that country at time T + 12 by 0.6 percentage points. Our findings show that while the institutional affinity provided by migrants from only low-income countries has a positive effect on future inward FDI into migrants' CR from the migrants' CO, the connectedness provided by transient migrants from both low and high-income countries positively affects future inward FDI from the migrants' CO.

4.4.2. Robustness check

To test the robustness of our findings, we ran the estimations for the full sample (N = 588) that includes tax-havens and outliers. The results of these estimations are shown in Table 6. Model 4 in Table 6 shows the estimates when institutional affinity (*Migrant Org Stock*) and connectedness (*Transient Migrant Stock*) variables enter the model. Model 4 in Table 6 shows that while *Migrant Org Stock* is not significant, *Transient Migrant Stock* ($\beta = 0.325$, p < 0.01) is highly statistically significant, similar to the estimates reported for Model 4 in Table 3, where the sample excluded outliers and tax havens (N = 459). To test the effect of institutional affinity and institutional connectedness on FDI from developed versus developing countries, we split the full sample by

Table 6
Tobit estimates with cluster-robust standard errors (includes tax havens and outliers).

Variables	Full Sample Model 4	High-income sample Model 4H	Low-income sample Model 4L
Migrant Org Stock (log)	0.024	−0.346*	0.511**
	(0.178)	(0.200)	(0.240)
Transient Migrant Stock (log)	0.325***	0.410***	0.275*
	(0.115)	(0.126)	(0.140)
Country Development (log)	0.112	0.219	0.314*
	(0.137)	(0.144)	(0.164)
Total GDP (log)	1.763***	1.811***	0.535
	(0.248)	(0.402)	(0.342)
Population (log)	−0.853***	−0.669	0.046
	(0.296)	(0.410)	(0.383)
Governance	1.079*	2.090***	−0.320
	(0.588)	(0.669)	(0.703)
Distance (log)	−0.327	−1.099**	−0.354
	(0.452)	(0.536)	(0.775)
OECD	0.950	−0.944	1.767
	(0.842)	(0.810)	(1.414)
Language	1.344**	0.195	1.427**
	(0.540)	(0.580)	(0.673)
Constant	−27.387***	−24.551***	−16.522**
	(4.464)	(6.180)	(7.453)
Observations	588	210	378
Log-Likelihood	−883.8	−428	−418.7

The dependent variable is the natural log of FDI stock (plus 1). Cluster-robust standard errors (clustered on country) are provided in parentheses. These samples include tax-havens as well as outliers. Time dummies were included for estimation. Full sample (Model 4) includes all observations. High-income sample (Model 4H) includes high-income countries based on World Bank's classification using Gross National Income per capita. Low-income sample (Model 4L) includes low-income countries based on World Bank's classification using Gross National Income per capita.
Notes:
*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$.

low-income and high-income countries. Models 4H and 4L in Table 6 show the Tobit estimates of high- and low-income samples respectively. Model 4H shows that *Migrant Org Stock* ($\beta = −0.346$, p < 0.1) is significant for high-income countries but has the opposite sign. *Transient Migrant Stock* ($\beta = 0.410$, p < 0.01), on the other hand, is highly statistically significant with the expected sign. This result is also in line with the estimates reported in Model 4H of Table 4. With regard to the low-income country sample, Model 4L in Table 6 shows that *Migrant Org Stock* ($\beta = 0.511$, p < 0.05) and *Transient Migrant Stock* ($\beta = 0.275$, p < 0.10) are both significant with the expected sign. This provides further support to the results reported in Model 4L of Table 5. In sum, results in Table 6 provide further evidence for institutional affinity as a driver of FDI for firms from low-income countries. These results also show that institutional connectedness matters for both high- and low-income countries with regard to FDI.

4.5. Two-stage estimation

A standard Tobit model imposes a restriction that a single mechanism determines the choice between *whether or not FDI occurs* and the *amount of FDI*. Since the decision of whether or not to invest may be influenced by related but different factors, as compared with the decision on the amount of FDI, we estimate our model using Heckman selection model that allows for possible dependence in the two parts of the model. We use distance as the exclusion restriction in the selection equation. The rationale is that distance is a fixed cost, and so it is likely

to factor in the *initial* decision to invest. Once the decision to engage in FDI in a foreign location has been made, distance is less likely to factor in, in subsequent increments of resource commitments.

In lieu of detailed estimation tables,[7] we briefly describe the key findings for the Heckman two-step estimates. Inverse Mill's Ratio for all models is highly statistically significant; this provides evidence that selection is an issue with this sample. Consistent with the Tobit estimates in Table 3, *Migrant Org Stock* is not significant, both in the main and the selection equation, and it carriers the opposite sign. Statistically significant coefficient estimates for *Transient Migrant Stock* ($\beta = 0.453$, $p < 0.01$) in the main equation provide further support to the proposed hypotheses 2a. *Transient Migrant Stock* ($\beta = 0.077$, $p < 0.01$) is also highly statistically significant in the selection equation. The Heckman two-step estimates suggest that institutional connectedness, brought about by increased concentration of transient migrants from a CO in a location, matters in the initial decision to invest, as well as in the subsequent decisions for increased resource commitment. The results for the Heckman two-step estimation for the full sample i.e. including outliers and tax havens are consistent with the results for our sample without outliers and tax havens, but these are biased upwards in the full sample.

4.6. Additional tests

We conduct two additional robustness tests.[8] For the first robustness test, we use alternate proxies for institutional affinity (*Diaspora Age*) and institutional connectedness (*Skilled Migrant Stock*) variables. The Tobit estimates for the model containing all control variables and both (alternate) explanatory variables reveals that the institutional affinity variable, *Diaspora Age,* is not significant, consistent with our findings for *Migrant Org Stock* in Model 4 of Table 3. These estimates also reveal that the institutional connectedness variable, *Skilled Migrant Stock*, is highly statistically significant ($\beta = 0.270$, $p < 0.01$). Thus, for the sample (N = 459) containing both high- and low-income countries, we find statistical support for hypothesis 2a, but 1a is not supported. This result is consistent with our findings reported in Table 3.

Next, we split this sample by high-income and low-income countries using World Bank's categorization. The Tobit estimates for the model containing all control and both (alternate) explanatory variables for the high-income sample (N = 127) reveals that affinity variable, *Diaspora Age,* is not significant for high-income countries. *Skilled Migrant Stock* ($\beta = 0.254$, $p < 0.05$), however, is statistically significant with the expected sign. Thus 2a is strongly supported for high-income countries, but 1a is not supported, similar to our findings reported in Table 4. The Tobit estimates for the model containing all control and both (alternate) explanatory variables for the low-income sample (N = 332) reveals that affinity variable, *Diaspora Age,* is not significant for low-income countries. *Skilled Migrant Stock* ($\beta = 0.313$, $p < 0.01$) is highly statistically significant with the expected sign. Thus 2a is strongly supported for low-income countries, but 1a is not supported for this alternate proxy. Further investigation reveals that *Diaspora Age* is highly statistically significant ($\beta = 0.037$, $p < 0.01$), when it enters the model with control variables only. When *Skilled Migrant Stock* enters the model, *Diaspora Age* is no longer significant. Since *Diaspora Age* and *Skilled Migrant Stock* are correlated at 0.6, it is likely that this correlation is downward biasing the result for *Diaspora Age*. Wald-test results show that institutional affinity measured as *Diaspora Age* is not significantly different for high-income versus low-income sample, so Hypothesis 1b is not supported. The proxy for institutional connectedness also does not differ significantly between the two samples. Thus, 2b is not

supported.

For our second robustness test, we replace GNI per capita with HDI as the country development indicator and use HDI to split our sample into high- and low-income groups. The Tobit estimates for the model containing all control variables and main explanatory variables reveals that the institutional affinity variable, *Migrant Org Stock,* is not significant, similar to our results in Model 4 of Table 3. These estimates also reveal that the institutional connectedness variable, *Transient Migrant Stock*, is highly statistically significant ($\beta = 0.322$, $p < 0.01$). Thus, for the sample (N = 459) containing both high- and low-income countries, we find statistical support for hypothesis 2a, but 1a is not supported. This result is consistent with our findings reported in Table 3.

Next, we split this sample into high-income and low-income groups using the mean HDI for our sample. The Tobit estimates for the model containing all control variables and the main explanatory variables reveals that affinity variable, *Migrant Org Stock,* is significant ($\beta = -0.339$, $p < 0.1$) for the high-income sample (N = 174) but with the opposite sign. *Transient Migrant Stock* ($\beta = 0.577$, $p < 0.01$) is highly statistically significant with the expected sign. Thus 2a is strongly supported for high-income countries, but 1a is not supported, similar to our findings reported in Table 4. The Tobit estimates for the model containing all control variables and the main explanatory variables for the low-income sample (N = 285) reveals that affinity variable, *Migrant Org Stock,* is statistically significant ($\beta = 0.446$, $p < 0.05$), providing strong support to hypothesis 1a. This result is consistent with the result reported in Model 4L of Table 5. *Transient Migrant* Stock is not significant, but has the expected sign. As a result 2a is not supported for low-income sample for this sample. Wald-test results show that institutional affinity measured as *Migrant Org Stock* is significantly different for high-income versus low-income sample, providing support to hypothesis 1b. The proxy for institutional connectedness, however, does not differ significantly between the two samples, so hypothesis 2b is not supported. These results are consistent with our findings when we split the sample using World Bank's Gross National Income per capita.

5. Conclusions and discussion

In this study, we argue that the external manifestation of migrant groups' tacit knowledge in interactions and exchange in their CR brings about changes in the informal and formal institutional environment that introduces into the region elements *somewhat* more akin to migrants' CO; the combined collective effect, which we call, *institutional affinity,* influences the investment strategies of firms from migrants' CO as these firms view the region as more attractive and relatively less-foreign. The results of our study support the proposed hypothesis that institutional affinity in migrants' CR with respect to their CO is a predictor of future inward FDI from migrants' CO, although only for developing countries. We find statistically significant support for institutional affinity as a determinant of future FDI for *developing country MNCs*. One possible explanation for the insignificant findings for institutional affinity for developed country MNCs may be related to the fact that we examine this phenomenon in a developed country; therefore it is likely that the liability of foreignness (Hymer, 1960; Zaheer, 1995) for MNCs from other developed countries seeking to invest in a developed host is low. The scope for migrants from developed countries to selectively create institutional variety is lower as the institutional environment in their CO is already somewhat similar to that in the U.S., a European settler society, and so the effect of migrant organizations or the diaspora is marginal in influencing the relationship being examined for the case of developed countries.

Our findings suggest that firms from emerging economies overcome the barriers raised by inexperience, weaker capabilities, and lack of reliable knowledge sources by seeking locations that offer some institutional familiarity in relation to the environment in their home countries. It suggests that migrants from developing economies residing

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[7] The results of Heckman estimations are not included due to space constraints, but they are available upon request from the authors.

[8] The results of these additional tests are not included due to space constraints, but they are available upon request from the authors.

in developed locations can speed up the process of internationalization of developing economy firms. Firms do not need to rely solely on learning through experience in a foreign location before expanding their internationalization operations (Johanson & Vahlne, 1977); they can rely on migrant groups from their CO in that location to learn more rapidly and translate their knowledge more easily into local contexts.

Our finding is consistent with the finding of Hernandez (2014), who finds that inexperienced firms are more likely to locate and survive in locations that host migrant population from the firms' home country. While Hernandez (2014) focuses on the knowledge connections between co-nationals, we take a novel theoretical approach to explaining the migration –FDI relationship that brings the *location* to the fore. We argue that the less foreign and more attractive and diverse institutional environment (due to the presence of relevant religious, educational, and cultural organizations, access to ethnic businesses, access to migrant spaces for knowledge exchange among compatriots, etc.) is a driver of inward FDI. Highly statistically significant results for the institutional affinity variables, specifically the non-profit migrant organization stock for migrant groups for low-income countries suggests that the changes brought about in the institutional environment of the host country play an important role in the internationalization strategies of emerging market firms.

The second major finding of this study is that institutional connectedness stimulated by migration facilitates future inward FDI for both developed and developing countries in the migrants' CR. Specifically, our finding suggests the important role played by *transient migrants*, who may be residing in the host country on a temporary basis but they provide new circuits for knowledge exchange between their CO and CR. Our finding is in line with the anecdotal evidence provided by Saxenian (2002) in relation to the notion of brain circulation brought about by skilled foreign-born workers.

In sum, our findings suggest that migrant communities in international locations may help reduce the foreignness of the location, create new opportunities, and provide superior monitoring and control of overseas subsidiaries, especially for firms originating from developing countries. Our finding of institutional affinity as a determinant of FDI leads to some other interesting research questions from an IB perspective: Are these investments primarily market-seeking, meaning that these firms from migrants' CO are serving the product and service needs of its ethnic community? Or are these investments more specific to the occupational industries of its migrants? To what extent and why is the relationship between migration and FDI similar or different between the two major migrant-receiving OECD countries—USA and Germany? Our finding of institutional connectedness as a predictor of future inward FDI using a novel measure – transient migrants – also leads to future research questions about transient migrants location, their characteristics, and their effect on FDI from their CO.

5.1. Implications for research and practice

Several studies in the IB and strategy areas have examined the effects of host country institutions (primarily political and economic) on the entry strategies of foreign firms (Bevan, Estrin, & Meyer, 2004; Brewer, 1993; Dunning, 2005; Globerman & Shapiro, 2003; Henisz, 2000; Loree & Guisinger, 1995). While these studies emphasize the importance of political governance, investment incentives, strong legal system, economic infrastructure, and political stability in host countries as factors attracting foreign investment, the findings of our study contribute to this stream of literature by showing that institutional changes in the environment brought about by increased migrant concentration from a CO (for developing countries) also exerts a pull on firms' investments from that CO. A statistically significant result for non-profit migrant organizations as a predictor of future inward FDI by firms from developing countries in our study is in line with the conclusions drawn by Saxenian (1999), whose case studies of Asian migrant scientists and engineers in the Silicon Valley region of U.S. have elaborated on the

positive role of some migrant organizations, such as industry and professional associations in the information and communications technology industry.

The migration-FDI conceptual framework proposed in this paper relates the literature on FDI determinants in IB to the institutional economics and migration literature streams. In doing so, it introduces the notion of institutional affinity and institutional connectedness, both of which are group-level effects, brought about by migrants from a foreign country through engaging in social and economic activities in a host location. The findings of this study have important implications for the stream of literature that deals with institutional distance between countries. Institutional distance, as proposed by Kostova (1999) draws on institutional theory (Scott, 1995) and defines it as the extent of similarity or dissimilarity between the cognitive, normative, and regulatory institutions of two countries. This construct, although a very useful measure in the global strategy domain, has been used to examine the *average difference* between the institutional environments of countries. Institutional affinity, on the other hand, is a more *focused effect* within the distribution of institutional characteristics in a CR. It relates to the recreation of those formal and informal institutional characteristics in the CR, that are more pronounced (and hence differentiate) the institutional environment of the CO. Thus, institutional affinity is a location-bound (social) effect, where the institutional environment of the region becomes either visibly familiar to some aspects of migrants' CO (as in ethnic enclaves) or provides spaces that allow migrant knowledge networks to be formed and sustained, or it could be some combination of both.

In other words, while institutional affinity clearly encompasses a notion of diminished distance, diminished institutional distance is a *down the line effect* of the institutional diversification process. Institutional affinity deals with those more nuanced and specific CO characteristics (such as use of native language in exchange, access to migrant spaces for knowledge exchange) that begin to develop in the CR due to the presence and engagement of migrants in social and economic activities of a CR location. With institutional affinity, the focus is more on institutional variance and greater diversity in the region brought about by migrants as opposed to the national (average) distance. In sum, institutional affinity can be viewed as contributing to the reduction of institutional distance over time, but it is not simply the inverse of institutional distance.

Our findings in relation to institutional connectedness have important implications for the market entry and cross-border knowledge flows literature streams. While the role of familial and social ties as an informal mechanism for coordinating exchanges (M. Granovetter, 1985; Uzzi, 1997) is evident in several empirical studies (e.g. Wong and Ellis (2002); Chung and Tung (2013), and Sheng, Zhou, and Li, (2011)), we expand on this notion and argue that migrant communities and migrant spaces collectively stimulate greater points of connectivity between the CO and CR. These connections allow increased transferability of knowledge between the CO and the CR, and that in turn facilitates better applicability of knowledge with regard to implementation of business ideas in the host country by CO firms. Our findings also support the notion that social proximity can substitute for geographical proximity and facilitate cross-border knowledge flows (Agrawal, Kapur, & McHale, 2008). Social proximity of migrants in host locations with their compatriots in their CO, who often share a common understanding of the world (Nahapiet & Ghoshal, 1998), makes the transfer of knowledge about potential product ideas, industry-specific technological knowledge, business opportunities in mainstream and niche areas, best practices in host country environment, among others, relatively easier.

We use novel measures—migrant organization stock and diaspora age—to capture migrant activity in their CR, thus contributing to the methodological literature that has examined the migration-FDI relationship. To this end, we construct a novel database of migrant tax-exempt organizations in the U.S. and use the information on founding

year and tax-exempt activity to create new non-economic measures that capture institutional changes brought about by migrants in a CR location. Also, this is the first study to our knowledge that explicitly differentiates between migrants (permanent) and transient migrants (non-immigrants). This differentiation allows us to tease out the contributions of the two types of migrants in affecting international economic activity.

The results of our study show that there is a positive externality associated with inward migration. Migration brings future investments in a location and so, as noted by Buch et al. (2006), this should be factored in the cost-benefit analysis of the immigration debate in developed countries that often focuses on the negative short-term labor market consequences of immigration. Our study is likely to benefit managers of firms in developing countries that are seeking to invest overseas. By tapping into the knowledge networks of their home country migrants through participation in international professional organizations, or industry associations, managers and entrepreneurs in migrants' CO seeking to set up a subsidiary, or a factory, or a sales location in the migrants' CR can help reduce their search costs and overall transaction costs.

5.2. Limitations and future research

Despite the fact that we use panel data with three census year observations for migrant data and FDI stock data for three benchmark years (unlike prior studies that have typically used two time periods or are cross-sectional studies), our study suffers from a few limitations. First, we rely on only one proxy for FDI. Using different measures of FDI stock, such as value-added and gross property and plant values would help in identifying the effect of migrants on different forms of resource commitment. Future studies could employ different proxies for FDI in order to capture the various motivations for FDI in a host country when such comparable data becomes available. A second limitation of our study is that we examine the relationship between migration and FDI at the level of the host country; future studies could use disaggregated data to examine this phenomenon at a more granular level, especially because institutional affinity, by definition, is a subnational effect. Third, we study this phenomenon in the context of the U.S., and so the results of our study may not be generalizable to other host contexts such as emerging market economies or low-income countries.

A fourth limitation of our study is that we are unable to differentiate among the various motives for direct investment—market-seeking, natural resource seeking, efficiency seeking, and strategic asset seeking. A more direct examination of the relationship between migration and FDI at the firm-level is likely to provide a clearer picture of the motive, extent, and the geographic spread of the relationship. For example, migrants preference for home-country goods and services, especially when substitutes for those differentiated ethnic goods (such as ethnic foods, ethnic clothing and print media) are not available in migrants' CR, have been shown to have a positive effect on imports from migrants' CO (White & Tadesse, 2011). As the migrant population in a region grows, thereby expanding the market for cultural and differentiated elite products, firms from CO may find it profitable to invest in production in migrants' CR.

We acknowledge that there are also some limitations with regard to our institutional affinity measure. From a measurement perspective, we assume that institutional affinity is created when migrants are involved in the founding of organizations, but it can be created in other ways as elaborated in the theory development section earlier in the paper. Also, it should be noted that in order to construct our migrant organization database, which consists of over eighteen thousand organizations (out of the total of 1.5 million tax-exempt organizations registered in the US), we relied on name-matching based on country and nationality names (such as in the example of China and Chinese in the name of the organization), which may have resulted in the overrepresentation of organizations for some countries, and yet an underrepresentation of

organizations for others. However, the use of additional proxies for the institutional affinity and institutional connectedness measures helps to alleviate concern around this issue. Lastly, while this is the first study to explicitly examine the differential effects of transient migrants on FDI, there are several questions that still need to be addressed by future research, such as: What are the characteristics of these transient migrants? To what extent is their subnational geographic location different from their co-national migrants in the CR? How does transient migrants' subnational location affect the future inward FDI of CO firms?

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