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Do Migrants Facilitate Internationalization? A Review of the Literature

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WORKING PAPER

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**Do Migrants Facilitate Internationalization?
A Review of the Literature**

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Economics

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Do Migrants Facilitate Internationalization?

A Review of the Literature

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How migration relates to internationalization has been a prominent question in international economics for a long time and its relevance for policy has increased with the amplified political focus on migration. But the role of migration for internationalization is not as obvious as the standard theory suggests, and tightening migration could have unexpected consequences for both developing and developed countries. In this paper we review and discuss over 100 papers published about migrants' role in international trade and foreign direct investment, from pioneering country-level studies to nascent firm-level studies that utilize employer-employee data. To our knowledge, this is the first paper offering a wide-ranging review of the different strands of theory on the relationship between migration and internationalization, as well as new empirical findings. Although the evidence suggests that migration can facilitate internationalization, we also note substantial gaps and inconsistencies in the extant literature. The aim of this paper is to encourage future research and assist policymakers in their efforts to promote internationalization, and better understand the economic effects of changes in migration policy.

The intensifying policy debate over the economic effects of migration and trade is moving the issue of how migration and trade are related up the policy agenda.

International trade and flows of persons and capital are viewed as substitutes in neoclassical economics. However, recent research suggests that there is a positive relationship between migration and trade, as well as other forms of internationalization, such as foreign direct investment and offshoring.

International migration and internationalization are two of the modern economy's mega-forces. The flow of migrants and global commerce has increased substantially over time. Because of the development of transportation technology, forward strides in trade liberalization, and the rise of global value chains, international trade is now at record levels. Migration has also

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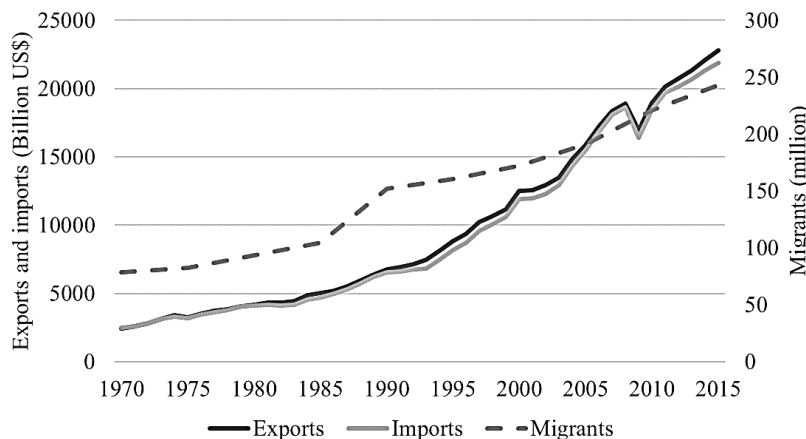
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increased substantially, driven by a variety of factors, with social, political, cultural and economic circumstances all playing major roles (e.g. Massey et al., 1993; Hatton and Williamson, 2005; Gallardo-Sejas et al., 2006; Belot and Ederveen, 2012). Furthermore, decisions to migrate can be based on voluntary or involuntary factors. The former category of ‘pull factors’ primarily center on a desire to improve living standards, through higher real wages, for example. The latter category, of ‘push factors,’ often involves the social and political circumstances of the source country, such as armed conflicts or persecution by authoritarian governments.

Figure 1 demonstrates the increase in both international migration (measured as a stock) and trade over time. Global exports of goods and services more than tripled between 1990 and 2015, from \$6.7 trillion in 1990 to \$22.8 trillion in 2015. Although governments and policymakers have been less willing to liberalize migration policy, migrant volumes have also continued to increase. Today, close to 250 million people—or 3.5 percent of the world population—live in countries other than their country of birth (UN, 2017).

Figure 1. International Trade and International Migrants, 1970-2015



Notes: Trade values stated in constant 2010 US\$. Exports and imports include trade in goods and services.
Source: World Bank (2017).

Despite technological progress and liberalization, internationalization still involves considerable costs. As ‘natural trade barriers,’ which consist of geographic factors, have become less significant—coupled with the reduction of conventional trade barriers, such as tariffs and quotas—the role of information, networks and trust in international trade has become relatively more important. To engage in international business, firms need to acquire skills in international commerce and substantial specific information about their intended markets. Firms also need to be able to gain ‘deep’ access to remote markets, in the form of admission to distribution networks, for example, and to establish trust with important market actors and customers. Subsequently, the issue of whether migration could be an instrument for facilitating internationalization has become more central.

Studies by Gould (1994), Head and Ries (1998) and others ignited research on the migration-trade nexus. The research has investigated migrants’ capacity to facilitate trade and other forms of international business activity. While most studies have focused on how migrants affect international trade flows at an aggregate level, recently some studies utilize matched employer-employee data instead.

The advancing role of migration in the context of internationalization has important policy implications. In recent years, the world has experienced a rise in numbers of voluntary and involuntary migrants. Immigration—in the form of migrant workers and refugees—held center stage in the 2016 UK referendum on EU membership, and the outcome was for the UK to leave the EU. The US presidential election of 2016 also focused on the issue of immigration.

Despite extensive literature on this nexus and its important implications for policy, there are very few examples of governments and policymakers highlighting the role of migration for firms' trade and other aspects of internationalization. Apart from migration being an inherently sensitive subject, one possible explanation could be the absence of an accessible and comprehensive survey of the available theory and evidence on the role of migration in internationalization.³

This article intends to bridge this gap. We review, summarize and discuss over 100 published papers on the subject, from pioneering country-level studies to nascent firm-level studies that utilize employer-employee data. To our knowledge, this is the first paper to provide a wide-ranging review of the different strands of theory related to the nexus between migration and internationalization, as well as early and new disaggregate empirical findings on migration and various forms of internationalization.

To obtain a comprehensive overview of previous literature, we created a database. The database was populated by collating information on the existing studies in an integrated spreadsheet, which categorized studies by year of publication, level of analysis, estimation method and results.

We organize the paper as follows: section 2 reviews and discusses the theory, starting with the neoclassical framework of trade and then moves on to the heterogeneous firm models, including the role of social networks in internationalization. Section 3 brings the hypotheses to the data. We analyze the evidence with an emphasis on micro-oriented contributions. Section 4 provides recommendations for future research and section 5 discusses the policy implications.

2. Theory

2.1 Traditional Views of the Migration-Internationalization Relationship

The traditional view in economics is that the cross-border movement of goods and factors of production are substitutes (e.g. Mundell, 1957; Massey et al., 1993). In a policy context, this has been translated into positions arguing for trade liberalization as a means of limiting immigration (Gaston and Nelson, 2013; Layard, 1992; Aroca and Maloney, 2005).⁴ This logic was employed to support the North American Free Trade Agreement between the US, Canada and Mexico (Uchitelle, 2007). Similarly, policymakers in the EU have hoped that liberalizing trade would alleviate migration pressures from new, and often poorer, member states (Geddes and Money, 2011).

³ For previous overviews, see Felbermayr, Grossmann, and Kohler (2015) and Gaston and Nelson (2013), and for meta-analyses see Genc, Gheasi, Nijkamp, and Poot (2011), Lin (2011) and Nijkamp, Gheasi, and Rietveld (2011).

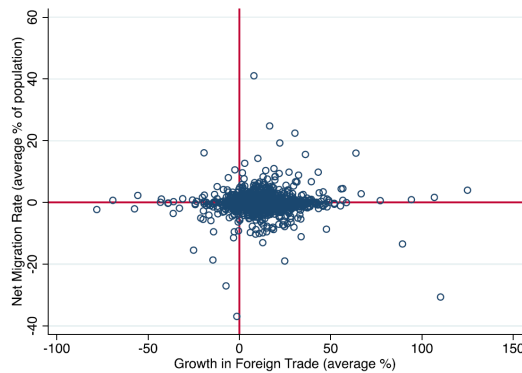
⁴ For a discussion, see, e.g. Carbaugh (2007) and for an empirical analysis, see, e.g. Río and Thorwarth (2009).

However, this basic neoclassical conclusion of substitutability between migration and trade does not hold up when some of the underlying assumptions of the model are relaxed, for instance, by allowing for non-identical technologies across countries. Then, even in a conventional factor proportions context, migration and trade can be complements (e.g. Markusen, 1983; Schiff, 2006).

A number of subsequent theoretical studies have demonstrated that various other settings can also determine whether migration and trade are substitutes or complements (e.g. Panagariya, 1992; Kohli, 2002; Hijzen and Wright, 2010; Bowen and Wu, 2013). The outcome may depend on the level of trade protection, migrant characteristics and the sectors where migrants are employed, and the elasticity of substitution between immigrants and intermediate inputs, among other factors. Rauch (1991) expanded on this analysis in a Heckscher-Ohlin model, which incorporated patterns of both migration and trade, noting that migrants possess social capital that lowers trade costs and thus spurs trade.

Based on the traditional view of the relationship between migration and trade, we would expect substitutability to dominate. However, the data do not support this, as figure 2 demonstrates.

Figure 2. Foreign Trade and Net Migration by Country



Notes: Foreign total trade growth calculated over five-year averages and net migration rates for 214 countries. Source: World Bank (2017) and authors' calculations.

2.2 An Updated View of the Role of Migrants in Trade

Recent trade theory postulates a complementary relationship between migration and trade. These models, pioneered by Clerides et al. (1998), Bernard et al. (2003) and Melitz (2003), focus on heterogeneous firms, imperfect competition, trade costs and intermediaries of trade.

In the recent trade models, firms face fixed and/or variable trade costs, which only the most productive firms can afford. This, in turn, creates a threshold separating non-trading firms from trading firms, based on productivity. Consequently, a reduction in trade costs induces firm dynamics and reallocations, such as rising productivity within an industry.⁵ This effect, and access to imported goods varieties, generates positive welfare effects in general equilibrium in addition to more traditional sources of gain from trade.

As trade costs and productivity are assumed to be exogenous, firms are predetermined in their trade behavior, which rules out internal productivity growth. These unrealistic constraints have

⁵ Bernard et al. (2007) present a model that also features trade gains from reallocations between sectors.

been relaxed, for example, to incorporate a role for migrants in reducing trade costs through the promotion of trust, contacts and knowledge.

The role of trusted intermediaries, such as migrants, has been evident historically (e.g. Greif, 1993). Traders seldom ventured abroad without assurance in the form of letters of introduction to prospective business connections, or without the promise of safe passage. Otherwise, the risk of theft or worse was often considerable. Many traders used traveling companions familiar with the customs and languages along the trading route. In the Muslim world, traveling companions for foreign traders, called *rafiqs*, were actually a requirement (Bernstein, 2009).

In a nutshell, two mechanisms have been proposed for migrants' impact on trade: one that is assumed to raise bilateral imports directly (the *preference mechanism*), and another that increases bilateral trade in general with the home country (the *foreign market and contacts mechanism*). While the first mechanism is straightforward inasmuch as it boosts demand for imported goods from immigrants' source countries, the second mechanism includes three ways through which immigrants can lower transaction costs by disseminating their specific human capital in the host country: (1) by improving communication between the host and home countries, by means including increasing the number of bilingual people in the host country; (2) by contributing knowledge of products, preferences etcetera in foreign markets, i.e. the immigrants' country of birth; and (3) reducing the costs associated with drafting and enforcing contracts, by infusing trust in trade relations by providing access to immigrants' contacts.

Primarily, migration has been assumed to influence trade with those immigrant source countries that lack formalized procedures for contracting, which usually means developing countries.⁶

According to Gould (1994), the less information available in the host country before immigration, the greater the trade impact of immigration. This is modeled by assuming that transaction costs are concave in the immigrant stock. Additionally, there is an assumed positive relationship between the migrant impact on trade and immigrants' ability to transmit information as they integrate more successfully into their new country. Accordingly, the factors that may affect this relationship are the existing stock of immigrants in the host country from the home country and the integration of immigrants.⁷

2.3 Towards a Modern View of Migration and Internationalization

Early studies on the trade-facilitating role of migration lacked a clear idea of the meaning of proximity between immigrants and business in host countries. Moreover, early studies neither considered the historic importance of networks and trust, nor business literature on the role of psychic distance and uncertainty in internationalization.

Rauch (1996, 1999) made a vital contribution to understanding the migration-internationalization relationship, by providing a network and search perspective of trade in differentiated products. Although migrants were not explicitly included in Rauch's theoretical

⁶ Blanes (2010) argued that an impact of immigrants on trade with countries that have different institutions but not on trade with others would indicate an absence of an ethnic network effect of immigrants through contacts. However, the ethnic network or trust effect would be likely to operate also in trade between similar and institutionally weak countries. For trade between similar and institutionally strong countries, personal relations are also likely to lubricate international commerce, but not as much.

⁷ The additional trade impact of well-educated immigrants may not materialize if their skills are downgraded, because of poor labor market integration (Aleksynska and Peri, 2014).

framework, it was influential to subsequent literature for emphasizing that networks can reduce search costs and improve matching in foreign trade.

This new framework was consistent with the concept of economies of scope in search activities, which, for example, rationalize trading intermediaries.⁸ The potential to ‘free ride’ on other parties’ searches may motivate public trade promotion activities. Finally, the network perspective would appear to give personal relations a more prominent role in trade, through ethnic, cultural social ties. Rauch (2001) argued that the repeated game nature of a network fosters trade, but may become less important over time as institutions develop.

Chaney (2014) contributed to the contemporary view of the migration-internationalization nexus by developing a dynamic network model of trade, which relates unexplained heterogeneity in trade behavior to firms’ foreign networks. In this model, firms need at least one contact in a foreign country to export there. Firms may search for contacts randomly or use existing networks. Once acquired, contacts abroad may allow the firm to remotely access contacts’ networks in neighboring countries. Consequently, firms with many contacts have an advantage in foreign trade.

Networks may divert trade from ‘good’ agents in favor of links with the ‘wrong’ agents (Lewer and Van den Berg, 2009; Casella and Rauch, 1998; Rauch and Casella, 2003). Consequently, this may damage other agents, the host and home countries, as well as third countries. For example, an immigrant network may create trade with, or divert trade to, foreign countries with relative factor endowments that are more like the host country than some other foreign country, to the detriment of the host country, and possibly the world. A similar mismatch may occur at the firm level to the detriment of the firms that are excluded from immigrant networks, with potential negative effects on allocative efficiency in the host country.⁹

2.4 Migrants and Heterogeneous Firms

Recently, theoretical contributions have emerged considering migrants within heterogeneous firm models of trade. In this vein, Tai (2009) incorporated the impact of immigrants on trade in Chaney’s (2008) firm model of trade with monopolistic competition, multiple sectors and fixed and variable costs of trade. The additional parameter included in this model was bilateral preferences between countries, which enter into the utility function drawing on Combes et al. (2005). Preferences may affect imports as well as exports.

Conceptually, Tai (2009) expects immigrants’ bias in demand for home country products—what White (2007b) called the transplanted home bias—to be transmitted to others in the host country, so as to further increase aggregate imports (the *preference effect*). The fact that Tai (2009) envisions transmission to the surrounding community paves the way to considering a wider trade impact of preferences, since immigrant communities generally constitute a small share of the population. Moreover, it is implicitly assumed that preferences may be transmitted

⁸ Rauch and Watson (2004) develop a model where persons with foreign networks may either exploit them themselves or offer their services to others. Problems related to contracting and externalities, as well as the cost of maintaining networks abroad, affect the choice between individual exploitation or provision to others.

⁹ Research on distributional impacts within and between industries of foreign networks is largely absent but would seem worthwhile. Another caveat is that migration may spur new production at home or in the host country that replaces existing trade (Mundra, 2005; Dunlevy and Hutchinson, 1999; Hiller, 2014).

from the host to home countries.¹⁰ Besides cultural transmission of preferences, immigrants are also assumed to reduce fixed trade costs related to information and opportunism (the *network effect*).¹¹

Importantly, the market structure of industries can influence these mechanisms, as characterized by the constant elasticity of substitution in demand of an industry. Bastos and Silva (2012) introduced migration into a heterogeneous firm trade model, but with a slightly different focus: how *emigration* could contribute to idiosyncratic firm-specific shocks in export demand. In the model, firms from a particular country are provided with better access to networks in a foreign country through the presence of emigrants (from the firm's home country) in that country. Emigrants are assumed to facilitate market entry for firms from their source country. In this setting, networks increase the likelihood of starting to export *and* the revenues from export. Moreover, networks in a foreign country provided through emigration are assumed to lower the economy-wide fixed cost of exporting, which raises export propensity for all firms to the foreign country. However, Bastos and Silva (2012) did not address how immigration could increase foreign demand by providing firms with improved access to distant markets.

Hatzigeorgiou and Lodefalk (2016) modified and reinterpreted the model of Bastos and Silva (2012) to analyze the role of immigrant employees for firm trade, while controlling for transplanted home bias of immigrant stocks in the host country.¹² The firm-level analysis was justified by referring to immigrant employees and entrepreneurs as natural trade facilitators. These immigrants are presumed to absorb and diffuse information about firm capabilities and related home country market opportunities more easily than most other immigrants from the host country. Concerning the general prevalence of immigrants in the host country, they are expected not only to affect imports of the host country, but also exports through the provision of information, but to a lesser degree than immigrant employees.

In this model, immigrants' export-promoting capability is derived from three mechanisms: (1) immigrants' reduction of the costs of export entry;¹³ (2) immigrants' transplanted home bias that makes firms in the host country more familiar with the foreign market, which in turn promotes exports, and (3) firms in the host country introducing modified or new products to cater for immigrant demand, which are subsequently exported to immigrants' home countries.¹⁴

¹⁰ Such transmission is akin to the absorption of preferences that Good (2013) discusses, where he also argues that migrants need to keep their links to networks at home alive for absorption to take place.

¹¹ White and Tadesse (2008) envision that migrants can create and intensify trade by reducing opportunism through the creation of bridges across cultural distances—in terms of norms and values—between countries. Meanwhile, Rauch (2001) explains the mechanism by referring to the moral bonds of and risk of exclusion from a network. Arguably, this explanation hinges on the network being sustained through new migrants or continued interaction. Accordingly, in overall terms, it is possible that migrants reduce both fixed and variable trade costs related to opportunism.

¹² Other recent heterogeneous firm frameworks with immigrants affecting trade costs and productivity are, e.g., provided in Marchal and Nedoncelle (2017) and Cardoso and Ramanarayanan (2019). The productivity effect may, e.g., stem from task specialization of natives or immigrants being exceptionally talented or skilled (e.g., Peri and Sparber, 2009; Peri et al., 2015).

¹³ Koenig (2009) models immigrants' impact as increasing the probability to export through their negative effect on fixed export costs.

¹⁴ These indirect impacts of immigrants are somewhat akin to what Good (2013) coins the revealed preferences effect of immigrants, whereby migrants indirectly—through their market transactions—

The first mechanism proposed by Hatzigeorgiou and Lodefalk (2016) is conceptually related to immigrant employees' ability to relay more, and reliable, information about the foreign market, provide communication skills in a foreign language, and to limit opportunism and infuse trust in foreign business relations. In this way, immigrant employees could reduce uncertainty in *entry into* and *continued presence in* foreign trade for the firm. By improving information and reducing asymmetries in information, immigrant employees are expected to reduce not only fixed, but also variable, trade costs to increase the propensity and intensity of exports.¹⁵

While the theoretical literature on migration and trade rarely distinguishes between trade in goods and services, Hatzigeorgiou and Lodefalk (2019) focus on the role of foreign networks—through immigration—for firm services exports.¹⁶ They argue that both formal and informal trade barriers are aggravated in service trading. Formally, they set out to incorporate insights from social network theory into a heterogeneous firm trade model of Cristea (2011), which includes industry-specific informational frictions. In their model, firms may prepare for exports by investing in market-specific and costly links to foreign networks, by means including hiring immigrants. Such investment enables firms to attach a special appeal to their products in the eyes of foreign consumers.

The authors assume that this is realized through better access to information and contacts that reduce uncertainty in exports. The greater the informational frictions in a sector, the larger the investment a firm will make. However, the downside with the firm's investment in foreign networks is that other firms in the vicinity may 'free ride' to gain improved, though not fully commensurate, access to the foreign market. This feature discourages investment.¹⁷ Conditional on certain parameter values, what emerges mimics typical social networks, which are clustered, and yet agents are only a few referrals away from other clusters. As in Carayol and Roux (2009), small communities may thus arise through some agents' endogenous investment in weak ties to distant clusters.

disclose information to agents in their host country about preferences in demand of the home country and thus can promote exports to their home country indirectly.

¹⁵ There are several reasons why variable costs can be lowered through migrants' assistance. Absence of opportunistic behavior and presence of trustful relations do arguably need continuous attendance through the maintenance of networks, perhaps even by the continuous entrance of new migrants, as discussed by Gaston and Nelson (2013). Such maintenance is likely to require face-to-face contacts, although modern means of communication may be a complement (Hatzigeorgiou and Lodefalk, 2019). As for the information channel, a continuous flow through migrants and their networks may be important for tracking changes in foreign demand and supply, especially for trade in advanced or fashionable items, as well as in regulations.

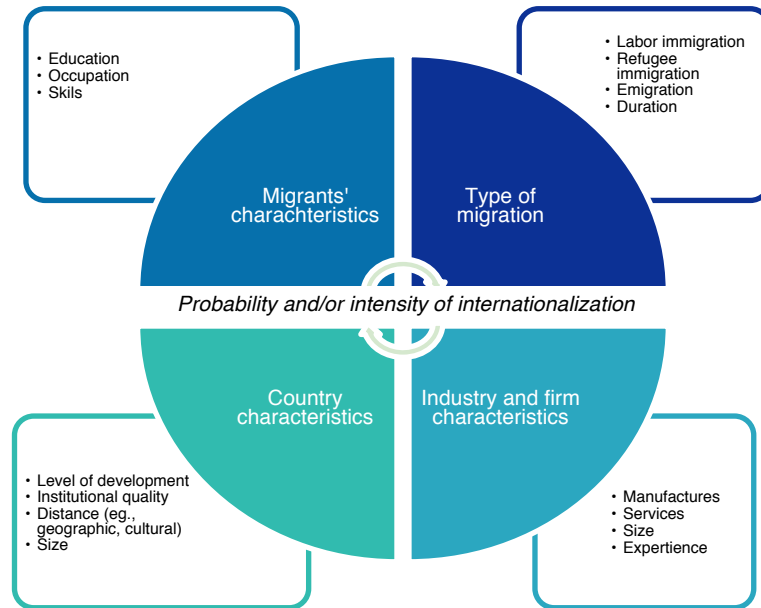
¹⁶ The only other studies we are aware of on the nexus between migration and general trade in services are the unpublished manuscripts of Foster-McGregor and Pindyuk (2013) and Bowen and Wu (2013), the latter of which does not feature the effect of migration on trade costs. In addition, there are a few studies on migration and tourism services, such as, domestically for Spain (de la Mata, 2011) and externally for New Zealand (Law et al., 2013).

¹⁷ In the model, investment by other firms is expected to reduce a firm's own investment, and therefore indirectly its own services exports, while others' investment directly promotes the firm's exports.

2.5 The Different Dimensions of the Migration-Internationalization Nexus

There are different theoretical hypotheses on factors that affect the degree to which migrants may influence internationalization. In Figure 3, we summarize these possible conjectures.¹⁸

Figure 3. Factors that Could Influence the Relationship between Migration and Internationalization



Many studies view immigrants as a homogenous group with no variation in their capability to facilitate trade. Some studies, however, presume that some migrants are more able than others in this respect. This ability is often related to educational attainment, e.g. Gould (1994). More recent studies have considered migrant occupations. For example, Aleksynska and Peri (2014) argued that occupation is a suitable proxy for the trade-promoting potential of migrants, whereas education credentials may not transfer readily across borders and migrants may not be matched to work commensurate with their education.¹⁹ They expected migrants in the top tier of occupations, such as managers, to have the greatest effect on trade, those in sales-related occupations to have an intermediate effect, and others to have the least effect. Similar expectations were incorporated in studies by Mundra (2012) and Blanes (2010).

Integration into the labor market could also influence the extent to which migration may influence trade.²⁰ Few studies have explicitly explored this aspect. Nevertheless, Hatzigeorgiou

¹⁸ The included studies have been screened for prior assumptions, conjectures and hypotheses. Only studies with clearly presented hypotheses are included.

¹⁹ Moreover, the level of education might not be correlated with the level of the occupation across firms, e.g. managers of smaller firms may not have a post-secondary degree, whereas that is common in large firms (Martín-Montaner et al., 2014).

²⁰ On the extent to which migrants trade-related human capital is exploited, see, e.g. surveys discussed in Bryant et al. (2004) and Hatzigeorgiou and Lodefalk (2016).

and Lodefalk (2015) argued that migrant groups that are more integrated into the labor market—such as males and non-refugees—are likely to have a greater impact on trade.²¹

Other migrant characteristics that are expected to influence the impact on trade are, e.g. entrepreneurship (Faustino and Peixoto 2013; Ivanov 2008), and age, because age is assumed to be related to more information about the home country (Koenig 2009). As regards entrepreneurship, migrants may be well suited through knowledge about foreign technologies and innovations (Hatzigeorgiou and Lodefalk 2019). On the other hand, discrimination, difficulties in the transfer of skills, and minimum wages may push migrants into self-employment. Moreover, Ivanov (2008) finds that many self-employed immigrants are in non-tradable sectors.

Most studies assume that *immigrants* mainly affect trade between their host countries and their countries of origin (e.g., Chinese immigrants to the US and their influence on trade with China), whereas only a few studies have explored the corresponding possible effect of *emigrants* on trade (i.e., American immigrants in China and their influence on US trade with China), such as Tadesse and White (2011). And few studies have investigated the role of particular ethnic networks, or even the role of domestic migration (Felbermayr et al., 2010; Rauch and Trindade, 2002; Combes et al., 2005; Artal-Tur et al., 2015). As discussed by Felbermayr et al. (2015), a diaspora may not only benefit trade between the host and home country—a direct link—but may also facilitate trade between host countries of the diaspora, i.e., an indirect link.²²

As for length of stay in a host country, the priors are mixed. Some studies expect time in the new country to promote integration, thereby enhancing migrants' ability to disseminate information and spur trade. Others, for example Herander and Saavedra (2005) and Jansen and Piermartini (2009) discuss how links to networks abroad can deteriorate over time and that information about foreign markets diminishes with time spent away from the source country, which in turn, could weaken immigrants' influence on trade.

More attention has been paid to characteristics of countries, either the foreign country where immigrants come from, or where emigrants reside.²³ In general, migrants are expected to promote trade more with less developed countries, where institutions are weaker (e.g. Dunlevy, 2004; Bryant et al., 2004; Gould, 1994; Herander and Saavedra, 2005; Vézina, 2012). By the

²¹ Besides labor market integration, other aspects are particular for refugees. On the one hand, refugees may facilitate trade less than non-refugees because of their strained relation to the country from which they have fled, weakening their special and up-to-date information. They may also limit interactions with the home country, e.g. to avoid negative consequences for themselves or their connections (Head and Ries 1998). Having spent considerable time in diaspora before entering the host country, would also weaken their ties to home countries (White and Tadesse, 2010). On the other hand, some refugees may be particularly able persons who had been politically influential at home and who have managed to flee. Refugees may also be more eager to return than other immigrants, thereby strengthening their ties to the home country.

²² Felbermayr et al. (2010) argue that this indirect impact is a better measure of the trade-facilitating role of migrants than the direct impact, because the home-bias in trade is assumed to operate between the host and home country but not between host countries.

²³ In more than 35 studies differential impacts across countries are studied. In at least four of them there is a prior of stronger impacts for countries at a lower level of development.

same token, migrants are presumed to enhance trade more with culturally distant countries (e.g. White, 2007b).²⁴

Several studies have hypothesized that migrants are particularly important for firms' trade in differentiated and complex products (e.g. Rauch and Trindade, 2002; Peri and Requena-Silvente, 2010).²⁵ A few studies have also assumed that trade in intermediate products is more assisted by migrants (e.g. Faustino and Peixoto, 2013; Ivanov, 2008). The study by Hatzigeorgiou et al. (2017), which draws on the papers of Grossman and Rossi-Hansberg (2008, 2012) relates to this. The authors argued that information frictions and principal-agent problems are aggravated in offshoring of production, so migrants are expected to be particularly instrumental in facilitating such imports.²⁶

A final dimension of the migration-trade relationship emphasized by a few studies is the margins of trade: do migrants primarily contribute to trade with a new country, with new products, or mainly through intensified trade with existing trade partners, as well as already traded products?

Most studies analyze the relation between bilateral migration stocks and trade volumes, which is akin to the intensive country margin of trade if only established trade is considered. However, a few studies have argued that migrants also facilitate trade with new foreign trade partners, e.g. White and Tadesse (2008); Koenig (2009); Bastos and Silva (2012); and Hatzigeorgiou and Lodefalk (2019).

Moreover, one common assumption is that migrants reduce the fixed cost of trade so new trade is stimulated. Most recently, this has been taken to the product level. Migrants are expected to reduce the fixed costs of starting to trade in a new product internationally, and the variable costs of trading it. The former is expected to create new trade, while the expectations on the latter's impact on trade are more ambiguous (Hatzigeorgiou and Lodefalk, 2019; Hiller 2013).²⁷

The literature on migration and *foreign direct investment* (FDI) is much less developed than that on migration and trade, and especially so in the theory.²⁸ Notably, there are no studies that incorporate a role for migrants in heterogeneous-firm models of trade and FDI.

²⁴ Other aspects of psychic or institutional distance supposed to augment the positive impact on trade include, e.g. having a different religion, no colonial relations in the past, and different languages. A study from the international business literature also discusses the contribution of ethnic homogeneity and strong family ties in home countries to the migrant-trade link (Duanmu and Guney, 2013).

²⁵ Some studies argue that trade in differentiated and homogeneous products alike benefit from the contract enforcement channel whereas trade in the former products benefit more from the information channel than trade in the latter (Vézina, 2012; Felbermayr et al., 2010; Rauch and Trindade, 2002). However, the contract enforcement channel is arguably stronger for differentiated products since it is more difficult to negotiate, enter into, and ensure enforcement of contracts regarding complex products, something which is hinted at by the evidence in Vézina (2012). In addition, the information channel captures much beyond the specific product, e.g. business culture, which explains why it may not be much stronger for differentiated products.

²⁶ Rauch (2001) refers to Saxenian (2002) who documents how ethnic networks have facilitated offshoring to India.

²⁷ These features are commonly operationalized as the number of traded X-digit products and the average value per product.

²⁸ We have found 104 studies on migration and trade but only 22 on migration and FDI.

Theoretically, a neoclassical analysis would conclude that factor flows are substitutes. However, if instead, firms want to supply the foreign market, to avoid import tariffs for example, and therefore make (horizontal) investment, that investment may need to be accompanied by personnel. This would imply that migration and investment are complements.²⁹ It can be noted that this assumption permeates trade and investment agreements, such as Trans-Pacific Partnership, which provides for easy visas for FDI personnel.

Considering that FDI is associated with even larger fixed costs, risks and uncertainty than trade—firms need to establish themselves physically abroad, hire personnel, deal with foreign suppliers and authorities—migration may be instrumental to vertical FDI. This is along the lines of, *inter alia*, Rauch (2001).³⁰ Moreover, such barriers are likely to sustain the positive relationship between migration and FDI as regards horizontal investment. Therefore, studies on migration and FDI have typically hypothesized that the relationship is a positive one, irrespective of the motive of the investment (e.g. Lewer and Van den Berg, 2009; Gao, 2003).³¹ Most commonly, the underlying notion has been that immigrants promote investment in their country of origin through their knowledge of it and contacts there (e.g. Bhattacharya and Groznik, 2008; Javorcik et al., 2011).

Federici and Giannetti (2010) is one of few contributions that has incorporated the positive external effects of migrants on FDI. In their dynamic two-country model, emigrants reveal information about their country of origin to investors of the host country. Information is conjectured to lower the risk and costs of investment. In addition to the return on capital abroad and labor efficiency, information becomes a determinant of capital flows to the foreign country. Capital moves freely across borders, while migration does not.

Besides incorporating the information effect of migration on FDI, a novel feature of this model is that it allows for temporary emigration, which is balanced by return migration. Moreover, emigrants are modeled to acquire new skills while abroad, which they subsequently bring home. The process of capital and migrant flows narrows differences in labor efficiency and wages across countries, which reduces the incentives for migration. Eventually, the economy of the migrants' country of origin converges to its equilibrium path.

Concerning heterogeneity in the impact of migrants on FDI, the literature has hypothesized that migrants are particularly instrumental in relation to investment in more distant countries in terms of language, culture and institutions, and in regard to countries with weak institutions (e.g. Gao, 2003; Murat and Pistoreshi, 2009; Johanson and Vahlne, 1977, 2009; Lücke and

²⁹ See also Aroca and Maloney (2005), Buch et al. (2006), Sanderson and Kentor (2008), Tsai and Tsay (2008) and Jayet and Marchal (2016). Besides, businesses view migration as important to coordinate multinational operations, to access scarce skills, and to sustain a common business culture in a multinational enterprise (Lodefalk, 2016).

³⁰ Ethier and Horn (1990) discuss the additional managerial challenges of firms in setting up and running operations abroad (the “interface effect”), and analytically study impacts on FDI patterns. Rauch and Trindade (2002) present a network model where firms overcome informal barriers to trade by venturing into formalized cooperation. Greenaway and Kneller (2007) discuss the segmentation of firms into exports or FDI according to their levels of productivity, because of higher fixed costs in FDI than in exports.

³¹ Kugler and Rapoport (2007) expect contemporaneous substitutability but dynamic complementarity, while Javorcik et al. (2011) discuss the endogeneity of migration to FDI and potentially mixed effects of FDI on migration.

Stöhr, 2018).³² Another assumption is that it is mainly skilled migrants that facilitate FDI (e.g. Flisi and Murat, 2011). However, as Kugler and Rapoport (2007) noted, other migrants may at least provide firms with information about the quality of labor abroad, so that uncertainty is reduced and FDI promoted. In a similar vein, Flisi and Murat (2011) expected that migrants' time in the host country to correlate positively with influence in economic decision-making. Murat and Pistoresi (2009) argued that migrant networks may be particularly useful for small firms.³³

3. Evidence

3.1 Methodology and Empirical Strategy

To answer the question of whether migration influences bilateral trade between migrant source and host countries, studies have tended to use a gravity model of international trade. Anderson (1979), Helpman and Krugman (1985), Bergstrand (1989) and Deardorff (1998) have contributed to the theoretical foundations of the gravity model. Anderson and van Wincoop (2003) further justified the model on the basis of assumptions of monopolistic competition and product differentiation.

Previous studies have assumed that information barriers are an important determinant of bilateral trade costs. People resident in countries other than those of their birth have the potential to reduce these costs, and thus facilitate trade between their current countries and countries of origin. To capture this line of argument, most studies in our sample have extended the gravity model by including an explanatory variable for foreign born people and their country of birth.

Studies have suggested estimating gravity models using a country-specific fixed effects approach, mainly to control for 'multilateral trade resistance.' (Anderson and van Wincoop, 2003; Santos Silva and Tenreyro, 2006). This recommendation has had a significant impact in the literature, and most studies that investigate the role of migration on the determinants of bilateral trade have implemented this approach.

Without a micro-level approach, however, it is difficult to conclude beyond doubt that migrants facilitate internationalization, and to analyze which mechanism the effect is derived from. First, the potential influence of migration on internationalization is often interpreted as a result of tacit knowledge and connections across markets that are facilitated through social networks (Aleksynska and Peri, 2014). Social networks are generally defined in terms of relations between agents (Granovetter, 1973; Milgram, 1967; Podolny, and Page, 1998). In turn, knowledge and familiarity can build on interaction and social proximity (which might be spatial in character). In this context, it is reasonable to assume that the business network

³² Since vertical investment is commonly expected in countries that are more different in terms of the relative supply of factors of production, migrants may be particularly useful for such FDI. Flisi and Murat (2011)'s conjecture is that emigrants from more developed countries are more influential in economic decision-making. Vaccarini (2015) summarizes the literature on psychic distance and FDI.

³³ In addition, Murat et al. (2011) explore the impact of 'transnational social capital' that is presumably embodied in ethnic associations on FDI, and perform a case study of Italy.

influence on internationalization is likely to be most relevant (Gould, 1994; Rauch, 2001; Herander and Saavedra, 2005; Lodefalk, 2016).³⁴

Second, at the micro-level, the relationship can be analyzed with respect to distinctive characteristics of migrants and internationalization, while controlling for confounding factors at more aggregate levels, including migrants' home bias in demand.

Third, even when migrants do not influence the relative degree of internationalization of specific industries, they could influence the internationalization of firms within certain industries, which might affect firms or firm activities. This mechanism may have possible welfare effects, offering more justification for a micro-level approach.

In this light, it makes sense to adopt a micro-level approach in attempts to capture the potential of migration for internationalization, while considering factors at the macro-level.³⁵

The empirical trade literature at firm level establishes that traders are different from non-traders (Bernard et al., 1995; Bernard et al., 2007). As discussed, this has led to the development of new models that highlight firm differences in productivity (e.g. Bernard et al., 2003; Melitz, 2003; Bellino and Celi, 2016). More recently, models that endogenize exporters' pre-entry productivity premiums have also been developed (e.g. Melitz and Constantini, 2008).

Empirical studies based on this heterogeneous-firm trade framework have demonstrated that other factors beyond sunk-costs and productivity can influence trade (e.g. Greenaway and Kneller, 2007). Firm size, age, relative capital-intensity, ownership status, and human capital, all help explain why some firms export and others do not.

With this background, micro-level studies on the migration-trade nexus at the level of the firm have elaborated on the conventional gravity model framework. Specifically, they have come to draw on new trade models that integrate firm and market characteristics as determinants of export behavior (e.g. Chaney, 2008; Greenaway et al., 2007), adding a set of explanatory firm-specific supply ancillary factors, such as firm size, productivity, ownership status, and previous trade experience. Finally, studies generally include indicators that capture industry data, regional export-destination, and year effects respectively. These are included to control for unobserved time-invariant variables and year-specific shocks.

The key concerns when studies have attempted this kind of estimation are that many firms do not engage in trade with other countries, and most firms do not trade with many countries (Helpman et al., 2008).³⁶ One approach to deal with the fact that firms decide whether or not to trade, with whom to trade, and how much to trade, has been to use a selection model, as proposed by Heckman (1979), for example.

Another methodical issue has been related to endogeneity: if trade leads to increased familiarity between trading partners, then theoretically, this could affect the cost and attractiveness of migration. The potential for endogenous migration with respect to trade would imply a correlation between the number of foreign-born workers in a specific firm and unobserved factors that influence trade decisions with respect to the source countries of these immigrants.

³⁴ Herander and Saavedra (2005) provided evidence using state-level US data to support the idea that proximity of migrants is important. More generally, social networks and proximity are considered conducive to knowledge transfer, as discussed by Inkpen and Tsang (2005) and empirically demonstrated by Head et al. (2018).

³⁵ Additionally, effects of migration on trade are expected to be stronger at the micro than the macro level (Herander and Saavedra, 2005).

³⁶ Zeros generally account for approximately 90 percent of the observations.

For both macro and micro-level studies, instrumental variable estimation has been a common approach to deal with endogeneity.

3.2 Macro-level Evidence

In his seminal study, Gould (1994) found a statistically significant link between immigrants to the US and its trade with their countries of origin. The argument was that this was the result of immigrants' contribution to reducing trade costs between the US and immigrants' source countries.

Looking further back in history, between 1870 and 1910, Dunlevy and Hutchinson (1999) demonstrated that exports to countries from which the US had many immigrants increased to a greater extent than those to other countries.

According to the macro-level evidence, the positive correlation between immigration and US foreign trade in the modern era primarily tends to be driven by immigration from developing countries (White, 2007b). Further evidence has been provided by Bandyopadhyay et al. (2008), which estimated a greater ethnic-network effect on trade than previous studies, at least for a subset of countries. Furthermore, concerning immigrants and their ability to strengthen the commercial ties with specific source countries, the rapid expansion of US trade with China in recent decades has partly been attributed to the networks of Chinese-born business people living in the United States (Rauch and Trindade, 2002).

Canada, a relatively small country in terms of population, but with a substantial proportion of immigrants, has also been studied frequently in the migration-trade literature. As with the US, studies have established that immigrants have a positive association with the level of foreign trade with countries from which immigrants originate (Head and Ries, 1998; Wagner et al., 2002).

The UK and Spain are two other countries where macro-level studies have found evidence supporting a positive migration-trade link (Girma and Yu, 2002). The study by Blanes (2008) found that Spain's imports from former colonies do not seem to have benefited specifically from immigration from those countries. One possible explanation is that trade was controlled to such an extent by imperialistic decisions that most other factors remained statistically insignificant. However, exports were found to be positively related with immigration. Additional macro-level evidence suggesting an influence on trade of immigrants in Spain was provided by Peri and Requena-Silvente (2010).

Research has mainly focused on investigating how immigration affects trade in large countries. However, case studies have been conducted on some small and open developed economies, such as Denmark (White 2007a), Greece (Piperakis, 2003) and Sweden (Hatzigeorgiou and Lodefalk, 2015). These studies are important because small, open economies are generally more dependent on foreign trade, and moreover, they are countries where immigrant populations tend to be considerable.

Unfortunately, a shortage of requisite data has impeded analysis of the migration-trade nexus for many individual developing countries. The immigration host country is a developing country in fewer than one in five studies of all the studies that we have examined, and immigrants are from a developed country in only a few studies. Nevertheless, a positive and significant link was confirmed for Bolivia by Canavire Bacarreza, and Ehrlich (2006). However, Ullah and Islam (2016) find a significant negative relationship between trade in goods and emigration from Bangladesh to the rest of the world.

A number of studies have attempted to estimate a more general correlation between migration and foreign trade. This can provide a pointer for countries that lack sufficient data for their own analysis of the correlation between immigration and foreign trade. However, a shortage of data, particularly concerning migration flows, has limited these studies to primarily investigating OECD member countries.

Generally, the studies conducted for groups of OECD countries corroborate the positive link between migration and trade (Lewer, 2006; Felbermayr and Toubal, 2012). As expected, results have varied, depending on groups of products and sectors. These studies, like those for individual countries, tend to suggest that the migration-trade relationship—in addition to transplanted home bias—primarily is assumed to stem from the dissemination of information and increased confidence between business partners via transnational trade networks between migrants' host countries and countries of origin (Lewer and Van den Berg, 2009).

To date, a total of approximately 70 macro-level studies on the migration-trade nexus have been conducted. Around 15 individual countries and their trade relationships with basically all their trading partners have been studied.

Table 1 summarizes the main estimates of the macro-level studies. The elasticity of trade with respect to immigration (measured as the stock of migrants in the host country) is in the span 0.21-0.22. That is, a one percent increase in a country's foreign-born population is associated with a 0.2 percent increase in trade with immigrant source countries, on average and all other things being equal. The median elasticity is lower, however, which implies that some studies have disproportionately impacted the overall picture. The size of the general macro-level relationship is closer to an elasticity span of 0.15-0.20.³⁷

Table 1. The Macro-level Evidence—Elasticities across Studies

	Immigration		Emigration	
	Exports	Imports	Exports	Imports
Average	0.21	0.22	0.22	0.06
Max.	0.67	0.88	1.82	0.15
Min.	-0.01	-0.63	-0.14	-0.01
Median	0.15	0.18	0.09	0.04
Number of studies	57	54	10	6

Fewer than twenty studies have investigated the role of emigration and trade. As is illustrated in Figure 4, these studies indicate a weaker relationship relative to immigration. The median elasticity is approximately 0.1, which suggests that a one percent increase in the stock of one country's emigrants in a certain other country is associated with 0.1 percent more trade between

³⁷ We found 22 macro-level studies that have analyzed migration and FDI. Unlike the macro-level studies that looked at trade in manufactures, which found a stronger influence on imports relative to exports overall, the evidence of the FDI studies suggests that migration tends to have a stronger influence on outgoing FDI than on investment inflows. On average, the migration elasticity with respect to outgoing FDI to immigrant source countries is 0.33, while the corresponding elasticity with respect to incoming FDI is 0.15.

the two. Although this result is based on few studies and should be interpreted cautiously, it is arguably substantial in economic terms.

Imperfect information affects trade differently, depending on products. For example, trade in electronics tends to be sensitive to information in terms of quality, brand and origin. Imperfect information for such relatively advanced products hampers trade more than for basic products.

Since the trade-facilitating influence of migration is postulated as derived, in part, from the ability of migrants to reduce information friction, empirical studies have analyzed how migration relates to trade in products with varying degrees of sensitivity towards information friction.

Our review of the macro-level evidence suggests that migration is more strongly related to immigrant host countries' imports relative to exports, especially if we put less emphasis on results that deviate substantially from the bulk of the empirical studies. The elasticity of trade with respect to immigration is approximately 0.18 for imports and 0.15 for exports. The discrepancy between the immigrant correlation *vis-à-vis* imports on the one hand, and exports on the other, is interpreted by most studies as an suggestive of the theoretical postulation that both the preference mechanism, and the foreign market and contact mechanism, play a role in explaining the migration-trade nexus.

The relatively high impact of those born abroad on trade in differentiated products, compared with homogenous products, suggests that the migration-trade link depends on migrants' ability to improve the information flow between countries and increase confidence in business transactions (Casella and Rauch, 2002).

The macro-level results also vary with characteristics of migrants and countries. Some variations are expected from theory, e.g. a stronger relationship in terms of skilled migrants and for less developed countries. Still, these variations are noteworthy and can likely be explained by differences in methodologies and data.

Potentially, reverse causality between migration and trade is a severe problem for the macro-level studies. If trade spurs migration rather than vice versa, the treatment variable is to be considered endogenous. Several studies have attempted to analyze the direction of causation, generally using instrumental variable analysis.

Gould (1994) conducted an econometric causality test and found that immigration precedes trade for most of US trading partners. Furthermore, Gould emphasized how immigration flows are restricted by binding quotas, which should make migration exogenous with respect to bilateral trade flows.

McKenzie (2005) analyzed passport and legal barriers to emigration in a large sample of countries and concluded that countries with high passport costs have lower levels of emigration. Therefore, passport costs may impede migration. Javorcik et al. (2011) utilized this finding when assessing the relationship between migration and FDI in the US. Although Gould (1994), Dunlevy and Hutchinson (1999), Javorcik et al. (2011), Aguiar et al. (2007), McKenzie (2007), Sangita (2013) and others concluded that the positive relationship between migration and trade ought to be viewed in terms of a causal influence, the macro-level studies cannot be said to have conclusively demonstrated that the direction of causality runs from migration to trade.

3.3 Sub-national Evidence

There are approximately 25 studies that have analyzed the role of migration for trade at the sub-national level. That is, studies that have exploited regional data to explore the role of migrant stocks across regions within countries for those countries' trade with migrant source countries. These studies have utilized regional data from US and Canadian states as well as regions within European countries, and in one case, for Mexican states.

Table 2. The Sub-national-level Evidence—Elasticities across Studies

	Immigration		Emigration	
	Exports	Imports	Exports	Imports
Average	0.15	0.27	0.04	n/a
Max.	0.39	0.59	0.03	n/a
Min.	-0.11	0.00	0.03	n/a
Median	0.14	0.23	0.03	n/a
Number of studies	23	8	1	0

The sub-national-level studies are more homogeneous than their macro-level counterparts inasmuch as they focus on immigration and exports almost exclusively.

The macro-level evidence on the migration-trade link for Canada was confirmed by Partridge and Furtan (2008), which studied immigrants' contribution to Canada's foreign trade on the provincial level. Furthermore, Peri and Requena-Silvente (2010) analyzed how immigration to 50 Spanish provinces affects exports to 70 different countries in the period 1995-2008. They found a positive and significant relationship between immigration to Spanish provinces and their exports to immigrant source countries.

Several sub-national-level studies have applied methods, such as instrumental variable analysis, to test the causal direction of the relationship.³⁸ In general, the sub-national-level evidence confirms the positive trade-facilitating potential of migration. As demonstrated in Table 2, the median estimated coefficient provided by these studies is 0.14 for exports and 0.23 for imports. The variation across studies that estimate a positive migrant influence on regional foreign trade has diminished over time. We attribute this to more recent studies employing more reliable data and methods.

3.4 Micro-level Evidence

Firm-level studies of the migration-trade nexus have started to emerge recently. This development in research is important for being able to investigate the multifaceted role of migration on internationalization as postulated by the theory.

Migrants neither obtain information on all host country opportunities without effort, nor do they diffuse relevant foreign market information uniformly to all host country firms. Far from all migrants possess the relevant information and contacts enabling them to act as host-country agents for trade. Ultimately, the specific firms that benefit from international contacts and

³⁸ Most recently, promising avenues for studying causality from immigration to trade using sub-national data have come from exploiting exogenous events (Parsons and Vézina, 2018; Stengress, 2018; Cohen et al., 2017). For example, Parsons and Vézina (2018) use information on US immigration of the Vietnamese Boat People in the 1970s, while the US had a lengthy trade embargo on Vietnam, and the subsequent removal of the embargo.

superior information about foreign markets can utilize this human and social capital to identify and exploit foreign trade opportunities. For example, Herander and Saavedra (2005) emphasized how the proximity between migrants themselves—and between migrants and firms—play an important role in the exchange of trade-related information, which implies that primarily, migrants are expected to have a local trade-facilitating effect.

The first empirical firm-level studies typically combined country or regional migrant stocks with firm trade data to analyze possible firm-level migration–trade links. These were generally executed within a gravity model framework. Overall, the expected key role of proximity on migrants’ impact on foreign trade was borne out in these studies.

Koenig (2009) examined the relationship between a measure of regional immigrant stocks in 1982 and the export propensity of French firms *vis-à-vis* 61 countries between 1986 and 1992. The results demonstrated a positive and statistically significant association between regional immigrant stocks and firm export propensity, especially for immigrant groups with a higher average age and level of education. On average, a one percent increase in the immigrant stock was associated with a 0.12 percent increase in the likelihood of firms to exporting to immigrant source countries.

Based on an analysis of firm exports from a set of European countries and the regional share of immigrants in four central European countries, Pennerstorfer (2016) concluded that the proportion of immigrants is strongly related to export propensity. Further, a one percent increase of the number of immigrants in a region is associated with 0.08 percent higher firm exports to immigrant source countries.

Andrews et al. (2017) examined whether employees with foreign citizenship could explain why some firms decide to export and the share of exports in total sales, using a sample of German exporters in the 1993-2008 period. They identified a significant effect on firm-level exports from the nationality of workers. A one standard deviation increase in the proportion of foreign-citizenship workers in a firm increased the probability of export by 1.5 percent.

Hiller (2011) studied the relationship between total emigrant stocks (the number of Danish citizens living abroad) and exports for a cross section of firms in Denmark in 2001, very similar to Bastos and Silva (2012) for Portugal in 2005. The former study indicated that emigrants only foster exports of small firms, while the latter suggested that firms in regions with historically large emigration flows are more likely to export, and that they export more.

The most detailed studies to date are Hiller (2013), Hatzigeorgiou and Lodefalk (2016), Marchal and Nedoncelle (2017), as well as Cardoso and Ramanarayanan (2019). These studies all exploited detailed trade data at the firm-level coupled with data on immigrants employed in the firms.³⁹

Hiller (2013) analyzed Danish manufacturing exporters in the period 1995–2005. This study found a positive—yet quite statistically weak—association between immigrant workers and firm export sales. On average, an additional immigrant employee increased firms’ exports to immigrant source countries by an estimated one percent. This positive influence of immigrant employees on firm exports was corroborated by Hatzigeorgiou and Lodefalk (2016), who studied all Swedish manufacturing firms with more than ten employees in the period 1998–2007. The estimated influence of hiring an additional immigrant was similar in scale to Hiller

³⁹ In a related study Lodefalk (2016), exploited data on migration and country of birth to study temporary expats in Swedish firms and exports of merchandise and services as well as underlying mechanisms.

(2013), increasing firm exports to immigrant source countries by approximately one percent on average.

Cardoso and Ramanarayanan (2019) studied Canadian incorporated manufacturing exporters in the period 2010-2013 and also found a positive association with export sales but also with export propensity, yet with strongly diminishing returns to hiring immigrants. Unlike the other three studies, Marchal and Nedoncelle (2017) lacked bilateral information on immigrant employees' origin and instead used the foreign-born status of employees in studying French manufacturing exporters in the period 1997–2008. The authors found that, on average, a firm hiring foreign-born employees exported 30 percent more than a control firm that was as likely to hire a foreign-born but did not.

In addition to analyzing trade in goods, a few attempts have been made to explore other firm-level aspects of the relationship between migration and internationalization. Hatzigeorgiou and Lodefalk (2019) studied the relationship between immigrant employees and firms' exports of services. They developed a heterogeneous firm framework and drew on employer-employee data for Swedish firms in the period 1998–2007. The results suggested that immigrant employees facilitate services exports; hiring one additional foreign-born worker can increase services exports by approximately 2.5 percent on average, with a stronger effect for skilled and recent immigrants. In addition to testing the validity of the trade-facilitating role of migration for services, this analysis aided understanding of the underlying mechanisms of the role of migration in internationalization. Provision of services often requires a considerable degree of mutual trust between sellers and buyers, which creates a need for firms to establish links with foreign markets to reduce information friction and promote trust.

In addition to services, offshoring is an important aspect of firms' internationalization. However, offshoring comes at a cost, especially where information or trust is lacking. Immigrant employees could reduce such offshoring costs through their knowledge of their former home countries and via access to foreign networks. Hatzigeorgiou et al. (2017) studied Swedish firms and found that that immigrant employees spur offshoring activities by firms through lower offshoring costs. Hiring one additional foreign-born worker can increase offshoring up to three percent on average, with stronger effects for skilled migrants.

There is still no firm-level evidence on the potential role of migration in foreign investment. Considering that migrants have been found to facilitate trade at different levels of analysis, and also for other aspects of internationalization—such as offshoring—there is reason to believe that foreign-born employees could also help facilitate firms' international investment. Also, there are some studies that suggest that migration and FDI are linked at the macro level, further supporting the case for firm-level analysis in regard to FDI.

Endogeneity in the firm-level context may be due to reverse causality caused by the influence of preexisting commercial relationships or foreign demand shocks in firms' decisions on immigrant hiring. This leads to the important question as to whether firms deliberately hire foreign-born workers to increase internationalizing activities toward immigrant source countries, or whether hiring decisions are exogenous with respect to internationalization activities. If the latter is true, this would imply that immigrants promote internationalization. But if, on the other hand, firms hire immigrants from countries that they already have established commercial relationships with, and/or hire immigrants as a way of increasing internationalization prior to implementing their internationalization plans—a sort of preparatory behavior emphasized in recent trade models (e.g. López, 2009)—this would imply that immigrant employment is endogenous to the trade decision.

The firm-level studies that we have reviewed have typically either used a historically determined or a lagged migrant variable, or adopted an instrument for the migrant variable, such as its lagged value or the regional or industry stock of migrants, to investigate the causal characteristics of the migration-internationalization relationship.⁴⁰ Hiller (2013) used regional and two-digit industry immigrant employment stocks as instruments to find that the link between immigrant employment and export sales was ‘borderline significant.’

Hatzigeorgiou and Lodefalk (2016) addressed this endogeneity in their empirical analysis by lagging firms’ immigrant employment and adopting an IV analysis. Their instrument consisted of two components: the average number of immigrants from country j who are employed in Swedish firms other than f , and the average number of immigrants from country j who are employed in the same three-digit industry as firm f , but do not work at the firm. They found evidence supporting a causal influence of immigrant employees on firms’ trade.

In addition to econometric applications, Hatzigeorgiou and Lodefalk (2016) conducted a business survey to shed light on the endogeneity issue. They emphasized that the concern over endogeneity in a firm-level context would be remedied if it could be demonstrated that firms’ hiring of foreign-born workers was exogenous with respect to preexisting trade relationships, or planned decisions related to trade with immigrant source countries. Their survey indicated that responding firms did not mainly hire foreign-born workers for reasons explicitly related to their foreign trade.

Finally, we note the recent study by Marchal and Wildnerova (2018). The authors demonstrated that a firm-specific yet exogenous export demand proxy was positively associated with the contemporaneous hiring of immigrants, irrespective of the country of origin, when analyzing French manufacturing exporters and workers, classified as natives or foreign-born, in the period 2005-2009. They interpreted this as evidence of a reverse causality issue neglected in previous research.

Overall, the emerging firm-level evidence tends to support the hypothesized key role of proximity for migrants’ impact on trade. However, much remains to be explored with respect to how—through which channels and mechanisms—migrants might facilitate firm internationalization, not least because the evidence on trade impacts across firms, firms’ products and product margins, as well as across groups of migrants with different human and social capital, is scarce. Additionally, modelling of migrant hiring decisions needs more attention to further consider endogeneity issues.

4. Conclusions

There are theoretical justifications for why the direction of causality runs from migration to internationalization and not *vice versa*. For example, trade is not postulated as an important determinant of migration in the extensive literature on international migration.⁴¹

In our review of the literature, we found a dozen studies suggesting that migrants’ educational attainment and/or company position matter for the capacity of migration to act as a facilitator

⁴⁰ Marchal and Nedoncelle (2017) used a matching approach to control for selection into hiring and reverse causality.

⁴¹ Case studies of immigrant communities indicate that individual migration decisions are mainly driven by factors such as differences in living standards and the size of the existing ethnic community (Gould, 1994).

of internationalization. The fact that skills seem to enhance the enabling role of migrants in internationalization can be viewed as support for the theoretical proposition that migrants provide knowledge and contacts that reduce information friction in international business. Yet there still is little firm-level evidence on the possible role of company position for the trade-facilitating role of foreign-born employees, which is a significant gap in the research (Felbermayr et al., 2015). However, recently, Andrews et al. (2017) demonstrated the role of immigrant managers in facilitating exports.

Based on the empirical evidence there is reason to assume refugees matter less or not at all as facilitators for internationalization, at least in the short term (e.g. Head and Ries, 1998; White and Tadesse, 2010; Lodefalk, 2016), and the reasons may seem obvious. It is inherently true that refugees' hail from countries suffering in conflict with very unfavorable conditions for international commerce and foreign investments. It is more uncertain, however, how migrants' time in the host country (away from the source country) influences their ability to facilitate internationalization.

We did not find conclusive evidence concerning the role of time passed since immigration for the ability of immigrants to promote internationalization. Time since immigration can facilitate integration into the adopted country. Foreign-born people who master the language and conventions of their new country and readily adapt to the work requirements of the firms where they are employed may become more credible when sharing knowledge about their country of origin with employers. Then again, time since immigration can result in a loss of contacts and deterioration of access to networks in migrants' countries of origin.

This conflicting evidence on time since immigration can be due to opposing forces. Consistent with the theoretical ambiguity, several empirical studies have found that time since immigration may be positively or negatively related to trade (Gould, 1994; Herander and Saavedra, 2005; Jansen and Piermartini, 2009). Jansen and Piermartini (2009) hypothesized that the stronger association to trade for temporary migrants than for permanent migrants is due to differences in employment levels. At the micro-level, Hatzigeorgiou and Lodefalk (2016) found evidence that indicated that contacts and access to networks attenuate with time away from the source country. Interestingly, however, they also found that integration into the host country, indicated in years since immigration, seems to compensate over time for the loss of contacts and deterioration of access to networks in migrants' countries of origin. Overall, we have identified three studies where time since immigration enhances the role of migration to internationalization, and five that conclude the opposite.

Notwithstanding the substantial work produced in the last two decades on the role of migration for internationalization, there are still important gaps in the research. Concerning theory, there is no formal framework tying together migration with its wider role in internationalization. Specifically, the nexus between migration, trade and FDI is insufficiently explained by theory, despite the reasonable assumption that clear linkages do exist (e.g. Fontagné, 1999).

The nascent firm-level approach has the potential to bridge several of the existing knowledge gaps, but the research is still in its initial stages.

Still, there needs to be more research on the causal characteristics of the relationship in order to determine, beyond doubt, whether and how migration does, in fact, promote internationalization. Most macro-level studies have interpreted the positive relationship between migration and internationalization as an indication of a positive effect of migration on internationalization. For reasons we have discussed, a macro-level approach is hindered by potential issues, not least concerning the potential endogeneity of migration. We believe that

macro-level data cannot be used to rule out the endogeneity concern completely. Exploiting granular data with recent estimators is the superior approach in this regard. Using quasi-experimental techniques, such as matching and difference-in-difference estimators, and linked employer-employee data, bilateral firm trade/FDI and migrant worker information as well as exogenous yet local foreign-demand shocks à la Hummels et al. (2014) is likely to be a promising avenue. Besides channels highlighted in this review, indirect links from migration to internationalization via productivity are also important to investigate (Mitaritonna et al., 2017).

In addition, more research on long-term effects is needed. The long-term perspective is especially relevant in light of the recent and ongoing global migration crisis, largely stemming from unrest in the Middle East. It should not be surprising to discover that refugees are not drivers of trade in the short or even medium term. However, knowing whether refugees could facilitate trade with their source countries once the right preconditions are met in their source countries, would be useful, not least from a policy perspective. It may be that refugees can act as facilitators of internationalization similar to voluntary migrants when the situation in their countries of origin improves. In addition, refugees can facilitate trade with neighboring countries and markets that are similar in character. But, it could also be true that refugees, either due to their individual characteristics or the circumstances surrounding their migration process and integration into host countries, have no positive influence on trade.

5. Policy Implications

The recent refugee crisis has resulted in calls for more restrictive immigration policies in many countries. Several governments have recently imposed measures to reduce the number of asylum seekers. There have also been rising demands to restrict overall immigration. Immigration held center stage prior to the 2016 UK EU membership referendum, and immigration was the single biggest issue for British voters: more than half (55%) said that they thought the government should have more control over who is granted entry into the UK, even if this meant the UK leaving the EU (Ipsos MORI, 2016).

Changes to immigration policy have mainly been analyzed from the perspectives of public finances and the labor market. However, as this paper has demonstrated, migration and firm internationalization are related, which means that more restrictive immigration policies—especially in labor immigration—could impact trade, foreign direct investment and employment, as well as growth, in ways that have been overlooked until the present. One major argument of the ‘Leave’ (pro-Brexit) campaign was that Brexit would enable more control over immigration (Wadsworth et al., 2016), yet this aspect was not captured in analysis of the possible trade effects of Brexit. Nor is it generally considered in other countries where immigration is currently restricted.

How can policymakers utilize the likely positive link between migration and internationalization? One conclusion might be to implement more open migration policies with the aim of increasing commercial links with immigrant source countries. However, our paper demonstrate that the research is still insufficient, especially in terms of utilizing micro-level data to examine various aspects of the complex relationship between migration and internationalization, and the underlying mechanisms.

In order to understand whether migration in general can spur internationalization, and how the process works, more research is necessary. Whether the direction of causation runs from

migration, or the hiring of foreign-born employees, to increased trade and other forms of internationalization has not yet been established beyond doubt. Indeed, it is not yet established whether migration *per se* can have a long-term positive impact on internationalization, or whether the evidence provided today is contingent on specific characteristics of migrants and their countries of origin. If policymakers want to apply the findings summarized and discussed in this article within migration policy, it would be reasonable to align the reforms with findings where results have been proven as robust in numerous studies. For example, several studies have found that education appears to be an important factor for the ability of migrants to help firms in their internationalization.

A complementary or alternative approach to applying the findings on the migration-internationalization nexus to migration policy would be to improve the opportunities for migrants already present in a country to facilitate trade and other forms of internationalization. For instance, policymakers could work to improve the channels through which immigrants can help reduce information friction and infuse trust in business relationships between their countries of residence and origin.

In light of the findings emphasizing the importance of education, policymakers may want to consider initiatives to increase the educational attainment of migrants with inadequate skills. Moreover, given the importance of contacts and networks for the trade-enhancing role of migration, policymakers could be motivated to find means to encourage migrants to foster relationships with contacts and networks in their countries of origin.

Although there is little evidence on how much the foreign-commerce-enhancing role of migration relies on what position within firms that foreign-born employees hold, we believe it is reasonable to assume a positive co-influence of managerial seniority within an organization and the ability of a foreign-born employee's promoting capabilities to come into their own. Improved matching on the labor market, as well as within firms, could improve the chances of migrants to act as facilitators of internationalization.

Finally, the previous evidence suggests that the benefits to improving the integration of immigrants in the labor market might have been underestimated. Several industrialized countries struggle with inadequate integration of immigrants in their labor markets, including Sweden (OECD, 2012). Policies to address the challenges of inadequate labor market integration are typically discussed from a public finance perspective, as high unemployment implies public spending on social benefits and other welfare programs. Accordingly, since migration can facilitate internationalization, policymakers may want to revisit the emphasis placed on policies that focus on immigrants' labor market integration. Improvements could go beyond public finances to increasing foreign trade, which has been demonstrated as important to jobs, long-term economic growth and development (e.g. Frankel and Romer, 1999; Winters, 2004).

This article is intended to help policymakers improve approaches to promote internationalization through a better understanding of the role of migration. However, increased knowledge is necessary. Future research needs to explore areas including how the migration-internationalization nexus is influenced by migrant characteristics and occupations, as well as by firm and country characteristics.

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References

- Aguiar, A., Walmsley, T. and Abrevaya, J. (2007). Effects of Bilateral Trade on Migration Flows: the case of the United States. Paper presented at the 10th Annual Conference on Global Economic Analysis, Purdue University, USA.
- Aleksynska, M. and Peri, G. (2014) Isolating the network effect of immigrants on trade. *The World Economy* 37: 434-455.
- Anderson, J. (1979). A theoretical foundation for the gravity equation. *American Economic Review* 69: 106-116.
- Andrews, M., Schank, T. and Upward, R. (2017) Do foreign workers reduce trade barriers? Microeconomic evidence. *The World Economy* 40: 1750-1774.
- Anderson, J. and E. van Wincoop (2003). Gravity with gravitas: a solution to the border puzzle. *American Economic Review* 93: 170-192.
- Aroca, P. and Maloney, W. F. (2005) Migration, trade, and foreign direct investment in Mexico. *The World Bank Economic Review* 19: 449-472.
- Artal-Tur, A., Ghoneim, A.F. and Peridy, N. (2015) Proximity, trade and ethnic networks of migrants: case study for France and Egypt. *International Journal of Manpower* 36: 619-648.
- Bandyopadhyay, S., Coughlin, C. C. and Wall, H. J. (2008). Ethnic networks and US exports. *Review of International Economics* 16: 199-213.
- Bastos, P. and Silva, J. (2012) Networks, firms, and trade. *Journal of International Economics* 87: 352-364.
- Belot, M. and Ederveen, S. (2012) Cultural barriers in migration between OECD countries, *Journal of Population Economics* 25: 1077-1105.
- Bellino, A. and Celi, G. (2016) The role of migration in the variety and quality of trade: evidence from Germany. *German Economic Review* 17: 1-25.
- Bergstrand, J. (1989). The generalized gravity equation, monopolistic competition, and the factor-proportions theory in international trade. *The Review of Economics and Statistics* 71: 143-153.
- Bernard, A. B., Eaton, J., Jensen, J. B. and Kortum, S. (2003) Plants and productivity in international trade. *The American Economic Review* 93: 1268-1290.
- Bernard, A. B., Jensen, J. B. and Lawrence, R. Z. (1995) Exporters, jobs, and wages in U.S. manufacturing: 1976-1987. Brookings Papers on Economic Activity. *Microeconomics* 1995: 67-119.
- Bernard, A. B., Redding, S. J. and Schott, P. K. (2007) Comparative advantage and heterogeneous firms. *Review of Economic Studies* 74: 31-66.
- Bernstein, W. J. (2009) *A Splendid Exchange: How Trade Shaped the World*. New York: Grove/Atlantic.
- Bhattacharya, U. and Groznik, P. (2008) Melting pot or salad bowl: some evidence from US investments abroad. *Journal of financial markets* 11: 228-258.
- Blanes, J. V. (2010) The link between immigration and trade in developing countries. ----- (2008) Characteristics of immigrants and bilateral trade. *Revista de Economía Aplicada* 16: 133-159.

- Bowen, H. P. and Wu, J. P. (2013) Immigrant specificity and the relationship between trade and immigration: theory and evidence. *Southern Economic Journal* 80: 366-384.
- Bryant, J., Genc, M. and Law, D. (2004) Trade and migration to New Zealand. Treasury Working Paper no. 18.
- Buch, C. M., Kleinert, J. and Toubal, F. (2006) Where enterprises lead, people follow? Links between migration and FDI in Germany. *European Economic Review* 50: 2017-2036.
- Canavire Bacarreza, G. J. and Ehrlich, L. (2006) The impact of migration on foreign trade in Bolivia. *Revista Latinoamericana de Desarrollo Económico* 6: 125-146.
- Carayol, N. and Roux, P. (2009) Knowledge flows and the geography of networks: a strategic model of small world formation. *Journal of Economic Behavior and Organization* 71: 414-427.
- Carbaugh, R. J. (2007) Is international trade a substitute for migration? *Global Economy Journal* 7.
- Casella, A. and Rauch, J. E. (1998) Overcoming informational barriers to international resource allocation: prices and group ties. NBER Working Paper, WP 6628.
- (2002) Anonymous market and group ties in international trade. *Journal of International Economics* 58: 19-47.
- Chaney, T. (2008) Distorted gravity: the intensive and extensive margins of international trade. *American Economic Review* 98: 1707-1721.
- (2014) The network structure of international trade. *American Economic Review* 104: 3600-3634.
- Clerides, S. K., Lach, S. and Tybout, J. R. (1998) Is learning by exporting important? Micro-dynamic evidence from Colombia, Mexico, and Morocco. *The Quarterly Journal of Economics* 113: 903-947.
- Cohen, L., Umit, G. and Malloy, C. (2017). Resident Networks and Corporate Connections: Evidence from World War II Internment Camps. *The Journal of Finance* 72: 207-248.
- Combes, P.-P., Lafourcade, M. and Mayer, T. (2005) The trade-creating effects of business and social networks: evidence from France. *Journal of International Economics* 66: 1-29.
- Cristea, A. D. (2011) Buyer-seller relationships in international trade: evidence from U.S. States' exports and business-class travel. *Journal of International Economics* 84: 207-220.
- de la Mata, T. (2011) Does trade creation by social and business networks hold in services? An analysis for accommodation and restaurants in Spain. Universidad Autónoma de Madrid, Department of Economic Analysis.
- Deardorff, A. (1998). Determinants of bilateral trade: does gravity work in a neoclassical world? In J. Frankel, ed. *The regionalization of the world economy*. Chicago: Chicago University Press.
- Duanmu, J.-L. and Guney, Y. (2013) Heterogeneous effect of ethnic networks on international trade of Thailand: The role of family ties and ethnic diversity. *International Business Review* 22: 126-139.
- Dunlevy, J. A. (2004) Interpersonal networks in international trade: evidence on the role of immigrants in promoting exports from the American States. Miami University, Working paper.
- Dunlevy, J. A. and Hutchinson, W. K. (1999) The impact of immigration on american import trade in the late nineteenth and early twentieth centuries. *The Journal of Economic History* 59: 1043-1062.
- Ethier, W. J. and Horn, H. (1990) Managerial control of international firms and patterns of direct investment. *Journal of International Economics* 28: 25-45.
- Faustino, H. C. and Peixoto, J. (2013) Immigration-trade links: evidence from Portugal. *Ekonomika Istrazivanja* 26: 155-170.
- Frankel, J. A. and D. Romer, (1999). Does trade cause growth? *American Economic Review* 89(3), 379-399.

- Federici, D. and Giannetti, M. (2010) Temporary migration and foreign direct investment. *Open Economies Review* 21: 293-308.
- Felbermayr, G., Grossmann, V. and Kohler, W. (2015) Migration, International Trade and Capital Formation: Cause or Effect? In B. R. Chiswick, and P. W. Miller (eds.), *Handbook of the Economics of International Migration*, Vol. 1B: Elsevier.
- Felbermayr, G. J., Jung, B. and Toubal, F. (2010) Ethnic networks, information, and international trade: revisiting the evidence. *Annales d'Economie et de Statistique* 97/98: 41-70.
- Felbermayr, G. J. and Toubal, F. (2012). Revisiting the Trade-Migration Nexus: Evidence from New OECD Data. *World Development* 40: 928-937.
- Flisi, S. and Murat, M. (2011) The hub continent: immigrant networks, emigrant diasporas and FDI. *The Journal of Socio-economics* 40: 796-805.
- Fontagné, L. (1999). Foreign Direct Investment and International Trade: Complements or Substitutes? OECD Science, Technology and Industry Working Papers 10/1999.
- Foster-McGregor, N. and Pindyuk, O. (2013) Ethnic networks and services trade. Vienna Institute for International Economic Studies, manuscript.
- Gallardo-Sejas, H., Pareja, S. G., Llorca-Vivero, R. and Martínez-Serrano, J. A. (2006) Determinants of European immigration: a cross-country analysis. *Applied Economics Letters* 13: 769-773.
- Gao, T. (2003) Ethnic Chinese networks and international investment: evidence from inward FDI in China. *Journal of Asian economics* 14: 611-629.
- Gaston, N. and Nelson, D. R. (2013) Bridging trade theory and labour econometrics: the effects of international migration. *Journal of Economic Surveys* 27: 98-139.
- Geddes, A., and Money, J. (2011). Mobility within the European Union. Migration, Nation States, and International Cooperation. New York, NY: Routledge.
- Genc, M., Gheasi, M., Nijkamp, P. and Poot, J. (2011). The impact of immigration on international trade: a meta-analysis. Norface Discussion Paper 2011/020.
- Girma, S. and Yu, Z. (2002) The link between immigration and trade: evidence from the United Kingdom. *Weltwirtschaftliches Archiv* 138: 115-130.
- Good, M. (2013) Gravity and localized migration. *Economics Bulletin* 33: 2445-2453.
- Gould, D. (1994) Immigrant links to the home country: empirical implications for U.S. bilateral trade flows. *Review of Economics and Statistics* 76: 302-316.
- Granovetter, M. S. (1973) The strength of weak ties. *American Journal of Sociology* 78: 1360-1380.
- Greenaway, D. and Kneller, R. (2007) Firm heterogeneity, exporting and foreign direct investment. *The Economic Journal* 117: F134-F161.
- Greif, A. (1993) Contract enforceability and economic institutions in early trade: the Maghribi traders' coalition. *The American Economic Review* 83: 525-548.
- Grossman, G. M. and Rossi-Hansberg, E. (2008) Trading tasks: a simple theory of offshoring. *American Economic Review* 98: 1978-1997.
- (2012) Task trade between similar countries. *Econometrica* 80: 593-629.
- Harari, Y. (2015). *Sapiens: A Brief History of Humankind*. New York: HarperCollins.
- Hatton, T. J., and Williamson, J. G. (2005) What fundamentals drive world migration?. In G. Borjas and J. Crisp (eds.) *Poverty, international migration and asylum* (pp. 15-38). London: Palgrave Macmillan.
- Hatzigeorgiou, A., Karpaty, P., Kneller, R. and Lodefalk, M. (2017) Do immigrants spur offshoring? Firm-level evidence. Ratio Institute, Working Paper, 282.
- Hatzigeorgiou, A. and Lodefalk, M. (2015) Trade, migration and integration – evidence and policy implications. *The World Economy* 38: 2013-2048.

- (2016) Migrants' influence on firm-level exports. *Journal of Industry, Competition and Trade* 16: 477-497.
- (2019) Migration and Servicification: Do Immigrant Employees Spur Firm Exports of Services? *The World Economy* (accepted).
- Head, K. and Ries, J. (1998) Immigration and trade creation: econometric evidence from Canada. *Canadian Journal of Economics* 31: 47-62.
- Head, K., Li, Y. A. and Minondo, A. (2018). Geography, Ties, and Knowledge Flows: Evidence from Citations in Mathematics. *Review of Economics and Statistics*, online Nov. 02.
- Heckman, J. (1979). Sample Selection Bias as a Specification Error. *Econometrica* 47: 153-161.
- Helpman, E. and P. Krugman (1985). Market structure and foreign trade. Cambridge, MA: MIT Press.
- Helpman, E., Melitz, M. and Rubinstein, Y. (2008) Estimating trade flows: trading partners and trading volumes. *The Quarterly Journal of Economics* 123: 441-487.
- Herander, M. G. and Saavedra, L. A. (2005) Exports and the structure of immigrant-based networks: the role of geographic proximity. *Review of Economics and Statistics* 87: 323-335.
- Hijzen, A. and Wright, P. W. (2010) Migration, trade and wages. *Journal of Population Economics* 23: 1189-1211.
- Hiller, S. (2013) Does immigrant employment matter for export sales? Evidence from Denmark. *Review of World Economics/Weltwirtschaftliches Archiv* 149: 369-394.
- (2014) The export promoting effect of emigration: evidence from Denmark. *Review of Development Economics* 18: 693-708.
- Hummels, D., Jørgensen, R., Munch, J. and Xiang, C. (2014). The Wage Effects of Offshoring: Evidence from Danish Matched Worker-Firm Data. *American Economic Review* 104: 1597-1629.
- Inkpen, A. C. and Tsang, E. W. K. (2005). Social Capital, Networks, and Knowledge Transfer. *The Academy of Management Review* 30: 146-165.
- Ivanov, A. V. (2008) Informational effects of migration on trade. University of Mannheim Center for Doctoral Studies in Economics, Discussion paper 42.
- Jansen, M. and Piermartini, R. (2009) Temporary migration and bilateral trade flows. *The World Economy*, 32: 735-753.
- Javorcik, B. S., Özden, Ç., Spatareanu, M. and Neagu, C. (2011) Migrant networks and foreign direct investment. *Journal of Development Economics* 94: 231-241.
- Jayet, H. and Marchal, L. (2016). Migration and FDI: Reconciling the standard trade theory with empirical evidence. *Economic Modelling* 59: 46-66.
- Johanson, J. and Vahlne, J.-E. (1977) The internationalization process of the firm-a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies* 8. 23-32.
- (2009) The Uppsala internationalization process model revisited: from liability of foreignness to liability of outsidership. *Journal of International Business Studies* 40: 1411-1431.
- Koenig, P. (2009) Immigration and the export decision to the home country. PSE Working Papers 2009-31.
- Kohli, U. (2002) Migration and foreign trade: further results. *Journal of Population Economics* 15: 381-387.
- Kugler, M. and Rapoport, H. (2007) International labor and capital flows: complements or substitutes? *Economics Letters* 94: 155-162.
- Law, D., Genç, M. and Bryant, J. (2013) Trade, diaspora and migration to New Zealand. *The World Economy* 36: 582-606.
- Layard, R. (1992) *East-West Migration: The Alternatives*. Cambridge, MA: MIT Press.

- Lewer, J. J. (2006). The Impact of Immigration on Bi-Lateral Trade: OECD Results from 1991-2000. *Southwestern Economic Review* 33: 9-22.
- Lewer, J. J. and Van den Berg, H. (2009) Does immigration stimulate international trade?: measuring the channels of influence. *The International Trade Journal* 23: 187-230.
- Lin, F. (2011). The pro-trade impacts of immigrants: a meta-analysis of network effects. *Journal of Chinese Economic and Foreign Trade Studies* 4: 17-27.
- Lodefalk, M. (2016) Temporary expats for export: firm-level evidence. *Review of World Economics* 152: 733-772.
- Lopéz, R. A. (2009). Do Firms Increase Productivity in Order to Become Exporters? *Oxford Bulletin of Economics and Statistics* 71: 621-642.
- Lücke, M. and Stöhr, T. (2018) *Heterogeneous immigrants, exports and foreign direct investment: The role of language skills*. *The World Economy* 41: 1529-1548.
- Marchal, L. and Nedoncelle, C. (2017) *How foreign-born workers foster exports*, Kiel Working Paper 2071.
- Marchal, L. and Wildnerova, L. (2018). Immigrants and Export Demand: Exploring a Reverse Causality Bias. Paper presented at the ifoCEMIR/cesifo Junior Economist Workshop on Migration Research, Munich, 19-20 June.
- Markusen, J. R. (1983) Factor movements and commodity trade as complements. *Journal of International Economics* 14: 341-356.
- Martín-Montaner, J., Requena, F. and Serrano, G. (2014) International trade and migrant networks: is it really about qualifications?/Comercio internacional y redes de migrantes: ¿Se trata realmente de las cualificaciones? *Estudios de Economía* 412: 251-260.
- Massey, D. (1993) Theories of international migration: a review and appraisal. *Population and Development Review* 19: 431-466.
- McKenzie, D. (2007), 'Paper walls are easier to tear down: passport costs and legal barriers to emigration', *World Development*, 35, 11, 2026-2039.
- Melitz, J. (2008) Language and foreign trade. *European Economic Review* 52: 667-699.
- Melitz, M. J. (2003) The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica* 71: 1695-1725.
- Melitz, M. J. and Costantini, J. A. (2008). The Dynamics of Firm-Level Adjustment to Trade Liberalization. In Helpman, E., Marin, D. and Verdier, T., ed. *The Organization of Firms in a Global Economy*. Cambridge and London: Harvard University Press.
- Milgram, S. (1967). The Small-World Problem. *Psychology Today* 1: 61-67.
- Mitaritonna, C., Orefice, G. and Peri, G. (2017). Immigrants and firms' outcomes: Evidence from France. *European Economic Review* 96: 62-82.
- Mundell, R. (1957) International trade and factor mobility. *American Economic Review* 47: 321-335.
- Mundra, K. (2005) Immigration and international trade: a semiparametric empirical investigation. *The Journal of International Trade and Economic Development* 14: 65-91.
- (2012) Immigration and trade creation for the U.S.: the role of immigrant occupation. Institute for the Study of Labor (IZA).
- Murat, M. and Pistoiesi, B. (2009) Emigrant and immigrant networks in FDI. *Applied Economics Letters* 16: 1261-1264.
- Murat, M., Pistoiesi, B. and Rinaldi, A. (2011) Transnational social capital and FDI: evidence from Italian associations worldwide. *Journal of Economic Development* 36: 1-15.
- Nijkamp, P., Gheasi, M. and Rietveld, P. (2011). Migrants and international economic linkages: a meta-overview. *Spatial Economic Analysis* 6: 359-376.

- Panagariya, A. (1992) Factor mobility, trade and welfare. A north-south analysis with economies of scale. *Journal of Development Economics* 39: 229-245.
- Parsons, C. and Vézina, P.-L. (2018). Migrant Networks and Trade: The Vietnamese Boat People as a Natural Experiment. *The Economic Journal* 128: F210-F234.
- Partridge, J. and Furtan, H. (2008). Immigration Wave Effects on Canada's Trade Flows. *Canadian Public Policy* 34: 193-214.
- Pennerstorfer, D. (2016). Export, Migration and Costs of Trade: Evidence from Central European Firms. *Regional Studies* 50: 848-863.
- Peri, G. and Requena-Silvente, F. (2010) The trade creation effect of immigrants: evidence from the remarkable case of Spain. *Canadian Journal of Economics* 43: 433-459.
- Peri, G., Shih, K. and Sparber, C. (2015). STEM workers, visas and productivity in US cities. *Journal of Labour Economics* 33: S225-S255.
- Peri, G. and Sparber, C. (2009). Task specialization, immigration and wages. *American Economic Journal: Applied Economics* 1: 135-169.
- Piperakis, A. S. (2003) Immigration, trade costs and trade: gravity evidence for Greece. *Journal of Economic Integration* 18: 750-762.
- Podolny, J. M. and Page, K. L. (1998). Network Forms of Organization. *Annual Review of Sociology* 24: 57-76.
- Rauch, J. E. (1991) Reconciling the pattern of trade with the pattern of migration. *The American Economic Review* 81: 775-796.
- (1996) Trade and search: social capital, sogo shosha, and spillovers. National Bureau of Economic Research, Inc, NBER Working Paper, WP 5618.
- (1999) Networks versus markets in international trade. *Journal of International Economics* 48: 7-35.
- (2001) Business and social networks in international trade. *Journal of Economic Literature*, 39: 1177-1203.
- Rauch, J. E. and Casella, A. (2003) Overcoming informational barriers to international resource allocation: prices and ties. *The Economic Journal* 113: 21-42.
- Rauch, J. E. and Trindade, V. (2002) Ethnic Chinese networks in international trade. *The Review of Economics and Statistics* 84: 116-130.
- Rauch, J. E. and Watson, J. (2004) Network intermediaries in international trade. *Journal of economics and management strategy* 13: 69-93.
- Río, A. M. D. and Thorwarth, S. (2009) Tomatoes or tomato pickers? Free trade and migration between Mexico and the United States. *Journal of Applied Economics* 12: 109-135.
- Sanderson, M. R. and Kentor, J. (2008) Foreign direct investment and international migration: a cross-national analysis of less-developed countries, 1985-2000. *International Sociology* 23: 514-539.
- Sangita, S. (2013). The Effect of Diasporic Business Networks on International Trade Flows. *Review of International Economics* 21: 266-280.
- Santos Silva, J. M. C. and Tenreyro, S. (2006). The log of gravity. *The Review of Economics and Statistics* 88: 641-658.
- Saxenian, A. (2002) Silicon Valley's new immigrant high-growth entrepreneurs. *Economic Development Quarterly* 16: 20-31.
- Schiff, M. (2006). *Substitution in Markusen's classic trade and factor movement complementarity models*, World Bank, Policy Research Working Paper 3974.
- Steingress, W. (2018). The causal impact of migration on US trade: Evidence from political refugees. *Canadian Journal of Economics* 51: 1312-1338.

- Tadesse, B. and White, R. (2011) Emigrant effects on trade: re-examining the immigrant-trade link from the home country perspective. *Eastern Economic Journal* 37: 281-302.
- Tai, S. H. T. (2009) Market structure and the link between migration and trade. *Review of World Economics/Weltwirtschaftliches Archiv* 145: 225-249.
- Tsai, P.L. and Tsay, C.L. (2008) Outward foreign direct investment and inward international labor migration: substitutes or complements? *International Economic Journal* 22: 127-139.
- Uchitelle, L. (2007). "Nafta Should Have Stopped Illegal Immigration, Right?" The New York Times, February 18. New York, NY.
- Ullah, M.S. and Islam, M.T. (2016) Linkage between emigration and export flows: the case of Bangladesh. *Journal of Economic and Financial Studies* 4: 55-61.
- Vaccarini, K. (2015) Psychic Distance and FDI: The Case of China. *Journal of Comparative International Management* 18: 1-23..
- Vézina, P.-L. (2012) How migrant networks facilitate trade: evidence from Swiss exports. *Swiss Journal of Economics and Statistics* 148: 449-476.
- Wadsworth, J., Dhingra, S., Ottaviano, G., and Van Reenen, J. (2016). *Brexit and the impact of immigration on the UK*, Brexit Analysis No. 5, Centre for Economic Performance, London School of Economics and Political Science.
- Wagner, D., Head, K. and Ries, J. (2002) Immigration and the trade of provinces. *Scottish Journal of Political Economy* 49: 507-525.
- World Bank. (2017). World Development Indicators [Accessed October.]
- White, R. (2007a) An examination of the Danish immigrant-trade link. *International Migration* 45: 61-86.
- (2007b) Immigrant-trade links, transplanted home bias and network effects. *Applied Economics*, 39: 839-852.
- White, R. and Tadesse, B. (2008) Cultural distance and the US immigrant-trade link. *World Economy* 31: 1078-1096
- (2010) The effects of refugee and non-refugee immigrants on US trade with their home countries. *Journal of International Trade and Economic Development* 19: 289-317.
- Winters, A. (2004). Trade liberalisation and economic performance: an overview. *The Economic Journal*, 114(493), F4-F21.