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Heterogeneity in Migration Network Effects Across Cultures

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Abstract

Heterogeneity in Migration Network Effects Across Cultures

by Tamara Bogatzki[*]

I empirically assess the importance of socially interdependent origin cultures as opposed to socially independent ones for network effects in inter-national migration. I propose that societies that emphasise collectivist behaviour accumulate larger levels of community-specific social capital than individualist societies. Furthermore, while community-specific social capital makes migration away from the group costly it can be recovered by entering a corresponding network abroad. My estimates show consistent positive effects of social interdependence on the importance of migrant diasporas for bilateral emigration rates from all over the world to 30 OECD destinations across a plethora of specifications. For people from an origin with maximal emphasis on collectivism the network effect can be up to more than twice as large as for people from the individualist pole of the scale. The pattern is reflected when comparing trust in other people across different degrees of generalisation, suggesting that the heterogeneous diaspora effect may indeed be driven by higher ingroup-specific social capital in collectivist cultures.

Keywords: International Migration, Cultural Economics, Economic Sociology, Collectivism, Individualism, Migration Networks, Social Capital

JEL classification: F22, Z13.

Zusammenfassung

Kollektivistische Gesellschaften verfügen über ein höheres gemeinschaftsspezifisches Sozialkapital als individualistische Gesellschaften. Dieses gesellschaftsspezifische Sozialkapital macht das Verlassen der Gemeinschaft kostspieliger, kann jedoch anteilig zurückgewonnen werden, wenn Individuen in Zielländer mit entsprechenden Diasporen migrieren. Die Forschungsarbeit zeigt, dass eine höhere gegenseitige soziale Abhängigkeit im Herkunftsland die Wichtigkeit von Netzwerken für die Selektion in 30 OECD Zielländer signifikant steigert. Der Effekt ist konsistent über verschiedene empirische Spezifikationen hinweg. Für Migrant*innen aus kollektivistischen Herkunftsländern ist der Netzwerkeffekt bis zu doppelt zu groß wie für Migrant*innen aus individualistischen Herkunftsländern. Ein vergleichbares Muster zeigt sich für allgemeines Vertrauen, das in kollektivistischeren Kulturen niedriger ist und den vorgeschlagenen Sozial-Kapital-Mechanismus stützt.

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1 Introduction

One of the main determinants of international migration is the share of people from the same country of origin in the destination country, referred to as the diaspora. Diasporas constitute networks that are assumed to reduce the expenses of migration by decreasing the physical and psychological cost of gathering information, the cost of the search for jobs and housing abroad, and the overall cost of relocation (Borjas, 1995; Chiswick and Miller, 1996; Bauer, Epstein, and Gang, 2005). They may furthermore help to relax credit constraints (Dolfin and Genicot, 2010) and foster irregular migration by recommending the best coyote (Massey, 1988; Dolfin and Genicot, 2010). Massey and Aysa-Lastra (2011) among others argue that migration networks can be conceived as a source of social capital by providing access to resources that are only accessible through social interaction.

However, networks do not appear to affect all migrants equally. For instance, McKenzie and Rapoport (2010) show that networks are most important for migrants with little education, while Pedersen, Pytliková, and Smith (2008) find supporting evidence for stronger effects on the poor than on the wealthy. In this paper, I suggest that the relative emphasis on social interdependence versus social independence of the origin culture may be a so far overseen source of heterogeneity in network effects. Socially *inter*dependent cultures see the group as the atomic entity of society. Individuals are embedded into well-founded social relationships serving superordinate group goals with a strong in-group favouritism. The boundaries between the self and the group are blurred. Socially *in*dependent cultures encourage the expression of personal ideas and feelings about life and the autonomous pursuit of self-set goals. Interaction with others is a matter of choice rather than a duty or habit.

Two of the most widely known cross-country comparisons related to social independence and interdependence include Schwartz's evaluation of autonomy versus embeddedness (Schwartz, 1994, 2004, 2008, 2012) and Hofstede's cultural dimension of individualism versus collectivism (Hofstede, 1980, 1991, 2003). According to my hypothesis, networks matter more for those flows from comparatively more socially interdepend-

ent/collectivist/embedded origin cultures. Importantly, I do not claim that cultural differences per se drive the migration decision.[1] Instead, I argue that the specific cultural trait affects how networks are weighted in the migration process.

I contend that because social interdependence entails an investment in community-specific social capital and social capital is tied to the people producing it, migration away from one's group comes at a cost that is experienced less by individuals living in cultures that assign social status to personal independence. While Massey and Aysa-Lastra (2011) among others have assessed the strength of different kinds of network ties and their effect on migration, to my knowledge this work is the first attempt to assign differences in network effects to cross-cultural variation in community-specific social capital.

I empirically assess the implications of my theory within a gravity framework of bilateral migration from all over the world to 30 OECD countries for the years 1980 to 2010. I find consistent positive effects of social interdependence on the importance of migrant diasporas for emigration rates. The effect is highly statistically significant across different specifications and subsamples and for instrumental variable regressions that account for unobserved sources of heterogeneity from bilateral policies and past migration flows. For people from a society of origin with maximal emphasis on embeddedness the network effect can be two times larger than for people from the autonomy pole of the scale.

In the remainder of my paper, I will proceed as follows. In Section 2, I provide an overview of the related literature. Section 3 introduces the theoretical model, while I discuss my empirical model and estimation strategy in sections 4 and 5. Section 6 contains a description of the data.
In section 7 I present results. Section 8 concludes.

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[1] The effect of cultural proximity on migration within Europe has been studied by e.g. Belot and Ederveen (2012) and Caragliu, Del Bo, de Groot, and Linders (2013).

2   **Related Literature**

This work is closely related to three main strands of research: First, it sheds light on how network effects on migration differ with respect to the characteristics of origin and destination countries. Second, I contribute to the literature on individualism and collectivism in economics. Third, I link my hypothesis to the treatment of migrant networks as sources of social capital in economic sociology.

There is a consensus in the economic literature that existing diasporas at destination predict future migration flows extraordinarily well.[2] Beine, Docquier, and Özden (2011) argue that networks account for over 70 percent of the observed variability in migration movements. Fagiolo and Santoni (2016), who regress flows in the year 2000 on stocks of periods back until 1960, detect decreasing but persistent responses. These so-called network effects, however, may vary in strength for a variety of reasons.

To begin with, networks appear to be more important for migrants with below-origin-average education. Beine, Docquier, and Özden (2011) estimate the effect of diasporas on bilateral flows to 30 OECD countries between 1990 and 2000 for three skill levels and find that large diasporas lead to an increasingly negative selection on education in migrants. Focussing on language skills, Bauer, Epstein, and Gang (2005) detect that Mexicans with little knowledge of English migrating to the United States tend to choose locations with larger networks. Beine and Salomone (2013) and McKenzie and Rapoport (2010) provide additional evidence for the importance of networks for low-skilled migrants.

Moreover, McKenzie and Rapoport (2007) detect heterogeneity due to the size of the network and the wealth level of potential migrants from Mexico to the United States. The authors find that in the long run, as networks grow, they increasingly enable poorer people to migrate. The authors' verdict is backed up by Winters, de Janvry, and Sadoulet (2001) who maintain that household characteristics lose their importance with the establishment of networks. Pedersen, Pytliková, and Smith (2008) find supporting evidence

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[2] See for instance Epstein and Gang (2006) for Hungarian emigrants in 1993/1994 and Moretti (1999) for Italians travelling to the United States during the age of mass migration.

for stronger effects on the poor than on the wealthy at the macro-level, that is, for migrants from the least developed countries to 26 OECD member countries.

Further positive differences in network effects have been found for first-time and irregular migrants who do not yet know their way around or have to heavily rely on informal aid (Bauer, Epstein, and Gang, 2007; Massey and Aysa-Lastra, 2011), with respect to a rise in non-relative quotas for migrants from 81 origins to the United States (Clark, Hatton, and Williamson, 2007), and employment prospects for females, elderly and unskilled Mexicans in the United States (Munshi, 2003).[3]

Overall, the literature suggests that networks positively affect migration flows and at least partly substitute for skill, wealth, and formal access to resources at destination. To my knowledge, to this point there has been no large-scale research on the variation in the effect of diasporas on migration flows due to differences in the cultural heritage of the origin country. I suspect that cultural variation across origins plays a role for the decision to settle in places with larger networks and I focus on cultural values that promote social interdependence, a shared emphasis of group goals, and the perception of oneself as a part of the greater whole.

Throughout the last decade, the aforementioned tendencies have been discussed in terms of the individualism/collectivism divide with regard to innovation and growth. Gorodnichenko and Roland (2011) contrast cultural dimensions measured by the World Values Survey (WVS), Schwartz, and Hofstede in terms of their relation to long-run economic growth. The authors find that Hofstede's individualism/collectivism scale constitutes the most important explanatory factor among all considered measures. In their latest paper, the authors further find that individualistic cultures adopt democracy earlier than collectivist cultures (Gorodnichenko and Roland, 2017).

Looking across the world and assuming that individualism and collectivism are poles of an unidimensional scale, East and South-East Asian countries appear to be the most collectivist, whilst the United States have been the most individualist with European countries scattered somewhere in between (Nisbett, 2003). Researching cross-cultural variation across Western countries and regions, Buggle (2020), Ang (2019) and Olsson and

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[3] Beine and Salomone (2013) cannot confirm any gender-specific network effects on migration flows.

Paik (2016) link agricultural practices to a demand for collective action and thereby the establishment of a corresponding culture. Individualistically inclined farmers leaving their homelands may have led to a persistent geographical divergence in the collectivist dimension. Ho, Martinsson, and Olsson (2017) and Bazzi, Fiszbein, and Gebresilasse (2020) explore a similar explanation for voluntary out-selection for the dispersion of collectivist in Vietnam and individualism in the U.S. Most closely related to this work is research by Knudsen (2019) who focusses on migration and collectivism in the origin country. She finds selection on individualism among Scandinavians leaving for North America during the age of mass migration.

Ho, Martinsson, and Olsson (2017) measure collectivist tendencies in terms of labour contributions to public goods production, divorce rates, patenting and family structure. The same behavioural cues, however, have also plausibly been linked to social capital. For instance, La Porta, Lopez de Silanes, Shleifer, and Vishny (1999) take efficient public goods provision, among other factors, to proxy the social capital stock across U.S. regions. I thus propose a reconciliation of the concept of individualism/collectivism, which I treat more broadly as a measure of social independence opposed to interdependence, and the notion of social capital which I define as access to resources that become available through being embedded in a specific group or network.

Tying my research to a third strand of literature, migration networks have long been discussed as sources of social capital by economic sociologists. Topical pioneers Massey, Alarcon, Durand, and Gonzalez (1987) maintain that a network connection corresponds to a form of social capital that allows access to resources, thereby inducing a growing stock of social capital with each new arrival, and consequently, decreasing the cost of migration for future migrants.

Massey, Alarcon, Durand, and Gonzalez (1987), Massey and Espinosa (1997), and Palloni, Massey, Ceballos, Espinosa, and Spittel (2001) consider qualitative differences in social capital depending on the kind of social relationship embodied by it: Family ties are stronger than those developed in friendships or neighbourhoods, knowing someone abroad who has lived there for over a decade is more valuable than knowing someone who has just arrived, and an acquaintance with regular resident permit is more beneficial

to one's own migration than one without. Massey, Alarcon, Durand, and Gonzalez (1987) and Palloni, Massey, Ceballos, Espinosa, and Spittel (2001) suggest that for Mexicans travelling to the United States, networks that carry larger amounts of social capital increase the likelihood of migration to a larger degree than social ties of lesser quality. Massey and Aysa-Lastra (2011) infer that the impact of migration-specific social capital is strongest for the first trip and gains significance with distance to destination. However, the distance effect only holds for individual migration networks and does not expand to the locality level.

Considering networks within the sending country, Haug (2008) points out that strong kinship ties at home lower the likelihood of emigration because of the entailed loss of location-specific social capital. In line with the findings of migration economists that networks may replace formal aid, Alesina and Giuliano (2010) show that not only do people in countries with an emphasis on (extended) family ties exhibit less interest in social welfare programmes, but also that these countries rank high in terms of collectivism. Stronger family ties also imply less geographical spread.

While some authors have assessed cross-geographical differences in social capital stocks, this variation has so far not been exploited to compare migration network effects. At the macro-level, social capital is considered to depict mutual trust within a community that enables the pursuit of a common objective. Knack and Keefer (1997) find that ethnically homogeneous societies with little income inequality score higher trust levels. Alesina and La Ferrara (2000) contribute similar results for the participation in social activities across U.S. localities.

To my knowledge, this paper is the first research endeavour to suggest variable network effects depending on the sending culture. In the following, I present the proposed mechanism in detail.

3 Theoretical Framework

The term diaspora originates from the ancient Greek word scatteredness and refers to religious, national, cultural or ethnic communities abroad who may be spread across the world. Even though diasporas can span across multiple receiving countries, empirically

diasporas are measured in terms of stocks of migrants sorted into origin–destination pairs. Turkish guest workers in Germany and Mexicans in the United States are typical examples of diasporas.

Besides forming networks abroad, diasporas extend back home, motivating chain migration, remittances, and circular migration movements. These networks may be affiliated with specific institutions such as universities, non-governmental organisations or religious groups that help with the migration process (Poros, 2011). Furthermore, community membership provides exclusive information, patronage, and assistance for individuals settling in the new country, all of which reduce the risks and costs of moving and often encourage clustered settlement in ethnic enclaves (Haug, 2008; Poros, 2011). Ethnic enclaves form residential areas with names like Little Italy, Chinatown or Little Havana, which centre around a cultural identity with an ethnicity-specific labour market that is independent of destination-specific skills (Portes and Wilson, 1980; Portes and Manning, 1986; Poros, 2011).[4]

The sense of community that arises from a common background related to homeland empowers these networks to affect their members' behaviour. In this paper I investigate if there is any relevance to the characteristics of the origin culture beyond being distinct from the receiving culture. I argue that cultures whose members think that societies are constituted by groups instead of individuals and thus put more weight on interpersonal relations have more culture-specific social capital in relative terms. As social capital provides access to various resources and is at the same time tied to the maintenance of network links and the nourishment of a mutual feeling of shared interests, migration may be more or less costly depending on the home community's social capital stock. Choosing a destination with a large diaspora may at least partially recover the cost of moving away from one's community.

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[4] The term ethnic enclave was coined by Portes and Wilson (1980) who observe that Cuban labourers in the United States are often employed in immigrant enterprises.

4   Diasporas as Sources of Co–Ethnic Social Capital

Massey, Alarcon, Durand, and Gonzalez (1987) were the first to suggest that migration networks can be considered a source of social capital[5] which can be transformed into other resources such as housing, employment, and information about formal processes such as the eligibility for social welfare (see for instance Haug, 2008; Beine, Docquier, and Özden, 2011; Poros, 2011; Bodvarsson, Simpson, and Sparber, 2015). As new migrants arrive, the stock of social capital builds up until the network has diffused so widely that its impact on the costs and risks of migration overpowers competing determinants of the cost of migration, such as linguistic differences, physical distance and migration policies (Massey, 1990). In addition, networks repeal the initial selection of migrants on socio-economic factors such as the level of education and wealth (Winters, de Janvry, and Sadoulet, 2001; Munshi, 2003; McKenzie and Rapoport, 2007; Beine, Docquier, and Özden, 2011), suggesting that networks, considered as social capital, may substitute for destination–specific human and physical capital. The concept of social capital employed by Massey, Alarcon, Durand, and Gonzalez (1987) and others implies that it is a resource available within the boundaries of a specific source country, i.e. it is restricted to an in–group defined by its members' origin.

While research on migrant networks by Massey, Alarcon, Durand, and Gonzalez (1987), Massey and Espinosa (1997), Palloni, Massey, Ceballos, Espinosa, and Spittel (2001), Massey and Aysa-Lastra (2011), and Poros (2011) supports the notion that social capital is not equally distributed across types of interpersonal relationships, I am interested in mean differences in social capital stocks across origin societies. I argue that these differences correspond to cultural disparities with respect to social interdependence.

Unfortunately, the term social capital is used inconsistently across the literature and sometimes lacks a theoretical foundation altogether in empirical applications (Haug, 2000a). The dominant division is between social capital as an individual property complementary to other types of capital and social capital as a community characteristic. For instance, in opposition to Bourdieu (1983) and Glaeser, Laibson, and Sacerdote (2002), who

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[5] One year earlier, Taylor (1986) had already referred to migration capital in a similar vein.

interpret social capital as an instrument to achieve individual goals that can be accumulated by investment in one's individual network, Putnam (1993a,b, 1995) and Bowles and Gintis (2002) understand the term as relating to a community's or state's capability to cooperate to overcome collective action problems.

Massey, Alarcon, Durand, and Gonzalez (1987) define social capital as interpersonal networks that can be mobilised by an individual to provide resources like financial assets and credit but also moral support and access to imported cultural goods[6] via an ethnic economy. This rather individualist understanding of social capital does not necessarily contradict differences in social capital levels across cultural communities as I will argue in the following subsection.[7]

Throughout this paper, I will assume that social capital is defined by the following properties: First, social capital can only be obtained from interaction with people. Second, people interact to gain access to resources that are not available through other types of capital at the same cost or that require coordinated action. Third, resource exchange and cooperation are bounded by a group identity. This identity is defined by a common origin country in the case of diasporas. Fourth, social capital is subject to individual effort that involves the investment of time, personal resources and conformity to some form of group norm. It follows that the production of social capital is easier in communities that are homogeneous, so that people do not experience subordination to a common goal as a contradiction of their own interest. Moreover, I presume that more social capital is created across cultures that value group membership over standing out from the crowd. In the next paragraph I will introduce the corresponding cross-cultural research.

Social Independence versus Social Interdependence

While some people perceive themselves and others as individual entities detached from the expectations and demands of their social environment, other people believe that they

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[6] Consider, for example, Asian supermarkets, Chinese New Year celebrations, or Turkish barber shops.

[7] Be aware that Massey uses the expression community social capital to refer to the weaker network ties of an individual such as casual friends and neighbours (see for instance Massey and Aysa-Lastra, 2011).

form part of a greater whole, with different responsibilities and rules of behaviour applying to each interpersonal relation. These differences in social interdependence appear to persist beyond the individual-level and correspond to cultural boundaries that can be approximated by national borders. They are reflected in everyday practice and can form a decisive part of cultural identity that in turn affects individual behaviour. For example, the number of politeness distinctions within a language may indicate the degree of social interdependence within a linguistic community. The use of many distinctions suggests that one's standing relative to one's counterpart constitutes an important part of communal life. Whereas English uses the second-person singular personal pronoun you regardless of who is being addressed, contemporary German includes both the informal du and the formal Sie. Similar to other South-East Asian languages, Thai speakers are expected to choose from a variety of specific status and kinship terms and titles to address superiors (Cooke, 1965). On a different note, the promotion of the American dream is a famous symbol of social independence tied to U.S. culture, promoting that everyone is the architect of their own fortune no matter the circumstances.

I propose that migrants who were brought up in contexts of social interdependence have higher migration costs when moving to destinations with no diaspora, a very small diaspora or a scattered diaspora. Cross-cultural psychologists have discussed and assessed cross-cultural variation in social interdependence under different names and with slightly different foci, but they have found strong correlations among the proposed indices. Two of the most popular cross-country comparisons of social independence and interdependence include Schwartz's evaluation of autonomy versus embeddedness (Schwartz, 1994, 2004, 2008, 2012) and Hofstede's cultural dimension of individualism versus collectivism (Hofstede, 1980, 1991, 2003). According to my hypothesis, networks matter more for those flows from ceteris paribus comparatively more socially interdependent/embedded/collectivist origins.

Collectivist cultures embed the individual into strong social relationships whose common goals are set above individual ones. In contrast, individualist societies worship personal independence and autonomy. From this definition it becomes clear that structures

related to social interdependence are interchangeably described as collectivist or embedded, even though the precise measurement of embeddedness as put forward by Schwartz and of collectivism as pursued by Hofstede and his co-authors does not coincide and therefore captures differing aspects of the subject. I will expand on both indices in section 6. Here I give a more detailed account of the social characteristics of interest to my analysis.

Triandis (1995b) summarises the defining attributes of collectivism as they were compiled by researchers on a conference devoted to the subject in 1994: First, collectivist cultures tend to favour members of their own communal in-group and are hostile towards out-groups, whereas individualist cultures are typically more heterogeneous and show tolerance for diverging lifestyles. Second, members of the collective define themselves not as individual entities whose goals are independently pursued but subordinate the achievement of their own desires to duties and responsibilities that forward the group's goal. There is a willingness to cooperate with in-group members. Third, unlike in individualist cultures, in collectivist cultures there is no clear boundary between the self and others. People are assumed to change and take on different roles depending on the context of the situation instead of being defined by a fixed set of attributes. Fourth, due to a high sensitivity to context and interrelations, there is a stronger awareness of hierarchy. Fifth, collectivism encourages group membership and conformism instead of standing out. People tend to worry about in-group harmony and saving face (Triandis, 1995b). To conclude, collectivists believe that the fundamental entity of a society is the group, whereas individualists believe it is individuals (Triandis, McCusker, and Hui, 1990).

Note that in-groups do not necessarily correspond to larger collectives. Beyond the origin country, the uniting feature may be social class, family, religious denomination, economic interest, a specific profession, speaking the same language and the like.[8] Instead, nationality is not guaranteed to carry a specific set of unstated assumptions, shared

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[8] An individualist's in-group is presumably narrow, while at the same time there exist many other in-groups to choose from. In collectivist cultures, less in-groups prevail and membership is typically not the result of an active decision (Triandis, 1995a).

beliefs, norms and roles that are passed on across generations. Differences in social interdependence do not necessarily correspond to national borders. Yet, the arrangement of countries along an imaginary unidimensional scale between individualism and collectivism can be a useful approximation to understand cross-country differences in institutions and socio-economic features (Triandis, 1995a).

Proposed Channel: Migration, Social Interdependence and Social Capital Recovery

I expect diasporas to be a stronger predictor of migrant flows from origins that emphasise social interdependence than of migrant flows from socially independent cultures. On the basis of the above-set characterisations of diasporas, social capital and social interdependence, I propose the following mechanism.

Assumption 1. *Collectivist cultures have relatively more community-specific social capital than individualist ones.*

Portes and Landolt (1996) consider the downsides of social capital. The associated ingroup focus paired with the discrimination of out-groups encourages the adherence to community norms and at the same time impedes individual freedom and initiatives. They also mention a resulting lack of innovation and creativity and a consequent lack of economic success within the community. Portes' and Landolt's early theorising on the outcomes of high levels of social capital therefore match the outcomes that Gorodnichenko and Roland (2011, 2012, 2017) attribute to collectivism.

Assumption 2. *Community-specific capital can only be exploited where the community in question is present.*

Da Vanzo (1981) argues that social capital, defined in terms of relationships between people, is connected to the place of residence of these people.[9] In other words, social capital,

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[9] Importantly, Kaasa (2019) finds that cultural background is a stronger predictor of social capital than personal values.

very much like culture, is always attached to a certain time and space. Leaving that space, as in the case of emigration, thereby implies the following:

Assumption 2 → Assumption 3. *Migration away from the community entails a loss of community–specific social capital.*

Festinger, Schachter, and Back (1950) randomly assigned students to living units across different buildings and found that instead of common interests or subjects of study, the distance between apartments was the key predictor of whether students formed social connections. Haug (2007) claimed that while established relationships can be maintained across distances, access to certain everyday resources is forfeited.[10] Based on assumptions 1 to 3, I arrive at the following intermediate conclusion:

Conclusion 1. *Migrants from collectivist cultures give up more community–specific social capital than migrants from individualist cultures.*

I further presume the following:

Assumption 4. *Diasporas in the destination country permit a (partial) recovery of community–specific social capital.*

Haug (2000b) believes that reclaiming lost social capital is a main motivator for family reunification and chain migration. It is useful to distinguish between social capital at origin and destination. On the one hand, large stocks of social capital from local kinship ties and a high investment in the origin community make emigration less likely (Haug, 2008). On the other hand, the existence of social capital at destination might remedy these detriments to a sufficient extent. Family, friends and neighbours united by homeland territorial identity who already know their way around can facilitate arrival in the destination country and staying there. Those social contacts may be an especially reliable resource for collectivists, as Triandis (1995a) argues that collectivist cultures tend to see

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[10] Consider Frida who, after starting a new job in Sweden, entertains regular phone calls with her parents in Germany, but must refrain from asking her mother to lend her the tools for putting up the shelf in her apartment. Neither can Frida expect her friend Ben to approach her to write an urgent essay for his blog after she is now only able to intermittently attend the otherwise weekly editorial meetings.

assistance within their community as a duty rather than a matter of reciprocity. In addition, the diaspora itself benefits from attracting new migrants who embody social capital potential themselves. Moreover, large enough networks develop ethnic markets that supply culturally based goods and services which encourage the in-group-identity (Coniglio, 2003).

Assumption 5. *In their migration decisions, migrants maximise benefits and minimise costs compared to staying and migrating to other destinations. Migrants, among other things, minimise the loss of social capital.*

While Haug (2008) does not consider variation in social capital stocks across origins, she contends that the social capital approach to migration networks is able to explain migration decisions and herd effects by combining the individualist rational choice approach and the economic sociology of migration. Rational choice theory assumes that observed macroeconomic migration flows are an aggregate of individual utility maximising decisions on whether to migrate and where to migrate within a model of expected utility.[11] Social capital, like human capital, enters the cost-benefit analysis as a non-monetary contributor. Networks at destination are beneficial while strong ties at origin, which have to be given up at departure, are costly (Haug, 2008). De Jong and Gardner (1981) call the utility from living near relatives or being part of some kind of community the affiliation dimension of migration decision making. From Conclusion 1, Assumption 4 and Assumption 5 I finally arrive at

Conclusion 2. *Collectivists require more compensation for the social capital loss from moving than individualists. They will prefer destinations with larger diasporas more than individualists do.*

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[11] The new economy of migration instead assumes that migration is the result of a household income maximisation problem. This assumption enables risk diversification across household members, offering an explanation for remitting behaviour, temporary migration, and family separation. Both individual and household income maximisation are consistent with the inclusion of social capital as an informative factor of the migration decision (see Massey, Arango, Hugo, Kouaouci, Pellegrino, and Taylor, 2013).

To conclude, I infer the following empirical implications.

Implication 1. *Collectivists are less likely to migrate than individualists.*

Implication 2. *The existence and size of a corresponding diaspora will affect collectivists more than individualists.*

Clark and Lisflowski (2019) provide evidence for Implication 1 and show that high social capital in the sending country significantly reduces the propensity to migrate. Knudsen (2019) argues that stayers during the age of mass migration were selected on collectivism. This work will test Implication 2.

5 Empirical Model: Migration Gravity

The empirical model follows paradigmatic migration gravity approaches (see for instance Beine, Docquier, and Özden, 2011; Özden, Parsons, Schiff, and Walmsley, 2011; Adserà and Pytliková, 2015b) and is derived for a 2010 cross-section of migration flows. To begin with, bilateral migration gross flows are given by the share of individuals moving from country j to country k, $p_{jk} \in [0,1]$, multiplied by the population in j, s_j

$$m_{jk} = p_{jk} \cdot s_j. \tag{1}$$

The relation is founded on the micro-economic assumption that individuals or households pick the single location for residence, including home, with the highest utility given the cost of moving out of the set of all possible locations D (see Assumption 5 in passage 3.3). Commonly, a Random Utility Model (RUM) of location choice is assumed to derive the expected value of p_{jk}. RUM entails that the log odds of migrating to k can be written as a linear function of the utility associated with the two countries. The utility for individual i from choosing k from D is determined by a deterministic cost–benefit calculation of benefits w_{jk} and costs c_{jk} plus an unobserved stochastic component μ_{ijk},

$$U_{ijk} = w_{jk} - c_{jk} + \mu_{ijk}. \tag{2}$$

Crucial for the calculation of $E(p_{jk})$ is the assumption that μ_{ijk} is independently, identically and Extreme-Value-Type-1-distributed following McFadden (1974). The assumption can only hold if the model is specified such that all sources of correlation across alternatives are covered in the deterministic component, so that the error term is entirely random. We thus can write

$$E(p_{jk}) = \frac{exp(w_{jk}-c_{jk})}{\sum_{l \in D} exp(w_{jl}-c_{jl})}, \tag{3}$$

being the expected probability that k is the destination of choice. Thereby the expected flows are given by

$$E(m_{jk}) = E(p_{jk}) \cdot s_j. \tag{4}$$

The stated error term assumption implies that the utility from going to k may well depend a lot on some properties of an alternative l, but it is unaffected by changes in the characteristics of other alternatives m.[12] In other words, if a close substitute to k becomes more attractive, migration flows to k should decrease more than flows to other countries.[13] Nonetheless, the assumption's fulfilment is desirable as it entails the property of Independence of Irrelevant Alternatives (IIA). IIA makes sure that all country-pairs are always compared to the same aggregate of all other pairs.

The second decisive assumption that $w_{jk} = w_k \, \forall j$ originates from the trade literature, where price differences for the same good in different places can be explained entirely from the difference in trade costs. Accordingly, differences in the attractiveness of the same destination for people from several origins are due to varying migration costs. These are considered in the bilateral migration cost specification to be introduced in

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[12] Some authors have considered diverging distributional assumptions (Bertoli and Fernandez-Huertas Moraga, 2013; Ortega and Peri, 2013; Bertoli and Marchetta, 2015).

[13] Say soon-to-be-migrant Frida, who likes pears and gender equality, has done all the maths and after a particularly long weekend of calculations has arrived at a utility ranking of resident countries. While Northern Europe dominates the top four, Norway has made the cut. After her cousin Paolo tells her about the many pear-flavoured products they sell in Sweden, Frida changes her mind and moves to Sweden instead. Frida's three friends who share her preference for pears, but other than that like the Iberian Peninsula much better, stick with moving to Portugal. Strictly speaking, the change affects the probability to migrate instead of the actual migration behaviour. Also, the change does not preclude Frida's friends from updating their rankings as well.

equation (7). For now, the second assumption allows us to rewrite equation (4) after plugging in expression (3) as

$$E(m_{jk}) = \frac{exp(w_k) \cdot exp(-c_{jk})}{\sum_{l \in D} exp(w_l) \cdot exp(-c_{jl})} \cdot s_j = \frac{y_k \cdot \varphi_{jk}}{\sum_{l \in D} y_l \cdot \varphi_{jl}} \cdot s_j \,, \tag{5}$$

where $y_k \equiv exp(w_k)$ captures the attractiveness of a destination and $\varphi_{jk} \equiv exp(-c_{jk}) \leq 1$ its accessibility from j. $\sum_{l \in D} y_{lt} \cdot \varphi_{jl} \equiv \Psi_j$ can be interpreted as the outward multilateral resistance of j. The term multilateral resistance was coined by Anderson and Van Wincoop (2003) and refers to effects of the relative attractiveness of third destinations on the migration (originally trade) flows between countries. Krugman (1995) illustrates its meaning for international trade flows: Two countries in same distance from each other will trade more with each other, all other things equal, if the two of them are situated on Mars than if they are localised in the centre of Europe. The intuition can be directly transferred to migration patterns. We obtain

$$E(m_{jk}) = \varphi_{jk} \frac{y_k}{\Psi_j} \cdot s_j. \tag{6}$$

Note that empirically, all unilateral components, Ψ_j, y_k and s_j can be accounted for by the inclusion of origin and destination fixed effects.

Lastly, I define the openness to migration φ_{jk} to be given by

$$\varphi_{jk} = exp(\alpha_0 + \alpha_1 \ln M_{jk} + \alpha_2 \ln M_{jk} \times SocialInterdependence_j + \mathbf{x'}_{jk}\boldsymbol{\beta} + \mathbf{u'}_j\boldsymbol{\gamma} + \mathbf{v'}_k\boldsymbol{\theta}). \tag{7}$$

Besides the size of migration stocks from j in k, which are measured for the previous year, lnM_{jk}, and the interaction term of interest of stocks and social independence at origin $lnM_{jk} \times SocialInterdependence_j$, the model comprises dyadic and unilateral determinants of international migration captured by vectors of control variables $\mathbf{x}_{jk}$, $\mathbf{u}_j$, and $\mathbf{v}_k$. Note however that any unilateral variables will be absorbed by the aforementioned fixed effects. While the determinants of the openness to migration are not theory-founded, the literature offers some insights on common specifications.[14] First, many migration economists

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[14] Beine, Bertoli, and Fernandez-Huertas Moraga (2015) conduct a neat summary of the existing practice.

have been interested in origin- and destination-specific push- and pull-factors of bilateral flows. These include income per capita at destination and credit constraints for migrants in terms of origin income and wages (Pedersen, Pytliková, and Smith, 2008; Mayda, 2010; Grogger and Hanson, 2011; Bertoli and Fernandez-Huertas Moraga, 2013; Bertoli, Fernandez-Huertas Moraga, and Ortega, 2013; Ortega and Peri, 2013; McKenzie, Theoharides, and Yang, 2014), unemployment levels, environmental factors (Beine and Parsons, 2014), violent conflict at origin (Fagiolo and Santoni, 2016), trade volume, literacy rates, and institutional quality (Pedersen, Pytliková, and Smith, 2008), and country-specific migration laws (Clark, Hatton, and Williamson, 2007; Mayda, 2010; Ortega and Peri, 2013). Generally speaking, the inclusion of any origin- and destination-specific aspects would demand the abandonment of the corresponding country- or country-time fixed effects and therefore would exit the structural gravity framework. As my main interest lies in the estimation of β_2, I may both maintain the formal theoretical foundation as well as capture a large share of otherwise omitted variables that may otherwise cause endogeneity concerns. Second, bilateral push- and pull factors other than diasporas remain. Apart from the inclusion of geographic distance and common border indices, the gravity literature has established measures for linguistic and cultural proximity (see e.g. Adserà and Pytliková, 2015b; Belot and Ederveen, 2012). Finally, I will acknowledge endogeneity concerns due to bilateral migration policies in a robustness check by restricting my sample to flows between countries that have abolished border controls due to Schengen membership, i.e. countries with legally perfect labour mobility.

6 Estimation Strategy

Presuming the empirical gravity model of international migration from the previous section, I substitute equation (7) into equation (6), take the natural logarithm and add a stochastic component with $E(\varepsilon_{jk}) = 0$. I estimate variants of the following linear specification employing Ordinary Least Squares (OLS) for a cross-section of 2010:

$$\ln m_{jk,2010} = \beta_0 + \beta_1 \ln M_{jk,2009} + \beta_2 \ln M_{jk,2009} \times SocialInterdependence_j$$

$$+ \beta_3 lnDistance_{jk} + \beta_4 LinguisticProximity_{jk} + \beta_5 CommonBorder_{jk}$$

$$+ \beta_6 ColonialTies_{jk} + \lambda_j + \pi_k + \varepsilon_{jk}, \tag{8}$$

where λ_j and π_k embody origin– and destination–specific fixed effects. Whereas π_k accounts for any observed and unobserved determinants of the destination's attractiveness such as y_k and $\mathbf{v}_k$, λ_j captures both sending country traits $\mathbf{u}_j$ and the multilateral resistance term Φ_j. $\ln m_{jk,2010}$ denotes the logarithm of gross flows of migrants from j to k divided by origin country population in 2010. Following Adserà and Pytliková (2015b), diasporas are measured as bilateral migration stocks. They enter the estimations lagged by one year in order to account for the timing of the migration decision and the information available at that point and are furthermore normalised by origin country populations. The expression β_1 $+\beta_2 SocialInterdependence_j$ captures the partial effect of diasporas, supposedly increasing with rising degree of social interdependence for the reasons explored in section 3.3. To capture this heterogeneity, I interact the migration stock variable with a measure of social interdependence based on either an indicator of collectivism or embeddedness originating from Hofstede, Hofstede, and Minkov (2010) and Schwartz (2008). Hofstede's Individualism indicator ranges from 0 to 100. I rescale the bipolar dimension so that larger values correspond to stronger collectivism. For comparability, I normalise Schwartz' embeddedness measure with 0 indicating the highest degree of autonomy and 100 denoting the maximum possible value of embeddedness.[15]

Furthermore, I add the following control variables which capture various types of remoteness between origin and destination that affect the cost of migration: The logarithm of the distance in kilometres between origin and destination capitals $lnDistance_{jk}$, a measure of linguistic proximity by Adserà and Pytliková (2015b) ranging from 0 to 1 where 0 indicates that the two countries' main official languages do not share any language family and 1 represents a common language denoted by $LinguisticProximity_{jk}$, and two dummy variables for sharing a border and having historical colonial ties.

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[15] Normalised embeddedness is obtained via feature scaling, i.e. by calculating $X_{norm} = \frac{X - X_{min}}{X_{max} - X_{min}}$.

Regarding the expected signs of estimated coefficients of the control variables, whereas geographic distance supposedly decreases migration flows, I expect linguistic proximity, common borders and colonial ties to have positive effects on bilateral movements. Geographic distance directly enlarges the costs of physical resettlement and thereby also the psychological burden of migration because regular travels to kins who stayed are more time-consuming and expensive. At the same time, countries that are remote to each other are likely to also entertain quite different cultural habits and norms, making acculturation more difficult. In contrast, countries that share a border may have developed more similar cultures due to their endowment with similar amenities and more regular interactions between their peoples in border regions. Besides, a common colonial history may both foster cultural proximity and lead to information about the destination country being more readily available. Lastly, linguistic proximity to the receiving country may serve as a pull-factor that encourages migration because fluency of the destination-country eases the transferral of human capital and the access to destination-specific information. Even if two countries do not speak the same language, closely related languages can be learned more easily and quickly.

Besides the 2010 cross-section, I employ a panel of bilateral migration between 1980 and 2010. I nonetheless refer to the cross-sectional dimension as my preferred specification because it permits an instrumental variable approach to tackle some of the endogeneity concerns with respect to migration diasporas and its interaction with social independence that are debated in the subsequent paragraphs.

Multilateral Resistance and Fixed Effects

As argued at the beginning of this section, the inclusion of origin- and destination fixed effects can both be derived from the theoretical foundation demonstrated in section 4 and at the same time be motivated by omitted variable considerations. They are therefore encompassed in all estimations. Origin and destination fixed effects account for differences between origins and differences between destinations that affect migration flows. These differences include country properties that remain stable over time such as having

access to the sea or having a moderate climate which may make a destination more attractive. For the 2010 cross-sectional analysis that lacks a time dimension, the country fixed effects also compound socio–economic push and pull factors of migration that otherwise change over time such as income and average education levels across origins and across destinations in 2010. Some of these may additionally be correlated with other explanatory variables. Recall for instance that Bauer, Epstein, and Gang (2005), McKenzie and Rapoport (2010), Beine, Docquier, and Özden (2011), and Beine and Salomone (2013) show that the effect of migration networks is highly correlated with the skill–composition in the origin country. Alternatively, consider civil war within a sending country as a push factor for international migration. The corresponding migrant flow may be a result of oppression or the destruction of homeland, so that resettling is not exactly a well–prepared decision of curiosity for a foreign country. Hence, networks may be especially important to preserve as much capital as possible if many resources were already sacrificed to survival at origin. Moreover, oppression at origin may be correlated with the interaction term of interest because external threat intensifies in–group–favouritism as suggested by Triandis (1995c). Without the inclusion of the corresponding fixed effects such country–specific properties which are correlated with at least one of the explanatory variables would be part of the error term causing an omitted variable bias.

In the panel–set up, comparable time–varying factors have to be accounted for by origin–time and destination–time fixed effects instead. Note that these also nest year fixed effects which capture time trends that affect all countries the same. An exemplary event is the global economic crisis between the late 2000s and early 2010s which may have increased the credit constraint to migration, perpetuating the substituting function of networks for financial assets. In addition, the origin–(time) fixed effect controls for the multilateral resistance of migration, i.e. third country effects. If, for example, the diaspora of German medicine students in Hungary decreases because of the country's restrictions on scientific freedom, less Germans may decide to settle in Hungary for educational purposes. However, Hungary's unilateral policy decision may not only affect inflows to Hungary directly but also cause more Germans to migrate to Austria for medicine studies. To sum up the consideration of country–(time)–specific control variables, note

that the destination–(time) fixed effect also comprehends the destination country's population size not explicitly modelled in the theoretical framework.

Table 1: Types of Fixed Effects Included in the Analysis

#	Fixed Effects	Type of Data	Variation Captured	Examples of Encompassed Variables	Identifying Variation
1a	Origin, destination	Cross-Section	All origin-specific and destination-specific factors	Income levels, destination population, conflicts at origin/destination in 2010, multilateral resistance	jk
1b	Origin, destination	Panel	Initial differences between origins and between destinations that remain stable over time	Geography, historic disease environment, social interdependence	jk, t, jt, kt, jkt
2	Origin, destination, year	Panel	1b plus changes across all countries over time	1b, the Great Recession of the late 2000s and early 2010s, overall economic development	jk, jt, kt, jkt
3	Origin-time, destination-time	Panel	Nest 1 and 2. Account for differences between origins and between destinations in each year	1a to 2, income levels, destination population, conflicts at origin/destination, natural disasters	jk, jkt
4	Origin-time, destination-time, country-pair	Panel	3 plus initial differences between country-pair combinations stable over time	1a to 3, geographic distance, linguistic proximity, common borders, colonial ties	jkt

Table 1 summarises the types of fixed effects included in different specifications of the regression analysis. The table designates the variation captured for the two types of data, the 2010 cross-section and the panel, and shows examples of potentially confounding variables included in this variation. The last column indicates the level of identifying variation left after the inclusion of the corresponding set of fixed effects.

Lastly, the panel dimension in principle permits the inclusion of bilateral fixed effects which would incorporate the lion share of my explanatory variables. Despite the capability of country-pair dummies to absorb otherwise omitted time-constant dyadic determinants of flows and my independent variables, the inclusion would also absorb the bilateral variation in my variable of interest, being $lnM_{jkt} \times SocialInterdependence_j$ in the panel regression. As the employed measures of social independence bear only cross-sectional variation, the left-over time-variation would be due to the change in diaspora sizes only. I suspect the difference of these changes between collectivist and individualist origins to be too subtle to allow the identification of a statistically significant impact on the network effects with regard to migration flows. I test this conjecture in the last column

of tables 5 and 6. Table 1 summarises this subsection's discussion before moving on to challenges due to the self-selection of migrants.

Selection on Social Independence

In congruence with the first empirical implication deduced in section 3.3, migrants are likely to be more socially independent than their non-migrating compatriots for moving abroad comes with a necessity to make one's own decision about how one wants to live (Triandis, 1995a). For instance, Alesina and Giuliano (2010) show that young individuals with strong family ties are less likely to exhibit geographic mobility. Thus, assuming that only the most socially independent people from each country constitute the flow of migrants, my estimates are likely to constitute a lower bound. Specifically, for stayers, the size of the network in any country, in addition to other constituents of the cost of migration, may simply not have been sufficient to compensate for their collectivist nature.

Migration Movements Affect Origin Culture

Furthermore, even if culture is rigid, as migrant flows across diverse sending countries emerge, they impact the environment at destination. Depending on the salience and size of the flows and the resulting diaspora, the destination society may experience a convergence of cultural values over time. In opposition to that, the presence of large cultural contrasts may lead to ingroup-favouritism and thereby collectivist behaviour as members of the diaspora feel the need to preserve their values or because the host's hostility from the dissimilarity can only be overcome by sticking together. Likewise, Triandis (1995c) stresses that collectivist behaviour is encouraged under conditions that also apply to migrating to a diaspora. Particularly, the situation emphasises that individuals are part of a specific collective, i.e. a migrant minority as opposed to the native majority, while facing a task best solved cooperatively. Being aware of one's collectivist environment makes it a salient norm, too. Therefore, it seems plausible that all migrants have a tendency towards more collectivist behaviour upon arrival, highlighting once more the importance of migration networks per se. Keep in mind that each destination at the same time constitutes an origin country, thereby implying ripple-effects of the proposed

transfer of norms. Additionally, return migrants have been found to remit parts of the abroad experienced norms back to their homelands. The relationship holds for both target countries that are more conservative and those that are more liberal than the home community: For instance, Bertoli and Marchetta (2015) argue that Egyptians who migrated to Arab countries and returned to Egypt tend to have more children than Egyptians who had not left their country and Lodigiani and Salomone (2020) contend that female parliamentary shares at origin rise with the number of migrants received by countries that encourage female political empowerment.

Given the data at hand, the indicators of social interdependence I employ originate in survey data collected between the years 1998 and 2007 for autonomy/embeddedness and between 1967 and 1973 for individualism/collectivism. In case of my cross-section estimates, the captured cultural dimensions therefore precede the dependent variable by at least three years. In addition to the assumption that culture is rigid, the timely ordering makes reversal of the causal direction towards contemporary flows unlikely. Instead, one might claim that the utilised cultural values have been subject to change over time due to the above-mentioned arguments as a result of those migration movements that happened in between, therefore being outdated and unsuitable to identify the targeted variation. I consent that more current surveys would be preferable. Unfortunately, both the Hofstede and the Schwartz data remain unmatched with respect to coverage. In addition, even if one rejects the presumption that cultural norms are slow-changing variables, Hofstede, Hofstede, and Minkov (2010) assert that the proportions between individualism values across countries prevail. The authors' allegation, of course, is a bold one because the included countries differ greatly in terms of the growth they experienced between the mid-nineteen-eighties and 2010 and Triandis (1995a) proclaims that economic development facilitates individualism.[16] Schwartz' data was collected more recently and is therefore preferred.

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[16] While China's GDP per capita has risen to about 13 times its value of 1980, for Germany and the United States their 2010 GDPs per capita are about 1.6 times the 1980 amount (The World Bank, 2018). If Triandis (1995a) is correct, China would have developed a much stronger drift towards individualism than Germany or the United States within the same period.

Unfortunately, past flows and stocks cannot easily be controlled for by appropriate sets of fixed effects because, as argued above, they absorb too much of the variation of interest for my research question. In addition, Beine, Bertoli, and Fernandez-Huertas Moraga (2015) point out that controlling for past flows in a panel-set up would induce serial-correlation in the stochastic component, thus violating the error term assumptions of the fixed effects regression (Wooldridge, 2008, p. 483).

Bilateral Policies

An additional challenge to unbiased estimation results for the effect of migration networks is posed by bilateral policies. While laws such as family reunification programmes reduce the cost of migration due to the chance for regulated and legal migration and directly correspond to the existence of a network abroad, quotas and point programmes may impose additional constraints on the possibility to migrate to an otherwise desired destination. Furthermore, if the social capital from social relationships abroad helps with working around legal restrictions as suggested by Bauer, Epstein, and Gang (2007) and Massey and Aysa-Lastra (2011), socially interdependent origin cultures with more ethnicity-specific resources may benefit even stronger from the network abroad than usual. Unfortunately, comprehensive migration policy data of broad coverage that are country-pair specific and that would therefore qualify to control for this otherwise unobserved determinant of bilateral migration does not exist. As mentioned above, I restrict my sample to contain within-Schengen migration only in order to check the robustness of my results to dyadic agreements due to a setting of free movement of labour.

Collectivism or Cultural Proximity?

Besides, I might fail to actually capture the heterogeneity in network effects due to differences in origin culture because the cultural dimension parallels other factors that are the true drivers of the importance of networks. First of all, migrants from Asia, South America or Africa, i.e. from cultures that are observed to adhere more strongly to values attributed to collectivism than Europeans, Australians or Northern Americans (Triandis,

1995a; Nisbett, 2003) may also be treated with more overall hostility by receiving countries than the average Caucasian. The expectancy of a welcoming host country may make networks less important because arrivals can be sure to receive aid with the immigration process and are treated with openness and respect by locals. As I am restricted to the consideration of OECD destinations and contemporary migration flows are predominated by South–North migration (Massey, Arango, Hugo, Kouaouci, Pellegrino, and Taylor, 2013), co-ethnic social capital may be important not because of a cultural inclination towards in-groups but because access to out-groups is simply easier for white people who also happen to be more socially independent. If there is an effect as general as proposed, it is controlled for by the origin fixed effects. Nonetheless, I also execute a sample restriction to OECD-origins to examine if the effect persists for North–North migration movements.

Yet, it might also be the case that the conjectured mechanism is bilateral of sort and driven by cultural proximity. Perhaps not all destinations act equally welcoming or dismissive towards the very same origin. It might thus be the case that whether migrant networks are important for embedded societies depends on their cultural proximity to the receiving country. The concern is supported by Lalonde and Cameron (1993) who interviewed immigrants from four ethnic groups in Canada and report that especially first-generation immigrants from stigmatised groups (Caribbean people and Chinese, as opposed to Greeks and Italians) endorse a collective acculturation within their own cultural group. Additionally, Triandis (1995a) quotes Turkish migrants in Western Europe as an example, arguing that their tightness, especially among members of lower social classes, may be a result of an urge to preserve their culture in presence of the contrast to the new homeland. In anticipation of a strange environment, cultural proximity might thus affect the weighting of a decently sized network at the time of the resettlement decision. While geographical distance, common borders, linguistic remoteness and historical ties all embody rough proxies of the closeness of cultural values, I also check the robustness of my estimates to the inclusion of the Euclidean distance between the collectivism/embeddedness values at origin and destination and to the inclusion of a more comprehensive measure of cultural proximity based on an aggregate from the Global Preference Survey (GPS).

Zero Flows and the Logarithmic Transformation

The logarithmic transformation of the dependent variable invites two sources of endogeneity: First, the logarithm of the expected value of migration flows demanded by equation (6) does not equal the expected value of their logarithm which actually enters the estimations. If we would estimate the relationship in its original non-linear form, the conditional expected value of the stochastic component would be required to equal unity. Taking the natural logarithm, however, does not guarantee the assumed expected value of 0 for the respective error term ε_{jk} in the linear transformation. Instead, the error, except in the unlikely case of multiplicative homoskedasticity, would be a function of the explanatory variables by construction (Santos Silva and Tenreyro, 2006). In response to resulting endogeneity concerns, I additionally estimate my main specification non-linearly using the Poisson Pseudo-Maximum-Likelihood Estimator (PPML).

Second, the logarithm is not defined for zero migration flows or stocks. Unity is added to all stocks and flows before normalisation and taking the natural logarithm to avoid data loss from zero values. In the quite recent 2010 cross-section, about 12 percent of the overall flows in the data equal zero, but only about two percent of the flows within my sample: Cultural values are missing for many countries in Africa and Central Asia which at the same time report zero out flows. For the panel dimension, 17 percent of all observations are affected. Besides regressing the model non-linearly to avoid the logarithmic transformation altogether, I estimate the linear specification for positive flows only to assess the robustness of my results.

Instrumenting Social Interdependence and Migration Stocks

Summing up the previous paragraphs, the main sources of endogeneity are due to omitted bilateral variables that are correlated with the stock of migrants from j in k or the interaction between this stock and origin-country social interdependence. First, both the diaspora and the interaction term may be correlated with unobserved migration policies between country-pairs. On the one hand, immigration laws are a direct determinant of

the legal accessibility of a destination from a specific origin. On the other hand, restrictive migration policies may increase the necessity of aid by network connections to co-ethnics, where cultures strongly embedded in society may benefit to larger degrees.

Second, migration flows and stocks in the recent past still affect current flows and stocks because of herd behaviour. Migration flows and stocks may also have influenced social interdependence. To address endogeneity concerns with respect to both the diaspora term and its interaction, Nizalova and Murtazashvili (2016) show that it is sufficient to instrument for migration networks. The unbiasedness of the interaction term is given as soon as one of the interacted variables is exogenous, i.e. it is not necessary to provide an additional instrument for social interdependence. Moreover, assuming that social interdependence is exogenous due to the inclusion of an extensive set of fixed effects, the estimate for the interaction term should be unbiased in both the OLS and the IV estimates. The IV regression results will show that the estimates indeed differ very little across the two estimators.

The required instrument has to predict the diaspora of 2009 without itself decreasing or increasing flows in 2010 by means other than the ones already included in the estimation equation. The literature has suggested various approaches which rely on the use of estimated and actual past stocks that pre-date the measurement of the dependent variable as much as possible (Beine, Docquier, and Özden, 2011; Beine and Salomone, 2013; Fagiolo and Santoni, 2016). I use the true bilateral stocks in 1960 to instrument 2010 stocks. Due to validity concerns, I understand the instrumentation results to be an additional robustness check. Causal inference remains to be treated with caution.

7 Data

In this section I give an overview of the data. Table 2 illustrates descriptive statistics of all estimated variables for the union of observations ever entering the estimation process. The table depicts the number of observations, mean, standard deviation, minima

and maxima of the variables in levels for the 2010 cross–section and the panel dimension according to topic.

In the subsequent paragraphs I discuss the measurement of bilateral migration and social independence in further detail. For a summary of these variables and information on the sources and precise definition of the remainder control variables, see Appendix table 12.

Table 2: Summary Statistics

Variable	2010 Cross Section					Panel				
	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max
Migration										
Flows$_{jk(t)}$	1488	0.11	0.48	0.00	8.73	32005	0.12	0.52	0	15.25
Diaspora$_{jk(t-1)}$	1488	2.19	14.90	0.00	359.35	32005	2.18	13.40	0	416.80
Social Interdependence										
Norm. Embeddedness$_j$	1393	47.29	24.88	0	100	29408	45.93	25.00	0	100
Collectivism$_j$	1488	57.57	22.69	9	94	32005	56.82	23.11	9	94
Bilateral Controls										
Distance$_{jk}$ in km	1488	5901.21	4522.02	59.56	19567.83	32005	0.14	6044.15	59.56	19568.83
LinguisticProximity$_{jk}$	1488	0.14	0.22	0	1	32005	0.14	0.23	0	1
CommonBorder$_{jk}$	1488	0.04	0.20	0	1	32005	0.04	0.20	0	1
ColonialTies$_{jk}$	1488	0.02	0.14	0	1	32005	0.03	0.16	0	1
Euclidean Distance:										
Embeddedness$_{jk}$	1294	0.50	0.34	0	1.57					
Collectivism$_{jk}$	1407	31.03	19.56	0	85.00					
GPS Values$_{jk}$	751	0.36	0.12	0.06	0.80					
Norm. Social Capital										
WVS Trust$_j$	853	33.46	23.24	0	100					
Welzel:										
Generalised Trust$_j$	853	41-36	22.79	0	100					
In-group Trust$_j$	853	56.84	21.06	0	100					
Out–group Trust$_j$	853	44.54	24.58	0	100					
Sample Restrictions										
OECD Origin	1393	0.44	0.50	0	1	32005	0.37	0.48	0	1
Within Schengen	1393	0.24	0.43	0	1	32005	0.09	0.28	0	1
> 90% Natives$_j$	1393	0.55	0.50	0	1	32005	0.53	0.50	0	1
Instrument										
Diaspora$_{jk}$,1960	1357	1.06	5.94	0	125.02					

Flows and diaspora stocks are reported normalised by their origin country populations in the previous year.

Bilateral Migration

The migration data allowing this investigation is available from Adserà and Pytliková (2015a) and is an extension of Pedersen, Pytliková, and Smith (2008). It captures yearly bilateral migration stocks and flows to 30 OECD destinations from all over the world and a variety of control variables. The panel covers the years 1980 to 2010. Flows and stocks were gathered from national statistical offices and the OECD International Migration Database in the cases of Korea, Mexico, Turkey, and partly Japan. In most cases, they are measured for immigrants staying for at least six months.

It is important to keep in mind the general limitations of international migration data: To begin with, different countries use different sources for their data collection, such as population registers, the number of issued residence permits, censuses or labour force surveys. Moreover, the definition of migrant varies. Country of birth is the decisive aspect for most countries, while nations like Finland, Norway and Greece rely on citizenship, and Belgium, Germany and France employ self-reported nationalities. Some work with the indicated last residence. See Pedersen, Pytliková, and Smith (2008) and Adserà and Pytliková (2015b) for an overview. All definitions, which partly overlap but do not coincide, carry advantages and limitations depending on the subject of interest.[17] Being foreign-born may represent the most reasonable category for my endeavour as it ensures a minimum of exposure to the origin culture before resettlement. Conveniently, Adserà and Pytliková (2015a) use data based on country of birth whenever available. Yet, the country of birth is not informative about the length of exposure to one's origin culture as it does not account for repeat migration or child migrants.

In addition, the migration stock data at hand does not provide any insights about the scattering of the diaspora within a receiving country. I assume that a geographically clustered network is much stronger than a widely diffused one and thus more relevant for

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[17] The Jus sanguinis is one example that increases the stock of migrants in countries that define migrants by citizenship even though there was no physical movement.

migrants relying on networks. Neither does the macro-data permit a discrimination according to relationship depth as investigated by Massey, Alarcon, Durand, and Gonzalez (1987), Massey and Espinosa (1997) and Massey and Aysa-Lastra (2011).

Measures of Social Interdependence

Hofstede: Individualism/Collectivism

The first version of Hofstede's cultural dimensions was published in 1980 and originated from over 100,000 protocols of interviews with IBM employees in more than 50 countries on their value preferences. A factor analysis of the mean responses at the country-level revealed the initial four cultural dimensions for 40 countries with reasonable sample sizes: Power distance, uncertainty avoidance, masculinity/femininity, and individualism/collectivism (Hofstede, 1980). Hofstede, Hofstede, and Minkov (2010) assert that these four dimensions mirrored the different solutions societies have developed to deal with common problems. Since then, the sample has been extended to include 76 countries[18] and two more dimensions, Long Term Orientation and Indulgence/Restraint.

Individualism/collectivism describes the relationship between the individual and the group. Hofstede, Hofstede, and Minkov (2010) define individualism to apply to

> *...societies in which the ties between individuals are loose: everyone is expected to look after him- or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty. (p. 92)*

Participants of the IBM surveys were asked to access the desirability of fourteen work goals on a scale from 1 to 5. The work goals attributed to individualism included having sufficient personal time, freedom of mind, and challenging tasks. The ones relevant for collectivism were learning opportunities, a good physical working environment and the opportunity to fully engage one's abilities on the job (Hofstede, Hofstede, and Minkov,

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[18] Some value scores exist only regionally (East Africa, West Africa, Arabic-speaking), while others distinguish linguistically distinct areas within countries (Belgium, Switzerland, Quebec). I assume the regional score for the corresponding countries and take country means if applicable.

2010). The aggregate analysis positions countries relative to each other along a unidimensional scale roughly running from 0 to 100[19] for each of the six dimensions. For ease of comparison with estimates based on Schwartz' embeddedness, I rescale the index such that larger values correspond to stronger collectivism instead. Table 2 shows the descriptive statistics for the rescaled Hofstede data. The most collectivist country with a value of 94 is Guatemala, while the most individualist country are the United States with a value of 9. The average origin has a value of around 57 and thus tends slightly towards collectivism. The standard deviation of over 20 points toward a broad cultural variation across origins. Figure 1 illustrates the distribution of collectivism and individualism across the world. Reds indicate states with above average collectivism, blues represent a tendency towards individualism. Darker shades of blue indicate stronger individualism whereas deep reds mark stark collectivism. The map depicts that Europe, Northern America and Australia lean towards individualism, while Asia, especially East- and South-East Asia, and Central and South America are attributed to the collectivist side of the scale.
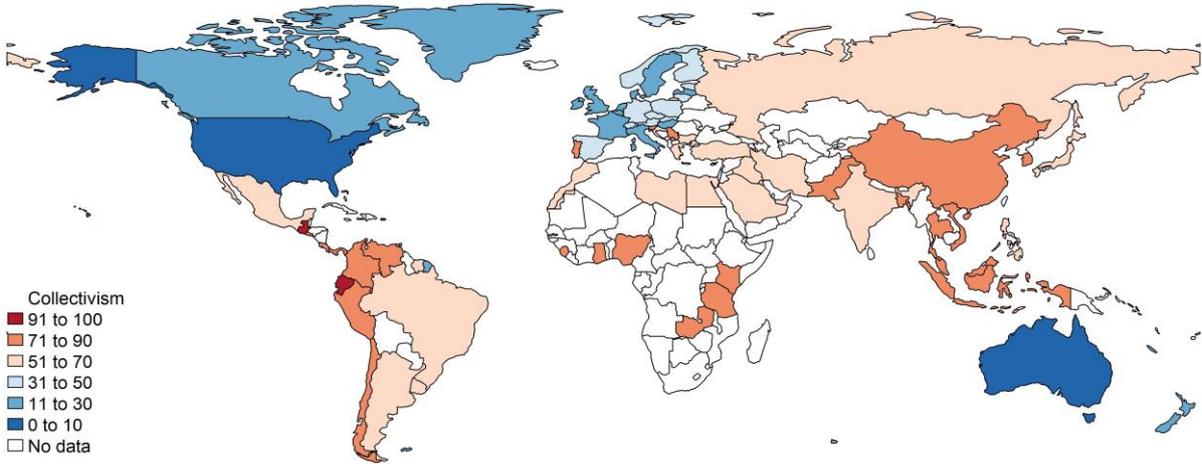
Figure 1: Collectivism Across Countries

After all, it is not straightforward to infer the above definitions of individualism and collectivism from the given work goals and Hofstedes's methodology has been criticised

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[19] I use the adjusted scale from 0 to 100 exactly, published on geerthofstede.com [Accessed November 4, 2018].

for various reasons such as its representativeness and its effect on behavioural outcomes relevant to society (see e.g. Shulruf, Hattie, and Dixon, 2007; Cozma, 2011; Thomas and Utler, 2013). Perhaps unexpectedly, the plethora of follow-up studies found the most robust correlations for the individualism/collectivism dimension.[20]

Schwartz: Autonomy/Embeddedness

Like Hofstede's data, the Schwartz' seven cultural value orientations for 80 countries target cultural aggregates instead of individual variation (Schwartz, 2004, 2008). Dimensions are considered as two poles of a unidimensional scale and were developed from a theoretical framework of typical problems faced by society and the values evolving from different solution approaches (Schwartz, 2012). In opposition to that, Hofstede's account was developed empirically. The dimension most closely related to individualism/collectivism by its definition is autonomy/embeddedness. Autonomy and embeddedness constitute the two orthogonal extremes with regard to the relation and boundaries between individuals and the group. Note that this vague description resembles Hofstede's motivation for his individualism/collectivism indicator perfectly. Autonomy encourages the expression of individual preferences, ideas and abilities and is further divided into intellectual autonomy which is about the independent pursuit of one's own intellect and affective autonomy which deals with fostering the pursuit of individually pleasurable experiences. Embeddedness, in turn, entails that individuals are viewed as entities embedded in the collective where the meaning in life is expected to come largely through social relationships, through identifying with the group, participating in its shared way of life, and striving toward its shared goals. Embedded cultures emphasize maintaining the status quo and restraining actions that might disrupt in-group solidarity or the traditional order (Schwartz, 2008).

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[20] Triandis, McCusker, and Hui (1990) show that results converge for different methodologies with respect to individualism/collectivism and Hofstede, Hofstede, and Minkov (2010) contains a review of more recent replication studies.
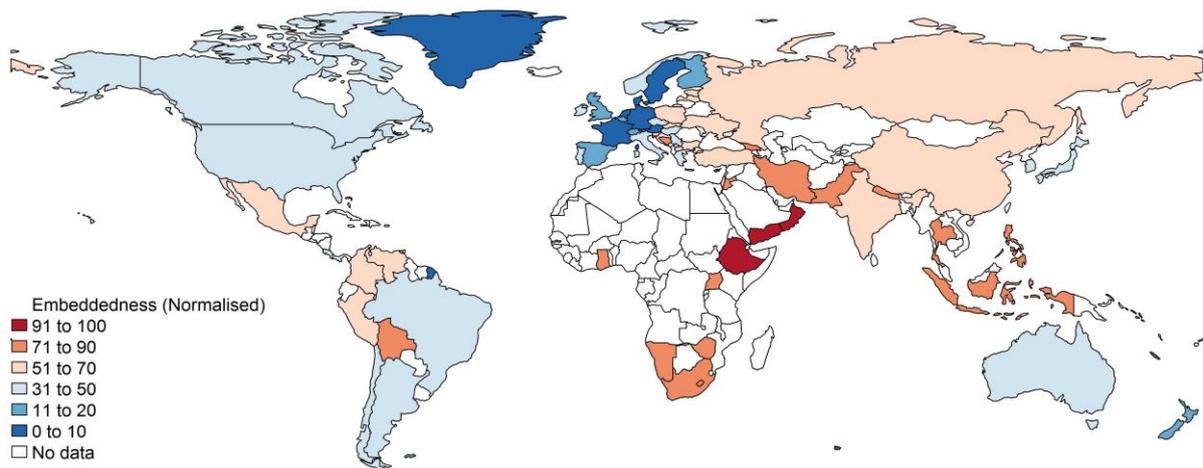
Figure 2: Normalised Embeddedness Across Countries

Schwartz' cultural orientation scores are based on one student and one teacher sample within each country. They were obtained as the average of two separate college student and teacher samples for each country between 1988 and 2007, at least 8 years past Hofstede's first publication. For the data at hand, if only one of the samples was available, the prospective average score of the missing group was estimated based on the first 59 countries covering both samples. In these cases, the total score averages over the observed and the gauged sample values. Greater coverage thus comes likely at the cost of measurement error. The sample questionnaires contain 5657 value items attributable to seven aggregate cultural orientation scores.[21] Participants were asked to judge each value with respect to being a guiding principle in their lives on a seven-point scale of increasing importance, plus an option for being opposed equalling −1 (Schwartz, 2004).

For instance, for embeddedness the attributed value items are clean, devout, forgiving, honouring parents and elders, moderate, national security, obedient, politeness, protecting my public image, reciprocation of favours, respect for tradition, self-discipline, social order, wisdom (Schwartz, 2008). The final aggregated score for embeddedness indicates the relative importance of this value to the other six values within a society. Larger values of embeddedness both indicate larger relative importance of collectivism and less relative importance of autonomy. I normalise the Schwartz' measure for comparability

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[21] Besides (affective and intellectual) autonomy versus embeddedness, the seven bipolar dimensions encompass egalitarianism versus hierarchy and harmony versus mastery.

with Hofstede's individualism/collectivism scale to range from 0 to 100, with 0 indicating maximum relative importance of autonomy and 100 yielding maximum valuation of embeddedness. Figure 2 shows normalised embeddedness across the countries of the world. Again, darker shades of red indicate increasing embeddedness whereas lighter shades represent stronger autonomy emphasis. It is apparent that Schwartz' index has a slightly better and variable coverage of African countries than Hofstede, most of which are in the 90-percentile of embeddedness within this sample of origins. Perhaps unexpectedly, Schwartz does not find that the United States are an especially autonomous or socially independent country. With an embeddedness value of 39 they are closer to the average of 47 in the cross-section than to the most autonomous country in the sample, Germany. The country with the strongest embeddedness culture is Yemen.

Schwartz' value items mirror many of the characteristics described by Triandis (1995a) as properties of individualism and collectivism. These include the importance of social relationships, the line between self and others, the treatment of individual versus group goals, the meaning of shared norms and aims, and hedonistic motives as opposed to dutiful behaviour. Besides being updated more recently, Schwartz' value items are much more straightforwardly related to the factors presumed to be relevant for the importance of migration networks than Hofstede's work goals. Moreover, Schwartz emphasises that his survey, opposed to Hofstede's methodology, directly asks to assess which values are determinants of one's own life beyond being generally desirable (Schwartz, 1994), thereby perhaps offering a better impression of which norms are actually executed in society.[22] I show results for my main regressions for both Hofstede and Schwartz in tables 3, 4, 5, and 6 but continue my empirical assessment focussing on the embeddedness for the aforementioned reasons.

Instrumentation: Past Diasporas

With respect to instrumenting migrant stocks in 2010, diasporas by country-pairs in 1960 are available from the World Development Indicators published by the World Bank in

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[22] See Ng, Lee, and Soutar (2007) for a comprehensive comparison of Schwartz' and Hofstede's accounts.

2018. From table 2 one can infer, that migrant networks relative to population have about doubled in size by 2010.

Cultural Proximity, Social Capital and Sample Restrictions

While the lion share of bilateral controls was already introduced in sections 4 and 5, I further consider three different measures of cultural proximity to account for the worry that culturally heterogeneous network effect may actually be due to the extent of dissimilarity. Note that bilateral cultural measures are prone to be the result of past migration flows or other bilateral ties and thus endogenous. I consider the Euclidean distance between destination and origin culture with respect to embeddedness, collectivism and an average of Euclidean distances of a variety of cultural preferences from the GPS published by Falk, Becker, Dohmen, Enke, Huffman, and Sunde (2018). Larger values indicate a larger distance in value conceptions. As not all measures that are available for origin countries have been gathered for the corresponding destination countries as well, sample sizes shrink.

Furthermore, to test my proposed theory with regard to the reference frame of social capital, I consider a set of normalised measures of mutual trust with varying degrees of in- and outgroup foci based on Delhey and Welzel (2012) and Welzel (2013). All indices range from 0 to 100 with about similar means and standard deviations, 100 being the maximum amount of trust towards the respective reference group. See Appendix A for further details.

Lastly, I consider several subsamples, namely within Schengen and within OECD migration, and a set of origins with mainly native residents. Table 2 illustrates the degree of restriction: About a fifth of bilateral flows moves within Schengen borders and only a 44 percent of origin countries in the cross-section and 37 percent in the panel belong to the OECD. About half of the source countries have populations that are at least 90 percent indigenous.[23]

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[23] Calculations are based on data from Putterman and Weil (2010).

8 Results

In this section, I present the results of my estimations. The dependent variable in all tables are migrant flows normalised by origin country populations, i.e. migration rates. If not stated otherwise, the dependent variable is measured in logs. Recall that my main variable of interest is the interaction term between bilateral migrant networks and social interdependence. As I expect origins of higher social interdependence to rely more heavily on ethnicity-specific social capital, the interaction should increase the direct effect of diasporas and thus show coefficients of positive signs across all specifications. Standard errors are reported robust to heteroskedasticity for all cross-sectional results and are clustered by country-pair in panel regressions.

2010 Cross Section

First, I demonstrate the estimated coefficients for the 2010 cross-section of bilateral migration in separate tables for each proxy of social interdependence. Table 3 is based on Schwartz' normalised embeddedness and Hofstede's collectivism is employed in table 4. The first column in each table includes only the most basic set of explanatory variables from the underlying gravity framework. These compile, besides my variables of interest, a measure of geographic distance and origin and destination fixed effects. In the second column, I add further bilateral controls, namely linguistic proximity and regressors for common border and colonial ties, resembling equation (8) in section 5. This is my preferred specification. In the third and fourth column I add two measures of cultural proximity: Column 3 contains the Euclidean distance between destination and origin for the measure of social interdependence at focus of the respective table. Column four introduces the more comprehensive GPS measure of cultural proximity.

In both tables, social interdependence at origin boosts the positive network effect of migration on bilateral flows. The estimates, although small in size, are statistically significant at the one percent level, except for columns 3 (five percent) and 4 (not significant at any conventional level) in table 4. Schwartz' embeddedness appears to be more relevant for the role of networks than Hofstede's collectivism as the estimated coefficients

of interest are consistently higher. However, in the end, the impact is fairly similar: Assuming column 2 for each table, for a culture one standard deviation above mean embeddedness, a one percent increase in diaspora size leads to a $0.60 + 0.002 \cdot (47.29 + 24.88) \approx 0.74$ percent increase in the corresponding flow, opposed to a 0.69 percent for a society at the mean. Embeddedness thus contributes 0.05 percentage points. Being almost the same in size, the effect of a one standard deviation (22.69) increase in collectivism is roughly 0.03 percentage points, raising the effect to 0.82 opposed to 0.79. Comparing source countries at the extremes of the embeddedness scale, the marginal network effect of a one percent increase in stocks on flows for migrants from Germany is 0.61, while it is 0.81 for migrants from Yemen. Looking at collectivism instead, a one percent increase in diaspora size, increases bilateral flows from the US by $0.73 + 0.0011 \cdot 9 \approx 0.74$ percent while the marginal effect for Guatemalans would be $0.73 + 0.0011 \cdot 94 \approx 0.83$.

Table 3: Social Embeddedness, Diasporas and Migration Rates: 2010 Cross–Section

	(1)	(2)	(3)	(4)
$\ln(Diaspora_{jk}) \times Embeddedness_j$	0.0020***	0.0020***	0.0023***	0.0026***
	(0.0004)	(0.0004)	(0.0004)	(0.0005)
$\ln(Diaspora_{jk})$	0.6146***	0.6038***	0.5815***	0.5971***
	(0.0266)	(0.0286)	(0.0299)	(0.0361)
$\ln(Distance_{jk})$	-0.3622***	-0.3951***	-0.4265***	-0.3584***
	(0.0445)	(0.0480)	(0.0486)	(0.0594)
$LinguisticProximity_{jk}$		0.3222***	0.3806***	0.4080***
		(0.1078)	(0.1099)	(0.1238)
$CommonBorder_{jk}$		-0.2595***	-0.2543***	-0.2005
		(0.0945)	(0.0956)	(0.1291)
$ColonialTies_{jk}$		0.1263	0.1423	0.0650
		(0.1407)	(0.1466)	(0.19929
Euclidean Distance: Embeddedness			0.3202**	0.1451
			(0.1306)	(0.1801)
Euclidean Distance: GPS Values				-0.1888
				(0.2992)
Origin/Destination Fixed Effects	Yes	Yes	Yes	Yes
R-Squared	0.928	0.929	0.927	0.933
Observations	1393	1393	1294	735

Table 3 shows the main results of the 2010 cross-sectional analysis with Schwartz' (normalised) Embeddedness measuring social interdependence. The dependent variable is $Flows_{jk.}$ to 30 OECD countries from all world origins. All specifications include origin and destination fixed effects and bilateral distance as controls. The second column introduces additional bilateral control variables. Column (3) and (4) control for cultural proximity in terms of embeddedness specifically and GPS values more generally. Robust standard errors in parentheses. $^* p < 0.1$, $^{**} p < 0.05$, $^{***} p < 0.01$.

Table 4: Collectivism, Diasporas and Migration Rates: 2010 Cross–Section

	(1)	(2)	(3)	(4)
ln($Diaspora_{jk}$) × $Collectivism_j$	0.0012***	0.0011***	0.0009**	0.0008
	(0.0004)	(0.0004)	(0.0004)	(0.0006)
ln($Diaspora_{jk}$)	0.6194***	0.7310***	0.6358***	0.6690***
	(0.0004)	(0.0238)	(0.0373)	(0.0473)
ln($Distance_{jk}$)	-0.3614***	-0.3996***	-0.4099***	-0.4024***
	(0.0449)	(0.0484)	(0.0501)	(0.0626)
$LinguisticProximity_{jk}$		0.2507**	0.2628**	0.3389**
		(0.1053)	(0.1075)	(0.1510)
$CommonBorder_{jk}$		-0.2787**	-0.2955**	-0.3719**
		(0.1145)	(0.1148)	(0.1590)
$ColonialTies_{jk}$		0.1393	0.1685	0.1085
		(0.1299)	(0.1317)	(0.1972)
Euclidean Distance: Collectivism			0.0022	0.0014
			(0.0017)	(0.0021)
Euclidean Distance: GPS Values				0.1353
				(0.3249)
Origin/Destination Fixed Effects	Yes	Yes	Yes	Yes
R-Squared	0.916	0.917	0.912	0.925
Observations	1488	1488	1407	751

Table 4 shows the results of the 2010 cross-sectional analysis in Table 3 with Hofstede's Collectivism measuring social interdependence. The dependent variable is $Flows_{jk.}$ to 30 OECD countries from all world origin countries. All specifications include origin and destination fixed effects and bilateral distance as controls. The second column introduces additional bilateral control variables. Column (3) and (4) control for cultural proximity in terms of embeddedness specifically and GPS values more generally. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Almost all remaining regressors exhibit the expected signs. However, it is surprising that sharing a border, which applies to four percent of the country-pairs in the sample, should decrease bilateral flows between two countries to a strong and statistically significant degree. Moreover, colonial ties do not show a statistically significant effect on migration rates in either of the two tables. Foreshadowing my instrumental variable regressions (see table 11), the unexpected results for neighbouring countries and colonial ties may be driven by a strong correlation with contemporary migration networks. Interestingly, similarities in degrees of embeddedness and collectivism decrease migrant movement between countries, perhaps because societies with high degrees of collectivism and embeddedness are also more likely to be homogeneous and in-group focussed, which might make the prospect of trying to fit in seem harder.

Yet, the estimated coefficient of Euclidean distance of the social interdependence variable is not robust across specifications in the embeddedness table and not statistically significant at any conventional level in the collectivism display. Cultural proximity measured in terms of the average Euclidean distance in values from the GPS has diverging effects across tables. While increased cultural distance is negatively but not statistically significantly associated with migration flows in table 3, it has an unexpected positive effect on flows in table 4. Moreover, the variable's inclusion in the regression affects the results for collectivist network effects, but not the ones for embeddedness.

Panel 1980–2010

Tables 5 and 6 show similar specifications but exploit the time-variation of the panel dimension. Again, I regress the same specifications across tables except for the measurement of social interdependence for first, embeddedness and second, collectivism. The first three columns only employ the two variables of interest and geographical distance, introducing increasingly general sets of fixed effects. Column 4 then adds the preferred assembly of bilateral controls. Column 5 concludes with the consideration of dyadic fixed effects. Again, social interdependence has a positive effect on the role of networks for migration flows across specifications and measures. For the preferred specification in column 4 a one percent increase in network size for Germany, the sample's most autonomous country, is coupled with a ceteris paribus increase in migration flows of about 0.55 percent, while for Yemen, the most embedded country, it would be 0.75 percent. As in the cross-section, the difference is roughly 0.2 percentage points. With respect to collectivism and assuming countries with values of 0 and 100 on the collectivism scale, the marginal effects would vary between 0.50 and 0.73 at the extremes, resembling the embeddedness estimates.

As expected, the coefficients estimated with the incorporation of bilateral fixed effects is not statistically significant anymore given the very limited time-variation due to a change in network sizes its computation uses. Consistent with the 2010 cross-section estimates, distance has a negative and statistically significant effect on migration flows. A one percent larger distance decreases migration flows by about 0.37 to 0.39 percent.

Sharing a language family increases bilateral migration, so do colonial ties. Again, being neighbours shows an adverse effect on migration flows that is not statistically significant at any conventional level.[24]

Table 5: Social Embeddedness, Diasporas and Migration Rates: 1980–2010 Panel

	(1)	(2)	(3)	(4)	(5)
ln($Diaspora_{jkt}$) × $Embeddedness_j$	0.0016***	0.0016***	0.0018***	0.0020***	-0.0011
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0008)
ln($Diaspora_{jkt}$)	0.5969***	0.5889***	0.5744***	0.5492***	0.4897***
	(0.0173)	(0.0175)	(0.0194)	(0.0196)	(0.0461)
ln($Distance_{jk}$)	-0.3763***	-0.3907***	-0.3947***	-0.3927***	
	(0.0347)	(0.0348)	(0.0364)	(0.0386)	
$LinguisticProximity_{jk}$				0.4252***	
				(0.0855)	
$CommonBorder_{jk}$				-0.0695	
				(0.0884)	
$ColonialTies_{jk}$				0.2226*	
				(0.1139)	
Fixed Effects:					
Origin/Destination	Yes	Yes	Yes	Yes	Yes
Year	No	Yes	Yes	Yes	Yes
Origin-/Destination-Time	No	No	Yes	Yes	Yes
Country Pair	No	No	No	No	Yes
R-Squared	0.896	0.898	0.925	0.926	0.967
Observations	29408	29408	29408	29408	29408

Table 5 shows the main results of the panel analysis with Schwartz' (normalised) Embeddedness measuring social interdependence. The panel covers migration between 1980 and 2010. The dependent variable is $Flows_{jkt}$ to 30 OECD countries from all world origin countries. All specifications include origin and destination fixed effects and bilateral distance as controls. Columns (2) to and (3) successively add year fixed effects and origin- and destination-time fixed effects. Column (4) introduces additional bilateral control variables. The last column includes country-pair fixed effects. Standard errors in parentheses are clustered by origin-destination pairs. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Robustness Checks

From here on I resort to my preferred measure of social interdependence, embeddedness. To begin with, I investigate the persistence of the network effect over time by regressing my preferred specification including origin and destination fixed effects for four different cross–sections of the same country–pairs between the years 1995 and 2010. The first column therefore shows the same results depicted in table 3, column 2. For a sample size

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[24] See Appendix B, table 13 for embeddedness estimates within a balanced panel of 6450 observations. The results do not differ in quality from the unbalanced panel reflected upon here.

of 727 observations and now only 15 OECD countries, embeddedness persistently encourages the network effect on migration rates. The estimates are statistically significant at the one percent level for all periods. With respect to the remaining regressors, the sole network effect has increased slightly. While linguistic proximity was positive and not significantly different from 0 in 1995, it appears to have gained importance for the migration decision over time. One percent higher distance between origin and destination capital decreased resettlement between the two by 0.35 to 0.47 percent. Colonial ties lose their weight for the migration decision over time.

Table 6: Collectivism, Diasporas and Migration Rates: 1980–2010 Panel

	(1)	(2)	(3)	(4)	(5)
$\ln(Diaspora_{jkt}) \times Collectivism_j$	0.0017***	0.0017***	0.0020***	0.0023***	0.0003
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0008)
$\ln(Diaspora_{jkt})$	0.5701***	0.5662***	0.5403***	0.5001***	0.3963***
	(0.0218)	(0.0222)	(0.0234)	(0.0229)	(0.0426)
$\ln(Distance_{jk})$	-0.3712***	-0.3803***	-0.3918***	-0.3809***	
	(0.0340)	(0.0340)	(0.0348)	(0.0369)	
$LinguisticProximity_{jk}$				0.5128***	
				(0.0841)	
$CommonBorder_{jk}$				-0.0508	
				(0.0896)	
$ColonialTies_{jk}$				0.1517	
				(0.1135)	
Fixed Effects:					
Origin/Destination	Yes	Yes	Yes	Yes	Yes
Year	No	Yes	Yes	Yes	Yes
Origin-/Destination-Time	No	No	Yes	Yes	Yes
Country Pair	No	No	No	No	Yes
R-Squared	0.891	0.893	0.919	0.921	0.966
Observations	32005	32005	32005	32005	32005

Table 6 shows the results from the panel analysis in Table 5 with Hofstede's Collectivism measuring social interdependence. The panel covers migration to 30 OECD destination countries from all world countries of origin between 1980 and 2010. The dependent variable is $Flows_{jkt}$. All specifications include origin and destination fixed effects and bilateral distance as controls. Columns (2) to and (3) successively add year fixed effects and origin- and destination-time fixed effects. Column (4) introduces additional bilateral control variables. The last column includes country-pair fixed effects. Standard errors in parentheses are clustered by origin-destination pairs. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 7: Social Embeddedness, Diasporas and Migration Rates:
OLS Cross–Sections 1995–2010

	(1)	(2)	(3)	(4)
	2010	2005	2000	1995
$\ln(Diaspora_{jk}) \times Embeddedness_j$	0.0027***	0.0019***	0.0030***	0.0021***
	(0.0004)	(0.0005)	(0.0005)	(0.0005)
$\ln(Diaspora_{jk})$	0.5333***	0.5872***	0.4721***	0.4830***
	(0.0328)	(0.0352)	(0.0408)	(0.0380)
$LinguisticProximity_{jk}$	0.5911***	0.6196***	0.5134***	0.1917
	(0.1243)	(0.1248)	(0.1600)	(0.1571)
$\ln(Distance_{jk})$	-0.4327***	-0.3607***	-0.3522***	-0.4719***
	(0.0531)	(0.0571)	(0.0668)	(0.0643)
$CommonBorder_{jk}$	-0.2298**	-0.1537	0.0465	0.0676
	(0.1090)	(0.1110)	(0.1441)	(0.1359)
$ColonialTies_{jk}$	0.2512	0.4228***	0.6216***	0.7692***
	(0.1579)	(0.1414)	(0.1844)	(0.1860)
Origin/Destination Fixed Effects	Yes	Yes	Yes	Yes
R-Squared	0.951	0.945	0.942	0.941
Observations	727	727	727	727

Table 7 shows separate OLS regressions for the years 1995, 2000, 2005 and 2010 with Schwartz' (normalised) Embeddedness measuring social interdependence. The dependent variable is $Flows_{jk}$ to 30 OECD destination countries from all world countries of origin. All specifications include origin and destination fixed effects and bilateral controls. Robust standard errors in parentheses.
$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

In table 8, I consider various sample restrictions. The first column, which includes only OECD origins, accounts for the worry, that the results may be defined by South–North migration. Migrants from lower-income countries might be more collectivist by coincidence and the hostility of wealthy nations towards migrants from developing nations is decisive for making co-ethnic capital indispensable. However, the coefficient of interest remains robust for this reduced sample of 608 observations. The same is true for a restriction to within Schengen migration. This may also be an interesting finding because Gross and Schmitt (2003) conclude, by interacting EU and OECD dummies with cultural variables, that cultural ties do not matter for flows between industrialised countries because of a uniform labour market and easy access to the relevant information. In opposition to that, Belot and Ederveen (2012) find that economic factors are unable to explain why Europeans do not exploit the gains from migration with respect to employment possibilities and income raises, and instead argue that the heterogeneity in bilateral flows in 20 developed OECD countries from 1990 to 2003 is due to cultural barriers.

Table 8: Social Embeddedness, Diasporas and Migration Rates
for Various Subsamples in 2010

	(1)	(2)	(3)
	OECD Origins	Within Schengen	> 90% Natives at Origin
$\ln(Diaspora_{jk}) \times Embeddedness_j$	0.0022***	0.0029***	0.0020***
	(0.0008)	(0.0010)	(0.0005)
$\ln(Diaspora_{jk})$	0.6118***	0.6380***	0.6146***
	(0.0391)	(0.0416)	(0.0395)
$LinguisticProximity_{jk}$	0.3004**	-0.0099	0.1625
	(0.1225)	(0.1580)	(0.1617)
$\ln(Distance_{jk})$	-0.2444***	-0.1463*	-0.4329***
	(0.0609)	(0.0846)	(0.0762)
$CommonBorder_{jk}$	-0.0904	0.0175	-0.2002
	(0.1025)	(0.1209)	(0.1237)
$ColonialTies_{jk}$	0.1306	-0.0193	0.1562
	(0.1226)	(0.1780)	(0.1846)
Origin/Destination Fixed Effects	Yes	Yes	Yes
R-Squared	0.922	0.932	0.929
Observations	608	340	766

Table 8 depicts OLS regression results for various subsamples in the year 2010 with Schwartz' (normalised) Embeddedness measuring social interdependence. The dependent variable is $Flows_{jk}$. The first column restricts the sample to flows from OECD origins to OECD destination, the second column only includes migration flows within the Schengen area and the third columns only includes those origin countries with at least 90 percent native population. All specifications include origin and destination fixed effects and bilateral controls. Robust standard errors in parentheses. $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$.

The third column considers only origins with a share of native population that exceeds at least 90 percent. These origins may be less likely to have been endogenously affected by past migration flows with respect to their cultural value system. However, the coefficients of both interaction term and diaspora by itself look representative for what we have seen for origins of all kinds.[25]

The results in table 9 address the concern that the estimates may be biased due to the logarithmic transformation of the initially non–linear gravity model and due to the loss of data from zero flows. Column 1 shows the 2010 cross section result for my preferred specification for comparison. Recall that the dependent variable is added to unity before taking the natural logarithm. Column 2 presents the estimates for the case where zero flows are dropped and column 3 shows PPML estimates. Qualitatively, the estimated coefficients and standard errors remain robust over estimation procedures, and therefore

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[25] For a panel analysis of the same subsamples see Appendix B, table 14.

foster confidence in the results discussed up until now.[26] If anything, non-linear estimation results suggest an even stronger effect.

Table 9: Social Embeddedness, Diasporas and Migration Rates in 2010:
Tackling Zero Migration Flows

	(1) ln(y+1)	(2) No 0 Flows	(3) PPML
ln($Diaspora_{jk}$) × $Embeddedness_j$	0.0020***	0.0024***	0.0038***
	(0.0004)	(0.0004)	(0.0007)
ln($Diaspora_{jk}$)	0.6038***	0.6164***	0.5903***
	(0.0286)	(0.0275)	(0.0446)
$LinguisticProximity_{jk}$	0.3222	0.3813***	0.5317***
	(0.1078)	(0.1065)	(0.1975)
ln($Distance_{jk}$)	-0.3951***	-0.3739***	-0.3328***
	(0.0480)	(0.0476)	(0.0721)
$CommonBorder_{jk}$	-0.2595***	-0.2690***	-0.2750***
	(0.0945)	(0.0936)	(0.0971)
$ColonialTies_{jk}$	0.1263	0.0754	-0.0814
	(0.1407)	(0.1450)	(0.1916)
Origin/Destination Fixed Effects	Yes	Yes	Yes
R-Squared	0.929	0.928	
Pseudo R-Squared			0.526
Observations	1393	1362	1393

Table 9 shows the results of the 2010 cross-sectional analysis for three approaches for dealing with zero migration flows (log transformation, exclusion and multiplicative model estimation). Social interdependence is measured by Schwartz' (normalised) Embeddedness. The dependent variable is $Flows_{jk.}$ to 30 OECD countries from all world origins. All columns include origin and destination fixed effects and bilateral control variables. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Testing the Social Capital Channel

Seemingly contrasting my first assumption that social interdependence parallels more community-specific social capital, Allik and Realo (2004) find a positive association between Hofstede's dimension of individualism and social capital. At the national level, the authors measure social capital in terms of organisational membership and mutual trust. Mutual trust, which is a popular measure of social capital, is generally measured in terms of agreement to the claim that most people can be trusted, also included in the WVS. I have suggested that access to social capital depends on a common group identity which is actively encouraged through group-specific activities. Thus, the strength of one's embeddedness in specific groups also determines one's scope of social capital. People from

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[26] For my preferred specification, only 31 observations are lost due to the logarithmic transformation.

cultures that value social interdependence and experience a strong in-group bias, will thus have high degrees of in-group-specific capital but little interest in the well-being of out-group members. Triandis, McCusker, and Hui (1990) conjecture that individualists, whose actions are not subject to predetermined in-group goals and who can choose their more narrow in-groups and degree of engagement freely, may actually be more likely to invest in the pursuit of social institutions that benefit people across groups such as welfare programmes.

The expression most people can be trusted is too vague to determine levels of social capital as it does make no specific claim about the people of reference and is thus subject to individual interpretation. For collectivist nations of little ethnic fractionalisation, most people will be very similar to oneself and the term may capture in-group-directed social capital. For survey participants from diverse societies, agreement to trust most people will require more tolerance and out-group-trust. Delhey and Welzel (2012) have developed in-group- and out-group-specific indicators of trust as well as a measure of trust that weights trust according to its level of generalisation. Round five of the WVS allows the calculation of trust values that distinguish between in-groups (narrow family, neighbourhood, and people known personally) and out-groups (new acquaintances, people of other religions, and people of other nationalities) following Welzel (2013) and are normalised to range from 0 to 100, where 100 is the strongest degree of trust. I interact the thus obtained measures of trust that allow for different reference frames with my diaspora variable and estimate their effect on migration rates. I predict that individualist cultures show higher degrees of generalised trust and that generalised trust decreases the importance of networks, while cultures of embeddedness exhibit more in-group-trust. Supporting evidence for my conjecture is presented in table 10.

The first two columns show embeddedness and collectivism for the preferred specification. Both have a positive effect on migration flows depending on network size. Column 3 depicts unspecific mutual trust as reported in reaction to the assertion above. The estimated coefficient is statistically not significant and very low, which is plausible because it does not relate to the specific need for co-ethnic networks. Column 4 instead reports estimates for an interaction with generalised trust, which weighs trust more heavily with

increasing in-group distance. Thus, it should correlate more strongly with individualist streams which is reflected in the negative sign of the estimated coefficient, comparable in size to column 2. Column 5 shows estimates for in-group trust. In-group trust refers to members of the family and close friends and is thus expected to be a rather universal value instead of reflecting a cultural inclination. In opposition to that, the findings for out-group trust which refers to trust in people of other nationalities and religions, perfectly fit my claim, that the effect of social interdependence is one of in-group specific social capital, in-groups referring here to a wider sense of ethnic identity. I therefore conclude that Assumption 1 can for now be maintained.

Table 10: Social Capital, Diasporas and
Migration Rates (2010 Cross Section)

	(1)	(2)	(3)	(4)	(5)	(6)
	Schwartz: Embeddedness	Hofstede: Collectivism	WVS: Trust	Welzel: Generalised Trust	Welzel: In-group Trust	Welzel: Out-group Trust
$\ln(Diaspora_{jk}) \times SocialInterdependence_j$	0.0020***	0.0011***				
	(0.0004)	(0.0004)				
$\ln(Diaspora_{jk}) \times SocialCapital_j$			0.0004	-0.0010*	-0.0004	-0.0014***
			(0.0004)	(0.0005)	(0.0005)	(0.0005)
$\ln(Diaspora_{jk})$	0.6038***	0.7310***	0.6975***	0.7342***	0.7254***	0.7510***
	(0.0286)	(0.0238)	(0.0253)	(0.0264)	(0.0322)	(0.0269)
$\ln(Distance_{jk})$	-0.3951***	-0.3996***	-0.3352***	-0.3290***	-0.3303***	-0.3262***
	(0.0480)	(0.0484)	(0.0670)	(0.0664)	(0.0668)	(0.0654)
$LinguisticProximity_{jk}$	0.3222	0.2507**	0.1864	0.2263*	0.1899	0.2750**
	(0.1078)	(0.1053)	(0.1200)	(0.1187)	(0.1182)	(0.1196)
$CommonBorder_{jk}$	-0.2595***	-0.2787**	-0.2870**	-0.2121*	-0.2507**	-0.1894
	(0.0945)	(0.1145)	(0.1187)	(0.1206)	(0.1184)	(0.1207)
$ColonialTies_{jk}$	0.1263	0.1393	0.2301	0.1952	0.2067	0.1764
	(0.1407)	(0.1299)	(0.1593)	(0.1568)	(0.1605)	(0.1590)
Origin/Destination Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.929	0.917	0.931	0.931	0.931	0.932
Observations	1393	1488	853	853	853	853

Table 10 shows the results from interacting migration networks with different measures of trust. Columns (1) and (2) depict the results from Tables (3) and (4), columns (2) for comparison. The dependent variable is $Flows_{jk}$ to 30 OECD countries from all world origins. All columns include origin and destination fixed effects and bilateral control variables. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Instrumental Variable Regressions

Finally, my last table lists the second-stage results of my instrumental variable regression approach. To approach endogeneity due to unobserved bilateral policies and flows in the recent past as discussed in section 5, I instrument the diaspora variable with bilateral stocks in 1960 and the corresponding interaction term by interacting 1960 stocks and

embeddedness. The first stage F–statistics for both instruments separately look reassuring with respect to the instruments' relevance.

Table 11: Social Embeddedness, Diasporas and Migration Rates: IV Regressions

	(1)	(2)	(3)	(4)
	OLS	2SLS	OLS	2SLS
$\ln(Diaspora_{jk}) \times Embeddedness_j$	0.0020***	0.0029***	0.0020***	0.0036***
	(0.0004)	(0.0004)	(0.0004)	(0.0005)
$\ln(Diaspora_{jk})$	0.6253***	0.4302***	0.6149***	0.3118***
	(0.0267)	(0.0610)	(0.0291)	(0.0841)
$\ln(Distance_{jk})$	-0.3455***	-0.5091***	-0.3789***	-0.5660***
	(0.0437)	(0.0709)	(0.0470)	(0.0766)
$LinguisticProximity_{jk}$			0.2942***	0.6000***
			(0.1077)	(0.1522)
$CommonBorder_{jk}$			-0.2530***	-0.0595
			(0.0968)	(0.1147)
$ColonialTies_{jk}$			0.1276	0.4476***
			(0.1418)	(0.1709)
Origin/Destination Fixed Effects	Yes	Yes	Yes	Yes
R-Squared	0.930	0.926	0.931	0.921
First Stage F-Statistic Diaspora		109.99		100.50
Interaction		88.94		49.71
Observations	1357	1357	1357	1357

Table 11 shows the results of the instrumental variable regressions and the corresponding OLS estimation results for comparison. Social interdependence is measured by Schwartz' (normalised) Embeddedness, the dependent variable is $Flows_{jk.}$ to 30 OECD countries from all world origins and the instruments are $Diaspora_{jk1960}$ and its interaction with social interdependence. All columns include origin and destination fixed effects. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Columns 2 and 4 illustrate the 2–Stage Least Squares regressions corresponding to columns 1 and 3. With respect to my preferred specification in the last two columns, one can see that the impact of distance on migrant flows increases by about 0.19 percentage points. Linguistic proximity also doubles its coefficient estimate. Both controls are significant at the 1 percent level. Instead, the effect of common borders almost vanished compared to its initial value and remains insignificant. The effect of having colonial ties becomes stronger which points towards a downward bias in the OLS estimations. Concluding with our variable of interests one has to once again access the change in impact in relative terms to the sole diaspora effect. Consider Yemen with a maximum value of embeddedness and Germany with a value of 0. Again, for Yemen, a one percent increase

in diaspora size would imply a 0.81 percent upsurge in the corresponding emigration rate to that specific destination, opposed to a 0.61 percent increase for Germany in the OLS regression. For the IV regression, I obtain a $0.3118 + 0.0036*100 = 0.67$ percent growth in flows associated with a 1 percent network expansion, while for Germany, the impact is merely about 0.32 percent. The IV results thus suggest a maximum impact of 0.35 percentage points due to embeddedness, given the instrument is valid. Both OLS and IV coefficients are significant at the 1 percent level.

All in all, my regressions have shown subtle but robust and statistically highly significant effects on the importance of networks for migration across different samples and specifications. My encounter of varying trust measures has yielded some confidence in a reconciliation of community-specific social capital and the importance of networks for cultures which vary with respect to their emphasis on social interaction.

9 Conclusion

I investigated whether there are culturally rooted grounds for heterogeneous effects on migration flows between countries. I claim that there are differences in importance of networks in the migration cost equation not because of cultural distance between origin and destination per se, but because of the specific make-up of the origin culture. Rooted in findings from cross-cultural psychology and sociology, I postulated that cultures with a heavy emphasis on the individual's embeddedness into a group instead of the independent pursuit of life goals, accumulate more community-specific social capital that is bound to a people and a location. Migration entails a loss of such capital and thus it is in the interest of such embedded, collectivist societies to migrate to countries that allow for the partial recovery of such social capital via existing networks. My estimations for migrant flows to 30 OECD countries from all over the world across different subsamples and specifications have shown a highly significant of social interdependent cultivation on the role of networks for destination choice. My insights may provide fruitful grounds for a more thorough investigation of the proposed relationship. Future research may target the relative strength of different sources of migrant network heterogeneity.

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Appendix A: Data Sources

Table 12: Variable Descriptions and Data Sources

*	Variable	Description	Source
D	$\ln(Flows_{jk})$	Log of bilateral migration flows, normalised by $t-1$ origin country j population. Following Adserà and Pytliková (2015a), unity is added to all flows before normalisation and taking the natural logarithm.	Adserà and Pytliková (2015a)
D	$Flows_{jk}$	Bilateral migration flows, normalised by $t-1$ country j population.	Adserà and Pytliková (2015a)
I	$\ln(Diaspora_{jk})$	Log of bilateral migration stocks in $t-1$, normalised by $t-2$ origin country j population. Following Adserà and Pytliková (2015a), unity is added to all stocks before normalisation and taking the natural logarithm.	Adserà and Pytliková (2015a)
I	*Social Interdependence$_j$*	Social independence as proxied by Schwartz' cultural dimension of Embeddedness and Hofstede's Collectivism, ranging from 0 to 100 where 100 is the highest value of Embeddedness/Collectivism.	Hofstede, Hofstede, and Minkov (2010), Schwartz (2008)

Bilateral Controls

*	Variable	Description	Source
I	$\ln(Distance_{jk})$	Log of the distance between capitals in kilometres.	CEPII, extended by Adserà and Pytliková (2015a)
I	*Linguistic Proximity$_{jk}$*	*LinguisticProximity$_{jk}$* between two countries' main official languages based on information from Ethnologue and ranging between 0 and 1, where 0 indicates that two languages do not share any language family and 1 represents a common language.	Adserà and Pytliková (2015a)
I	*Common Border$_{jk}$*	Dummy variable that equals unity if countries are neighbours and zero otherwise.	CEPII, extended by Adserà and Pytliková (2015a)
I	*Colonial Ties$_{jk}$*	Dummy variable that equals unity if countries have a colonial history and zero otherwise.	Rose (2004), extended by Adserà and Pytliková (2015a)
I	*Euclidean Distance$_{jk}$*	A measure of cultural proximity. Own calculation as the Euclidean distance of a) Schwartz' Embeddedness scores for destination and origin country, b) Hofstede's collectivism values of destination and origin country, and c) of the six values from the Global Preference Survey which measures cross-country differences in risk and time preferences, positive and negative reciprocity, altruism, and trust. The survey was conducted with representative samples of 80,000 individuals from 76 countries. For the six values, the Euclidean distance is calculated per item and then averaged.	Schwartz (2008), Hofstede, Hofstede, and Minkov (2010), Falk, Becker, Dohmen, Enke, Huffman, and Sunde (2018)

*D = Dependent Variable, I = Independent Variable, IV = Instrumental Variable, SR = Sample Restriction

Table 12 Continued from Previous Page

*	Variable	Description	Source

Social Capital

*	Variable	Description	Source
I	*WVS Trust$_j$*	Origin country averages of answers to the survey question: "Most people can be trusted", where larger values indicate on average stronger agreement. Gorodnichenko and Roland (2015) accumulated data from the World Values Survey, the Globalbarometer, Latino-barómetro, the European Values Survey, and the East-Asian barome-ter. They provide a detailed list of sources for each country.	Gorodnichenko and Roland (2015)
I	*Welzel Generalised Trust$_j$*	Own calculations following Welzel (2013). The index is a country av-erage and ranges from 0 to 1, where 1 indicates the highest value of generalised trust and 0 the lowest. Generalised trust weighs measures of trust the stronger the larger their social radius. Thus, high values of generalised trust imply greater out-group trust, whereas small values point towards a focus on in-groups.	Inglehart, Haerpfer, Moreno, Kizilova, Díez Medrano, Lagos, Norris, Ponarin, and Pura-nen (2014)
I	*In–group Trust$_j$*	Own calculations following Welzel (2013). The index is a country av-erage and ranges from 0 to 1, where 1 indicates the highest value of in-group trust and 0 the lowest.	Inglehart, Haerpfer, Moreno, Kizilova, Díez Medrano, Lagos, Norris, Ponarin, and Pura-nen (2014)
I	*Out–group Trust$_j$*	Own calculations following Welzel (2013). The index is a country av-erage and ranges from 0 to 1, where 1 indicates the highest value of out-group trust and 0 the lowest.	Inglehart, Haerpfer, Moreno, Kizilova, Díez Medrano, Lagos, Norris, Ponarin, and Pura-nen (2014)

*D = Dependent Variable, I = Independent Variable, IV = Instrumental Variable, SR = Sample Restriction

Table 12 Concluded from Previous Page

*	Variable	Description	Source
Instrumental Variable Regression			
IV	$Ln(Diaspora_{jk,1960})$	Bilateral migration stocks in 1960, normalised by 1960 origin country population.	The World Bank (2018)
Sample Restrictions			
SR	$OECD_j$	A dummy variable that equals unity if a country is member of the OECD at time t and zero otherwise.	OECD (2018)
SR	$Schengen_{jk}$	A dummy variable that equals unity if two countries had abolished border controls due to Schengen membership at time t and zero otherwise.	Auswärtiges Amt (2018)
SR	$Indigenous$ $Share_j$	Share of indigenous people at origin in 1500. Employed to restrict the sample to origins with at least 90 percent native residents.	Putterman and Weil (2010)

*D = Dependent Variable, I = Independent Variable, IV = Instrumental Variable, SR = Sample Restriction

Appendix B: Further Robustness Checks

Table 13: Social Embeddedness, Diasporas and Migration Rates: Balanced Panel

	(1)	(2)	(3)	(4)	(5)
$\ln(Diaspora_{jkt}) \times Embeddedness_j$	0.0041***	0.0042***	0.0044***	0.0047***	0.0031
	(0.0005)	(0.0005)	(0.0005)	(0.0006)	(0.0022)
$\ln(Diaspora_{jkt})$	0.4991***	0.5172***	0.5314***	0.5158***	0.4407***
	(0.0350)	(0.0356)	(0.0416)	(0.0424)	(0.1215)
$\ln(Distance_{jk})$	-0.4104***	-0.3852***	-0.3543***	-0.3407***	
	(0.0648)	(0.0634)	(0.0705)	(0.0721)	
$LinguisticProximity_{jk}$				0.2960	
				(0.2250)	
$CommonBorder_{jk}$				-0.0289	
				(0.1630)	
$ColonialTies_{jk}$				0.1812	
				(0.2035)	
Fixed Effects					
Origin/Destination	Yes	Yes	Yes	Yes	Yes
Year	No	Yes	Yes	Yes	Yes
Origin-/Destination-Time	No	No	Yes	Yes	Yes
Country Pair	No	No	No	No	Yes
R-Squared	0.933	0.936	0.958	0.959	0.981
Observations	6450	6450	6450	6450	6450

Table 13 shows the results from Table 5 for a balanced panel. Social interdependence is measured by Schwartz' (normalised) Embeddedness measuring social interdependence. The balanced panel covers migration to 5 OECD destinations (Denmark, Germany, Norway, Switzerland and the US) from 49 sending countries between 1980 and 2010. The dependent variable is $Flows_{jkt}$. All specifications include origin and destination fixed effects and bilateral distance as controls. Columns (2) to and (3) successively add year fixed effects and origin- and destination-time fixed effects. Column (4) introduces additional bilateral control variables. The last column includes country-pair fixed effects. Standard errors in parentheses are clustered by origin-destination pairs. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 14: Social Embeddedness, Diasporas and Migration Rates for Various Subsamples 1980–2010

	(1)	(2)	(3)
	OECD Origins	Within Schengen	> 90% Natives at Origin
$\ln(Diaspora_{jkt}) \times Embeddedness_j$	0.0023***	0.0017*	0.0022***
	(0.0007)	(0.0009)	(0.0003)
$\ln(Diaspora_{jkt})$	0.5921***	0.6226***	0.5398***
	(0.0293)	(0.0385)	(0.0257)
$LinguisticProximity_{jk}$	0.4644***	0.1941	0.2143
	(0.1079)	(0.1341)	(0.1305)
$\ln(Distance_{jk})$	-0.2063***	-0.2394***	-0.4211***
	(0.0537)	(0.0708)	(0.0578)
$CommonBorder_{jk}$	-0.0347	-0.0520	0.0323
	(0.0923)	(0.0894)	(0.1149)
$ColonialTies_{jk}$	0.0809	0.1105	0.0255
	(0.1323)	(0.0935)	(0.1476)
Fixed Effects			
Origin/Destination	Yes	Yes	Yes
Year	Yes	Yes	Yes
Origin-/Destination-Time	Yes	Yes	Yes
R-Squared	0.928	0.945	0.929
Observations	11608	2552	16479

Table 14 depicts the panel regression results for various subsamples with Schwartz' (normalised) Embeddedness measuring social interdependence. The dependent variable is $Flows_{jk}$. The first column restricts the sample to flows from OECD origins to OECD destination, the second column only includes migration flows within the Schengen area and the third columns only includes those origin countries with at least 90 percent native population. All specifications include origin and destination fixed effects and bilateral controls. Robust standard errors in parentheses. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.