Defying the Law of Gravity:
The Political Economy of International Migration*

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Abstract: The causes of international migration have been the focus of much scholarly attention. Existing work, however, tends to focus on single countries—either on the origin or destination side—which leads to conclusions that are not broadly generalizable. We focus on two aspects of international migration patterns: (i) the forces that perpetuate migrant flows between two countries and (ii) the characteristics that promote initial migration. We argue that the existence and volume of migrant social networks are key to understanding the perpetuation of migration flows while a focus on non-native political freedoms in destination countries is important for explaining initial migration. These arguments are tested on a large panel dataset comprised of migration flows from 144 origin countries into 28 destination countries over the period 1985-2004. The importance of social networks is also confirmed with individual level survey data.

1. Introduction

History abounds with stories and images of migration. Consider the following: Moses and the Israelites journey from Egypt to the Promised Land; the Celts leave Central Europe and settle in Gaul; the Pilgrims travel from England to the New World; Italians, Irish and Eastern Europeans converge on Ellis Island in the late 19th century; and the residents of East Germany move west when the Berlin Wall comes down. While these examples are different in their historical, social, political and economic contexts, they all illustrate the important role that migration—the act of leaving one's native land to settle somewhere else—has played in shaping the modern world.

Historical anecdotes aside, migration is a key component of globalization. Political economists have devoted considerable energies to the study of trade and financial globalization

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and with good reason. In 2004 international trade in commodities exceeded 20% of global gross national product and cross-border flows of capital was double that. In strict quantitative terms, the legal international movement of people pales in comparison: recent estimates from the United Nations Population Division put the share of the world's population residing outside of their nation of origin at 185 million people—approximately 2.5% of the world's total population. Likewise, the Organization for Economic Cooperation and Development (OECD) estimates that the number of legal immigrants into OECD member countries stands at a little over three million annually (OECD 2006).

While quantitatively small, migration has important consequences for both origin and destination countries. The effects of emigration on origin countries include expanded social roles for women and the alleviation of poverty and unemployment, but also brain drain and heightened inequality due to remittances (Carrington and Detragiache 1998; Conway and Cohen 1998; Vidal 1998; Zachariah, Mathew and Rajan 2001). From an economic perspective, immigration has been shown to have a negative impact on the wages of unskilled labor in some destination countries (Borjas, Freeman and Katz 1996; Zorlu and Jartog 2005), but a positive impact on international trade (Head and Ries 1998; Rauch 2001). Politically, recent research has revealed that immigration boosts the electoral prospects for radical right parties (Knigge 1998; De Vos and Duerloo 1999; Lubbers, Gijsberts and Scheppers 2002), drives policy makers to enact increasingly strict immigration policies (Thraenhardt 1995; Bale 2003; Van der Valk 2003), and increases social expenditures (Borjas 1999; Brucker et al 1992; Lee and Miller 2000). More generally, the phenomenon of international migration has led scholars to redefine traditional notions of domestic security (Rudolph 2006), national citizenship (Castles 2002; Vertovec 2004), and transnational governance (Hollifield 2002).

In spite of these consequences, we have little systematic knowledge about the causes of international migration. Even a general reading of the literature suggests three reasons why this is the case. First, scholars from a variety of disciplines have studied migration by focusing on either

a particular country of origin or a particular destination. While this approach is useful in helping focus on the cultural, social and historical conditions surrounding migration it does not allow for broad and generalizable conclusions (Massey et al. 1999). Second, quantitative studies of international migration have tended to concentrate on the policy implications of immigration for particular destination countries and, consequently, are not interested in making general theoretical claims (Borjas 2000). Third, the factors leading to initial migration – which we refer to as pioneer migration – are likely different from those that promote subsequent migration. Existing studies—both qualitative and quantitative—reflect these differences.

In this paper we combine insights from a variety of social science disciplines and argue that international migration can be best understood by focusing on social networks—the social, cultural and community ties that link migrants in origin and destination countries (Boyd 1989; Portes and Bach 1995; Massey, et al. 1993, 1999; Faist 2000). Social networks help perpetuate and direct migration flows in that they have two related effects. First, networks have *support effects*—existing networks of co-ethnics in destination countries help support migrants financially by providing monetary support, psychologically through the provision of a social community, and instrumentally by assisting migrants assimilate into their new community. As such, migrants are more likely to move to a country where they have personal contacts that can decrease the myriad costs of migration. Furthermore, because of their *informational effects*, networks of co-ethnics in destination countries can help migrants reduce uncertainty and mitigate risk, and thereby help them overcome traditional barriers associated with moving. An emphasis on social networks, then, is a critical supplement to extant models of international migration.

Social networks, however, do not help us understand the factors driving initial migration to particular destinations. When choosing among possible destinations, and when comparing these destinations to the country of origin, what factors lead individuals to become migration pioneers? We argue that traditional economic explanations are deficient and need to be complemented with political considerations. Specifically, when comparing among alternative destinations, we posit

that migrants are drawn to countries offering a more attractive political environment that provides a broader set of political rights for non-natives.

We test our arguments about the initiation and perpetuation of international migration using a large panel data set comprised of migration flows from 144 origin into 28 destination countries over the period 1985-2004. To this data set we add covariates that measure a number of political and economic conditions in both origin and destination countries. This allows us to empirically test political and economic hypotheses but also enables us to ascertain the extent to which existing social networks help migrants overcome the costs associated with moving.

Our arguments and evidence are presented in the following six sections. In order to ground our discussion, in the next section we provide a brief set of stylized facts characterizing international migration. In the third section we develop our theoretical argument about the importance of social networks in the perpetuation of migration flows and we discuss how this argument complements traditional explanations. Section four contains a discussion of the variables, sample and empirical methodology used while section five contains our empirical results. In section six we briefly present some survey research findings. These provide micro-level evidence that supports our argument about the importance of social networks and allows us further examine the functions of social ties. Section seven concludes and discusses implications for future research.

2. International Migration: Stylized Facts

The contemporary debate over migration currently taking place in industrial democracies is not without reason. The size and composition of immigration flows has changed over the last one hundred years, with the recent decade now approaching pre-World War I levels (Hatton and Williamson 2006). Here we intend to give some empirical foundation to the discussion that follows. Our source for international migration statistics is the OECD's *International Migration Outlook* (OECD 2006). Continuing the collection of migration statistics initially contained in the Continuous Reporting System on Migration (SOPEMI), the OECD has attempted to harmonize

their migration statistics. This task is complicated by the fact that national migration statistics are collected by local authorities (that is, not by the OECD itself) and these agencies define immigration differently. Germany, for example, counts asylum seekers as immigrants while the Netherlands, Sweden and Denmark do not. Norway counts asylum seekers as migrants once their application for refugee status has been processed.

The differential classification of refugees or asylees notwithstanding, the OECD distinguishes three categories of legal immigrants: (i) spouses, children and close relatives of citizens that enter the country on a permanent basis, (ii) individuals entering for economic and/or business reasons, and (iii) individuals entering to acquire national citizenship (Coppel, Dumont and Visco 2001).

In figure 1 we show gross immigration inflows into selected countries averaged (to eliminate the influence of exogenous shocks) over the years 2000-2004. As has been true historically, the United States stands out as the leading destination for legal international immigration, admitting close to six hundred thousand migrants per year. Other important destinations include Germany, the United Kingdom and Spain.

This snapshot is illustrative of a longer history of differential immigration policies. In figure 2 we show immigration flows into the set of traditional immigration countries: Australia, Canada, New Zealand and the United States. Scholars tend to compare these countries because, as "English speaking settler societies," they represent a distinct model of liberal immigration policies (Freeman 1995) and relatively high levels of tolerance for immigration-related diversity (Pettigrew 1998). These countries have all undergone relatively similar immigration cycles as of 1995 and the sheer magnitude of immigration flows is reflective of the relative size of their respective populations (note that the figures for the USA are in the tens of thousands). The spike in immigration to the US in the early 1990s is a consequence of the 1986 Immigration Reform and Control Act (IRCA) which provided amnesty to illegal aliens who could demonstrate that they had resided in the US since 1982. Once granted amnesty, these immigrants were formally counted in the Immigration and Naturalization Service's official census.

In figures 3 and 4 we show trends in immigration for selected Western and Southern European countries. In both cases there are some interesting developments. First, Germany (again, inflows are measured in the tens of thousands for Germany) is the leading destination for immigrants to Western Europe—a place it has held since 1989 with the collapse of the communist bloc. In addition, the United Kingdom continues to attract immigrants, albeit at a rate lower than that of Germany.

In Southern Europe, Portugal, Turkey and Spain have been the destinations of choice for those immigrating to that region. Spain, especially, has shifted from a country of emigration to a country of immigration. As the Spanish economy has grown and the population aged in recent decades, the need for low-skilled labor has increased. Responding to these employment opportunities, labor migrants from Morocco, China and Latin America have dominated recent flows to Spain (Bodega et al. 1995; Corkill 2001; Baldwin-Edwards 2002).

In addition to the size of immigration flows, composition of the immigrant populations varies considerably across destination countries. In table 1 we document, for a selection of destination countries, the five largest sources of migrants for the 2000-2004 period. Consider Germany, which in the post-war period initially welcomed labor migrants from Italy, Spain, Greece, Turkey, Morocco, Tunisia and Yugoslavia. After the fall of the Iron Curtain, Germany solicited labor from central and Eastern Europe, adding flows of Hungarians and Poles to their immigrant population. Since then, labor migrant flows have become more variegated, originating all over Europe including the former Soviet Union. Germany's recent migration flows reflect this history—labor migration coupled with family unification brings a large number of Poles and Turks, in particular, to Germany each year.

New Zealand, in contrast, traces its immigration roots back over one thousand years to the arrival of Polynesian peoples. The nineteenth century brought colonial migrants from the United Kingdom, and more recent newcomers from India, China, and South Africa. Flows from the last several years are composed of movers from the United Kingdom as the largest single source

country, but are generally dominated by Asian immigrants. Canada, too, has a colonial past which brought Britons and French migrants. Yet, immigration to Canada today is primarily composed of Asian migrants, with large numbers also coming from central Europe. Finally, the United States in recent years is a destination for migrants from Latin America—mainly Mexico—as well as Asia.

3. Explaining International Immigration

The stylized facts in the previous section are just a snapshot of the dynamic processes of international migration. That a majority of origin and destination countries are tied together by colonial or historical linkages is hardly a surprise: we argue that these linkages help perpetuate the flow of international migrants over time. Apart from colonial connections, we ask: What factors lead individuals from one country to move and, once that decision has been made, what influences the choice of destination country?

As mentioned in the introduction, the lion's share of studies asks this question within the context of particular origin and destination countries. Since our goal is to examine this phenomenon generally we begin with a canonical economic model of an individual's decision to migrate (Borjas 2000). Assume that there are two countries where individuals can seek employment: the country of origin, *o*, and a destination country, *d*. The individual, aged *t* years, can earn w_{ot} dollars in the origin and w_{dt} dollars in the destination. In Borjas' model, as in other economic models of migration, there is a cost of moving, *M*, which includes both physical and psychic costs associated with moving. The net gain from migration over a lifetime is given by:

$$\text{Net Gain} = \sum_{k=t}^{T} \frac{w_{dk} - w_{ok}}{(1+r)^{k-t}} - M \qquad (1)$$

The implications of this model are straightforward: an individual migrates to destination *d* if the (discounted) income stream is greater in the destination as compared with the origin and if this difference is large enough to compensate for the costs of moving. As noted in the introduction, this model is useful for policy analysis because it suggests that increasing wages in

the origin country (or decreasing them in the destination) will decrease the pressure to immigrate to a particular destination. It is, however, not particularly useful from a theoretical perspective as it makes a number of pivotal assumptions that are unrealistic.

First, this model assumes that migrants have sufficient information about the economic opportunities not just to compare the origin and a particular destination, but to compare across a large set of alternative destinations. And, even if accurate information is available, this model assumes that the costs—language, training, customs—associated with being successful in a new job environment are equal to zero. Second, the model ignores other factors that "pull" migrants to various destinations. If expected income is higher in two destinations (as compared with the origin), migrants can be pulled to various destinations by political and social opportunities—the right to vote, the opportunity for education, the ability to get health care, etc. Third, the model in equation (1) ignores "push" factors—characteristics of the origin country—such as limitations on freedom or the occurrence of civil conflict. These may make emigration a very attractive option, but also may make it difficult or impossible to leave.

Finally, this model assumes that moving, represented by the cost parameter M, is always negatively signed. Certainly distance between the origin and destination countries has a negative effect on the net gain from migration. If we take seriously the idea of the expected net gains from migration taken over the life of a potential immigrant, it is important to evaluate how informational factors influence the migration decision. Consider the decision faced by a native Ecuadorian deciding whether to migrate to the United States, Germany or Spain. Economic opportunities, all things equal, are likely greater in the US and Germany than they are in Spain and, Germany and Spain are further away from Ecuador than the US. However, the social costs of migrating to Spain are far lower, not just because of the use of a common language, but because of the existence of a large community of co-ethnics. The existence of a co-ethnic community in Spain helps decrease the transaction and information costs associated with moving,

provides benefits by virtue of group membership, and creates additional linkages to potential migrants living in Ecuador.

The Role of Social Capital

Our focus on co-ethnic networks as key factors in migration processes is rooted in the more general literature on social capital. Theoretically, the importance and durability of migrant networks are rooted in the social capital that they are expected to produce. In general, social network theorists posit that migrant networks promote international migration by providing information and support to would-be migrants, constituting a form of social capital that decreases risk, and thereby lowering transaction costs (Portes 1995; Portes and Borocz 1989; Massey 1999). In terms of its effects on migrants, social capital can be conceptualized as an individual resource created through interpersonal networking and routine cooperation (Coleman 1988) that a migrant can leverage to minimize the costs of moving and maximize his human capital upon reaching the destination.[1] Social capital can also be viewed as a set of aggregate resources of a transnational migrant system with positive externalities of support and information available to members of a particular community. Therefore, social capital can facilitate the migration process and influence migratory flow direction—once migrants have made the decision to leave, the relative levels of social capital available to them in different destinations should factor into the decision of where to go.

The importance of migrant networks in the provision of support and transmission of information—and the associated reduction of moving costs—has been documented in a number of case studies. Work in this tradition has investigated how networks of co-ethnics in particular destination countries facilitate migration in general (Massey et al. 1993; Faist 2000), help immigrants find jobs and housing (Baily and Waldinger 1991; Sassen 1995; Light et al. 1999),

[1] Sociologist Pierre Bourdieu's definition is: "Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition (Bourdieu 1985, p. 248)." Social capital is not always a positive resource for migrants. For discussions of the down-side of social capital, see Portes and Landolt (1996).

and integrate immigrants socially and politically into the host society (Boyd 1989; Fong and Ooka 1996; Hagan 1998). In their study of the Great Black Migration in the United States, Carrington, Detragiache and Vishwanath (1996) demonstrate both formally and empirically that existing migrant networks of African Americans decreased moving costs for subsequent migrants via two main mechanisms. First, migrants provided friends and family in the South with employment and housing information.[2] Second, previous migrants established formal and informal institutions that lessened the costs of adapting to a new environment. These studies highlight the importance of migrant networks for migration, and also document the support and information resources they make available to later movers.

Focusing on migrant social networks provides leverage on three questions that have received limited attention in prior scholarship. First, quantitatively speaking, how important are co-ethnic networks as a determinant of international migration when compared with factors such as distance, employment, voting rights, etc.? Second, what factors influence immigration in the absence of social networks? That is, are the variables that influence streams of migrants similar or different from those that lead pioneers to leave country *o* for country *d*?

The third question is related to the second: to what extent does the size of a co-ethnic community affect the relative influence of other variables? Furthermore, does a small population of co-ethnics operate in the same way as a large network to condition migration flows? These queries speak to a broader theoretical debate over the link between social networks and social capital. Social capital theorists are divided over the type of network that produces social capital. Using Granovetter's (1974) distinction between strong, dense ("friends and family") ties and weak, porous ("friends of friends") links among individuals, Coleman (1988) and Loury (1977) emphasize the importance of strong ties for generating social capital. Granovetter (1973) and Burt (1992), on the other hand, argue that social capital is born of structural holes, a characteristic

[2] In related studies Marks (1989) and Grossman (1989) show how letters passed from migrants back to family members and friends documented both employment and housing conditions.

of weak network ties. An observation by Boissevian (1974) connects this back to network size, noting that the larger the network the less likely it is that any one member personally knows any other, and therefore the less dense it is.

The quantitative literature on migration flows does not acknowledge these alternate perspectives on social networks and social capital generation. This is a major weakness, considering the theoretical significance of social capital as a critical resource for migrants. Therefore, we set up our migration flow analysis to test the impact of the presence and the size of co-ethnic stock in general, then test how different magnitudes of co-ethnic migrant stock influence the other important explanatory factors.

This focus on migrant networks, however, should not be taken to imply that other determinants of international migration are unimportant. Rather, our argument is in the tradition of a broader literature on social networks that recognizes the influence of social factors on economic calculations (e.g., Granovetter 1985; Granovetter and Swedberg 1992). The social structures in which people—in this case migrants—are embedded instruct their selection of goals and preferences, regulate the means through which they pursue their aims, and constrain their behavior upon achieving certain ends (Portes 1995, Portes and Sennesbrenner 1989). By conditioning other influences, migrant social networks promote, shape and direct international migration.

What Drives Pioneer Migrants?

While we emphasize social networks we understand that this focus begs the question of what leads individuals—the pioneers—to initially move to a particular destination. At the macro-level we can divide these factors into three groups: those that link home countries (which we refer to as countries of origin) to destination countries; those that are unique to destination countries (pull factors); and those that are unique to origin countries (push factors). Scholars studying cross-national trade (e.g., Rose 2001), foreign direct investment (e.g., Loungani, Mody and Razin 2002), and equity flows (e.g., Eichengreen and Luengnaruemitchai 2006) ground their analyses in

"gravity equations." In physics the law of gravity states that the force of gravity between two objects is proportional to the masses of the two objects divided by the squared distance between them. As applied to international commodity and capital movements, gravity equations stipulate that cross-national economic flows are a function of the relative size of the two countries as well as the cost—captured by distance—associated with moving commodities or capital from country to country.

While the use of gravity equations is a relatively new phenomenon in international economics (Baldwin and Taglioni 2006), it has long history when it comes to the study of migration. In one of the first contributions to the science of migration, the geographer E.G. Ravenstein highlighted the importance that distance plays in the decision over where to move:

> We have already proved that the great body of our migrants only proceed a short distance, and that there takes place consequently a universal shifting or displacement of the population, which produced "currents of migration" setting in the direction of the great centres of commerce and industry which absorb the migrants.
>
> In forming an estimate of this displacement we must take into account the number of natives of each country which furnishes the migrants, as also the population of the towns or districts which absorb them. (Ravenstein 1885).

As Greenwood and Hunt (2003) observe, Ravenstein's first "law of migration" contains three components: (i) distance deters migration; (ii) migrants are attracted by economically active areas; and (iii) the relative size of the origin and destination influence migration flows.

The reduction in transportation costs associated with advances in technology have decreased the physical costs associated with migration, though it is still the case that immigration is likely between countries that are geographically closer. Physical distance, however, is not the only way to capture the relationship between origin and destination countries. Gravity models of both trade and capital hold that cross-country linkages based on common language, and colonial origin help decrease the transaction costs inherent in international transactions.

The same can be said of migration decisions. Even if there is no pre-existing migrant community in a particular destination, it is likely that migration flows will be larger if a pair of countries shares a common language as this reduces a barrier to entry and increases the likelihood

that a migrant will be able to secure employment, housing, etc. McManus et al. (1983), Chiswick and Miller (1995), and Lazear (1995), among others, have documented the economic benefits of language fluency for immigrants. A similar argument can be made for countries that share a colonial history. Individuals in countries with a shared history—whether a colony or a colonizer—will have better information about the institutions, culture and economy of the other country and, subsequently, will be more likely to migrate to them. This effect is not unambiguous as Riley et al. (2002) and Sharpe (2005) find that all colonial relationships are not alike for integrating immigrants into a destination society.

Destination Country Characteristics

In addition to the role that country linkages play in affecting migration, the decision to migrate to a particular destination is influenced by some of its characteristics. A large body of literature, as we discussed in the beginning of this section, argues that migration decisions are driven by economic considerations. Individuals, according to this view, compare the expected wage in destination countries with their (expected) wage in their country of origin. George Borjas put it succinctly:

> Neo-classical theory assumes that individuals maximize their utility: individuals 'search' for the country of residence that maximizes their well-being…In a sense, competing countries make 'migration offers' rom which individuals compare and choose. The information gathered in this marketplace leads many individuals to conclude that it is 'profitable' to remain in their birthplace…Conversely, other individuals conclude that they are better off in some other country….[t]his approach leads to a clear—and empirically testable—categorization of the types of immigrant flows that arise in a world where individuals search for the 'best' country (Borjas 1989: 461).

Economic opportunities, however, are not the only characteristic of destination countries that influence immigration. Migrants, especially when choosing among advanced industrial economies, also consider welfare benefits and political rights.

The welfare magnet hypothesis posits that migrants, once they have made the decision to leave home, will seek out destinations that offer them the heftiest bundle of social services. The idea is that to decrease risk, migrants will move to societies where economic hardship is most

fully alleviated by the government. Originally formulated with respect to interstate migration within the United States, this thesis has been tested in relation to intra-national migration as well as international movement. To date, the reported results have been mixed.

In the U.S. context, some researchers have found evidence that interstate migration in the United States is motivated in part by an interest in extracting better benefits from the government (Borjas 1998; Bailey 2005), while others have reported disconfirming results (Allard and Danziger 2000). Looking at where immigrants to the U.S. settle, Zavodny (1997) argues that rather than a state's welfare provision, its stock of migrant networks influences immigration to particular locales. Studies of international migration dynamics also offer a mixed bag of results. Some findings substantiate the welfare magnet hypothesis for migrants to Western Europe (Boeri 2002; Gallardo-Sejas 2006). Others offer only partial evidence of welfare migration to OECD countries—contingent on model specifications (Pederson, Pytlikova and Smith 2003). In our analysis, we test the welfare magnet hypothesis across OECD destinations.

In addition to striving to maximize their human, social and even language capital, do migrants seek to build meaningful political capital in their new environment? All else equal, do migrants choose destinations where they will have the best opportunities for political incorporation? Immigration scholars have closely examined the relationship between immigration and political rights. Rather than considering political rights as a draw for migrants, however, the focus has been on how foreign influxes affect citizenship policies and regimes (Joppke 1999), or on how traditions of political belonging influence immigration policies (Castles and Davidson 2000). Recent debates in many advanced democracies about citizenship policies and about non-citizen political rights have prompted consideration of new political models for immigrant participation (Messina 2005). For instance, as countries struggle to better incorporate immigrants and their future generations into domestic society, some have debated making citizenship easier to obtain, or offering local voting rights for non-citizen residents.

In our sample of destination countries over two decades, there is variation in these two important aspects of immigrant political rights. First, two general types of citizenship regime are represented: *jus solis,* which is rooted in territorial claims and is generally the best avenue for migrants to gain access to citizenship, and *jus sanguinis*, a blood or ethnicity based conditionality which is less open to immigrant incorporation (Brubaker 1992; Howard 2005).

Second, the countries in our sample of destinations offer different voting rights to residents who are not citizens. New Zealand, for instance, has a long tradition of offering national voting rights to alien residents, and many European countries, including Sweden and Ireland, allow non-citizens to vote in municipal elections. In contrast, Austria, France and Switzerland do not extend any such rights. Over the period of our analysis, things have changed in some countries. For instance, in recent years Luxembourg and Portugal have extended municipal voting rights to resident aliens. Our indicator of non-citizen voting rights is a dichotomous measure denoting whether (1) or not (0) a country allows for any type of non-citizen voting rights in a given year. If international migrants are driven by considerations of political rights, policies associated with a *jus solis* citizenship regime and voting rights for non-citizens should serve as incentives, or pull factors.

Origin Country Characteristics

While social networks and destination attributes influence a migrant's choice of where to migrate, characteristics associated with the country of origin may also influence a decision to stay or go. Domestic strife, whether in the form of human rights abuse, absence of democratic freedoms or civil war, should decrease the likelihood of out-migration. This may be due to physical or legal restraints on movement. It may also be due to a lack of knowledge of migratory alternatives. Social disorder may limit the amount of information a potential emigrant receives, as communication with the outside world can become difficult or impossible (Gilbert and Koser 2006). Of course, under dire domestic circumstances in the country of origin, the most likely

avenue for moving to a new country would be the asylum-seeking process. In such cases, migrants will generally not show up in our analysis due to our restricted focus on labor migration.

4. Empirics: Model, Measures and Methodology

We test the impact of co-ethnic migrant networks and other factors on international migration using a panel data set of migrant flows from 128 origin countries to 26 destination countries over the period 1985-2004. To fix ideas, we estimate a regression of the following form:

$$\begin{aligned}\log(\text{Migration Flow})_{odt} &= \beta_1 \text{Immigrant Stock}_{odt-1} + \beta_2 \text{Distance}_{od} + \beta_3 \text{Border}_{od} \\ &+ \beta_4 \text{Common Language}_{od} + \beta_5 \text{Colonial Heritage}_{od} + \beta_6 \text{Relative Wage}_{odt-1} \\ &+ \beta_7 \text{P[Employment]}_{dt-1} + \beta_8 \text{Welfare State}_{dt-1} + \beta_9 \text{Voting Rights}_{dt-1} + \beta_{10} \textit{Jus Solis}_{dt-1} \\ &+ \beta_{11} \text{Age Structure}_{ot-1} + \beta_{12} \text{Human Rights}_{ot-1} + \beta_{13} \text{Democracy}_{ot-1} + \beta_{14} \text{Civil War}_{ot-1} \\ &+ \beta_{15} \log(\text{Population})_{ot-1} + \delta \sum \text{Destination Dummies} + \gamma \sum \text{Year Dummies} + \varepsilon_{dot}\end{aligned} \quad (2)$$

The dependent variable, migration flow, measures the flow of individuals between a country of origin (*o*) and a destination (*d*) each year (*t*). We standardize migration flows by (thousands of) origin country population and then take the logarithm. The source for our immigration flow data is the OECD's *International Migration Outlook* (OECD 2006). As discussed in section 2, countries vary with regard to how they count migrants. We control for these cross-country differences by including a set of destination specific dummy variables. The use of these destination dummy variables also helps control of unmeasured destination specific factors that may influence immigrant decisions.

We measure the existence and size of co-ethnic networks using data from the OECD as well. For each year we measure the size of a co-ethnic network as the proportion of the stock of foreign born from country *o* residing in country *d* to the total size of country *o*'s population. Like migration flow, this variable is logarithmically transformed.

Four other variables are used to identify geographic and historical factors that link origin to destination countries: distance, common border, common language, and colonial heritage. All of these variables follow standard use in other gravity models and are provided by Mayer and

Zignago (2006). Distance is the great circle distance in kilometers between country capitals, common border is coded as 1 if two countries share a border, common language is coded as 1 if the same language is spoken by at least 9% of the population, and colonial heritage is coded 1 if the two countries were ever in a colonial relationship.

Economic opportunities in the destination country are measured using two variables. First, we create a ratio of origin to destination country real gross domestic product per worker. If gdp per worker is higher (lower) in the origin than in the destination country then we expect greater (lesser) migration. Data for real gdp per worker comes from the Penn World Table (PWT) version 6.2. Second, we measure the probability that an immigrant will find work in the destination country as 1 minus the unemployment rate. Data for the unemployment rate comes from the World Bank's World Development Indicators (WDI) on CD-ROM (2006 edition).

Our measure of a destination country's welfare policies is captured by per capita government consumption as a percentage of gross domestic product which we obtain from the PWT. The two variables measuring political rights—the right to vote in any election and citizenship policy based on *jus solis*—were collected by the authors and are based on national and secondary sources.

For origin country characteristics we use WDI data to measure the age structure of the population as the percentage of the population aged between 16 and 64. Democracy in the origin country is measured using the POLITY data set from which we use the POLITY2 variable measuring the country's democracy score minus its autocracy score. Our measure of human rights comes from the State Department's categorization of human rights practices across countries. Where countries are not reported by the State Department (e.g., the United States), we substitute the coding based on Amnesty International's reports. This variable ranges between one and five with higher values indicating greater protection for human rights. Finally, we include a variable that measures the magnitude of a civil war in the origin country. This variable is from the Correlates of War project.

Our empirical model also includes two additional controls. Because the dependent variable is the emigration rate out of origin *o* into destination *d*, we control for the size of the population in origin *o* as larger countries are likely to have relatively smaller emigration rates as measured in proportion to their total population. We also include a set of year dummy variables to account for systematic and cyclical processes at the global level that may influence international migration.

Methodology

The above discussion of migrant networks as a key determinant of international migration flows draws our attention to three main questions. First, to what extent do these social networks influence migration flows when controlling for a battery of other plausible influences? Second, what factors drive immigration to a particular destination in the absence of a co-ethnic migrant network? And third, do social networks help migrants overcome influences that tend to decrease migration rates and does that impact increase with the size of the co-ethnic community in the destination country?

Answering these questions is straightforward. To answer question 1 we use linear regression to estimate equation 1. Questions 2 and 3 require the use of an interactive model and we interact all the variables in equation 1 with the measure of migrant stock (measured at time *t*-1). To answer question 2 we constrain migrant stock and the interactions to be equal to zero and to answer question 3 we constrain migrant stock to be equal to a number of positive values.

We use the generalized estimating equation (GEE) framework to estimate our empirical models.[3] We choose this statistical strategy because the panel nature of our dataset contains country-pair observations that are repeatedly observed over a 20 year period. This data structure gives rise to an error term that is likely serially correlated and heteroscedastic. Consequently, we specify that the error term follows a non-stationary process of order 1 and report standard errors that are clustered by country-pair. In addition, as we discuss above, we also include a set of year

[3] The GEE framework was introduced by Zegler and Liang (1986). See Zorn (2001) and Ballinger (2004) for accessible discussions.

and destination dummy variables that help account for unmeasured temporal and cross-sectional stationary (of order 1) error term. In addition to the variables discussed above we include both year and destination dummy variables.

5. Empirical Results

In the first column of table 2 we report the results of estimating our GEE model of migration flows. Beginning with the variables that capture the relationship between country pairs, we note that our measure of migrant stock, geographic distance, common language and income ratio are all statistically significant and in the expected direction. Shared border and colonial relationship are not statistically significant at even the 1% level which is not entirely surprising: distance and shared border are highly correlated (dropping distance leads shared border to become significant) as are common language and colonial relationship (dropping common language leads colonial relationship to become significant).

For this global sample of migrant flows we find statistical support for the argument that migrant social networks play an important role in driving subsequent migration. Holding all other variables at their means, increasing the stock of co-ethnics from country *o* in country *d* by ten percent increases subsequent immigration from country *o* into country *d* by one-tenth of one percent. The results in the top panel of table 1 also provide support for a modified-gravity model of international migration. As in the case of bilateral trade and capital flows, longer distances between countries decreases migrant flows while migration flows are larger between countries that share a common language. We also find that economic incentives have the predicted influence when it comes to the direction of migration: increasing the ratio of origin to destination country income decreases migration flows.

Characteristics of destination countries also play a significant role in influencing the direction of global migration flows. All else equal, immigrants flow into countries where there is a higher probability of employment, where there is greater government expenditures, and where they will have an opportunity to express themselves politically through the act of voting. Similarly,

migration is also responsive to conditions in the country of origin. As in prior studies, we find that migration rates are higher from countries that have larger active populations (as measured by the age ratio) and that are democracies (as measured by the Polity Score). Conversely, migration rates are lower when the destination country has poor human rights practices and when the country is experiencing civil war.

It is important to emphasize that these results are unconditional; that is, the parameter estimate for any particular variable is understood to be the impact of that variable holding all other variables at their means. We argue, however, that existing migrant networks play a powerful role in conditioning subsequent immigration flows. Consequently we re-estimate equation 1 and interact the lagged value of migrant stock—our measure of migrant networks—with all of the other independent variables. This strategy not only allows us to understand the extent to which migrant networks decrease the constraints to immigration, but it also permits us to examine the factors that lead to initial flows of migrants.

The results from our interactive model are contained in the second set of columns in table 1. In the first column we set existing migrant stock equal to zero; the consequence is that all of the interactive terms are also equal to zero and we are left with a set of parameter estimates that can be interpreted as the impact of the variable on migration flows given zero migrant stock at time t-1. Given no pre-existing migrant network, what factors lead to migration from country *o* to country *d*? Consistent with the expectations of the gravity model, colonial heritage leads to an initial flow of migrants while distance reduces it. None of the other country-pair characteristics are statistically significant.

Turning our attention to the destination and origin characteristics we find that in the absence of migrant networks, migrants are drawn to countries that offer opportunities for employment, that spend on social welfare programs, and that afford immigrants political rights. Of particular importance we note that the variables capturing political rights—both the right to vote and the right to citizenship—play a significant substantive role in drawing migrants. Offering voting

rights increases migration flows by one percent and the provision of citizenship increases migration flows by five percent. Origin characteristics also matter in the absence of migrant networks. As in the non-interactive model, we find that political conditions—notably political democracy and human rights protection—matter in the absence of migrant networks. This is hardly surprising as these characteristics provide opportunities for individuals to move from location to location.

In the second, third and fourth columns we increase the size of the existing migrant stock from country *o* residing in country *d* from 1.05 per thousand (or 1050 per million) to 1.28 (or 1280 per million). Increasing the migrant stock from zero to a very low level (1.05 per thousand), we find that both the colonial relationship and common language variables are statistically significant. Destination and origin characteristics that were significant before remain significant as well. Moving right across the columns we see that a larger migrant social network increasingly helps migrants overcome constraints on mobility. When the existing migrant stock is 1.28 per thousand we find that traditional gravity variables actually serve to increase, rather than decrease, migration flows. In the far right column of table 1 the conditional coefficient on distance is now statistically significant and positive, indicating that migrant networks lead to larger flows of migration from farther away. Likewise we find that large migrant networks provide an incentive for migrants to take larger risks when deciding whether to leave their country of origin. The parameter estimates on human rights and on civil war become positive and statistically significant when existing migrant stock is set at 1.05 per thousand.

These results demonstrate the importance of social networks in reducing the costs and risks associated with international migration. Our findings suggest that migrant networks – large and small – are influential in migration decisions. We find that the existence of a community of co-ethnics, even a small one, has a positive impact on immigrant flows. However, as networks grow, their impact strengthens, suggesting that larger, weak networks act as a stronger draw than small, dense groups. Relating this to the debate over whether strong or weak ties are more

efficient in generating the resources predicted by social capital theories, we find that larger networks produce greater resources for co-ethnics. This supports the aggregate-level argument that expansive networks dominated by weak ties are relatively more effective than strong ties in generating social capital. Thinking about this from the perspective of potential migrants, does this mean that "friends of friends" ties are more effective than "family and friends" connections in directing migration flows? In the micro-level analysis below, we investigate the resources that different types of social connections offer to migrants.

Our results, however, go further than specifying the independent effects of migrant networks. Not only are they important in and of themselves, but they also influence the way other predictors operate in the model. Based on the network's size, it will have different effects on other explanatory factors. That is, as migrant networks grow, they change the decision making contexts for would-be migrants, prompting different considerations. In particular, the larger the network, the more likely it is that migrants will travel long distances to a new home, and brave personal harm in escaping dangerous situations in their countries of origin. This interaction effect is rooted in the risk-reduction function of social networks.

Furthermore, a look across the columns in table 2 reveals that the coefficients for destination country characteristics grow and gain significance, meaning the relationships strengthen as the co-ethnic population rises. We argue that this trend is a function of the information effect of migrant networks—having interpersonal links to the destination gives potential migrants access to news about employment, social services and political rights. The effects of social networks on the calculations of would-be migrants are powerful and multi-faceted—understanding them is the key to gaining insight into migration.

Robustness

We evaluate the robustness of our results in three ways. Given that our sample of destination countries is heterogeneous with regard to their immigration histories, cultures and institutions, we first re-estimate the results from table 2 on two different sub-samples. In table 3 we restrict the

destinations to the set of traditional immigration countries (Australia, Canada, New Zealand and the United States). Note that in this restricted sample we do not provide parameter estimates for either citizenship at birth or voting rights. All of these destination countries have some form of *jus solis* citizenship, and each allows some measure of electoral participation in at least some areas for resident aliens.

Even with this restricted sample the stock of migrants remains statistically significant and the parameter estimate has almost tripled as compared with the global sample. This is striking as a number of the other variables—income ratio, probability of employment and almost all of the origin characteristics—are statistically insignificant in the non-interactive model. With regard to the factors attracting pioneers, we find that initial migration is less likely as distance increases and more likely when two countries share either a common border or a common language. Initial immigrants are also attracted by employment opportunities and by higher per-capita social expenditures.

In table 4 we restrict our attention to the countries of the EU 15. These countries, in contrast, have less experience with modern immigration. And some, Portugal and Spain for instance, are considerably newer to the immigrant-receiving role than others, such as France and the United Kingdom. These differences show up in our parameter estimates. While the stock of immigrants remains both substantively and statistically significant, the same cannot be said of all other variables. In the non-interactive model we still find that distance, colonial relationships and relative wages matter as well as the probability of employment and citizenship rights in the destination country and one measure of political rights in the origin country. So far as pioneer immigrants are concerned, we find no effect of distance but find that shared border and colonial origin are statistically significant though in opposite directions. Viewed historically this is reasonable as the destination countries are relatively close geographically speaking (which accounts for the lack of significance on distance) and have borders that reflect cultural, political and, in some cases, religious differences. Of particular interest is that pioneer immigrants are

drawn to countries that provide employment opportunities and where political rights are afforded to the immigrant community.

Our second robustness check is methodological: given the truncated nature of the dependent variable we substituted a tobit model for our GEE specification. [4] The results from the tobit model were broadly supportive of—and in many cases stronger than—the results we report. We prefer the GEE specification as the calculation of marginal and conditional effects is more straightforward.

For our final robustness check, we tested the robustness of our results to the use of alternative data sources. For example, we used a measure of real gross domestic product per worker from the World Bank instead of the measure from the Penn World Tables and we did likewise for measures of government expenditures. We substituted Amnesty International's coding of human rights practices for the State Department's and we compared different measures of democracy from the POLITY data set. While the use of alternative measures did affect the sample size and the estimated coefficients, they did not change the results of the hypotheses tests we report or the substantive interpretations of the interactions.

6. Social Networks and Migration: Micro Evidence

The migration flow analyses above specify the pull strength of migrant networks.[5] In generalizeable terms, we can see how the existence and size of a network influences migration decisions on a mass scale. Because these aggregate relationships depend on thousands of individual decisions by migrants, we also investigate some micro-level trends as they relate to social networks. In this section we offer descriptive data from immigrant surveys that underscore the importance of co-ethnic populations in destination countries. We then move the analysis of

[4] To avoid a proliferation of tables we summarize the results of our robustness exercises rather than include the results. These additional results are available from the authors upon request.
[5] It is beyond the scope of this paper to consider the effects of social networks in the country of origin. See Faist (2000) for a more comprehensive consideration of the push and pull effects of network ties.

migrant networks forward by testing the role of different types of migrants' social ties in transmitting information and offering support to future migrants to Germany.

Three recent national surveys of immigrants, New Zealand's Longitudinal Immigration Survey (LisNZ), the Longitudinal Survey of Immigrants to Canada (LSIC), and the German Socio-Economic Panel survey (GSOEP), offer information on the relevance of networks for destination selection and integration into their host society.

The LisNZ pilot study interviews recent immigrants to New Zealand in 2001 and 2002. Approximately one-third of respondents reports that their move was predominantly motivated by kinship ties. Additional reasons include: the lifestyle, education, low crime rates, employment opportunities, political freedoms, and economic conditions. The main sources of pre–migratory information about New Zealand were friends or relatives living there, followed by friends or relatives not living in New Zealand, immigrant consultants, New Zealand government bureaus, prospective employers, and finally community or ethnic groups in New Zealand. Among all respondents, 73 percent report having known somebody in New Zealand prior to migrating.

In choosing a place to live in New Zealand, immigrants mainly chose locales based on the desire to live with family (41 percent) or to live near family/friends (25 percent). After considerations of access to education, neighborhood quality and affordability, some respondents expressed a preference to live near others of the same ethnic group or religion. These results emphasize the impact of social networks on migration to New Zealand.

Shifting to the Canadian survey, the LSIC asks respondents who moved to Canada between October 2000 and September 2001 why they settled in their Census Metropolitan Area (CMA) of residence. The main draws are related to social ties, followed by consideration of job opportunities. Over 40 percent of newcomers state that their location choice was driven by the presence of a close family member. Other key considerations include joining friends, job prospects and education-related criteria, and housing factors. In the three largest cities for

immigration, Toronto, Vancouver and Montreal, the number one pull factor was social ties. The second most important consideration varies across these destinations.

The two most immediate needs of new arrivals are housing and employment. The LSIC finds that over 80 percent of immigrants surveyed had made housing arrangements before arriving in Canada. Nearly 90 percent of people with relatives or friends already in the country had made prior arrangements for accommodations. Of those migrants without personal contacts in Canada, 62 percent already had housing lined up before they arrived. People who had to find housing upon arrival used a number of different strategies: talking to friends or relations, consulting major newspapers, visiting neighborhoods, enlisting realtors, and looking online or in ethnic newspapers. Though most respondents had no difficulties in finding housing, nearly 40 percent reported problems. These included high housing prices, a need for guarantors and cosigners, and unfamiliarity with the town or city.[6]

Access to the Canadian labor market also posed some problems for immigrants. The main impediments to employment for job-seekers were: inexperience in the Canadian labor market, inapplicability of foreign credentials, lack of language skills, dearth of available jobs, and absence of social networks in the job market. In general, social ties were instrumental in bringing most of the migrant respondents to Canada, drawing them to specific locales within the country, and helping them settle into their new society. Canada's long history of immigration has enabled many large migrant networks to form. As such, Canada is a destination where most migrants find that the potential costs and difficulties of migration are mitigated through social connections.

Moving on to German survey data, the GSOEP is a national longitudinal survey of Germany's residents that over-samples immigrants over twenty years (1984 to present). The sample we use here is the 1500 non-refugee foreign-born respondents who moved from 61 countries to Germany during the time period that coincides with our most of our aggregate

[6] Source: Longitudinal Study of Immigrations to Canada, 2001, Statistics Canada.

analysis (1985-2001).[7] When asked why they moved to Germany, the predominant answer is to join family members, for the freedoms provided, to make money, and to escape poverty in the respondent's country of origin. Before moving to Germany, 63 percent of respondents had family in Germany. In Germany, as well, social networks are the dominant factor in migrants' decision making.

In discussing the mechanisms through which social ties influence migration decisions, thereby channeling migration flows, we have emphasized two main processes: provision of support and transmission of information. Both of these functions can effectively decrease the risk and cost of migration for people with ties to migrant networks. Support offered by networks can range from outright monetary support, to practical assistance to psychological comfort. Information that flows through social channels lets would-be migrants know that they are getting into, and helps recent arrivals survive in their new environment. In particular, networks provide information about the labor market and about housing.

Many ethnographic and sociological studies have traced the effects of networks on immigrant behavior. Using a sample of Mexican immigrants to the United States, Massey et al. (1987) show that almost forty percent of them found jobs through friends or relatives.[8] Looking at migrant communities residing in particular cities, Joly (1987), Josephides (1987), Hily and Poinard (1987), and Wilpert (1988) found that co-ethnic ties influence employment opportunities for, respectively, Pakistanis living in London, Greek Cypriots living in Britain, Portuguese living in France, and Turks living in Germany.[9]

[7] Ethnic German migrants to Germany are not included in the sample used here.
[8] Donato et al (1992) report that family connections increased both the wage rate and number of hours worked for Mexican immigrants. Greenwell et al (1997) reached a similar conclusion for Salvadorean and Filipino immigrants residing in Los Angeles.
[9] There are scores of similar studies. See Massey et al (1998) for a review.

It is not disputed that social ties offer specific resources to migrants, and that these resources include support and information.[10] However, these accepted claims about how migrant networks operate have not been put to empirical test. Do all social ties function in the same way? The social ties literature discussed above denotes different types of migrant connections that range from close personal ties to large migrant networks, but it is unclear whether they all operate the same way to provide benefits. Indeed, our migration models above appear to make a case for the strength of weak network ties in drawing migrants to particular destinations. Yet, interestingly, the migrant survey results reviewed above make a compelling case for the importance of family ties in reducing the risks of moving to a new environment. To sort this out, we use survey data from the GSOEP immigrant sample to further investigate the roles of social networks—focusing on the critical task of finding suitable housing. Specifically, we are looking to see whether "friends and family" ties or large migrant networks are more useful to migrants in locating accommodations.

The GSOEP asks respondents whether or not the housing situation in Germany met the expectations they held prior to migrating. The possible responses are: worse than expected, as expected, and better than expected. This survey item reveals two key aspects of housing market experiences: whether or not the individual had an accurate picture of the housing scene before moving to Germany, and how easy it was to find housing (relative to expectations). We explore both dimensions, as the first reveals the accuracy of the information a migrant held before moving, and the second speaks to the migrant's own experience with the housing market. We present the results in table 6.

In the first model, we look at the information aspect of this issue. We code the responses with 1 representing immigrants with good preliminary housing information, and 0 for those with inaccurate expectations. Our key independent variables of interest are two varieties of pre-

[10] There is variation, of course, at the individual level when it comes to access to such resources. See Hagan (1998) for a discussion a gendered understanding of this inequality.

migration social ties to Germany: size of the migrant's co-ethnic stock in Germany in the year of migration, and family members already living in Germany. Control variables are gender, age at time of migration, distance between country of origin and Germany, colonial ties between origin and Germany (which in this sample turns out to be a dummy variable for Austrians), and whether or not the origin country and Germany share a common language.[11] A dummy variable for each year of migration for this sample (1985-2001) is included in the full model but not displayed here. The second model uses the same predictor variables to explain the ease with which the respondent found housing in Germany—relative to his or her prior expectations. Here, the dependent variable is coded to increase as ease of finding housing rises from more difficult than expected (0), to as expected (1), to easier than expected (2). The model is an ordered logit to reflect this categorization.

The results from the first model reveal the strong, significant effect of the size of the co-ethnic stock on having good information about Germany's housing market prior to arrival. Family ties, on the other hand, are not influential here, nor are the control variables. These results suggest that, with respect to the transmission of information on housing, a large co-ethnic network operates more effectively than a family connection in the destination country. In light of the literature on social networks discussed above, this makes sense. Larger, more porous networks should function more effectively to collect and provide information (Faist 2000).

The second model, in contrast, demonstrates the important role of family ties in actually finding housing. Having family already established in Germany increases the likelihood that locating a place to live will be easier than expected. Gender, age and colonial ties also affect the relative ease with which an individual finds housing: older male Austrians are in general pleasantly surprised with their success in the real estate arena. On the other hand, size of migrant stock has no significant effect here. This model suggests that the support function of migrant ties

[11] Though the colonial variable and language variable are correlated, removal of each from the model does not substantively influence the effects of the other.

is dominated by kinship relations rather than large migrant networks. For immigrants to Germany, actual assistance is the benefit provide by personal ties, but not via migrant stock.

This is an important pair of findings. The main support and informational functions of migrant networks appear to stem from different types of social ties. Weak ties are more crucial for information, and strong ties provide support. Both are essential for migration, as each one helps to reduce the risks of moving to a foreign country. This offers important insight into our macro-level analysis above. As the migrant network indicator in those models is the stock of co-ethnics, the key mechanism is likely information transmission, rather than provision of support. The larger and more porous the migrant network, the more information it can offer. This can reduce the perceived risks of migration—even when a move involves crossing long distances or moving through dangerous channels.

7. Discussion and Conclusion

International migration is a process that has far reaching consequences. To date we have little systematic knowledge of its causes. Massey and his colleagues (1998) suggest that this is due, at least in part, to the differing economic and social contexts within which migration occurs. The fact that migration has been treated as a phenomenon unique to a particular time, place and people means that the conclusions of academic studies are often not broadly generalizable. Our paper is an attempt to overcome this criticism. We do so by developing hypotheses about the importance of migrant networks for migration flows and by evaluating the impact of historical, political and economic arguments on pioneer migrants. By testing these various factors using a large panel data set of migration flows, we can offer some general conclusions.

Our results suggest that attempts to decrease legal immigration into OECD countries by increasing economic development in origin countries would only be effective for EU-15 destination countries, and only when the co-ethnic community is small. We find no evidence—for either the global or the traditional immigration countries sample—that legal immigrants are motivated by their evaluation of relative wages. That said, we do find that migrants are drawn to

destinations that offer a higher probability of employment and that provide basic political rights for immigrants and their children. This suggests that in addition to seeking to improve their work prospects, migrants are interested in political inclusion and incorporation—key aspects of integrating into their new societies. Most importantly we find that a stock of immigrants—even a minimal stock in some cases—is sufficient to attract future immigrants and that an established community of co-ethnics helps immigrants to overcome the costs associated with migration. Our emphasis on the information transmission effect of migrant networks is supported by micro-level analysis of housing market expectations.

While our focus has been on the causes of international migration, the strength of social networks in determining migration flows has some interesting implications for future research. International migration, while part of the overall process of globalization, helps facilitate commodity and capital flows between countries. With regard to trade, immigrants residing in a destination country are a set of consumers that may demand imports from their country of origin. Immigrants may also have knowledge of commodity preferences for their country of origin and may have origin country business contacts (Globerman 2001). In a recent study of US members of the World Trade Centers Association, Rauch and Watson found that the utilization of networks linking the origin to the destination country increased the level of international transactions by approximately 1.25% for each 10% increase in the stock of migrants in the US (Rauch and Watson 2002).

Likewise, international capital flows are facilitated by the existence of migrant social networks. Not only is foreign direct and portfolio investment facilitated by personal ties (Bandelj 2002), but remittances have become a significant source of capital inflows for developing countries. Recent estimates from the World Bank (2006) put the dollar value of remittances in 2004 for countries such as Mexico, India and China above the 15 billion dollar mark. For Mexico this is an amount that exceeds both the size of foreign direct investment into Mexico and the cash inflow resulting from oil sales. In addition to serving as a source of hard currency for foreign

exchange, remittances are directed back to local communities and can have a profound impact on poverty. Based on survey data, the World Bank estimates that remittances have reduced poverty in Uganda by 11%, in Bangladesh by 6% and by 5% in Ghana (World Bank 2006). On a related note, future research should investigate the role of return migration and remittances—and the way they are regulated by governments—on migration and also on transnational migration networks. These are factors that likely influence the ties among co-ethnics residing in countries of origin and destination, and a broad view of these processes would improve our understanding of how migrant networks are formed and maintained.

Apart from our consideration of political rights for non-natives, institutions and policies are important aspects of migration flows that have not figured prominently into our analysis.[12] Though we indirectly control for various migration-related policies in countries of origin and destination by including dummy variables for country and year, country-specific limitations, multi-national coordination and bilateral agreements are certainly factors that condition migration. Policies can also have an effect on the role of social networks. In some cases the social networks that connect past and future migrants have become promoted through institutional measures. Present US policy, for example, earmarks the majority of annual immigration visas for the purpose of family (re)-unification, a process that continues the chain of immigrants from specific origin countries. Immigrant institutions—be they formal or informal—also serve important functions in helping migrants move and adjust, yet our understanding of their effects is slim. Institutions are an important area for future cross-national research that would deepen our understanding of migration flows.

[12] See Thielemann (2004) for a cross-national quantitative analysis of migration that considers the role of national policies aimed at reducing inflows of asylum seekers.

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Figure 1

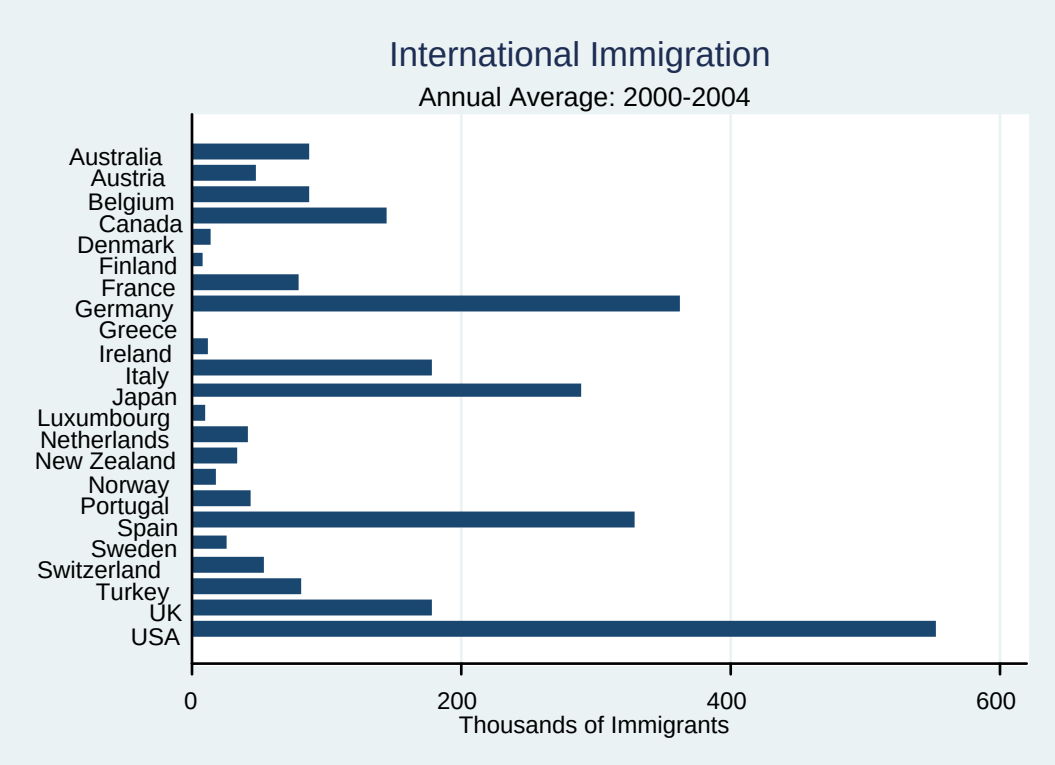
International Immigration
Annual Average: 2000-2004
Australia
Austria
Belgium
Canada
Denmark
Finland
France
Germany
Greece
Ireland
Italy
Japan
Luxumbourg
Netherlands
New Zealand
Norway
Portugal
Spain
Sweden
Switzerland
Turkey
UK
USA
0
200
400
600
Thousands of Immigrants

Figure 2

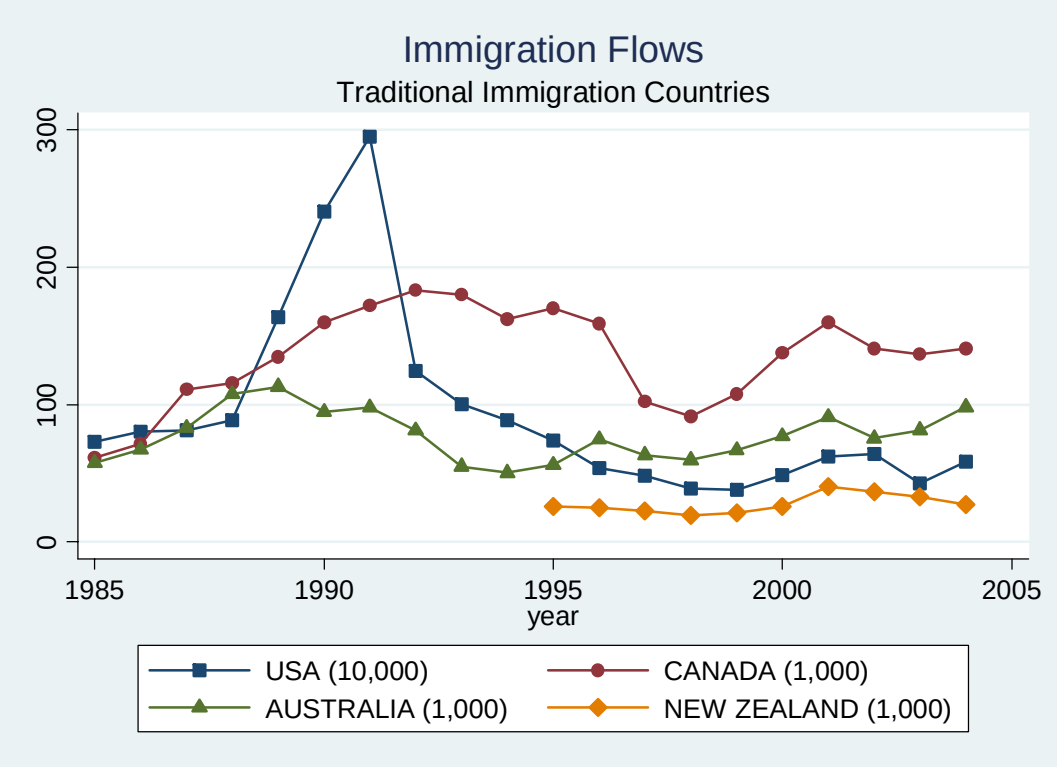
Immigration Flows
Traditional Immigration Countries
0
100
200
300
1985
1990
1995
2000
2005
year
USA (10,000)
CANADA (1,000)
AUSTRALIA (1,000)
NEW ZEALAND (1,000)

Figure 3

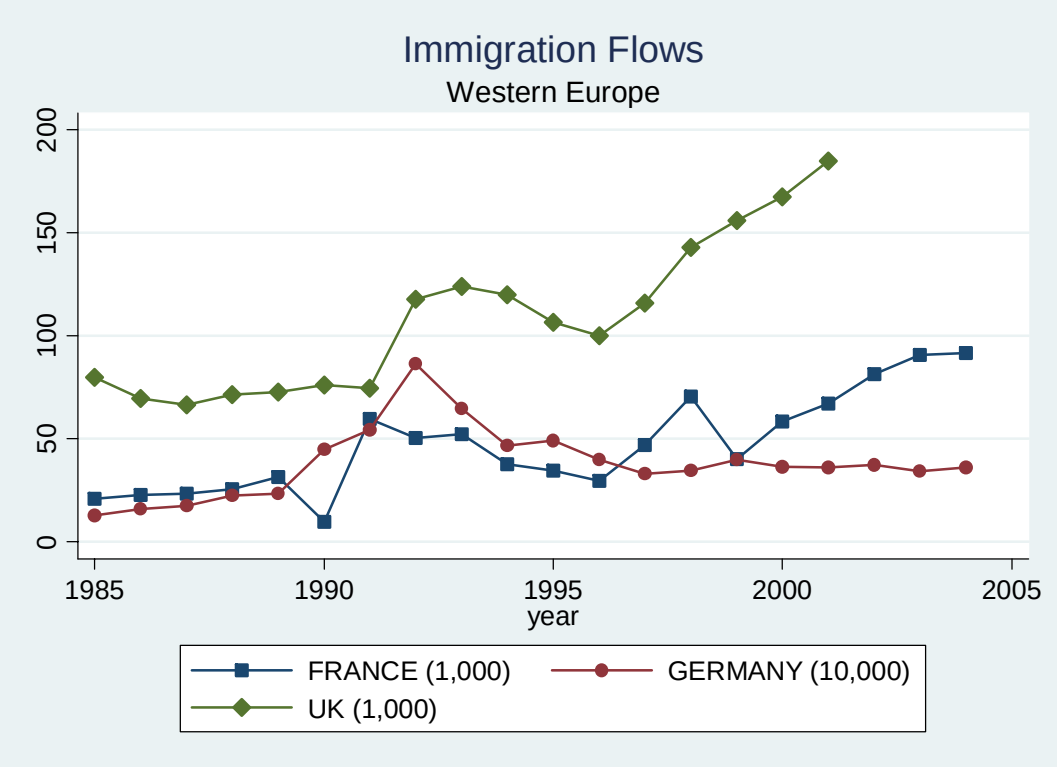
Immigration Flows
Western Europe
0
50
100
150
200
1985
1990
1995
2000
2005
year
FRANCE (1,000)
GERMANY (10,000)
UK (1,000)

Figure 4

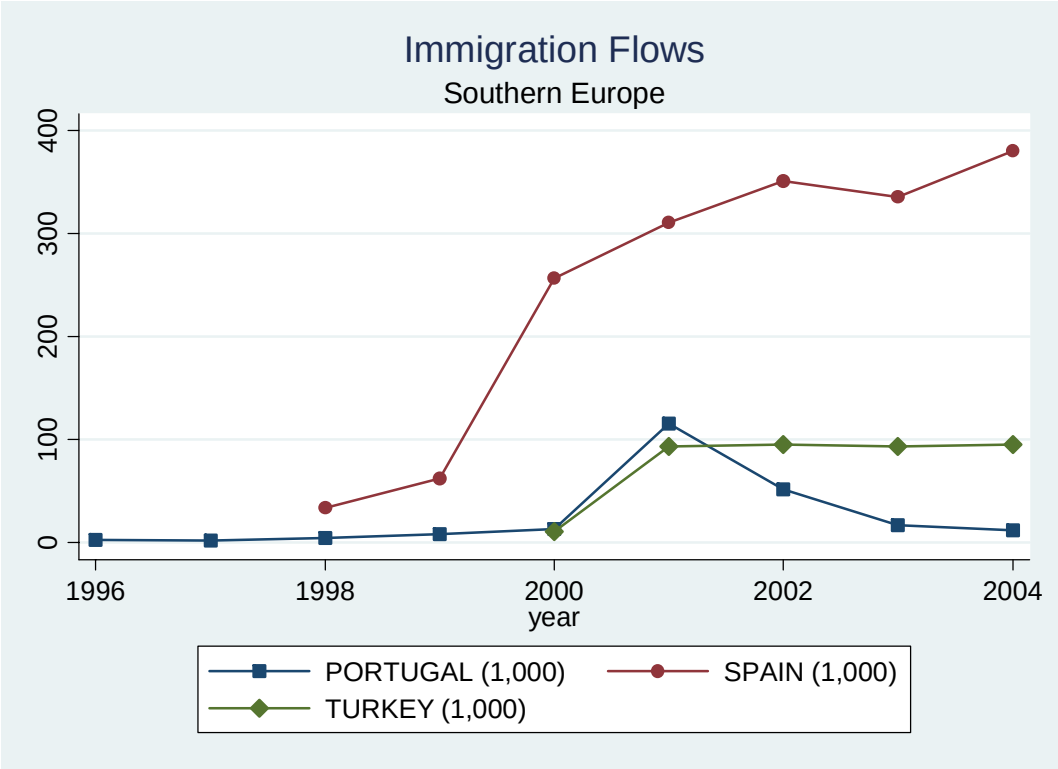
Immigration Flows
Southern Europe
400
300
200
100
0
1996
1998
2000
2002
2004
year
PORTUGAL (1,000)
SPAIN (1,000)
TURKEY (1,000)

Table 1
Largest Immigrant Flows (percentage of total)
2000-2004

Destination Origin	Percentage of total	**Destination** Origin	Percentage of total
Australia		**Japan**	
New Zealand	21.17	Philippines	30.34
United Kingdom	19.92	China	30.13
China	13.28	Brazil	11.38
India	10.06	Korea, Rep.	8.12
South Africa	8.57	United States	7.57
Austria		**Netherlands**	
Germany	21.91	Germany	12.74
Turkey	18.42	Turkey	12.69
Bosnia and Herzegovina	10.18	United Kingdom	12.27
Macedonia, FYR	9.10	Morocco	11.04
Croatia	8.44	China	7.50
Belgium		**New Zealand**	
Algeria	14.64	United Kingdom	21.86
Greece	14.29	China	18.37
Congo, Rep.	14.11	India	17.25
France	9.90	South Africa	10.14
Netherlands	9.68	Fiji	8.02
Canada		**Norway**	
India	14.65	Sweden	17.14
Hong Kong, China	10.94	Iraq	12.28
China	8.50	Denmark	11.01
Poland	8.38	Somalia	9.07
Germany	8.08	Russian Federation	7.87
Denmark		**Poland**	
Iraq	16.21	Ukraine	34.06
Afghanistan	11.45	Belarus	9.76
Norway	10.34	Russian Federation	8.97
China	8.76	Vietnam	7.16
Iceland	7.99	Germany	7.13
Finland		**Portugal**	
Russian Federation	32.49	Ukraine	31.05
Estonia	17.34	Brazil	22.46
Sweden	10.26	Cape Verde	8.16
China	5.38	Angola	7.67
Thailand	4.65	Moldova	6.33
France		**Slovak Republic**	
Algeria	26.96	Ukraine	17.70

Morocco	25.90	Poland	14.61
Turkey	10.14	Germany	11.45
Tunisia	9.67	Vietnam	6.99
Congo, Rep.	3.67	Austria	6.38
Germany		**Turkey**	
Poland	24.88	Bulgaria	56.79
Turkey	14.10	Azerbaijan	13.82
Russian Federation	9.17	Russian Federation	8.21
Macedonia, FYR	7.33	Iran, Islamic Rep.	8.11
Italy	7.10	Greece	6.72
Hungary		**Spain**	
Romania	61.03	Ecuador	21.40
Ukraine	14.74	Romania	14.04
Macedonia, FYR	6.12	Morocco	13.45
China	3.46	Colombia	11.00
Germany	2.81	Argentina	6.50
Italy		**United Kingdom**	
Romania	21.55	Australia	16.27
Albania	18.14	China	10.52
Morocco	13.22	India	9.41
China	7.13	France	8.77
Poland	6.43	Germany	7.80
		United States	
		Mexico	32.36
		India	11.04
		China	9.27
		Philippines	9.09
		Vietnam	5.43

Table 2
Migration into 26 OECD Countries

		Non interactive Model	Interactive Model Setting Log(Migrant Stock (t-1)) at			
	Log(Migrant Stock)	0.01289**	*0.00*	*0.05*	*0.10*	*0.25*
		(0.00358)				
Country-Pair Characteristics (t-1)	Log(Distance)	-0.02441**	-0.00763*	0.0021	0.0119	0.041**
		(0.00500)	(0.00385)	(0.0066)	(0.009)	(0.019)
	Shared Border	-0.01511	-0.03806	-0.0252	-0.0124	0.0259
		(0.03441)	(0.03152)	(0.0312)	(0.0316)	(0.0368)
	Common Language	0.06021**	0.02240	0.0374**	0.0524**	0.0976**
		(0.01950)	(0.01631)	(0.0166)	(0.018)	(0.0267)
	Colonial Relationship	0.03138	0.06123**	0.0696**	0.0779**	0.103**
		(0.02422)	(0.02216)	(0.0224)	(0.023)	(0.027)
	Income Ratio	-0.06690**	-0.02419	-0.021	-0.017	-0.0066
		(0.02896)	(0.02237)	(0.022)	(0.023)	(0.0293)
Destination Characteristics (t-1)	Prob[Employment]	0.22366**	0.23672**	0.2455**	0.254**	0.281**
		(0.07890)	(0.08293)	(0.0828)	(0.082)	(0.083)
	Govn't Expenditure	0.00438**	0.00579**	0.0166**	0.027**	0.0599**
		(0.00166)	(0.00185)	(0.005)	(0.0082)	(0.0196)
	Voting Rights	0.00635*	0.01061*	0.0214**	0.0322**	0.0647**
		(0.00341)	(0.00644)	(0.0076)	(0.010)	(0.020)
	Citizenship at Birth	0.04524	0.05078*	0.0621**	0.073**	0.107**
		(0.03073)	(0.02970)	(0.030)	(0.031)	(0.038)
Origin Characteristics (t-1)	Ratio of Pop 15-64	0.00101*	0.00054	0.0114**	0.0224**	0.0552**
		(0.00056)	(0.00040)	(0.0038)	(0.007)	(0.0185)
	Human Rights Score	-0.00399**	-0.0021**	0.0086**	0.019**	0.0515**
		(0.00134)	(0.00109)	(0.0038)	(0.007)	(0.0184)
	Polity Score	0.00076**	0.00068**	0.0116**	0.0225**	0.0553**
		(0.00029)	(0.00022)	(0.0037)	(0.007)	(0.0186)
	Civil War	-0.00130*	-0.00151	0.009**	0.020**	0.0532**
		(0.00075)	(0.00095)	(0.0037)	(0.007)	(0.0185)
	Log(Population)	-0.00802**	-0.0076**	0.0035	0.0146**	0.0479**
		(0.00199)	(0.00161)	(0.0038)	(0.007)	(0.0183)
	Wald Chi-Squared	1472.99	2212.00			
		(0.0000)	(0.0000)			

N=34,568 * p<0.10, ** p<0.05

Cell entries are GEE parameter estimates. Robust standard errors, clustered by country-pair, are in parentheses. GEE model is estimated with a non-stationary (order 1) error term.

All models include a set of destination and year dummy variables.

Table 3
Migration into Traditional Migrant Receiving Countries
(Australia, Canada, New Zealand, United States)

		Non Interactive Model	Interactive Model Setting Log(Migrant Stock (t-1)) at			
	Log(Migrant Stock)	0.03314**	*0.00*	*0.05*	*0.10*	*0.25*
		(0.01518)				
Country-Pair Characteristics (t-1)	Log(Distance)	-0.19973**	-0.16477**	-0.150**	-0.135**	-0.092
		(0.05680)	(0.05705)	(0.0594)	(0.0637)	(0.087)
	Shared Border	0.20084	0.42744*	0.469*	0.450*	0.486*
		(0.35261)	(0.25956)	(0.259)	(0.259)	(0.264)
	Common Language	0.08576**	0.03163*	0.052**	0.072**	0.135**
		(0.02434)	(0.01918)	(0.023)	(0.032)	(0.067)
	Colonial Relationship	-0.02047	-0.20820	-0.185	-0.154	-0.074
		(0.09244)	(0.13336)	(0.127)	(0.123)	(0.122)
	Income Ratio	0.02623	0.01807	0.036	0.054	0.109
		(0.07689)	(0.08122)	(0.082)	(0.084)	(0.102)
Destination Characteristics (t-1)	Prob[Employment]	0.47935	1.10113*	1.113*	1.125*	1.163*
		(0.57438)	(0.66308)	(0.664)	(0.665)	(0.672)
	Govn't Expenditure	0.03472**	0.05349**	0.068**	0.083**	0.125*
		(0.01529)	(0.01812)	(0.024)	(0.034)	(0.070)
Origin Characteristics (t-1)	Ratio of Pop 15-64	0.00002	0.00036	0.016	0.030	0.076
		(0.00160)	(0.00149)	(0.0127)	(0.0255)	(0.064)
	Human Rights Score	-0.00657	-0.00311	0.0118	0.0267	0.071
		(0.00511)	(0.00554)	(0.014)	(0.0266)	(0.064)
	Polity Score	-0.00050	0.00026	0.0154	0.030	0.076
		(0.00090)	(0.00067)	(0.013)	(0.026)	(0.064)
	Civil War	-0.00335	-0.00210	0.013	0.028	0.073
		(0.00466)	(0.00687)	(0.014)	(0.026)	(0.064)
	Log(Population)	-0.02127**	-0.02151**	-0.006	0.009	0.055
		(0.00600)	(0.00533)	(0.014)	(0.026)	(0.0644)
	Wald Chi-Squared	16243.00	23779.34			
		(0.0000)	(0.0000)			

N=5,581 * p<0.10, ** p<0.05
Cell entries are GEE parameter estimates. Robust standard errors, clustered by country-pair, are in parentheses. GEE model is estimated with a non-stationary (order 1) error term.
All models include a set of destination and year dummy variables.

Table 4
Migration into EU-15 Countries

		Non Interactive Model	Interactive Model Setting Log(Migrant Stock(t-1)) at			
	Log(Migrant Stock)	0.01318**	*0.00*	*0.05*	*0.10*	*0.25*
		(0.00430)				
Country-Pair Characteristics (t-1)	Log(Distance)	-0.01926**	0.00723	0.019*	0.0313*	0.0674**
		(0.00542)	(0.00618)	(0.010)	(0.0162)	(0.0325)
	Shared Border	-0.01565	-0.0916**	-0.074*	-0.056	-0.003
		(0.04117)	(0.04580)	(0.044)	(0.044)	(0.049)
	Common Language	0.00698	0.01840	0.0316*	0.0448**	0.0844**
		(0.01804)	(0.01600)	(0.0185)	(0.024)	(0.0379)
	Colonial Relationship	0.07126**	0.06093**	0.075**	0.0892**	0.131**
		(0.02670)	(0.02307)	(0.023)	(0.0246)	(0.0356)
	Income Ratio	-0.13459**	-0.04031*	-0.043*	-0.0449	-0.0518
		(0.04202)	(0.02282)	(0.024)	(0.0274)	(0.0415)
Destination Characteristics (t-1)	Prob[Employment]	0.36046**	0.44054**	0.447**	0.454**	0.4755**
		(0.10636)	(0.11082)	(0.110)	(0.109)	(0.109)
	Govn't Expenditure	0.00056	0.00115	0.015**	0.0285**	0.0696**
		(0.00208)	(0.00208)	(0.007)	(0.0133)	(0.0313)
	Voting Rights	0.00800	0.01444*	0.028**	0.0405**	0.0796**
		(0.00660)	(0.00771)	(0.009)	(0.014)	(0.0312)
	Citizenship at Birth	0.11197**	0.11004**	0.123**	0.137**	0.179**
		(0.03526)	(0.02909)	(0.031)	(0.036)	(0.045)
Origin Characteristics (t-1)	Ratio of Pop 15-64	0.00235**	0.00113**	0.015**	0.0288**	0.070**
		(0.00069)	(0.00038)	(0.006)	(0.012)	(0.030)
	Human Rights Score	-0.00116	0.00013	0.017**	0.027**	0.0688**
		(0.00190)	(0.00141)	(0.006)	(0.011)	(0.030)
	Polity Score	0.00062**	0.00007	0.013**	0.027**	0.069**
		(0.00027)	(0.00026)	(0.006)	(0.012)	(0.030)
	Civil War	0.00087	-0.00101	0.0129**	0.026**	0.0688**
		(0.00151)	(0.00176)	(0.006)	(0.012)	(0.030)
	Log(Population)	-0.00449**	-0.0030**	0.011*	0.025**	0.067**
		(0.00194)	(0.00107)	(0.006)	(0.012)	(0.031)
	Wald Chi-Squared	256.71	144.53			
		(0.0000)	(0.0000)			

N=19,801 * p<0.10, ** p<0.05

Cell entries are GEE parameter estimates. Robust standard errors, clustered by country-pair, are in parentheses. GEE model is estimated with a non-stationary (order 1) error term.

All models include a set of destination and year dummy variables.

Table 5
Social Networks and Finding Housing: Migrants to Germany

Finding Housing: Migrants to Germany

	Accurate housing information (before migrating) *logit model*	**Ease in finding housing (relative to expectations)** *ordered logit model*
Log(Migrant Stock)	0.25364**	0.04849
	(0.07978)	(0.06466)
Family in Germany	0.00476	0.32665**
	(0.18489)	(0.10114)
Male	-0.02589	-0.15316*
	(0.16515)	(0.08905)
Age at migration	-0.00464	0.024286**
	(0.00487)	(0.00627)
Log(Distance)	0.14732	0.05815
	(0.10094)	(0.09273)
Colonial Relationship	1.50439	0.625961**
	(1.37333)	(0.25696)
Common Language	-1.71251	0.06258
	(1.38529)	(0.28443)
Constant	-1.00296	
	(0.95485)	
Cut 1		0.65312
Cut 2		2.37757
Wald Chi-Squared	57.98**	4561.29**

N=825 *p<0.10 **p<0.05
Robust standard errors, clustered by country of origin, are in parentheses.
Model includes a set of year dummy variables.