International Journal of Sociology, 46: 85–113, 2016

ISSN: 0020-7659 print/1557-9336 online
DOI: 10.1080/00207659.2016.1163986

Routledge
Taylor & Francis Group

From Macrostructural Forces to Social Connectedness: Uncovering the Determinants of South–South Migration

Aaron Ponce

Department of Sociology, Indiana University

Current perspectives on international migration emphasize conventional macrostructural influences on flows and focus nearly exclusively on migration from South to North. Given this limited framework, and the rapid growth of South–South migration, important questions remain: Do other factors acknowledged in the theoretical literature, but not yet systematically tested, also affect migration flows? Are South–North models appropriate for explaining South–South migration? This study directly addresses these questions using newly available data on bilateral migration flows and an empirical model that extends conventional gravity models of migration to include *social connectedness* and *world-systemic* influences. Further, it offers an original framework for analyzing international migration by examining flows first on a global scale and then disaggregated by region. Findings show that while South–North migration is significantly shaped by world-systems trends, such as trade and investment penetration, South–South migration is more strongly associated with social connectedness factors, such as migrant remittances received in the origin, and the region's unique demographic pressures. Conflict in the origin significantly increases out-migration regardless of migration type. Findings also reveal the self-interested, benefit-maximizing, and culturally neutral migrant as an incomplete theoretical model. Finally, South–South migration is distinguished from other migration forms and potential avenues for continuing research in the field are identified.

Keywords conflict; international migration; social connectedness; South–North migration; South–South migration; world-system

International migration has become a topic of increasing scholarly and public interest, due in large part to the rapid migration-led demographic shifts transforming societies around the world. It is estimated that between 1990 and 2013, the number of international migrants rose by 50 percent, with the highest growth occurring in the past decade and, regionally, in the Global South (UN 2013). Despite the intensification of South–South migration, current theoretical and empirical understandings of international migration are limited to South–North flows, thus potentially hindering an investigation of migration on a global scale. Further, as more

Aaron Ponce is a PhD candidate in sociology at Indiana University. His research examines international migration from a cross-national perspective emphasizing migration as both a consequence and source of social change. His dissertation examines the relationship between migration and universalism in the welfare states of Nordic Europe, focusing on the reasons behind migration to the region as well as migration's impact on the foundations of universalist systems.

Address correspondence to Aaron Ponce, Department of Sociology, Indiana University, 1020 East Kirkwood Avenue, Bloomington, IN 47405. E-mail: ajponce@indiana.edu.

Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/mijs.

recent migration increasingly includes displacement from war and conflict (UNHCR 2015), it is possible that existing frameworks are, at worst, no longer suitable and, at best, partially outmoded for an analysis of contemporary global movements. Although this disjuncture between existing knowledge on international migration and how it is currently unfolding is due in large part to a prior lack of data, the availability of new data on bilateral flows between the world's countries (Abel and Sander 2014) makes it possible to turn attention toward this growing and underanalyzed source of international mobility.

Theoretically, accounts of macrolevel migration flows emphasize the importance of migrants' decisions to improve their quality of life, typically framed in neoclassical economics terms. Net of other higher-level factors like geography and demography, migration is assumed to occur as a result of calculated self-interest (Borjas 1989). Empirically, studies analyzing the determinants of migration flows have tested these theories in South–North gravity models using a standard set of macrostructural explanatory variables (DeWaard, Kim, and Raymer 2012; Hooghe et al. 2008; Pedersen et al. 2008). More recent empirical work on South–North migration extends explanations by incorporating other potentially influential factors (see, e.g., Fitzgerald, Leblang, and Teets 2014). In its current state, the literature does not provide an answer to (1) whether additional connectedness and systemic influences acknowledged by theories of migration but not yet systematically tested also affect international migration flows; and (2) whether existing South–North models are appropriate for explaining South–South migration.

This study aims to fill a long-existing void in migration studies by identifying the macrolevel factors shaping international migration within the Global South, thus making a number of contributions. First, it extends gravity models of migration by identifying additional *social connectedness* factors linking current migrants to potential migrants as well as *world-systems* theoretical influences that recognize global disequilibria in the relationship between North and South. This study is the first to present this more elaborated model of migration flows to systematically provide a more comprehensive understanding of the varied factors that shape migration. Second, this study draws on world-systems theory to offer an original framework for analyzing migration flows along different dimensions. It first analyzes bilateral flows on a global scale and then turns to flows disaggregated by migration type: (1) South–North migration; (2) South–South migration; and (3) South–Semiperiphery migration. This allows for a direct comparison of South–South migration to other forms, positions migration within a larger and unequal global system, and links migration flows to other global dynamics like capital penetration and the onset of conflict. Finally, the study narrows in on additional demographic processes that are found to improve the estimation of South–South flows, thus laying the groundwork for future empirical studies of migration from the South. It concludes with a discussion of South–South migration in relation to other forms of migration and potential avenues for continuing research.

BACKGROUND

Theories of International Migration

Theories of international migration have developed around diverse focal points, disciplinary lines, and objectives, offering a multifaceted framework for the study of migration flows (Massey et al. 1993). The early literature explains migration largely in economic terms, with

a number of underlying assumptions about migrants' motivations and the forces that propel them. At the macro level, early theories argue that migrants are pushed out of and pulled toward certain countries by higher-level forces such as wage differentials and the supply and demand of labor (Borjas 1989; Harris and Todaro 1970). At the micro level, migrants' decisions are based on which locations will maximize their returns while minimizing the costs of migration and risk (Borjas 1989). Gravity models of migration were developed, based on economic trade models, which formulated migration flows as a function of macrolevel forces that attract and deter migrants.

Meso-Level Theories of Social Connectedness and Migration

Sociologists argue that "seeds of doubt" have been planted as to whether economic motives are the primary driver of international migration flows (Massey et al. 1998: 8). A shift among many theorists acknowledges the social determinants of migration and migrant agency, often in conjunction with economics-based factors. Migration network theory maintains that ties linking migrants in the destination country to people back home support the continuation of migration between two countries. Initial migration to a destination may be influenced by factors like colonialism, shared language, or geographic proximity (Massey et al. 1998; Skeldon 1997). Migration then becomes routinized as flows become self-perpetuating. More broadly, migrant networks act as geographically defined forms of social capital that prospective migrants take advantage of in accessing resources, thus lowering the overall costs of migration (Portes 1995).

Social-centered explanations allow for other potentially important variables related to group dynamics and connectedness to be brought into an otherwise conventional rational choice framework. Concepts such as *cumulative causation* are introduced, which recognizes that migration alters the socioeconomic context within which future decisions to migrate are made (Massey 1990). Origin and destination contexts can also be transformed by new forms of communication, which are expected to play an especially important role in promoting the spread of information across networks (Czaika and de Haas 2014). Evidence suggests that new communications technologies, such as mobile phones and the Internet, increasingly bridge migrants in the destination to family and friends back home (Dekker and Engbersen 2014; Hiller and Franz 2004; Horst 2006). These technologies can facilitate the build up of social capital in migrant networks (Dekker and Engbersen 2014; Hiller and Franz 2004), making migration more likely (Palloni et al. 2001). The converse could also be true, however. Improvements in communication technologies may result in better opportunities for improving life in the origin country, through facilitating trade or making possible the outsourcing of production for entrepreneurs in the origin (de Haas 2009; Skeldon 2012). These possibilities would discourage migration or make it less necessary. Two competing hypotheses are thus formulated:

H1a: Improved communications technologies, represented by mobile phone and Internet use in the origin country, will increase out-migration as technology facilitates the buildup of social capital and makes communication along migrant networks easier.

H1b: Improved communications technologies, represented by mobile phone and Internet use in the origin country, will decrease out-migration as technology facilitates entrepreneurship by producing additional business opportunities in the origin.

Remittances have also been implicated in the perpetuation of migration flows. Remittance monies sent from migrants in the destination to family in the origin act as a form of insurance against risks and uncertainties (Massey et al. 1993). Scholars have noted that remittances encompass more than just socially transmitted flows of capital. Remittances can also send back messages about opportunities available overseas, thus stimulating new flows (Boyd 1989). The surplus capital that remittances provide can also be used to finance future migration. Other theorists suggest that the remittance effect works through structural transformations in the origin. Remittances in the aggregate can potentially increase inequality in a society, leading to more emigration (see discussion on relative deprivation in Massey et al. 1998). At the micro level, there is some region-specific evidence that remittances have a positive impact on intentions to migrate (Leeves 2009; van Dalen, Groenewold, and Fokkema 2005). Theories of remittances thus suggest the following hypothesis, despite disagreement on the exact mechanism:

H2: Remittances sent to the origin country will increase out-migration, as potential migrants are motivated by the outside opportunities that remittances represent and/or by a sense of being increasingly unequal in a social context transformed by remittance receipts.

Macrolevel Theories of Migration in a Global System

In conceptualizing social connectedness, it is also necessary to consider how countries are linked at the global level. World polity scholars argue that a world society has emerged that influences and homogenizes national institutions (Meyer et al. 1997). In particular, networks of intergovernmental organizations (IGOs), which represent connections to world society, allow for the adoption of world cultural scripts in a number of domains, such as democracy diffusion (Pevehouse and Russett 2006; Torfason and Ingram 2010). World polity theorists would argue that shared IGO membership between countries should promote the flow of migrants across borders as migration becomes normalized and increasingly coordinated in world society. This could especially be the case since world society has also been linked to the international human rights regime (Hafner-Burton and Tsutsui 2005), which calls for the protection of migrants, particularly migrant workers and their families (Cholewinski, de Guchteneire, and Pécoud 2009). Shared IGO memberships, which represent formal treaty-based links between governmental organizations, contrast with international nongovernmental organization (INGO) connections, which consist of individuals, interest groups, and businesses (Pevehouse, Nordstrom, and Warnke 2004). World society influences on migration are thus expected to work through embeddedness in IGOs and not INGO networks, since the state plays a role in coordinating migration.

H3: Shared country-level links to world society will increase bilateral flows as migration becomes normalized in global culture.

While world society theory offers a macrolevel perspective of migration, conceptualization of the Global South within a larger system is largely absent. World-systems theory (WST) offers a framework that encompasses network dynamics at a global level and provides for a theory-driven means of delineating North and South, or periphery and core in WST terms, along with an intermediate region, the semiperiphery. It also takes into account the historic and contemporary unequal relationships between the advanced North and the Global South within

a relational system, further generating predictions regarding movement within and out of these spheres.

WST accounts of migration position international flows within a broader context of capital penetration and the expansion of markets from a dominant region of *core* countries into a dependent region of *periphery* countries (Morawska 1990; Portes and Walton 1981; Sassen 1988).[1] States are linked in unequal economic relations as core countries incorporate periphery countries into the system through the extraction of labor and resources (Burawoy 1976). This expansion was first made possible through colonial relationships between core and periphery (Wallerstein 1974), but has since been perpetuated by national interests and multinational corporations. The world-system as currently formulated features an intermediate *semiperiphery* region of countries that have traits of both *core* and *periphery* and that are up-and-coming countries in the core–periphery hierarchy (Chase-Dunn and Hall 1997). Migration arises from the displacement of people in the periphery countries as core economic expansion alters their traditional livelihoods and redefines valuable forms of labor and wealth. WST predicts that the fundamental drivers of migration should be different from those identified by prior approaches. From this perspective, international migration is tied to capitalist development and less connected to wage differentials as original economics-based theories would suggest (Massey et al. 1998: 41).

WST recognizes economic transformations in the world-system and their connection to migration. Trade and foreign direct investment (FDI) penetration from the core into the periphery act to integrate Global South countries into a network of unequal economic relations, disrupting origin labor markets in the process (Chase-Dunn, Kawano, and Brewer 2000). According to this perspective, FDI flows, and relatedly trade flows through the internationalization of production, indirectly and directly increase out-migration via a number of mechanisms. Sassen (1988) suggests that economic penetration into the periphery mobilizes origin workforces as they become inextricably connected to wage labor regimes in a larger global market. Such penetration also serves as an ideological force as the origin becomes culturally more westernized. It is this combination of objective and ideological transformations in the origin initiated by the core's economic penetration that spurs migration (Sassen 1988: 9). Thus:

> *H4: Penetration of capitalist markets, as represented by bilateral trade and foreign direct investment in origin countries, will increase migration flows.*

A WST approach also acknowledges variables that could apply specifically to migration from the South. One form of migration that characterizes South–South migration is conflict-driven movement (De Lombaerde, Guo, and Neto 2014). Conventional theories do not account for the role of conflict. Researchers working in the WST tradition have linked the peripheralization of countries in the Global South to increased conflict through disarticulated development and military intervention by the dominant core (Boswell and Dixon 1990; Moaddel 1994). Experts on refugee migration also acknowledge the association between interstate and civil strife and forced migration. Anthony Richmond's work underscores the interdependence between the economic, social, and political factors that move both conventional migrants and global refugees. Richmond (1988) draws a connection between the dismantling of rich colonial empires, the political underdevelopment of the newly independent states that emerge from colonialism, and the turbulence and conflict that ensue. Refugee migration is thus *reactive* to dislocations that are the product of past and continuing global inequalities. From these

perspectives, conflict-driven migration should be more apparent where conflict is most prominent, that is, from the periphery countries of the world. Thus:

H5: Conflict, as represented by the number of armed disputes in the origin country, will increase out-migration.

WST also identifies networks of global cities that structure migration flows. These global cities are urban centers around the world that serve as major sites of production and that are characterized by a concentration of finance and service firms (Sassen 2006). Migrants often move to urban centers as old forms of labor become untenable and as urban economies are restructured by capital–labor relations creating segmented labor markets (Sassen 2006). The lower sectors of the economy typically offer migrants a steady supply of work. From a cross-national perspective, WST's emphasis on urban-driven migration suggests that flows are structured by a country's level of urbanity:

H6: The level of urbanity of a destination country will increase migration inflows as new, stratified labor markets become available to migrants.

Existing Studies on International Migration

Recent empirical research on migration to the advanced North finds that macrostructural economic, demographic, and geographic forces shape migration flows. Migration is spurred by higher wage levels or differentials (Mayda 2010), larger and more urban populations in destination and origin countries (DeWaard et al. 2012; Fitzgerald et al. 2014; Hooghe et al. 2008; Kim and Cohen 2010; Pedersen, Pytlikova, and Smith 2008), and cultural and colonial linkages (Hooghe et al. 2008). Migration is deterred by high unemployment rates in destination countries (DeWaard et al. 2012; Fitzgerald et al. 2014; Hooghe et al. 2008; Pedersen et al. 2008) and longer distances between origin and destination (DeWaard et al. 2012; Fitzgerald et al. 2014; Kim and Cohen 2010; Mayda 2010).

WST variables have been tested in a small series of studies concentrating on specific destinations and origins. Yang (1998) uses U.S. visa application data to reveal that trade ties and FDI from the United States increase demand for visas from less developed countries. Sanderson and Kentor (2008) show that FDI has a net positive effect on out-migration from 25 less developed countries, although this effect may vary by FDI sector (Sanderson and Kentor 2009). Such studies have largely ignored other noneconomic macrolevel influences and thus have not provided a simultaneous and comprehensive test of migration theories on a global scale.

Quantitative empirical studies on migration between countries in the Global South are much less common. Ruyssen and Rayp (2014) consider intraregional migratory patterns in Sub-Saharan Africa from 1980 to 2000. Drawing from an economics-based framework and using innovative statistical techniques, they find that income differences, social networks, and geography largely drive migration within Sub-Saharan Africa. In addition, they find that conflict has a significant and indirect effect on migration patterns.

The immigration literature has also increasingly focused on new immigrant destinations (NIDs), or emerging sites of migration where little migration existed before. Winders's

(2014) comprehensive review of research on NIDs shows that knowledge is largely limited to the United States and Europe, although some less unified case studies exist on nonadvanced countries. Generally, NIDs are not contextualized within a large global system (Winders 2014). In terms of identifying NIDs, no one method dominates. In studies of NIDs within Europe, colonial ties are an important indicator of migration history and, conversely, NID status. However, this definition is not conducive to examining global migration, as it would not identify new South–South flows, for example. In contrast, much of the research on U.S. NIDs traces quantitative changes in the size of immigrant populations in certain geographically defined areas (see, e.g., Lichter and Johnson 2009). This approach is more flexible, which makes it applicable to migration flows in a global context.

DATA AND METHODS

Outcome: Migration Flows

A hurdle in studying global migration is the lack of availability of complete data on migrant flows. Generally, migrant stock data that periodically enumerate the number of foreign-born people in a country are more readily available than flow data. Recently, a new dyadic migration flow data set has been made available (Abel and Sander 2014), which represents the only source of robust estimates allowing for a test of global migration theories.[2] Drawing from the Able and Sander data set, the outcome is defined as the number of migrants moving from origin country *i* to destination country *j* during four five-year time intervals: 1990–95, 1995–2000, 2000–2005, and 2005–10. The outcome represents bilateral migration flows between 176 countries (see Table A2 in the Appendix). Despite not being disaggregated by migrant populations, these newly available flow data are comprehensive and thus include various migration types in the total, including refugee flows (Abel and Sander 2014). This allows for the estimation of variables that disproportionately affect specific migrant populations, such as conflict.

Position in the world-system is used to identify and analyze migration patterns against disparate and unequal relations in a global context. In determining a state's WS position, I use Clark's (2012) measure, which is based on an earlier update to Snyder and Kick's (1979) classic WS position measure. This update significantly improves prior measures by reassessing countries' positions based on their economic ties (i.e., trade ties), which are at the core of WS relations (Clark and Beckfield 2009: 9). It also outperforms prior measures in identifying three distinct WS spheres as earlier measures include extraneous network information (Clark and Beckfield 2009). Identifying spheres based on global activity that is patterned by linkages is essential for an analysis of South–South migration.[3] Finally, the Clark measure is updated and comprehensive, accounting for new and newly upwardly mobile countries.

I identify NIDs by first measuring inflows as a percentage of each destination country's total population. To recognize destinations that experience rapid growth, I identify countries with inflow increases from the first to last period that are in the highest quartile of growth. To distinguish new from old migration destinations, I exclude destinations where total populations consist of an above average level of foreign stock during the first period.[4] NIDs can be found in the core, semiperiphery, and periphery.

Predictor Variables

Predictor variables are drawn from conventional data sources and are time-varying (see variable descriptions and sources in Table A1). The first set of predictors relate to social connectedness. *Remittance flows* are measured as total remittance receipts in the origin country in millions of U.S. dollars at current prices and exchange rates. *Internet use* and *mobile phone use* are measured as the number of Internet users and mobile phone subscriptions per 100 people in the origin country.[5] *Ties to world society* are measured as the total number of shared IGO memberships per origin–destination country dyad.[6] This measure is theoretically and empirically preferable to other ways of measuring world society membership, such as through INGO networks, since it directly captures formalized ties between dyads and not individual countries' relative positions in world society.[7]

The second set of predictors includes WST variables. *Trade penetration* is measured in dyadic terms as the total value of trade imports to the origin country from the destination country in millions of U.S. dollars at current prices. *Investment penetration* is measured as the total flow of foreign direct investment per capita received by the origin country from outside sources.[8] FDI represents a type of external investment where there is a lasting interest in national enterprises and where outside investors gain an effective voice in the management of these enterprises. Conflict is measured by two variables, each representing a different form of armed conflict. *Interstate conflict* is measured as total incidents involving armed conflict in a country where at least one party to the conflict is a state.[9] *Nonstate conflict* is measured as an indicator variable (=1) if there is armed conflict in a country where the parties are nonstate actors, such as warring guerrilla or separatist groups. Since original conflict data record only incidents of conflict, any country-year in which no incidents are reported is set to zero. *Urbanity* is measured as the number of urban agglomerations with over one million inhabitants in each country.[10]

All continuous time-series predictors are lagged as averages over the five-year period preceding the migration period: 1985–90, 1990–95, 1995–2000, and 2000–2005 unless otherwise indicated. For indicator variables, values are for the year directly preceding the migration period.

Control Variables

Controls for conventional gravity models of migration are included in all estimated models. To proxy for *wage differentials*, the difference between destination country's gross domestic product (GDP) per capita and that in the origin country is included. *Labor conditions* in the destination are measured by the proportion of a destination country's working-age population actively engaged in the labor market.[11] *Geographic distance* is measured as the total distance between countries' capital cities. *Geographic contiguity* is an indicator variable (=1) for country pairs that border each other. *Colonial legacy* is measured by an indicator variable (=1) for dyads that have ever had a colonial relationship. Geographic distance, colonial legacy, and common language are time-invariant. Origin countries' *working-age populations* are measured by their potential support ratio, or the ratio of people 15 to 64 years old per every person 65 or older.

In studies of migration, standard social network effects are typically proxied by the number of migrants already residing in the destination country at a time before the inflow of new migrants. A network variable is generated as the destination country's total population of

foreigners during the five-year period preceding migration flows. Although not disaggregated by country of origin, this total measure serves as a control for the relative openness of *migrant network space* within a destination country. Unless otherwise noted, controls are lagged in the same manner as predictors above.

Analytic Technique

The empirical model accounts for variation at destination country, origin country, and country dyad levels and the effect of variation on the dyadic outcome: migrant flows. A number of considerations are taken into account to identify appropriate analytic techniques. First, because the data are structured as a country-country-year panel, it is necessary to address the potential for clustering of standard errors by country dyad and serial autocorrelation where values for one year affect those of subsequent years. Standard ordinary least squares (OLS) regression techniques assume homoskedastic errors across dyads and time periods and are thus inappropriate. Second, because the outcome of interest is not expressed in intervals but rather as a count, count models are preferred to continuous modeling. Third, the data are overdispersed with a greater variance than expected value, which may deflate standard errors making predictors appear significant.

A frequently employed estimator in studies of migration is a population averaged generalized estimating equations (GEE) estimator, which treats clustering and autocorrelation (DeWaard et al. 2012; Kim and Cohen 2010; Pedersen et al. 2008).[12] GEE extends generalized linear models by allowing for explicit yet flexible specification of the correlation structure (Hardin and Hilbe 2003). In contrast to other modeling techniques, it also allows for the estimation of time-invariant predictors, which are important for migration flows.[13] To adapt GEE estimation to a count outcome and to address overdispersion, I estimate GEE negative binomial (GEE-NB) regression models. Negative binomial models are used as an alternative to Poisson regression when a count outcome is overdispersed (Hilbe 2011). GEE-NB models employ a GEE estimator with a negative binomial link and a calculated heterogeneity parameter (α) as suggested by Hilbe (2011: 456–57). For goodness of fit, *QIC* statistics, which are extensions of maximum likelihood *AIC* for quasi-likelihood GEE models (Hilbe 2011, ch. 14), are included for comparison to base models. Lower *QIC* statistics denote better model fit.

As a sensitivity analysis, I include alternative estimations using zero-inflated negative binomial (ZINB) models. In the original flow data, 31 percent of dyads consist of zero flows. ZINB models account for overdispersion as well as zero inflation, but do not accommodate the data's panel structure. ZINB models use a two-step process to gauge the probability of a zero count and subsequently the count of the outcome if nonzero. Results from GEE-NB and ZINB models can be checked against each other, allowing for increased confidence in results that conform.

For all models, the number of individuals migrating from country i to destination j at time t is estimated by the following equation:

$$flows_{ijt} = Z_{ijt-1}\beta_1 + X_{it-1}\beta_2 + X_{jt-1}\beta_3 + D_{ij}\beta_4 + u_{ijt} \quad (1)$$

Z_{ijt-1} is a vector of predictor or control variables specific to destination-origin country dyads at time $t - 1$.[14] X_{it-1} and X_{jt-1} are vectors of predictor or control variables specific to origin and destination countries, respectively, at time $t - 1$. D_{ij} represents time-invariant factors specific to dyads; u_{ijt} is the error term for the dyad at time t.

RESULTS

Results from GEE-NB models are presented throughout. ZINB sensitivity estimates are included in Appendix tables with consistently conforming results, unless otherwise noted. Table 1 provides incidence rate ratios (IRRs) for base-level GEE-NB models testing conventional variables for different forms of migration.[15] For global migration, which has not been previously analyzed, conventional explanations are confirmed (DeWaard et al. 2012; Fitzgerald et al. 2014; Hooghe et al. 2008; Kim and Cohen 2010; Mayda 2010; Pedersen et al. 2008). Wage differentials between origin and destination, as proxied by GDP differences, exert a significant positive influence on migration. Greater geographic distance between origin and destination significantly impedes migration while contiguity facilitates it, as expected. Variables connected to shared culture or history also work in the expected directions: both colonial ties and common language are associated with larger bilateral migration flows (Hooghe et al. 2008). Social networks as represented by more open migrant network spaces (i.e., larger foreign populations) in destinations are also a highly significant and positive influence on flows.

For South–North migration, on which most prior studies have focused, patterns are similar to global migration with some variation in the degree and strength of effects. Compared to other forms, wage differentials tend to produce the strongest incentive for migration from South to

TABLE 1
Incidence Rate Ratios from Base GEE Negative Binomial Regression Models Predicting Migration Flows between and within World-System Regions

	Global migration	*South–North migration*	*South–South migration*	*South–Semiperiphery migration*
Wage differential[a]	1.19**	1.79***	1.38***	1.13
	(2.94)	(6.10)	(5.52)	(1.18)
Labor participation (dest.)[a]	0.93	1.15^{+}	1.07	0.97
	(−1.52)	(1.66)	(0.87)	(−0.28)
Colonial legacy	9.60***	7.03***		
	(13.05)	(6.62)		
Geographic distance[b]	0.37***	0.18***	0.05***	0.15***
	(−14.10)	(−18.55)	(−23.67)	(−12.04)
Geographic contiguity	17.60***	2.54**	47.41***	12.86***
	(11.05)	(2.68)	(7.09)	(5.57)
Common language	1.82***	2.28***	4.02***	3.50***
	(5.51)	(3.62)	(4.85)	(3.41)
Migrant network space[b]	2.32***	2.19***	1.33***	1.68***
	(20.32)	(14.45)	(5.19)	(10.71)
Year	1.00	0.98**	0.96***	0.94***
	(−0.03)	(−2.95)	(−3.63)	(−5.32)
N (origin-destination-year)	124,608	14,100	22,200	11,100
QIC	119,283.43	278,085.82	1,723,725.45	294,668.72

[a]Variable standardized for ease of interpretation.
[b]Skewed distributions are natural log transformed.
z-statistics in parentheses; probabilities based on two-tailed *z*-tests.
$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

North. This makes sense because original theories identify past South–North migration as emerging from economic disequilibria between origins and destinations. Labor participation in the destination also marginally increases migration to the North, confirming the reciprocal dynamic of high unemployment's dampening effect on migration (DeWaard et al. 2012; Fitzgerald et al. 2014).[16] Geographic contiguity has a significant positive, yet smaller, effect on migration flows when compared to global migration.

South–South migration is similarly patterned, with many of the largest and smallest effects found of any migration form. In addition to being positively influenced by wage differentials, it is strongly constrained by geographic distance and, conversely, strongly impelled by geographic contiguity. Geography thus plays an especially important role in South–South migration as physical mobility is tightly connected to space. The largest common language effect also emerges. The number of South–South migrants is expected to increase by over 300 percent when origin and destination share a common language. Interestingly, this does not imply an equally large effect for migrant network space. While still significant and positive, migrant network space plays the smallest role in South–South migration compared to other forms.

Movement from the South to the semiperiphery is similar. An important difference compared to other forms is that wage differentials do not appear to play a significant role in South–Semiperiphery migration. This suggests that such movement is influenced more by noneconomic factors.

Table 2 presents IRRs for GEE-NB models predicting social connectedness effects (in columns) grouped by forms of migration (in rows). Table 2 models include all variables from Table 1 as controls.[17] Remittance theories predict that higher remittance levels in the origin will lead to out-migration (H2), by increased awareness of inequalities and/or opportunities abroad. For global migration, H2 is supported: higher remittance receipts in the origin are associated with migration increases. Similar yet smaller effects are found for South–South and South–Semiperiphery migration. In contrast, H2 is not fully supported for South–North migration. While GEE-NB estimates suggest that remittances have a marginally significant and positive effect, this effect does not rise to a level of statistical significance in ZINB models (Table A4), suggesting that remittance receipts cannot be clearly linked to migration to the North, all else equal.

Theories of improved communication technologies expect higher migration due to the transfer and buildup of social capital among potential migrants (H1a) or lower migration due to a growth of opportunities for entrepreneurship in origin countries (H1b). While H1a is strongly supported in the global sample, results differ for other forms of migration. For South–North migration, no clear effect from improved communication technologies emerges. In contrast, migration between Southern countries and between South and semiperiphery appears to be negatively impacted, at least marginally, by both Internet and mobile phone use. H1b, which recognizes increased entrepreneurial opportunities in the origin, finds support for both migration types, although the effect is weaker for South–South migration.[18] Results suggest that social connectedness *within* the origin, as represented by greater possibilities for communication, acts to constrain potential connections *outside* of the origin through migration.

World society theories predict that country ties to global society will lead to higher levels of migration as countries adopt scripts that normalize migration as part of an increasingly unified world culture (H3). For global migration, world society ties as represented by shared IGO

TABLE 2
Incidence Rate Ratios from GEE Negative Binomial Regression Models Predicting Social Connectedness Variables' Effects on Migration Flows

GEE-NB models	*Remittances*[a]	*Internet use*[a]	*Mobile phone use*[a]	*World society ties*
Global migration				
	1.65***	1.56***	1.55***	1.07***
	(13.80)	(5.66)	(7.03)	(16.31)
N	93,279	124,608	123,908	120,408
QIC	90,665.54	119,763.04	119,255.03	118,256.73
South–North migration				
	1.17+	1.10	1.05	1.00
	(1.78)	(1.03)	(0.70)	(0.01)
N	9,917	14,100	13,959	14,100
QIC	304,298.97	272,227.54	275,738.09	271,519.83
South–South migration				
	1.22***	0.76+	0.81*	1.04***
	(6.38)	(-1.94)	(-2.00)	(3.64)
N	15,614	22,200	21,978	22,200
QIC	1,355,945.89	2,228,043.92	2,121,149.21	969,725.81
South–Semiperiphery migration				
	1.26***	0.67***	0.69***	1.04***
	(4.38)	(-3.30)	(-4.01)	(3.60)
N	7,807	11,100	10,989	11,100
QIC	200,551.58	451,125.73	437,992.05	233,695.49

GEE-NB models are presented by rows, which are grouped by type of migration (global migration, South–North migration, etc.). Columns represent the social connectedness variable tested in each model. All models include controls, which are not shown for ease of interpretation (full estimates available from author). Controls generally conform to results presented in Table 1.

[a]Skewed distributions are natural log transformed.

z-statistics in parentheses; probabilities based on two-tailed *z*-tests.

$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

memberships are associated with higher levels of migration between dyads, thus supporting H3. This is also the case for South–South and South–Semiperiphery migration, although effects are slightly smaller. Results emphasize the importance of social connectedness at multiple levels for migration flows, including at a global social level. In contrast to other migration types, South–North migration does not appear to be significantly influenced by shared world society ties.

While social connectedness factors tend to uniquely influence South–South and South–Semiperiphery migration, WST factors shape South–North migration in particular. Table 3 presents IRRs for GEE-NB models predicting WST effects (in columns) grouped by forms of migration (in rows), including all controls. WST predicts that higher levels of trade and FDI penetration from the advanced North's economic expansion should lead to more out-migration as individuals' livelihoods and valuations of labor and wealth are transformed in the Global South (H4). Globally, H4 is partially supported as trade penetration leads to significantly higher levels of migration. Investment penetration, however, is found to have a significant negative effect on migration. As origin countries are increasingly penetrated by enduring multinational corporative interests, migration levels are shown to be lower on a global level.[19] H4 is also only partially supported for South–Semiperiphery migration. While trade penetration

TABLE 3
Incidence Rate Ratios from GEE Negative Binomial Regression Models Predicting World-System Variables' Effects on Migration Flows

GEE-NB models	*Trade penetration*[a]	*Investment penetration*[b]	*Interstate conflict*	*Nonstate conflict*
Global migration				
	1.83***	0.91***	1.52***	1.36**
	(35.10)	(−4.58)	(9.39)	(3.16)
N	94,835	119,183	124,608	124,608
QIC	112,601.97	113,220.71	119,571.81	119,312.18
South–North migration				
	1.49***	1.62***	1.49**	2.69***
	(9.68)	(5.67)	(3.18)	(4.60)
N	13,249	13,536	14,100	14,100
QIC	181,381.22	291,804.83	274,419.26	281,736.55
South–South migration				
	1.22	1.14	1.58**	3.46***
	(1.26)	(0.88)	(2.60)	(3.99)
N	13,463	21,312	22,200	22,200
QIC	662,487.01	1,810,027.49	1,658,827.16	1,522,169.94
South–Semiperiphery migration				
	1.49***	1.15	2.25***	3.41***
	(3.55)	(0.91)	(3.98)	(4.03)
N	9,063	10,656	11,100	11,100
QIC	116,393.03	270,869.29	328,516.24	322,601.74

GEE-NB models are presented by rows, which are grouped by type of migration (global migration, South–North migration, etc.). Columns represent the world-system variable tested in each model. All models include controls, which are not shown for ease of interpretation (full estimates available from author). Controls generally conform to results presented in Table 1.

[a]Skewed distributions are natural log transformed.

[b]Variable standardized for ease of interpretation.

z-statistics in parentheses; probabilities based on two-tailed *z*-tests.

$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

leads to more South–Semiperiphery migration, investment penetration has no significant effect. In contrast, H4 is fully supported for South–North migration. Higher levels of trade and investment penetration lead to increased South–North flows. These results underscore the unevenness of economic development globally, in particular between core and periphery, and the unequal relations inherent in trade and investment arrangements, as well as their direct connection to migration. For South–South migration, neither trade nor investment penetration appears to significantly influence migration.

WS theories predict that conflict generated by core expansion and subsequent dislocations will lead to migration out of the Global South (H5). Two conflict measures are used to test WS theories: one representing conflict where state actors are involved and the other nonstate conflict. H5 finds robust support for all migration types. Both interstate and nonstate conflict exert a positive significant influence on migration flows regardless of destination or origin. Figure 1 shows percent increases in migration predicted for additional conflict, by migration and conflict types. While conflict produces a net increase in migrants for South–North migration (a 49 percent increase with additional interstate conflict and 169 percent increase with

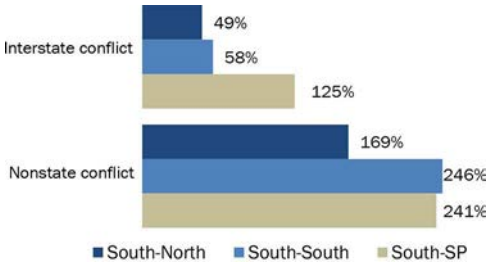

FIGURE 1 Percent increase in migration from additional conflict, by migration and conflict types.
Note: For interstate conflict, additional conflict represents one additional incident. For nonstate conflict, additional conflict represents the presence of nonstate conflict. Increases are net of all other covariates held constant.

nonstate conflict), the highest percent increases are found for South–South and South–Semiperiphery migration. Nonstate conflict leads to a 246 percent increase in the number of South–South migrants. Interstate conflict particularly influences South–Semiperiphery migration, with a net 125 percent increase in migration for each additional conflict incident. Results suggest that conflict and the resulting search for stability, and not wage differentials, are significant drivers of migration from the South to up-and-coming economies.

I evaluate the robustness of the central findings and extend relevant analyses in a number of ways. First, I assess whether the results presented are sensitive to outliers in the flow data. Two dyads stand out for their high flow numbers across panels: Pakistan–Afghanistan and Mexico–United States. Estimating models without these outliers does not substantively change the presented results.

Second, I test whether the WST and social connectedness relationships emerge specifically with migration to NIDs. Figure A1 maps NIDs around the world.[20] I estimate the models presented in Tables 1, 2, and 3 with the NID sample. Results are patterned very similarly to those for global migration models.[21] Forms of social connectedness have significant, positive effects on migration flows to NIDs, with the clearest effects for remittances (IRR = 1.74, $z = 9.91$) and world society ties (IRR = 1.08, $z = 8.70$) and marginal effects for communication variables. For WST variables, trade penetration is found to have a significant, positive effect (IRR = 1.74, $z = 11.19$) while investment shows a significant, negative effect on flows (IRR = 0.85, $z = -3.08$), much like for global models. Both forms of conflict are associated with higher out-migration from the origin: interstate (IRR = 1.52, $z = 4.43$) and nonstate (IRR = 1.90, $z = 2.65$). It should be noted that wage differential effects, which are consistently found throughout the global models, are inconsistent for NID migration. Results suggest that while NID migration exhibits very similar trends compared to global patterns, wage-based evidence for such migration remains inconclusive.

Finally, I test the urbanity hypothesis, which predicts that a destination's level of urbanity will influence migration flows as migrants move to globalized city centers. Table 4 presents IRRs for GEE-NB models predicting the effect of urbanity on migration flows. While destination urbanity has a clear and consistent positive effect on migration flows for global migration, this effect is not robust for South–South migration (compare ZINB results in Table A6).[22] Instead, it appears that urbanity in the *origin*, and not the destination, spurs South–South migration. Further, population pressures in the form of larger working-age populations in the

TABLE 4
Origin Urbanization and Population Pressures Drive South–South Migration

	Global migration	*South–South migration*		
	GEE-NB	*GEE-NB*	*GEE-NB*	*GEE-NB*
Urbanity in destination	1.03***	1.71***		
	(6.78)	(3.82)		
Urbanity in origin			1.97***	2.05***
			(5.30)	(5.50)
Working age pop. in origin (potential support ratio)				1.53***
				(4.18)
Wage differential[a]	1.21**	1.41***	1.30***	1.58***
	(2.89)	(5.23)	(3.61)	(8.68)
Labor participation (dest.)[a]	0.90*	1.08	1.09	1.07
	(−2.31)	(1.03)	(1.28)	(1.11)
Colonial legacy	9.84***			
	(13.07)			
Geographic distance[b]	0.36***	0.04***	0.05***	0.05***
	(−14.94)	(−24.96)	(−27.22)	(−28.20)
Geographic contiguity	17.16***	40.23***	36.31***	31.87***
	(11.31)	(6.96)	(7.82)	(7.63)
Common language	1.85***	3.61***	4.11***	4.34***
	(5.80)	(4.90)	(4.70)	(3.86)
Migrant network space[b]	2.22***	1.20**	1.31***	1.35***
	(19.33)	(3.25)	(5.20)	(5.94)
Year	1.00	0.95***	0.95***	0.95***
	(0.10)	(−4.36)	(−4.90)	(−4.69)
N (origin-destination-year)	124,608	22,200	22,200	22,200
QIC	119,399.95	862,440.89	481,860.66	434,418.99

Incidence rate ratios from GEE Negative Binomial models presented in separate columns.
[a]Variable standardized for ease of interpretation.
[b]Skewed distributions are natural log transformed.
z-statistics in parentheses; probabilities based on two-tailed *z*-tests.
$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$.

origin also appear to increase South–South flows in conjunction with urbanization. It is important to note that the final model results in a significant decrease in the *QIC* statistic compared to all other South–South models estimated. Results point to demographic processes in the origin, such as urbanization and pressures derived from large working-age cohorts, as a driving force behind South–South migration, net of conventional factors.

DISCUSSION AND CONCLUSION

This study bridges a gap in international migration studies using newly available global migration data and an extended empirical model that captures social connectedness and world-systemic influences on both global and regional migration flows. Are models designed to account for South–North migration appropriate for South–South flows? In short, yes and no. While findings show that South–South migration is also shaped by conventional

macrostructural factors, though to differing degrees compared to South–North migration, flows within the Global South also emerge as a distinct form of migration with unique sources.

Baseline results confirm conventional explanations for most migration forms. For South–South migration, wage differentials, as conventionally recognized, shape flows. However, findings suggest that geographical and cultural variables are particularly influential, pointing to an important connection between mobility and space as well as cultural and linguistic familiarity in South–South migration motives.

Moreover, social connectedness factors that go beyond migrant network space are particularly important for South–South and South–Semiperiphery migration. Remittances received in the origin, a form of socially transmitted capital, are found to significantly increase these flows. Communication technologies, on the other hand, appear to socially connect people *within* the origin, thus expanding entrepreneurial and other networking opportunities and making outmigration from the South less necessary. At the global level, shared ties to world society between dyads are shown to increase bilateral migration as migration becomes normalized and increasingly coordinated at a global level. Findings thus provide evidence for remittances and world society hypotheses, suggesting that connectedness at both the migrant and country levels sustain migration flows. Findings also support an origin-centered technology hypothesis, which locates connectedness within borders and not across them.

The inequalities between North and South elucidated by WST are supported by evidence throughout the analysis. While South–North migration is not particularly affected by social connectedness, it is consistently influenced by global WS dynamics. Trade and investment penetration from core to periphery are linked to higher levels of migration in the opposite direction. In contrast, South–South migration is not significantly impacted by trade or investment penetration and South–Semiperiphery migration lies somewhere in between, providing evidence for its transitional nature. In the context of global inequalities, migration and capital flows appear to be the opposite sides of the same systemic coin.

The influence of conflict, a residual effect of core–periphery penetration that WST and refugee experts identify, finds strong support in the data. Both interstate and nonstate conflict consistently drive migration regardless of migration type. Not surprisingly, conflict, however defined, has the strongest effects for South–South and South–Semiperiphery migration, with anywhere from a 58 percent to 246 percent increase in migration depending on conflict type. Conflict thus has a more consistent effect on flows across all migration types than the wage differentials on which conventional explanations rely.

Taken together, findings point to the importance of connectedness for South–South and South–Semiperiphery migration and, in contrast, world-systemic disjuncture for South–North migration. Yet, it is nearly impossible to analyze connectedness and disjuncture separately. It could be argued that even forms of connectedness that bridge boundaries must still occur within a context of systemic disequilibria. While remittances, for example, are a form of capital that bonds migrants and prospective migrants, such social transmission would be impossible if not for the existence of richer destinations in a broader context of global inequality. The proliferation of communication technologies, tied as it is to development, cannot be analyzed separately from the distribution of resources and technological goods across unequal global spheres. Even world society theoretical frameworks provide only partial explanations of globally homogenized outcomes. If migration is regularized through world society connectedness, such theories would expect institutions to begin formulating common and coordinated solutions

to the movement of people across borders. Importantly, however, results suggest that such coordination should only affect South–South and South–Semiperiphery migration, the regions of the world that most lack the resources to impose common solutions. Thus, it appears that world-society frameworks cannot predict the inevitability of institutional isomorphism without also considering for whom and through what means such isomorphism will be achieved.

Results also show that the estimation of South–South migration dramatically improves when taking into account additional demographic determinants. While no clear evidence exists that destination urbanity spurs South–South migration, as WST would predict, there is robust support pointing to the significance of *origin* urbanity. More urban origins stimulate out-migration, perhaps because these areas act as jumping off points post-internal migration and pre-international migration. Future research should test whether origin urban areas are indeed migration transition points. In addition, origins with larger working-age populations experience more out-migration, presumably as competitive pressures for work and economic survival lead individuals to seek opportunities abroad. Demographic models thus appear to substantially improve our understanding of South–South migration and may benefit prospective analyses.

Findings have important implications for future theoretical and empirical work. First, the study points to additional influences on migration flows that go beyond the macrostructural forces on which most prior studies rely. New forms of connectedness and global systemic dynamics shape migration in important ways, revealing that migration is tied to relations between people, countries, and systems and not necessarily driven solely by inexorable gravity-like forces. This insight should be exploited as data become more available and detailed, making it possible to investigate how people in the origin maintain connections with current migrants, how they connect to others within their origins, and how forms of capital are socially remitted along transnational paths. Furthermore, this study finds strong support for WST accounts of international migration. WST's focus on unequal relations on a global scale should compel future work to consider the often incomplete ways that migrants have been conceptualized theoretically. If South–North migration is significantly affected by economic penetration and its disparate terms, this suggest that international migrants are at least partially motivated by historically circumscribed unequal relations that have redefined their traditional views of work, consumption, and value. The self-interested, benefit-maximizing, and rather culturally neutral migrant provides only a partial theoretical model. Moreover, if conflict is consistently found to influence international migration, regardless of migrant origin or destination, new theoretical and empirical models should emerge to acknowledge its increasing role. Most recent estimates suggest that the number of forcibly displaced migrants is at an all-time high, with nearly 14 million newly displaced people in 2014 (UNHCR 2015). These numbers underscore the need for theoretical improvements to account for migrants who are mobile by force.

Despite current findings, this study leaves open several questions for future research and debate. One of its distinct limitations is the lack of detail in flow data. Due to the data's standardization, the reasons behind migration cannot be distinguished, so labor migration, forced migration, and resettlement across borders are all treated similarly. Although it is still possible to assess the role of conflict in migration, improved disaggregation of flows would further refine our understanding of this relationship. In addition, common difficulties incorporating other political, environmental, and cultural factors that potentially shape migration processes have plagued studies of South–North migration, and are particularly severe for exploring migration on a global scale. While the current study's scope is limited to key connectedness and systemic

influences, future research should begin incorporating additional factors as data are harmonized and theory provides new guidance on testing these relationships. Because of the innovative nature of this research, the study also elects to prioritize breadth of predictors over a narrower selection of explanatory variables. Continued investigation should theoretically delineate and test distinct categories of social connectedness, WST, or other variables while employing different measures to ascertain whether results qualify current findings. Migration and the relationships analyzed herein may also have implications for other large-scale, global trends. In particular, the flow of remittances and subsequent migration could ultimately influence global inequalities, both within and between countries. A focus on the semiperiphery's development trajectory may also produce new insights regarding migration to this region given current findings' limited evidence for economic motives. Finally, debate over the determinants of international migration should begin turning attention to South–South migration as an increasingly important form of mobility worthy of serious and sustained analysis. Current findings reveal that space and conflict play a larger role in South–South migration than wage differentials and other macroeconomic factors, characterizing this form of migration as one where opportunities can only be viewed through the lens of constraint. Meanwhile, as countries in the advanced North show ambivalence toward conflict-driven migrants and anti-immigrant extreme right-wing parties gain popularity, additional constraints only accrue for migration out of the Global South. This study is a first step in generating a framework that will allow for greater understanding of both the deterrents and motives behind these increasingly important forms of international mobility.

ACKNOWLEDGMENTS

I would like to thank Patricia McManus and Kody Steffy for their thoughtful comments and feedback on previous versions of this manuscript. I would also like to thank the editor and coeditor of the special edition and the anonymous reviewers who helped improve the article.

NOTES

1. For the purposes of this study, the terms *Global South* and *periphery* will be used largely interchangeably. See "Analytic Technique" section and note 3 below.

2. Abel and Sander use an iterative proportional fitting algorithm to estimate the number of movements from origin country i to destination country j required to account for the observed change in bilateral migrant stock numbers from time t to time $t+1$ (for a detailed discussion of methods, see Abel 2013; supplement to Abel and Sander 2014). These data provide a superior means of estimating flows compared to other methods that involve simply differencing migrant stock numbers between periods since they also account for natural population change due to deaths and births and the number of likely "stayers," that is, migrants who do not move on to another destination.

3. There are potentially multiple ways of defining the Global South. An alternative way of identifying global spheres is with reference to a country's income level, as World Bank income groupings do, or by outmoded geopolitical conventions such as the Brandt Line. Such groupings, however, are not theoretically motivated and instead rely on arbitrary income thresholds or boundaries to delineate groups. Because migration flows consist of networks of social groups and countries, a network-based approach that is also grounded in theory is preferable and more rigorous. WST offers a theoretically and empirically sound means of identifying stratified country groups in a global system while substantiating both income differences and network relations (Clark and Beckfield 2009).

4. The foreign stock threshold corresponds to 8.5 percent of total destination population, which is the sample average for the first migration period.

5. For Internet use, missing values for years after 1990, a year in which most countries report zero users, are interpolated to the first available data point. Missing values for years 1990 and before are assumed to be zero since the Internet was largely undeveloped during this period.

6. IGO membership categories in the original Correlates of War (COW) data include *no membership, observer, associate membership*, and *full membership*. In keeping with this schema, values increased by .25 are assigned to each category from 0 (no membership) to 1 (full membership). Missing values are assumed to correspond to a lack of membership. Of the 528 IGO memberships analyzed by dyads, an average 3 percent of these memberships are missing for any particular dyad with a maximum of 5 percent missing for certain country dyads. Regression analyses indicate that these negligible missing values are not systematically patterned by origin or destination country.

7. There is some evidence that INGO membership captures a network structure similar to the world-system position. The commonly used INGO Network Country Score (Paxton, Hughes, and Reith 2015) is highly correlated with the world-system categories used to define samples in this study ($r = 0.84$). The same is not true for the IGO ties variable ($r = 0.37$). Such a high correlation suppresses intrasample variation and potentially biases any derived estimates.

8. Ideally, FDI would also be measured bilaterally. However, available bilateral FDI data are incomplete and thus do not cover the majority of countries across all panels. In addition, FDI is entered into models as a standardized variable and not logged, despite a skewed distribution. This is due to negative FDI values that represent cases in which disinvestment has occurred.

9. Armed conflict is defined as conflict that results in at least 25 battle-related deaths a year.

10. Several urbanity measures, including percent of total population in urban areas, were tested. However, alternatives suffered from high collinearity with other predictors and controls.

11. Due to a lack of data for earlier time points, values are provided for the migration period's first year. While some studies use unemployment rates to gauge labor market conditions, there is generally a lack of available unemployment data for many country-years.

12. Prior studies of South–North migration have primarily estimated GEE models with a natural-logged flow outcome. With the current global data, taking the natural log of the outcome does not effectively normalize its distribution.

13. An alternative estimation technique is standard fixed effects (FE) modeling. FE techniques control for unobserved heterogeneity by differencing away between-unit variation. However, due to FE's differencing strategy, it is not possible to estimate time-invariant predictor variables. Because these variables are usually highly significant in studies of migration, in particular geographic distance, colonial legacy, and common language, a GEE estimator is preferable.

14. Either the previous year or an average over the previous five-year period serves as lags depending on data availability and variable type.

15. Incidence rate ratios provide a ratio of the rate of migration with a change in the predictor to the rate of migration without a change in the predictor. IRRs are similar to odds ratios for logistic regression models in that negative effects are indicated by IRRs less than 1 and positive effects by IRRs greater than 1. A percent increase or decrease in the number of migrants for a change in the predictor variable can be calculated as (1-IRR) for negative effects and (IRR-1) for positive effects.

16. This effect does not emerge in the corresponding ZINB model, however (Table A3).

17. For ease of interpretation, controls are not shown and are available from the author. Results generally conform throughout to those presented in Table 1.

18. It should also be noted that technology models of South–South migration suffer from the worst fit, as indicated by *QIC*, suggesting that communication theories alone may be inadequate for explaining South–South movement.

19. Although this finding appears counterintuitive, it is likely driven by the inclusion of North–North migration, where FDI may be used for human capital enhancement in contrast to FDI in low- or medium-technology enterprises in the Global South. In such cases, FDI may be expected to decrease out-migration net of other factors. Estimating FDI effects for North–North migration shows a significant, negative effect ($\text{IRR} = 0.71$; $z = -8.37$).

20. Some countries classified as NIDs up to 2010 are likely no longer NIDs. Syria, for example, is now the leading country of origin for refugees (UNHCR 2015) due to more recent conflict in the region. In earlier years, there was substantial in-migration from other Middle Eastern countries, including refugees from Iraq.

21. ZINB models confirm the NID results presented.

22. There is also a robust significant and positive destination urbanity effect for South–Semiperiphery migration ($\text{IRR} = 1.42$; $z = 5.59$).

REFERENCES

Abel, Guy J. 2013. "Estimating Global Migration Flow Tables Using Place of Birth Data." *Demographic Research* 28(18):505–46.

Abel, Guy J., and Nikola Sander. 2014. "Quantifying Global International Migration Flows." *Science* 343(6178): 1520–22.

Borjas, George J. 1989. "Economic Theory and International Migration." *International Migration Review* 23(3): 457–85.

Boswell, Terry, and William J. Dixon. 1990. "Dependency and Rebellion: A Cross-National Analysis." *American Sociological Review* 55(4):540–59.

Boyd, Monica. 1989. "Family and Personal Networks in International Migration: Recent Developments and New Agendas." *International Migration Review* 23(3):638–70.

Burawoy, Michael. 1976. "The Functions and Reproduction of Migrant Labor: Comparative Material from Southern Africa and the United States." *American Journal of Sociology* 81(5):1050–87.

Chase-Dunn, Christopher, and Thomas D. Hall. 1997. "The Semiperiphery: Seedbed of Change." Pp. 78–98 in *Rise and Demise: Comparing World-Systems*. Boulder, CO: Westview Press.

Chase-Dunn, Christopher, Yukio Kawano, and Benjamin D. Brewer. 2000. "Trade Globalization since 1795: Waves of Integration in the World-System." *American Sociological Review* 65(1):77–95.

Cholewinski, Ryszard, Paul de Guchteneire, and Antoine Pécoud eds. 2009. *Migration and Human Rights: The United Nations Convention on Migrant Workers' Rights*. Cambridge: Cambridge University Press.

Clark, Rob. 2012. "World-System Position and Democracy, 1972–2008." *International Journal of Comparative Sociology* 53(5–6):367–99.

Clark, Rob, and Jason Beckfield. 2009. "A New Trichotomous Measure of World-system Position Using the International Trade Network." *International Journal of Comparative Sociology* 50(1):5–38.

Czaika, Mathias, and Hein de Haas. 2014. "The Globalization of Migration: Has the World Become More Migratory?" *International Migration Review* 48(2):283–323.

de Haas, Hein. 2009. "Mobility and Human Development." Human Development Research Paper 2009/01. New York: United Nations Development Programme.

De Lombaerde, Philippe, Fei Guo, and Helion Póvoa Neto. 2014. "Introduction to the Special Collection." *International Migration Review* 48(1):103–12.

Dekker, Rianne, and Godfried Engbersen. 2014. "How Social Media Transform Migrant Networks and Facilitate Migration." *Global Networks* 14(4):401–18.

DeWaard, Jack, Keuntae Kim, and James Raymer. 2012. "Migration Systems in Europe: Evidence From Harmonized Flow Data." *Demography* 49(4):1307–33.

Fitzgerald, Jennifer, David Leblang, and Jessica C. Teets. 2014. "Defying the Law of Gravity: The Political Economy of International Migration." *World Politics* 66(3):406–45.

Hafner-Burton, Emilie, and Kiyoteru Tsutsui. 2005. "Human Rights in a Globalizing World: The Paradox of Empty Promises." *American Journal of Sociology* 110(5):1373–411.

Hardin, James W., and Joseph M. Hilbe. 2003. *Generalized Estimating Equations*. Boca Raton, FL: Chapman and Hall/CRC.

Harris, John R., and Michael P. Todaro. 1970. "Migration, Unemployment and Development: A Two-Sector Analysis." *American Economic Review* 60(1):126–42.

Hilbe, Joseph M. 2011. *Negative Binomial Regression*. Cambridge: Cambridge University Press.

Hiller, Harry H., and Tara M. Franz. 2004. "New Ties, Old Ties and Lost Ties: The Use of the Internet in Diaspora." *New Media and Society* 6(6):731–52.

Hooghe, Marc, Ann Trappers, Bart Meuleman, and Tim Reeskens. 2008. "Migration to European Countries: A Structural Explanation of Patterns, 1980–2004." *International Migration Review* 42(2):476–504.

Horst, Heather A. 2006. "The Blessings and Burdens of Communication: Cell Phones in Jamaican Transnational Social Fields." *Global Networks* 6(2):143–59.

Kim, Keuntae, and Joel E. Cohen. 2010. "Determinants of International Migration Flows to and from Industrialized Countries: A Panel Data Approach Beyond Gravity." *International Migration Review* 44(4):899–932.

Leeves, Gareth. 2009. "Migration Plans and Received Remittances: Evidence from Fiji and Tonga." *International Migration Review* 43(1):160–77.

Lichter, Daniel T., and Kenneth M. Johnson. 2009. "Immigrant Gateways and Hispanic Migration to New Destinations." *International Migration Review* 43(3):496–518.

Massey, Douglas S. 1990. "Social Structure, Household Strategies, and the Cumulative Causation of Migration." *Population Index* 56(1):3–26.

Massey, Douglas S., Joaquin Arango, Hugo Graeme, Ali Kouaouci, Adela Pellegrino, and J. Edward Taylor. 1993. "Theories of International Migration: A Review and Appraisal." *Population and Development Review* 19 (3):431–66.

Massey, Douglas S., Joaquín Arango, Hugo Graeme, Ali Kouaouci, Adela Pellegrino, and J. Edward Taylor eds. 1998. *World in Motion: Understanding International Migration at the End of the Millenium*. Oxford: Oxford University Press.

Mayda, Anna Maria. 2010. "International Migration: A Panel Data Analysis of the Determinants of Bilateral Flows." *Journal of Population Economics* 23(4):1249–74.

Meyer, John W., John Boli, George M. Thomas, and Francisco O. Ramirez. 1997. "World Society and the Nation-State." *American Journal of Sociology* 103(1):144–81.

Moaddel, Mansoor. 1994. "Political Conflict in the World Economy: A Cross-National Analysis of Modernization and World-System Theories." *American Sociological Review* 59(2):276–303.

Morawska, Ewa. 1990. "The Sociology and Historiography of Immigration." Pp. 187–240 in *Immigration Reconsidered: History, Sociology, and Politics*, edited by Virginia Yans-McLaughlin. New York: Oxford University Press.

Palloni, Alberto, Douglas S. Massey, Miguel Ceballos, Kristin E. Espinosa, and Michael Spittel. 2001. "Social Capital and International Migration: A Test Using Information on Family Networks." *American Journal of Sociology* 106 (5):1262–98.

Paxton, Pamela, Melanie M. Hughes, and Nicholas E. Reith. 2015. "Extending the INGO Network Country Score, 1950–2008." *Sociological Science* 2:287–307.

Pedersen, Peder J., Mariola Pytlikova, and Nina Smith. 2008. "Selection and Network Effects: Migration Flows into OECD Countries 1990–2000." *European Economic Review* 52(7):1160–86.

Pevehouse, Jon, Timothy Nordstrom, and Kevin Warnke. 2004. "The Correlates of War 2 International Governmental Organizations Data Version 2.0." *Conflict Management and Peace Science* 21(2):101–19.

Pevehouse, Jon, and Bruce Russett. 2006. "Democratic International Governmental Organizations Promote Peace." *International Organization* 60:969–1000.

Portes, Alejandro. 1995. *The Economic Sociology of Immigration*. New York: Russell Sage Foundation.

Portes, Alejandro, and John Walton. 1981. *Labor, Class, and the International System*. New York: Academic Press.

Richmond, Anthony H. 1988. "Sociological Theories of International Migration: The Case of Refugees." *Current Sociology* 36(2):7–25.

Ruyssen, Ilse, and Glenn Rayp. 2014. "Determinants of Intraregional Migration in Sub-Saharan Africa 1980–2000." *The Journal of Development Studies* 50(3):426–43.

Sanderson, Matthew R., and Jeffrey Kentor. 2008. "Foreign Direct Investment and International Migration: A Cross-National Analysis of Less-Developed Countries, 1985—2000." *International Sociology* 23(4):514–39.

Sanderson, Matthew R., and Jeffrey D. Kentor. 2009. "Globalization, Development and International Migration: A Cross-National Analysis of Less-Developed Countries, 1970–2000." *Social Forces* 88(1):301–36.

Sassen, Saskia. 1988. *The Mobility of Labour and Capital*. Cambridge: Cambridge University Press.

Sassen, Saskia. 2006. *Cities in a World Economy*. Thousand Oaks, CA: Pine Forge.

Skeldon, Ronald. 1997. *Migration and Development: A Global Perspective*. Harlow: Addison-Wesley Longman.

Skeldon, Ronald. 2012. "Migration and Its Measurement: Towards a More Robust Map of Bilateral Flows." Pp. 229–48 in *Handbook of Research Methods in Migration*, edited by Carlos Vargas-Silva. Cheltenham, UK: Edward Elgar.

Snyder, David, and Edward L. Kick. 1979. "Structural Position in the World System and Economic Growth, 1955–1970: A Multiple-Network Analysis of Transnational Interactions." *American Journal of Sociology* 84(5):1096–126.

Torfason, Magnus Thor, and Paul Ingram. 2010. "The Global Rise of Democracy: A Network Account." *American Sociological Review* 75(3):355–77.

United Nations (UN). 2013. "International Migration Report 2013." New York: United Nations.

United Nations High Committee for Refugees (UNCHR). 2015. "Global Trends: Forced Displacement in 2014." Geneva: United Nations High Commissioner for Refugees.

van Dalen, Hendrik P., George Groenewold, and Tineke Fokkema. 2005. "The Effect of Remittances on Emigration Intentions in Egypt, Morocco, and Turkey." *Population Studies* 59(3):375–92.

Wallerstein, Immanuel. 1974. *The Modern World-System I: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century*. New York: Academic Press.
Winders, Jamie. 2014. "New Immigrant Destinations in Global Context." *International Migration Review* 48: S149–S179.
Yang, Philip Q. 1998. "The Demand for Immigration to the United States." *Population and Environment* 19(4):357–83.

APPENDIX

TABLE A1
Descriptive Statistics and Data Sources

Variable	*Range*	*Mean*	*SD*	*Description*	*Source*
Flow of migrants	0–2,677,763	1,046.55	18,388.76	number of migrants moving from origin i to destination j at time t	Abel and Sander (2014)
Trade penetration, logged	0–12.39	1.45	2.05	total value of imports from destination j to origin i at time $t-1$ in millions of USD current prices	Correlates of War Bilateral Trade data (v3.0)
Investment penetration, standardized	–1–11.71	0	1	total foreign direct investment per capita in origin i in USD current prices at time $t-1$	U.N. Conference on Trade and Development Statistics
Interstate conflict	0–6.5	0.21	0.57	total incidents of armed conflict in origin i at time $t-1$ where at least one party is a state	Uppsala Conflict Data Program Monadic Conflict Onset and Incidence data
Nonstate conflict	0–1	0.05	0.23	1 if there is armed conflict in origin i at time $t-1$ where parties are non-state actors	Uppsala Conflict Data Program Nonstate Conflict data
Remittance flows, logged	–2.97–9.77	4.76	2.46	total remittance receipts in origin i at time $t-1$ in millions USD current prices	UN Conference on Trade and Development Statistics
Internet use, logged	0–4.28	0.75	1.12	number of internet users per 100 people in origin i at time $t-1$	World Bank World Development Indicators
Mobile phone use, logged	0–4.62	1.11	1.40	number of mobile phone subscriptions per 100 people in origin i at time $t-1$	World Bank World Development Indicators

(*Continued*)

TABLE A1
Continued

Variable	*Range*	*Mean*	*SD*	*Description*	*Source*
World society ties	0–105	26.06	13.12	total number of shared IGO memberships between origin *i* and destination *j* at time *t* – 1	Correlates of War Intergovernmental Organizations data (v2.3)
Urbanity (destination)	0–72	1.72	5.57	number of urban agglomerations in destination *j* with over 1 million inhabitants at time *t*	UN World Urbanization Prospects (2014 Revision)
Urbanity (origin)	0–72	1.72	5.57	number of urban agglomerations in origin *i* with over 1 million inhabitants at time *t*	UN World Urbanization Prospects (2014 Revision)
Working-age population, standardized (origin)	–1.23–9.31	0	1	potential support ratio: persons aged 15 to 64 per every person aged 65 and over in origin *i* at time *t* – 1	UN World Population Prospects (2012 Revision)
Wage differential, standardized	–4.06–4.06	0	1	difference between GDP per capita in destination *j* and that in origin *i* at time *t* – 1 in int'l dollars, PPP 2005 constant prices	Penn World Tables (v7.1)
Labor participation, standardized (destination)	–2.33–2.61	0	1	labor force participation rate in destination *j* at time *t*	Int'l Labor Organization Key Indicators of the Labor Market (KILM)
Colonial legacy	0–1	0.01	0.10	1 if destination *j* and origin *i* were ever in a colonial relationship	CEPII[a] GeoDist Database
Geographic distance, logged	2.35–9.90	8.75	0.78	total distance between origin *i* capital city and destination *j* capital city in kilometers	CEPII[a] GeoDist Database
Geographic contiguity	0–1	0.02	0.13	1 if destination *j* and origin *i* share national borders	CEPII[a] GeoDist Database

(*Continued*)

TABLE A1
Continued

Variable	*Range*	*Mean*	*SD*	*Description*	*Source*
Common official language	0–1	0.15	0.35	1 if destination *j* and origin *i* share common official language	CEPII[a] GeoDist Database
Migrant network space, logged	7.07–17.43	12.11	1.91	population in destination *j* that are foreigners at time $t-1$	World Bank World Development Indicators

[a]Centre d'Études Prospectives et d'Informations Internationales.
*For logged terms, unity added to original term before taking natural log.

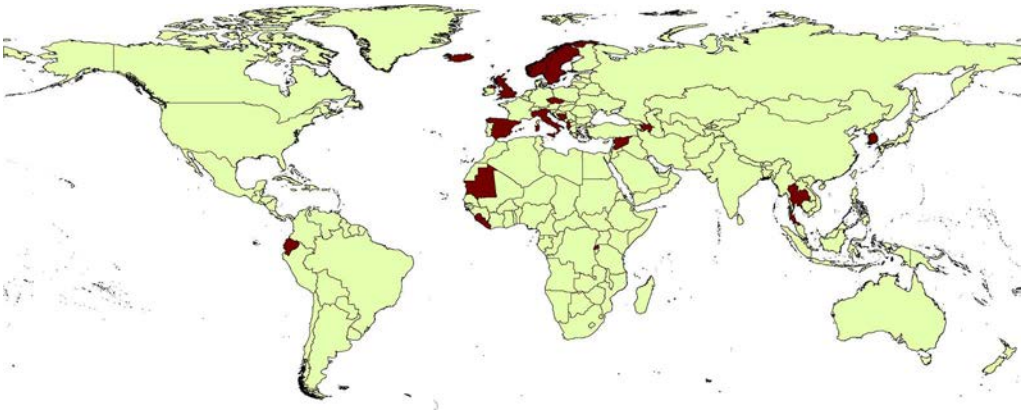

FIGURE A1 New immigrant destinations, 1990–2010.

TABLE A2
Sample Countries, World-System Position, and New Immigrant Destination Status

Country	*WSP*	*NID*	*Country*	*WSP*	*NID*	*Country*	*WSP*	*NID*	*Country*	*WSP*	*NID*
Afghanistan	P	no	Denmark	C	no	Kyrgyzstan	P	no	Rwanda	P	yes
Albania	P	yes	Djibouti	P	no	Laos	P	no	Saudi Arabia	C	no
Algeria	SP	no	Dom. Rep.	P	no	Latvia	SP	no	Senegal	P	no
Angola	P	no	Ecuador	SP	yes	Lebanon	SP	no	Serbia-Mont.	P	no
Argentina	C	no	Egypt	C	no	Liberia	P	yes	Sierra Leone	P	yes
Armenia	P	no	El Salvador	P	no	Libya	SP	no	Singapore	C	no
Australia	C	no	Equation Guinea	P	no	Lithuania	SP	no	Slovakia	SP	no
Austria	C	no	Estonia	P	no	Macedonia	P	no	Slovenia	SP	no
Azerbaijan	P	yes	Ethiopia	P	no	Madagascar	P	no	Solomon Isl.	P	no
Bahamas	P	no	Fiji	P	no	Malawi	P	no	Somalia	P	no
Bahrain	SP	no	Finland	C	no	Malaysia	C	no	South Africa	C	no
Bangladesh	SP	no	France	C	no	Maldives	P	yes	South Korea	C	yes
Barbados	P	yes	Gabon	P	no	Mali	P	no	Spain	C	yes
Belarus	SP	no	Gambia	P	no	Malta	SP	no	Sri Lanka	SP	no
Belgium	C	no	Georgia	P	no	Mauritania	P	yes	Sudan	P	no
Benin	P	no	Germany	C	no	Mauritius	P	no	Suriname	P	no
Bolivia	P	no	Ghana	SP	no	Mexico	C	no	Sweden	C	yes
Bosnia Herz.	P	yes	Greece	C	no	Moldova	P	no	Switzerland	C	no
Brazil	C	no	Guatemala	SP	no	Mongolia	P	no	Syria	SP	yes
Brunei	P	no	Guinea	P	no	Morocco	SP	no	Tajikistan	P	no
Bulgaria	C	no	Guinea-Bissau	P	no	Mozambique	P	no	Tanzania	SP	no
Burkina Faso	P	no	Guyana	P	no	Nepal	P	no	Thailand	C	yes
Burundi	P	no	Haiti	P	no	Netherlands	C	no	Togo	P	no
Cambodia	P	no	Honduras	P	no	New Zealand	C	no	Trin. and Tob.	P	no
Cameroon	P	no	Hungary	C	no	Nicaragua	P	no	Tunisia	SP	no
Canada	C	no	Iceland	P	yes	Niger	P	no	Turkey	C	no
Cape Verde	P	yes	India	C	no	Nigeria	SP	no	Turkmenistan	P	no
CAR	P	no	Indonesia	C	no	Norway	C	yes	Uganda	P	no
Chad	P	no	Iran	C	no	Oman	P	no	Ukraine	C	no
Chile	C	no	Iraq	P	no	Pakistan	C	no	UAE	C	no
China	C	no	Ireland	C	no	Panama	SP	no	UK	C	yes
Colombia	SP	no	Israel	C	no	PNG	P	no	United States	C	no
Comoros	P	no	Italy	C	yes	Paraguay	P	no	Uruguay	SP	no
Rep. Congo	P	no	Ivory Coast	SP	no	Peru	SP	no	Uzbekistan	P	no
DRC	P	no	Jamaica	P	no	Philippines	SP	no	Venezuela	SP	no
Costa Rica	SP	no	Japan	C	no	Poland	C	no	Vietnam	SP	no
Croatia	SP	no	Jordan	SP	no	Portugal	C	no	Yemen	P	no
Cuba	SP	no	Kazakhstan	SP	no	Qatar	P	no	Zambia	P	no
Cyprus	SP	no	Kenya	SP	no	Romania	C	no	Zimbabwe	SP	no
Czech Rep.	C	yes	Kuwait	SP	no	Russia	C	no			

Source: WSP data drawn from Clark (2012).

Note: Global analyses include additional countries without WST position designations in a pooled sample: Belize, Bhutan, Botswana, East Timor, Eritrea, Hong Kong, Lesotho, Luxembourg, Macao, Namibia, Puerto Rico, St. Lucia, St. Vincent and Grenadines, Samoa, São Tomé and Príncipe, Swaziland, Tonga.

TABLE A3
Incidence Rate Ratios from Base Zero-Inflated Negative Binomial Regression Models Predicting Migration Flows between and within World-System Regions

	Global migration	*South–North migration*	*South–South migration*	*South–Semiperiphery migration*
Wage differential[a]	1.14***	1.70***	1.39***	1.21
	(2.94)	(8.26)	(4.11)	(1.54)
Labor participation (dest.)[a]	1.06	0.99	1.18	1.01
	(1.02)	(−0.13)	(1.38)	(0.08)
Colonial legacy	6.96***	5.90***		
	(11.95)	(5.98)		
Geographic distance[b]	0.43***	0.18***	0.08***	0.19***
	(−15.91)	(−16.42)	(−16.45)	(−13.89)
Geographic contiguity	15.55***	2.34**	28.80***	8.88***
	(10.78)	(2.56)	(9.27)	(5.19)
Common language	1.79***	2.30***	4.16***	4.04***
	(5.89)	(3.78)	(4.66)	(3.84)
Migrant network space[b]	2.23***	2.36***	1.88***	2.28***
	(19.10)	(19.02)	(7.86)	(11.90)
Year	1.01	0.97***	0.98	0.94***
	(1.00)	(−3.10)	(−1.25)	(−5.30)
N (origin-destination-year)	124,608	14,100	22,200	11,100

[a]Variable standardized for ease of interpretation.
[b]Skewed distributions are natural log transformed.
z-statistics in parentheses; probabilities based on two-tailed *z*-tests.
$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

TABLE A4
Incidence Rate Ratios from Zero-Inflated Negative Binomial Regression Models Predicting Social Connectedness Variables' Effects on Migration Flows

ZINB models	*Remittances*[a]	*Internet use*[a]	*Mobile phone use*[a]	*World society ties*
Global migration				
	1.49***	1.33***	1.25***	1.05***
	(15.98)	(5.07)	(3.89)	(13.48)
N	93,279	124,608	123,908	120,408
South–North migration				
	1.12	0.89	0.89	1.00
	(1.23)	(−1.03)	(−1.53)	(−0.01)
N	9,917	14,100	13,959	14,100
South–South migration				
	1.22***	0.68*	0.68***	1.02+
	(3.62)	(−2.52)	(−3.40)	(1.73)
N	15,614	22,200	21,978	22,200
South–Semiperiphery migration				
	1.24***	0.73*	0.71***	1.03***
	(4.27)	(−2.35)	(−3.48)	(3.37)
N	7,807	11,100	10,989	11,100

ZINB models are presented by rows, which are grouped by type of migration (global migration, South–North migration, etc.). Columns represent the social connectedness variable tested in each model. All models include controls, which are not shown for ease of interpretation (full estimates available from author). Controls generally conform to results presented in Table A3.

[a]Skewed distributions are natural log transformed.

z-statistics in parentheses; probabilities based on two-tailed *z*-tests.

$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

TABLE A5
Incidence Rate Ratios from Zero-Inflated Negative Binomial Regression Models Predicting World-System Variables' Effects on Migration Flows

ZINB models	*Trade penetration*[a]	*Investment penetration*[b]	*Interstate conflict*	*Nonstate conflict*
Global migration				
	1.57***	0.81***	1.47***	1.27*
	(24.25)	(–6.21)	(8.21)	(2.27)
N	94,835	119,183	124,608	124,608
South–North migration				
	1.37***	1.38**	1.95***	2.35***
	(6.89)	(2.78)	(4.46)	(3.98)
N	13,249	13,536	14,100	14,100
South–South migration				
	0.89	1.02	1.92*	5.25***
	(–0.91)	(0.24)	(2.56)	(4.61)
N	13,463	21,312	22,200	22,200
South–Semiperiphery migration				
	1.19+	1.17	2.12***	2.93***
	(1.94)	(1.11)	(3.45)	(3.84)
N	9,063	10,656	11,100	11,100

ZINB models are presented by rows, which are grouped by type of migration (global migration, South–North migration, etc.). Columns represent the world-system variable tested in each model. All models include controls, which are not shown for ease of interpretation (full estimates available from author). Controls generally conform to results presented in Table A3.

[a]Skewed distributions are natural log transformed.

[b]Variable standardized for ease of interpretation.

z-statistics in parentheses; probabilities based on two-tailed *z*-tests.

$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

TABLE A6
Origin Urbanization and Population Pressures Drive South-South Migration (Incidence Rate Ratios from Zero-Inflated Negative Binomial Models)

	Global migration	*South–South migration*		
	ZINB	*ZINB*	*ZINB*	*ZINB*
Urbanity in destination	1.02**	1.01		
	(2.65)	(0.07)		
Urbanity in origin			1.87**	1.90**
			(2.86)	(2.92)
Working age pop. in origin (potential support ratio)				1.50***
				(3.30)
Wage differential[a]	1.16***	1.39***	1.31**	1.61***
	(3.39)	(4.20)	(3.19)	(4.70)
Labor participation (dest.)[a]	1.04	1.19	1.19	1.18
	(0.66)	(1.50)	(1.64)	(1.51)
Colonial legacy	7.38***			
	(12.20)			
Geographic distance[b]	0.43***	0.09***	0.10***	0.10***
	(−16.62)	(−16.15)	(−18.63)	(−20.15)
Geographic contiguity	15.59***	29.68***	25.23***	23.13***
	(11.07)	(9.30)	(8.94)	(8.60)
Common language	1.77***	4.20***	4.35***	4.69***
	(5.87)	(4.83)	(4.63)	(4.38)
Migrant network space[b]	2.16***	1.88***	1.85***	1.90***
	(16.90)	(7.23)	(8.63)	(9.10)
Year	1.01	0.98	0.97*	0.97*
	(1.15)	(−1.09)	(−2.34)	(−2.20)
N (origin-destination-year)	124,608	22,200	22,200	22,200

Incidence rate ratios from Zero-Inflated Negative Binomial models presented in separate columns.
[a]Skewed distributions are natural log transformed.
[b]Variable standardized for ease of interpretation.
z-statistics in parentheses; probabilities based on two-tailed *z*-tests.
$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.