Spanning the Institutional Abyss: The Intergovernmental Network and the Governance of Foreign Direct Investment

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Global economic transactions such as foreign direct investment must extend over an institutional abyss between the jurisdiction, and therefore protection, of the states involved. Intergovernmental organizations (IGOs), whose members are states, represent an important attempt to span this abyss. We argue they are a source of relational governance and use a network approach to demonstrate that the connections between two countries, through joint-membership in the same IGOs, are associated with a large positive influence on the foreign direct investment that flows between them. Moreover, we show that this effect occurs not only in the case of connections through IGOs that focus on economic issues, but also through those with social and cultural mandates. This demonstrates that relational governance is important and feasible in the global context, even for the most risky transactions, and moreover, that the social content of the relationship matters. Finally we examine the interdependence between the IGO network and the domestic institutions of states. The interdependence between these global and domestic institutional forms is complex, with target-country democracy showing a negative inter-dependence with economic IGO connections, but a positive interdependence with social and cultural IGO connections.

Recent decades have seen a substantial increase in economic transactions that span national borders, a phenomenon known widely as economic globalization. As with international interactions of all types, economic globalization presents intriguing questions regarding governance. Theories of the governance of economic transactions have been developed mostly in the domestic context. The state is always conspicuous in these theories, as the ultimate institutional authority within a country, and therefore the backbone of the relevant institutional framework, even when private institutions are prominent in that framework. In stark contrast, there is no equivalent of the state to serve as the ultimate authority over international transactions. In terms of extant accounts of governance which depend on the state even if they don't focus on it, such transactions must cross an institutional abyss. We are careful to say an abyss and not a vacuum. While an important institutional mechanism—the legitimate coercive authority of the state—stops at the national boundary, there are other institutional mechanisms that may facilitate border-spanning activity. Our focus in this paper is on these "institutions in-between," and our core claim is that some of the most important of them operate via distinctly sociological mechanisms, namely through relational governance.

A census of the bridges across the interstate institutional abyss would include culture, bilateral agreements, multinational corporations (MNCs), and networks. While the first two enter into our empirical analysis, the latter two are our theoretical focus. MNCs may subsume international economic transactions within their bureaucracies when they operate interdependent units in different countries. This phenomenon, called foreign direct investment (FDI), is the fastest growing economic indicator of globalization, and it is the outcome that we seek to explain in this paper. Between 1980 and 2009 the stock of

FDI as a percentage of world GDP increased by more than 300%, much faster than the trade to GDP ratio, which increased 11% over that period (UnctadStat, IMF World Economic Outlook database). Our chief explanatory factor is the network of connections between countries through intergovernmental organizations (the IGO network), which are organizations of states that aim to facilitate international surety, coordination and trust (Fligstein and Stone-Sweet, 2002). Additionally, we consider domestic political institutions that may provide credible commitments to MNCs, and examine their interdependence with the IGO network.

Our focus on the IGO network continues a trend in sociological accounts of economic globalization which have increasingly emphasized the role of international organizations, both governmental and non-governmental. World-polity theory has traditionally emphasized interstate power and dependence to explain the pattern of economic globalization (Van Rossem, 1996), but Chase-Dunn, Kawano and Brewer (2000: 93) suggest that international organizations could substitute for hegemonic states to provide global order[1]. Recent developments in value-chain theory have sought to explain global economic governance as a function of transaction attributes, and highlight the significance of "global regulations", which are often fostered by international organizations (Gereffi, Humphrey and Sturgeon, 2005:99). And institutional theorists have identified the influence of international organizations on states through coercive, cultural, and normative mechanisms (Meyer, Boli, Thomas and Ramirez, 1997; Polillo and Guillén, 2005; Torfason and Ingram, 2010). The idea that the network formed by

[1] Chase-Dunn et al. also note that the current wavc of "investment globalization" (their term for increasing FDI) began in the 1970s, and has continued over a period of declining U.S. hegemony. This provides further motivation to examine the role of international organizations as a source of governance for FDI.

connections through IGOs provides governance for economic globalization has been examined in the context of trade (Ingram, Robinson and Busch, 2005; Zhou, 2010).

Our foundational prediction is that there will be more FDI between states that are more connected in the IGO network. At a superficial level, this prediction might seem obvious, given that many IGOs have explicit mandates to promote economic globalization. There are, however, theoretical arguments to the contrary. A small set of relevant analyses includes evidence that WTO membership is associated with increased (Buthe and Milner, 2008) and that IMF conditions are associated with decreased (Jensen, 2006) FDI inflows to a country. More importantly, our focus is not on the rules of any particular IGO, but on the IGO network as a basis for relational governance, and we will show that connections in the network have a substantial influence on FDI, even when prominent and powerful IGOs such as the IMF, WTO and World Bank are excluded.

As Torfason and Ingram (2010) showed, the IGO network is the basis of normative influence between countries, where contact and collaboration through IGOs forms the basis of awareness, trust, and sympathy. Those sentiments have been the focus of recent sociological accounts of FDI (Bandelj, 2008). Our view that the IGO network is a source of relational governance leads to two notable departures from previous analyses linking IGOs to FDI. First, our analysis is dyadic, and we consider IGO connections between the senders and targets of FDI, not only the IGO memberships of the target. Second, we consider the full set of IGOs, not only the IMF and the WTO, but the hundreds of other organizations that are less known. Unlike the IMF and WTO, these organizations are mostly weak relative to the states that are their members. If they were functioning as enforcers of rules they would surely fail, but they are fully adequate for the

role we see them playing, as contexts for affiliation and as Karns and Mingst (2004: 9) put it, "peer pressure."

The view that the IGO network supports the relational governance of FDI also yields two unique theoretical predictions. First, if IGOs are contexts for affiliation, then it is not only economic IGOs (EIGOs) that should matter, but also social and cultural IGOs (SCIGOs). Indeed, countries' connections through SCIGOs may be particularly likely to produce trust and sympathy between their citizens. Second, relational governance is specific to the members of a relationship. It matters who they are, not only how they are connected. This could be the basis of a range of arguments as to how the characteristics of senders and targets of FDI interact with the IGO connections between them. We examine one version of this argument: that IGO connections between two states do less to promote FDI when the target is more democratic. Democracy and the democratic division of powers may allow target-country governments to credibly commit to MNCs to protect their investments, and therefore may lessen the benefits from IGO connections, at least to the extent those connections provide surety.

The Challenge of International Economic Exchange

How different is international economic exchange from its domestic equivalent? A telling result is Anderson and van Wincoop's (2003) finding that national borders reduce trade between the US and Canada by about 40% and among other industrialized countries by about 30%. By comparing the magnitude of border effects to those of distance in gravity-models of trade, Helliwell (2002) concludes that the effect of a border to discourage trade is equivalent to adding 10,000 miles of distance between the traders.

This equivalency is all the more impressive in light of the fact that the effect of physical distance to discourage trade is substantial, more than would be expected merely from transportation costs.

The effect of borders to discourage trade derives from two sources. The first is that (ideally) states provide institutions to facilitate economic exchange domestically, and these institutions do not operate across borders because of the limitations on any one state's jurisdiction. The relevant institutions may be roughly divided into those that provide surety and those that facilitate coordination. In the realm of surety, strong laws that enforce contracts, protect property rights, and otherwise reduce transaction costs at the domestic level enable exchange partners to credibly commit to future actions, and reduce the risk of malfeasance (North, 1990). And while private actors also provide surety for economic transactions, in doing so they typically depend on the background of formal institutions of the state, as when private bargaining over contract disputes takes place "in the shadow of the law" (Macaulay, 1963), or when organizations that make assurances, such as auditors, stock exchanges, and banks rely on state regulation to facilitate their own credible commitments. As for state institutions that facilitate coordination, the most obviously relevant is the provision of a common currency, a critical ingredient for smoothing exchange (Rose, 2001). Likewise, almost all states support communications and travel within their borders, and provide exchange-relevant standards (e.g., for measurement).

The second source of border effects is the distribution of social networks and norms. Normative governance may facilitate exchange in markets where formal institutions of the state are absent or insufficient. For example, DiMaggio and Louch

(1998) have shown that buyers in what might otherwise be "markets for lemons" (e.g., used cars) are particularly likely to transact with relatives. And Clay (1997) shows how coalitions of merchants employing social sanctions facilitated trade in early 19th century California, when there was no state enforcement of contracts. Of course, social relations *sometimes* span national borders, but they are overwhelmingly more common within a country. Gravity-model analyses of outcomes such as migration and telephone calls show that there is a massive border effect for social relations as well as economic ones (Rietveld and Janssen, 1990; Helliwell, 1998).

Although the evidence of border effects in global exchange has developed through the analysis of trade, we expect that they are even more discouraging of FDI than of trade. FDI avoids some of the challenges of international economic transactions by subsuming them within the organizational structure of a multinational firm. This is particularly useful for transacting intangibles, such as knowledge or permission to use a valuable brand (Teece, 1985; Carr, Markusen and Maskus, 2001). In many cases, communication mechanisms and intellectual property rights are insufficient to allow such intangibles to be transferred across borders in any other way than by a multinational company that extends its operations via FDI (Vernon, 1971). Even in the case of intangibles, however, some familiar border effects apply. In particular, the internal operations of a multinational corporation cannot completely resolve coordination problems because even though the corporation may standardize within, its various national operations must, in some ways, integrate with their local environments.

There are also border effects that are unique to FDI, or worse in the case of FDI than trade. Foremost among these is the exposure of investments in and profits from a

target country to some form of expropriation by the target-country government. Such expropriations may range from the nationalization of a plant to a domestic legal change that makes it more difficult for a multinational to extract profits from a target country. Compared to trade, the exposure of FDI are notable because they are typically larger, and they are mainly to the target-country government, rather than to private companies that may be engaged in trade.

Culture is another barrier that is uniquely problematic for FDI. Cultural distance, the extent of differences between countries regarding important cultural values, has been argued to discourage international transactions because it inhibits communication and knowledge transfer (Siegel, Licht and Schwartz, 2006; Kogut and Singh, 1988). Further, FDI, unlike trade and some other international transactions, typically involves *some* transfer of persons. Employees of the multinational company often relocate, even if temporarily, to the target country to set up operations, coordinate with the parent firm, facilitate the transfer of intangible and tangible assets between the parent firm and the FDI operation, and protect those assets. Thus, FDI between culturally distant countries represents an added cost of submerging employees in a national environment they may find confusing, stressful, or even hostile. At the least, this increases concrete costs to the multinational due to premium pay and turnover. At the most, firms may forego altogether some profitable FDI opportunities because the prospect of "living there" is so unappealing to managers and other employees.

The Governance Role of the IGO Network

If border effects exist because the traditional bases of governance of transactions—states and networks—are more relevant within than between countries, a natural source of relief would be from institutional structures that are explicitly international. There is no more likely candidate than the IGO, an organization with three or more states as members. Prominent examples are the UN, the International Monetary Fund (IMF), and the World Bank, but there are currently more than three hundred IGOs operating in the world system. While the majority of IGOs receive little public attention, all of them work to promote collective international goals, and many of these are specifically aimed at smoothing global economic transactions like FDI.

The most heavy-handed FDI influence comes from IGOs such as the IMF and World Bank, which encourage neo-liberal economic reforms. For example, Polillo and Guillén (2005: 1775) quote a letter of intent from the Indonesian government to the IMF wherein the government reports amending the banking law to, among other things, "permit major improvements in…openness to FDI." Similarly, Henisz, Zelner and Guillén (2005) show that pressure from the IMF and the World Bank increased privatization and regulatory reform in telecommunications and electricity industries around the world, opening the door to increased FDI in these important sectors. While these studies expose a coercive element of some important IGOs to push neoliberal policy on dependent countries, these same organizations promote less controversial policies which may be more important for FDI. Exemplary in this regard is the IMF's sponsorship of convertible currency. Its members agree to "promote international monetary cooperation, exchange stability, and orderly exchange arrangements" (IMF, 2006).

Some IGOs provide dispute resolution processes that may encourage MNCs to take the commitments of target governments as credible, and thereby reduce the perception of risk associated with FDI. A sample of the IGOs that facilitate such credible commitment includes the African Reinsurance Corporation, the European Court of Justice, and the Permanent Court of Arbitration. Many other IGOs promote the recognition and protection of property rights, among them the European Patent Office, the International Patent Cooperation Union, and the World Intellectual Property Organization. Still others promote communication and standardization, including the International Bureau of Weights and Measures, a number of postal unions, railway congresses, aviation councils, information banks, and centers for statistics.

With so many IGOs aimed at reducing international transaction costs, we might expect that their effect on FDI would already be well documented, but instead IGOs receive almost no attention in surveys of the determinants of FDI (e.g., Blonigen, 2005). This may be an oversight in a literature that has tended to view governance in terms of domestic institutions rather than international ones. There are also theoretical arguments that efforts to affect countries' political economies are so complex that IGO programs may reduce FDI even if they intend to increase it (Jensen, 2006). And then there is the long-standing realist critique that IGOs lack the real power to change the behavior of states. That argument has manifested itself most vividly in the literature on war, but the core realist precept that "institutions cannot get states to stop behaving as short-term power maximizers (Mearsheimer, 2005: 82)," is relevant with regard to the surety that states must offer MNCs to attract investment. Few analyses examine the influence of IGO memberships and policies on FDI, and these have looked at only two particularly

powerful IGOs (Buthe and Milner (2008) on GATT/WTO; and Shandra, Ross and London (2003), Jensen (2006) and Bandelj (2008), on the IMF) and generated mixed results.

Furthermore, until recently there was little consistent evidence that IGOs promote economic outcomes of any type. In response to this inconsistent evidence, almost all generated in monadic analyses, Ingram, Robinson and Busch (2005) argued that IGO efficacy should be understood in relational terms. They used simultaneous joint-membership in IGOs to create an affiliation network between states, and showed that this network was powerful for predicting dyadic trade, a result confirmed by Zhou (2010). The relational view of IGO influence is aligned to the dyadic nature of FDI. Often, a given IGO is only useful for promoting FDI between two countries if both are part of the IGO and therefore subject to its policies. This is obviously true in the case of IGOs that promote coordination. It is also likely in the case of IGOs that promote FDI-friendly reforms, which align the economic systems of rich members and poor ones.

Just as importantly, the relational view of IGO influence is consistent with the normative mechanisms through which IGOs operate. Most IGOs are minimalist organizations, and they have no power to coerce their state-members to do anything. Instead, "IGOs provide a forum where different expectations and norms are brought to light and conflicts get resolved" (Torfason and Ingram, 2010: 357). Ultimately, the enforcement mechanism of IGOs is the same as for social groups – to expel non-conforming members – a mechanism that is more powerful when the bonds between members are strong and multi-dimensional (Homans, 1950). These arguments suggest that all IGOs, even the many weak ones, may contribute to relational governance (Cao,

2009). Consistent with these arguments, Rangan and Sengul (2009) found that the financial performance of MNC's foreign investments depends on the IGO connections between their home and host countries. At the level of dyadic FDI flows we expect that

Hypothesis 1: FDI flows will be stronger between two countries when the connection between them in the IGO network is stronger.

Social/Cultural IGOs and Cultural Convergence

While evidence for hypothesis 1 would support our claim that IGOs govern through relational mechanisms, some might still argue whether it evidences sociological mechanisms. Connections through the majority of IGOs that have economic mandates might be seen as representing a relational, but utilitarian "shadow of the future," where countries protect each other's MNC investments in the interest of preserving future valuable economic exchange (Gibbons, 1999). There are, however, a substantial number of IGOs that exist to promote social and cultural contact between nations, such as the Asia-Europe Foundation, whose mission is "to foster contacts and intercultural dialogue among people from all walks of life in Asia and Europe" (www.asef.org), or the Bureau International des Expositions, which promotes world fairs (www.bie-paris.org). Many other SCIGOs facilitate cohesion between the peoples of two countries through the pursuit of shared goals, such as the eradication of disease and the improvement of human rights. Bonikowski (2010) shows that the IGO connections between two countries lead to cultural convergence between them.

The effect of SCIGOs on FDI is also worth considering, particularly because cultural differences between nations are an important impediment to FDI. Cultural distance inhibits FDI (Kogut and Singh, 1988) and increases the failure risk of foreign

ventures (Zaheer, 1995). Berry, Guillén and Zhou (2010) show that a number of other dimensions of international distance—in terms of political, financial, administrative and scientific systems, tourism and internet use, and demographics—also discourage FDI. There are SCIGOs that promote convergence on all of these dimensions. SCIGOs may enable FDI to the extent that they succeed in closing these any or all of these forms of distance, and reducing the "foreignness" of other countries' corporations.

The possibility that SCIGOs and not only EIGOs increase FDI evokes the claim from sociology's theory of embeddedness that social relations between traders can be the basis of trust, and therefore reduce transaction costs (Granovetter, 1985; Uzzi, 1996). Greif (1989) provides historical evidence of the social governance of international business by documenting the role of kinship in trading relations in the 11th century Mediterranean region. Contemporary analyses have shown that there is more trade between countries whose populations have more trust for each other (Guiso, Sapienza and Zingales, 2004) and that bilateral connections through SCIGOs are associated with higher trade (Ingram et al., 2005). And most directly, Bandelj (2002; 2008) shows that FDI is more likely to flow to Central and Eastern European countries from investor countries that have stronger cultural ties to the target countries, as indicated by historical immigration. This evidence, combined with arguments that cultural differences are particularly deleterious for FDI suggests that IGOs that promote social and cultural ends may also affect this important economic outcome. Therefore we expect that

Hypothesis 2: FDI flows will be higher between countries that are more strongly connected through SCIGOs, and not only through EIGOs.

IGOs and Domestic Institutions: Target Country Democracy

The most salient risk of FDI is that that government of the target country will expropriate the profits from the investment, or even the investments itself (Li, 2006). This can occur outright through nationalization, or if the government changes policies regarding taxes, the repatriation of profits, or competition. These possibilities suggest that the efficacy of IGO connections to promote FDI may depend on domestic institutions in the target country. To put it simply, we suspect that IGOs will do more to promote FDI for target countries whose domestic governments are unable to make credible commitments to investing MNCs. In other words, we see IGO governance and domestic institutions as potential substitutes.

The risk to an MNC's investment in a target country is generally understood to be higher when the political institutions of the target are more autocratic, because democracies do a better job of ensuring that investments are secure (Olson, 1993). Evidence from economic history supports the idea that absolute power reduces a sovereign's ability to make credible commitments to investors, and that the democratic division of power increases that ability (North and Weingast, 1989). Li (2006) reports that 564 expropriation acts in 56 developing countries between 1960 and 1995, only 59 occurred in democracies, and the level of democracy was negatively related to expropriation in a multivariate regression. Buthe and Milner (2008) find that the division of political powers increases the inflow of FDI to developing countries, and Jensen (2006) shows that target-country democracy is associated with increased FDI inflows.

There are alternative arguments of the relationship between democracy and FDI. Li and Resnick (2003) argue that democracies are more exposed to public demands for the redistribution of capital, to demands for improved labor practices, and to arguments

by domestic competitors against advantageous competitive positions held by MNCs. They find that after controlling for the democratic protection of property rights, the residual effect of democracy is to reduce investment flows to developing countries. These arguments, however, apply specifically to developing countries, where poverty is highest and MNCs may be attracted by cheap labor and poorly regulated competition. The fact remains that most FDI inflows are to developed countries. Further, previous analyses of the influence of democracy on FDI may have suffered from misspecification, because they did not consider the simultaneous impact of IGO connections, which are more common between democratic countries.

If democracies do indeed provide better surety for FDI, then the role of IGOs as a source of surety would presumably be smaller, suggesting that target-country democracy and IGO connectedness will be institutional substitutes. This leads us to test the following interaction hypothesis:

Hypothesis 3: Connections in the IGO network will do less to increase FDI to target countries that are more democratic.

Method

We use gravity models to test our hypothesis. Gravity models, originally created to explain bilateral trade flows, "have produced some of the clearest and most robust empirical findings in economics" (Leamer and Levinsohn, 1999). The widespread acceptance of gravity models in international economics has been reinforced by continuous efforts to link them to different trade theories (Anderson, 1979; Bergstrand 1989; Feenstra, Markusen and Rose, 2001; and Evenett and Keller, 2002) and by recent econometric research that has improved their statistical reliability (Anderson and

Wincoop, 2003; Santos and Tenreyro, 2006). Based on their successful application in the analysis of international trade, gravity models have also been applied to other dyadic empirical contexts, such as migration flows (Heliwell, 1997), equity flows (Portes and Rey, 2005), and FDI flows (Brenton et al. 1999; Brainard, 1997; Carr et al., 2001).

Equation (1) represents a basic specification for a gravity model that explains FDI flows between countries i and j (Y_{ij}) as a function of country specific variables (X_i and X_j), such as GDP or population, and dyadic variables (X_{ij}) such as joint income, physical and cultural distance between country pairs, etc.

$$Y_{ij} = \beta_0 X_i^{\beta_1} X_j^{\beta_2} X_{ij}^{\beta_3} \eta_{ij} \qquad (1)$$

η_{ij} is an error term assumed to be statistically independent of X_i, X_j and X_{ij}, and with $E\left(\eta_{ij} \middle| X_i X_j X_{ij} = 1\right)$.

The standard practice is to log-linearize equation (1) and estimate the coefficients β by ordinary least squares (OLS) using the following equation:

$$ln\,(Y_{ij}) = ln(\beta_0) + \beta_1 X_i + \beta_2 ln\,(X_j) + \beta_3 X_{ij} + ln\,(\eta_{ij}) \qquad (2)$$

However, Santos and Tenreyro (2006) raise two issues with this approach. First, it relies heavily on the assumption that η_{ij} and $ln\,(\eta_{ij})$ are statistically independent of the covariates, an assumption that is normally violated when error terms are heteroskedastic[2]. As a result, OLS estimates of equation (2) would be inconsistent. Second, when the dependent variable is equal to zero the log-linearization is infeasible. This issue is especially important in our empirical context because only a small number of countries

[2] Because that is, the expected value of the logarithm of a random variable *y* is not equal to the logarithm of its expected value (Jensen's inequality), the independence assumption between the log value of error terms and log values of covariates holds only under very specific conditions of the error term. When there is heteroskedasticity in the data, the independence does not hold.

account for most of the FDI[3] and zero flows are common among the remaining countries. Although several methods are used to overcome this limitation, such as dropping the pairs where the dependent variable equals zero, using $ln(Y_{ij} + 1)$ as the dependent variable instead of $ln(Y_{ij})$, or using Tobit estimation, no method guarantees that the coefficients are properly estimated.

To address these problems, Santos and Tenreyro (2006) suggest a variation of the traditional gravity model that does not use a log-transformation of the dependent variable. This model, estimated by Poisson pseudo-maximum likelihood and using a robust covariance matrix[4] instead of OLS, produces consistent estimators even in the presence of heteroskedasticity. Following their approach, we estimate the following equation:

$$FDI_{ijt} = \beta_1 BIT_{ijt} + \beta_2 ln(aid_{ijt}) + \beta_3 ln(trade_{it}) + \beta_4 ln(GDPcap_{it} * GDPcap_{jt}) + \beta_5(GDP_i) + \beta_6(GDP_j) + \beta_7(natural_{jt}) + \beta_8(debt_{jt}) + \beta_9(emissions_{jt}) + \beta_{10}(democ_{jt}) + \beta_{11} ln(IGO_{ijt}) + \Sigma\phi_{ij} D_{ij} + \Sigma\alpha_t Y_t + \varepsilon_{ijt} \quad (3)$$

where *i* and *j* denote the countries in the dyad, *t* represents time, and:

- FDI_{ijt} is the real value of the FDI flow from country *i* to country *j* in year *t*.
- BIT_{ijt} is a binary variable equal to 1 if there is a Bilateral Investment Treaty between *i* and *j* at time *t*.
- aid_{ijt} is the net unilateral financial aid that country *i* gives to country *j* at time *t*.
- $trade_{ijt}$ the unilateral trade flow between countries *i* and *j* in year *t*.
- $GDPcap_{it}$ is the GDP per capita in real terms for country *i* in year *t*.
- $GDPcap_{jt}$ is the GDP per capita in real terms for country *j* in year *t*.

[3] The US, Japan, and the countries of the European Union accounted for 78% of the senders and 50% of the receivers of FDI (World Development Report 2005).
[4] We obtain robust standard errors by bootstrapping.

- GDP_{it} is the GDP in real terms for country *i* in year *t*.
- GDP_{jt} is the GDP in real terms for country *j* in year *t*.
- $natural_{jt}$ is the natural resources exports as percentage of GDP for country *j* in year *t*.
- $debt_{jt}$ is the percentage of total debt to GDP for country *j* in year *t*.
- $emissions_{jt}$ is the CO_2 emissions measured as Kg. of Carbon Dioxide per US $ of GDP in country *j* in year *t*.
- $democjt_{jt}$ is the sum of the democracy and autocracy (reverse coded) scores (taken from the Polity IV Database) of country *j* in year *t*.
- IGO_{ijt} is IGO connectedness, the number of IGOs that countries *i* and *j* are simultaneously members of in year *t*.
- D_{ij} is a set of fixed effects at the dyad level.
- Y_t is a set of year fixed effects.

To examine hypothesis 2, we decompose the variable for IGO connectedness into two subcomponents:

- $EIGO_{ijt}$ is economic IGO connectedness, the number of economic IGOs that countries *i* and *j* are simultaneously members of in year *t*.
- $SCIGO_{ijt}$ is social/cultural IGO connectedness, the number of social/cultural IGOs that countries *i* and *j* are simultaneously members of in year *t*.

We use dyad fixed effects to account for the dependence of observations in our data and to control for all static dyadic influence in FDI flows, such as distance between the two countries, and whether they share a common language, border, religion, or colonial history. Similarly, we use year fixed effects to control for historical events that

affect all dyads, such as global economic shocks, the opening of Eastern European markets and technological changes. These two sets of fixed effects control for all influences on FDI flows except those that vary simultaneously across time and within a dyad.

Data

***Dependent variable*:** We built our dependent variable – FDI flows for country *i* to country *j* at time *t* – in four steps. First, we started with the most comprehensive dataset available in FDI flows from the United Nations Conference on Trade and Development (UNCTAD)[5] which provided data for 31,150 inflows and outflows for the period from 1980 to 2000. Although this initial set covered 214 home countries and 212 host countries, most of the flows identified are associated to OECD countries (65%); Non-OECD flows account for 35% of the data and Non-OECD to Non-OECD account for 18%. Because Non-OECD countries are more likely to have non-democratic regimes, the bias towards OECD countries in our sample may cast doubts in our estimates. Our following steps aimed to boost the number of data points associated to Non-OECD countries as a source or destination of FDI.

In a second step we collected information for another 29 countries – all Non-OECD countries. Although these countries are not included in the electronic database because they do not follow the UNCTAD standards to report FDI data, they are available in country-specific UNCTAD reports. Whenever possible, we accessed FDI reports directly from the central bank documents of these countries to check the data reported to

[5] We used the pay-per-record version of the database instead of the publicly available dataset because it provided more data points. See *http://www.unctad.org/Templates/Page.asp?intItemID=3206* for more information about the pay-pre-record version.

UNCTAD as well as to collect extra observations. This effort provided another 5,516 observations; 43% of which are Non-OECD to Non-OECD FDI flows. UNCTAD's data reported by OECD countries tends to aggregate figures by region when the FDI flows are small. Suspecting that OECD countries are likely to report more detailed data that what UNCTAD reported, we checked FDI inflows and outflows from OECD country statistics through *sourceoecd.org* and obtained the country-specific flows that were aggregated by region in the UNCTAD dataset[6]. This third step added 17,298 OECD-Non OECD observations.

The previous steps taught us that we could use comparisons between aggregated and disaggregated values to impute non-reported FDI flows. The logic used in this process was the following: if the summation of all the reported dyads is equal to the aggregated values reported by IMF, then any missing dyadic flow should be zero. For example, if UNCTAD and OECD reported data for inflows to country A from countries A_1, A_2 and A_3 and the summation of these flows is equal to the total inflows to country A, then we can infer that inflows from countries A_4 to A_n are equal to zero. This approach was useful to infer outflow data for Non-OECD countries, which commonly report zero outflows at the macroeconomic level. Of course the validity of this approach depends on whether the data reported by central banks to IMF is correct. But short of collecting these data from primary sources, we think that this approach is the most comprehensive we can follow. This fourth step added 30,154 observations.

[6] We also double checked that country-specific flows reported by UNCTAD and OECD were similar. The correlation of flows reported by both sources is 0.98.

Table 1A shows the final distribution of the 84,478 inflows and outflows obtained through our four-step approach[7]. Steps 2 to 4 move the proportion between OECD and Non-OECD from 65% vs. 35% to 43% vs. 57%. The increase in data points associated with Non-OECD countries is not only capturing flows from OECD to Non-OECD (28% of observations) but also from Non-OECD to Non-OECD (29%). Note that the sample has twice as many observations for Non-OECD to Non-OECD flows than for OECD to OECD flows.

Table 1B mimics Table 1A in structure but uses FDI value – measured in constant 2000 US$ – instead of number of observations. As expected, even if the flows between OECD countries are small in terms of observation numbers, they represent a significant majority in terms of values: 79% of FDI flows correspond to flows among OECD country pairs and 81% of flows have an OECD country as the source or destination. OECD countries invest directly in Non-OECD countries twice as much as other Non-OECD countries. Although the number of observations decreases due to missing values for control variables for some country pairs, we believe our sample offers a very comprehensive representation of FDI flows.

Some idiosyncrasies of the FDI data require further comment. If both countries in the dyad are in the dataset, the same unidirectional FDI flow is reported twice. For example, our dataset registers the FDI flow from Canada to the US twice: (1) as outflow from Canada to the United States, reported by the Canadian government, and (2) as inflow to the United States from Canada, reported by the American government. Unfortunately, a pair of data points associated with the same flow may be different since both the OECD and UNCTAD build their dataset based on figures provided by national

[7] Our final sample is smaller due to observations with missing dependent variables and negative FDI flows.

governments, which differ on the definition of what constitutes FDI[8]. That is, the outflow figure from Canada to the US may differ from the inflow figure to the US from Canada due to differences in what each country defines as FDI. We dealt with the problem of duplicated flows in three ways: using their average, randomly choosing one of the reported flows as the actual flow, or using only inflow data[9]. Although all three approaches produce similar results, we use average flows in our main analysis and introduce the alternative approaches in robustness checks.

Another issue is the presence of negative FDI flows. A multinational firm may decide to close or reduce operations in a given country. If the number of firms doing so is high enough, the overall aggregate FDI flow may be negative. Unfortunately, negative values cannot be in Poisson models required to estimate equation (3). Thus we drop 4,832 observations. To explore whether these missing observations may induce selection bias, we perform the Kolmogorov-Smirnov test comparing the two samples – missing observations and remaining observations – in four key independent variables: democracy levels, AIGOs, EIGOs and SCIGOs. For all the tests, we are not able to reject the null hypothesis that both samples are similar. Thus we don't expect that the exclusion of observations linked to negative flows affects our results.

Independent variables: Our key independent variable, the IGO network, is built using the time-varying listing of IGOs and their members compiled by Pevehouse et al. (2003). According to their definition, an IGO must:

(1) include three or more members of the Correlates of War-defined state system;

[8] Although OECD countries comply with the definitions for FDI contained in the IMF Balance of Payments Manuals (BPM5) and the OECD Benchmark Definition of FDI (BMD), they still have some freedom to define the level of foreign ownership required.

[9] Because governments collect data from foreign firms' operations for tax collection and tax incentives purposes, inflow data are normally more accurate and comprehensive that outflow data.

(2) hold regular plenary sessions at least once every ten years; and

(3) possess a permanent secretariat and corresponding headquarters.

We first aggregate all IGOs (AIGOs) regardless of their mandates. There were 402 of these that operated anytime in the period we studied (Beckfield, 2010, lists the 335 that existed in 2000). We then classified the IGOs into economic or social/cultural based on their mandates as described in the Yearbook of International Organizations. We defined economic IGOs (EIGOs) as those whose mandates stipulate any of the following: (1) perform multiple economic functions, monitor and enforce international economic transactions, establish international trade agreements or protect property rights; (2) promote standards and conventions that smooth international transactions; (3) promote development or manage international public goods; or (4) address issues regarding the international structure and operations of specific industries. This definition yielded 126 EIGOs in 1980 and 158 in 2000. Social/cultural IGOs (SCIGOs) are those that: (1) engage in activities related to conservation and environment; (2) address health, disease, disaster, social welfare or cultural issues; or (3) promote education, technology and scientific research. Using this definition, we identified 77 IGOs as social/cultural in 1980 and 116 in 2000[10].

For AIGOs, EIGOs and SCIGOs, we used the IGO-member listing to create time-varying affiliation matrices of connectedness between two countries. The affiliation matrix for AIGOs at time t, A_t, is produced by multiplying X_t, a matrix whose cells indicate whether a country is a member of a given at time t, by its transpose X_t^T. Thus, A_t

[10] The set of AIGOs includes two other categories of IGOs besides EIGOs and SCIGOs (general purpose and military). We do not analyze networks created by these explicitly because of the multi-collinearity problems created by analyzing four IGO networks simultaneously, and because we have no particular predictions regarding them. Our results do not change if we exclude these from AIGOs in our aggregate network, or include them with EIGOs in our decomposed networks.

is a symmetric country-by-country matrix where the cell a_{ijt} indicates the number of AIGOs in which country *i* and country *j* share joint membership at time *t*, the measure we call AIGO connectedness. Similarly, E_t is a symmetric country-by-country matrix where the cell e_{ijt} indicates the number of EIGOs in which country *i* and country *j* share joint membership at time *t*, the measure we call EIGO connectedness. Finally, the affiliation matrix for SCIGOs, S_t, is created in the same way by multiplying Y_t, a country-by-SCIGO matrix whose cells indicate whether a country is a member of a given SCIGO at time t, by its transpose Y_t^T.

Our EIGO and SCIGO measures are highly correlated (0.794). To avoid multicollinearity problems – especially when the connectedness and democracy measures are interacted – we orthogonalized them[11]. Finally, we take the natural logarithms of the IGO connectedness variables for consistency with the treatment of other independent variables in the gravity model.

Control variables: We tap different sources to obtain the other country-level variables used in our models. The Center of Settlement of Investment Disputes (ICSID), associated with the World Bank, provides the information on Bilateral Investment Treaties (BITs). Unilateral Net Aid Transfer figures come from the Center for Global Development and are expressed in 2000 real US$. Our trade data comes from the compilation of unilateral trade flows generated by Feenstra & Lipsey (2005) that is rapidly becoming the standard in trade data. GDP per capita data comes from the World Development Indicators (WDI) from the World Bank. With the WDI data, we also calculate the GDP deflators per country-year required to obtain real figures for FDI and trade flows. WDI is also the

[11] We replicated our baseline regressions without orthogonalizing EIGO and SCIGO. Results, available upon request from the authors, show larger but less statistically significant coefficients.

source for natural resources exports and total debt data, expressed in both cases as percentage of GDP, and carbon dioxide data, measured as Kilograms of CO_2 per constant (2000) US dollars.

Data for the democracy variable come from the Polity IV Database, a widely used dataset in political science and international relations research. Democracy is the aggregate of two orthogonal ten-point sub-scales, one representing the presence of autocratic institutions in a state (reverse coded), the other the presence of democratic institutions. The original range, from -10 to 10, is transformed into a 1 to 21 scale to allow for the log transformation. Thus 21 is the maximum democratic score with the value 1 capturing the most autocratic states[12].

Unless otherwise indicated, the IGO independent variables in our analyses are lagged one year. Table 2 shows the summary statistics and correlation matrix for our variables.

Results

Model 1 in Table 3 contains our control variables. Model 2 adds the measure for connectedness through all IGOS, AIGO connectedness. Consistent with our fundamental assertion (hypothesis 1) the FDI flow from country *i* to country *j* is significantly greater as a function of the number of IGOs that they are jointly members in. The Poisson regression model is multiplicative, so the magnitude of the coefficient represents the impact of a change in AIGO connectedness on the ceteris paribus rate of FDI from *i* to *j*. The coefficient in model 2 indicates that a one-standard deviation increase in logged

[12] We also estimated our models using POLCON, Henisz's (2000) index of political constraint, rather than democracy, to capture the support from domestic institutions for commitment to investors. Results were comparable to those we found using the democracy measure. We use democracy from Polity IV in this paper because its greater coverage allows us to include substantially more dyads in the analysis.

AIGO connectedness is associated with a 24% increase in FDI ($e^{0.51 * 0.485} = 1.24$). Model 3 adds the interaction between AIGO connectedness and the level of democracy of the target country. The interaction term has a negative coefficient as predicted by hypothesis 3, but it is only marginally significant ($p \approx .07$). Subsequent models will show that the interaction with target democracy depends on the type of IGO connection.

Models 4 through 10 present decompositions of AIGO connectedness into that from EIGOs and SCIGOs. Models 4 and 5 show that EIGO connectedness is associated with an increase in FDI flows, but the increase lessens as the democracy of the target country increases, as predicted by hypothesis 3. Given that our theory rests on a mechanism of relational governance, rather than the direct power of particular IGOs, we wanted to show that our EIGO results were not driven by participation in the small set of prominent and powerful EIGOs that are popularly viewed as the most significant in global economy. These include the IMF and WTO, the only two IGOs that have been previously analyzed for their effect on FDI. To these two, we added the three IGOs associated with the World Bank. These five IGOs are called the "Bretton Woods" institutions. We calculated a dyadic connectedness variable using only connections through simultaneous membership in these five IGOs. Model six shows that while its coefficient is positive, it is not statistically significant. Model 7 replicates model 5, but excludes the IMF, WTO and World Bank from the calculation of EIGO connectedness. In other words, EIGO connectedness in this model is based on connections through "all the rest" of the worlds EIGOs that are less prominent and powerful. Nevertheless, the

results are comparable to those in model 5. The effect of EIGOs we document is not driven by participation in the small set of powerful "brand name" economic IGOs[13].

Model 8 shows that SCIGO connectedness has a positive influence on FDI flows, as predicted by hypothesis 2. Model 9 includes the interaction between SCIGO connectedness and target democracy, and yields an unexpected result. Now the main effect of SCIGO connectedness is negative, and the interaction positive. Although the direction of the interaction was a surprise to us, the cross-over point where the combined main and interaction effects of SCIGO connectedness acts to increase predicted FDI is at a target-country democracy of six or higher. This includes 83% of our dyads, so there is consistent support for hypothesis 2, that SCIGO connectedness is associated with more FDI[14].

Figure 1 uses coefficients from models 5 and 9 and plots the combined main and interaction effects of SCIGO and EIGOs ties (both evaluated at their mean level) over the range of target-country democracy. The substitution effect predicted by hypothesis 3 between IGO connectedness and target democracy is apparent for EIGO connectedness, but SCIGO connectedness and target democracy appear to be complements. We will take up this unpredicted result in the discussion. Finally in Table 3, model 10 presents a full model that includes EIGO connectedness, SCIGO connectedness, and the interactions

[13] In terms of our theory of relational governance, there is nothing *wrong* with the Bretton Woods IGOs. We see them as offering opportunities to build dyadic relationships, much as other less prominent IGOs.

[14] The fact that SCIGO-ties at very low levels of target-country democracy are associated with reductions in the expected level of FDI was surprising to us. It is not clear why an IGO tie would ever decrease the expected level of FDI. Supplementary analysis suggests that this outcome is attributable to the influence on our models of a small set of outlier observations. If we exclude observations for which the actual FDI is most in excess of our estimate (these observations are mostly associated with states in obviously unusual circumstances, such as Argentina during the hyper-inflation period) we obtain estimated multiplier effects for SCIGO connectedness that go up from one.

between each and target country democracy. The results are consistent with the nested models.

In Table 4 we reproduce the specifications in Table 3 using different approaches for reconciling the flow of FDI from country *i* to country *j* as reported by *i* and by *j*. (Recall in Table 3 we took the average of duplicate reports). In models 1-8 we choose randomly between duplicate reports; in models 9-16 we take only inflow data; and in models 17-24 we use a three-year moving average of reported flows. In all cases results correspond to those in Table 3 in all substantive ways.

Robustness checks

There are deep and reciprocal interdependencies between inter-state economic and political relationships, so the issues of causality and endogeneity in our models deserve careful attention. To begin, we highlight that in the models we have so far shown the independent variables are lagged one year, so there is no possibility of reverse causality in the simplest sense that our dependent variable causes the independent variable. In supplementary analyses we replicated our full model, model 10, using five-year lags of our IGO connectedness variables. All of the coefficients for EIGO connectedness, SCIGO connectedness, and their interactions with target-country democracy were comparable whether IGO connectedness was lagged one or five years. This is consistent with our theoretical claims, because the information, trust and affect impact of an IGO connection would be expected to endure over time. The result further raises the bar for alternative explanations by demanding that they account for this lag.

A much bigger worry is that both FDI and IGO connectedness could be driven by some common cause which was not reflected in our model. Certainly, there are many

dimensions of the dyadic relationship between states that affect both FDI and IGO connectedness, such as geographic proximity, language, a history of colonial relationships, and common religious or cultural heritage. All of these influences, however, are accounted for by the dyad fixed effects in our model, which represent all of the time invariant features of a dyad. Similarly, our year fixed effects account for global trends over time that might influence both FDI and IGO connectedness, such as technological changes that increase bi-national awareness and sympathy (the internet and cheaper air travel come to mind), shocks to the global system such as the fall of the Berlin Wall, or a diffuse cultural trend of globalization. What our fixed effects don't account for are variables that change within a dyad over time, but many that seem very important as simultaneous influences on FDI and IGO connectedness are directly controlled for in our models: (1) the existence of Bilateral Investment Treaties; (2) the flows of financial aid between countries in the dyad; (3) the trade between the countries in a dyad; (4) the wealth of the countries in a dyad; (5) the existence of unique natural resources in the target country; (6) the debt level of the target country; and (7) the possibility that the target country is a paradise for a "polluting" type of investment. While we believe that the most likely common cause variables are accounted for in our model specification, there are other possibilities that our controls do not preclude[15].

[15] In supplemental analysis we ran regressions that included a direct measure of time-varying cultural distance, created from the World Value Survey by Berry, Guillén and Zhou (2010). We think that one of the influences of SCIGOs is to affect cultural convergence, but there are surely other forces that are driving convergence. If a direct measure of time-varying cultural distance knocked out our SCIGO effects, it would open a concern that exogenous forces of cultural convergence may be driving both SCIGO connectedness and FDI flows. Even though we lose 75% of our observations due to missing cultural distance data, in these regressions the sign and significance for the main and interaction effects of SCIGO connectedness were significant in the same directions, and the magnitude were comparable to those in Table 3. We also examined our belief that SCIGO connections promote cultural convergence by regressing cultural distance on lagged levels of SCIGO connectedness, controlling for dyad and year fixed effects. The results, available from the authors, support our belief that SCIGOs promote convergence.

Additionally, we estimated models that offer target-country fixed effects and target-country time trends to capture time-varying omitted variables such as schooling and human capital.[16] Most statistical software packages use maximum likelihood estimation for Poisson panel data. Finding a maximum when there are numerous dummy variables that need to be estimated poses a challenge even to the best maximization algorithms. In most cases, our attempts to estimate models with a complete set of dummy variables failed to converge. As a result, we went back to OLS panel data, the standard method for estimating gravity equations until very recently, to estimate models with multiple dummy variable sets. Tables 5 and 6 show our results. Table 5's objective is to link our Poisson results from Table 3 to identical models estimated by OLS. Note that the behavior of the main variables is very similar between estimation techniques. Table 6 shows the results of introducing target-country fixed effects (models 1 to 8) and additional target country-specific time trend (models 9 to 16). Again our main results are robust to adding these sets of dummy variables.

Our results could also be caused spuriously by serial autocorrelation in our dependent variable, FDI flows, or in the EIGO and SCIGO connectedness variables. We addressed this issue in two ways. First, we ran a battery of tests to explore any sort of autocorrelation. Specifically we applied four Fisher-type unit-root tests (inversed chi-squared, inverse normal, inverse logit, and modified inverse chi-square) for these three variables with no evidence of serial autocorrelation. To provide more compelling evidence of lack of non-stationary problems we applied a Wooldridge test on the residuals for all models in Table 3. The null hypothesis is that there is no first-order

[16] We considered controlling for these variables directly. However, adding these variables would reduce our sample dramatically due to missing data. For example, migration flows are missing for 80% of dyads in our sample; schooling years in the target countries is missing for 91% of dyads.

autocorrelation in the error terms. The F statistics for the models fluctuated between 2.217 and 2.239 indicating p values between 0.1348 and 0.1366. In all cases, we failed to reject the null that there is not first-order correlation. Second, we estimated our models robust to heteroskedasticity and autocorrelation. Unfortunately, there is no Newey-West model developed for a count data model available. To overcome this constraint, we estimated the models in Tables 3 using OLS instead of Poisson and obtaining Newey-West standard errors. The results, available from the authors upon request, are similar to those presented in Table 3.

The gold standard to test causality is an experiment where subjects are randomly assigned to two groups, those that receive a treatment and those that do not. The global political economy is hardly the domain where this approach can be taken. Rosenbaum and Rubin (1983) introduced the idea of propensity score matching (PSM) as a quasi-experimental approach to test causality. The idea is to create pairs of observations that are similar in many dimensions but differ in one attribute, the treatment. Propensity scores summarize all of the background (covariate) information about treatment selection into a scalar. This allows an observational study to be interpreted similarly to an experiment. While this approach is not a panacea to the problem of unobserved variables, it relaxes many assumptions about how variables affect the selection into treatment.

We follow this approach to provide a complementary test of causality in our setting. We begin with the main effect of connectedness through all IGOS. We created "treatment" groups from the top (bottom) 10%, 25%, and 50% of observations on the AIGO Connectedness measure. We then created "control" groups by selecting from the observations with lower (higher) IGO Connectedness those that are most-similar to those

in the treatment group in terms of other variables. We then compared the average FDI over the next three years. As Table 7 shows, in every case, the group with higher AIGO Connectedness experienced more subsequent FDI than its less connected match group.

We next applied the propensity-score approach to look at EIGO and SCIGO connectedness, while also observing shocks to the target-country's political system to gain further insight into causality. Dyads were assigned to the high EIGO connectedness treatment if they were in the top 5% of the distribution for that variable. Similarly, dyads were assigned to the high SCIGO connectedness treatment if their level was in the top 5% of that distribution. Then we looked at a shock in the democracy level. Two types of shocks may occur: a country becomes suddenly more democratic (e.g., a dictator is deposed) or more authoritarian (e.g., a coup d'état occurs). We identified shocks as the largest one-percent of year-to-year changes in target democracy. These shocks represent substantial changes in democracy. For negative shocks there was a decrease of three to 15 points on the 21 point scale; on the positive side, the size of the largest changes ranged from nine to 16 points.

We used all the control variables from model 1 to find the matches for scenarios of positive and negative democracy shocks. For example, each observation with high levels of EIGO connectedness was matched with another observation that had experienced the same shock and was similar to the treated observation in all control variables. In other words, for each observation that had been treated, the algorithm obtained at least one observation that was similar in each dimension but that had not been treated (e.g., it didn't have high levels of EIGOs). Note that this observation corresponds to a dyad with the same target country but different source country. For example, if a

negative democratic shock occurs in Argentina and the UK has strong EIGO connectedness with Argentina, the algorithm picks another country that invested in Argentina, is very similar to the UK in the dimensions defined by the control variables and doesn't have high levels of EIGO connectedness to Argentina. After the match proceeds and the propensity scores are calculated, a test on the mean of change in FDI is conducted between the treatment and control groups. If a statistical difference is found, then a stronger link of causality between the treatment and the output can be inferred.

Table 8 shows the results of this analysis. Our output variable is the change of FDI flows for 1 and 3 years after the shock. The results of this pseudo-experiment are in line with those of our multivariate regressions. Our multivariate regressions showed that EIGO connectedness was associated with more FDI when democracy is low, and the propensity-score analysis shows that the EIGO treatment is associated with more FDI for negative shocks in democracy. Our multivariate regressions showed that SCIGO connectedness was associated with more FDI when democracy is high, and the propensity-score analysis shows that the SCIGO treatment is associated with more FDI for positive shocks in democracy.

After all these robustness checks: lagged independent variables, a complete list of variables that cover potential alternative explanations, an extended set of dummy variables to control for host-country unobservables and time trends, corrections for serial auto-correlation, and a quasi-experimental test through propensity scores, it is worth highlighting just what an alternative explanation would have to account for our results. It is not sufficient merely to account for a positive association between IGO connectedness and FDI; our theory also predicts, and our results show, a negative interaction between

IGO connectedness and target-country democracy. A credible alternative explanation would also have to account for this interaction. Furthermore, our results show very different effects of EIGO and SCIGO connectedness as target-country democracy increases. Although we had not predicted this *a priori*, we will explain in the discussion that these findings are consistent with our position that EIGO and SCIGO connectedness represent very different mechanisms of governance.

After our robustness checks, the set of alternative explanations that might account for this complex, but theoretically consistent, pattern of IGO connectedness effects is vanishingly small. Add to this some important facts about the processes that bring about IGO connectedness and FDI. First, different agents are responsible for these two outcomes—states engage in IGOs, while companies engage in FDI. Thus, alternatives must explain the mobilization of these two agents, and cannot rely only on the initiative of states, or that of companies. Furthermore, IGO connectedness is not easily focused on a single dyadic relationship—when a country joins an IGO it adds a connection with at least two countries, and typically many more. This frustrates alternatives that derive from purely dyadic mechanisms. Altogether, the hurdles for alternative explanations to the causal logic we present loom very large.

Discussion

The insufficiency of state authority as a source of surety for transactions that transcend national borders creates an opportunity for an increased role for other governance forms. In this paper we applied a network methodology to show that relational governance through IGO connections facilitates FDI. We further document a fascinating interdependence between domestic institutions, specifically democracy, and the

international institutions represented by IGOs. The results help to understand which countries attract FDI, and from which senders.

We see normative mechanisms behind IGO influence. This suggests a very different approach from past research of the effect of IGOs on FDI, which have taken a monadic approach focused on the most powerful IGOs. Instead, we examine dyadic ties in an affiliation network created by the set of hundreds of extant IGOs, most of them weak and incapable of controlling the states that are their members through coercion. The number of connections in this network between two countries has a substantial positive influence on the flow of FDI between them and the results do not change if we exclude the IMF, WTO and World Bank when constructing the network.

Yet more evidence that IGOs enable relational governance comes from the fact that it is not only economic IGO connectedness but also social/cultural IGO connectedness that increases FDI flows between two countries. The influence of SCIGO connectedness reinforces arguments that social and cultural differences are a major barrier to cross-border investment, and therefore to global economic integration. More optimistically, the result also suggests that IGOs are a mechanism for reducing social/cultural differences (Bonikowski, 2010) and for reducing the negative effect of those differences on FDI. Future research should investigate the influence of IGOs, particularly SCIGOs, on all of the forms of distance identified by Berry et. al, (2006).

For governance, this result highlights the role the social mechanisms can play in smoothing even the most high-stakes economic exchanges. Sociologists have long argued that socially embedded sentiments, such as trust, empathy, and affinity, all support exchange (e.g., Granovetter, 1985). Nevertheless, unambiguous evidence in support of

that claim is scarce, mostly because important and ongoing exchange relations often co-occur with social relations, making it difficult to isolate the benefit of social governance (Uzzi, 1996; Gibbons, 1999). The distinction between economic and social/cultural IGOs provides a rare opportunity to compare economic and social governance mechanisms.

As Stiglitz (2003) and others have observed, international institutions do notably less to encourage FDI flows to *some* countries. Our results suggest at least two reasons why the flow of FDI is so unequal. First, the pattern of IGO connectedness is unequal (Beckfield, 2010). IGO connections are strongest within regions and weaker between developed and developing countries, where FDI flows are also low.

Second, our findings regarding target country democracy may also be relevant for understanding which countries attract more or less FDI. When the target country is more democratic, EIGO connections do less to increase FDI flows. As Martin (1999) argues, whether the international institutions substitute of compliment domestic institutions informs regarding the mechanisms through which they operate. We think the substitution between democracy and EIGO connectedness occurs because they are two different mechanisms that provide surety to MNCs about their investments. When one is higher, the role of surety for the other is less important for FDI. We recognize that both EIGO connectedness and target democracy have other implications for FDI than the provision of surety. EIGO connectedness may represent opportunities for coordination. Target democracy may represent demands for redistribution and other policy changes relevant to MNCs, which may make some EIGOs less effective. For example, Shandra, Ross and London (2003) show that IMF conditionality does more to attract FDI for repressive regimes that can overwhelm civil resistance to IMF conditions. While that effect is

consistent with our results, it seems relevant to only a few powerful EIGOs, not the large number of weak ones that drive our findings.

Target democracy interacts in the opposite way with SCIGO connectedness, to increase the flow of FDI, an effect that surely derives from the unique governance mechanisms embedded in networks of social/cultural, as opposed to economic, relations. One explanation for this is that the sources of FDI are overwhelmingly the "first world" democratic countries. The social/cultural connections of these sender countries to potential targets may be more effective if those targets are more democratic due to an international equivalent to interpersonal homophily. When an SCIGO brings the citizens of two democracies together, political similarity may enhance trust, smooth communication, and facilitate relationship building. Another explanation is that non-democratic targets may not get as much out of SCIGO connections because they are less open, and therefore less willing to exploit to the fullest opportunities for social and cultural contact. Consider for example the stereotype that the contingents from Eastern Bloc countries at international events during the cold war were heavily guarded, constrained and otherwise inhibited. Either way, the result indicates that for states as for individuals, employing social governance requires a certain capacity for sociability—the ability to strike up and maintain social relationships with others that are sufficiently positive that they may be the basis of trust, empathy and affect.

Another implication of this is with regard to the interdependence between institutional forms. Although states form and operate IGOs, the relational mechanisms IGOs influence through are very different from the legitimate authority for coercion that states enjoy domestically. One characterization of the interdependence between these

mechanisms is as a contest, with international organizations winning, affecting what Strange (1996) has called a retreat of the state. Our results are consistent with this as they show a substitution effect between states and IGOs, at least for the EIGOs which are explicitly targeted at governing global economic transactions. On the other hand, it could be argued that the mere fact that target democracy affects FDI at all signals a victory for the relevance for global transactions of the state's domestic governance. Even more significant is that there is a *positive* interdependence between SCIGOs and target democracy, a relationship that is largely unforeseen in a literature that has highlighted rivalry between international organizations and states, and attended more to the influence of EIGOs such as the IMF, the World Bank and the WTO than on SCIGOs which rely on very different governance mechanisms.

The resulting conclusion must be that the interrelationship between domestic and international governance is more complex than previous accounts have recognized. And while our findings may give hope to those who see a substantial role for the state as economic globalization progresses, there can be no claim that the network forged by international organizations is not massively and increasingly important in this regard. We have argued that inter-governmental networks bridge an institutional abyss, by forging relationships that span country borders. The evidence supports this argument: the connections between states through both economic and social/cultural IGOs weigh positively and heavily on which states receive FDI from which others.

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TABLE 1A

DISTRIBUTION OF FDI FLOWS (NUMBER OF OBSRVATIONS) BY OECD AND NON-OECD COUNTRIES

		Target Country		
		Non-OECD	OECD	
	Non-OECD	29%	28%	57%
Source Country	OECD	28%	15%	43%
		61%	39%	

TABLE 1B

DISTRIBUTION OF FDI FLOWS (COSNTANT 2000 US$) BY OECD AND NON-OECD COUNTRIES

		Target Country		
		Non-OECD	OECD	
	Non-OECD	6%	2%	8%
Source Country	OECD	13%	79%	82%
		19%	81%	

TABLE 2
DESCRIPTIVE STATISTICS

	Variable	Mean	Std. Dev	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	FDI_{ij}	72.58	986.97	1													
(2)	BIT_{ij}	0.15	0.36	-0.02	1												
(3)	ln(Net financial aid_{ij})	0.38	1.05	0.00	0.14	1											
(4)	ln(Tradeij)	9.44	4.41	0.10	0.16	0.12	1										
(5)	ln(GDP_i)	24.97	2.15	0.10	0.09	0.43	0.42	1									
(6)	ln(GDP_j)	24.98	2.12	0.09	0.07	-0.23	0.37	-0.31	1								
(7)	ln(Natural resources exports to GDP_j)	2.95	1.09	-0.04	-0.10	0.16	-0.22	0.15	-0.43	1							
(8)	ln(Gov't $debt_j$)	2.80	0.36	0.02	0.01	-0.20	0.11	-0.09	0.17	-0.08	1						
(9)	ln(CO_2 Emissions)	1.65	0.81	0.06	0.05	-0.36	0.26	-0.19	0.57	-0.22	0.49	1					
(10)	ln(GDP per $capita_i$ x GDP per $capita_j$)	16.72	1.98	0.11	0.04	0.00	0.47	0.31	0.30	-0.25	0.30	0.53	1				
(11)	ln(Target Democracy)	2.59	0.71	0.04	0.06	-0.16	0.18	-0.10	0.29	-0.45	0.14	0.27	0.32	1			
(12)	ln(All IGO $Ties_{ijt-1}$)	3.48	0.51	0.07	0.03	-0.02	0.32	0.17	0.20	-0.16	0.02	0.07	0.23	0.17	1		
(13)	ln(Economic IGO $Ties_{ijt-1}$)	0.32	0.99	0.06	0.05	0.00	0.34	0.19	0.22	-0.17	0.03	0.08	0.24	0.17	0.97	1	
(14)	ln(Social/Cultural IGO $Ties_{ijt-1}$)	0.08	1.01	0.03	-0.06	-0.05	0.02	-0.02	-0.03	-0.03	-0.08	-0.13	0.01	0.08	0.34	0.01	1

TABLE 3
FIXED EFFECTS (Dyad and Year) GRAVITY MODELS OF UNILATERAL FDI FLOWSij, 1980-2000

VARIABLES	POISSON ESTIMATION									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ln(BITij)	0.537***	0.489***	0.488***	0.498***	0.499***	0.529***	0.532***	0.473***	0.474**	0.467***
	(0.167)	(0.188)	(0.186)	(0.192)	(0.186)	(0.175)	(0.183)	(0.176)	(0.190)	(0.170)
ln(Net financial aidij)	0.188***	0.184***	0.180***	0.186***	0.182***	0.178***	0.173***	0.181***	0.188***	0.183***
	(0.049)	(0.052)	(0.043)	(0.040)	(0.044)	(0.047)	(0.053)	(0.050)	(0.051)	(0.051)
ln(Dif per capitai x GDP per capitaj)	0.139**	0.141*	0.14	0.14	0.139*	0.012	0.0350**	0.148**	0.148**	0.145**
	(0.059)	(0.078)	(0.089)	(0.099)	(0.077)	(0.020)	(0.016)	(0.068)	(0.069)	(0.065)
ln(Tradeij)	-0.00322	0.0426*	0.0416*	0.0341	0.0318	0.0436	0.0361	0.0227	0.0285**	0.0405*
	(0.017)	(0.023)	(0.022)	(0.024)	(0.021)	(0.064)	(0.078)	(0.017)	(0.014)	(0.022)
ln(GDPi)	0.728***	0.561**	0.513**	0.557**	0.482**	0.790***	0.585**	0.699***	0.743***	0.556**
	(0.247)	(0.248)	(0.233)	(0.219)	(0.228)	(0.218)	(0.247)	(0.231)	(0.259)	(0.261)
ln(GDPj)	0.713***	0.549**	0.497**	0.543**	0.464*	0.784***	0.579**	0.683***	0.733***	0.540*
	(0.267)	(0.269)	(0.247)	(0.240)	(0.244)	(0.243)	(0.263)	(0.252)	(0.275)	(0.283)
ln(Natural resources exports to GDPj)	0.305**	0.313**	0.314**	0.312**	0.313**	0.361***	0.365***	0.310**	0.312**	0.317***
	(0.148)	(0.129)	(0.133)	(0.133)	(0.126)	(0.139)	(0.097)	(0.132)	(0.126)	(0.117)
ln(Gov't debtj)	-0.864***	-0.887***	-0.888***	-0.880***	-0.875***	-0.812***	-0.812***	-0.888***	-0.879***	-0.880***
	(0.225)	(0.195)	(0.237)	(0.219)	(0.208)	(0.214)	(0.211)	(0.208)	(0.199)	(0.259)
ln(CO2 Emissions)	0.0687	0.0536	0.0667	0.0576	0.0767	0.0274	0.033	0.0598	0.0418	0.063
	(0.217)	(0.188)	(0.206)	(0.190)	(0.176)	(0.189)	(0.227)	(0.192)	(0.197)	(0.199)
ln(Target Democracy)	-0.416***	-0.434***	0.493	-0.432**	-0.330**	-0.399***	0.318	-0.431***	-0.399**	-0.280**
	(0.143)	(0.127)	(0.650)	(0.169)	(0.130)	(0.150)	(0.317)	(0.143)	(0.166)	(0.129)
ln(All IGO Ties$_{ijt-1}$)		0.485***	1.254***							
		(0.183)	(0.465)							
ln(All IGO Ties$_{ijt-1}$) * ln(Target Democracy)			-0.259							
			(0.174)							
ln(Economic IGO Ties$_{ijt-1}$)				0.220**	0.781***					0.817***
				(0.103)	(0.239)					(0.260)
ln(Economic IGO Ties$_{ijt-1}$) * ln(Target Democracy)					-0.191**					-0.240***
					(0.082)					(0.093)
ln(Social/Cultural IGO Ties$_{ijt-1}$)								0.211*	-0.341*	-0.493**
								(0.113)	(0.203)	(0.213)
ln(Social/Cultural IGO Ties$_{ijt-1}$) * ln(Target Democracy)									0.197**	0.173**
									(0.087)	(0.086)
ln(IMF, WTO and World Bank Ties$_{ijt-1}$)						0.158				
						(0.140)				
ln(Economic IGO Ties exc. IMF, WTO, WB, $_{ijt-1}$)							1.349***			
							(0.389)			
ln(Economic IGO Ties exc. IMF, WTO, WB, $_{ijt-1}$) * ln(Target Democracy)							-0.284**			
							(0.118)			
Dyad fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594
R-squared										
Number of dyadid	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397

z statistics in parentheses. Standard errors corrected via boostrapping
*** p<0.01, ** p<0.05, * p<0.1

TABLE 4

(Dyad and Year) GRAVITY MODELS OF UNILATERAL FDI FLOWSij, 1980-2000. POISSON ESTIMATION FOR ALTERNATIVES WAYS TO DEFINE UNILATE

	Unilateral flows are chosen randomly when duplicates exist								Unilateral inflows are chosen								Unilateral flows are calculated as a 3 year moving average							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
BIT_{ij}	0.576***	0.534***	0.533***	0.540***	0.541***	0.529***	0.528***	0.521***	0.773***	0.731***	0.728***	0.739***	0.746***	0.727***	0.731***	0.731***	0.621***	0.580***	0.576***	0.586***	0.585***	0.565***	0.565***	0.558***
	(0.19)	(0.18)	(0.17)	(0.15)	(0.16)	(0.15)	(0.14)	(0.17)	(0.18)	(0.19)	(0.16)	(0.23)	(0.21)	(0.18)	(0.18)	(0.17)	(0.17)	(0.11)	(0.17)	(0.17)	(0.18)	(0.15)	(0.15)	(0.17)
ln(Net financial aid_{ij})	0.202***	0.197***	0.194***	0.199***	0.195***	0.195***	0.202***	0.197***	0.201***	0.197***	0.187**	0.198***	0.186***	0.193***	0.203***	0.191***	0.179***	0.175***	0.170***	0.176***	0.172***	0.173***	0.177***	0.172***
	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)	(0.05)	(0.06)	(0.07)	(0.07)	(0.06)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
ln($Trade_{ij}$)	-0.0106	0.0353	0.0344	0.0278	0.0258	0.0126	0.0185	0.0327	0.0612	0.0971**	0.095	0.0887**	0.0843*	0.0833**	0.0929**	0.0952***	-0.0068	0.0316	0.0304	0.0269	0.0246	0.0135	0.017	0.0303
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.04)	(0.07)	(0.04)	(0.05)	(0.04)	(0.05)	(0.04)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)
ln(GDP per $capita_i$ x GDP per $capita_j$)	0.163**	0.164*	0.163**	0.164**	0.163*	0.169**	0.169**	0.166**	0.111	0.117	0.115*	0.117	0.115	0.116*	0.113	0.112	0.0866	0.0894	0.0885	0.0886	0.0876	0.0948	0.0946	0.0911
	(0.08)	(0.10)	(0.08)	(0.08)	(0.09)	(0.07)	(0.09)	(0.08)	(0.08)	(0.09)	(0.07)	(0.08)	(0.10)	(0.06)	(0.08)	(0.07)	(0.07)	(0.07)	(0.06)	(0.07)	(0.07)	(0.08)	(0.07)	(0.07)
ln(GDP_i)	0.656***	0.485**	0.434**	0.479**	0.399*	0.615***	0.667**	0.466*	0.528***	0.378**	0.219	0.382	0.151	0.471**	0.591**	0.305	1.121***	0.988***	0.922***	0.973***	0.885***	1.107***	1.136***	0.925***
	(0.24)	(0.21)	(0.20)	(0.21)	(0.23)	(0.23)	(0.27)	(0.26)	(0.19)	(0.19)	(0.26)	(0.24)	(0.30)	(0.24)	(0.28)	(0.24)	(0.24)	(0.19)	(0.25)	(0.26)	(0.22)	(0.22)	(0.23)	(0.24)
ln(GDP_j)	0.619**	0.450**	0.396*	0.444**	0.359	0.578**	0.635**	0.429	0.783***	0.638***	0.470*	0.641**	0.399	0.728***	0.859***	0.563**	1.128***	0.996***	0.925***	0.981***	0.887***	1.113***	1.146***	0.929***
	(0.26)	(0.22)	(0.22)	(0.23)	(0.25)	(0.24)	(0.28)	(0.27)	(0.21)	(0.21)	(0.27)	(0.25)	(0.32)	(0.26)	(0.29)	(0.25)	(0.25)	(0.20)	(0.26)	(0.28)	(0.23)	(0.23)	(0.23)	(0.25)
ln(Natural resources exports to GDP_i)	0.256*	0.264**	0.265**	0.262**	0.263**	0.260*	0.261*	0.266*	0.501***	0.510***	0.512***	0.508***	0.514***	0.508***	0.514***	0.523***	0.399***	0.406***	0.408***	0.405**	0.407***	0.403***	0.404**	0.409***
	(0.13)	(0.13)	(0.11)	(0.10)	(0.12)	(0.14)	(0.14)	(0.14)	(0.16)	(0.15)	(0.13)	(0.15)	(0.15)	(0.16)	(0.17)	(0.14)	(0.15)	(0.14)	(0.15)	(0.18)	(0.14)	(0.12)	(0.17)	(0.16)
ln(Gov't debt$_i$)	-0.773**	-0.796**	-0.798**	-0.788**	-0.785**	-0.795**	-0.783**	-0.787***	-0.690**	-0.710**	-0.719**	-0.704**	-0.704**	-0.714**	-0.701**	-0.703***	-0.788**	-0.804**	-0.806**	-0.799**	-0.795**	-0.804**	-0.797**	-0.800***
	(0.18)	(0.22)	(0.19)	(0.18)	(0.19)	(0.23)	(0.19)	(0.21)	(0.25)	(0.27)	(0.31)	(0.29)	(0.25)	(0.27)	(0.26)	(0.27)	(0.20)	(0.21)	(0.23)	(0.22)	(0.22)	(0.23)	(0.25)	(0.24)
ln(CO_2 Emissions)	0.0758	0.0591	0.0722	0.0631	0.0824	0.0655	0.0484	0.0684	-0.319	-0.34	-0.308	-0.336	-0.295	-0.335	-0.369	-0.33	-0.0063	-0.0206	-0.0014	-0.0176	0.00607	-0.0146	-0.027	-0.0021
	(0.20)	(0.19)	(0.19)	(0.21)	(0.22)	(0.18)	(0.18)	(0.22)	(0.22)	(0.24)	(0.26)	(0.26)	(0.23)	(0.26)	(0.25)	(0.21)	(0.18)	(0.24)	(0.25)	(0.21)	(0.18)	(0.21)	(0.20)	(0.21)
ln(Target Democracy)	0.467***	0.485***	0.49	0.484***	-0.366**	0.483***	0.456***	-0.321**	(0.37)	(0.38)	1.85	-0.379*	(0.10)	-0.367*	(0.31)	0.00	-0.377***	0.397***	0.95	0.396***	(0.27)	0.396***	-0.375**	(0.23)
	(0.12)	(0.14)	(0.68)	(0.16)	(0.16)	(0.14)	(0.16)	(0.13)	(0.23)	(0.24)	(1.50)	(0.23)	(0.26)	(0.20)	(0.24)	(0.26)	(0.13)	(0.15)	(0.70)	(0.13)	(0.18)	(0.13)	(0.17)	(0.15)
ln(All IGO $Ties_{ij(t-1)}$)		0.480**	1.291**							0.413*	2.250*							0.419***	1.535***					
		(0.20)	(0.55)							(0.22)	(1.24)							(0.16)	(0.57)					
ln(All IGO $Ties_{ij(t-1)}$) * ln(Target Democracy)			-0.27								-0.62								-0.375**					
			(0.19)								(0.42)								(0.19)					
ln(Economic IGO $Ties_{ij(t-1)}$)				0.223**	0.835**			0.869***				0.179*	1.526**			1.590**				0.206***	0.911***			0.946***
				(0.09)	(0.35)			(0.33)				(0.11)	(0.73)			(0.78)				(0.08)	(0.30)			(0.30)
ln(Economic IGO $Ties_{ij(t-1)}$) * ln(Target Democracy)					-0.207*			-0.251**					-0.455*			-0.523**					-0.239**			-0.277**
					(0.12)			(0.11)					(0.24)			(0.25)					(0.10)			(0.11)
ln(Social/Cultural IGO $Ties_{ij(t-1)}$)						0.183**	-0.346**	-0.302**						0.192*	-0.513**	-0.567*						0.171**	(0.19)	-0.135*
						(0.08)	(0.15)	(0.15)						(0.11)	(0.26)	(0.33)						(0.07)	(0.21)	(0.08)
ln(Social/Cultural IGO $Ties_{ij(t-1)}$) * ln(Target Democracy)							0.190***	0.163**							0.259**	0.280**							0.127*	0.0987**
							(0.07)	(0.07)							(0.11)	(0.11)							0.08	(0.06)
Dyad fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	65,365	65,365	65,365	65,365	65,365	65,365	65,365	65,365	73,641	73,641	73,641	73,641	73,641	73,641	73,641	73,641
# of dyads	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400

*** p<0.01, ** p<0.05, * p<0.1

TABLE 5

FIXED EFFECTS (Dyad and Year) GRAVITY MODELS OF UNILATERAL FDI FLOWSij, 1980-2000.

VARIABLES	POISSON ESTIMATION								OLS ESTIMATION							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
BIT_{ij}	0.537***	0.489***	0.488***	0.498***	0.499***	0.473***	0.474**	0.467***	0.161***	0.163***	0.165***	0.163***	0.167***	0.154***	0.156***	0.162***
	(0.167)	(0.188)	(0.186)	(0.192)	(0.186)	(0.176)	(0.190)	(0.170)	(0.031)	(0.034)	(0.039)	(0.034)	(0.040)	(0.033)	(0.039)	(0.043)
ln(Net financial aid_{ij})	0.188***	0.184***	0.180***	0.186***	0.182***	0.181***	0.188***	0.183***	0.210***	0.210***	0.208***	0.211***	0.208***	0.209***	0.208***	0.206***
	(0.049)	(0.052)	(0.043)	(0.040)	(0.044)	(0.050)	(0.051)	(0.051)	(0.021)	(0.022)	(0.018)	(0.015)	(0.020)	(0.018)	(0.020)	(0.018)
ln($Trade_{ij}$)	-0.00322	0.0426*	0.0416*	0.0341	0.0318	0.0227	0.0285**	0.0405*	-0.00793***	-0.00821***	-0.00858***	-0.00863***	-0.00906***	-0.00719***	-0.00620**	-0.00723***
	(0.017)	(0.023)	(0.022)	(0.024)	(0.021)	(0.017)	(0.014)	(0.022)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
ln(GDP per $capita_i$ x GDP per $capita_j$)	0.139**	0.141*	0.14	0.14	0.139*	0.148**	0.148**	0.145**	-0.0104	-0.0104	-0.0108	-0.0103	-0.0108	-0.0108	-0.0108	-0.0112
	(0.059)	(0.078)	(0.089)	(0.099)	(0.077)	(0.068)	(0.069)	(0.065)	(0.026)	(0.022)	(0.028)	(0.024)	(0.019)	(0.025)	(0.023)	(0.022)
ln(GDP_i)	0.728***	0.561**	0.513**	0.557**	0.482**	0.699***	0.743***	0.556**	0.165***	0.165***	0.163***	0.167***	0.165***	0.163***	0.174***	0.174***
	(0.247)	(0.248)	(0.233)	(0.219)	(0.228)	(0.231)	(0.259)	(0.261)	(0.045)	(0.048)	(0.056)	(0.046)	(0.046)	(0.045)	(0.045)	(0.047)
ln(GDP_j)	0.713***	0.549**	0.497**	0.543**	0.464*	0.683***	0.733***	0.540*	0.138***	0.138***	0.135**	0.139***	0.136***	0.137***	0.148***	0.146***
	(0.267)	(0.269)	(0.247)	(0.240)	(0.244)	(0.252)	(0.275)	(0.283)	(0.046)	(0.050)	(0.059)	(0.048)	(0.049)	(0.047)	(0.046)	(0.047)
ln(Natural resources exports to GDP_j)	0.305**	0.313**	0.314**	0.312**	0.313**	0.310**	0.312**	0.317***	0.0399***	0.0396***	0.0399***	0.0392***	0.0395***	0.0398***	0.0405***	0.0402***
	(0.148)	(0.129)	(0.133)	(0.133)	(0.126)	(0.132)	(0.126)	(0.117)	(0.011)	(0.010)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)
ln(Gov't $debt_j$)	-0.864***	-0.887***	-0.888***	-0.880***	-0.875***	-0.888***	-0.879***	-0.880***	-0.152***	-0.152***	-0.151***	-0.151***	-0.149***	-0.151***	-0.138***	-0.136***
	(0.225)	(0.195)	(0.237)	(0.219)	(0.208)	(0.208)	(0.199)	(0.259)	(0.035)	(0.042)	(0.038)	(0.040)	(0.037)	(0.038)	(0.034)	(0.040)
ln(CO_2 Emissions)	0.0687	0.0536	0.0667	0.0576	0.0767	0.0598	0.0418	0.063	-0.0676***	-0.0677***	-0.0657***	-0.0679***	-0.0650***	-0.0677**	-0.0738***	-0.0709***
	(0.217)	(0.188)	(0.206)	(0.190)	(0.176)	(0.192)	(0.197)	(0.199)	(0.022)	(0.024)	(0.021)	(0.024)	(0.023)	(0.027)	(0.027)	(0.023)
ln(Target Democracy)	-0.416***	-0.434***	0.493	-0.432**	-0.330**	-0.431***	-0.399**	-0.280**	-0.111***	-0.111***	0.0549	-0.111***	-0.112***	-0.112***	-0.109***	-0.110***
	(0.143)	(0.127)	(0.650)	(0.169)	(0.130)	(0.143)	(0.166)	(0.129)	(0.015)	(0.016)	(0.092)	(0.017)	(0.015)	(0.016)	(0.016)	(0.016)
ln(All IGO $Ties_{ijt-1}$)		0.485***	1.254***							0.155***	0.117					
		(0.183)	(0.465)							(0.033)	(0.076)					
ln(All IGO $Ties_{ijt-1}$) * ln(Target Democracy)			-0.259								-0.0500*					
			(0.174)								(0.029)					
ln(Economic IGO $Ties_{ijt-1}$)				0.220**	0.781***			0.817***				0.0206**	0.0626*			0.0748*
				(0.103)	(0.239)			(0.260)				(0.012)	(0.037)			(0.042)
ln(Economic IGO $Ties_{ijt-1}$) * ln(Target Democracy)					-0.191**			-0.240***					-0.0320**			-0.0354**
					(0.082)			(0.093)					(0.015)			(0.016)
ln(Social/Cultural IGO $Ties_{ijt-1}$)						0.211*	-0.341*	-0.493**						0.0496***	-0.109***	-0.111***
						(0.113)	(0.203)	(0.213)						(0.016)	(0.037)	(0.032)
ln(Social/Cultural IGO $Ties_{ijt-1}$) * ln(Target Democracy)							0.197**	0.173**							0.0633***	0.0643***
							(0.087)	(0.086)							(0.013)	(0.012)
									-6.537***	-6.511***	-6.807**	-6.624***	-6.504***	-6.488***	-7.078***	-7.025***
									(2.253)	(2.454)	(2.987)	(2.301)	(2.333)	(2.242)	(2.190)	(2.334)
Dyad fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594
R-squared									0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Number of dyadid	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397

z statistics in parentheses. Standard errors corrected via boostrapping

*** p<0.01, ** p<0.05, * p<0.1

TABLE 6

FIXED EFFECTS (Dyad, Year, Host Country, Host Country Linear Trend) GRAVITY MODELS OF UNILATERAL FDI FLOWSij, 1980-2000. OLS ESTIMATION

	OLS ESTIMATION								OLS ESTIMATION							
VARIABLES																
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
BIT_{ij}	0.152***	0.153***	0.152***	0.154***	0.153***	0.144***	0.146***	0.147***	0.0728**	0.0756**	0.0815**	0.0747**	0.0820**	0.0664	0.0663*	0.0757**
	(0.027)	(0.036)	(0.034)	(0.035)	(0.039)	(0.038)	(0.036)	(0.034)	(0.033)	(0.035)	(0.037)	(0.033)	(0.034)	(0.045)	(0.037)	(0.031)
ln(Net financial aid_{ij})	0.0978***	0.0981***	0.0985***	0.0987***	0.0988***	0.0977***	0.0987***	0.0995***	0.0950***	0.0960***	0.0936***	0.0963***	0.0936***	0.0950***	0.0959***	0.0945***
	(0.017)	(0.017)	(0.019)	(0.018)	(0.020)	(0.022)	(0.020)	(0.017)	(0.022)	(0.016)	(0.015)	(0.019)	(0.017)	(0.017)	(0.016)	(0.017)
ln($Trade_{ij}$)	0.0849**	0.0846*	0.0842*	0.0845	0.0843*	0.0875*	0.0994**	0.0990***	0.0626*	0.0586	0.0534	0.0600*	0.0553	0.0693**	0.0766*	0.0691*
	(0.043)	(0.049)	(0.046)	(0.052)	(0.048)	(0.053)	(0.039)	(0.036)	(0.036)	(0.037)	(0.046)	(0.033)	(0.038)	(0.034)	(0.040)	(0.039)
ln($GDP\ per\ capita_i$ x $GDP\ per\ capita_j$)	-0.00753	-0.00743	-0.00729	-0.00726	-0.00722	-0.00791	-0.00775	-0.0075	-0.0104	-0.0104	-0.0108	-0.0103	-0.0108	-0.0108	-0.0108	-0.0112
	(0.025)	(0.021)	(0.021)	(0.028)	(0.026)	(0.024)	(0.023)	(0.025)	(0.026)	(0.022)	(0.028)	(0.024)	(0.019)	(0.025)	(0.023)	(0.022)
ln(GDP_i)	0.110*	0.111**	0.112**	0.113**	0.114***	0.110***	0.115**	0.118**	0.134***	0.141***	0.131**	0.145***	0.135***	0.133**	0.138***	0.139***
	(0.058)	(0.048)	(0.056)	(0.055)	(0.043)	(0.042)	(0.056)	(0.047)	(0.044)	(0.042)	(0.059)	(0.044)	(0.044)	(0.055)	(0.050)	(0.049)
ln(GDP_j)	0.204***	0.206***	0.209**	0.208**	0.209***	0.199**	0.222***	0.226***	0.370***	0.354***	0.371***	0.347***	0.368***	0.368***	0.373***	0.372***
	(0.075)	(0.071)	(0.086)	(0.099)	(0.080)	(0.081)	(0.076)	(0.081)	(0.094)	(0.100)	(0.085)	(0.078)	(0.101)	(0.074)	(0.068)	(0.087)
ln(Natural resources exports to GDP_j)	-0.0564***	-0.0571***	-0.0571***	-0.0582***	-0.0582***	-0.0566***	-0.0556***	-0.0570***	-0.0160***	-0.0173***	-0.0182***	-0.0179**	-0.0196***	-0.0170**	-0.0167***	-0.0200***
	(0.012)	(0.012)	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)	(0.005)	(0.007)	(0.007)	(0.008)	(0.007)	(0.008)	(0.006)	(0.006)
ln($Gov't\ debt_j$)	-0.145**	-0.148**	-0.152**	-0.152**	-0.154***	-0.139***	-0.158**	-0.165***	-0.00285	-0.00446**	-0.00448*	-0.00500**	-0.00508**	-0.00204	-0.00183	-0.00398*
	(0.071)	(0.064)	(0.073)	(0.066)	(0.055)	(0.054)	(0.069)	(0.060)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ln(CO_2 Emissions)	-0.000272	-0.000512	-0.000474	-0.000891	-0.000878	0.000394	0.000869	0.000355	-0.0825	-0.0906	-0.0841	-0.0907	-0.0835	-0.0714	-0.0777	-0.0785
	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.068)	(0.071)	(0.056)	(0.060)	(0.076)	(0.065)	(0.059)	(0.050)
ln(Target Democracy)	-0.124***	-0.124***	-0.169*	-0.124***	-0.124***	-0.126***	-0.133***	-0.133***	-0.0548***	-0.0564**	0.352***	-0.0576***	-0.0531***	-0.0577***	-0.0616***	-0.0596***
	(0.025)	(0.027)	(0.092)	(0.016)	(0.026)	(0.022)	(0.020)	(0.020)	(0.015)	(0.023)	(0.113)	(0.016)	(0.020)	(0.022)	(0.022)	(0.018)
ln(All IGO $Ties_{ijt-1}$)		0.0168*	0.0522*							0.0855**	0.239***					
		(0.009)	(0.028)							(0.035)	(0.083)					
ln(All IGO $Ties_{ijt-1}$) * ln(Target Democracy)			-0.0136								-0.121***					
			(0.027)								(0.033)					
ln(Economic IGO $Ties_{ijt-1}$)				0.0225*	0.0285**			-0.0208				0.0599***	0.119***			0.123**
				(0.012)	(0.012)			(0.056)				(0.017)	(0.045)			(0.052)
ln(Economic IGO $Ties_{ijt-1}$) * ln(Target Democracy)					-0.00238			0.00106					-0.0680***			-0.0680***
					(0.018)			(0.018)					(0.016)			(0.019)
ln(Social/Cultural IGO $Ties_{ijt-1}$)						0.0487***	-0.0736*	-0.0760***						0.0540***	-0.0765*	-0.0864*
						(0.017)	(0.042)	(0.029)						(0.015)	(0.042)	(0.047)
ln(Social/Cultural IGO $Ties_{ijt-1}$) * ln(Target Democracy)							0.0488***	0.0490***							0.0505***	0.0498***
							(0.014)	(0.012)							(0.015)	(0.013)
Constant	-7.249***	-7.247***	-7.237***	-7.410**	-7.442***	-7.149***	-7.783***	-7.934***	-11.37***	-10.92***	-11.85***	-11.18***	-11.06***	-11.31***	-11.60***	-11.29***
	(2.636)	(2.201)	(2.763)	(3.160)	(2.309)	(2.322)	(2.508)	(2.710)	(2.278)	(2.750)	(3.161)	(2.010)	(2.412)	(2.192)	(2.153)	(2.044)
Dyad fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Host-country fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Host-country specific time trend	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Observations	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594	73,594
R-squared									0.275	0.275	0.276	0.276	0.276	0.276	0.276	0.277
Number of dyadid	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

TABLE 7
PROPENSITY SCORE ANALYSIS

	Average 3-year FDI				
Treatment definition	Treated	Untreated	Difference	S.E.	T-stat
Top 10%	108.85	45.35	63.5	2.126	9.78
Bottom 10%	11.22	22.52	-11.3	3.501	-3.23
Top 25%	50.27	21.97	28.31	2.99	9.77
Bottom 25%	8.104	17.7	-9.6	-9.6	-6.12
Top 50%	26.53	4.21	22.32	1.35	16.55
Bottom 50%	4.21	26.53	-22.32	1.35	-16.35

TABLE 8
EXOGENOUS SHOCK ANALYSIS

		Negative shock in democracy levels						Positive shock in democracy levels					
High levels of	Variation period	Observed Coefficient	Bootstrap Std. Err.	z	P>z	Normal-based [95% Conf.	Interval]	Observed Coefficient	Bootstrap Std. Err.	z	P>z	Normal-based [95% Conf.	Interval]
Economic IGOs	3 years	15.71	6.09	2.58	0.01	3.77	27.66	1.35	1.41	0.96	0.336	-1.41	4.11
Social IGOS	3 years	3.44	4.05	0.85	0.396	-4.50	11.38	14.43	5.83	2.47	0.013	3.00	25.86
Economic IGOs	1 year	13.79	7.46	1.85	0.065	-0.84	28.41	0.47	2.63	0.18	0.858	-4.69	5.64
Social IGOS	1 year	4.34	3.69	1.18	0.24	-2.89	11.57	9.95	4.45	2.23	0.026	1.22	18.68

Figure 1
Effect of IGO Connectedness over the Range of Target Democracy