

# **Dyadic Risk and Foreign Direct Investment:**

*Wharton Research Scholars Honors Thesis*

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*Foreign direct investment (FDI) has been rigorously examined by scholars of international business. While recent studies have achieved a general consensus with regard to the political and economic determinants of FDI inflows and outflows, this paper sought to reconcile two disparate segments of the literature – regime type and political climate – based upon recently available events data. The study ultimately failed to establish support for its hypothesis that bilateral political ties can substantively mitigate political risk to investment in states with autocratic regimes, but demonstrates a necessity to look beyond country-level political risk factors and further examine those of the dyad in making foreign investment decisions.*

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## **Introduction:**

In this era of economic globalism, scholars of international business have sought to address a salient question: are the interests of multinational enterprises (MNEs) conflictual with those of democratic governance? In recent literature on the non-market determinants of FDI, this question has been approached by examining levels of investment in countries with either democratic or autocratic regimes. It has been shown that the benefits of transparency and accountability for investments found in states with democratic regimes far outweigh the benefits of low wages and exploitative contracts that MNEs can reap by investing in states with autocratic regimes. However, this general consensus is vulnerable to the criticism that recent studies have examined only country-level political risk factors and, as such, upheld a dichotomous view of democracy and autocracy that does not reflect the range of political risk as it relates to multinational investor preference. By including a larger sample of home countries than in recent literature and introducing measures for bilateral political risk to existing models of FDI, this paper seeks to improve the generalizability of relationships established in prior studies, uncover the determinants of FDI that may exist at the dyadic level of analysis, and further examine the consensus that the interests of MNEs are complementary with those of democratic governance.

This paper begins in the *Background* section with a definition of FDI and brief discussion of its importance and theory. A section for *Literature* follows, in which the methodology and objective of recent studies are summarized. In the *Extension*, this study is positioned in the existing literature and its principal hypotheses are outlined. The paper then describes the *Methodology and Data* that was adopted to test the hypotheses, makes *Predictions* in accordance with intuition and recent studies, and presents its *Results*. The potential *Flaws* are then discussed, followed by a *Conclusion*, which offers a suggestion for further research.

## **Background and Definitions:**

FDI describes the investment of privately owned capital from an MNE to operations in a foreign country. To qualify as FDI, an investment must give the MNE some degree of control over operations abroad. FDI has been widely studied because of its implications for the world economy. According to Nathan Jensen, “FDI is an engine of employment, technological progress, productivity improvements, and ultimately economic growth” (Jensen 2003, 587). As such, generating inflows of FDI is considered to be a crucial element of economic development (Jensen 2003, 587-588).

Dunning’s *Eclectic Theory of FDI* is the commonly accepted paradigm for decomposing the advantages that FDI confers upon firms – ownership, location, and internalization. With regard to *ownership*, engaging in FDI projects allows MNEs to leverage the distinct competencies of their business practices – whether operational, intellectual, or brand superiority – to outperform competitors in the host market and generate returns in excess of what is possible at home. The advantage of *location* refers to the ability of MNEs to supply a foreign market through production in the host country, rather than exports to it. This allows the sale of goods that, due to trade barriers or large physical characteristics, may be otherwise unprofitable. Along similar lines, FDI also benefits MNEs if an abundance of natural resources in the host country reduces input prices, or if a highly educated workforce can produce quality goods. Finally, the advantage of *internalization* refers to the extension of well-established corporate oversight and hierarchical structures to a foreign market that may be poorly developed. This describes why MNEs may choose to engage in FDI, as opposed to simply licensing production to a firm in the host country (Jensen 2003, 591). These advantages allow MNEs to overcome the liability of being foreign and succeed in markets outside of their home.

## Literature:

Scholars have demonstrated the extent to which geographic, economic, and demographic features of a host country – market and cost based elements of Dunning’s advantage of location – can attract inflows of FDI. Geographic features, such as an abundance of natural resources in the host country, can decrease input prices and thus increase the profitability of operations abroad. Economic factors also have a great deal of explanatory power. For instance, market size is an indicator for an economy’s ability to absorb large amounts of FDI, and market growth is often directly correlated with returns to investment. Finally, the demographic features of a host country can promote inflows of FDI. Human capital of a workforce (operationalized as average schooling, literacy, etc.) is one such example.

With regard to the non-market determinants of FDI, *regime type* studies have examined the extent to which U.S. MNEs prefer to invest in states with autocratic regimes. Alternatively, scholars focusing on *political climate* have attributed flows of FDI to international and intranational cooperation and conflict. Each has sought to uncover the preferences of international investors as they relate to political risk to investment.

The previously untested assumption in the regime type literature is that MNEs prefer to invest in peripheral countries, as their market power is relatively greater in emerging markets and can be leveraged to gain unduly favorable terms for business (Oneal, 568). Furthermore, it is assumed that MNEs prefer to invest in states with autocratic regimes, whose repression of unions and collective bargaining ensures low wages, and whose popular suppression allows the formation of exploitative contracts (Jensen, 593). This conjecture raises a salient question in this era of economic globalism: are the interests of MNEs conflictual with those of democratic governance?

The consensus in recent studies is that the above assumptions are false. Much to the vindication of capitalists worldwide, the exact opposite seems to be true – MNEs prefer to invest in countries whose governance is transparent, liberal, and democratic. John Oneal was among the first to approach this subject quantitatively. In his paper, *The Affinity of Foreign Investors for Authoritarian Regimes*, Oneal examined both the flow and profitability of non-petroleum FDI to 22 developed countries and 26 less developed countries (LDCs). Controlling for financial risk, business cycles, GDP

growth, and military vs. civilian government, O Neal regressed FDI data from the U.S. Department of Commerce (1950-1985) against an indicator for regime type. The study operationalized regime type, autocracy vs. democracy, on -10 to +10 point scale using weights ranging from “competitiveness of political participation” to “constraints on chief executive” (O Neal, 573).

O Neal’s findings lend some support to the traditional assumption that U.S. MNEs have performed best in autocratic states. When considering only LDCs, a one point increase in a regime’s autocracy score increases profits by an average of 0.17 percent.<sup>1</sup> It was also observed that, in the periphery, FDI flow was greater to autocratic than democratic states.<sup>2</sup> A regional-level examination of these findings has yielded mixed results. When considering all countries, however, higher returns on FDI were observed in developed democracies than in countries with autocratic regimes (though results of FDI *flow* vis-à-vis regime type were insignificant).

More recently, Jensen sought to explicitly overturn the traditional assumption through his study, *Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment*. Jensen hypothesized that MNEs prefer to invest in states with democratic regimes (as opposed to autocratic ones) because they confer less political risk to investments. Indeed, democratic governance enhances cooperation between other states and corporations. More importantly, however, democratic regimes are ultimately responsible to an electorate and, as such, can make more credible commitments to not expropriate investments, nationalize industry, or renegotiate contracts (Jensen, 594).

Jensen regressed net inflow FDI data from the World Bank against an indicator for regime type similar to that which was used by O Neal. Improving upon previous designs, however, Jensen included controls for natural resources and government consumption levels. The results contradict O Neal’s with regard to his subsidiary conclusion – that, *ceteris paribus*, MNEs prefer autocratic regimes when considering only LDCs. Indeed, Jensen found that the MNE preference for democracy holds even when considering only non-OECD countries. Jensen also concluded that democracy is inversely correlated with sovereign default risk.

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<sup>1</sup> result only slightly significant:  $p < .10$

<sup>2</sup> result statistically insignificant

With regard to the *political climate* literature, most studies have concluded that the perception of political environment in a host country is one of the primary non-market determinants of FDI (Schollhammer and Nigh, 21). Nigh's 1985 article, *The Effect of Political Events on United States Direct Foreign Investment: A Pooled Time-Series Cross-Sectional Analysis*, examined the relationship between manufacturing FDI and political climate across 21 years and 24 countries. As an indicator for both international and intranational cooperation and conflict, the study used Azar's Conflict and Peace Database (COPDAB). Control variable used in the regression included market size, market growth, and others. On the basis of this data, Nigh concluded that both international and intranational conflict and cooperation have a significant effect on U.S. FDI to developing countries, whereas only international conflict and cooperation affects U.S. FDI to the developed world.

Building upon this study, Tallman later examined the extent to which home country political climate affects outflows of FDI – in other words, the factors lead MNEs to seek investment opportunities abroad. The methodology is similar to Nigh's study, in which the COPDAB was used as an indicator for political climate and GDP was controlled for. Results indicated a positive relationship between adverse political conditions and the outflow of FDI from industrialized countries to the United States.

These findings are approximately consistent with the more recent literature. Biglaiser and DeRouen, for example, examined the effect of regime type on U.S. outbound FDI from 1965 to 2002 (Biglaiser and DeRouen, 2005). Their study included controls for host country macroeconomics, governance, economic reforms, and U.S. military presence, as well as lagged measures for natural resources, FDI, per capita GDP, and both internal and external conflict (operationalized in Marshall's 'Societal Effects of Warfare' data, 2002). In this study, Biglaiser and DeRouen find that regime type, though significant, has less an impact on U.S. outbound FDI (when political stability is controlled for) than other variables in the study, such as market size and governance. They also find that the effect of U.S. troops in a host country has a positive and significant effect on flows of FDI.

In a similar study, Busse and Hefeker examined FDI data (1984–2003) to 83 developing countries (Busse and Hefeker, 2005). Their study used the PRS Group's *International Country Risk Guide* for its measures of political risk. Controls were added for Gross National Income per capita and its growth rate, trade as a percentage of

GDP, and inflation. On the whole, Busse and Hefeker find support for their measures of political risk as they relate to inflows of FDI, with government stability and quality of bureaucracy being amongst the most significant of the PRS Group's country-level measures.

### **Extension:**

The basic approach of this study is to introduce an indicator for the affect and density of bilateral political ties to existing models of FDI. With few exceptions, FDI research has been conducted at the country level of analysis and examined inflows or outflows to a single home or host. This has limited the extent to which the determinants of FDI flows can be generalized across time and space. As such, introducing a set of dyadic explanatory variables into a fully cross-sectional model is an important next step in the research on FDI.

Dyadic measures provide a far more realistic context for evaluating political risk than country-level variables, which are limited to using a weighted average of bilateral relations for each host. Also, framing the data within dyads allows us to evaluate country specific determinants for both the home and host together. In addition, this study includes a full cross section of OECD home countries, instead of limiting the data to inflows from the United States. This allows us to examine the generalizability of relationships for which support has been found in previous studies. For example, do investors in all countries view the political risk associated with democratic and autocratic political structures in the same way?

It is important to recognize that political risk varies not just by regime and country but also by dyad. For instance, consider the United States' post-9/11 relationship with Pakistan. One would expect inflows of FDI to the country to increase as Pakistan becomes a strategic ally in the War on Terror – despite no macroeconomic or regime changes in the country. Alternatively, consider the possibility for greater FDI inflows from the United States to Indonesia during times of U.S. military presence in Southeast Asia. Indeed, it is likely that the dichotomy between democracy and autocracy in existing studies is overly simplistic. Investors desire protection for their investments, and there is potential for this to be achieved either through investing in

democratic and transparent states, or through investing in autocratic states with clear ties to the home country.

Using events-data, this paper examines the extent to which MNEs prefer to invest in states with autocratic regimes whose national interests are aligned with those of the home country. This scenario is intuitively sound, as there is potential for MNEs to reap the benefits of low wages and preferential treatment associated with autocratic regimes, while at the same time mitigate the political risk that typically pushes FDI toward developed democracies. Pursuant to this intuition, this paper empirically tests the following two hypotheses:

*H<sub>1</sub>: Bilateral affect and political ties are positive determinants of FDI flows within and between dyads.*

*H<sub>2</sub>: The relative importance of this relationship depends upon the nature of political structures in the host country; ceteris paribus, bilateral affect and political ties have a greater influence on inflows to autocratic states.*

## **Methodology and Data:**

Unlike past studies, which have examined FDI inflows or outflows to a single home or host country, the dependent variable in this research is FDI inflows and net flows<sup>3</sup> from the nearly 30 member nations of the *Organization for Economic Cooperation and Development* (OECD) to 61 host countries over a period of ten years (1991–2000).<sup>4</sup> Capital flows within each of the 1,712 dyads were aggregated into a common currency using market exchange rates. Ideally, the chosen aggregation metric should have accounted for the relative price difference between host countries; however, the only widely available statistical construct – Purchasing Power Parity (PPP) – is based upon baskets of consumer goods and is thus an inappropriate proxy for the input prices of industrial production.

*Inflows* of FDI within a dyad refer to transfers of investment dollars from a home to host country. For example, when U.S. MNEs contribute money to investment

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<sup>3</sup> Calculated as outflows minus inflows

<sup>4</sup> See Appendix A



projects in China, a positive inflow within the U.S. – China dyad is registered in the data. Some of the greatest inflows in the data were observed between the U.S. and United Kingdom. *Net flows* of FDI refer to outflows minus inflows within a given dyad; in other words, the amount of investment dollars that flow from the host to the home, minus those that flow in the opposite direction. As such, one might expect *negative* net flows between the United States and a smaller (though lucrative) economy (U.S. – France, 1990), or positive net flows if the United States were to be defined as the host country in that same scenario (United Kingdom – U.S., late 1990s)

Negative net flows would also be observed if the host country in a given dyad were disproportionately more attractive or hospitable to foreign investors than the home (Japan – U.S., late 1990s). Alternatively, high net flows could be interpreted to show capital flight from loss of investor confidence. For example, during times of political instability in *Country A*, U.S. investors may choose to decrease inflows of foreign investment to that country, while investors in *Country A* maintain confidence (and outflows of investment) to the United States. In the data, some of the highest net flows are found between the United States and Brazil in 1990, and between Belgium and Brazil during that same year. This was likely the result of Brazil's economic instability, which contributed to large negative inflows to Brazil from those countries.

The first group of independent variables in this study was constructed using events-data from the Virtual Research Associates (VRA). The VRA's Reader parses text from the headings of Reuters news articles and codes them according to 195 event categories, ranging from apologies to military seizures. The process is fully automatic and accurate to a degree consistent with that of undergraduate coders (King and Lowe 2001, 14). This study used VRA's codes for 3.7 million international dyadic events, involving 201 countries for the years 1991-2000. In essence, the data provides a quantitative summary of the who/what/when/and where of 3.7 million events. Instead of broadly categorizing dyadic conflict and cooperation based on limited weighting schemes and surveys, events-data analysis allows an appraisal to be made that is exhaustive of public discourse worldwide. Given that the *perception* of political climate largely drives the risk-factored investment decisions of MNEs, VRA provides what is perhaps the ideal metric for examining the relationship between FDI and dyadic political climate.

In order to contextualize the 3.7 million VRA events, a normative weighting scheme for cooperation and conflict was introduced to the data. For the purposes of this study, the Goldstein Scale (GS) was chosen because of its wide use in the International Relations literature. The GS uses a [-10, +10] point range to denote gradations of cooperation and conflict at both the state and dyadic levels of analysis. The weights, in conjunction with the VRA events, could be used to approximate *positive/negative affect* (accept/deny, praise/denounce, etc.), *political ties* (improve/break relations, ease/tighten sanctions, etc.), and *dependency* (requests for/promises of military, economic, and humanitarian aid). To put a few event categories in context of the weighting scheme, military engagements, occupations, and coups receive a negative 10, whereas promises of military, economic, and humanitarian aid lie at the other end of the spectrum. Events receiving a zero (or neutral) score, include sports contests, arts & entertainment performances, etc.

Using the GS as a weighting scheme, the sum and count of VRA events were computed for every dyad-year:

$$X_{Dyad-year} (VRA, GS)$$

This study aggregated scores for home source and home target (that is, when the home is the source and target, respectively, of action within a dyad). Normal quantile plots revealed that the count measure was skewed heavily to the right and, as such, the variable was logged. Ultimately, for every dyad-year, there were two different one-value summaries of bilateral affect and political ties:

$$VRA-G \text{ Sum} = \text{Home Source Sum} + \text{Home Target Sum}$$

$$VRA-G \text{ Count} = \text{Log} [\text{Home Source Count} + \text{Home Target Count}]$$

By way of example, in 1998 the France–Brazil Home Source/Target Count was 46; in other words, the actions committed by France to Brazil in 1998, and vice-versa, registered as 46 unique Goldstein-relevant events in the popular press.

The *VRA-Goldstein Count* variable was formulated to measure the density of bilateral relations. To provide some examples from the data, the highest VRA-Goldstein Count observed was between the U.S. – United Kingdom in 1999. In that

dyad-year, 1,853 unique Goldstein-relevant events were captured by VRA's data. Other high Counts during the 1990s include Japan – U.S. (1677), Canada – U.S. (898), U.S. – China (831), and U.K. – China (853). Some of the lowest Counts in the data set include dyads such as Poland – Bulgaria and Finland – Canada.

The *VRA-Goldstein Sum* variable was formulated to measure both the density and affect of bilateral relations. Not surprisingly, many of the lowest Sums observed in the data are between countries with bitter histories of conflict. For example, the most negative Sum (-451) was found between France and Algeria in 1997. Incidentally, the vast majority of that score (97%) is comprised of events in which France was the source of action. Other large negative Sums are observed within dyads such as Turkey – Germany, U.S. – Iran, and Australia – Indonesia. At the other end of the spectrum lie dyads such as U.S. – China, Japan – U.S., and U.S – United Kingdom, which have some of the highest Sums in the data.

Consistent with the design of existing research on the non-market determinants of FDI, this study also included a number of control variables. The first of these was *Gross Domestic Product* (GDP) per capita, aggregated into a common currency using PPP and logged to correct for a skewed distribution. This measure, in conjunction with *Population*, is a commonly accepted proxy for market size and an economy's ability to absorb FDI (Jensen). A measure for *Human Capital* (operationalized in this study as a country's illiteracy rate) was also included. Other authors, such as Jensen, have used *Average Schooling of Workforce* in this instance, but unfortunately the coverage of that data was prohibitively sparse for the country and time sample of this study. The next control variable was *Inflation Rate*. According to Philipp Harms and others, this variable can be used as a proxy for a country's macroeconomic management – something that is no doubt of interest to international investors (Harms 2001, 6). As was mentioned previously, an abundance of natural resources can increase the profitability of FDI in a given host country; as such, a measure for *Primary Exports* was also included – operationalized as % of total exports,  $\Sigma_{Dyad-year}$  (food, fuel, agriculture, mines/ores). Finally, a measure for *Economic Openness* (operationalized as trade volume as % of GDP) was used as a proxy for FDI inflow controls, a measure for which there was no data. Data for each of these measures was included for both the home and host country for every dyad-year in the sample.

Incidentally, this list of controls is by no means exhaustive of the FDI literature. However, inclusion of the following variables was either impossible given the extent of publicly available data, or unwise given the systematic gaps in coverage for the countries included in this study. These include the *Profitability of FDI* (which is, in itself, biased by MNE's incentives to hide profits from their home country), *Financial Risk* (operationalized as the standard deviation of returns to FDI), *FDI Inflow Controls*, *Business Cycles*, and *Military vs. Civilian Government*. Some authors have also included a measure for *Political Risk*. For this purpose, Harms and others have used data taken from the PRS Groups' *International Country Risk Guide*. This proprietary data *forecasts* political risk and, as such, is an inappropriate metric for this study because it does not gauge the average investor's perception of dyadic political risk.

In order to test the second hypothesis (H<sub>2</sub>), that bilateral political affect and political ties have a greater influence on FDI inflows to autocratic states (as opposed to democratic ones), a mean-centered interaction term was formulated that includes a quantitative measure of host country political structures. Polity IV scores, published by the *Center for International Development and Conflict Management (CIDCM)* at the University of Maryland, denote the range of autocracy to democracy on a [-10, +10] point scale for every host country in the sample.<sup>5</sup> The country to receive the most autocratic score (-10) was Saudi Arabia. Many Middle-Eastern countries followed closely with Kuwait (-9), United Arab Emirates (-8) and Morocco (-8). Countries receiving scores in the middle of the democracy-autocracy scale include Mexico and Thailand. The most democratic countries (those receiving a 10) include Switzerland, the United Kingdom, Japan, Spain, and others. The interaction term was constructed as follows:

$$[X_{Dyad-year} (VRA, GS) - \mu_{X(VRA, GS)}] * [(Host\ polity)_{Dyad-year} - \mu_{Host\ polity}]$$

The error covariance matrix of time series cross section data violates the standard assumptions of Ordinary Least Squares (OLS) regressions in that error terms are typically correlated across time within a cross-sectional value (i.e. autocorrelation) and across units at a moment in time (i.e. heteroskedacity). While there are a range of

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<sup>5</sup> -10 = complete autocracy; +10 = complete democracy.

alternatives to adjust for these conditions, Liang and Zenger highlight the benefits of a population-averaged data model (see also, McCullough, P. and J.A. Jelder, 1989). Another approach championed by Beck and Katz (1995) is the use of panel-corrected standard errors. We employ both of these methods both with and without country fixed effects.

### **Predictions:**

In accordance with the findings of existing research, this study predicted that GDP per capita is a positive and significant determinant of FDI for both the home and host country. When taken with the independent variables of home and host population (both of which were expected to be negatively correlated with inflows of FDI), GDP per capita approximates market size. According to Jensen, a large economy in the host country implies that it can absorb large flows of foreign direct investment (Jensen 2003); similarly, a large economy in the home country implies that there is sufficient capital to fund new and ongoing multinational investment projects.

This study also predicted that host country human capital is a positive and significant determinant of FDI inflows, as (*ceteris paribus*) education and productivity are directly related vis-à-vis a given country's workforce. As such, it was expected that host country illiteracy rates are *negatively* correlated with inflows of FDI. With regard to the home country, the prediction for human capital is less clear: on the one hand, greater human capital implies a more productive workforce and thus less incentive to seek investment opportunities abroad; and on the other, human capital is highly correlated with per capita GDP – a positive determinant of FDI flows. The latter of these two effects is likely to predominate and, as such, this study predicted that, if significant, the coefficient for home country illiteracy would be negative as well. While there are admittedly better proxies for human capital than literacy, the available data for net educational attainment was prohibitively sparse for the country and time sample of this study.

Inflation rates were used as a proxy for the macroeconomic management of host and home countries. With regard to the host country, it was predicted that inflation rates are negatively correlated with FDI, as higher levels of inflation generally imply macroeconomic mismanagement and thus increased financial risk to investment

projects. To the extent that an abundance of natural resources can imply lower input prices and greater returns on investment, it was predicted that the measure for host country primary exports (as a percentage of total exports) is positively correlated with inflows of FDI. With regard to the home country, primary exports were expected to be indirectly correlated with flows of FDI; indeed, *ceteris paribus*, greater natural resources imply that home input prices are lower relative to a potential host. Finally, it was expected that the last control variable – trade as a percentage of GDP – is positively correlated with FDI. This is consistent with the findings of previous studies, which have used trade as a proxy for economic openness and FDI inflow controls (Harms 2001) – something for which there is little data.

As mentioned previously, studies by Jensen, Harms, and others have independently shown that flows of FDI are attracted to states with democratic and transparent regimes. As such, it was expected that inflows of FDI are positively correlated with host country Polity IV scores. Indeed, the more democratic a regime, the greater the audience cost for mistreating MNEs, the less political risk to investment, and the more hospitable a country for FDI (Jensen, 2001).

Finally, with regard the first hypothesis of this study ( $H_1$ ) – that bilateral affect and political ties are positive determinants of FDI flows within and between dyads – it was predicted that *VRA-G Sum* and *Count* are both positive and significant. With regard to the second hypothesis ( $H_2$ ), that bilateral affect and political ties have a greater influence on inflows to autocratic states, it was predicted that the interaction term would be both negative and significant.

## Results:

Pursuant to the above data and methodology, there exists limited support for the first hypothesis of this study. In the limited controls model the *VRA-Goldstein Count* variable appears to be robust across regression types and for both FDI inflows and netflows. The *Sum* variable is less robust, with significance registering only in the population-averaged netflow model.<sup>6</sup> The initial regressions included only controls for market size, but the relationship held when other controls were added as well. The relationship also held in cases where net flow was used as the dependent variable. The regressions that were conducted with lags and fixed effects yielded similar (though less robust) results.

With regard to the first hypothesis, the fact that *VRA-G Count* was most significant implies that perhaps density of bilateral relations is more important than their type. This would make sense if, for instance, it could be shown that a high number of events within a dyad implies intrinsic audience interests in each country, greater media coverage of the relationship, and thus greater accountability for foreign investors.

The somewhat more limited support found with data lags implies that reverse causation may, in fact, be a problem. This is consistent with the findings of recent studies, which have shown that FDI breeds cooperative relations (Polachek et. al., 2004). Further complication derives from the operational and decision lags of political risk-factored changes to foreign investment projects.

Contrary to hypothesis H<sub>2</sub>, the mean-averaged interaction term is always positive when significant, with the clearest relationship being observed in the population-averaged and Prais-Winsten lagged models using *VRA-Goldstein Count* and FDI inflows. With regard to the *Count* variable, this result indicates that density of bilateral relations does not positively affect inflows of FDI to autocratic countries in a manner that is disproportionately larger than to that of democratic countries.

The regime type variable, *Host Polity*, is significant only in the Prais-Winsten lagged model using *VRA-Goldstein Count* and FDI inflows. Though by no means

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<sup>6</sup> Regressions using *VRA-G Sum* yielded less robust results, as the variable was only significant when net flows were used as the dependent variable. While the explanation for this is unclear, one possible reason deals with the aggregation of summed scores (both positive and negative) vis-à-vis instances in which the home is the target and source of bilateral action.

robust, the coefficient of this variable has a sign that is inconsistent with recent literature, which has found that inflows of FDI are attracted to democratic and transparent regimes more so than autocratic ones. According to the regression, an increase in a country's *Polity IV* score actually decreases inflows of FDI. As expected, the coefficient of GDP per capita is positive when significant for both the home and host country. Taken together with home and host country population, which is also positive when significant, this indicates that market size is a positive determinant of FDI inflows as they relate to capital abundance and FDI absorption, respectively. Lagged inflows of FDI are also positive when significant.

The above relationships were maintained when additional controls were added, though the coefficient on *Host Polity* was no longer significant in any model. *Home* and *Host Trade*, the two measures for economic openness, were the most significant additional variables, with effects being observed in the inflow models of both *VRA-Goldstein Sum* and *Count*. None of the remaining independent variables not in the limited controls model had robust effects. In addition, there were no systematic differences observed between control variables in the *VRA-Goldstein Count* versus *Sum* models.

Though intuitively sound, either the hypothesis, design of the study (or both) is flawed. In addition, with regard to the control variables in this study, including *Polity IV* scores for the host country, few coefficients were significant. While the reason for this is unclear, the systematic gaps in data coverage for the time and country sample of this study was likely a factor.<sup>7</sup>

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<sup>7</sup> The variables for home and host illiteracy were dropped altogether because they reduced the sample size by nearly an order of magnitude.



Limited Controls Model	Inflows VRA-G Sum		Netflows VRA-G Sum		Inflows VRA-G Count		Netflows VRA-G Count	
	GEE	GEE (Fixed)	GEE	Prais-Winsten (Lags)	GEE	Prais-Winsten (Lags)	GEE	GEE (Fixed)
VRA-Goldstein	0.474 (0.63)	--	7.16*** (5.88)	2.515 (1.34)	101.239*** (-4.76)	146.098** (2.33)	62.808** (2.02)	--
Interaction	0.217 (1.23)	--	0.617** (2.63)	0.041 (0.21)	12.251*** (-3.24)	26.292*** (3.29)	7.215 (1.34)	--
Host Polity	-2.197 (-0.16)	--	-2.918 (0.150)	-6.856 (-1.06)	-20.899 (-1.33)	-35.708*** (-3.72)	-18.864 (-0.77)	--
Home: Log GDP PC	637.203*** (5.26)	--	59.649 (0.21)	-304.064* (-1.71)	394.931*** (3.11)	851.066*** (3.46)	162.309 (0.56)	--
Home: Log Population	143.319*** (3.89)	--	0.868 (0.02)	8.012 (0.19)	23.542 (0.57)	207.871*** (2.90)	48.95 (0.82)	--
Host: Log GDP PC	583.989*** (5.91)	--	7.456 (0.05)	65.195 (0.44)	381.176*** (3.73)	808.675*** (3.85)	153.545 (1.05)	--
Host: Log Population	174.330***	--	17.382	108.959	64.099*	203.475***	83.462	--
Logged Inflows	(4.99)	--	(0.35)	(1.61)	(1.67)	(2.93)	(1.54)	--
	0.507*** (36.98)	--	0.49*** (29.72)	0.241 (0.93)	0.509*** (37.31)	0.017 (0.06)	0.533*** (32.78)	--
	* p<0.1							
	**p<0.05	coefficient						
	***p<0.01	(z-score)						

	Inflows VRA-G Sum		Netflows VRA-G Sum		Inflows VRA-G Count		Netflows VRA-G Count	
	GEE	GEE (Fixed)	GEE	Prais-Winsten (Lags)	GEE	Prais-Winsten (Lags)	GEE	GEE (Fixed)
All Controls Model								
VRA-Goldstein	0.938 (1.16)	0.981 (1.09)	7.736*** (5.98)	2.533435 (1.27)	152.027*** (6.29)	--	72.762** (2.11)	80.204* (1.77)
Interaction	0.137 (0.73)	0.128 (0.61)	0.606** (2.44)	-0.008 (-0.04)	7.826* (1.83)	--	7.215 (1.24)	5.898 (0.90)
Host Polity	23.282 (1.21)	-25.476 (-0.33)	-5.121 (-0.20)	3.799 (0.27)	13.32 (0.60)	--	-19.858 (-0.63)	-32.775 (-0.28)
Home: Log GDP PC	735.962*** (4.13)	-791.429 (-0.43)	-102.907 (-0.26)	-616.173 (-1.53)	337.76* (1.81)	--	34.581 (0.09)	1407.293 (0.42)
Home: Log Population	306.41*** (4.99)	-7302.887 (-1.57)	-54.896 (-0.66)	-68.813 (-1.06)	146.725** (2.27)	--	-16.644 (-0.19)	-11068.16 (-1.16)
Home: Inflation	1.824 (0.30)	12.408 (0.83)	-24.785 (-0.71)	-43.142 (-1.18)	-0.026 (-0.00)	--	-22.356 (-0.63)	17.149 (-0.27)
Home: Primary Exports	4.584 (1.35)	9.646 (0.34)	-3.872 (-0.87)	-7.422** (-2.26)	2.631 (0.77)	--	-4.475 (-1.00)	-75.335 (-1.18)
Home: Trade	8.628*** (4.52)	11.056 (0.95)	-1.079 (-0.44)	-2.062 (-1.54)	9.784*** (5.11)	--	-1.21 (-0.49)	-22.45 (-1.23)
Host: Log GDP PC	651.21*** (5.39)	-233.014 (-0.22)	-44.966 (-0.27)	96.621 (0.60)	376.903*** (3.01)	--	126.258 (0.73)	-1350.911 (-0.88)
Host: Log Population	279.337*** (5.35)	-3494.074 (-1.28)	-10.198 (-0.14)	167.858*** (2.85)	129.845** (2.34)	--	71.391 (0.93)	4386.739 (1.06)
Host: Inflation	-0.054 (-0.13)	0.237 (0.47)	0.069 (0.12)	0.273 (1.09)	0.1076 (0.25)	--	0.088 (0.15)	-0.009 (-0.01)
Host: Primary Exports	3.253 (1.12)	-17.179 (-0.68)	-0.651 (-0.17)	4.368 (1.40)	2.229 (0.77)	--	0.113 (0.03)	-9.852 (-0.24)
Host: Trade	3.989 (2.86)	-3.779 228 (-0.42)	-0.427 (-0.22)	1.714 (1.11)	4.111*** (2.89)	--	-0.04 (-0.02)	-0.373 (-0.03)
Lagged Inflows	0.449*** (31.09)	0.417*** (28.47)	0.470*** (26.90)	0.237 (0.90)	0.444*** (30.96)	--	0.521*** (30.24)	0.498*** (28.72)
	* p<0.1							
	** p<0.05	coefficient						
	*** p<0.01	(z-score)						

## **Flaws:**

Several potential flaws of this study deal with the VRA data itself. Given that VRA only tracks events that appear in English-language newspapers, it is unclear to what extent this measure can be used to approximate investors' perception of dyadic risk around the world. However, this concern was mitigated by the fact that the above results were consistent with subsequent regressions that examined inflows from only the United States, the United Kingdom, and both. Another potential flaw is that the limited time span for VRA's publicly available data (ten years) makes it difficult to examine variation *within* dyads. Finally, there is sometimes a significant lag between when an event occurs and when it is reported. Ideally, the VRA/Goldstein measure should approximate the time at which international investors receive, and can reasonably incorporate into investment decisions, the information at hand; unfortunately, because reporting, decision, and operational lags vary widely, the event date was the most precise option available.

What exacerbates each of these problems is that many psychological biases blur perceptions of risk. Consider, for instance, the possibility for diminishing sensitivity to negative (or positive) events; logging the VRA-Goldstein Count measure was intended to partially correct for this, but it is unclear to what extent this action was appropriate or sufficient. Also, consider the tendency for people to discount low probability but high impact events (Messick et. al., 1996), or the reality that investors are often use a biased subset of public discourse to make business decisions based upon dyadic risk. Even if quantifiable, these effects could not easily be corrected for in future studies.

There is also an issue with the event categories themselves. While military engagements and economic aid within dyads are undeniably important to international investors, this study intended to examine bilateral affect and political ties as they relate to political risk to investment. As such, the VRA data should have also included event categories for the renegotiation of contracts, nationalization of industries, and expropriation of investments. Unfortunately, this was not possible given the publicly available data. Finally, much like the VRA event categories, it is not clear that the normative weightings of the Goldstein scale reflect the true preferences and concerns of international investors. There have been some efforts to revise the scale for this purpose, but unfortunately nothing was available as of this year.

## **Conclusions:**

What has motivated much of the recent literature on FDI is the question: Are the interests of MNEs conflictual with those of democratic governance? A positive response to this could have profound implications for public policy and international development, but the consensus in recent literature is clear – inflows of FDI are attracted to states with democratic and transparent regimes. While this study intended to qualify that finding by introducing a measure for bilateral affect and political ties – and thus political risk to investments – the consensus remains unchallenged. However, this study demonstrated that a dyadic design for examining the non-market determinants of FDI is plausible, and that significant effects exist at that level of analysis. The most robust new variable – a simple count of bilateral events between countries – should be further examined to uncover why the density of bilateral relations, both positive and negative, has the tendency to increase flows of FDI within dyads.

## Appendix A

### FDI Home Country List:

Australia  
Austria  
Belgium-Luxembourg  
Canada  
Czech Republic  
Denmark  
Finland  
France  
Germany  
Greece  
Hungary  
Iceland  
Ireland  
Italy  
Japan  
Korea  
Mexico  
Netherlands  
New Zealand  
Norway  
Poland  
Portugal  
Slovak Republic  
Spain  
Sweden  
Switzerland  
Turkey  
United Kingdom  
United States

### FDI Host Country List:

Algeria  
Argentina  
Australia  
Austria  
Belgium-Luxembourg  
Brazil  
Bulgaria  
Canada  
Chile  
China  
Chinese Taipei  
Colombia  
Costa Rica  
Czech Republic  
Denmark  
Egypt  
Finland  
France  
Germany  
Greece  
Hungary  
Iceland  
India  
Indonesia  
Iran  
Ireland  
Israel  
Italy  
Japan  
Korea  
Kuwait  
Libya  
Malaysia  
Mexico  
Morocco  
Netherlands  
Netherlands Antilles  
New Zealand  
Norway  
Panama  
Philippines  
Poland  
Portugal  
Republic Slovak  
Romania  
Russia  
Saudi Arabia  
Singapore  
Slovenia  
South Africa  
Spain  
Sweden  
Switzerland  
Thailand  
Turkey  
Ukraine  
United Arab Emirates  
United Kingdom  
United States  
Venezuela

## Appendix B

### Goldstein Scale and relevant VRA event categories:

Gold	IDEA	Definition	Gold	IDEA	Definition
8.3	072	extend military aid	-2.8	12	accuse
7.6	074	rally support	-3	161	warn
7.6	073	extend humanitarian aid	-3	16	warn
7.4	071	extend economic aid	-3.4	122	denounce or denigrate
6.5	081	make substantial agreement	-3.8	194	halt negotiations
5.4	064	improve relations	-4	1134	break law
5.2	0523	promise humanitarian support	-4	1132	disclose information
5.2	0522	promise military support	-4	1131	political flight
5.2	0521	promise economic support	-4	113	defy norms
5.2	052	promise material support	-4	1123	veto
4.8	083	collaborate	-4	1122	cancel media
4.8	08	agree	-4	1121	impose curfew
4.7	05	promise	-4	112	refuse to allow
4.5	051	promise policy or non-material support	-4	111	reject proposal
3.5	0432	forgive	-4	11	reject
3.5	04	endorse or approve	-4.4	2122	political arrest and detention
3.4	093	ask for material aid	-4.4	2121	criminal arrest and detention
3.4	092	solicit support	-4.4	212	arrest and detention
3.4	043	empathize	-4.4	171	non-specific threats
3.4	041	praise	-4.5	1963	administrative sanctions
3	082	agree or accept	-4.5	1961	strike
2.9	065	ease sanctions	-4.5	196	strikes and boycotts
2.8	054	assure	-4.5	19	sanction
2.8	033	host meeting	-4.9	151	demand
2.5	062	extend invitation	-4.9	15	demand
2.2	0655	relax curfew	-5	201	expel
2.2	0654	demobilize armed forces	-5	20	expel
2.2	0653	relax administrative sanction	-5.2	1813	protest defacement and art
2.2	0652	relax censorship	-5.2	1812	protest procession
2.2	0651	observe truce	-5.2	1811	protest obstruction
2.2	0632	evacuate victims	-5.2	181	protest demonstrations
2.2	063	provide shelter	-5.6	193	reduce or stop aid
2.2	06	grant	-5.8	172	sanctions threat
2.2	0431	apologize	-6.4	175	non-military force threats
2	013	acknowledge responsibility	-6.4	17	threaten
1.9	066	release or return	-6.8	2112	guerrilla seizure
1.9	032	travel to meet	-6.8	2111	police seizure
1.6	0933	ask for humanitarian aid	-6.8	21	seize
1.6	0932	ask for military aid	-6.9	183	control crowds
1.6	0931	ask for economic aid	-6.9	1814	protest altruism
1.6	09	request	-6.9	18	protest
1.5	1011	offer peace proposal	-6.9	174	give ultimatum
1.5	101	peace proposal	-7	2231	military clash
1.5	03	consult	-7	195	break relations
1.2	102	call for action	-7	1734	threaten military war
1.1	01	yield	-7	1733	threaten military occupation
1	031	discussions	-7	1732	threaten military blockade
0.8	10	propose	-7	1731	threaten military attack
0.6	012	yield position	-7	173	military force threat
0.6	011	yield to order	-7.6	1827	military border violation
0.1	091	ask for information	-7.6	1826	military border fortification
0.1	024	optimistic comment	-7.6	1825	military mobilization
0	99	sports contest	-7.6	1824	military troops display
0	98	A and E performance	-7.6	1823	military naval display
0	97	accident	-7.6	1821	military alert
0	96	natural disaster	-7.6	182	military demonstration
0	95	human death	-8.3	224	riot or political turmoil
0	94	human illness	-8.7	221	bombings
0	72	animal death	-9.2	2236	military seizure
0	27	economic status	-9.2	2123	abduction
0	26	adjust	-9.2	211	seize possession
0	25	vote	-9.6	2228	assassination
0	24	adjudicate	-9.6	2227	guerrilla assault
0	2321	government default on payments	-9.6	2226	paramilitary assault
0	2312	private transactions	-9.6	2225	torture
0	2311	government transactions	-9.6	2224	sexual assault
0	231	transactions	-9.6	2223	bodily punishment
0	23	economic activity	-9.6	2222	shooting
-0.1	094	ask for protection	-9.6	2221	beatings
-0.1	022	pessimistic comment	-9.6	222	physical assault
-0.1	021	decline comment	-9.6	22	force
-0.1	02	comment	-10	2237	biological weapons use
-0.9	141	deny responsibility	-10	2235	assault
-1	14	deny	-10	2234	military occupation
-1.1	0631	grant asylum	-10	2233	coups and mutinies
-2.2	192	reduce routine activity	-10	2232	military raid
-2.2	121	criticize or blame	-10	223	military engagements
-2.4	132	formally complain			
-2.4	131	informally complain			
-2.4	13	complain			

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