THE EFFECT OF CORRUPTION ON AMERICAN INVESTMENT ABROAD IN THE 21ST CENTURY

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By

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ABSTRACT

The world is getting smaller. Globalization is creating an increased level of interconnectedness, raising the importance of understanding the relationship of those connections. An important facet of globalization is foreign direct investment (FDI). This study looks at the effects of corruption in a host nation on the FDI decisions of United States organizations, and compares the decisions of United States organizations against the decisions of the world as a whole. Using panel data from 2000 to 2010 and performing fixed effects regressions, I find that corruption negatively affects the FDI decisions of United States firms at a significant level in the 21st century. However, I find no difference between the effects of corruption on the FDI decisions of United States firms versus the FDI decisions of firms across the globe.
The research and writing of this thesis is dedicated to everyone who helped along the way, especially my parents Robert and Donna, my sister Shannon, my GPPI colleagues, and my Thesis Advisor Andrew Wise.

Many thanks,
Stephen R. Bailey
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I: INTRODUCTION

The world is getting smaller. Globalization is creating an increased level of interconnectedness, raising the importance of understanding the relationship between those connections. It has sparked an unprecedented volume of international investment since the late 20th century, with companies looking to tap into new markets and countries welcoming new foreign firms. In this paper, I look to see if corruption in a foreign nation negatively effects investment from United States companies into that nation. I also compare whether United States companies invest less if there is corruption in a foreign country than the world as a whole.

One notable measure of international investment is foreign direct investment inflows (FDI), quantified as the value of foreign investment into a given country. Across the world, cumulative foreign direct investment inflows increased from $690 billion in 1980 to nearly $20 trillion in 2010 (United Nations Conference on Trade and Development, 2012). According to the U.S. Census Bureau, United States companies invested nearly $4 trillion abroad in the year 2010 alone (2012).

As FDI becomes an increasingly prevalent strategy for United States companies, policy makers have a need to gain a better understanding of host country characteristics that motivate and deter this type of investment. While factors like GDP size and growth, population size, and economic stability are all likely to affect a company’s decision to invest, another less obvious yet plausible variable is host country corruption. Strictly speaking, corruption is defined by Transparency International (2012) as “the abuse of entrusted power for private gain.” This can be thought of as the additional wheels a private company needs to grease in order to perform legal tasks in a given country. From a relatively early stage, the United States government was
sensitive to the effects of corruption on United States companies abroad, creating *The Foreign Corrupt Practices Act of 1977 (FCPA)* to deter American companies from making bribes in host countries.

My contribution includes an attempt to clarify and provide a modern evaluation of previous research. While it is generally assumed that corruption inhibits foreign direct investment, studies are mixed on whether there is actually a significant affect. In 1995, James Hines determined that the anti-bribery legislation in 1977 severely limited the ability of American companies to compete against other investing foreign companies in more corrupt host countries (Hines 1995). Shortly following that paper, Shang-Jin Wei (1997) concluded that while corruption does discourage foreign investment, the United States is not more influenced by the presence of corruption than any other investing country. More recently in 2009, Al-Sadig used panel data from several host and source countries from 1984 to 2004 and found no significant relationship between corruption and foreign direct investment after including control variables (Al-Sadig 2009).

Using regression analysis and modern data, I hope in this thesis to provide clarity to these three conflicting conclusions. Specifically, I will analyze data of 56 host countries from 2000 to 2010 to determine whether corruption affects the investment decisions of United States companies and whether corruption affects United States companies differently than other investing source countries. It is my hypothesis that corruption remains a disincentive for American foreign investment in the 21st century, but the disincentive of corruption is equivalent between the United States and all other investing countries. I believe globalization has not only

* P.L. # 95-213
increased the world’s interdependence, but it has also standardized the incentives and disincentives for investment.

In the remaining sections, my goal is to provide a better understanding of the relationship between American foreign investment and corruption in hope of giving policy makers an updated perspective of factors that affect American influence abroad in this dynamic age of globalization. In the next section, I examine the background and previous literature on foreign direct investment and its relationship with corruption. In section III, I present the theoretical framework behind this paper’s analysis and then continue to describe the data used for analysis in section IV. Section V contains the empirical model for the regression explaining the relationship between foreign direct investment and corruption. I present and interpret the results of my regression models in Section VI. In the final section, I conclude the thesis with a summary of findings and propose potential policy recommendations based on the results of the paper.
II: BACKGROUND AND LITERATURE REVIEW

*Foreign Direct Investment Background*

Consistent with the rise of globalization, literature on foreign direct investment has grown considerably in the past few decades. This is well noted by Robert Lipsey, explaining it took until the 1950’s for foreign direct investment to be defined in a traditional way (Lipsey 1999). Corporations looking to expand their reach and positions abroad will typically engage in foreign direct investment. Generally speaking, foreign direct investment represents a lasting and significant influence on management of an enterprise by a foreign company or individual (Feenstra 1999). Multinational corporations based in the U.S. substantially led in foreign direct investment levels across the world for much of the 20th century, peaking in the 1980’s but then losing some ground to Europe and then later Japan (Lipsey 1999). While traditionally foreign direct investment goes from one developed country to another, the 1990’s saw more investment going toward developing nations than ever before (Feenstra 1999). This trend has continued in the 21st century, with an increased amount of FDI flows going into developing countries in places like Asia, Latin America, and transitioning European countries (Ndu 2003). Despite this trend of new FDI flows into developing nations, a majority of flows still move from one developed nation to another (United Nations Conference on Trade and Development, 2012).
Figure 1 provides a visual of a few key trends in foreign direct investment. As explained, while developed economies still receive the most FDI inflows, developing economies like China and Brazil have also attracted an exponentially higher amount of investment since the late 1980’s. The graph also makes apparent the increasing interconnection between FDI and the health of global economy. The downturn in FDI after the global recession of the late 1980’s caused a noticeable reduction in FDI inflows to developed nations. However, that reduction pales in comparison to the loss in FDI inflows seen after periods of economic turmoil in the 21st century. During times of FDI inflow variation, investments in developed nations appear much more susceptible to dramatic changes in flows than the nations in other economic stages. While FDI into least developed nations has certainly grown over the past 40 years, they are still far behind FDI inflow levels of developed and developing economies. There are several factors that help account for this massive increase in foreign direct investment over the past several years.
Broadly speaking, many nations have made shifts towards free market economies, privatization, and deregulation, all of which encourage foreign investment (Ndu 2003). The late 1980’s was also a point when many more governments became open to FDI, easing restrictions on foreign companies and in some cases even offering incentives for foreign investment (Alfaro 2003). During the growth of globalization in the 1990’s, over 50% of new foreign direct investments were found in the service sector (Alfaro 2003).

For United States corporations, a majority of their direct invest flows are invested in Europe. Out of roughly $3.9 trillion in direct investment positions abroad in 2010, over $2.1 trillion of that was based in Europe. By comparison, the United States had $676 billion in direct investment positions abroad in all other countries (excluding Canada) in the Western Hemisphere and $611 billion in Asia and the Pacific (U.S. Census Bureau 2012). Despite the substantial gap, United States companies have increased their level of FDI in non-European nations by a significantly percentage over the past 10 years. This trend can be seen in Figure 2, which illustrates the investment positions of United States companies abroad since 2000.
By definition, a host country is the nation into which the foreign direct investment is flowing, while a source country is the multinational firm’s country of origin. In an instance where a firm based in the United States buys the shares of a company in Argentina, Argentina is the host country and the United States is the source country. While there are several definitions of foreign direct investment, I look at foreign direct investment as defined by the United Nations Conference on Trade and Development. They categorize FDI into the components of equity capital, reinvested earnings, and intra-company loans (United Nations Conference on Trade and Development, 2012). Essentially, equity capital can be thought of as the purchase of shares in a foreign enterprise by a company or individual. Reinvested earnings involve the earnings made by the investing company from the foreign enterprise that are not given off as dividends, in proportion to the amount of equity owned by the investing company or individual. Intra-
company loans represent borrow that occurs between the investing company or individual and the foreign enterprise.

Various studies have pointed to the importance of foreign direct investment for both an investing multinational corporation and a host country. From a general macroeconomic perspective, FDI is thought to generate employment, productivity, and competitiveness in the host country (Denisia 2009). As discussed by Ndu (2003), FDI into the host country has the effect of increasing the level of domestic savings level without reducing the level of consumption. This increase in investment not only raises employment, but can also help increase income levels (Ndu 2003). In the developed world, De Backer and Sleuwaegen noted that the presence of multinational firm investment gave benefits to Belgium in terms of both efficiency and overall welfare gains (De Backer and Sleuwaegen 2003). Additional, they observed that domestic firms were better in the long-run because they were able to assimilate many of the foreign firms’ best practices. For developing countries, Lipsey (2001) articulated the importance of foreign direct investment for bringing much needed capital, new technology, and in some cases new industry to the host nation. This phenomenon, when foreign direct investment into a firm creates an effect on the host country beyond the firm itself, is often labeled a “spillover” effect (Ndu 2003). For the investing firm itself, foreign investment gives a company the opportunity to enter new markets and find new competitive advantages to use for profit (Denisia 2009).

While most agree there are generally positive effects from foreign direct investment on the host country, some studies have produced conflicting findings. In their 1999 study, Aitkin and Harrison used a panel data set for Venezuelan firms with foreign equity participation to
determine the “spillover” effects on local industries. They found that foreign activity actually negative affects the productivity of domestically owned plants (Aitkin and Harrison 1999). They further assert that the net gains from foreign investment are quite small when factoring in the negative productivity of the domestic firm from foreign investment (Aitkin and Harrison 1999). Another study found that FDI inflows affect the economy differently depending on the sector it enters (Alfaro 2003). For example, FDI inflows appear to have a positive effect on the host economy if the investment was done in the manufacturing sector, while having a negative effect if the investment was done in the primary sector (Alfaro 2003). In a 1999 study by Bosworth and Collins, they use panel data of 58 developing countries from 1978 to 1995 in order to determine the effect of foreign investment on the domestic investment rate of host nations. They found that foreign direct investment inflows lead to an almost one-for-one increase in domestic investment in the host nation (Bosworth and Collins 1999).

Globalization and foreign direct investment more specifically are driven by a number of facets. Haas, Hird, and Mcbratney list financial liberalization, privatization, secure property rights, deregulation, regulatory institutions, and anti-corruption measures as important factors in promoting international trade and investment (Haas, Hird, and Mcbratney 2009). Additionally, the World Health Organization explains that foreign direct investment tends to go to the countries with the right “pull factors,” which include those with cheaper costs for wages, material and land, a large and growing domestic market, economic and political stability, a reliable and advanced infrastructure, high-level education systems and legal frameworks, and perceived security of foreign investment property rights (World Health Organization 2012).
Laws Concerning Corruption

As the 20th century saw an increased proliferation of international transactions, the United States and other countries sought to curtail unethical practices when their domestic companies were dealing abroad, mainly in the form of combating corruption. Ironically for the United States, it was the domestic Watergate Scandal that turned the country’s attention to corruption practices with foreign nations (Posadas 2000). Upon investigating United States companies for improper political contributions, prosecutors also uncovered a litany of wrongful practices by multinational corporations abroad. Examples included contributing four million dollars to a foreign political party, paying over one million dollars for repeal of tax regulations, and leasing a helicopter for a foreign political candidate (Posadas 2000). During an initial Senate hearing, Senator Frank Church declared corruption abroad was “a major issue of foreign policy for the United States (Posadas 2000).”

The United States legislative investigation into corrupt practices abroad eventually produced the Foreign Corrupt Practices Act of 1977 (FCPA). The FCPA makes it illegal for companies or people associated with the United States to make improper payment while in the United States or to bride foreign officials to obtain or retain business (Funk 2010). Additionally, the act introduced a number of standardized accounting and record keeping provisions to monitor corruption for corporations in the United States (Funk 2010).

While the corruption scandal and legislation in America got the attention of the international community, there was a lack of significant progress on corruption laws throughout the 70’s and 80’s across the globe. Posadas attributes much of the lack of international agreement on the East-West and North-South differences that were prevalent during the time (Posadas
2000). It was not until the fall of the Soviet Union and increased liberalization of economies in the late 1980’s that the international community was able to deal with corruption in a meaningful way.

By 1989 the United States was still the only nation were firms faced criminal sanctions for bribes paid anywhere abroad (International Monetary Fund 2001). Many groups in the United States felt the FCPA put U.S. interests at a disadvantage abroad and petitioned for the weakening of the law. Instead, United States officials helped organize a working group to discuss the issue among Organisation for Economic Co-Operation and Development (OECD) countries (International Monetary Fund 2001). Largely based off FCPA, the OECD countries eventually approved the Convention on Combating Bribery of Foreign Public Officials in International Business Transactions in 1997. Countries that signed the Convention were required to make bribing public officials a criminal offense in their public law.

As international trade began to flourish, the 1990’s saw numerous international agreements and treaties on corruption. In 1996, the Organization of American States signed the Inter-American Convention Against Corruption, aimed at preventing corruption and corrupt officials among the Americas (Organization of American States 2011). In 1999 the African Union signed a similar measured with the African Union Convention on Preventing and Combating Corruption (Georgetown Law Library 2013). Similarly, the Criminal Law Convention on Corruption in signed in 1999 Europe required the criminalization of all active and passive forms of bribery in both the public and private sectors for all signatories (Georgetown Law Library 2013).
Despite these more recent developments and treaties, even some developed nations are still catching up to where the United States was in 1977 in terms of public law. For example, after years of debate and discussion, the United Kingdom finally produced criminal law related to bribery with the *Bribery Act 2010* (Ministry of Justice 2010). So while there is little doubt that other liberalized nations recognize the importance of corruption legislation, it remains unclear if their legislation prevents corruption more or less effectively than United States legislation.

*Literature on the Connection between FDI and Corruption*

Corruption is traditionally thought to limit investment and deter globalization. Transparency International (2012) looked at corruption as “the abuse of entrusted power for private gain.” Shleifer and Vishney (1993) illustrated this definition perfectly as they discussed how a corruption bribe burden on private companies by public bureaucracies can reduce or eliminate all incentive to invest in a nation. They explained cases in post-Soviet Russia, where a private firm was forced to bribe every agency involved in the foreign investment process, severely limiting investment in the country. In his writings on poverty, Jeffrey Sachs (2009) noted that high corruption rates are often seen as a deterrent to foreign aid and investment, since corruption can reduce the efficiency of delivery systems. Shang-Jin Wei looked at corruption as having the similar effect as a tax on the investing firm (Wei 1997), again providing a disincentive for firms to invest.

One of the first researchers to study the relationship between corruption and investment was Paolo Mauro in 1995. He looked at the “Bureaucratic Efficiency” index in various countries from 1980 to 1983 and compared that against measures of growth and investment. He found that
corruption significantly lowered investment in a country, consistent with his own economic theory that corruption lowers the marginal product of capital (Mauro 1995).

Also in 1995, James Hines tested whether the United States Foreign Corrupt Practices Act (FCPA) of 1977 weakened the competitive position of U.S. companies when investing in more corrupt countries. As explained by Hines, FCPA “prohibits American individuals and corporations from bribing foreign government officials.” He theorized the FCPA made U.S. companies more sensitive to corruption in a foreign host country than companies from other source nations. Using various methods examining foreign direct investment, capital/labor flows, joint venture activity, and aircraft exports directly before and after 1977, Hines determined that it was indeed likely that the Foreign Corrupt Practices Act lowered United States investment in more corrupt countries relative to their foreign competitors (Hines 1995).

Building from Hines’s study, Shang-Jin Wei studied the effect of investment and corruption on a much more global level than Hines, using foreign direct investment cross-sectional data from 1990 to 1991 of fourteen source countries and forty-five host countries. Like Hines, Wei determined that corruption in a host nation did have an adverse effect on United States foreign investment. However, he could not find evidence that the U.S. was more averse to investing in corrupt countries than other Organization for Economic Co-Operation and Development (OECD) countries despite the Foreign Corrupt Practices Act (Wei 1997).

In a similar analysis with more recent data, Habib and Zurawicki used pooled data from 1996 to 1998 of 89 host countries and seven source countries to determine the relationship between corruption and foreign direct investment as well as relative corruption and FDI. With relative corruption and FDI, Habib and Zurawicki were looking at whether countries with similar
corruption levels were more likely to engage in a host and source country investment relationship. They determined that not only is foreign direct investment deterred by corruption, but also that large differences in the corruption level between the host country and source country can have a negative effect on foreign direct investment (Habib and Zurawicki 2002).

While many researchers have focused on U.S. investment, others have used varying techniques to determine the relationship between FDI and corruption in other specific countries. Voyer and Beamish (2004) used cross-sectional data from the year 2000 on Japanese firms and 59 host countries to determine the effect of corruption on foreign direct investment outflow locations of Japanese firms. They concluded that Japanese foreign direct investment outflows were severely reduced in corrupt nations without fully developed regulatory networks. Hakkala, Norback, and Svaleryd (2004) looked specifically at firm-level data for Swedish firms and divided FDI into horizontal and vertical integration categories. Horizontal integration in the FDI context is when a firm will simply place a duplicate structure of their domestic firm into a foreign nation. By contrast, vertical integration in FDI is when a multinational firm will place different aspects of their production process across the globe to take advantage of cost differences. They observed that corruption decreases horizontal FDI but can actually increase vertical FDI (Hakkala, Norback, and Svaleryd 2004).

Similar to Hakkala, Norback, and Svaleryd’s firm-level research, Wei and Javorcik (2002) used data on 262 firms from across the world who invested in emerging economies in Central and Eastern Europe between 1989 and 1995. Somewhat consistent with the results Wei found in the 1997 study, they found no evidence that U.S. companies were less likely to invest in
corrupt countries, but did find evidence that U.S. companies are less likely to partake in joint ventures in a corrupt nation (2002).

As with most topics of interest, there is no consensus on the effect of corruption and foreign direct investment. In the early 1990’s, Wheeler and Mody used U.S. firm data and did not find any significant relationship between foreign direct investment and country risk (Mody and Wheeler 1995). In line with Wheeler and Mody’s early 1990’s study, Ali Al-Sadig failed to find a relationship between corruption and foreign direct investment in his 2009 study. Al-Sadig used panel data on over 117 host-countries from 1984 to 2004. Once controlling for institutional quality, he found the effects of corruption on foreign direct investment disappeared (Al-Sadig 2009).

Others, like Egger and Winner (2005), have found that there is actually a clear positive relationship between corruption and foreign direct investment. Using a 1995 to 1999 panel on 73 developed and less developed countries, they found that corruption can actually act as a helping hand for foreign investment, speeding up the bureaucratic process for firms and giving them a competitive edge in a new market. Larrain and Tavares (2004) found a statistically significant relationship between FDI and corruption. However unlike most studies, they determined that the causal link was reversed, with foreign direct investment inflows causing a reduction in corruption rates over time.

While there is indeed incredible depth in the literature on the relationship between foreign direct investment and corruption, research is lacking on the modern era of globalization. In this thesis I provide a needed update to the policy world on the effect of corruption in a host country on foreign direct investment decisions of American multinational firms. Utilizing strictly
21st century panel data, this analysis provides new findings on the role of corruption and foreign direct investment in this increasingly global world. Since the importance of foreign direct investment has increased over the past ten years, I wish to determine whether the importance of corruption has changed as well. Additionally, this thesis revisits the earlier conflicting finding of Hines (1995) and Wei (1997) to assess whether American firms are less likely than other foreign firms to invest in the presence of corruption in a host nation. In the next section, I lay out the theoretical framework of my analysis, which serves as the guide for building the empirical model in Section V.
III: THEORETICAL FRAMEWORK

This theoretical framework provides the mathematical intuition behind the data gathered in section IV and the empirical model shown in section V of the paper. This framework predicts the variables that go into the decisions leading a firm to choose to invest in one host country over another. The aggregate of those individual firm decisions make up a host country’s total foreign direct investment inflows.

Foreign Direct Investment Inflows = f(Pull Factors, Push Factors, e) \ (1)

The function above borrows terminology seen earlier by the World Health Organization. It predicts that a host country’s foreign direct investment inflows are a function of the pull and push factors of the host country (2012). As explained, pull factors like a high GDP, stable economy, and advanced technology entice a multinational firm to invest in the host country. Push factors, like corruption and economic instability are disincentives for FDI inflows. A nation with a number of strong positive pull factors and few push factors is predicted to have high foreign direct investment inflows. By contrast, a host nation with relatively weak pull factors and many severe push factors is predicted to have low foreign direct investment inflows according to the framework. The e in the equation represents an error term.

In the next section, I describe the data collected and later utilized for my empirical model in Section V.
IV. DATA AND DESCRIPTIVE STATISTICS

In this paper I use four primary sources to compile panel data on 56 countries from 2000 to 2010, creating a total of 518 unique observations. The 56 countries were selected because of their documented history of receiving direct investment inflows from companies based in the United States over the past decade and the availability of a corruption measure over that same time.

Data on the dependent variable foreign direct investment inflows from the United States was provided by the Bureau of Economic Analysis (BEA) in their International Economic Accounts section. The BEA defines United States foreign direct investment as the “control by one U.S. person or company of 10 percent or more of the voting securities of an incorporated foreign business enterprise or an equivalent interest in an unincorporated foreign business enterprise (BEA 2012).” There were cases when data were omitted by the BEA to protect the privacy of individual companies, which limited observations in some countries. For the purposes of this analysis and consistent with previous studies, I use the log of FDI inflows. By taking the log of FDI inflows, I am able to control for the non-linear effects of countries with incredibly large FDI inflow values, much like someone would control for population or GDP.

The second part of my hypothesis looks at whether United States companies invest differently in the presence of corruption. For a comparative measure to U.S. foreign direct investment inflows, I use data on total country foreign direct investment inflows provided by my second data source, United Nations Conference on Trade and Development’s statistics division. Again, I log this data to match previous research and to control for countries with large FDI inflow values.
The primary independent variable *corruption* comes from a metric Transparency International generates on an annual basis. Transparency International is a politically non-partisan organization acting under the mission to stop corruption and promote transparency (Transparency International 2012). They have a series of corruption data sets going back to 1995 for a wide variety of countries. The Berkley Center at Georgetown University notes that the organizations source book and “Global Corruption Report” are widely respected in the world (Berkley Center 2013). One of the key metrics produced by Transparency International is the Corruption Perceptions Index (CPI), which is a composite index that estimates perceived corruption in a given country. Transparency International generates the CPI from a combination of polls from experts in each country with a minimum of three polls needed for a complete measure. The Corruption Perceptions Index is represented on a scale of 0 to 10, with the least corrupt country rated a 10 and the most corrupt rated a 0. I invert the Corruption Perceptions Index scale for a more intuitive interpretation of corruption, so that the expected sign on the coefficient implies an inverse relationship between FDI and corruption.

I then match the 518 observations with control variables provided by the fourth data source, The World Bank’s World Development Indicators and Global Development Finance. This database is the primary World Bank source for developmental indicators (The World Bank 2012). Again all data are from the year 2000 to 2010. Control variables are necessary if they correlate with both corruption and foreign direct investment inflows. Failure to include or otherwise account for these additional variables could bias my regression results. Since stronger and larger economies are more enticing for foreign investors for profit and market share, I add the variables of *GDP per capita*, *GDP per capita growth*, and *population size* to the model. I use
the log of population size to avoid overstating the effects of extremely large populations, following the logic used by Habib and Zurawicki (2002) when they selected a population measure for their analysis. Habib and Zurawicki also note that each country has a different level of openness to foreign activity, which has the potential to influence foreign direct investment. To control for openness, I insert the World Bank’s measure of the percent of net imports in relation to GDP. As discussed in Section II, FDI has expanded rapidly in the past few decades in part because governments generally have adopted less protectionist policies. The openness measure tries to capture a country’s generally policies toward foreign activity by looking at the proportion of imports that enter the country. I also assume companies are more likely to invest resources in countries that have a more advanced technological infrastructure. For this technology measure, I use World Bank data on internet users per 100 people. While economic and technological strength are obviously important factors in foreign direct investment inflows, the economic stability of a country is equally vital. To account for economic stability, I include data on the annual inflation rate of consumer prices, in line with Al-Sadig in his 2009 work. High levels of inflation could signal poor monetary policy or some sort of fiscal instability that deters investment. To coincide with previous literature, I also include unemployment rate as an additional proxy of economic stability. High unemployment can control for issues in the economy not clearly captured in GDP level statistics. A descriptive breakdown of all the collected data is provided in Table 1 below. From the theoretical framework established in Section III and data described in Section IV, I generated the empirical model shown in the next section of my paper.
Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>logUSFDI</td>
<td>612</td>
<td>5.20</td>
<td>13.16</td>
<td>9.28</td>
<td>1.61</td>
</tr>
<tr>
<td>Corrupt</td>
<td>600</td>
<td>1.00</td>
<td>10.00</td>
<td>5.57</td>
<td>2.46</td>
</tr>
<tr>
<td>logTotalFDI</td>
<td>580</td>
<td>16.67</td>
<td>26.07</td>
<td>16.67</td>
<td>26.07</td>
</tr>
<tr>
<td>GDPCap</td>
<td>616</td>
<td>371.77</td>
<td>118218.80</td>
<td>19564.74</td>
<td>19167.97</td>
</tr>
<tr>
<td>GDPCapGrowth</td>
<td>614</td>
<td>-11.99</td>
<td>16.24</td>
<td>2.30</td>
<td>3.63</td>
</tr>
<tr>
<td>logPop</td>
<td>616</td>
<td>12.50</td>
<td>21.01</td>
<td>16.80</td>
<td>1.63</td>
</tr>
<tr>
<td>Internet</td>
<td>613</td>
<td>0.06</td>
<td>93.27</td>
<td>36.95</td>
<td>26.43</td>
</tr>
<tr>
<td>Openness</td>
<td>608</td>
<td>9.43</td>
<td>219.07</td>
<td>46.11</td>
<td>34.56</td>
</tr>
<tr>
<td>Inflation</td>
<td>589</td>
<td>-4.48</td>
<td>96.09</td>
<td>4.84</td>
<td>7.05</td>
</tr>
<tr>
<td>Unemployment</td>
<td>562</td>
<td>1.20</td>
<td>31.20</td>
<td>7.77</td>
<td>4.36</td>
</tr>
</tbody>
</table>
V. EMPIRICAL MODEL

\[
\begin{align*}
\logUSFDI &= \beta_0 + \beta_1(CPI) + \beta_2(GDPCap) + \beta_3(GDPCapGrowth) + \beta_4(\logPop) + \beta_5(Openness) + \beta_6(\text{Internet}) + \beta_7(\text{Inflation}) + \beta_8(\text{Unemployment}) + u \\
\logTotalFDI &= \beta_0 + \beta_1(CPI) + \beta_2(GDPCap) + \beta_3(GDPCapGrowth) + \beta_4(\logPop) + \beta_5(Openness) + \beta_6(\text{Internet}) + \beta_7(\text{Inflation}) + \beta_8(\text{Unemployment}) + u
\end{align*}
\]

Where:

\(\logUSFDI\) is the log foreign direct investment inflows from United States companies to a host country in a given year;

\(\logTotalFDI\) is the log of total foreign direct investment into a host country in a given year, regardless of source country;

\(\text{Corrupt}\) is the inverted Corruption Perception Index score for the host country;

\(\text{GDPCap}\) is the annual Gross Domestic Product per capita in the host country;

\(\text{GDPCapGrowth}\) is the GDP per capita annual growth in a host country;

\(\logPop\) is the log of the total population of the host country in a given year;

\(\text{Openness}\) is the annual total value of imports into a host country divided by the GDP of the host country;

\(\text{Inflation}\) is the reported annual inflation rate in the host country;

\(\text{Internet}\) is the annual number of internet users by 100 people in the host country;

\(\text{Unemployment}\) is the reported annual unemployment rate in the host country;

and \(u\) is the random error.

\(\logUSFDI\) and \(\logTotalFDI\) are my dependent variables used to account for foreign investment levels. \(\logUSFDI\) represents investment from U.S. companies to a host country in a given year and \(\logTotalFDI\) represents investment into the host country overall. The two measures are compared through separate regressions to determine the differences between U.S. foreign investment and overall foreign investment.
Corrupt is the primary independent variable, a measure I believe will explain variation in the model caused as a result of corruption in a foreign country. Although corruption is impossible to measure precisely, the Corruption Perception Index is a consistent and often cited proxy for corruption, which is why I feel comfortable including it in a quantitative regression. I expect the Corrupt variable to have an indirect relationship with both logUSFDI and logTotalFDI. The second part of my hypothesis is that the coefficients on Corrupt in Model 2 and Model 3 will not differ in a statistically significant way, meaning that there is no difference between the effects of corruption on United States firms compared to the rest of the world’s firms when performing foreign direct investment in a host nation.

GDPCap, GDPCapGrowth, logPop, Internet, and Openness are potential explanatory “pull factors” for a given host country in attracting investment. These metrics signal a strong market for growth and investment. Robust levels of these variables should entice foreign investment, while relatively lower measures of these variables will attract lower FDI. I expect the sign of all five of these coefficients to be positive.

Conversely, Inflation and Unemployment are potential explanatory “push factors” for countries looking to attract investment. For these measures, high levels of inflation and unemployment in a country signal economic instability and weakness. Robust levels of these variables are predicted to deter foreign direct investment into those host countries, meaning the signs of the coefficients are expected to be negative.

For both Model 2 and Model 3, I also produce a time and country level fixed effects regression version. Fixed effects models are useful in panel data to control for a variety of different important variables that are otherwise difficult to measure and control. For example,
controlling for country level fixed effects, I am able to control for all differences between countries in the data set that are fixed over time. This is especially helpful when dealing with geographic or cultural factors. If United States companies typically make investments in Jamaica over the United Kingdom because Jamaica is closer geographically, then a country level fixed effects regression will control for that factor. If however, United States companies typically make investments in the United Kingdom over Jamaica because of greater cultural similarity, then that factor will also be controlled through country level fixed effects. Time fixed effects control for previously uncontrolled variations that vary over time but are consistent across all countries. For example, if there was a global recession that affected the desire of all firms across the globe to invest globally in a particular year, time fixed effects would control for that factor.
VI: RESULTS

In the four regression results outlined below, I attempt to estimate the effect of foreign direct investment by American companies abroad (Tables 2, 3) and on total foreign direct investment (Tables 3, 4) into a host country. With both dependent variables, I estimate a standard OLS regression and a time and fixed effect regression for a total of four regressions. The regressions account for the push and pull factors that influence foreign direct investment in both instances. Generally speaking, Regressions 1, 2, 3, and 4 produced relatively robust models, with strong R² figures and highly statistically significant F-statistics. For Regressions 1 and 2, 518 observations remain after accounting for missing observations across all variables. For Regressions 3 and 4, 491 observations remain, again after accounting for missing observations across all variables.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Regression 1. Standard Equation</th>
<th>Regression 2. Time and Country Fixed Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>518</td>
<td>518</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.65</td>
<td>0.63</td>
</tr>
<tr>
<td>F-Statistic</td>
<td>130.15***</td>
<td>22.42***</td>
</tr>
</tbody>
</table>
Table 3: Log US FDI Model Coefficients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression 1. Standard Equation</th>
<th>Regression 2. Time and Country Fixed Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>Standard Error of Coefficient</td>
</tr>
<tr>
<td><strong>Corrupt</strong></td>
<td>-0.184</td>
<td>0.033</td>
</tr>
<tr>
<td><strong>GDPCap</strong></td>
<td>0.037</td>
<td>0.0039</td>
</tr>
<tr>
<td><strong>GDPCapGrowth</strong></td>
<td>-0.021</td>
<td>0.0156</td>
</tr>
<tr>
<td><strong>logPop</strong></td>
<td>0.698</td>
<td>0.0398</td>
</tr>
<tr>
<td><strong>Openness</strong></td>
<td>0.012</td>
<td>0.0012</td>
</tr>
<tr>
<td><strong>Internet</strong></td>
<td>0.0061</td>
<td>0.003</td>
</tr>
<tr>
<td><strong>Inflation</strong></td>
<td>-0.015</td>
<td>0.005</td>
</tr>
<tr>
<td><strong>Unemployment</strong></td>
<td>-0.013</td>
<td>0.009</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-4.721</td>
<td>0.752</td>
</tr>
</tbody>
</table>

*** 99% significant, ** 95% significant, * 90% significant

Table 4: Log Total FDI Model Summary

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observations</strong></td>
<td>491</td>
<td>491</td>
</tr>
<tr>
<td><strong>R-Squared</strong></td>
<td>0.57</td>
<td>0.35</td>
</tr>
<tr>
<td><strong>F-Statistic</strong></td>
<td>114.14***</td>
<td>12.26***</td>
</tr>
</tbody>
</table>
My central focus in the study is on the coefficients estimated for the Corrupt variable. The negative sign for the coefficients on the variable in all four regressions indicates that corruption in a host country does negatively influence the amount of FDI a particular country receives, regardless of whether that FDI comes from the United States or from all countries in the world. For example if a country’s corruption rating drops by one full point, the amount of foreign direct investment from United States companies will decrease by 14.8 percent, according to the fixed effects model in Regression 2. Again, the Corrupt metric is measured on a linear 0 to 10 scale, with 0 being least corrupt and 10 being most corrupt. In three of the estimations, the corruption coefficients are statistically significant at the 99 percent confidence level, while in the fixed effects regression of total FDI, the coefficient is significant at the 90 percent confidence level.
level. The findings support part of my hypothesis, that American foreign direct investment is still negatively influenced by corruption in a host country in the 21st century.

To compare the differences between the coefficients on Corrupt in the US FDI and Total FDI models, I use a post-regression chi-square test on Regression 2 and Regression 4, the fixed effects versions of the models I consider the fixed effects models the most appropriate regressions for comparison, since they control for all time-invariant variables and all time-variant variables equal across all countries. The test found no significant statistical difference between the two coefficients in the models, supporting the second part of the hypothesis that corruption affects FDI decisions from U.S. companies and the world as a whole in a similar way in the 21st century.

<table>
<thead>
<tr>
<th>Figure 3. Chi-Test on Corrupt – Regressions 2 and 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null Hypothesis: $Corrupt(\text{Regression 2}) = Corrupt(\text{Regression 4})$</td>
</tr>
<tr>
<td>Prob &gt; Chi-square = .4405</td>
</tr>
<tr>
<td>Fail to reject null hypothesis</td>
</tr>
</tbody>
</table>

The positive sign on GDPCap for Regressions 1, 2, and 3 are as expected, meaning that the wealth of a nation is predicted to increase the amount of foreign investment in a country. For the United States in the fixed effects equation (Regression 2), a $1000 increase in the host country’s GDP per capita is associated with a 1.09 percent increase in foreign direct investment outflows to a particular nation. Regressions 1, 2, and 3 also had GDPCap coefficients that were statistically significant at the 95 percent confidence level. These results support the notion that
firms are more likely to invest in more developed nations across the globe. The total FDI model with time and country fixed effects (Regression 4) produced an unexpected negative sign on $GDPCap$, however it was the only regression without statistical significance on the $GDPCap$ coefficient. It is possible that the interaction of variables and loss of degrees of freedom in the fixed effects model produced an inaccurate coefficient output for Regression 4. It is also possible that a high GDP per capita is highly correlated with having strong institutions, an unobserved variable that is captured in the fixed effects models.

There are differing signs and significances between the U.S. models and total models when dealing with $GDPCapGrowth$. In the United States examples (Regressions 1 and 2), the coefficients are negative and not significant, while in the total world examples (Regressions 3 and 4) the coefficients are positive and significant at the 95 percent confidence level in the case of Regression 3. These relationships are certainly plausible. The Unites States could be more likely to invest in older and less dynamic economies with lower economic growth than the rest of the world, creating this weak negative relationship between economic growth and American FDI. As mentioned in Section II, a majority of United States FDI flows go toward Europe, where the Eurozone had only a 2.1 percent real GDP growth rate in 2010 (Eurostat 2013). In the American FDI fixed effects regression, a one percent increase in GDP per capita growth of a host country is only associated with a 1.37 percent reduction in American foreign direct investment.

For the most part, the $logPop$ coefficient has the expected positive sign and magnitude in three of the regression equations, the only exception being Regression 2, which produced an unexpected negative sign. The two fixed effects equations failed to produce significant results on the coefficient, which could be a function of the regressions controlling for all time-invariant
factors across a given country. Since population size typically grows relatively slowly, the fixed effects equation could have simply controlled for much of the variation in population. For that reason, the true effect of population is more likely found in Regressions 1 and 3, which did not use fixed effects. Regression 1 and Regression 3 were both significant at the 99 percent confidence level with the expected positive sign. In Regression 1, a one percent increase in population growth is associated with a 0.7 percent increase in FDI flows into the host country from United States firms. For all firms in Regression 3, a one percent increase in population growth is associated with a nearly identical 0.71 percent increase in FDI flows into the host country. This indicates that market size is a positive factor in foreign investment decisions, which makes sense since one of the reasons a firm undertakes foreign direct investment is to enter new markets (Denisia 2009).

For the most part, the Openness coefficient appears positive and significant in influencing FDI as expected. This means that a nation with relatively large amounts of imports invites more investment. As discussed earlier, a relatively large percentage of imports in relation to GDP could signal the countries openness to foreign activity and a lack of protectionist policies, which would hamper FDI. The exception is the United States in the time and country fixed effects equation (Regression 2), where the coefficient is not significant at any major level. It is possible that United States companies are simply not affected by a host country’s relative openness when controlling for many other factors with the fixed effect equation; however given the high significance of Openness in Regression 1, I believe it is more probable that controlling for time and country fixed effects introduced previously uncontrolled variables that are highly correlated with Openness. As with logPop, it makes more sense for interpretation to compare the regression
equations without fixed effects. In Regression 1, a one percent increase in the net imports as a percentage of GDP in the host country is associated with a 1.2% increase in FDI inflows from United States organizations.

There was little evidence that the chosen technology variable, Internet, had a large influence on foreign direct investment. All four regression equations failed to produce a significant coefficient on the variable. It is possible that a majority of the technology variable is already captured through the GDPCap measure, since countries with the most advanced technologies are likely also the richest economies. It is also possible that the chosen proxy for technology, Internet, was an incorrect proxy for the level of technology in a given nation.

There is a possible negative relationship between Inflation and FDI flows into a host country. All four regression equations produced the expected negative sign on the coefficient, with the U.S. FDI without fixed effects model (Regression 1) being statistically significant at the 99% confidence level. In that regression, a one percent increase in the inflation rate in the host country is correlated with a 1.5 percent reduction in FDI from United States firms. As predicted, high levels of inflation might signal other underlying problems in the economy not controlled for with GDP level statistics.

Finally, the coefficient on Unemployment is not significant for the United States or whole world regressions at any major level. Even though the sign is negative, the low t-statistic makes it unlikely that unemployment levels in a host country are influencing the investment decisions of United States firms. That being said, there is indeed a significant negative relationship between unemployment and total FDI in the fixed effects equation (Regression 4). It is possible that other countries are more sensitive to employment conditions in a host nation than United
States firms. This finding could also indicate that the United States is more focused on long-term economic potential and less dependent on current economic conditions.
VII: CONCLUSION AND POLICY RECOMMENDATIONS

The relationship the United States has with outside nations will have an increasingly meaningful impact on America’s development over the next decade. By evaluating the modern effect of corruption on foreign direct investment from the United States, we gain a better understanding of the dynamic world around us. That is what I set out to do in this paper.

Specifically, I looked at the relationship between the perceived corruption rate in a host country (the country receiving foreign direct investment inflows) and the amount of foreign direct investment into the country from United States firms in the 21st century. I then compared the results of the United States firms’ response to corruption against the overall global response to corruption, in order to determine if organizations in the United States are more or less sensitive to corruption when deciding where to perform foreign direct investment operations. In order to answer these questions, I used a panel data set for the years 2000 to 2010 on 56 countries across the globe. The countries were chosen because of their recorded history of receiving foreign direct investment from United States firms over the past 10 years.

In order to determine the appropriate relationship between corruption and FDI, I controlled for other “pull” factors that might encourage FDI (wealth, wealth growth, market size, technology, and openness), potential “push” factors that could discourage FDI (inflation and unemployment), all time-invariant variables in a particular host nation, and all time-variant variables that effect all host countries in the dataset equally in a given year. Once these factors were controlled for, I was able to run a series of four regressions to answer the proposed research questions.
The results find that United States firms investment decisions are indeed still negatively influenced by corruption in a host country in the 21st century, with the standard regression equation and complete fixed effects regression equation significant both significant at the 99% confidence level. Using a chi-square test for statistical difference, I evaluated the coefficient on corruption for United States firms against the coefficient on corruption for all firms across the globe. The test failed to find any significant difference between the coefficients, supporting my hypothesis that United States firms do not react differently to corruption than the world as a whole when deciding to perform foreign direct investment in a nation. It appears that other foreign firms are equally averse to investing in the presence of corruption.

These results show that the 1997 findings by Wei, that the United States firms are adverse to corruption but no more than other countries around the globe, holds true using updated 21st century data (Wei 1997). My results run contrary to the findings of Al-Sadig, who used panel data from 1984 and 2004 to determine that there was no relationship between corruption and foreign direct investment (Al-Sadig 2009). Finally my findings show that the fears and conclusions of Hines, that the United States firms would be less likely to invest in corrupt countries than the rest of the world (Hines 1997), appear to not carry over to the 21st century.

These results are meaningful on two separate levels. First, even in this rapid age of globalization, numerous countries are deprived of valuable foreign investment because of their perceived level of corruption. In their 2013 meeting, the World Economic Forum experts identified corruption as the top impediment for conducting business in 22 out of 144 economies (World Economic Forum 2013). That means that these countries have the economic pulls to receive increased investment, but they operate at a level of investment below equilibrium.
because of corruption. Foreign direct investment increases a host nation’s savings rate and can help these nations by increasing productivity, raising employment, and introducing new technology. An important step to preventing corruption across the globe is to recognize its importance and relevance in hampering the development of nations.

Equally important, my results indicate that current American firm views on corruption do not differ significantly from the rest of the world. If the results indicated corruption levels affected American firms differently, it might be necessary to reevaluate the current laws and regulations governing U.S. multinational firms abroad. However, it appears there is a global census in regard to the acceptable level of corruption for investment into a host country. This makes sense, as globalization has almost created an equilibrium level of acceptable corruption for all firms, regardless of source country.

My study is not without limitations. By comparing United States FDI levels against total world FDI levels, United States levels are included in the total world FDI levels. It is unknown if there would be a significant difference between the effects of corruption on U.S. FDI versus the rest of the world if it were possible to remove the United States FDI from the total world FDI dataset. As a next step in future research, I recommend comparing how corruption influences U.S. FDI decisions versus the decisions of several other specific nations. In other words, I suggest comparing the United States versus other major contributors to FDI outflows and evaluating relationships based on the results of each country.

I recommend an increased push to educate the more corrupt countries about the harmful economic effects of corruption. Trade agreements should be designed with clauses that encourage a reduction in corruption and promote transparency. Corruption is a barrierimpeding
the natural level of foreign investment in a country. It hinders firms from entering potentially
profitable markets and it prevents host nations from receiving valuable investment. Corruption is
a preventable “push” factor that deters foreign direct investment. If steps are taken to reduce it
across the world, both the source and host country stand to benefit from meaningful reductions in
corruption.


