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# Experts' Perceptions versus Firms' Experiences of Corruption and Foreign Direct Investment

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# Experts' Perceptions versus Firms' Experiences of Corruption and Foreign Direct Investment\*

## Abstract

This paper documents that standard measures of corruption based on the perceptions of experts and opinion surveys and measures based on the experiences of firms can in some cases lead to quite different conclusions as to how much of a problem corruption is in a country. We then show that while perceptions of corruption are significantly associated with the amount of foreign direct investment that a country attracts, the experience on the ground is not. This finding is robust to alternative perceptions and experience measures and the inclusion of standard empirical foreign direct investment model controls. When we look at establishment modes of foreign investors we find some evidence that direct investment that builds new operations from zero in a foreign country (greenfield investment) is significantly associated with the experience of corruption while mergers and acquisitions is driven by perceptions.

**JEL Classification:** F21, F23, D73

**Keywords:** corruption, corruption experiences, corruption perceptions, foreign direct investment

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## 1 INTRODUCTION

Corruption, the abuse of public power for private gain, can impose an additional cost on many transactions and activities. Fisman and Svensson (2007) point out that corruption could act like a tax or on the other hand it may help (some) firms to overcome excessive bureaucracy and red tape. Corruption has also been found to be negatively associated with many macroeconomic conditions, the presence of which could discourage foreign investment. Foreign investors, like domestic investors, will take account of these costs when making their investment decisions.

This paper contributes to a long standing literature that has tended to find that corruption, as measured by expert's perceptions, is detrimental in terms of a country's foreign direct investment (FDI) performance. We allow both perceptions of corruption and firms' experiences of corruption to enter into an empirical FDI model as separate and distinct variables. After illustrating that these variables can tell very different stories about the extent of corruption in a country, we show that perceptions based measures are strongly associated with FDI while experience based measures are not, even when perceptions are not included in the model. However, we do find some evidence that experiences trump perceptions when it comes to greenfield investment.

Until relatively recently, corruption has been measured and compared internationally using measures that are, for the most part, based on the perceptions of experts. However, recent years have seen the emergence of large survey based datasets that contain corruption indicators based on the experiences of firms. While perception based indicators have allowed academics to understand corruption better and helped the media to shine a light on corruption, researchers have long been aware of the shortcomings inherent in such measures. Svensson (2003), Reinikka and Svensson (2006), Treisman (2007), and Fan, Lin and Treisman (2009) all raise concerns that perception indices are likely to suffer from perception biases. Knack (2007) and Kenny

(2009) suggest that perception indicators lag reality. On the other hand, experience based measures from appropriately designed surveys can yield “hard evidence on corruption” (Svensson (2005)). Knack (2007) stresses that survey based measures can “place a greater emphasis on experience and less on perceptions” (p. 257) and that “[i]n contrast to most expert assessments, surveys of firms and households generate data likely to be largely independent from other judgments” (p. 266). Razafindrakoto and Roubaud (2010) compare individuals’ experiences of corruption with a survey of experts’ opinions for Sub-Saharan Africa and conclude that there are differences between the two and that there are ideological and cultural biases in the experts’ evaluations of corruption.

There is a large empirical literature that examines the effect of corruption on FDI, almost always using perceptions based indicators. Wei (2000a) studies the effect of corruption on FDI using bilateral investment data and finds that corruption reduces FDI significantly and substantially. Wei (2000b) finds that corruption plays a role in shaping both the composition of the FDI that a country receives and the magnitude. Hakkala, Nörback and Svaleryd (2008) use firm level data from Sweden to show that higher corruption in a country reduces the probability that a firm will invest there. Habib and Zurawicki (2002) examine the effect of corruption in the host and receiving countries on FDI. They find a negative effect of host country corruption and of the difference between corruption levels between the host and receiving countries on FDI. Egger and Winner (2006) examine outward FDI stocks of OECD countries and find that the overall effect of corruption is negative.

At the subnational level, Cole, Elliott and Zhang (2009) find that FDI is more attracted to Chinese provinces that are actively fighting against corruption. Ledyeva, Karhunen and Kosonen (2013) study Russian regions and find that foreign investors tend to pick regions that are similar to their host countries in terms of where they are on the (relative) corruption and democracy spectra. A related contribution is provided by Morrissey

and Udomkerdmongkol (2012) who conclude that “increased FDI under political stability and low corruption has the greatest impact on increasing total private investment”(p.443).

Corruption has been shown to matter for FDI even when one considers other important factors. Using a survey based measure Asiedu (2006) finds corruption to have a negative effect on FDI to countries in Sub-Saharan Africa but that countries in the region that attract the most FDI are either resource-rich or have significant market size. Good infrastructure, an educated labour force, macroeconomic and political stability, openness to FDI and an efficient legal system are also important. With a survey data of French civil servants Bénassy-Quéré, Coupet and Mayer (2007) study the impact of institutional quality on bilateral FDI. They find that corruption is important alongside measures of the quality of banking sector and general legal institutions. Similarly, Busse and Hefeker (2007) find institutional quality matters for FDI though they find a weaker relationship between corruption and FDI flows than with other political factors such as government stability, conflicts, law and order, ethnic tensions and bureaucratic quality. Daude and Stein (2007) also study the effect of institutional quality on FDI. They point out that indicators based on expert evaluations on one hand and surveys on the other hand might yield different results. They find that a survey based measure of corruption similar to one that we employ in this paper is insignificant though they do not include perceptions and this measure at the same time. They also fail to find a significant effect of the standard corruption measures on FDI which puts them at odds with much of the literature.

This is just a small sample of this literature consisting of the most relevant and important papers. The weight of evidence suggests that corruption is undesirable in terms of attracting FDI, though there are some papers that fail to find a relationship such as Daude and Stein (2007) while Egger and Winner (2005) find that corruption is beneficial in terms of FDI in both the short and long run. This paper clearly builds on this literature by asking whether perceptions of corruption, the reality of corruption, or both matter for FDI.

When perceptions differ from the experiences of firms, which should matter? Should one matter more than the other? These are empirical questions but we can think of reasons as to why each could matter. The experience based measures are probably the more relevant of the two in that they capture the actual situation faced by firms and they are exclusively concerned with firms whereas the other measures may pick up corruption that affects individuals. However, the perceptions measures, particularly the Corruption Perceptions Index (CPI) which receives a lot of media attention and is easily accessed in a user friendly way, are perhaps the data that foreign investors actually see.

Results from other literatures offers little guidance as to which we should expect to matter. Gillanders (2014) finds that both perceptions based measures and experience based measures individually predict infrastructure quality. However, Aidt (2009) shows that when you switch from perceptions to experience based measures the links between corruption and economic growth disappear (though he only has an experience based measure for 1999-2000 and uses this to explain growth from 1970-2000). It is therefore important to note that the context may matter. Different underlying mechanisms and decision making processes are likely to result in different conclusions regarding the importance and relative importance of perceptions and experience based measures.

We begin by outlining the data used and then show that perceptions can differ from experience in many cases. Section 4 shows that perceptions are significantly and meaningfully associated with good FDI outcomes in general while the experience based measures are not, though greenfield investment may be different. Section 5 concludes and briefly discusses the implications of these findings for policy and the caveats to the analysis.

## 2 DATA

In this section we define and discuss our dependent variables and independent variables of interest. Table A1 in the appendix gives definitions and sources for all the variables used in our analysis. We obtained our information on FDI from the United Nations Conference on Trade and Development (UNCTAD) database. The UNCTAD WIR Methodological Note (2013) defines FDI inflows as “an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)” (p.2).

Our main measure of FDI is net FDI inflows. This consists of the sum of equity capital, reinvestment of earnings or intra-company loans or debt. The inflow data is recorded in net terms implying that if net FDI inflows appear negative, at least one of its three components is negative and is not offset by positive amounts of the other components. We also examine the net values of greenfield investments and M&A (Mergers & Acquisitions) sales by destination country, which are also obtained from the UNCTAD database. Greenfield investments are investments that entail operations built from zero, or in other words the foreign entity does not acquire a share in an existing company in the host country. The value of Greenfield investments are collected by fDi markets of the Financial Times for UNCTAD. The greenfield data may include investments that are not qualified as FDI because information on the equity share is not always available. In addition, the UNCTAD methodological annex states that in the greenfield data “joint-ventures are also included only where they lead to a new physical operation. While there is no minimum size for a project to be included, as a selection criteria for inclusion in this database an investment project has to create new direct jobs and capital investment” (UNCTAD WIR 2013, p. 66). M&A investments on the other hand are the net sum of sales of existing companies or shares in them. The information in the UNCTAD cross-border M&A statistics are collected by Thomson Reuters. The M&A data consist of the values of equity sales as well as the



purchases via domestic and international capital markets, which should not be considered as FDI flows. Therefore, the M&A statistics correspond to the definition of FDI only in the case of equity sales. All data were converted to constant 2005 US\$.

The most widely used measure of corruption is the Transparency International Corruption Perceptions Index (CPI), which gives countries a score on their perceived corruption from 10 (highly clean) to 0 (highly corrupt).<sup>1</sup> The CPI is primarily based on expert views and according to the CPI 2013 methodology the index is based on information “drawn from data sources of independent institutions specializing in governance and business climate analysis”.<sup>2</sup> Some of these sources can be based on surveys of “business leaders” in the country but the sample size of these surveys tend to be very small, they are unlikely to be representative, and most such sources only cover a small number of countries.

As an alternative perceptions based measure of corruption we use the Control of Corruption (CC) variable from the Worldwide Governance Indicators (WGI) dataset. CC ranges from -2.5 to 2.5 and is a composite index of surveys on households and firms as well as expert views from different organizations. The WGI indicators methodology as defined by Kaufman, Kraay and Mastruzzi (2010) describes CC as measuring “the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as ‘capture’ of the state by elites and private interests.” Despite aggregating its source data in a more complicated way, CC tells a very similar story to the CPI as the two are econometrically very similar with a correlation of 0.92.

As we saw in Section 1 above, leading scholars of corruption have expressed several concerns about perceptions measures. Fan, Lin and Treisman (2009) capture perfectly what is perhaps the chief concern of corruption researchers regarding perceptions based measures:

*“...perceived corruption indices ... rely on the aggregated perceptions of businessmen or country experts, many of whom may have formed impressions – perhaps subconsciously – based on common press depictions of countries or conventional notions about what institutions or cultures are conducive to corruption”*(p.15).

They support this assertion with the findings of Treisman (2007) that while characteristics such as the extent of democracy, press freedom, oil rents, and the percentage of women in government can explain variation in perceptions of corruption, once one controls for income these factors do not explain experience based measures. Fan, Lin and Treisman (2009) suggest that “the businessmen and experts whose perceptions are being tapped might be inferring corruption levels from its hypothesized causes”(p.15).

Such perception biases have also been alluded to by other scholars of corruption (e.g. Svensson (2003) and Reinikka and Svensson (2006)) and have been shown to exist in the case of Sub-Saharan Africa by Razafindrakoto and Roubaud (2010), but other issues have also been raised. For example, Knack (2007) points out that composite indices have no explicit definition due to the many, often quite different, sources used to create them and that the implicit definition changes over time as the source information changes. Both Knack (2007) and Kenny (2009) argue that changes in perceptions based measures tend to lag reality “if they have anything to do with reality at all” (Knack 2007, p. 265).

Thus while traditional perceptions/composite indicators have served researchers, policymakers and journalists well in the past, there are strong reasons to seek alternative measures that are less likely to suffer from these perception biases and other issues. For researchers interested in international comparisons, evidence from well-designed standardised surveys can provide batteries of interesting corruption measures. Svensson (2005) and Reinikka and Svensson (2006) argue that properly conducted surveys of firms can provide reliable “hard” evidence on corruption. Knack (2007) argues that such exercises can yield measures

of corruption that are based on the experience of corruption rather than perceptions and that are less likely to be influenced by other judgements and the judgements of others.

The World Bank's Enterprise Surveys (ES) contain a wide range of information on firms in wide range of countries. The ES are representative firm level surveys that ask several questions about firms' experiences of corruption.<sup>3</sup> They are carefully designed and implemented and have been much used in recent years by researchers interested in corruption. We use three variables from the ES macro dataset to measure corruption. Each is somewhat different and thus, if they are in agreement, we can have more confidence in our findings.

The three ES corruption measures that we use are the percent of firms that see corruption as a major constraint to their business (*Constraint*), the percent of public transactions where a gift or informal payment was requested (*Depth*) and the percent of firms that are expected to give gifts to public officials "to get things done" (*Gifts*). Each of these variables takes a slightly different approach to measuring corruption. *Constraint* comes from a question that asks respondents if corruption is no obstacle, a minor obstacle, major obstacle, or a very severe obstacle to the current operations of their establishment. The vagueness of this question is part of its appeal. It does not ask specifically about specific bribe amounts or frequencies which people may intentionally or unintentionally misreport. Besides this, corruption can manifest itself in ways other than bribes. As alternatives to this measure of corruption, we use two variables that do focus on bribery as the main modality of corruption. *Depth* and *Gifts* differ though in that the former asks directly about the respondent's own firm, as does *Constraint*, while the latter was compiled from answers referring to a "firm with similar characteristics to yours." This is done to draw out honest answers. Thus we have a set of indicators based on firm's experiences that are each subtly different from the others. *Depth* and *Gifts* are strongly correlated with each other (0.78) while *Constraint* has a weak correlation (0.23 and 0.14) with the two other experience based measures.

Our combined dataset includes 135 different countries and covers years from 2002 to 2013. The countries in the survey are, however, very unevenly represented during the eleven years of yearly survey rounds and the resulting panel data is very unbalanced. Table 1 presents summary statistics for the main variables.

<TABLE 1 HERE>

### **3 DO PERCEPTIONS MATCH EXPERIENCES?**

In this section we show that the conclusions one might draw from perceptions measures can be very different from the story according to experience based measures. Treisman (2007) found somewhat strong correlations between perceptions based measures and experience based measures (roughly between 0.6 and 0.8) though he notes that the correlation is weaker if one focuses on developing countries. We find weaker correlations between our perceptions and experience based measures (between 0.40 and 0.52) and when we examine the data visually we can see many countries that seem to have undeserved reputations – at least by these metrics.

Figures 1, 2 and 3 show that the CPI and measures based on firms reported experiences can tell quite different stories about the corruption situation in a country. Moreover, this seems to apply even though the three indicators of experienced corruption each takes a slightly different approach to measuring the corruption experiences of firms. Figure 1 shows that the CPI and *Constraint* are rather weakly correlated (-0.4) with each other. The correlations remain relatively weak between *Gifts* and the CPI (-0.48) and *Depth* and the CPI (-0.5) as can be seen in figures 2 and 3.

The figures are divided into four quadrants defined by the sample means. Immediately one can see that there exist a significant number of countries with an unearned corruption reputation either in that they are

perceived as corrupt but are not according to firms' actual experiences or are perceived as "clean" but are not according to firms' experiences, with the first group being far larger. Furthermore, it is important to note here that our sample average for the CPI is rather low (3.3 out of 10) since we are missing Enterprise Surveys information on most of the least corrupt countries in the world such as the Nordic countries and New Zealand.

**<FIGURE 1 HERE>**

**<FIGURE 2 HERE>**

**<FIGURE 3 HERE>**

Figures 4 to 6 present the same relationships on world maps. This allows us to see clearly how closely the experience based measures match the CPI as well as how this degree of agreement is distributed geographically.<sup>4</sup> In most regions of the world we can point to countries where perceptions do not match reality. In addition, some interesting geographical patterns exist. For example, much of Africa (except for the very south) is perceived to be corrupt however perceptions do not match reality in many parts of East-Africa. Clusters can also be observed in Europe. For the most part in Western European and EU countries perceptions of low corruption match the experience based measures. However, some newly acceded EU countries and Balkans countries have low perceptions of corruption but are corrupt by the *Constraint* measure. This could indicate that these countries are benefiting in terms of perceptions from the proximity of very clean countries and possibly EU membership even though firms feel that corruption is constraining their operations.

Amongst Asian countries in general it is hard to see any common patterns. Many of the Central Asian countries in our sample are perceived to be corrupt and this is largely in agreement with the experience based measures. Central and Latin American countries, however, show considerable disagreement both between

perceptions and experience measures and also between different experience measures. This discrepancy could indicate that firms in Central and Latin American countries do not see giving gifts or paying bribes as a constraint or these more traditional forms of corruption are very limited in scale and that firms are plagued by other more subtle forms of corruption (such as nepotism or old boy networks). Similar differences between the different experience based indicators can be seen in Turkey and the Balkans, which share a long common history under the former Ottoman Empire.

**<FIGURE 4 HERE>**

**<FIGURE 5 HERE>**

**<FIGURE 6 HERE>**

The conclusions one can draw from this presentation of the raw data are that there are, by the measures available to us, large numbers of countries that have an unearned or undeserved reputation for corruption and that there are “reputation blocks” of countries that share certain geographic and historical traits. While for the purposes of this paper it is sufficient to observe that differences between perceptions and experience based measures exist, the existence of these clusters is very interesting and warrants further and full study. Certainly the existence of these blocks brings to mind the argument of Fan et al. (2009) quoted above regarding perceptions being driven by expectations based on culture and history rather than by actual corruption. These findings also tie in well with the finding of Razafindrakoto and Roubaud (2010) that experts may have a model of “how Africa works” in their minds.

## **4 PERCEPTIONS, EXPERIENCES AND FDI**

### **4.1 Approach**

Having established that there is often a difference between the widely reported perceptions of corruption in a country and the experience of firms in that country, we ask if perceptions or actual experience or both matter

in terms of the amount of FDI a country attracts. As outlined above, there is a longstanding literature that, for the most part, shows that the degree of corruption in a country, usually measured with a perceptions based measure, is negatively associated with inward FDI.

To investigate the importance of perceptions and experience based measures in terms of FDI, we estimate models of the following general form with OLS on our unbalanced panel data:

$$FDI_{it} = \alpha_0 + \beta_1 corruption_{it} + \Gamma X_{it} + \epsilon_{it} \quad (1)$$

where  $FDI_{it}$  is the natural logarithm of total net inflow of FDI in country  $i$  at time  $t$ ,  $\alpha$  is the intercept term,  $corruption_{it}$  is an indicator of perceived corruption and/or experienced corruption,  $X$  contains different control variables described below and  $\epsilon_{it}$  is an error term of the standard type.

There are obvious endogeneity concerns one might have with this approach. Unfortunately the data is not suitable for the GMM solutions that others have used and it is very difficult to think of valid instruments for two measures of corruption – especially in the context of FDI. This is not an uncommon issue with empirical FDI papers (see e.g. Chung (2014)). Even though the results may not be causal, we think they will be of interest for policy makers.

## 4.2 Main Results

Table 2 presents our main results. The first two columns show that our two perceptions measures are strongly and meaningfully correlated with FDI.<sup>5</sup> The results tell us that countries with lower perceived corruption tend to attract more FDI. The magnitude of this association is similar in both cases. A ten percent change in either

index (1 unit for CPI which runs from 0-10 and 0.5 of a unit for the CC measure which takes values between -2.5 and 2.5) is associated with an increase of around 28% to 49% in FDI inflows. This is clearly a very large “effect” but such large associations have been found by others e.g. Wei (2000a) and Asiedu (2006).

**<TABLE 2 HERE>**

However, our experience based corruption measures are not significantly associated with FDI in general and the size of the estimated association is much smaller. This can be seen in columns 3, 4, and 5. The remaining columns pair each of the perceptions measures with each of the experience based measures. These regressions suggest that it is perceptions that matter for FDI and not the reality as captured by the experience measures we have. In one instance the experience based measure *Gifts* is weakly significant and only in one case is the perceptions measure insignificant.<sup>6</sup> This is in Column 10 where we pair CC with the *Depth* measure. This is likely due to the smaller sample size as when we use *Depth* in Column 7 with the CPI, the significance of the latter drops to 10%.

Thus, these simple regressions tell a clear story. The experience of corruption, which we have seen can be very different from perceptions, is not an important factor in terms of a country’s ability to attract FDI. Even when we exclude the perceptions measures, the experience based measures do not predict FDI. Why might this be? As argued above, investors should probably care about the reality of corruption and not the perception. However, until recently experience based measures were hard to come by while the CPI is widely reported, free to access, and presented in a user-friendly way. In other words, investors concerned about corruption are likely to use the CPI as their metric.

Another explanation is that a given operating environment could affect a global multinational corporation differently than a local entrepreneur. For example, in Russia the operating environment is not the same for all



and whether a company is targeted can depend on informal networks (see for example Aidis and Adachi (2007)). Sometimes foreigners are targeted more and sometimes not. Billon and Gillanders (2014) show that firms with more foreign ownership do indeed face a statistically significantly lower burden of corruption in that they pay less in bribes and tend to find corruption to be less of a constraint to their operations. However, the sizes of these effects are not very large and are only evident in a sample of Eastern European and Central Asian economies. Thus, we tend to favour the first explanation though the two are not mutually exclusive.

### **4.3 Controls**

Having uncovered this simple relationship, we now show that it is still evident when we include several important factors commonly used in the empirical FDI literature. We allow for trade costs to enter the specification as proxied for by the inverse of openness to international trade.<sup>7</sup> To control for market size and development we include a population variable and income category dummies from the World Bank.<sup>8</sup> We follow the literature (e.g. Blonigen et al. (2007)) and include the sum of distance weighted GDP of other countries to measure surrounding market potential. In line with Carr, Markusen and Maskus (2001) we control for the skill level in a country by using data on expected years of schooling. Finally we include dummies for landlocked and island nations to allow for potentially important geographical considerations. All variables are defined fully in Table A1 in the Appendix.

Tables 3 and 4 present the results using CPI and CC respectively. These factors are signed as one would expect. Poorer countries tend to attract less in FDI than richer countries while countries with larger populations attract more, as do those with a more skilled work force and a larger surrounding market potential, though this later factor is not robustly significant. Trade costs are always a significant and negative correlate of FDI as is being landlocked while the island dummy is never significant. While the magnitude of

the relationships between corruption and FDI are smaller than those in Table 2 they are still sizable and slightly stronger in terms of statistical significance.

Overall, we can conclude that the our main result, that perceptions of corruption matter for FDI while the experience of corruption does not, is robust to the inclusion of standard FDI controls. In the future it will become possible, and desirable, to revisit this question armed with the full arsenal of panel data techniques. However even these simple correlations that are robust to the inclusion of other important factors tell a story that should be of great interest to policymakers. Countries that wish to attract more FDI should, according to these results, focus on improving their ratings on perceptions of corruption measures and not on reducing the reality of corruption as firms experience it (though this is a worthy goal for other reasons and in and of itself). However, we want to stress that this relationship may change as experience based measures become more well-known.

**<TABLE 3 HERE>**

**<TABLE 4 HERE>**

#### **4.4 Are Greenfield and M&A Investment Different?**

One can readily imagine that different modes of investment may stand in different relation to different measures of corruption. Foreign investors can enter a market through buying equity shares in a domestic company (mergers and acquisitions or M&A investment) or build their operations from zero (greenfield investment). There are many reasons that could lead investors to favour one method of investing over the other. For example, building new operations from zero in a foreign country can entail more risk than acquiring an already locally established company (Dikova and Witteloostuijn 2007). Another possible factor is that more R&D intensive companies may prefer to use greenfield investment which can reduce the likelihood of their innovations being transmitted unintentionally.

In this section, we investigate whether the importance of experience based measures of corruption and perception based measures change with the mode of investment (greenfield or M&A). To measure these quantities, we use the net inflows of greenfield and M&A investment variables from UNCTAD. Globerman and Shapiro (2005) have also used UNCTAD data to study cross-border M&A investment and conclude that factors that are found to be influencing the overall levels of FDI inflows into a country might not have the same effect on all modes of investment. Neto, Brandão and Cerqueira (2010) have also used the same data for comparison of greenfield and M&A investment and they find that there are some mode-specific macroeconomic variables. They find for example that good governance (measured with WGI indicators) is significant for both modes of establishment but that cultural distance is only important for greenfield investment. Furthermore, Ayça (2012) has used firm-level data on Swedish MNCs and found that perceptions based measures of corruption have a negative effect on greenfield investment and a weak positive effect on M&A investment but that the effect of corruption is alleviated by the company's international experience.

Tables 5 and 6 present the results of regressions using the net value of greenfield and M&A investment as dependent variables with all the controls used in tables 3 and 4. When we exclude the experience measures, the CPI is a significant correlate of both types of FDI and this is also true for the most part when we include *Depth* and *Gifts*. However, *Constraint* is significantly correlated with greenfield investments though not with M&A investment. When *Constraint* is included perceptions no longer have a significant association with greenfield investment. These results could arise from a tendency for firms engaging in greenfield investment to investigate the local situation more carefully for themselves as they do not have the help of already established networks and facilities that come with a company already in operation. Investors in a greenfield project will most likely need to assess the local risks more carefully anyway as this form of investment is in

itself already more risky than M&A. Given that we do not find any significant associations with the other experience measures, it may be the case that bribery is not seen as a problem, or a constraint, per se.

**<TABLE 5 HERE>**

**<TABLE 6 HERE>**

Thus we have some evidence that the two modes of investment are different from each other with regards to their association with corruption indicators. While M&A responds to perceptions of corruption, greenfield may be driven more by the actual degree to which corruption is a hindrance to firms on the ground. Once again this has some interesting implications for policymakers as there may be some role for actual improvements in corruption to play a role. Countries that make corruption less of an obstacle for firms may see some additional greenfield FDI even if the perception of corruption in their country remains unchanged.

## **5 CONCLUSIONS**

This paper has shown that perceptions of corruption in a country can differ substantially from firms' experiences of corruption and, as things stand now, it is perceptions that seem to be associated with the amount of FDI that a country attracts in general. While others have shown that improvements in perceptions matter, we add a new dimension to the policy prescription by showing that improving the reality of corruption, holding perceptions constant, does not seem to be related to any benefit in terms of overall FDI. However, we did find some evidence that reality may dominate perceptions when it comes to greenfield investment. We do not consider here whether the experience on the ground has any effect on perceptions measures as this is an important question that warrants a full and careful analysis. However, we have seen that the two concepts are not very strongly correlated and Treisman (2007) has shown that the two are correlated with different factors.

As experience based measures become more well-known and expand in their country coverage these relationships may change but for now our findings imply that governments interested in attracting FDI would do well to improve their standing with regards to perceptions based measures like the Corruption Perceptions Index even if this improvement is not associated with an improvement in the reality of corruption. It will be interesting to revisit these issues again in the future not only due to the fact that the relationships may change but also because the continuation of the Enterprise Surveys over time will allow one to employ methods that can help to make strong arguments for causality.

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World Bank Worldwide Governance Indicators Dataset (2014)

available from: <http://data.worldbank.org/data-catalog/worldwide-governance-indicators>

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## Endnotes

<sup>1</sup> The CPI score was changed to range from a scale of 0-100 in 2012, but for the purposes of this study we converted the 2012 and 2013 scores to the previous 0 to10 scale.

<sup>2</sup> [http://cpi.transparency.org/cpi2013/in\\_detail/](http://cpi.transparency.org/cpi2013/in_detail/).

<sup>3</sup> See <http://www.enterprisesurveys.org/Methodology> for the full methodology.

<sup>4</sup> The quadrants on the maps show the most recent observation and a country is included in the map only if there were both the survey and perception measures available for the same year.

<sup>5</sup> Our results are robust to using net inflow of FDI per capita as the dependent variable.

<sup>6</sup> These results are robust and even slightly stronger when using alternative FDI inflow data from World Bank Development Indicators (WDI).

<sup>7</sup> Using the trade component of the Doing Business project as our measure of trade costs as is done in Corcoran and Gillanders (forthcoming) does not change the results.

<sup>8</sup> See <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>.

**TABLE 1: SUMMARY STATISTICS OF KEY VARIABLES**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
Log (Net FDI Inflow)	218	6.444386	2.07377	-3.486542	11.54239	United Nations Conference on Trade and Development (UNCTAD)
Log (Value of Greenfield Investment)	178	7.002563	1.954534	-0.1371105	11.21719	United Nations Conference on Trade and Development (UNCTAD)
Log (Value of Crossborder M&A sales)	138	5.09026	2.58637	-0.87707	10.7685	United Nations Conference on Trade and Development (UNCTAD)
<b>Perceptions of Corruption</b>						
Corruption Perceptions Index (0 - 10)	214	3.385981	1.333705	1.5	8.2	Transparency International
Control of Corruption (-2.5 - 2.5)	228	-0.332463	0.7109995	-1.623821	1.861744	World Bank Worldwide Governance Indicators (WGI)
<b>Experience Based Measures of Corruption</b>						
Percent of firms identifying corruption as a major constraint	235	33.3183	19.74747	0	83.7	Enterprise Surveys (World Bank and IFC)
Bribery depth (percent of public transactions where a gift or informal payment was requested)	165	14.89879	14.81908	0	65.2	Enterprise Surveys (World Bank and IFC)
Percent of firms expected to give gifts to public officials "to get things done"	230	30.55174	21.97043	0	87	Enterprise Surveys (World Bank and IFC)

**TABLE 2: KEY RESULTS**

	Dependent Variable: Natural Log of Net FDI Inflows										
	1	2	3	4	5	6	7	8	9	10	11
Constant	5.201*** (0.357)	6.644*** (0.156)	6.479*** (0.287)	6.309*** (0.239)	6.793*** (0.255)	4.654*** (0.565)	5.581*** (0.606)	5.860*** (0.490)	6.425*** (0.284)	6.309*** (0.240)	6.739*** (0.257)
Corruption Perceptions Index (0 - 10)	0.432*** (0.0977)					0.492*** (0.109)	0.276* (0.149)	0.316*** (0.105)			
Control of Corruption (-2.5 - 2.5)		0.580*** (0.204)							0.657*** (0.230)	0.0686 (0.295)	0.390* (0.224)
Percent of firms identifying corruption as a major constraint			-0.00104 (0.00687)			0.0104 (0.00763)			0.00744 (0.00765)		
Bribery Depth				-0.00354 (0.00894)			-0.00115 (0.00990)				-0.00181 (0.0109)
Percent of firms expected to give gifts to public officials "to get things done"					-0.0126* (0.00646)			-0.00934 (0.00657)			-0.00637 (0.00720)
R <sup>2</sup>	0.075	0.033	-0.005	-0.006	0.014	0.079	0.015	0.060	0.033	-0.013	0.021
N	199	218	218	149	214	199	136	195	218	149	214

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors in parentheses.

**TABLE 3: ADDITIONAL CONTROLS WITH CPI AS PERCEPTIONS MEASURE**

	Dependent Variable: Natural Log of Net FDI Inflows								
	1	2	3	4	5	6	7	8	9
Constant	-19.03*** (4.357)	-17.48*** (4.850)	-19.89*** (4.702)	-16.34*** (5.970)	-17.87*** (5.938)	-17.51*** (4.953)	-18.50*** (4.711)	-19.42*** (5.012)	-17.88*** (6.015)
Corruption Perceptions Index (0 - 10)	0.219*** (0.0611)		0.242*** (0.0631)		0.206** (0.0972)		0.202** (0.0785)	0.225*** (0.0778)	0.207* (0.105)
Percent of firms identifying corruption as a major constraint		-0.00229 (0.00441)	0.00370 (0.00457)					0.00399 (0.00461)	0.000282 (0.00524)
Bribery Depth				-0.00159 (0.00672)	0.00165 (0.00733)				0.00162 (0.00733)
Percent of firms expected to give gifts to public officials "to get things done"						-0.00718* (0.00405)	-0.00407 (0.00456)	-0.00429 (0.00472)	
Natural Log of Inverse Openness	-0.751*** (0.285)	-0.682** (0.288)	-0.772** (0.300)	-0.674** (0.339)	-0.733** (0.345)	-0.762** (0.343)	-0.824** (0.345)	-0.848** (0.362)	-0.736** (0.368)
Natural Log of Population	0.967*** (0.0673)	0.907*** (0.0651)	0.973*** (0.0698)	0.890*** (0.0809)	0.956*** (0.0894)	0.923*** (0.0718)	0.983*** (0.0754)	0.989*** (0.0777)	0.957*** (0.0947)
Natural Log of Surrounding Market Potential	0.340* (0.180)	0.332 (0.203)	0.369* (0.187)	0.293 (0.259)	0.279 (0.245)	0.351* (0.212)	0.325* (0.194)	0.358 (0.201)	0.280 (0.246)
Natural Log of Skill Level	1.012** (0.449)	1.233*** (0.446)	0.955** (0.450)	1.247** (0.521)	1.208** (0.535)	1.017** (0.461)	0.911* (0.465)	0.847* (0.473)	1.200* (0.542)
Low Income Dummy	-1.853*** (0.327)	-2.054*** (0.324)	-1.852*** (0.330)	-2.059*** (0.392)	-1.841*** (0.399)	-2.023*** (0.332)	-1.866*** (0.340)	-1.863*** (0.343)	-1.842*** (0.406)
Lower Middle Income Dummy	-0.853*** (0.219)	-1.078*** (0.202)	-0.866*** (0.221)	-1.131*** (0.251)	-0.900*** (0.283)	-1.083*** (0.214)	-0.886*** (0.234)	-0.900*** (0.236)	-0.901*** (0.285)
Landlocked Dummy	-0.584*** (0.215)	-0.701*** (0.206)	-0.538*** (0.203)	-0.710*** (0.261)	-0.656** (0.264)	-0.674*** (0.216)	-0.593*** (0.221)	-0.544*** (0.206)	-0.653*** (0.246)
Island Dummy	-0.218 (0.292)	0.0572 (0.407)	-0.190 (0.281)	0.00146 (0.416)	-0.297 (0.302)	-0.00880 (0.430)	-0.291 (0.308)	-0.264 (0.295)	-0.295 (0.307)
R <sup>2</sup>	0.738	0.719	0.738	0.686	0.699	0.713	0.727	0.727	0.697
N	151	153	151	117	115	150	148	148	115

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors in parentheses.

**TABLE 4: ADDITIONAL CONTROLS WITH CC AS PERCEPTIONS MEASURE**

	Dependent Variable: Natural Log of Net FDI Inflows									
	1	2	3	4	5	6	7	8	9	
Constant	-18.42*** (4.216)	-17.48*** (4.850)	-19.30*** (4.577)	-16.34*** (5.970)	-19.47*** (6.099)	-17.51*** (4.953)	-18.09*** (4.523)	-18.99*** (4.852)	-19.54*** (6.255)	
Control of Corruption (-2.5 - 2.5)	0.518*** (0.133)		0.569*** (0.147)		0.579** (0.230)		0.516*** (0.154)	0.565*** (0.164)	0.590** (0.269)	
Percent of firms identifying corruption as a major constraint		-0.00229 (0.00441)	0.00417 (0.00471)					0.00424 (0.00473)	0.000881 (0.00575)	
Bribery Depth				-0.00159 (0.00672)	0.00695 (0.00755)				0.00691 (0.00755)	
Percent of firms expected to give gifts to public officials "to get things done"						-0.00718* (0.00405)	-0.00192 (0.00421)	-0.00204 (0.00434)		
Natural Log of Inverse Openness	-0.761*** (0.288)	-0.682** (0.288)	-0.789** (0.307)	-0.674** (0.339)	-0.718** (0.336)	-0.762** (0.343)	-0.821** (0.340)	-0.848** (0.361)	-0.725* (0.366)	
Natural Log of Population	0.969*** (0.0674)	0.907*** (0.0651)	0.978*** (0.0721)	0.890*** (0.0809)	0.951*** (0.0877)	0.923*** (0.0718)	0.985*** (0.0759)	0.993*** (0.0805)	0.953*** (0.0964)	
Natural Log of Surrounding Market Potential	0.351** (0.175)	0.332 (0.203)	0.383** (0.183)	0.293 (0.259)	0.388 (0.251)	0.351* (0.212)	0.337* (0.189)	0.370* (0.196)	0.390 (0.255)	
Natural Log of Skill Level	1.017** (0.432)	1.233*** (0.446)	0.965** (0.441)	1.247** (0.521)	1.228** (0.522)	1.017** (0.461)	0.947** (0.456)	0.892* (0.469)	1.205** (0.537)	
Low Income Dummy	-1.811*** (0.318)	-2.054*** (0.324)	-1.805*** (0.319)	-2.059*** (0.392)	-1.807*** (0.379)	-2.023*** (0.332)	-1.829*** (0.331)	-1.823*** (0.332)	-1.809*** (0.385)	
Lower Middle Income Dummy	-0.840*** (0.222)	-1.078*** (0.202)	-0.854*** (0.223)	-1.131*** (0.251)	-0.892** (0.285)	-1.083*** (0.214)	-0.868*** (0.235)	-0.882*** (0.236)	-0.896*** (0.285)	
Landlocked Dummy	-0.613*** (0.207)	-0.701*** (0.206)	-0.564*** (0.192)	-0.710*** (0.261)	-0.693*** (0.261)	-0.674*** (0.216)	-0.616*** (0.210)	-0.566*** (0.194)	-0.682*** (0.236)	
Island Dummy	0.0261 (0.348)	0.0572 (0.407)	0.0600 (0.344)	0.00146 (0.416)	-0.0423 (0.330)	-0.00880 (0.430)	-0.00328 (0.365)	0.0304 (0.361)	-0.0326 (0.335)	
R <sup>2</sup>	0.740	0.719	0.740	0.686	0.702	0.713	0.728	0.728	0.699	
N	153	153	153	117	117	150	150	150	117	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors in parentheses.

**TABLE 5: GREENFIELD INVESTMENTS AS THE DEPENDENT VARIABLE**

	Dependent Variable: Natural Log of Value of Greenfield Investments								
	1	2	3	4	5	6	7	8	9
Constant	-20.21*** (5.086)	-16.82*** (5.410)	-16.36*** (5.662)	-18.99*** (5.948)	-20.45*** (6.448)	-21.61*** (5.262)	-21.20*** (5.241)	-17.36*** (5.878)	-17.84** (7.023)
Corruption Perceptions Index (0 - 10)	0.153** (0.0643)		0.0552 (0.0694)		0.250** (0.0968)		0.192** (0.0856)	0.0882 (0.0937)	0.123 (0.104)
Percent of firms identifying corruption as a major constraint		-0.0169*** (0.00491)	-0.0144*** (0.00529)					-0.0141** (0.00542)	-0.0171*** (0.00640)
Bribery Depth				0.00285 (0.00783)	0.0101 (0.00850)				0.0110 (0.00783)
Percent of firms expected to give gifts to public officials "to get things done"						-0.00105 (0.00570)	0.00243 (0.00660)	0.00138 (0.00640)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.625	0.659	0.643	0.596	0.594	0.621	0.617	0.635	0.618
N	150	152	150	115	113	148	146	146	113

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors in parentheses. All specifications include the additional controls from Table 3.

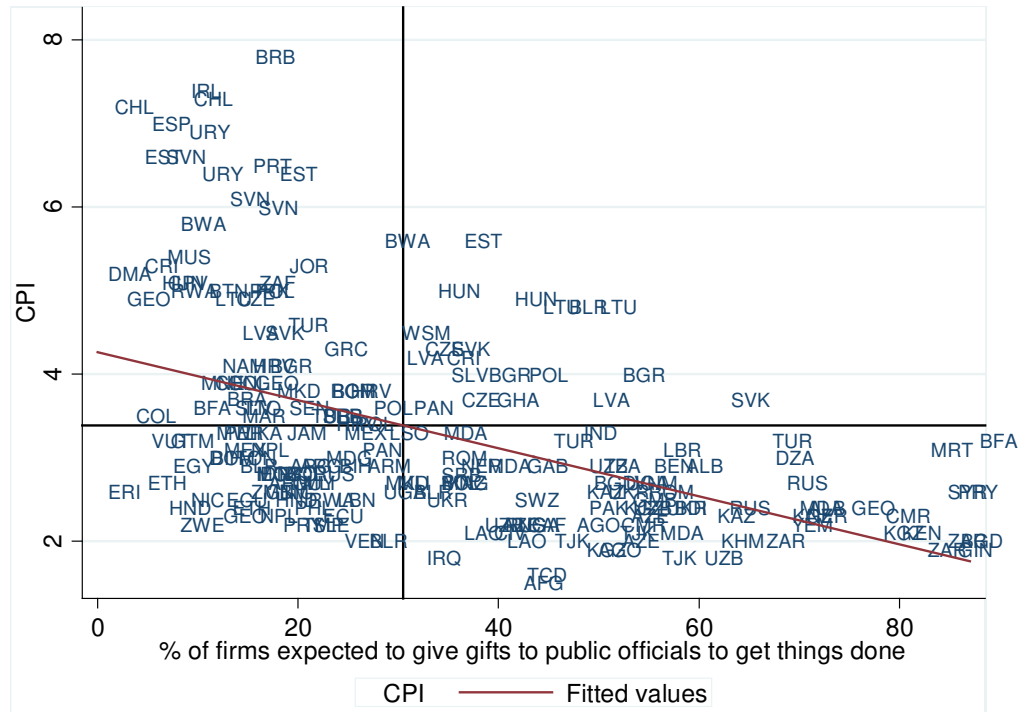
**TABLE 6: CROSS-BORDER M&A SALES AS THE DEPENDENT VARIABLE**

	Dependent Variable: Natural Log of Value of Crossborder M&A sales									
	1	2	3	4	5	6	7	8	9	
Constant	-28.47*** (10.24)	-23.23** (10.83)	-28.92** (11.28)	-17.94 (13.06)	-19.89 (14.13)	-27.74*** (10.40)	-30.11*** (11.10)	-30.44** (12.13)	-20.08 (14.71)	
Corruption Perceptions Index (0 - 10)	0.496*** (0.168)		0.506*** (0.187)		0.363 (0.234)		0.585*** (0.194)	0.592*** (0.213)	0.371 (0.260)	
Percent of firms identifying corruption as a major constraint		-0.0170 (0.0123)	0.00178 (0.0128)					0.00128 (0.0129)	0.00149 (0.0167)	
Bribery Depth				-0.00323 (0.0201)	0.00228 (0.0212)					0.00171 (0.0226)
Percent of firms expected to give gifts to public officials "to get things done"						0.0137* (0.0129)	0.0249* (0.0145)	0.0248 (0.0146)		
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.470	0.431	0.464	0.328	0.344	0.404	0.454	0.448	0.333	
N	105	107	105	75	73	104	102	102	73	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors in parentheses. All specifications include the additional controls from Table 3.



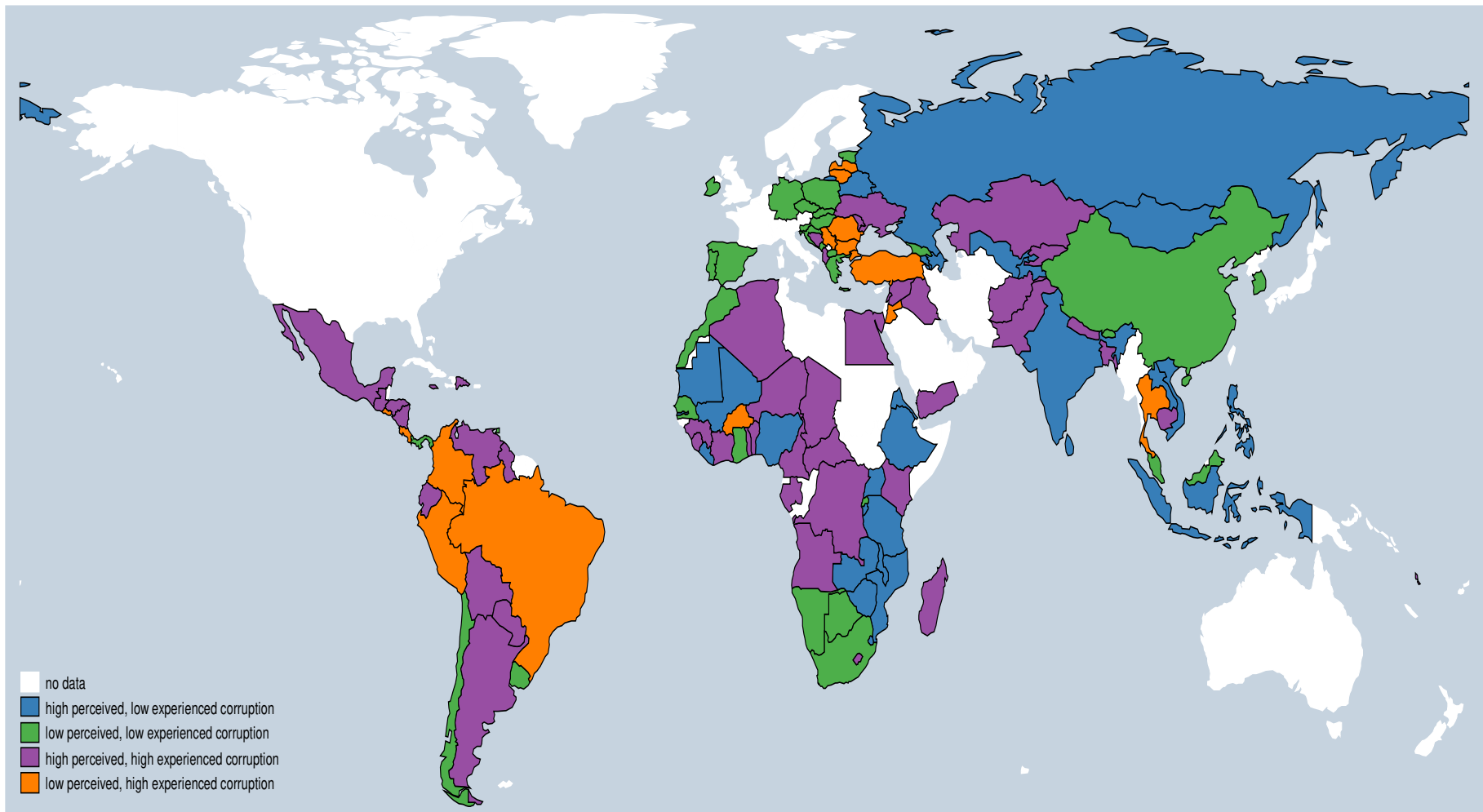




**FIGURE 2: FIRMS EXPECTED TO GIVE GIFTS TO “GET THINGS DONE”**

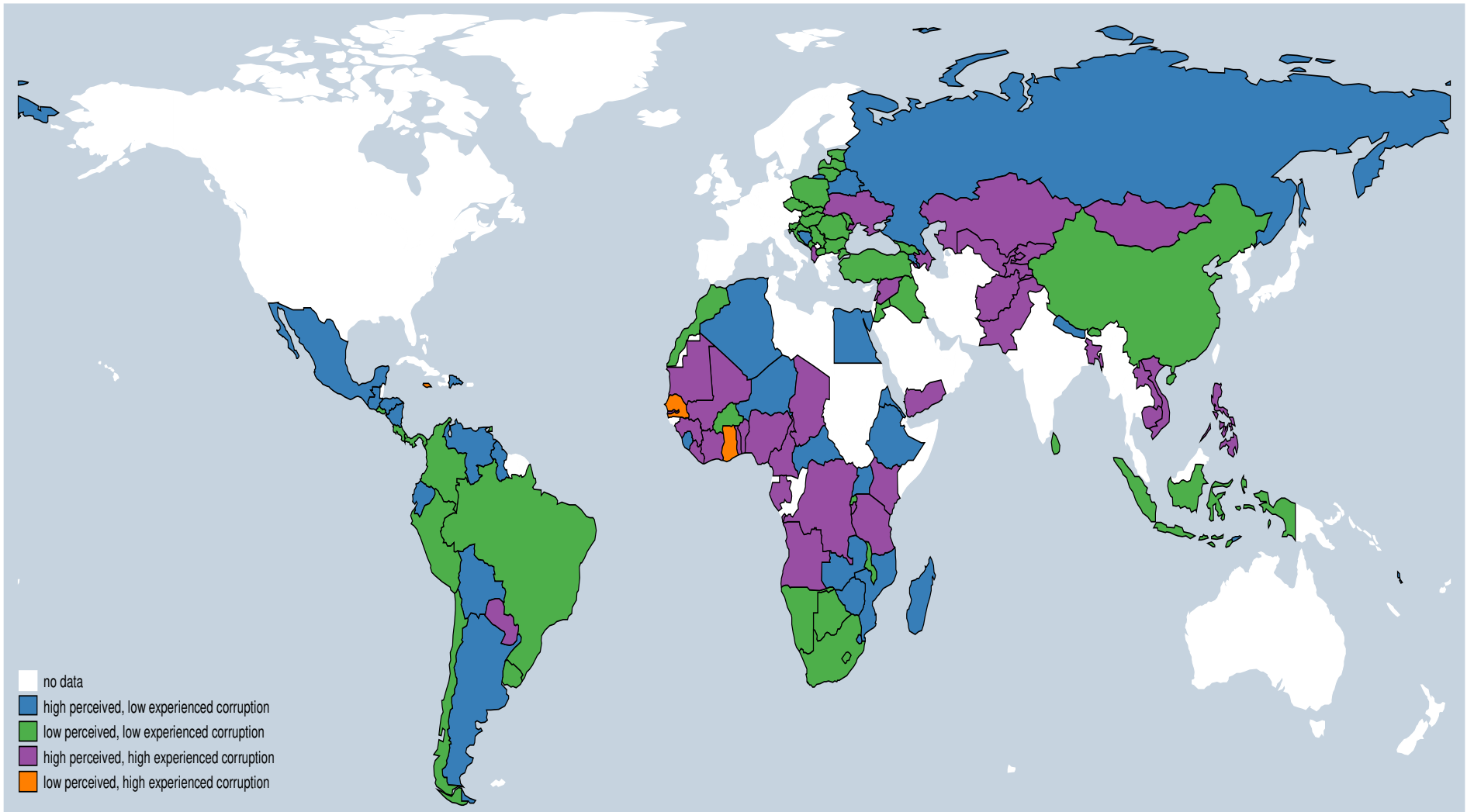
Experienced corruption (x-axis) increases to the right, while perceived corruption (y-axis) increases downwards





**FIGURE 4: CPI VERSUS PERCENT OF FIRMS IDENTIFYING CORRUPTION AS A MAJOR CONSTRAINT**





**FIGURE 6: CPI VERSUS BRIBERY DEPTH**

## APPENDIX

**TABLE A1: DESCRIPTION OF MAIN VARIABLES**

Variable	Description	Source
<b>Dependent variables</b>		
Log (Net FDI Inflow)	Natural logarithm of foreign direct investment, net inflows (BoP, constant 2005 US\$)	UNCTAD
Log (Value of Greenfield Investment)	Natural logarithm of the value of greenfield investments (new investments built from zero), net (constant 2005 US\$)	UNCTAD
Log (Value of Crossborder M&A sales)	Natural logarithm of the value of merger and acquisitions sales, net sales (constant 2005 US\$)	UNCTAD
<b>Controls</b>		
Log (GDP)	Natural logarithm of GDP (BoP, constant 2005 US\$)	WDI
Imports	Imports of goods and services (BoP, constant 2005 US\$)	WDI
Exports	Exports of goods and services (BoP, constant 2005 US\$)	WDI
Log (Population)	Natural logarithm of population	WDI
Log (Skill Level)	Natural logarithm of expected years of schooling	UNDP
Log(Inverse of Openness)	log(GDP/Import+Exports), (BoP, constant 2005 US\$)	Constructed
Log(Surrounding Market Potential)	Natural logarithm of distance weighted sum of global GDPs	Constructed
Landlocked Dummy	1 if country is land locked, 0 otherwise	CEPII
Island Dummy	1 if country is an island, 0 otherwise	Constructed
Low Income Dummy	1 if country is classified as low income (GNI per capita 1 035 US\$ or less), 0 otherwise	World Bank, constructed
Lower Middle Income Dummy	1 if country is classified as lower middle income (GNI per capita from 1 036 to 4 085 US\$), 0 otherwise	World Bank, constructed
<b>Perceptions of Corruption</b>		
CPI	Corruption Perceptions Index, ranges from 0 (highly corrupt) to 10 (highly clean)*	Transparency International
Control of Corruption	Perceptions of government corruption, ranging from -2.5 (very corrupt) to 2.5 (very little or no corruption)	World Bank Worldwide Governance Indicators (WGI)
<b>Experience Based Measures of Corruption</b>		
Bribery depth (percent of public transactions where a gift or informal payment was requested)		Enterprise Surveys (World Bank and IFC)
Percent of firms expected to give gifts to public officials "to get things done"		Enterprise Surveys (World Bank and IFC)
Percent of firms identifying corruption as a major constraint		Enterprise Surveys (World Bank and IFC)