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by

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**Deciding where to invest in the developing world:  
Determinants of FDI Flows**

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**Deciding where to invest in the developing world:  
Determinants of FDI Flows**

**by**

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**Report**

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## **Abstract**

### **Deciding where to invest in the developing world: Determinants of FDI Flows**

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The relationship between the type of political regime and foreign direct investments has been widely studied. The large number of studies have explored different elements of the FDI and regime type link, but little consensus has emerged on the overall relationship. In this paper I conduct the first elite level experiment of how political regimes shape investment decisions. By using an original sample of investment analysts from one of the top investment firms in the world I find that the political regime has a significant and substantive effect on investor decisions on whether or not to invest on a foreign country. This finding is robust under varying levels of property rights, capital controls, judicial independence, and economic conditions. I also find that the effect of political regimes is strengthened when the protection of property rights fall. This indicates that regime type plays an instrumental role in investors' decision making process. The results point towards a need to better understand why political regimes matter to attract investment flows.

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## **1. Introduction**

Previous work on the relationship between foreign direct investment (FDI) flows and political regimes have either tested specific mechanisms such as the impact of democracy on political risk, or have revolved around empirical analysis of aggregate FDI stocks and flows. While these former studies have allowed us to understand the causal impact of regimes on some of the mechanisms linking democracy and FDI, the later studies have failed to come to a consensus on how important political regimes are to the aggregate relationship. To address this issue I implement an experiment on a sample of investment analysts. The sample is composed of subjects that work at one of the top ten investment firms in the world. Each subject handles, on average, funds worth fifty billion dollars, and makes investment assessments, both at a national and international level, with regularity. The study is unique in having access to experiment on such an elite and relevant sample. Focusing on elites making cross-national investment decisions leads to a high degree of external validity for this study, and the experimental research designs holds a strong degree of internal validity. I find that political regimes influence FDI flows, and that its effect is strengthened by weak property rights in recipient countries.

For the experiment, I use a conjoint analysis to tease out the effect of democracies on the decision making process of individual investors. Conjoint experiments have been more common in the field of marketing, but they have gained popularity in political science. They are particularly well suited for this study because they allow one to randomize across several attributes without needing an exceedingly large sample to do inferential analysis. After randomizing across attributes and individuals, it is straightforward to obtain the unconditional effect of any one attribute on the decision

making process of the subject pool. For example, I estimate the unconditional effect of the political regime on investment decisions. I also estimate the unconditional effect of property rights on investment decisions. In other words, I isolate the effect of political regimes from associated mechanisms that are believed to carry the blunt of the variable's explanatory power. This allows me to establish a causal relation between regime type and FDI flows, while taking into account mechanisms that could potentially muddle up the connection.

There are strong theoretical arguments both in favor and against the positive relation between FDI and political regimes without clear theoretical predictions on the overall impact. Using an experimental approach, I find that political regimes have a strong unconditional effect on investment decisions. Investors care about the political regime more than they care about capital controls or the existence of BITs in recipient countries. In addition, contrary to what empirical analysis has found, regime type weights as much as property rights in the decision-making process of investors. This result helps adjudicate the debate on whether regime type is a determinant of FDI flows or not. I also find that the effect of regime type is strengthened in low property rights contexts. This indicates that investors use political regimes in an instrumental way to maximize the expected return of the investment.

The findings have important implications for the field. By using an experiment I make a strong case for the causal relationship between FDI flows and political regimes. This speaks directly to the branch of the field that has found evidence in the same line of thought. More broadly, it hints at a need to once again bring political regimes to the forefront of the study of FDI determinants. However, it also suggests that investors use political regimes in an instrumental way. Work must be done to understand what elements

of regimes, besides the usual suspects, account for this effect. Rather than a call to go back to the analysis of aggregate accounts, this points towards a greater need to use fine-grained data to test our hypothesis. This goes in line with the conclusions reached by Pandya (2016).

The rest of the paper is as follows: Section 2 presents an overview on the theory on how regime types and FDI flows are related; section 3 presents the research design; section 4 describes the subject sample and the results of the analysis; and section 5 concludes.

## **2. Political regimes and FDI flows: an uncertain relationship**

There are many reasons to believe that regime type influences investment decisions. At the most fundamental level, democracies are believed to possess institutions highly valued by investors. For example, Barro (1996) attributes the positive effect that democracies have on growth on the rule of law, among other factors. In the same vein, regime type is thought to have a direct effect on FDI flows. Democratic governments have more constraints and are subject to domestic audience costs, which should make their commitments more credible. In addition, it could be argued that democracies have a freer (and thus competitive) labor market, are ideologically closer to the country of origin of investors, and present lower levels of political uncertainty. Then, it is unsurprising that many studies have shown that political regimes have an effect on FDI flows, even after controlling for rule of law<sup>1</sup>.

Nevertheless, the main theoretical candidate to explain why democracies should affect FDI flows remains the rule of law and how this protects the private property of foreign investors. Setting bilateral investment treaties (BITs) aside, there is no formal way to settle conflicts that arise between foreign investors and host countries at an international level (Jensen et al 2012). Thus, if presented with two countries, identical in all but their respect for private property, investors will choose the one with a higher level of property rights. The only way a country with low level of property rights would be selected is if it offered a higher rate of return. In other words, the price of investment is higher, which lowers the aggregate level of FDI a country would receive. From a rational point of view,

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<sup>1</sup> For excellent examples see Jensen (2003), Jensen (2008), Pandya (2014), or Kerner (2014).

the existence of property rights should weight more than concerns about ideology, labor quality, or political uncertainty in the minds of investors. Li and Resnick (2003) not only find that, indeed, property rights matter, but, that once they are accounted for, political regimes play no role in investment decisions. This conclusion, surprising when contrasted with the previous discussion, has been found in other studies<sup>2</sup>.

The findings of Li and Resnick pushed the field towards thinking of other intermediating mechanisms that can account for the effect of political regimes. For example, democracies may offer more economic freedoms than autocracies. Lower tax rates, ease of doing business, and freedom of capital movement can all be considered as important for investors<sup>3</sup>. Others have turned their attention to BITs and their role of isolating investment risks from national courts. As democracies are more likely to sign this type of agreement, they will attract higher levels of investment (Neumayer and Spess 2005)<sup>4</sup>. Other possible mechanisms are the level of corruption, respect for human rights, and close relations with other democracies, among others. To further muddle up findings on the topic, there is evidence that political regimes continue to matter even after controlling for all of these intermediating mechanisms (Biglaiser and Staats 2010).

The increased attention to mechanisms naturally leads to intermediating variables that have a negative effect on FDI flows. Democracies may have strict anti-trust regulations, favor domestic firms over international firms, yield more frequently to popular pressure, have less generous tax incentives, and in some cases offer less economic

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<sup>2</sup> Biglaiser and DeRouen (2006) find the same results for Latin America, and Ali, Fiess, and MacDonald (2010) reach a similar conclusion when analyzing investment data at a sectorial level.

<sup>3</sup> See Baccini, Li, and Merkina (2014), Corcoran and Gillanders (2015), and Asiedu and Lien (2004) for discussions on each element respectively.

<sup>4</sup> Whether BITs are effective or not is a matter of discussion, see Sauvart and Sachs (2009) for more on the matter.

freedoms (Li, Mitchell, and Owen 2017)<sup>5</sup>. This line of reasoning brings theories on how regime type affects FDI flows full circle. Now it is argued that autocrats can commit with more credibility than democracies, and thus enjoy higher levels of foreign investment. The question becomes whether, on the net, the effect becomes negative or positive. As has been previously discussed, there is evidence that the effect is positive. But there is also evidence that the aggregate effect is negative<sup>6</sup>. And, it has also been argued that there is no aggregate effect (Montero 2008) or that it depends on the sector (Douglas and Jepsen 2014). Clearly then, the views on how regime type and FDI flows interact are not clear.

Researchers have tried to disentangle this web by using advanced statistical analysis and exploiting novel sources of data. However, regime type and its intermediating mechanisms are hard concepts to measure, and somewhat surprisingly, so are FDI flows. It has been shown that how FDI is measured has a strong effect on the relationship it has with regime type (Kerner 2014)<sup>7</sup>. FDI flows can be measured as a yearly change, a stock, a ratio with respect to production, and a level variable. It can also vary on what is understood as FDI, for example, are re-invested utilities part of the FDI flow or are they conceptually different? The selection of the dependent variable can have implications on the consistency of the results on the topic. Analysis has also turned towards the use of lagged values of the independent and dependent variables to better understand the dynamics of the relation. However, lagged dependent variables can bias the results (Achen 2000) while lagged independent variables do not necessarily lead to clean cut causality (Bellemare, Massaki, and Pepinsky 2015).

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<sup>5</sup> Also see Manthur and Sing (2013), Li and Resnick (2003), Zcheng (2011), and O'Donnell (1998) for more detailed discussions on these factors.

<sup>6</sup> See Tuman et al (2004) or Mathur and Singh (2013)

<sup>7</sup> Douglas and Jepsen (2014) find similar issues with how investment is measured in the model.

Novel methods of causal inference can complement this rich body of research. Baccini, Li and Mirkina (2016) appear to move in this direction by using synthetic controls to evaluate the impact of tax controls on FDI flows. This kind of controlled exercises may have a lower degree of external validity, but make a strong case for adjudicating hard to answer cases, such as the present one. In this paper I implement an experiment to tease out the relationship between political regimes and investment decisions. This type of analysis is not only novel, it also complements past and ongoing work on the topic.

By isolating the regime type from institutions that serve as intervening mechanisms, we can analyze if the regime itself matters or not. Three possible situations present themselves. On one hand, the effect may be undistinguishable from zero. This may happen either because the regime type does not matter, or because its positive and negative effects cancel each other. This result would be the least analytical useful of the three. Alternatively, it can be found that there is a relation between democratic regimes and FDI flows. This finding would lead future research towards analyzing why the effect is positive or negative. Finally, since most intervening mechanisms are theorized to have a positive effect, the isolated regime will carry only its own weight and whatever negative unobservable mechanisms there are. Thus, if the effect is positive, it means that it is strong enough to counter the negative pull of other factors. In that case, it becomes important to understand whether the positive effect is due to ideological diffusion patterns or due to more immediate advantages granted by the regime type.

Ideological patterns refer to the notion that ideas matter when explaining patterns of globalization (Quinn and Toyoda 2007). Investors may be attracted to democratic ideals such as the respect for human and civil rights. This may be due to a purely ideological reasoning, or as a response to pressures from the popular base in their own domestic

markets. Alternatively, a democratic regime may provide more concrete advantages to foreign investors. Democracies have more constraints which would translate to a more stable investment environment. Similarly, they present more access points to influence policy for international investors. Under this second line of thought, the isolated effect of regime types is due to instrumental profit oriented reasons.

An indirect way of testing which of these holds is by observing how investors act under different regime types when property rights are also changing. If investors care about the ideological fundamentals of regime types, investment flows towards democracies should exceed that of autocracies, no matter the level of property rights in a country. Alternatively, if regime type holds instrumental value for investors, there should be variation across both the level of property rights and regime type. If property rights are high, and the ideological fundamentals of democracies do not matter, investment flows should not vary between autocracies and democracies. Following the same line of thought, when property rights are low, democracies should receive higher levels of investment, since investors would turn to regime type as a way of safeguarding their investment. This could take the shape a more stable economic environment or more access points to influence policy, for example.

Given the previous discussion, I the aim to test two hypotheses:

1. Investors will be more attracted to a country when said country operate under a democratic regime.
2. The effect of the political regime will be stronger when property rights are low in a country.

The first hypothesis deals with the isolated effect of political regimes on investment decisions. By using an experimental design I isolate the regime type from many of the

common intervening mechanisms considered in the field. The second hypothesis is an indirect test of the mechanism through which these effect takes place. Using an interaction between the effect of property rights and political regime, I look to determine if democratic regimes matter due to ideological reasons or instrumental ones. I have no prior reasoning to believe that investors will cease to be profit driven entities, so I expect that the effect of the regime type will increase under low property rights conditions, indicating an instrumental reasoning for caring about democracies.

### **3. Research Design<sup>8</sup>**

As was previously discussed, it has been hard to properly establish the relation between FDI flows and its determinants. I use an experiment on a new sample of experts to address this issue. The sample is composed of investment analysts from one of the ten biggest investment firms in the world. The firm has operations across the globe and the analysts make investment analysis and decisions as part of their daily operations. Each subject in the sample handles, on average, funds worth fifty billion dollars<sup>9</sup>. These funds are invested across sectors and across countries. Such a sample is ideal to study how international investors make decisions. By using an experiment I extract information about the investment decision making process from the subjects, without compromising confidentiality, all while controlling for potential biases in their responses.

Note that traditional experiments usually test only for one or two variables. Testing for more factors requires a larger sample than what researchers usually have at their disposal. However, the particular nature of the research question asks for a test of several attributes at the same time, while the sample is limited in size. Due to these issues, conjoint analysis presents an attractive alternative. Rather than vary the treatment per subject, in a conjoint design all subjects are presented with choice tasks where attributes vary per question. This allows researchers to test for several attributes simultaneously without needing an exceedingly large sample.

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<sup>8</sup> This study was exempted from IRB approval on October 10, 2016 under study number 2016-09-0128 by the Institutional Review Board of the University of Texas at Austin.

<sup>9</sup> Interview April 18, 2017.

Furthermore, since the value of each variable is randomized per question and per subject, the estimated effect is independent of the value of the other variables (Hainmueller et al, 2014). This is important to test whether political regimes matter for FDI flows. An experiment where only the regime type is randomized will be criticized for its low level of generalizability, since it would not account for the different scenarios under which a regime interacts with investment decisions. In addition, it would not help answer whether regime type has an effect in isolation of property rights and other institutions. In other words, by using a conjoint analysis it is possible to estimate the effect of the political regime conditioning on the distribution of the institutions and environmental factors that might muddle up any potential conclusion.

Conjoint analysis consists of asking respondents to choose among several alternatives. Each alternative is characterized by attributes that take random variables across choices, questions, and subjects. Following the discussion in section 2, I presented subjects with hypothetical countries (choices) characterized by their economic freedoms, level of property rights, whether they have signed a bilateral investment treaty (BIT), and regime type. All these are traits commonly taken as intermediating mechanisms through which democracies affect FDI flows. To further increase the validity of the task, countries are also characterized by their economic conditions.

In particular, economic freedom is represented by the level of capital controls, economic conditions by expected growth and inflation rates, and the political regime by the classification used by Freedom House (2013). The level of property rights is represented by hypothetical categorical values of low, medium, and high. Note that, as in any experiment, the treatment is limited by the subject's attention span and the sample size. While it would be more realistic to include more attributes, it is advised not to do so to

minimize the risk of the subject losing interest halfway through the treatment (Orme 2005). Similarly, an attribute cannot take on too many values without running into statistical inference issues. Thus, while a complex variable such as economic freedoms would be better represented by several complex attributes, the level of capital controls is a good enough proxy within the limitations of the experiment.

Having said that, the values for the variables were not picked without forethought. Having a BIT or not, and having being sued through the BIT or not, address the debate on if, and when, BITs matter.<sup>10</sup> The inflation rates picked, 2%, 7%, and 10% are values that can be considered low, moderate, and high rates in the context of a developing country. A value of 10% is equivalent to double digit inflation, which raises the specter of hyperinflation in people's minds<sup>11</sup>. A value of 2% is equivalent to the rate the US usually aims for, and a value of 7% is close to the average inflation rate the IMF reports for developing countries for the decade 2000-2010 (IMF 2016). The same logic applies to an economic growth rate of 1%, 3%, and 6%. In the last decade, the lowest growth rate for emerging markets was around 1% (crisis year), while the highest growth years oscillated between 6% and 7% (Didier 2016). For political regime I use the "not free", "partly free", and "free" categories from Freedom House. While much more fine grained and subtle measures abound in the field, interviews with subjects indicate they use simple aggregate measures of democracy for their judgment calls<sup>12</sup>. For the level of property rights I use "low", "mid", and "high" categories. This is a simplification of the World Bank's measure of property rights index that goes from 1 (weak) to 6 (strong). While I could have used the measure

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<sup>10</sup> See Hallward-Driemeier (2003) or Tobin and Rose-Ackerman (2011).

<sup>11</sup> This measure is so common to describe high inflation that it even has its own entry in the Cambridge Dictionary and is commonly used in news articles with negative connotation. For example see Gladstone (2013) on Iran's inflationary woes or Ant (2017) on Turkey's efforts to curb double-digit inflation.

<sup>12</sup> Interview on April 18, 2017.

itself, I would have risked subjects not being familiar with what the index entails or how to interpret it. Finally, for capital controls I once again use “low”, “mid”, and “high”. Most capital control indices are complex in nature. Miller and Kim (2015) attempt to create subjective categories, but it is not clear that investors would be familiar with their measure or agree with the categorization. Considering that, it is better to leave the interpretation of what each value entails open to subjects. Given that this is their area of expertise, and they work in the same company, the prompt more than likely will make them default to priors on what a given level of control looks like.

Two further benefits of using conjoint analysis are that it allows for a direct comparison across the importance of each attribute, as well as the creation of interaction effects between any attributes that are chosen. The former is important because it helps in identifying how important, in substantive terms, the political regime is. A significant effect that is barely different than zero would not be as interesting as a significant effect that has a strong influence on investor’s decisions. The latter is important because it helps test how the effect of regime type changes when other attributes move. For example, regime type might have a weak effect by itself, but it might become important when property rights are low.

It is also important to notice that conjoint analysis is adequate when moving several variables while having only a small sample size. According to Johnson and Orme (1996), doubling the number of tasks per subject is about as effective in increasing precision as doubling the number of respondents. In theory, a person responding a thousand choice tasks would be equivalent to a thousand persons responding one choice task each. In practice, they find that subjects can solve at least twenty choice tasks without introducing any degradation of data quality into the study.

Based on this, several rules of thumb have been proposed to determine what an adequate sample size for a conjoint experiment is.<sup>13</sup> Note, however, that highly specialized populations are more homogenous and prone to present less variance in their opinions. Furthermore, they may follow logical paths to their decision making, leading to consistent choices. As such, the sample size necessary to be able to infer results from them does not need to be as big as it would be when dealing with a general population. With this in mind, Tang et al. (2006) propose a Logical Consistency Index (HLI) that takes into account whether a sample is made up by specialists or not.

$$\frac{nta}{d.f.} \geq HLI \quad (1)$$

In the equation “n” is the sample size, “t” is the number of tasks per respondent, “a” is the number of alternatives per task, and “d.f.” is the number of coefficients estimated in the model. The denominator accounts for the complexity of the model being estimated and punishes the addition of alternatives to inflate the HLI. The authors propose a value of 100 for the HLI when dealing with specialists. In other words, if the left hand side of the equation is greater than or equal to 100, the sample size, “n”, is adequate enough for the exercise.

For this study, the sample consists of 28 highly specialized subjects out of a potential population at the financial advisory team of 50 (N)<sup>14</sup>. Each of them answered 15

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<sup>13</sup> Orme (1998) originally proposed a similar rule of thumb where the HLI equivalent has to be over 500. While still in use, it is too strict when dealing with samples of specialists. Since specialist populations are smaller in number, and with lower variance in opinions, it has been argued that a smaller HLI would suffice to study them.

<sup>14</sup> Interview April 23, 2017.

choice tasks (t)<sup>15</sup>, with a number of alternatives per choice task equal to 3 (a). In total, 12 coefficients are estimated for the attributes being tested (d.f.). Altogether, this gives an HLI of 105. This value is higher than the lower HLI bound suggested for conjoint exercises on highly specialized samples.

The conjoint exercise was applied through an online tool (Qualtrics). Subjects lacked schedule flexibility to do the experiment in one in-house round. The use of an online tool allowed them to take the experiment according to their availability. Given the small subject pool, it was necessary to prioritize responsiveness over sterile control of the environment. At the start of the experiment respondents were prompted with the following message:

*The following exercise aims to determine what are the main drivers of investment flows among specialists such as yourself. The survey consists of 15 questions where you must pick a country to invest in, and 4 short demographic questions.*

*For the exercise assume that you have narrowed the place to set up a new manufacturing plant down to three developing countries (Country 1, Country 2, and Country 3). For each question, please select the hypothetical country profile that is more attractive for you to invest in by building the new manufacturing plant.*

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<sup>15</sup> Less than the maximum of 20 that Johnson and Orme (1996) estimate subjects can reliably answer before their responses give a net loss of information to the study.

Figure 1: Example of survey choice task

In which of these countries would you establish the new manufacturing plant?

	Country 1	Country 2	Country 3
<b>Protection of property rights</b>	Low	High	Mid
<b>Capital mobility</b>	Strict capital controls	No capital controls	Strict capital controls
<b>Expected yearly growth rate for the next 10 years</b>	3%	3%	1%
<b>Expected yearly inflation rate for the next 10 years</b>	10%	10%	7%
<b>Level of democracy</b>	Partly free	Free	Free
<b>The country has a Bilateral Investment Treaty (BIT) with the US</b>	Yes	No	Yes
<b>The country has been sued in an international arbitration court</b>	Yes	No	No

Country 1

Country 2

Country 3

To avoid priming subjects with prior knowledge of a country or region, I obviate giving proper names on the experiment's prompt. Otherwise, there is a risk of biasing responses with a subject's prior belief of a particular state or region. Characterizing the investment decision as a new manufacturing plant was also done on purpose. Leaving FDI as a generic term may open the concept for different interpretations, such as utility reinvestments, buy-in on existing business (M&A), or the acquisition of easily divestible assets. A new manufacturing plant is a fixed asset that is not easily sellable and represents a strong commitment on the investor's part. Furthermore, by being new, the investment is green. Kerner (2014) argues that empirical work with FDI measures will give different

results depending on how FDI is conceptualized. By limiting the exercised to a visible green field investment I aim to circumvent the issue altogether.

Subjects were then presented with a table containing attribute information for three different hypothetical countries. Subjects were asked to select the country where they would set up the new manufacturing plant, given the information provided. Figure 1 provides an example on how such a choice task looks.

Respondents were asked a similar choice task fifteen times each. Each choice task presented three different profiles with random attribute values. The order in which they appear in the choice task was also randomized by respondent. By randomizing the order in which they appear I control for possible biases induced by the subject preferring the first positioned attributes, for example, to shape their decision. In spite of this, I present robustness checks to ensure the randomization worked and that ordering is not biasing the results in the appendix.

Experiments by their nature can be affected by interference, attrition and non-compliance. Given the nature of survey experiments, attrition is not of much concern in this case. In addition, due to the small sample size, I was able to monitor when a survey was carried to completion or not. Since there is no control group per se, non-compliance is also not a major issue. There is no risk of the control taking the treatment or vice-versa. However, there is a risk in subjects talking with each other or influencing what they are doing. Given the limited access that was given to the subjects, I was not able to do a close follow-up of their interactions. However, many of the responses come from different ip-addresses, meaning they responded at home in some instances. Similarly, responses were spread throughout weeks. In addition, short unstructured interviews to a sub sample of

subjects further assuages my concerns about interference<sup>16</sup>. During the interviews they revealed they had not shared or discussed the experiment with other office-mates. The high pressure environment in which they work keeps non-essential activities, such as the survey, off the discussion table throughout the day.

The results are analyzed by estimating the average marginal component effects (AMCE) for each attribute. This gives the effect of an attribute conditional on the distribution of the values of other attributes. In other words, it gives the marginal effect that a political regime has on investment decisions. Average component interaction effects (ACIE) are also estimated for the attributes under analysis. An ACIE is the equivalent of an interaction effect in normal regression analysis. It will elucidate whether attributes interact in interesting and unexpected ways. Given the nature of the research question this proves to be valuable. For example, an ACIE is necessary to determine if the effect of regime type changes as the effect of property rights does the same.

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<sup>16</sup> Interviews on January 4, 2017.

## 4. Sample and results

As previously mentioned the study was conducted on a sample of investment analysts. All subjects in the sample work at the headquarters of one of the top 10 investment firms in the world and deal frequently with international investment and private equity operations. The subjects routinely analyze financial, macroeconomic, and political data to make investment recommendations for the firm and its clients. The average size of the fund they manage is fifty billion US dollars. While they do not make the final decision (that is reserved for people higher in the organization), their technical operations carry considerable weight in the final deciding process and are rarely overturned.

In regards to its composition, the sample is made of finance majors (50%), economics majors (25%), and mathematicians (14%). The rest is composed of computer scientists, statisticians, engineers, and business majors (one of each). By origin, 32% of the subjects are from the US, 25% from China, and 14% from India. Other countries represented by the sample include Germany, Korea, Italy, Latvia, and Switzerland. Finally, the average age of the sample is 26 years and 54% of the subjects are male. The oldest person on the sample is 32 years old while the youngest one is 22 years old. In general, the sample is composed by analysts and associates at the firm. While the subject's age may seem low, this is standard for the industry and does not imply lesser responsibilities.<sup>17</sup> The size of the funds they manage is evidence of the sample's relevance.

A conjoint experimental design<sup>18</sup> achieves causal inference by estimating the average marginal component effect (AMCE). The AMCE identifies the marginal effect of

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<sup>17</sup> According to the Bureau of Labor Statistics (2017) 53% of employees in "securities, commodities, funds, trusts, and other financial investments" are under 42 years old with the average being around 35 years old (own estimate). Note that this includes all senior employees, associates are bound to be younger on average.

<sup>18</sup> This section makes liberal use of Hainmueller et al. (2014) throughout the analysis.

attribute “i” averaged over the joint distribution of the remaining attributes. In different words, it represents the average effect of an attribute on the probability of a profile being chosen over another. For instance, in this case the AMCE of economic growth represents the average change in the probability of a country being chosen over another caused by changes in the growth attribute. The advantage of using the AMCE over the average treatment effect (ATE) is that it is conditional on the distribution of other attributes. Note that this implies that the AMCE is adjusted according to the probability distribution of all attributes. Once again using growth as an example, this means that the effect takes into account the value of the other attributes given to the subject, including the slanted probability distribution of having been sued through a BIT. This gives the experiment a higher degree of external validity and permits the comparison of AMCEs across attributes.

Figure 2 summarizes the results of the exercise. The coefficients for all variables are in the expected direction. Having no capital controls increases investment flows<sup>19</sup>, a positive economic outlook is attractive for investors, while price volatility scares them away. BITs have a positive non-significant effect, and property rights has a positive effect on investment outcomes. Finally, political regime has a direct effect on investment flows. In particular, the less democratic a country is, the less likely it is to be favored by investors.

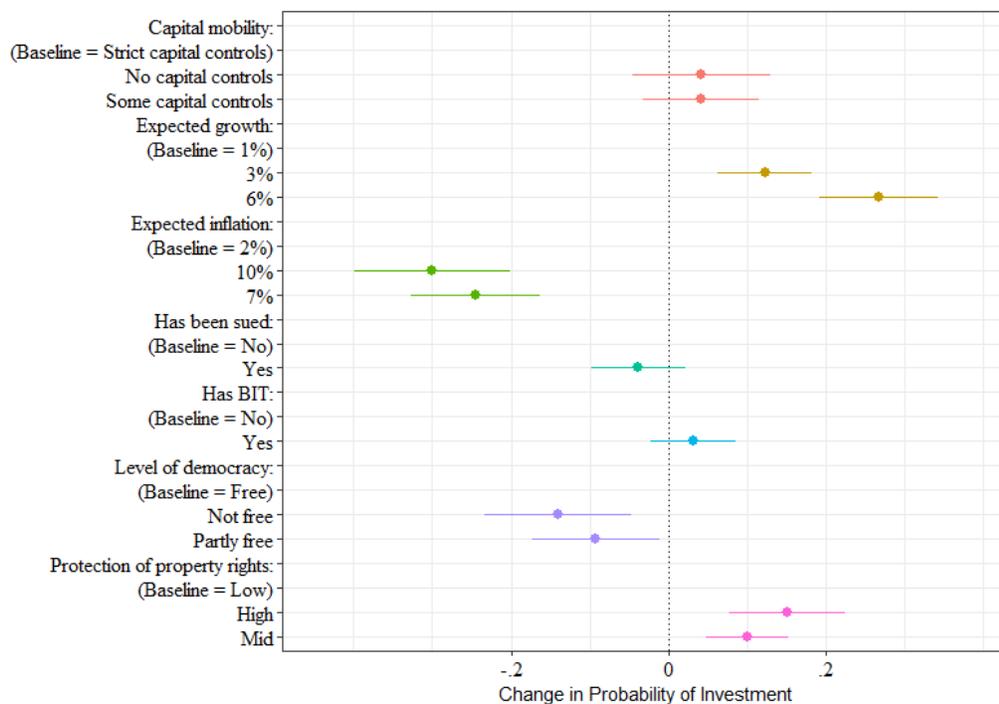
Note that the interpretation of AMCE coefficients is straightforward. In the case of political regimes the results indicate that a not-free country is -0.14 (S.E. of 0.03) points less likely than a free country to receive investment. Similarly, a partly free country is 0.09 (S.E. 0.03) points less likely than a free country to be favored by investors. The conjoint analysis also allows for direct comparisons across attributes. Figure 2 clearly shows that

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<sup>19</sup> The coefficients for capital controls are not significant. In many ways capital controls are as controversial as the political regime in the field. Rodrick (1998) warned of how their effect is contextual, and recently even the IMF, Korineck (2011) advocates for a healthy level of controls.

the effect size of political regimes is, on average, similar to the effect size of property rights (Coefficients of 0.15 and 0.1 for the presented categories). This is significant because it signals that the effect of the regime is as substantively important as that of political regimes.

Figure 2: Average Marginal Component Effects (AMCEs) for the experiment

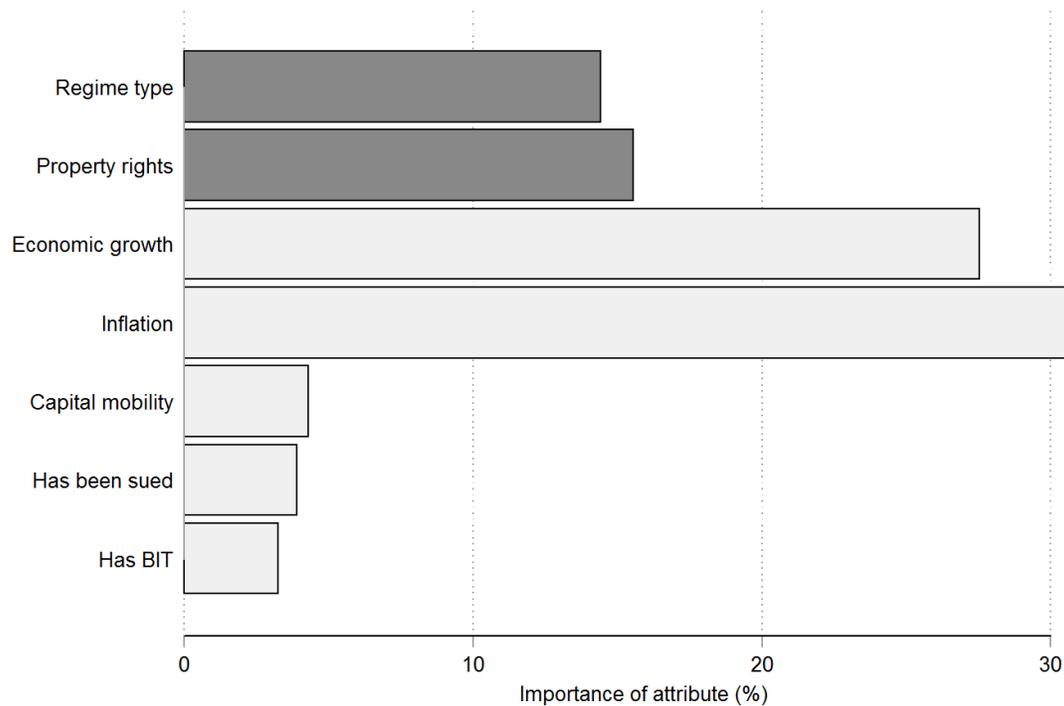


Note: Average marginal component effects for each attribute in the experiment. The baselines are selected for ease of interpretation. I present 95% confidence intervals estimated with clustered standard errors. A positive estimate indicates an increase in the probability, in the value of the estimate, that an investment will be made.

A more direct measure of the same result can be found following Orme (2005). According to Orme, the relative importance of each attribute can be estimated by considering how much difference each attribute could make in the total utility of a product. This is obtained by measuring the distance between the high point and low point of an attribute, then taking its relative weight compared to the distance for other attributes. Figure 3 presents the results for this exercise. Economic factors are clearly the most important

deciding element<sup>20</sup>, but notice that both property rights and political regime come in second with roughly the same contribution (around 15% each).

Figure 3: Importance of each attribute on investment decisions



Note: Relative importance of each attribute in the decision making process of investors. Following Orme (2005) the importance is obtained by obtaining the difference between the minimum and maximum value of the coefficients for each attribute (min-max difference), summing all min-max differences, then estimating the weight of each attribute difference in the summation.

These results confirm hypothesis 1. Political regimes do influence the decision making processes of investors. Furthermore, this effect is in isolation of institutions that are thought to usually absorb said effect. That indicates that investors are responding to an attribute of democracies in isolation of property rights, economic freedoms, BITs, or

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<sup>20</sup> While not the focus of the study, this result is important. Work done on the field tends to undervalue the contribution of economic factors and fail to question when its coefficient is not significant or barely higher than 0 in empirical results. While political factors are important, it would be incorrect to pretend that they overrule economic factors in a predominantly economic decision.

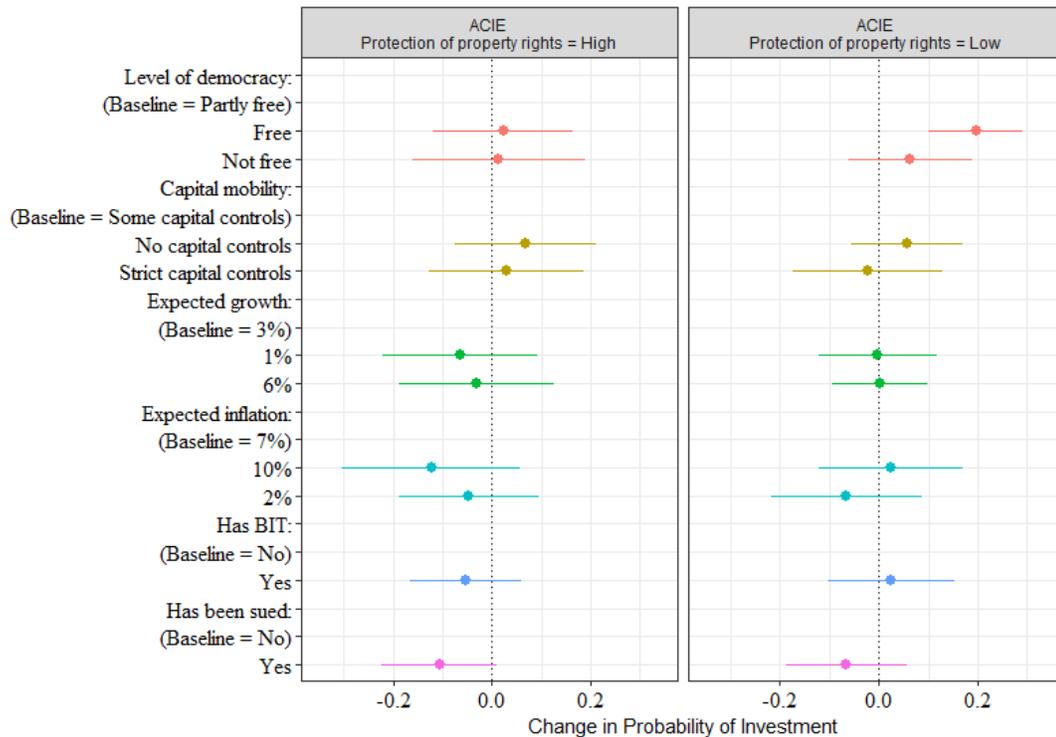
economic performance. Said attribute can range from ideological preferences based on a respect for human rights to more pressing instrumental reasons, such as being able to influence policy through several channels.

The use of average component interaction effects (ACIE) can shed light on the issue and give a more subtle response on when political regimes matter. For that matter Figure 4 presents the ACIE between all attributes and property rights. Note that the baseline values for each attribute are not equal to the baseline values for Figure 1. The change is done to increase the distance between levels of variables. For example, property rights go from low to high instead of medium to high. An identical baseline change was done to level of democracy. This change is done only to facilitate understanding, it has no substantive effect on the estimates. Since the number of subjects inside each category is smaller, the standard errors go up. By setting up the baseline to be the middle value for each attribute I simply am maximizing the difference between the coefficients presented in the figure. This does not involve any change in the methodology, data, or results, it simply is an artifice for visual representation of the results. In any case, the appendix contains the same plot using the old baselines, and the results hold.

Going back to figure 4, focusing first on the estimates for democracy, note how the values lose significance when the level of property rights is high (the left figure). On the other hand, when the level of property rights is low (the right figure), a regime classified as free continues to have a positive and statistical effect on investment decisions. This result is impressive when the increased size of the standard errors are taken into account. While all other variables lose statistical significance when estimating the ACIE, the substantive effect of level of democracy is strong enough to remain significant. This signals that

investors put a lot of weight on information gleaned from regime type when there is little protection for property rights.

Figure 4: Average Component Interaction Effects (ACIE) with Property Rights



Note: 95% confidence intervals estimated with clustered standard errors. The ACIE gives the estimate of the effect of an attribute on the probability of investment in the presence of a different attribute. In this case, it shows the effect of all attributes in the presence of varying levels of property rights.

The ACIEs for expected growth, expected inflation, having a BIT, and capital control do not produce similar results. In part, this is due to the increased standard errors. On the other hand, if regime matters when a firm is facing adverse circumstances, it will do so when the regime type signifies a potential change for the firm. For example, if property rights are low, having access to several levels of government can counteract the environment in an informal way. The same cannot be said for economic expectations. Even if pressured, there is little a government can do in the short term to alter their path. Finally,

both capital controls and BITs are not significant in the unconditional estimates, so there is little reason for them to be significant in interaction, given the widened standard errors.

These results serve as evidence for hypothesis 2. If investors cared about the political regime for ideological reasons, its effect should not vary according to the level of property rights. Instead, not only does the effect of regime type vary according to the level of property rights, it is strengthened by low levels of protection. When the investment is uncertain, investors increase their reliance on the regime type as a source of stability. Democracies have more constraints and should lead to more stable environments. Furthermore, they present more access points for investors to influence policy making and protect their assets through informal means. This speaks to an instrumental reasoning for why investors consider political regimes in their decision making. While Quinn and Toyoda (2007) speak of ideology as an important factor for why investors should care about the level of democratization in a country, the evidence of this experiment says otherwise. Investors are profit driven and make their decisions based on a utility maximizing calculation.

## 5. Conclusion

In this paper, I circumvent empirical issues to address the debate on the role of political regimes in investment decisions. In particular, I use an experiment in the form of a conjoint analysis to isolate the effect of common intervening mechanisms and of the political regime itself. To assure that the answer holds an acceptable degree of external validity I applied the experiment on an original sample of investment analysts. The analysts work for one of the ten biggest investment firms in the world and make foreign investment decisions as part of their daily operations. They manage funds that average fifty billion dollars and direct them to investment alternatives across the world. This is the first experiment of this nature that has been carried on such a sample.

I find that the regime type of a country does influence investment decisions. The findings are robust under varying levels of property rights, capital controls, and economic conditions. In addition, due to the stochastic nature of the experiment, its results can be interpreted in a causal way. Furthermore, the results indicate that the substantive effect of regime type is equivalent to that of property rights. This helps settle the debate on whether democracies matter by showing that not only do they matter, but that they matter as much as property rights, an intervening mechanism long argued to explain any positive effects attributed to regimes.

In addition, I find that this effect is strengthened when property rights are low in a country. This is an indicator that firms care about regime type for instrumental reasons, rather than ideological beliefs. It is possible that democracies offer more access points to influence policy, or a higher degree of political stability that plays a role in investors profit calculations. Note, however, that this is not concrete evidence, future research should aim to understand if and why democracies affect the utility of foreign investors.

The study's main contribution is to complement previous work by overcoming confounding obstacles that have existed in empirical research. Going forward, it can guide future empirical and experimental research on the topic at hand. For example, it suggests that the field should take a second look at the role that regime type plays in investment decisions. It also calls for a better understanding on how investors use regime type as a shortcut to maximize utilities. While property rights matter, regime type has an effect of its own. This can be studied by analyzing new disaggregate series on FDI flows, as has already been suggested by Pandya (2016) when it comes to work on the politics of FDI in general.

## Appendix

### ASSUMPTIONS

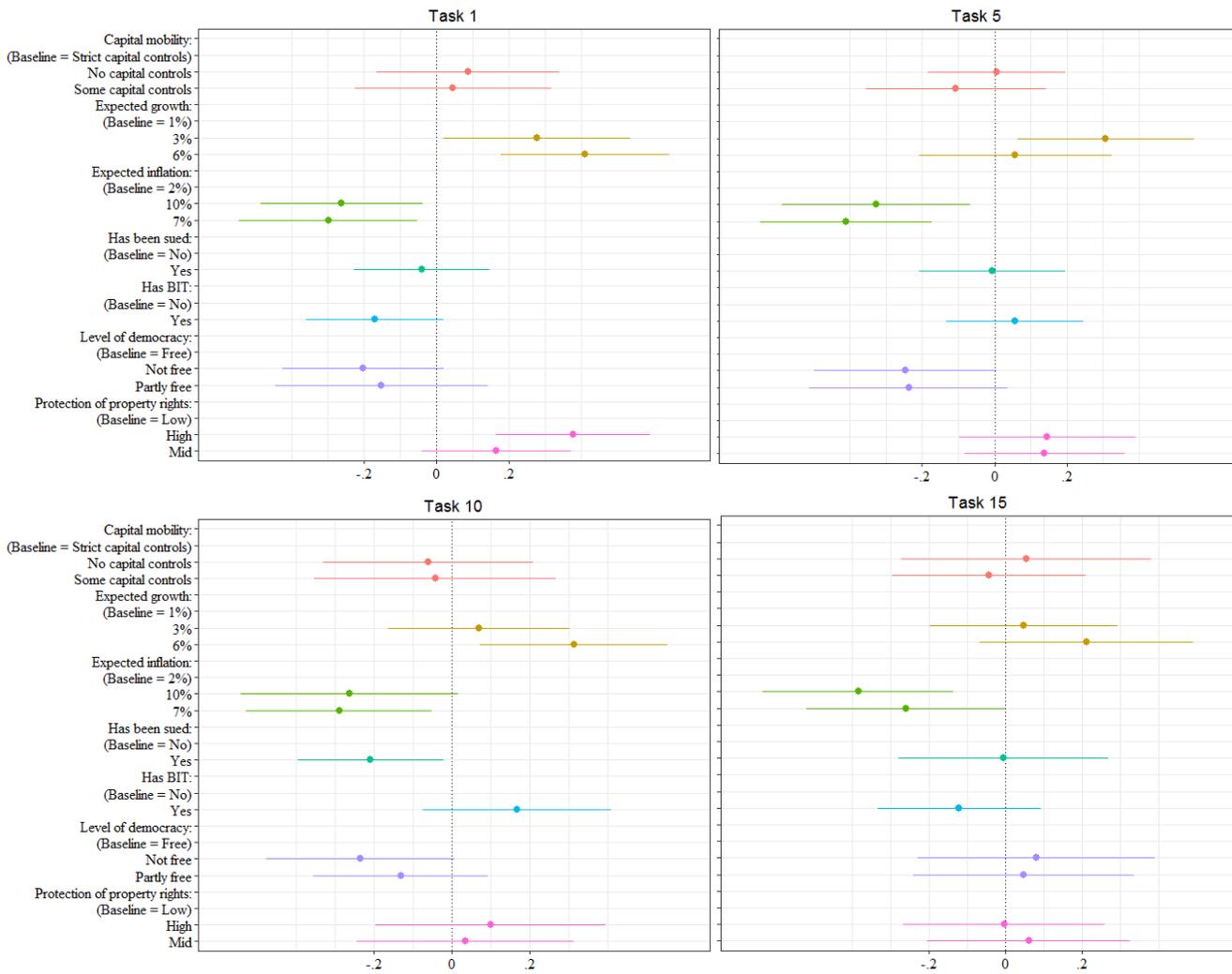
In this section I test assumptions that are implicit in any conjoint analysis. In particular, causal inference based on conjoint analysis relies on three assumptions. The first of this is called the no carryover effects assumption. This assumption requires that potential outcomes always take on the same values as long as all the profiles in the same choice task have identical set attributes. In other words, this assumption implies that a subject's response to a choice task will not be influenced by profiles that were presented in previous choice tasks or by profiles that will be presented in future choice tasks.

A way of testing if this assumption holds involves assessing if results from later tasks differ from results obtained in the first task. Figure 5 presents the ACME for four subsets of the data: the first, the fifth, the tenth, and the fifteenth choice task. For example, subfigure "Task 1" is estimated using only the first response from each subject, while subfigure "Task 15" is estimated using only their last response. As can be seen most of the attributes hold similar values to each other and to that of the estimation for the pooled data. Note however that each plot is done using only one answer from each subject, so the estimates are based on 28 data points. This has increased the standard errors of each estimate and explains why some estimators (democracy for example) appear to vary more than the others. Nevertheless, the test supports the "no carryover" assumption necessary to establish causality from conjoint analysis.

The second assumption refers to profile order effects. This assumption requires subjects to ignore the order in which profiles are presented in a choice task. If, for example, subjects always picked the first profile, the results would be biased. This assumption can be tested by verifying if the AMCE is similar no matter on which profile the assumptions

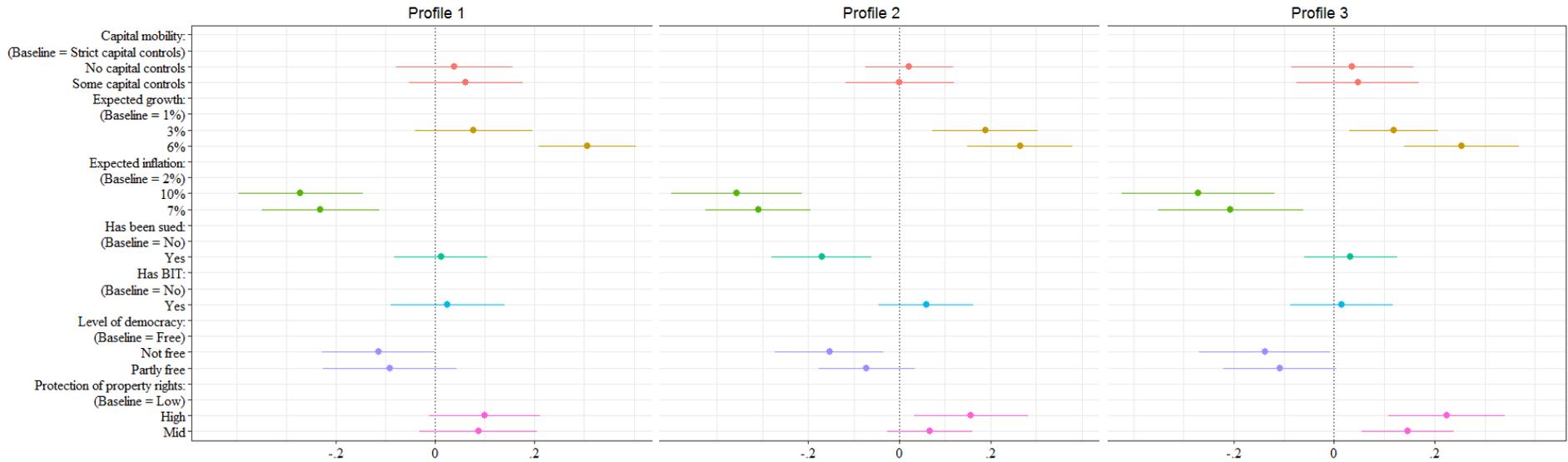
take place. This is equivalent to estimating the AMCE for a subset of data for each profile position. Figure 6 shows the AMCE for each profile of data. As can be seen, except for BITs and been sued (related categories) the estimates are similar.

Figure 5: Testing carryover effects



Note: 95% confidence intervals estimated with clustered standard errors. If the results for each task are similar to each other the “no carryover” effect assumption is not violated.

Figure 6: Testing profile order effects

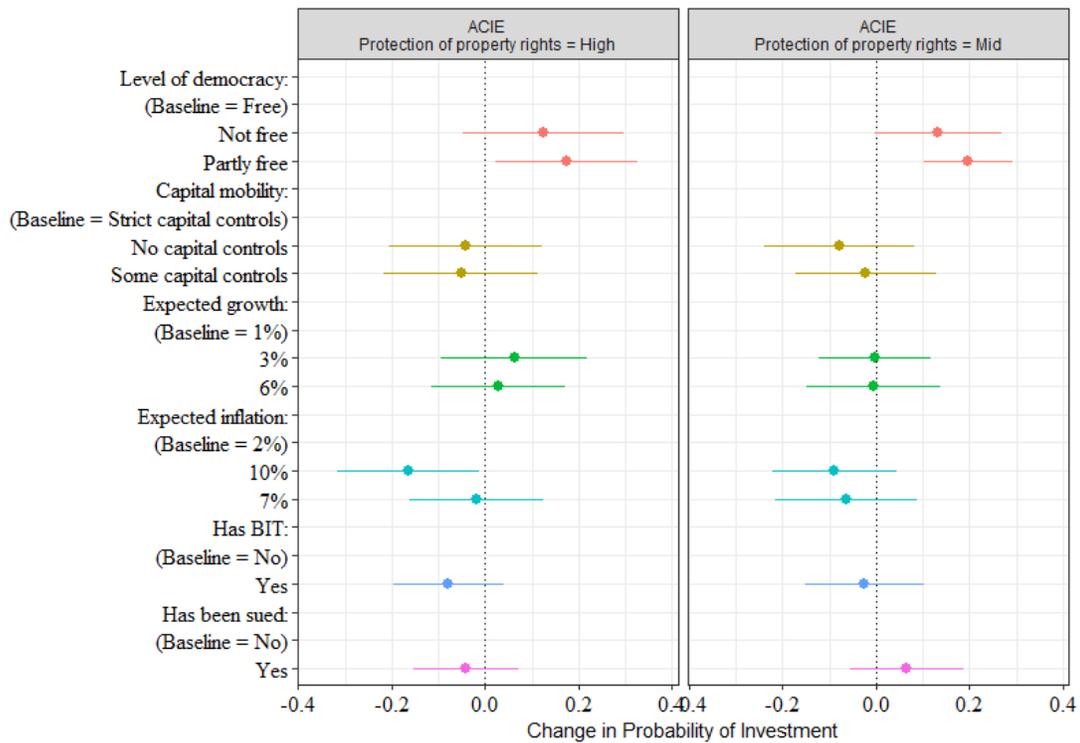


Note: 95% confidence intervals estimated with clustered standard errors. Suspicions of profile effects arise when the estimates across profiles differ from each other. In this case estimates are similar for profile 1, 2, and 3. This indicates that “no profile order effects” assumption is held.

The third and final assumption is that profiles were assigned at random. This assumption holds by design. As previously explained every element of the survey was randomized before giving it to a subject. Nevertheless, this assumption was tested by checking whether the attributes can predict individual covariates such as sex or age. In both instances the attributes are not statistically significant individually or jointly.

### ORIGINAL BASELINE

Figure 7: Average component interaction effect using original baselines



Note: 95% confidence intervals built with clustered standard errors. Results in Figure 4 using the baseline if Figure 1. It can be seen how the effect of democracy increases as property rights fall.

## References

- Achen, Christopher H. "Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables." *Ann Arbor* 1001, no. 2000 (2000): 48106–1248.
- Ali, Fathi A., Norbert Fiess, and Ronald MacDonald. "Do Institutions Matter for Foreign Direct Investment?" *Open Economies Review* 21, no. 2 (April 1, 2010): 201–19. doi:10.1007/s11079-010-9170-4.
- Ant, Onur. "Turkey Raises Lending Costs to Curb Double-Digit Inflation." *Bloomberg.com*, March 16, 2017. <https://www.bloomberg.com/news/articles/2017-03-16/turkey-raises-late-liquidity-rate-to-11-75-after-fed-s-move>.
- Asiedu, Elizabeth, and Donald Lien. "Capital Controls and Foreign Direct Investment." *World Development* 32, no. 3 (March 2004): 479–90. doi:10.1016/j.worlddev.2003.06.016.
- Baccini, Leonardo, Quan Li, and Irina Mirkina. "Corporate Tax Cuts and Foreign Direct Investment." *Journal of Policy Analysis and Management* 33, no. 4 (September 1, 2014): 977–1006. doi:10.1002/pam.21786.
- Barro, Robert J. "Democracy and Growth." *Journal of Economic Growth* 1, no. 1 (March 1, 1996): 1–27. doi:10.1007/BF00163340.
- Bellemare, Marc F., Takaaki Masaki, and Thomas B. Pepinsky. "Lagged Explanatory Variables and the Estimation of Causal Effects," 2015.
- Biglaiser, Glen, and Joseph L. Staats. "Do Political Institutions Affect Foreign Direct Investment? A Survey of U.S. Corporations in Latin America." *Political Research Quarterly* 63, no. 3 (September 1, 2010): 508–22. doi:10.1177/1065912909331428.
- Biglaiser, Glen, and Karl R. DeRouen. "Economic Reforms and Inflows of Foreign Direct Investment in Latin America." *Latin American Research Review* 41, no. 1 (2006): 51–75.
- BLS. "Labor Force Statistics from the Current Population Survey," 2017. <https://www.bls.gov/cps/cpsaat18b.htm>.
- Corcoran, Adrian, and Robert Gillanders. "Foreign Direct Investment and the Ease of Doing Business." *Review of World Economics* 151, no. 1 (February 1, 2015): 103–26. doi:10.1007/s10290-014-0194-5.
- Didier, Tatiana, M. Ayhan Kose, Franziska Ohnsorge, and Lei Sandy Ye. "Slowdown in Emerging Markets: Rough Patch or Prolonged Weakness?," 2016.
- Freedom House. "Freedom in the World 2013." *Democratic Breakthroughs in the Balance* 5 (2013).
- Gladstone, Rick. "Iran's Double-Digit Inflation Worsens - The New York Times." *New York Times*, 2013. <http://www.nytimes.com/2013/04/02/world/middleeast/irans-double-digit-inflation-worsens.html>.
- Hainmueller, Jens, Daniel J. Hopkins, and Teppei Yamamoto. "Causal Inference in Conjoint Analysis: Understanding Multidimensional Choices via Stated Preference Experiments." *Political Analysis* 22, no. 1 (January 1, 2014): 1–30. doi:10.1093/pan/mpt024.
- Hallward-Driemeier, Mary. "Do Bilateral Investment Treaties Attract Foreign Direct Investment? Only a Bit And They Could Bite." SSRN Scholarly Paper. Rochester, NY:

- Social Science Research Network, June 1, 2003.  
<https://papers.ssrn.com/abstract=636541>.
- Hallward-Driemeier, Mary. "Do Bilateral Investment Treaties Attract Foreign Direct Investment? Only a Bit And They Could Bite." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, June 1, 2003.  
<https://papers.ssrn.com/abstract=636541>.
- Hecock, R. Douglas, and Eric M. Jepsen. "The Political Economy of FDI in Latin America 1986–2006: A Sector-Specific Approach." *Studies in Comparative International Development* 49, no. 4 (December 1, 2014): 426–47. doi:10.1007/s12116-013-9143-x.
- IMF. "Global Disinflation in an Era of Constrained Monetary Policy." In *World Economic Outlook*, 2016. <http://www.imf.org/external/pubs/ft/weo/2016/02/#ch3>.
- Jensen, Nathan M. "Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment." *International Organization*, July 2003. /core/journals/international-organization/article/div-classtitledemocratic-governance-and-multinational-corporations-political-regimes-and-inflows-of-foreign-direct-investmentdiv/246025D12F8982BCC871F6398EB57720.
- Jensen, Nathan, Glen Biglaiser, Quan Li, Edmund Malesky, Santiago Pinto, and Joseph L. Staats. *Politics and Foreign Direct Investment*. University of Michigan Press, 2012.  
<https://muse.jhu.edu/book/18084>.
- Jensen, Nathan. "Political Risk, Democratic Institutions, and Foreign Direct Investment." *The Journal of Politics* 70, no. 4 (2008): 1040–52. doi:10.1017/s0022381608081048.
- Johnson, Richard M., and Bryan K. Orme. "How Many Questions Should You Ask in Choice-Based Conjoint Studies?," 1996.
- Kerner, Andrew, and Jane Lawrence. "What's the Risk? Bilateral Investment Treaties, Political Risk and Fixed Capital Accumulation." *British Journal of Political Science* 44, no. 1 (January 2014): 107–21. doi:10.1017/S0007123412000725.
- Kerner, Andrew. "What We Talk About When We Talk About Foreign Direct Investment." *International Studies Quarterly* 58, no. 4 (December 1, 2014): 804–15.  
doi:10.1111/isqu.12147.
- Korinek, Anton. "The New Economics of Prudential Capital Controls: A Research Agenda." *IMF Economic Review* 59, no. 3 (August 1, 2011): 523–61. doi:10.1057/imfer.2011.19.
- Li, Quan, and Adam Resnick. "Reversal of Fortunes: Democratic Institutions and Foreign Direct Investment Inflows to Developing Countries." *International Organization* 57, no. 01 (February 2003). doi:10.1017/S0020818303571077.
- Li, Quan, Erica Owen, and Austin Mitchell. "Do Democracies Attract More Foreign Direct Investment? A Meta Analysis," 2017.
- Mathur, Aparna, and Kartikeya Singh. "Foreign Direct Investment, Corruption and Democracy." *Applied Economics* 45, no. 8 (March 1, 2013): 991–1002.  
doi:10.1080/00036846.2011.613786.
- Miller, Terry, Anthony B. Kim, and K. Holmes. "2015 Index of Economic Freedom." *Washington DC: The Heritage Foundation*, 2015.

- Montero, Alfred P. "Macroeconomic Deeds, Not Reform Words: The Determinants of Foreign Direct Investment in Latin America." *Latin American Research Review* 43, no. 1 (March 3, 2008): 55–83. doi:10.1353/lar.2008.0008.
- Neumayer, Eric, and Laura Spess. "Do Bilateral Investment Treaties Increase Foreign Direct Investment to Developing Countries?" *World Development* 33, no. 10 (October 2005): 1567–85. doi:10.1016/j.worlddev.2005.07.001.
- O'Donnell, Guillermo A. *Bureaucratic Authoritarianism: Argentina, 1966-1973, in Comparative Perspective*. Univ of California Press, 1988.
- Orme, Bryan K. *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research*. Madison, WI: Research Publishers, LLC, 2005.
- Pandya, Sonal S. "Democratization and Foreign Direct Investment Liberalization, 1970–2000." *International Studies Quarterly* 58, no. 3 (September 1, 2014): 475–88. doi:10.1111/isqu.12125.
- Quinn, Dennis P., and A. Maria Toyoda. "Ideology and Voter Preferences as Determinants of Financial Globalization." *American Journal of Political Science* 51, no. 2 (2007): 344–63.
- Rodrik, Dani. "Who Needs Capital-Account Convertibility?," 1998.
- Sauvant, Karl P., and Lisa E. Sachs. *The Effect of Treaties on Foreign Direct Investment: Bilateral Investment Treaties, Double Taxation Treaties, and Investment Flows*. 1 edition. Oxford England ; New York: Oxford University Press, 2009.
- Tang, Jane, Warren Vandale, and Vandale Weiner. "Sample Planning for CBC Models: Our Experience." Sawtooth Software, 2006. <https://www.sawtoothsoftware.com/download/techpap/2006Proceedings.pdf>.
- Tobin, Jennifer L., and Susan Rose-Ackerman. "When BITs Have Some Bite: The Political-Economic Environment for Bilateral Investment Treaties." *The Review of International Organizations* 6, no. 1 (March 1, 2011): 1–32. doi:10.1007/s11558-010-9089-y.
- Tuman, John P., and Craig F. Emmert. "The Political Economy of U.S. Foreign Direct Investment in Latin America: A Reappraisal." *Latin American Research Review* 39, no. 3 (2004): 9–28.
- Zheng, Yu. "Credibility and Flexibility: Political Institutions, Governance, and Foreign Direct Investment." *International Interactions* 37, no. 3 (2011): 293–319.