# Pre-Analysis Plan: The Micro-foundations of Openness to Foreign Direct Investment: beyond the capital-labor divide

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**Abstract**

What explains variation in individual preferences towards foreign direct investment (FDI)? Previous research has focused on the divide between labor and capital but is inconclusive. While one strand of work finds that labor benefits but domestic capital suffers from FDI (Pandya 2010; Pinto 2013; Owen 2018), another put that labor hurts (Owen 2015), while domestic capital makes a gain (Danzman 2020). We set out to adjudicate between these contrasting accounts by going beyond the labor-capital divide and integrating non-material factors into the picture. To do so, we field a paired-profile conjoint experiment to a representative sample of citizens in Brazil ($N \approx 2,000$), a large economy where FDI is politically salient, that requires individuals to compare various firm profiles differing across multiple material and non-material attributes. We also collect detailed information on the individuals' role in the economy and on their level of trust, nationalism, and chauvinism. To the best of our knowledge, this is the first attempt at providing detailed microfoundations for the study of openness to FDI. Our expectation is that individual-level preferences are a function of both material incentives and political psychology, a finding that would add new and important dimensions to existing scholarship rooted on the Open Economy Politics (OEP) approach.

**Keywords:** Foreign Direct Investment (FDI); microfoundations of economic openness; Open Economy Politics (OEP); multinational corporations (MNCs)

## 1 Background

What explains variation in individual preferences towards foreign direct investment (FDI)? Literature based on the Open Economy Politics approach (OEP) typically tries to answer the question through the Heckscher-Ohlin classic trade model. Under the assumption of factor (capital and labor) mobility, this model posits that the abundant factor in an economy benefits from trade while the scarce factor loses from it, dividing individuals alongside capital-versus labor lines. When it comes to FDI, there are slight modifications to this model. According to one body of work, because the entry of foreign capital in a host economy expands demand for labor, labor tends to benefit even in economies

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that are scarce in this factor. And because MNCs demand more high-skilled labor, these types of workers benefit more than their low-skilled peers (though the latter benefit from the expansion of the labor market as well). MNCs pay higher wages than domestic firms and raise labor productivity in host countries, which means that labor – and high-skilled labor, in particular – benefit from and should support FDI (Pandya 2010, 2014). Following the same rationale, openness to FDI means that foreign firms often drive domestic businesses out of the market. Domestic capital-owners are left without their businesses, while labor previously employed in domestic firms can now find jobs (and even better jobs) in MNCs. It follows that labor constituencies should reward politicians who bring FDI to their locations (Owen 2018)[1]. It also follows that when democracy spreads and it empowers labor constituencies (Pandya 2010, 2014), and when left parties are in office and aim at spurring labor-intensive sectors (Pinto and Pinto 2008; Pinto 2013) fewer restrictions on FDI are likely to ensue.

Another body of scholarly work questions these findings, even if it follows the same distinction between capital and labor. More specifically, some studies disagree with the assertion that labor benefits from FDI while capital hurts from it. Overall, there are four reasons for this. First, workers that are laid off from domestic firms driven out of businesses by MNCs might not be hired by the new foreign entrants - there might be a skill gap that prevents this outcome, for instance. Second, MNCs' higher productivity might also mean fewer jobs in general, since several activities might be automated or outsourced. Third, there is limited evidence on a given FDI project's potential to generate jobs and wages spillovers (Dix-Carneiro et al. 2021). Finally, FDI increases the elasticity of demand for labor because MNCs can relocate abroad, which erodes labor's bargaining position. The implication that follows is that labor union density is negatively associated with FDI attraction (Owen 2015) - though micro-level evidence that those affiliated to labor unions do hold more negative views towards FDI is lacking.

Furthermore, scholars have argued that domestic capital might under certain circumstances benefit from FDI: after all, MNCs can offer domestic firms an opportunity to either downstream or upstream their supply chains (Markusen and Venables 1999). Additionally, some work suggests that domestic firms' attitudes towards FDI liberalization are not fixed but are conditional on more structural characteristics of the local economy, such as access to credit (Danzman 2020). Ultimately, a MNC can buy domestic businesses in mergers and acquisitions processes, which can provide capital owners with handsome profits. Therefore, in this context, capital attitudes towards FDI may turn on whether inward foreign investment is coming to establish a new factory (greenfield investment) or to partially or fully acquire an existing domestic firm (brownfield or MA investments), either complementing or substituting labor (Pinto and Pinto 2008).

The picture gets further complicated when we consider non-material aspects of FDI. Consider the fact that there is a "longstanding agreement on FDI as a unique source of constraint on host state sovereignty" (Wellhausen 2021, p.14), and one may therefore expect citizens to balance the potential

[1]Consistent with the point that labor constituencies like FDI, there is evidence that politicians offer tax incentives to MNCs to increase their electoral success by signaling to voters that they are committed with spurring economic growth (Jensen et al. 2014), even though these incentives are shown to rarely change MNCs' decisions on where to locate (Jensen and Malesky 2018)

economic benefits of MNC activity with perceived threats to national autonomy and sovereignty. While important work has been done in investigating how nationalism and ethnocentrism play out when it comes to mass preferences for FDI (Feng et al. 2021; Andrews et al. 2018), none has to our knowledge investigated how these ideological traits shape the way individual weigh the costs and benefits of openness to FDI, particularly when compared to domestic investments. Despite its political salience, the sovereignty risk is not the only dilemma that may be created with the presence of foreign firms. Scholars have increasingly warned of the importance of corporate sustainability practices for foreign firms considering investing in other countries (Rudolph et al. 2019). However, the extent that such practices affect individuals' preferences for foreign firms in low-income countries is an empirical question still unaddressed by the literature.

Given the inconclusiveness of these theoretical predictions, we set out to tackle what we see as an essentially empirical question: how do labor and domestic capital stand regarding the entry of FDI and explicitly vis a vis the possibility of prioritizing domestic capital instead? And how do material and non-material factors interact to shape individual preferences over FDI? To answer these questions, we propose to field a paired-profile conjoint experiment to a representative sample of Brazilian individuals ($N \approx 2,000$). In our conjoint, subjects are shown to two randomly generated firm profiles across multiple attributes - including one that explicitly differentiates between domestic and foreign firms from multiple origins - and told that these two companies are thinking about entering the Brazilian market. Respondents are then asked to indicate which firm they think is more likely to benefit Brazil. By providing an integrative framework that presents material and non-material factors in concert, this conjoint experiment allows us to estimate the relative importance of each set of factors in ways that would be impossible using large-N data and traditional survey experiments, the two most common research strategies employed by previous studies. We expect results to help adjudicate between the competitive theoretical predictions that have predominated over time in the literature about preferences for FDI.

We integrate a variety of material and non-material measures in our study. For measures of economic interest, we survey respondents directly about their role in the economy and encompass all possible employment and business ownership categories in Brazil. This is a substantial improvement over a first generation of studies on FDI which had to rely on proxies for individual's categorization of labor or capital – typically by using the level of education to do so. Moreover, we provide high-quality and extensive measures of potential non-material sources of individuals' preferences for FDI such as trust, nationalism, and chauvinism. While previous studies have shown that non-material sources - such as nationalism - are little consequential for public preferences on FDI (Pandya 2010), we suspect that these results may be driven by imprecise use of such measures. By using a more robust set of measures of non-material interests, and clearer theoretical predictions of their effects on preferences for FDI, we expect to provide a more robust test about the relationship between non-materials sentiments and support for FDI.

Employing a research design that is suitable to investigate how material interests interact with ideas and values to form individuals' preferences, our study allows us to directly verify both labor and capital's preferences over FDI relative to a range of material and non-material factors. In doing so, this project ultimately examines the micro-foundations of openness to the world economy.

## 2 Setting

Brazil is an appropriate case for this project because, being a large economy where government policies towards MNCs and FDI have been hotly contested in successive democratic elections, individual-level preferences are not clear ex ante and cannot be predetermined by any self-evident country feature. Although Brazil is not nearly as open to the global economy as neighboring countries such as Argentina and Chile[2], it has gone through several cycles of openness over time. At various junctures the country welcomed MNCs to make up for its persistent capital scarcity. For example, evidence showing that the "left loves FDI (Pinto 2013) is compatible with what we observe in Brazil during the Workers' Party years (2003-2016), when the country's effort and capacity to attract FDI were notable. More recently, under the term of right-wing administrations, investor-friendly policies continue to be at the center of economic goals[3]. These developments indicate that, regardless of partisanship, MNCs can hold great leverage in the country, as they bring much needed capital which can translate into growth and jobs in a country with a large population of workers, and help politicians get elected in the process (Owen 2018). At the same time, Brazil is one of the few countries around the world that has not ratified a bilateral investment treaty (BIT) (Campello and Lemos 2015), and so it does not hold any special international legal obligations towards foreign firms. All these characteristics mean that Brazil is a suitable case to investigate labor's preferences for FDI and vis a vis domestic investment because there is not anything about its economic structure or its political and institutional environment that clearly pre-determine such preferences.

From a capital perspective, Brazil has historically gone through a process of "dependent development", one that entails dependency on foreign capital but is accompanied by domestic capital accumulation and complex differentiation of the industrial structure (Evans 1979). Such a process has been feasible because of the alliances forged between foreign and domestic capital and the state. While foreign firms bring innovation, the domestic ones hold the asset of political and bureaucratic contacts and knowledge. These relationships between the state, foreign firms, and domestic businesses in Brazil mean that it is not immediately clear that capital will privilege domestic over foreign investments[4]. Adding complexity to the cost-benefit analysis that capital owners might make when considering the effects of FDI, it may be the case that domestic firms are well-positioned to pressurize the political class to favor them - after all, domestic investment also generates jobs and revenue and can give politicians an electoral boost (Hong et al. 2016). Thus, when

[2] According to data on FDI entry restrictions as coded by Pandya (2014)

[3] Among these initiatives is Brazil's request to join OECD as a member, a movement that brings several implications to both domestic and multinational firms operating in the country. Brazil has formally applied to become an OECD member in May 2017.

[4] One recent development that opposed domestic and foreign firms in the country refers to the soda industry. The Executive branch renewed a tax benefit for foreign manufacturers – most notably, Coca-Cola - because they are in the free economic zone of Manaus. This decision was strongly opposed by domestic producers of soft drinks. For an overview, please refer to the following link, in Portuguese: `https://valor.globo.com/brasil/noticia/2020/10/19/bolsonaro-torna-permanente-benefcio-para-produtores-de-refrigerante.ghtml`

it comes to domestic business preferences, the conditions in Brazil are such that it is not obvious if they are or not at odds with those of foreign firms (Danzman 2020; Danzman and Slaski 2021).

If we look beyond the economic benefits of foreign capital and focus instead on MNCs' "foreignness", we can see reasons why Brazilians may perceive foreign investment more negatively and domestic firms more positively. For years, Brazilian politicians from across the ideological spectrum warned of MNCs threatening national autonomy and sovereignty (Cardoso and Faletto 2021; Moran 1978). Politicians from both the right and the left have on occasion turned to "sovereignty" rhetoric to justify restrictions on foreign investment[5]. At the same time, part of this repulse stems from multinationals' source of the power of their size (Kim and Milner 2019; Wellhausen 2021), which has the potential to undermine the national manufacture and make the country dependent on foreign capital. Even if we consider that politicians invoke this rhetoric to signal their position to their peers, their frequency is an indicator of the types of arguments that they think will resonate with their voters. More crucially, this rhetoric suggests that the incentives to restrict foreign investment may come from the pressure exerted by civil society groups and by public opinion more broadly.

Given these features, we contend that Brazil is an appropriate case to explore labor and capital preferences over FDI relative to a range of material and non-material factors. To be sure, the results from this study conducted in Brazil are likely to have important implications for understanding individual preferences for FDI in economies with similar factor endowments, similar standing in global value chains, and a similar recurrence of nationalist arguments for imposing limits on foreign investment. Because Brazil has used foreign investment as a tool to generate jobs and revenue, it has grappled with nationalist arguments that portrait MNCs' "foreignness" as a problem requiring government intervention every bit as much as other countries who have relied on globalization to drive growth. Yet, our findings have the potential to shed new light onto the political processes behind the backlash against globalization that has emerged across advanced industrial economies in recent years. FDI has become politically salient in the developed world, and we cannot discard the possibility that the theoretical mechanisms that account for discontent with globalization in developing settings are fundamentally different from those that apply to advanced economies. Moreover, our findings are likely to speak directly to other societies where individual-level attitudes towards FDI are politically salient and levels of openness to the global economy are not preordained, be them developing or developed. Given these scope conditions, we expect our findings to generalize to places where existing levels of openness to the world economy are the stuff of everyday political dispute, like Turkey and Indonesia in the developing world or Japan and Brexit Britain in the developed world. Conversely, we do not expect our results to travel to places where levels of openness are set and very hard to change, be them developing (e.g., Chile and Mexico) or advanced (e.g., Germany and France). As discontentment with globalization unfolds and gains political traction the world over, our results will speak to those societies where social attitudes towards economic openness are shifting, making domestic political contention about FDI

[5] We analyzed debates about FDI legislation in the lower house of the Brazilian Congress and found support for this point. In these discussions, we find politicians from the whole ideological spectrum defending restrictions on FDI based on claims that "foreign capital hurts national sovereignty".

a relevant phenomenon. As such, our findings may resonate with the political processes involving FDI that are now unfolding in China and the United States, the two major economies of our time.

# 3 Research Design

## 3.1 Overview, sample and recruitment

Our research strategy consists of fielding a paired-profile conjoint experiment with a nationally representative sample of Brazilian citizens (aged 18 or older). The respondents will be selected based on data from PNAD 2019, the National Household Sample Survey conducted by the Brazilian Institute of Geography and Statistics. The sample of 2,000 individuals will be nationally representative in terms of sex, age, income, education, and region. We will field the experiment with Netquest, a company that maintains a nationally representative online panel in Brazil. Netquest is a company based in Spain that recruits respondents in 26 countries for survey research conducted by academics and business. Netquest uses an opt-in recruitment method to build its panels of respondents, where they randomly select panel participants for survey invitations, using population quotas to produce nationally representative samples of respondents. Besides being certified by ISO 26362 standards for online access panels, Netquest has been frequently used as a survey company for academics around the world. For examples of published political science studies using Netquest, see Campello and Urdinez (2021), and Bakaki and Bernauer (2016).

## 3.2 Conjoint experiment

Before presenting our respondents with the conjoint experiment, we first survey them regarding their levels of nationalism, trust and their self-reported place in an ideological scale, in order to avoid post-treatment bias. Similarly, we ask questions about individuals' employment and/or business ownership status. The order of the pre-treatment questions is randomized across respondents. Then, each individual is presented with a series of five randomized and independent combinations of nine firm attributes that entail size, nationality (including domestic)[6], mode of entry, market orientation, impact on the labor market, impact on the credit market, their sector, and status concerning compliance with anti corruption and ESG norms[7]. After examining each set of two

[6] To reiterate: to the best of our knowledge, ours is the first conjoint experiment to explicitly ask respondents to contrast domestic versus foreign investment of various nationalities. Previous work has assessed how respondents' opinions vary depending on the foreign origin of the investment, but they do not include domestic investment among the options (Li et al. 2017; Chilton et al. 2020), or do so only implicitly (Feng et al. 2021). This is important because it is what explicitly allows us to ask respondents to contrast foreign with domestic investment. Furthermore, as explained in our background section, it is not altogether clear from the literature what is special about FDI, if anything. It might be as well that people value the benefits brought by firms in general and that they cannnot distinguish between foreign and domestic players. More specifically, MNCs tend to be large, productive businesses and it might be that what we know about MNCs is actually knowledge about big firms, regardless of nationality. This has important implications for how the scholarship assesses potential threats to sovereignty that MNCs are thought to provoke.

[7] Again, to the best of our knowledge, ours is the first research design that directly asks respondents on their views about corporate sustainability practices, while forcing them to consider a potential trade-off with other desirable goals, such as job creation. We do not have strong priors regarding what explains individuals' preferences for corporate sustainability norms - or even if those are salient at all to these groups when other firm attributes are under consideration. Our goal

different firms that vary across these attributes, individuals answer questions about which firm they would prioritize. As we explain further below, we ask four different questions that force individuals to choose between the two firms, which constitute our dependent variables. Finally, respondents provide demographic information such as gender, age, and educational level.

Specifically, these are the attributes and options of attributes individuals are presented with[8]:

**Size**: *(1) Large company and listed among the 500 largest firms in the world.; (2) Medium-sized company and not listed among the 500 largest firms in the world.*

**Origin**: *(1) Brazil; (2) United States; (3) Europe; (4) China; (5) Latin America (not Brazil)*

**Mode of insertion in the Brazilian market**:*(1) Building of new facilities; (2) Partial acquisition of a Brazilian firm; (3) Complete acquisition of a Brazilian firm*

**Sales destination**: *(1) Sales to other countries (exports); (2) Sales to the Brazilian market*

**Labor market impact**: *(1) Generation of a few jobs in its region; (2) Generation of a lot jobs in its region*

**Credit market impact**: *(1) Establishment in Brazil with money from abroad only - that is, no loans from Brazilian banks; (2) Establishment in Brazil with money from abroad and some loans from Brazilian banks*

**Sector**: *(1) Industry (for example, an automaker, a beverage producer, a steel sheet manufacturer); (2) Retail (for instance, a store chain); (3) Services (for example, software development, logistics); (4) Agriculture or Extractive (for instance, mining, oil); (5) Construction; (6) Banking/Finance.*

**Good practices against corruption program**: *(1) It has such a program; (2) It doesn't have such a program*

**Member in the United Nations Global Compact, a program that incentivizes firms to adopt practices that contribute with the environment and with society**: *(1) It is part of the United Nations Global Compact; (2) It is not part of the United Nations Global Compact*

These yield 5,760 different possible firms (2*5*3*2*2*2*6*2*2). We do not identify the need to exclude any combinations because of illogical groupings. We randomize the order of attributes for all

with the inclusion of these attributes in the conjoint is two-fold: first, it forces individuals to consider both material and non-material characteristics of both foreign and domestic firms; and second, it constitutes an exploratory effort, as we hope results will help us to generate hypotheses for future projects. We believe that a theory that explains variation in individuals' preferences for corporate sustainability norms can have important implications for the study of the distributional (Genovese and Tvinnereim 2019), regulatory (Kolcava et al. 2021; Malhotra et al. 2019) and existential politics (Colgan et al. 2021) driven by climate change, for instance.

[8]The whole survey will be conducted in Portuguese.

respondents, but we fix the same order for each respondent for the remainder of the experiment. This allows us to mitigate concerns that question order is driving the results while relieving respondents from the burden of adjusting to new attribute orders for every task.

Below are the instructions, the questions and an example of the table of the firm profiles that respondents will see.

*We are conducting an academic study concerning Brazilian citizens' views on both Brazilian and foreign multinational firms insertion in the country. If you accept to participate, you will be asked a few questions on your general political views, your demographic information and your opinion on firms considering investing in the Brazilian market. Your responses will be completely anonymous and confidential and will be used for academic purposes only. They will help us to better understand the factors that shape the investment environment in Brazil. This project is being conducted by three researchers from the FGV School of International Relations: Carolina Moehlecke (assistant professor), Matias Spektor (associate professor) and Guilherme Fasolin (associated researcher). If you have any questions, please send an email to carolina.moehlecke@fgv.br.*

*This survey should take approximately 15 minutes of your time. Are you interested in participating in this survey? If so, check "Yes".*

Please respond to these questions relative to some of your political preferences and characteristics. Recall that your answers are anonymous and confidential.

**[Q.1]** When someone says something bad about the Brazilian people, how strongly do you feel it is as if they said something bad about you?

- Extremely strongly
- Very strongly
- Strongly
- Not too strongly
- Not strongly at all

**[Q.2]** How much does being a Brazilian have to do with how you feel about yourself?

- A tremendous amount
- A lot
- Somewhat
- Not too much
- None at all

**[Q.3]** How much do you feel that what happens to Brazil in general would be your fate as well?

- A tremendous amount
- A lot
- Somewhat
- Not too much
- None at all

**[Q.4]** How superior is Brazil compared to other nations?

- Vastly superior
- Very superior
- Not so superior
- Not at all superior

**[Q.5]** How much better would the world be if people from other countries were more like Brazilians?.

- Vastly better
- Much better
- Somewhat better
- Not better at all

**[Q.6]** How many things about Brazil make you ashamed?."[9]

- Very many
- Many
- Not many

[9]We purposely employ two sets of three questions each (Q.01 to Q.03 and Q.04 to Q.06) to gauge different facets of nationalism. In the set (Q.04 to Q.06), we follow Mutz and Kim (2017); Mansfield and Mutz (2009); Rho and Tomz (2017); Feng et al. (2021), and others to obtain a metric of national superiority and compatriotism, which "refers to the tendency to favor in-group members strictly because they are citizens of the same country" (Mutz and Kim 2017). While this metric is more often employed in IPE literature because it gets at a competition dynamic, it might be the case that national superiority does not apply well to countries other than the United States. In the case of Brazil, for example, there is a possibility that national superiority measures will misrepresent the actual respondents' preferences of nationalism given the broad debate in the country that Brazilians themselves have internalized the image of the country as a subaltern in comparison to the rest of the world. For this reason, we follow Herrmann (2017) and include another measure of nationalism that also taps into respondents' social identity and feeling of attachment to their home country, but does not necessarily include a dimension of superiority to other countries. Given that this measure also produces discriminatory bias that favors the home nation, it is reasonable to assume that it might produce the in-group favoritism on FDI preferences that we are seeking to find out with this measure. For a detailed discussion of how national attachment and national superiority are different attributes of the national identity, see Herrmann et al. (2009).

- None

**[Q.7]** Generally speaking, would you say that most people can be trusted (1) or that you can't be too careful in dealing with people (0)?

- Most people can be trusted
- You can't be too careful in dealing with people

**[Q.8]** Generally speaking, would you say that Brazil can trust other nations (1), or that Brazil can't be too careful in dealing with other nations (0)?

- Brazil can trust other nations
- Brazil can't be too careful in dealing with other nations

**[Q.9]** In a scale ranging from 1 to 9, where 1 is the furthest to left, 9 is the furthest to right and 5 is in the center, where would you place yourself? Scale from 1 to 9.

**[Q.10]** Are you currently working?

- Yes
- No

**[Q.11]** Which of the following best characterizes your current situation concerning work? If you are not currently working, please check the one that best describes your last position.

- I work for somebody else or for somebody else's organization
- I work for myself or for my own organization

**[Q.12]** Again, which of the following best characterizes your current situation concerning work? If you are not currently working, please check the one that better describes your last position:[10]

- CLT
- PJ
- MEI
- I have my own business and it is not MEI
- Autonomous
- Internship or scholarship
- Informal

[10] These categories reflect the possibilities of employment in Brazil. CLT refers to the existence of a formal relationship between the employee and the employer, which offers the highest level of labor protection. PJ refers to a contractual relationship between the employee and the employer, but in the condition of a services provider and with less labor protection. MEI refers to micro entrepreneurs, often people from lower income strata who open a micro business. Informal encompasses people who do not have a registered economic activity of any kind.

*Thank you for answering those questions. Now, consider the following hypothetical but plausible situation: there are two firms thinking about entering the Brazilian market. They differ across multiple characteristics, which are summarized below. Please read and compare their characteristics carefully and then answer the questions that follow. There is no right answer – different people may place different weights to each of the attributes, which will lead to different preferences.*

**Table 1.** Conjoint study treatments

| **Dimensions** | **Firm A** | **Firm B** |
|---|---|---|
| Size | Large company and listed among the 500 largest firms in the world. | Medium-sized company and not listed among the 500 largest firms in the world. |
| Origin | Brazil | United States |
| Mode of insertion in the Brazilian market | Building of new facilities | Complete acquisition of a Brazilian firm |
| Sales destination | Sales to other countries (exports) | Sales to the Brazilian market |
| Labor market impact | Generation of a few jobs in its region | Generation of a lot jobs in its region |
| Credit market impact | Establishment in Brazil with money from abroad only - that is, no loans from Brazilian banks | Establishment in Brazil with money from abroad and some loans from Brazilian banks |
| Sector | Agriculture or Extractive (for instance, mining, oil) | Construction. |
| Good practices against corruption program | It has such a program | It doesn't have such a program |
| Member in the United Nations Global Compact, a program that incentivizes firms to adopt practices that contribute with the environment and with society | It is part of the United Nations Global Compact | It is not part of the United Nations Global Compact |

**[Q.D1]** Which company do you believe is more beneficial to the country?

- Firm A
- Firm B

**[Q.D2]** Which company do you believe is more beneficial to you and your family?

- Firm A
- Firm B

**[Q.D3]** Suppose these two firms have opposing positions over some regulatory issues. In its regulatory decision-making process, whose firm's preferences should the government give more weight to?

- Firm A
- Firm B

**[Q.D4]** Suppose these two firms already operate in the country and they are asking for fiscal incentives (such as tax exemptions) to continue to operate. These firms are threatening to end their activities if the incentives are not conceded. Which of these two firms should be prioritized to receive incentives?

- Firm A
- Firm B

*Thank you very much for going through the five rounds. To conclude, we will just ask another few questions about you. We recall that your answers are anonymous and confidential.*

**[Q.13]** What is your gender?

- Male
- Female
- I'd rather not answer

**[Q.14]** What is your age?

**[Q.15]** What is your state?

**[Q.16]** What is your zip code?

**[Q.17]** What is your color/race?[11]

- White
- Black
- Brown
- Yellow
- Indigenous

**[Q.18]** What is your highest level of education?

- Less than one year of formal instruction
- Some elementary school
- Elementary school diploma
- Some high school
- High school diploma

[11] In order to facilitate merging with other data sets, we follow the categories used by the Brazilian Institute of Geography and Statistics (IBGE).

- Some college
- College diploma
- Some graduate school
- Graduate school diploma

**[Q.19]** Did you take any vocational/trade school training?

- Yes, I have a diploma
- Yes, some but I don't have a diploma
- No

**[Q.20]** Please select the one that best describes your sector of occupation, regardless of whether you are currently working or not (options):

- Industry (for example, an automaker, a beverage producer, a steel sheet manufacturer)
- Retail (for instance, a store chain)
- Services (for example, software development, logistics)
- Agriculture or Extractive (for instance, mining, oil
- Construction
- Banking/Finance
- Public Sector

**[Q.21]** If you are working, does the firm/business you work for mostly rely on sales to other countries?

- Yes
- No
- Don't Know

**[Q.22]** Do you work for a foreign firm or have you ever worked for a foreign firm?

- Yes
- No

- Don't Know

**[Q.23]** Does anyone in your household work for a foreign firm or has worked for a foreign firm?

- Yes
- No
- Don't Know

**[Q.24]** Average estimated income of your household (consider the sum of your income with the income of the people who live with you)?

**[Q.25]** Are you or have you ever been affiliated to a union?

# 4 Observable implications

As explained in section 1, theoretical predictions of both labor and capital preferences over FDI are ambiguous and so we treat it as an empirical issue. In this section, we define our "goalposts": if it is true that labor in general supports FDI (according to theories based on the Heckscher-Ohlin model) then, empirically, we should observe the following:

- *(1A) Labor should prefer firms from foreign countries relative to Brazilian firms.*
- *(1B) Capital should prefer Brazilian firms relative to foreign firms.*

Such preferences are analyzed primarily relative to the firm's origin, one of the attributes in the conjoint and that brings five possibilities: Brazil, United States, Europe, China, and Latin America (not Brazil). Labor should prefer foreign firms relative to Brazilian firms, according to the expectation that labor is more supportive of FDI. Similarly, capital should privilege Brazilian firms relative to foreign peers. We do not necessarily expect to find that labor is more supportive of foreign firms from every single origin brought by the conjoint relative to Brazilian firms. However, labor should be more supportive of foreign firms on average and less supportive of Brazilian firms, both relative to capital.

If these results turn out to be the opposite of what we have just outlined, then we will find that labor actually does not necessarily prefer FDI relative to capital, which is in accordance with a newer generation of research on the distributional effects of FDI (see again Owen (2015); Danzman (2020)). If we do not find any meaningful differences between the labor and capital groups, then we have evidence that goes against the rationale that what drives preferences for FDI is one's position in the economy.

We can also test the relative importance of foreignness and other firm attributes relative to multiple observable implications that our design allows us to leverage. Specifically, if labor preferences are indeed mostly driven by material factors attached to employment, here is what we should observe relative to three key attributes in our conjoint survey:

- *(1C) Regarding the* Size *attribute: labor prefers large firms while capital prefers medium-sized firms.*
- *(1D) Regarding the* Mode of insertion in the Brazilian market *attribute: labor prefers firms that build new facilities, while capital prefers firms that merge with Brazilian firms.*
- *(1E) Regarding the* Labor market impact *attribute: labor prefers firms that generate lots of jobs; capital prefers firms that generate fewer jobs.*

These expectations are aligned with the rationale that the underlying factor that drives labor support for FDI is foreign capital's potential to generate more jobs and better jobs. Hence, labor should prefer larger firms, that build new facilities and that generate more jobs. In contrast, capital should prefer smaller firms that generate fewer jobs because they present less of a competition, including competition for labor. Capital should also prefer mergers and acquisitions because these present an opportunity to profit from the sale of their own businesses. If we cannot find support for these observable implications, then we will have evidence questioning the suitability of the Heckscher-Ohlin model to explain individual-level preferences for FDI.

More importantly, if we do not find meaningful differences across the labor-capital cleavage, then the idea that the drivers of individual preferences for FDI could be associated with non-material aspects gains strength. Based on the literature of non-material drivers of individual preferences for trade, we argue that social trust, national attachment, and chauvinism are key dispositional characteristics that might shape individuals' preferences for FDI. If anything, we believe that these dispositional characteristics should be even stronger when it comes to FDI relative to trade because the latter entails a longer-term relationship than the former and is more likely to generate concerns with sovereignty erosion and foreign control. We further explore the observable implications of each of these non-materials drivers below.

In the case of social trust, we have evidence that trust is an important micro-foundation of attitudes toward free trade (Nguyen and Bernauer 2019). Given that FDI entails a more long-lasting relationship and one rife with time-inconsistency problems, trust could be even more important in determining preferences for foreign capital than in trade. In addition to the time dimension, trust can play an important role in determining the public's preferences because FDI by MNCs can make workers feel more insecure. While FDI may bring better economic opportunities for workers, it also generates strong uncertainty about the consequences on individuals' material well-being (Scheve and Slaughter 2004). All these factors make it difficult for individuals with lower levels of trust - that is, those who tend to be distrustful of others and risk-averse - to interact with people outside their known social community and establish long-term relationships. Following this argument, we expect that:

- *(2A) Individuals with low social trust should prefer Brazilian firms relative to foreign firms, regardless of occupation.*

While the measure of social trust captures how the uncertainty stemming from FDI may make difficult for low trust individuals to support it, FDI might also bring concern about sovereignty erosion and foreign control. For a nationalist living in a capital's scant-state, FDI may be seen or perceived as both destroying the national manufacture and making its state dependent on foreign capital. Under these conditions, individuals highly attached to the state may think that to privilege domestic firms would be a suitable way to guarantee autonomy from foreign capital influence and secure the auto-sufficiency of the country. Thus, we expect that:

- *(2B) Individuals scoring higher on the national attachment scale should prefer Brazilian firms relative to foreign firms, regardless of occupation.*

Since nationalism is rife with different meanings and definitions, it is also possible that nationalistic individuals form beliefs about FDI based on its effects on national competitiveness. On this conception of nationalism, the presence of MNCs and FDI might represent a challenge to national companies, undermining their competitiveness and presence in both domestic and global markets. Here, the opposition to FDI would be driven more on a competition logic than concerns about sovereignty erosion and foreign control. Such logic of nationalism is typically portrayed in the literature as "chauvinism" and associated with a clear preference for national superiority and dominance (Herrmann et al. 2009). Drawing on this measure of nationalism, we should expect that individuals scoring higher on a national superiority ("chauvinsim") scale should prefer Brazilian firms relative to foreign ones, regardless of its occupation.

However, it is important to highlight that chauvinism may also produce the reverse effect - at least in theory. If chauvinism is a dispositional trait where people hold a perception of national superiority, then they can interpret the flux of FDI through MNCs in a more sanguine way. After all, higher chauvinists may interpret that national companies can compete with foreign ones, assessing the situation with feelings more of opportunity than threats.A recent work by Herrmann (2017), for example, points out this direction. The author finds that Americans higher in chauvinism did not perceive threats of economic globalization as potentially threatening situations or representing a big problem to the country. This would suggest that more chauvinist individuals appear to be confident that the U.S. can compete with foreigners. This result led Herrmann (2017) to warn that chauvinism may be associated with a more positive assessment of economic threats than previously established in the literature. Given the contrasting predictions about the effects of chauvinism on individuals' preferences over FDI, we opt by not registering hypotheses about this relationship.

## 4.1 Operationalization and Measurement

To identify those individuals that comprise 'labor' and those that comprise 'capital' in our sample, we will resort to two forms of measurement. For both measures, we will get to only the subset of people who respond they are currently working [Q.10]. Then, first, we will use responses to Q.11 to identify labor (those who checked they work for somebody else) and capital (those who checked they work for themselves). Second, we will use [Q.12] to build an alternative indicator of labor and capital, with CLT representing labor and MEI + business owners + autonomous constituting capital.

These approaches allow us to contrast formal mode of insertion in the economy with individuals' perception of what their role in the productive structure of the country is.

We will also create three measures for each of the potential non-material sources of FDI: social trust, national attachment, and chauvinism. To measure individual's level of generalized social trust, we will split respondents into those who say that most people "can be trusted" (1), and those who hold a more pessimistic view about trust in others (0) ("you can't be too careful in dealing with people") [Q.8].[12]. To capture national attachment, we will take the mean scores of responses across the [Q.1], [Q.2], and [Q.3]. Similarly, to measure chauvinism, we will take the mean scores of the items [Q.4], [Q.5], [Q.6]. Both the national attachment and chauvinism measures will be rescaled from 0 to 1, producing a continuous scale with higher values denoting greater national attachment and chauvinism, respectively.

# 5 Estimation

We will first estimate the average marginal component effect (AMCE), the main quantity of interest in conjoint experimental analysis. The AMCE represents the marginal effect of one specific attribute averaged over the joint distribution of the remaining attributes (Hainmueller et al. 2014; Bansak et al. 2021). To assess subgroup effects, we will follow Leeper et al. (2020) and estimate the marginal means of the different target groups - crucially, labor and capital and low and high levels of nationalism, chauvinism, and social trust. We focus on marginal means rather than AMCEs because the latter can be misleading in subgroup comparisons since they rely on estimation from the same baseline to make comparisons. To test interaction effects, we will adopt a similar approach. We will estimate the average marginal interaction effect (AMIE) (Egami and Imai 2019) rather than the average component interaction effect (ACIE) (Hainmueller et al. 2014) to assuage concerns that the relative magnitude of interaction effects is sensitive to the choice of the baseline categories when treatments are compared. We will estimate all these quantities of interest in R using the following packages: cjoint,cregg, and FindIt.

## 5.1 Subgroup effects

As indicated in section 3.2, we have four dependent variables [Q.D1, Q.D2, Q.D3 and Q.D4]. We also ask several questions concerning respondents' ideological, dispositional, and political preferences, as well as demographic information, which allows us to perform subgroup analyses. As explained in 4, our main subgroups effects are the ones that divides respondents between labor and capital and those that divide groups according their levels of social trust, nationalism, and chauvinism. However, we will also verify other heterogeneous effects for exploratory purposes, as follows.

[12] Because some scholars in IR use international trust rather than social trust as a proxy for measuring attitudes on international economic relations (Casler and Clark 2021), we will also use this measure as a robustness check [Q.7]. We will follow the same measurement strategy employed in the social trust measure, creating a binary variable where 1 means that respondents believe that "Brazil can trust in other nations" and 0 means that "Brazil "can't be too careful in dealing with other nations".

### 5.1.1 Formal labor versus informal labor

We will break down our sample among those formally employed versus those informally employed. This will allow us to explore heterogeneity among workers. If labor as a whole perceives the benefits of FDI and of its spillovers, we should not find a difference between formal and informal labor. However, if the benefits of FDI are perceived among those who either directly benefit from working at a MNC or that might credibly be employed by a MNC, then we should find more support for FDI (again, identified in terms of the nationality attribute) among formal workers.

### 5.1.2 Ideology

We will split respondents between left, center and right, based on individuals' response to [Q.9]. This will allow us to either validate or question the foundational results from the OEP tradition that posit that the left should be more supportive of FDI than capital. We will compare the marginal means of each of these groups regarding the nationality attribute in the conjoint (which, we recall, contains an option for domestic investment).

### 5.1.3 Other subgroup effects

We will also analyze other subgroup effects, such as gender, region, sector of employment, education, etc. These estimates seek to test other hypotheses outlined by the FDI literature as well as provide information to help generate new insights for future projects.

## 5.2 Diagnostics checks

Following the procedures set out by Hainmueller et al. (2014), we will run diagnostic checks for each of the assumptions of conjoint experimental designs. We will conduct a carryover assumption test to determine if the study results do not display over-time effects, a concern in conjoint experiments. Additionally, in order to validate the no profile order effects assumption, we will test whether respondents' choices would be the same irrespective of the order in which the two companies' profiles are displayed to respondents in each choice task. To probe whether the order in which attributes were presented to respondents did not affect the results, we will also conduct a test for order effects. Finally, we will run a randomization check to confirm that the treatments are well-balanced across respondents' covariates.

# 6 Power Analysis

We use the Power Analysis Tool for Conjoint Experiments designed by Stefanelli and Lukac (2020) to calculate the statistical power of our analysis, i.e., the probability of correctly rejecting the null hypothesis when the null hypothesis is false.

## 6.1 Nationally representative sample

Given a sample of 2000 respondents, completing 5 tasks each and with the highest number of variable/attribute levels being 6, we are able to detect the following effect sizes (AMCE):

- 1 percentage points - 11%
- 2 percentage points - 42%
- 3 percentage points - 80%
- 4 percentage points - 92%
- 5 percentage points - 98%

Studies pursuing research questions in the same field and applied to samples of individuals typically find sizable effects. For instance, Chilton et al. (2020) report results in the range from 1 to 19 percentage points, with most results > 4 percentage points. Li et al. (2017)'s results fall between 10-40 percentage points. Therefore, we do not anticipate any issues with statistical power.

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