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Institutional distance and foreign direct investment: An asymmetric approach

ABSTRACT

This paper analyses the effects of distance asymmetries on Portuguese inward foreign direct investment (FDI) from relatively more, and less, developed countries through the lenses of institutional distance. We developed a panel dataset composed of 35 origins of Portuguese FDI during the period 2003-2015 and analysed it through a series of multiple regression techniques. Results suggest that, when investing in Portugal, countries with lower levels of development are not affected by distance variations. Conversely, it seems that FDI from more developed countries is influenced by several dimensions of distance. This paper contributes to the understanding of asymmetries in institutional distance, emphasising the need for purely asymmetric distance constructs in IB research. Also, it provides the framework for assessing asymmetries with traditional, absolute measured, distance constructs.

Keywords: Asymmetries; country development; cross national distance; distance; distance asymmetries; FDI; foreign direct investment; multiple regressions; panel data; Portugal.

INTRODUCTION

The concept of distance is key for international business (IB) literature (Zaheer, Schomaker and Nachum, 2012; Hutzschenreuter, Kleindienst and Lange, 2016; Dow, 2017), being used as a metaphor for the difference, or degree of dissimilarity, between two countries (Håkanson and Ambos, 2010; Ambos and Håkanson, 2014). Those differences have a potential to encourage or deter international location decisions made by multinational enterprises (MNE), such as FDI decisions (Dunning, 1998; Shenkar, 2001; Dow, 2017).

The study of distance has come a long way in IB literature, geographic distance being first used as a surrogate measure for transportation costs, in gravity models, to predict trade flows (Beckerman, 1956; Linnemann, 1966; Anderson, 1979). Currently, the 30 year old cultural distance index (Kogut and Singh, 1988) remains the most popular distance construct (Hutzschenreuter *et al.*, 2016; Outreville, 2016; Jiménez *et al.*, 2017). Kogut and Singh (1988) used it originally to explain the influence of cultural distance on entry mode choice and found that, when entering the United States market, foreign firms preferred less control when cultural distance was higher. Similarly, Hennart and Larimo (1998) found a positive relationship between cultural distance and Finnish and Japanese firms preference for shared ownership in their US affiliates instead of full ownership. Contesting these findings, Tihanyi, Griffith, and Russell (2005) failed to find in a meta-analysis statistical evidence of relationships between cultural distance and entry mode choice, international diversification, and the performance of MNEs, notwithstanding moderating effects found on such relationships. However, culture may not be the only variable capable of affecting international business (Shenkar, 2001; Berry, Guillén and Zhou, 2010). Drawing from institutional theory (North, 1990), both formal and informal institutions matter, because they can facilitate or hinder interactions between actors (Maseland, Dow and Steel, 2018).Therefore, a more multidimensional construct of distance is needed.

Notwithstanding a fair agreement on the multidimensional nature of distance (Dow and Karunaratna, 2006; Brewer, 2007; Berry *et al.*, 2010; Dow, 2017), consensus about the impacts of its various dimensions on FDI-related decisions is still non-existent (Hutzschenreuter *et al.*, 2016; Ghemawat, 2017). On the one hand, Hutzschenreuter et al. (2016) argue that distance has only negative effects on firms' international business outcomes. This argument is supported by previous empirical studies where, for example, Li and Guisinger (1992) found that increases in cultural distance did not increase the number of foreign affiliates of MNEs in Triad regions. On the other hand, Shenkar's (2001) stresses that distance does not necessarily imply negative outcomes. In fact, Malhotra, Sivakumar and Zhu (2009), using a CAGE framework, found positive relationships of administrative and economic distances with the number of cross-border acquisitions by developing countries' multinational firms. In another study, Zhang (2015) found that several dimensions of cross-national distance were positively related to Japanese firms' levels of ownership in foreign affiliates.

These conflicting results may originate from the lack of consideration of distance asymmetries. Following Shenkar's (2001) illusion of symmetry, distance from country A to country B is not necessarily the same as that of country B to A. When analysing geographic distance alone the assumption holds, but when dealing with other institutional distances (e.g., cultural, political, economic, administrative) the same is hardly true (Faria, Carvalho and Reis, 2018; Hernández, Nieto and Boellis, 2018). Therefore, we rely on institutional theory to answer the question: does institutional distance affect inward FDI differently, depending on whether the home country is more, or less, developed than the host?

To answer this question we utilise an institutional distance construct developed by Berry et al. (2010) with a sample of 35 national origins of Portuguese inward FDI from 2003 to 2015.

Since distances in Berry et al. (2010) construct are calculated in absolute terms, thus assuming symmetry, we attempt to overcome this illusion by considering that investments can come from countries more, or less, developed than Portugal. Accordingly, this paper uses a measure of development that is shown to have an impact on FDI: gross domestic product *per capita* (GDP *per capita*) (Bénassy-Quéré, Coupet and Mayer, 2007; Leitão, 2011; Mishra, 2016). The moderating effects of the relative level of development on the relationship between institutional distance and inward FDI allow us to research whether investors from countries more, or less, developed than Portugal are affected differently by institutional distance when investing in the country.

This paper provides two major contributions. First, it deepens the understanding about institutional distance asymmetries, to the extent that models not accounting for such directionalities are probably inconclusive. Second, the use of development indicators, such as GDP *per capita*, provides a framework to assess distance asymmetries in the context of pre-existing international business models measured in absolute terms.

After this introduction, we review existing literature, followed by the empirical model and proposed hypotheses. Afterwards, we present the sample, variables and methodology used, as well as the specification of the econometric model. After presenting and discussing the results, we conclude with relevant findings and main contributions to the literature, as well as the limitations of this study and directions for future research.

LITERATURE REVIEW AND HYPOTHESES

The concept of distance was introduced by Wilfred Beckerman in 1956, where he proposed the existence of a psychic distance between countries, proxied by the geographic distance between them. The term seemed to have disappeared from IB literature, taken up again later by the Uppsala's internationalisation process model (Hörnell, Vahlne and Wiedersheim-Paul,

1973; Vahlne and Wiedersheim-Paul, 1973; Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977), which defined psychic distance as "the sum of factors preventing the flow of information from and to the market" (Johanson and Vahlne, 1977, p. 24). From that point on several constructs of distance appeared in IB research, namely cultural distance (Kogut and Singh, 1988), psychic distance (Dow and Karunaratna, 2006; Sousa and Bradley, 2006; Brewer, 2007; Håkanson and Ambos, 2010), and more recently institutional distance (Ghemawat, 2001; Berry *et al.*, 2010). Of these, cultural distance remains the dominant construct (Hutzschenreuter *et al.*, 2016; Outreville, 2016; Jiménez *et al.*, 2017; Maseland *et al.*, 2018). However, López-Duarte, Vidal-Suárez and González-Díaz (2019) verified that the tide is turning to cultural distance, with the ascension of multidimensional constructs such as the institutional distance proposed by Berry *et al.* (2010).

According to North (1994, p. 360), institutions are "the humanly devised constraints that structure human interaction", which can be formal (e.g. rules, laws) or informal (e.g. norms of behaviour, conventions). Institutional theory regards differences between countries' institutions as capable of affecting transactions between borders, with greater differences leading to higher transaction costs (North, 1994). However, previous research sustains that the way distance is managed, as well as its impacts, may change depending on the relative development of home and host countries (Phillips, Tracey and Karra, 2009; Aleksynska and Havrylchyk, 2013; Oh, 2016; Faria *et al.*, 2018; Hernández *et al.*, 2018). For instance, Aleksynska and Havrylchyk (2013) found that when countries from the South invest in countries with better institutions, institutional distance is viewed as a driving force. Oh (2016, p. 37) also concluded that "MNEs from a more corrupt country bribe more when invested in a less corrupt host country than MNEs from a less corrupt country do, although the distance is exactly the same".

In this paper, the notion of an asymmetric effect of institutional distance on FDI relates to the fact that two countries can have the same absolute institutional distance to, for instance, Portugal. However, one may be more developed and the other less developed than Portugal, hence leading to asymmetric effects of distance on FDI. To address the relative level of development between countries we use GDP *per capita,* since its relationship with FDI is well established (Bénassy-Quéré *et al.*, 2007; Sharma and Bandara, 2010; Leitão, 2011; Tocar, 2018).

Following institutional theory, we assess distance asymmetries of four general dimensions that are well accepted when looking into FDI, namely administrative, cultural, economic, and political distances. We also keep the remaining distance dimensions of Berry *et al.* (2010) as control variables in order to maintain the model's integrity. We provide a review of each of these distances in the context of FDI to derive our hypotheses.

First, cultural distance has been used in many empirical studies to explain a wide range of phenomena, with FDI representing "the most popular arena" for its application (Shenkar, 2001, p. 520). Some controversy exists regarding the impact of cultural distance on FDI, with studies finding negative effects (Kogut and Singh, 1988; Konara and Wei, 2019), positive effects (Gooris and Peeters, 2014; Duarte and Carvalho, 2018), and no effects at all (Tihanyi *et al.*, 2005). Regarding cultural differences, one country cannot be better or worse than another, just different. Hence, an increase is such differences is likely to deter foreign investment decisions due to an increase in the levels of uncertainty towards the host country. However, that same uncertainty could also lead to higher forms of commitment in order to maintain control over foreign activities, which local partners could otherwise tamper with. Therefore, without being able to predict a sign, we propose the following hypothesis.

Hypothesis 1. The sign of the effect of cultural distance on Portuguese inward FDI is different, depending on whether it comes from more or less developed countries than Portugal.

Second, administrative and political distances have been seen as deterring dimensions to FDI flows (Berry *et al.*, 2010; Bailey and Li, 2015) due to uncertainties arising from such differences. Nevertheless, Malhotra *et al.* (2009) verified that administrative distance had a positive effect on the number of cross-border acquisitions by emerging economies, concluding that less developed countries invest in more developed economies due to their institutional quality. Firms in less developed countries are most likely exposed to higher levels of bureaucracy, corruption, and have worse property protection rights, thus being attracted by the high-quality institutions present in more developed countries, whereas firms in more developed countries perceive the opposite. Hence, we propose the following hypotheses.

Hypothesis 2a. Administrative distance has a positive relationship with Portuguese inward FDI when it comes from countries that are less developed than Portugal.

Hypothesis 2b. Administrative distance has a negative relationship with Portuguese inward FDI when it comes from countries that are more developed than Portugal.

Hypothesis 3a. Political distance has a positive relationship with Portuguese inward FDI when it comes from countries that are less developed than Portugal.

Hypothesis 3b. Political distance has a negative relationship with Portuguese inward FDI when it comes from countries that are more developed than Portugal.

Last, economic distance refers to differences in economic development and macroeconomic characteristics (Berry *et al.*, 2010), which could impact FDI flows. Studies using economic distance found evidence of its positive effect on FDI (Lu *et al.*, 2014; Zhang, 2015). In terms of economic development, it is likely that firms in less developed countries feel attracted by more developed counterparts, due to market dimensions (Tocar, 2018), thus increases of this distance should attract more FDI. On the other hand, greater economic distance should hamper FDI decisions for firms in more developed countries. Hence, we propose the following hypotheses.

Hypothesis 4a. Economic distance has a positive relationship with Portuguese inward FDI when it comes from countries that are less developed than Portugal.

Hypothesis 4b. Economic distance has a negative relationship with Portuguese inward FDI when it comes from countries that are more developed than Portugal.

Figure 1 shows the proposed conceptual model, in which arrows represent the direct and moderating effects, summarising the hypotheses developed above.

"Figure 1 goes about here"

RESEARCH METHODOLOGY

To test the proposed hypotheses, we developed a panel dataset of Portuguese inward FDI from 35 national origins (table 1) during the period 2003-2015. In order to assess distance asymmetries, different studies apply different methodologies. Regarding psychic distance measured at the individual level, Håkanson and Ambos (2010) conducted a survey where respondents classified their perception of distance to several countries relative to their home country. This methodology made it possible for the authors to compute asymmetric perceptions of distance based on the respondents' countries. Another study (Hernández and Nieto, 2015), which measured distance at the country level, associated a dichotomous variable with the distance variable of interest, which takes the value of *one* if the absolute distance is positive and *zero* if the absolute distance is negative. However, since the distances used in this paper are measured without accounting for directionality, we overcome such issue by including a qualitative variable (GDP *per capita*) that allow us to account for asymmetries in country development relative to Portugal, thus emulating distance asymmetries in the Berry *et al.* (2010) model.

"Table 1 goes about here"

There are four reasons why we chose Portugal as the context for this study. First, Portugal is, traditionally, a net recipient of FDI (Simões and Cartaxo, 2013). According to the World Bank, FDI outflows only surpassed inflows in three years during the period 2003-2017. Second, the involvement in the creation of the European Free Trade Area in the 1960s, and Portugal's entry in the European Economic Community (EEC) in 1986, led to an increase of FDI inflows into the country (Simões and Cartaxo, 2013). Third, besides being part of a large economic and monetary union, the eurozone, Portugal also shares an historic and cultural past

with several countries outside the European continent, with the larger among them being Brazil, Angola, and Mozambique. Fourth, a dual perception of Portugal as a destination for FDI. Several reports (e.g. EY, 2017, 2018; Simões and Cartaxo, 2013) suggest that firms already in the country perceive Portugal as specialised, thus conferring it added value. On the other hand, unestablished investors see Portugal as a less competitive country with a less perceived value.

Data and Sample

Stocks of Portuguese inward FDI were collected from the United Nations Conference on Trade and Development (UNCTAD), Organizations for Economic Co-operation and Development (OECD), and Banco de Portugal (BP). Although different sources of FDI data are used, all of them base their FDI compilations on the Benchmark Definition of FDI: Fourth Edition (BMD4, OECD, 2008). Distance data was obtained from Berry *et al.* (2010) and from Hofstede's website, while control variables data were obtained from the World Bank, the International Monetary Fund (IMF), UNCTAD, CIA Factbook, and Community of Portuguese Language Countries (CPLP). The World Bank also provided data on GDP *per capita*. Table 2 summarizes the sources and descriptions of the variables.

"Table 2 goes about here"

The resulting panel was an unbalanced one, composed by 35 national origins of FDI during the period 2003-2015. The sample represents about 92% of the total inward FDI into Portugal during the period of the study, according to the latest World Investment Report (WIR, UNCTAD, 2018).

Variables

Dependent variable. As dependent variable in this study we used the stocks of Portuguese inward FDI (inFDI), measured in millions of US dollars and deflated by the Portuguese deflator (base year 2010), which was obtained from the IMF's International Financial Statistics (IFS). FDI stocks, and not flows, were used, since "foreign investors decide on the worldwide allocation of output, hence on capital stocks" (Bénassy-Quéré *et al.*, 2007, p.769). Bénassy-Quéré et al. (2007) also stress the volatility of flows over stocks in relatively small economies, given that the former can be hugely influenced by one or two takeovers.

Independent variables. The explanatory variables of interest are three of the nine dimensions of distance proposed by Berry et al. (2010) and cultural distance based on Hofstede's (1980) scores, due to insufficient data by Berry et al. (2010). Administrative distance (ADM) refers to differences in religion, legal system, and the presence of colonial ties. Economic distance (ECO) refers to differences in income, inflation, and international trade. Political distance (POL) refers to differences in political stability, democratic character, size of state, and membership in trade organizations.

Control variables. To attempt to isolate the effects other variables could have on Portuguese inward FDI, several controls were added to the models. In order to maintain the integrity of the Berry *et al.* (2010) model we have included the remaining distance variables. Connectedness distance (CON) refers to differences in internet use and international tourism receipts and expenditure. Demographic distance (DEM) refers to differences in population structure. Financial distance (FIN) refers to differences in composition of the stock market and domestic credit to private sector. Geographic distance (GEO) is measured using the great

circle distance between the geographic centre of countries. Knowledge distance (KNO) refers to differences in patent activity and scientific articles. Previous research has used GDP to proxy for countries' market size (Bénassy-Quéré *et al.*, 2007; Buckley *et al.*, 2007; Kokores, Kottaridi and Pantelidis, 2017). Therefore, we used the purchasing power parity GDP, in current international dollars, in its logarithmic form (lnGDP). According to Buckley et al. (2007), an underrated exchange rate encourages exports, but deters FDI. In this sense, we included an exchange rate variable (XR). Since Portugal has joined the Eurozone, other members will present a constant (*one*) in this variable. Previous studies have found significant relationships between FDI and the presence of a common border between two countries (e.g. Bénassy-Quéré et al., 2007; Choi, Lee, and Shoham, 2016; Konara and Wei, 2019). Therefore, since Spain is the only country bordering Portugal, and one of the most prominent Portuguese trade and FDI partners, we included a border dummy (Border) to capture its effect. We also included a dummy variable (BIT), which takes the value *one* if a country, in a given year, has a Bilateral Investment Treaty in force with Portugal and *zero* otherwise, since BITs have previously been found to have a positive relationship with FDI flows (e.g. Busse, Königer, and Nunnenkamp, 2010; Egger and Pfaffermayr, 2004). Previous research also found evidence of a link between belonging to a monetary union and FDI (De Sousa and Lochard, 2006; Kilic, Bayar and Arica, 2014).Hence we used a dummy variable (Eurozone) to capture this effect. Lastly, given that the last update of distance dimensions excludes the common language item from administrative distance, we included it as a dummy variable (PT), which takes the value of *one* if a country has Portuguese as official language and *zero* otherwise. Differences in language between countries is one of the factors that Johanson and Vahlne (2009) say affects the flow of information from and to the market, thus being able to influence MNEs' FDI decisions.

Interaction terms. The inclusion of a dummy variable allows us to test for differences between groups of countries that are more, or less, developed than Portugal. In this sense, we have created one dummy variable – GDPpc – which take the value of *one* if country *i* has a higher GDP *per capita* than Portugal and *zero* otherwise. To create this variable, we computed a simple average of GDP *per capita* for each country in the sample during the period of the analysis and compared it to the average Portuguese GDP *per capita*. Then, we interacted GDPpc with each mean-centred distance dimension of interest, thus creating four interaction terms. Note that regressions do not include the dummy variables, since we intend to assess the coefficients of each dimension of distance in each group, and not the overall distance (i.e., intercept).

With the exception of geographic distance, all other distances in this paper (including cultural distance based on Hofstede's data) were calculated with the Mahalanobis distance, which can be written mathematically:

$$d(a,b)^2 = (a - b)\, C^{-1}\, (a - b)^T$$

Where *a* and *b* are two vectors of different characteristics of two countries in a given year, and *C* is the covariance matrix of a (*n* x *p*) matrix, with *p* columns representing the characteristics and *n* rows representing each country in every year.

We have also included a one-year time lag in time-varying variables (connectedness, demographic, economic, financial, knowledge, and political distances, lnGDP, and exchange rate) to capture possible causal relationships (Lavie and Miller, 2008; Guler and Guillén, 2010; Jiménez and de la Fuente, 2016).

Due to the existence of missing values in several dimensions of distance, which reduced the number of observations by 42%, we adopted a method for replacing them as follows. In a given distance dimension, two situations appear: first, no values exist in the period of the

analysis; second, the missing values for a certain country in a certain distance dimension can be concentrated at the beginning of the period, at the end of the period or in the middle of the period. Consequently, we did not replace values where no distance/country observation existed. Where values were missing in the middle of the period, we used linear interpolation to obtain them. Regarding missing values in the beginning or in the end of the period, we used two different approaches: where six or more values existed, we used linear trend at point to input the missing values; when less than six values existed, we kept the last observed value constant throughout the remining period. This method enabled us to increase the number of country-year observations, from 266 (58.46%) to 321 (70.55%).

Some controversy is expected regarding this method of inputting data. Our goal was to minimize interference in the data and the introduction of biases. We believe that the increased number of observations surpasses the methodological issues at hand, and that this method is a good approximation to the real values.

Model Specification

Since we are using a panel dataset it is important to understand which model to use to estimate regressions. According to Baltagi (2015), the most common models to estimate linear regressions are Pooled Ordinary Least Squares (pOLS), Fixed Effects (FE), and Random Effects (RE). This study uses a RE model, mainly due to the presence of time-invariant explanatory variables, which, in a FE model, would be dropped.

Aside from the theoretical discussion of model selection (see Hsiao, 2004), Baltagi (2015) recommends a Hausman test, which compares FE and RE models. As such, we used three different tests to choose between the three estimators, namely an F test (H0: pOLS; H1: FE), a Breusch-Pagan test using a Lagrange Multiplier (H0: pOLS; H1: RE), and the Hausman test (H0: RE; H1: FE).

The regression model for the main effects is presented as follows:

$$FDI_{it} = \beta_0 + \beta_1 ADM_{it} + \beta_2 CUL_{it} + \beta_3 ECO_{it-1} + \beta_4 POL_{it-1} + \delta_5 CON_{it-1} + \delta_6 DEM_{it-1} + \delta_7 FIN_{it-1} + \delta_8 GEO_{it} + \delta_9 KNO_{it-1} + \delta_{10} lnGDP_{it-1} + \delta_{11} XR_{it-1} + \delta_{12} Border_{it} + \delta_{13} BIT_{it} + \delta_{14} Eurozone_{it} + \delta_{15} PT_{it} + \varepsilon_{it} \quad (1)$$

Where FDI_{it} is the dependent variable for each individual i in each period t, β_0 is the constant term, β_1 to β_4 are the coefficients of each distance dimension of interest, δ_5 to δ_{15} are the coefficients of each control variable, and ε_{it} is the random disturbance term, which, in the RE model, can be decomposed in $\varepsilon_{it} = \mu_i + v_{it}$, where the first term represents the individual random effects that do not vary over time and the second term represents the unobserved variables. When regressing with a RE model, we used the transformation proposed by Baltagi and Chang (1994) since our panel is unbalanced.

According to Wooldridge (2016), when using interactions with dummy variables, the interpretation is as follows: the coefficient of the variable of interest refers to its marginal effect on the dependent variable when d=0 (i.e., it measures the effect of a certain distance dimension on Portuguese inward FDI for countries that are less developed than Portugal), while the marginal effect for more developed countries than Portugal (d=1) is given by the sum of the variable's coefficient and the respective interaction term coefficient. Below is an example of a regression with the interaction term:

$$FDI_{it} = \beta_0 + \beta_1 ADM_{it} + \beta_2 CUL_{it} + \beta_3 ECO_{it-1} + \beta_4 POL_{it-1} + \delta_5 CON_{it-1} + \delta_6 DEM_{it-1} + \delta_7 FIN_{it-1} + \delta_8 GEO_{it} + \delta_9 KNO_{it-1} + \delta_{10} lnGDP_{it-1} + \delta_{11} XR_{it-1} + \delta_{12} Border_{it} + \delta_{13} BIT_{it} + \delta_{14} Eurozone_{it} + \delta_{15} PT_{it} + \theta_{16} ADM*GDPpc_{it} + \varepsilon_{it} \quad (2)$$

Where θ_{16} is the coefficient of the interaction term. Please note that four regressions were made. Interactions are regressed separately for each dimension of distance, and corresponding coefficients are highlighted to facilitate visualization. These interactions were regressed separately to prevent problems of multicollinearity between the independent variables and the interaction terms.

RESULTS

Table 3 shows the variables' main descriptive statistics, correlation matrix, and the variance inflation factors (VIF). Since the highest VIF value is 3.54 for administrative distance, well below the rule of thumb of 10.00 (O'Brien, 2007), multicollinearity does not seem to be a problem. By examining the correlations matrix, we can observe that there are several significant correlations between variables. Although VIF tests did not indicate the presence of multicollinearity, we have mean-centred the explanatory variables to further reduce such problem, as proposed by Aiken and West (1991).

"Table 3 goes about here"

Table 4 displays the results of the main effects regressions. Starting with the controls (column 1, table 4), we can see that panel tests indicate that a fixed effects (FE) estimator is adequate. However, since five control variables are time-invariant and the FE estimator would drop them, we relied exclusively on the random effects (RE) estimator. When introducing the explanatory variables (column 2, table 4), panel tests indicate that a RE approach is more adequate. Both pooled OLS and RE specifications are presented, but only the results from RE are discussed.

In column 3 (table 4), we can observe that the Border variable has a strong, positive and statistically significant effect on Portuguese inward FDI below the 1% level, which is in line with previous studies (Bénassy-Quéré *et al.*, 2007; Konara and Wei, 2019). Also, geographic distance and lnGDP show significant effects (negative (p=0.0296) and positive (p=0.0363), respectively), as was expected. The negative relationship between BIT and inward FDI is somewhat unexpected. However, studies on their impact on FDI have found mixed results (e.g. Busse et al., 2010; Hallward-Driemeier, 2003; Kerner, 2018). Lastly, knowledge distance presented a negative sign (p=0.0822), which is in line with previous studies (Berry *et al.*, 2010).

"Table 4 goes about here"

When regressing the variables of interest (column 4, table 4), only BIT dropped it statistical significance, while financial distance revealed a negative and statistically significant effect (p=0.0594). It can also be seen that administrative distance presented a negative and statistically significant effect (p=0.0631) on Portuguese inward FDI. This result is in line with previous research (Bailey and Li, 2015; Zhang, 2015; Duarte and Carvalho, 2018), and with the findings of reports on Portugal's attractiveness for FDI (e.g. EY, 2017, 2018), where legal constraints are highlighted as factors deterring FDI into the country. We did not find significant effects of cultural distance on Portuguese inward FDI, which supports previous research (Tihanyi *et al.*, 2005). Economic distance revealed a positive and significant effect close to the 1% level (p=0.0105). Previous studies also found a positive relationship between economic distance and FDI flows (Zhang, 2015; Duarte and Carvalho, 2018; Mingo, Morales and Dau, 2018). Lastly, political distance revealed a positive and significant impact (p=0.0327).

Additionally, we performed a Chow test (Chow, 1960) to verify the existence of a structural break along GDPpc. The null hypothesis states that all parameters in each group are the same. Since the test rejected the null hypothesis, we can assume that countries that are more, or less, developed than Portugal may behave differently when investing in the country. A deeper analysis of those differences is made in the following table.

Table 5 presents the results of the regressions with GDPpc interaction terms. Only RE regressions are shown due to space constraints, but pooled OLSs are available upon request. In each column, the main effect of the interacted explanatory variable is highlighted, and column 5 (table 5) shows the sums of the coefficients highlighted and those of their respective interaction terms.

"Table 5 goes about here"

Regarding hypothesis 1, although not statistically significant, the direction of the effects of cultural distance is the same whether FDI came from more, or less, developed countries than Portugal. Therefore, the results do not support hypothesis 1. Table 5 also reveals a lack of relationships between the remaining variables of interest and Portuguese inward FDI from countries that are less developed than Portugal (columns 1, 3, and 4, table 5), thus not supporting hypotheses 2a, 3a, and 4a. When analysing FDI from countries that are more developed than Portugal (column 5, table 5), several significant relationships were found. Administrative distance showed a negative and statistically significant effect (p=0.0237), supporting hypothesis 2b. Political distance revealed a positive, statistically significant, impact on Portuguese inward FDI (p=0.0334), thus not supporting hypothesis 3b. Similarly, economic distance had a strong statistical significance (p=0.0034) with a positive sign, also not supporting hypothesis 4b.

As a robustness test, we applied different development indicators , namely the Economic Freedom of the World (from the Fraser Institute), the Index of Economic Freedom (from Heritage Foundation), and the Human Development Index (from the United Nations Development Programme), not significantly altering the results obtained. Results are not reported for the sake of brevity but are available upon request.

DISCUSSION AND CONCLUDING REMARKS

This paper had the purpose of analysing the effects of distance asymmetries in Portuguese inward FDI patterns using Berry et al. (2010) institutional distance. The necessity to proxy distance asymmetries with relative levels of development comes from the absolute distance measures in traditional institutional distance constructs. In this sense, we suggested a rationale in which a foreign investor's perception of distance can be affected if its home country is more, or less, developed than the host (Aleksynska and Havrylchyk, 2013; Hernández and Nieto, 2015). This idea is supported by our results, which show that foreign investors from more developed countries are affected by multiple dimensions of institutional distance, with the same not being true for foreign investors from countries that are less developed than Portugal.

Firstly, our results suggest that administrative distance hampers FDI from more developed countries. According to Duarte and Carvalho (2018), legal issues may inhibit foreign investment in Portugal if the quality of the legal systems in the investors' home countries is better. On the other hand, investors from less developed countries could perceive Portugal as having a comparatively good legal system, thus not being affected by increases in that particular distance. Political distance presented a positive and statistically significant effect on FDI from more developed countries. On the one hand, one could argue that an increase in political distance, in turn raises foreign investors' levels of uncertainty, and FDI decisions

could be deterred by such political risk (Delios and Henisz, 2003; Buckley *et al.*, 2007; Bae and Salomon, 2010). On the other hand, a foreign investor could overcome the uncertainty through internalization (Buckley and Casson, 1976; Dunning, 1993), thus fostering higher levels of commitment. Although gravity models applied to FDI (Bénassy-Quéré *et al.*, 2007; Sharma and Bandara, 2010; Leitão, 2011) indicate that investment tends to flow to larger economies (higher GDP and more open to trade), our results suggest the opposite. We found that, as economic distance increases to the more developed side (i.e., as Portugal's economy gets relatively smaller), investors tend to invest more in Portugal. A possible explanation is that investors from more developed countries may perceive Portugal as an export platform, due to its location and relatively low wages (Barbosa, Guimarães and Woodward, 2004). As for the absence of cultural distance impact, it might be due to other moderator effects. Tihanyi *et al.* (2005) discussed this point of view as the main reason for the contradictory findings in the literature.

A major issue raised by this study is that the sole reliance on absolute distance measures may induce disparate findings of FDI decisions, incurring in Shenkar's (2001) illusion of symmetry. Although providing only a Portuguese perspective, this paper highlights that different perceptions of distance exist and need to be accounted for. In this study we used a distance construct measured in absolute terms, which lends space for future research to pick up with a novel, purely asymmetric construct of distance. Nevertheless, the approximation revealed some intricacies of the relationship between institutional distance and decisions to invest in Portugal. The focus on Portugal can also be seen as a limitation, since it is a small economy and accounts for a relatively small share of global FDI flows. However, it is an open economy with historical and business relationships with all of the five continents, making it a good starting point to analyse foreign investors' decisions. Also, since our data on FDI refers to stocks aggregated by national origin, it is not possible to determine whether the decision

was made by the ultimate owner (i.e., headquarters), by an intermediate counterpart (i.e., foreign subsidiary), or by the Portuguese subsidiary itself through profit reinvestment. What can be determined is that the value of FDI stock at the end of a given year from a given national origin, is the sum of all FDI decisions made by MNEs from that given country in that given year. In that sense, regardless of whether the decision was made by headquarters or another agent of the firm, it came from a particular country, which is at a given distance from Portugal. Also, other Shenkar (2001) illusions were not addressed, namely the one of stability with respect to Hofstede's cultural distance, the illusion of linearity, and the assumptions of equivalence, and corporate and spatial homogeneity. Regarding this last assumption, future research could find ways to incorporate in the same model cross-national distance variables and individual perceptions of distance, which, albeit a probably daunting task, could provide richer insight to the study of distances.

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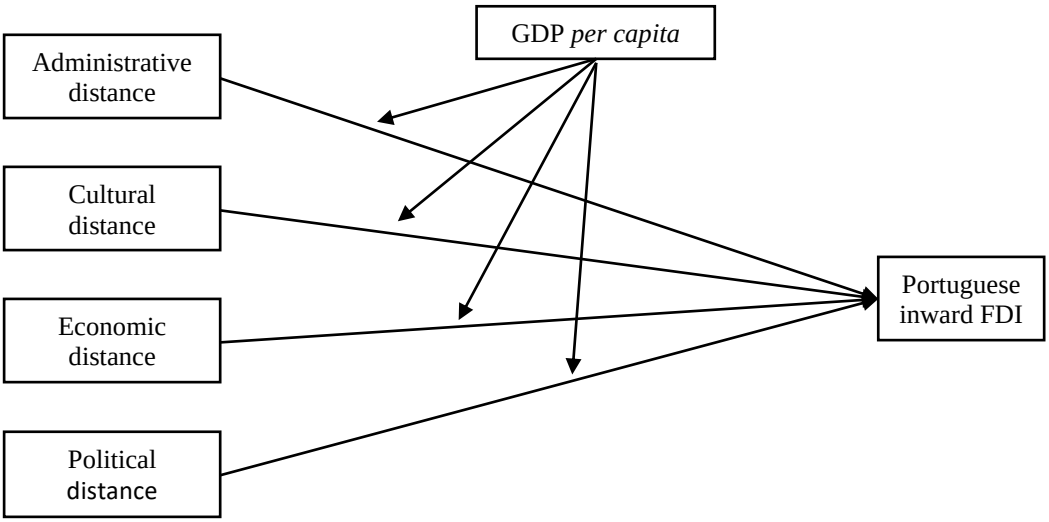
Figure 1 - Conceptual Model



Source: Authors.

Table 1 - Portuguese inward FDI origins

Angola	Lithuania
Australia	Luxembourg
Austria	Malta
Belgium	Mexico
Brazil	Morocco
Canada	Mozambique
Cyprus	Netherlands
Czech Republic	New Zealand
Denmark	Norway
Finland	Saudi Arabia
France	South Africa
Germany	Spain
Greece	Sweden
Iceland	Switzerland
Ireland	United Kingdom
Italy	United States of America
Japan	Venezuela
Korea, Republic of	

Source: Authors.

Table 2 - Variable descriptions and sources

Variable	Description	Source
Portuguese inward FDI	Stocks of Portuguese inward FDI	UNCTAD; OECD; BP
Administrative distance	Colonial link; religion; legal system	Berry et al. (2010)
Connectedness distance	Internet users; international tourism expenditure and receipts	Berry et al. (2010)
Hofstede distance	Power distance; collectivism; masculinity; uncertainty avoidance	Hofstede (1980) and own calculations
Demographic distance	Life expectancy; birth rate; population below 14 and above 65	Berry et al. (2010)
Economic distance	Income; inflation, total imports, and exports	Berry et al. (2010)
Financial distance	Credit to private sector; market capitalization; listed companies	Berry et al. (2010)
Geographic distance	Great circle distance	Berry et al. (2010)
Knowledge distance	Patents; scientific articles	Berry et al. (2010)
Political distance	Political uncertainty; democracy; size of the state; membership in WTO and regional trade bloc	Berry et al. (2010)
GDP	Home country GDP (PPP, current international dollars)	World Bank
Exchange rate	Exchange rate of home country's national currencies into Euros	International Financial Statistics (IMF)
Bilateral Investment Treaty	Dummy variable which takes a value of *one* if a country has a treaty in force with Portugal in a given year	UNCTAD
Common Border	Dummy variable which takes a value of *one* if a country has common border with Portugal	CIA Factbook
Official Portuguese language	Dummy variable which takes a value of *one* if a country has Portuguese as its official language	CPLP
GDPpc	Dummy variable which takes a value of *one* if a country has a higher GDP *per capita* than Portugal and *zero* otherwise	World Bank and own calculations

Source: Authors.

Table 3 - Descriptive statistics, VIF, and correlations matrix

	Variable	Mean	S.D.	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	inFDI	3 000.00	6 031.00	-337.40	33 640.00																
2	ADM	44.18	35.42	0.06	142.10	-0.41	**3.55**														
3	CUL	1.68	1.08	0.17	4.32	-0.09	0.17	**1.52**													
4	ECO_{t-1}	5.20	8.05	0.12	52.14	0.12	-0.08	0.19	**2.50**												
5	POL_{t-1}	162.40	60.88	57.21	238.40	-0.24	0.27	-0.19	-0.06	**2.12**											
6	CON_{t-1}	2.24	2.30	0.03	17.75	-0.11	0.47	0.43	0.31	0.06	**2.56**										
7	DEM_{t-1}	6.35	7.83	0.04	37.33	-0.25	0.03	-0.26	-0.17	0.44	-0.11	**2.38**									
8	FIN_{t-1}	3.85	3.41	0.07	15.78	-0.08	-0.30	-0.18	0.16	0.29	-0.09	0.33	**1.99**								
9	GEO	4 763.00	4 352.00	346.80	19 801.00	-0.31	0.31	-0.11	-0.18	0.56	0.15	0.40	0.20	**2.08**							
10	KNO_{t-1}	5.89	9.87	0.00	71.43	-0.14	0.32	-0.00	0.00	0.35	-0.02	0.02	-0.18	0.35	**2.23**						
11	$lnGDP_{t-1}$	26.69	1.70	22.84	30.49	0.20	0.06	-0.10	-0.54	0.27	-0.01	0.09	-0.11	0.38	0.40	**2.95**					
12	XR_{t-1}	0.58	0.49	0.00	2.34	0.37	-0.55	0.11	0.12	-0.49	-0.25	-0.53	-0.20	-0.46	-0.25	-0.21	**3.14**				
13	Border	0.03	0.17	0	1	0.59	-0.24	-0.20	-0.12	-0.14	-0.22	-0.11	0.01	-0.20	-0.12	0.11	0.14	**1.25**			
14	BIT	0.23	0.42	0	1	-0.22	0.26	-0.25	-0.24	0.13	-0.09	0.31	0.15	0.08	-0.03	0.09	-0.45	-0.10	**1.87**		
15	Eurozone	0.35	0.48	0	1	0.42	-0.44	0.02	0.12	-0.50	-0.31	-0.44	-0.24	-0.55	-0.33	-0.24	0.64	0.22	-0.24	**2.45**	
16	PT	0.09	0.28	0	1	-0.09	-0.00	-0.20	-0.10	0.05	-0.04	0.34	0.12	0.16	-0.05	0.19	-0.14	-0.04	-0.10	-0.18	**1.51**

Note: VIF values are presented diagonally, in bold.
inFDI: Portuguese inward FDI; ADM: administrative distance; CUL: cultural distance; ECO: economic distance; POL: political distance; COM: connectedness distance; DEM: demographic distance; FIN: financial distance; GEO: geographic distance; KNO: knowledge distance; lnGDP: logarithm of GDP; XR: exchange rate; BIT: bilateral investment treaties; PT: Portuguese as official language.
Correlations with absolute value above 0.09 are significant at the 5% level (two-tailed).
Source: Authors.

Table 4 - Main effects regressions

	Pooled OLS	**Pooled OLS**	**RE**	**RE**
	(1)	(2)	(3)	(4)
Constant	-29 473.60*	-28 769.40	-52 368.10*	-58 271.80*
	(12 313.00)	(17 541.50)	(26 454.00)	(27 731.50)
Distances:				
ADM		-74.68		-75.92†
		(55.90)		(40.85)
CUL		-117.39		101.77
		(526.29)		(470.26)
ECO_{t-1}		116.35		268.07*
		(144.75)		(104.82)
POL_{t-1}		-6.44		14.20*
		(10.25)		(6.65)
Controls:				
CON_{t-1}	806.84	1 652.42	116.64	421.92
	(692.98)	(1 370.02)	(180.42)	(317.93)
DEM_{t-1}	7.07	42.74	42.71	-8.24
	(71.90)	(76.69)	(145.98)	(159.82)
FIN_{t-1}	66.27	-133.37	-386.33	-547.26†
	(166.24)	(278.93)	(251.12)	(290.34)
GEO	-0.28**	-0.17	-0.58*	-0.44*
	(0.09)	(0.15)	(0.27)	(0.21)
KNO_{t-1}	-23.75	15.13	-40.34†	-43.23†
	(39.63)	(78.07)	(23.21)	(26.06)
$lnGDP_{t-1}$	1 107.41*	1 128.34†	2 050.02*	2 231.71*
	(448.79)	(623.91)	(979.01)	(1 028.30)
XR_{t-1}	2 455.55*	977.12	194.66	759.79
	(1 063.88)	(1 456.13)	(980.52)	(1 419.61)
Border	17 363.60***	17 730.00***	15 659.20***	16 766.90***
	(1 652.41)	(1 716.49)	(3 175.10)	(2 901.08)
BIT	-697.16	958.03	-2 949.09†	591.30
	(1 431.66)	(1 823.95)	(1 684.07)	(1 638.43)
Eurozone	2 477.26	1 640.42	297.01	-1 019.26
	(2 333.37)	(2 187.34)	(942.38)	(1 079.39)
PT	6.14	-225.88	-2 735.59	-903.73
	(1 089.81)	(1 841.10)	(2 296.06)	(2 122.86)
N	316	296	316	296
AIC	6 260.88	5 828.12	6 354.47	5 891.07
Adj. R^2	0.4914	0.5779		
Correlation $(y, \hat{y})^2$			0.3817	0.5172
Panel tests:				
F (23,281)	40.76***			
F (20, 261)		33.78***		
Breusch-Pagan	835.77***	659.42***		
Hausman	24.03**	10.11		
Chow test (GDPpc)		105.00***		

Note: †p≤0.1; *p≤0.05; **p≤0.01; ***p≤0.001
Below each coefficient are the heteroskedasticity and autocorrelation consistent (HAC) standard errors, shown in parenthesis.
RE: random effects; ADM: administrative distance; CUL: cultural distance; ECO: economic distance; POL: political distance; COM: connectedness distance; DEM: demographic distance; FIN: financial distance; GEO: geographic distance; KNO: knowledge distance; lnGDP: logarithm of GDP; XR: exchange rate; BIT: bilateral investment treaties; PT: Portuguese as official language.
Dependent Variable: Portuguese inward FDI.
Source: Authors.

Table 5 - Regressions with GDPpc interactions

	(1)	(2)	(3)	(4)	(5)
Constant	-53 270.10†	-56 719.40†	-53 303.00*	-55 887.50*	
	(28 497.10)	(29 893.40)	(27 034.00)	(26 530.00)	
Distances:					
ADM	154.80	-81.27*	-87.04*	-79.22*	-94.64*
	(130.38)	(41.25)	(36.23)	(38.67)	(41.85)
CUL	234.16	2 541.96	220.39	130.91	69.59
	(477.19)	(2 949.82)	(472.81)	(470.41)	(482.93)
ECO_{t-1}	260.99*	264.82*	1 283.19	258.71**	248.16**
	(102.43)	(104.76)	(1 634.48)	(95.73)	(84.79)
POL_{t-1}	15.07*	14.63*	14.46*	-4.79	15.10*
	(6.98)	(6.73)	(6.73)	(29.36)	(7.10)
Controls:					
CON_{t-1}	421.42	421.08	399.63	471.31	
	(318.04)	(321.55)	(330.05)	(302.21)	
DEM_{t-1}	24.25	5.65	90.00	40.23	
	(166.50)	(176.10)	(296.93)	(205.69)	
FIN_{t-1}	-538.22†	-544.38†	-523.54†	-535.40†	
	(290.30)	(291.86)	(299.93)	(289.88)	
GEO	-0.42*	-0.47*	-0.42*	-0.44*	
	(0.20)	(0.20)	(0.20)	(0.21)	
KNO_{t-1}	-44.32†	-43.71†	-47.35	-44.14†	
	(26.40)	(26.38)	(28.95)	(26.31)	
$lnGDP_{t-1}$	2 069.16*	2 187.50*	2 077.66*	2 150.55*	
	(1 051.03)	(1 100.71)	(1 003.60)	(985.76)	
XR_{t-1}	390.00	561.08	445.75	764.98	
	(1 487.44)	(1 469.35)	(1 198.57)	(1 386.33)	
Border	16 694.40***	16 569.30***	16 659.80***	16 784.80***	
	(2 858.31)	(2 859.87)	(2 793.13)	(2 818.18)	
BIT	2 498.42	984.84	1 328.56	868.56	
	(2 259.31)	(1 932.10)	(2 057.03)	(1 622.89)	
Eurozone	-1 415.23	-1 267.13	-1 138.11	-924.95	
	(1 122.88)	(1 095.72)	(1 032.64)	(1 091.73)	
PT	-793.09	1 640.17	1 495.67	-1 147.53	
	(2 151.94)	(3 519.34)	(3 819.22)	(2 308.90)	
Interactions:					
ADM x GDPpc	-249.44†				
	(141.83)				
CUL x GDPpc		-2 472.37			
		(3 035.40)			
ECO_{t-1} x $GDPpc_{t-1}$			-1 035.03		
			(1 586.66)		
POL_{t-1} x $GDPpc_{t-1}$				20.07	
				(29.44)	
N	296	296	296	296	
Correlation $(y, \hat{y})^2$	0.5382	0.5211	0.5385	0.5285	

Note: †p≤0.1; *p≤0.05; **p≤0.01; ***p≤0.001

Below each coefficient are the heteroskedasticity and autocorrelation consistent (HAC) standard errors, shown in parenthesis.

ADM: administrative distance; CUL: cultural distance; ECO: economic distance; POL: political distance; COM: connectedness distance; DEM: demographic distance; FIN: financial distance; GEO: geographic distance; KNO: knowledge distance; lnGDP: logarithm of GDP; XR: exchange rate; BIT: bilateral investment treaties; PT: Portuguese as official language.

Dependent Variable: Portuguese inward FDI.

Source: Authors.