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PERSONALITY DISTANCE AND ECONOMIC ACTIVITY

Abstract: Building on the similarity-attraction hypothesis I examine whether differences in the personalities of inhabitants from interacting countries affect the level of economic activity between them. To do this I investigate whether both aggregated and non-aggregated differences in personality scores of average inhabitants from two countries have the potential to explain variation in the level of trade, foreign portfolio investment, mergers and acquisitions, and cross-listings between these countries. Results show that only the number of cross-listings is negatively and statistically significantly related to personality distance. I discuss possible reasons for the lack of support (in general) for the hypothesized relationship.

Keywords: personality traits, personality similarity, similarity-attraction hypothesis, familiarity, cultural distance.

JEL Classification: G2, G15.

DYSTANS OSOBOWOŚCIOWY A AKTYWNOŚĆ EKONOMICZNA

Streszczenie: Na podstawie teorii przyciągania podobieństw badam w pracy, czy różnice osobowościowe między mieszkańcami różnych państw mają wpływ na skalę aktywności ekonomicznej między krajami. W tym celu badam, czy zagregowane i niezagregowane różnice w osobowości przeciętnych mieszkańców dwóch krajów stanowią determinantę skali handlu, inwestycji portfelowych, fuzji i przejęć, oraz cross-listingu między nimi. Wyniki wskazują, że jedynie liczba operacji cross-listingu ma negatywny i statystycznie istotny związek z dystansem osobowościowym. W artykule przedyskutowano kilka możliwych powodów braku wsparcia (patrząc całościowo) dla przedstawionej hipotezy.

Słowa kluczowe: cechy osobowości, podobieństwo osobowości, teoria przyciągania podobieństw, dystans kulturowy.

Introduction

Financial academics have demonstrated that cultural differences clearly affect decisions made by practitioners and influence international bank loans [Giannetti and Yafeh 2011], cross-border takeover activity [Ahern, Daminielli and Fracassi 2015], and the choice of cross-listing destinations [Dodd, Frijns and Gilbert 2013]. The purpose of this study is to test an alternative proxy for the differences between individuals that engage in some form of economic activity that could have the potential to constrain or discourage the level of activity between two countries. More specifically I argue that differences in the personalities¹ of individuals from two countries can affect the perceived attractiveness of a country, in terms of trade, investment in the country's securities, takeover targets and as a destination for cross-listing shares.

The majority of studies that focus on personality differences focus on interpersonal interactions, which stems from the fact that personality assessments relate to individuals, not cultures. However at this point there is sufficient evidence to warrant the analysis of personality differences at the ecological level (i.e. on a cross-cultural or cross-country level). Research (e.g. McCrae and Terracciano [2005]) has shown that each of the factors that comprise the most widely-accepted model of personality, the Five-Factor Model, emerge (with some exceptions) regardless of the culture that is investigated, and that the analysis of differences between-countries seems, from a theoretical standpoint, equally appropriate as the analysis of differences within countries (between individuals of a given country).

The study contributes to the literature that focuses on between-country (e.g. Allik and McCrae [2006], Schmitt et al. [2007]) and between-region [Rentfrow, Gosling and Potter 2008] differences in the mean levels for each personality domain described in the Five-Factor Model, by performing an analysis of possible economic consequences of such variation. Researchers have only recently started to investigate the link between differences in personality and economic outcomes which has been done mostly from a theoretical perspective (e.g. Borghans et al. [2008], Almlund et al. [2011]).

¹ Cattell [1950, p. 2] defines personality as: „that which permits a prediction of what a person will do in a given situation”. Temporally stable tendencies in the behaviour of individuals are called personality traits [Asendorpf 2009], and are often aggregated in personality factors or domains. For example, one's assertiveness is a subcomponent of the extraversion factor in the Five-Factor Model (as operationalized in the Revised NEO Personality Inventory [McCrae and Costa 1992]).

1. Personality differences versus the interaction of economic agents

1.1. The effect of personality similarity

I consider the argument that differences in personality can affect the level of economic interaction between two countries as plausible, building on extensive research on the similarity-attraction hypothesis [Byrne 1971], also known as the similarity effect, which posits that a high level of similarity between the perceiver and the target makes the latter more attractive (in a broad sense) to the former, and thus makes it much more likely that they will establish a rapport (decide to interact) or continue to interact in the future. The major categories of similarity that have been studied are attitudinal similarity, demographic similarity and personality similarity [Finkel and Baumeister 2010]. The analyses of similarities (and differences) in personalities generally focus on the assortative matching between people that establish strong emotional bonds i.e. friends (e.g. Izard [1960], Duck and Craig [1978]) and spouses (e.g. Botwin, Buss and Shackelford [1997], Watson et al. [2004], McCrae et al. [2008]). This research generally shows a link between personality similarity and the likelihood of establishing a relationship, although it is usually moderate.

There is convincing evidence that – analogously to interpersonal relations – the level of economic activity between countries is also to a certain extent determined by how similar the interacting countries are to one another. Examples of such similarities are commonalities in language, legal origin, and religion². A salient (albeit indirect) manifestation of this point can be found in Guiso, Sapienza and Zingales [2009], who show that the degree of trust towards inhabitants of another country is – amongst other factors – higher for countries that have a similar (if not common) language or religion, or a similarly developed economy. Although the personality of an individual is not as overt a characteristic as the language he speaks or his physical appearance, it can nonetheless be assessed, even when very little information is provided [Funder and Colvin 1988]. Thus it seems plausible that the level of personality convergence between average individuals from two countries can also play some role in determining the level of economic interaction between these countries, analogously to the role played by the

² Although language and legal origin commonality very often work as proxies for the level of between-country information asymmetry, it would be difficult to argue that they don't also have a significant behavioural impact on decision-makers.

previously mentioned factors. Therefore I hypothesize that the level of economic activity (i.e. exchange or degree of access to a foreign market) should be positively (negatively) related to the convergence (divergence) of personalities of average individuals from the interacting countries.

Although the aforementioned research makes the connection between personality similarity and economic exchange intuitive it is nonetheless necessary to highlight the two possible channels through which a member of a specific culture can acquire knowledge or model his perception about the personality structure of an average individual from a foreign country. The first way is to do so directly whilst interacting with members of another culture, which would, however, require many such interactions to make a reliable assessment. The second possible way of obtaining information on the personality of a mean individual from another culture is through culturally-transmitted stereotypes³. This, in turn, would in theory require that the stereotypes correspond to the true personalities of foreigners, but there is some research that suggests that this is not the case [Terracciano et al. 2005]. However this does not necessarily render the assessments of the level of similarity inaccurate, as individuals can make the same sort of bias whilst comparing the stereotypical image of residents of their own country and residents of a foreign country (which could simultaneously yield congruence in perceived personality characteristics and incongruence between perceived and actual personality characteristics⁴).

1.2. Measuring differences in personality

The main focus of this study is to conduct an analysis of the effect of aggregate differences in the personality of individuals from two countries ('personality distance'), i.e. initially I do not focus on any specific personality trait. One reason for doing so is based on the observation made by Watson et al. [2004], who reach the conclusion that the matching of couples is more likely 'diffuse' than trait-specific. Note, however, that some researchers criticize the idea of studying aggregate (composite) measures of cultural differences [Shenkar 2001; Dow and Karunaratna 2006], and some of their concerns might equally apply to differences in personality.

³ Indirect evidence for a link between national stereotypes and the level of economic activity is provided in Hwang [2011], who demonstrates a correlation between the 'likeability' of citizens from a foreign country and demand for securities from that country.

⁴ A discussion on the evidence of a different effect of actual and perceived similarity can be found in Montoya, Horton and Kirchner [2008].

It should be noted that whilst an aggregate (composite) personality difference is a more ‘complete measure’ – just as differences in national culture are usually aggregated, and take the form of cultural distance – it can be expected that differences on each of the personality traits under investigation can contribute independently to the creation of barriers that would mitigate economic activity between two countries. As extant research suggests it is also possible that people might be more accurate when assessing certain ‘visible’ personality traits, and be less accurate when judging others [Funder 1995]. For example, Terracciano et al. [2005] demonstrate a significant divergence between the perceived (as measured by national stereotypes) and actual (as measured by the mean scores obtained in each country) level of agreeableness of inhabitants from another culture. Thus to complement the analysis, I also study each personality dimension separately.

2. Data and methodology

2.1. Personality distance

To assess personality distance (the aggregated difference between personalities) between inhabitants of two countries I use the data provided by McCrae and Terracciano [2005]. This study provides – for a wide range of cultures – mean levels on each of the five factors from the Five-Factor Model of personality. The five factors – often referred to as the ‘Big Five’ – are: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. The first two factors – which relate to one’s emotional stability and sociability, respectively – are well known dimensions of personality that appear in virtually every model of personality. The remainder of factors relate (amongst other characteristics) to how imaginative (openness to experience), kind (agreeableness), and responsible (conscientiousness) one is [McCrae and John 1992]. Estimates are obtained through the observer-rating Revised NEO Personality Inventory (NEO-PI-R).

I construct the personality distance (or dissimilarity) of average individuals from two countries to mirror the measure investigated in Allik and McCrae [2004]. Thus the personality distance between country i and country j is defined as the weighted Euclidean distance, or:

$$PD_{ij} = \sqrt{\sum_{f=1}^5 \left[\frac{(S_{fi} - S_{fj})^2}{Var(S_f)} \right]}, \quad (1)$$

where S_{fi} and S_{fj} are the scores of the interacting countries on the f -th personality trait, and $Var(S_f)$ is the variation of mean scores on this trait across countries. Note that this measure differs from the cultural distance measure proposed in Kogut and Singh [1988], in which instead of taking the square root of the sum the authors take the arithmetic average of each ‘component’.

2.2. Trade

Data on bilateral trade is sourced from the Directions of Trade database provided by the International Monetary Fund (IMF). Trade is defined as the log value of the geometric average of the value of exports and imports reported by each partner (in year t):

$$T_{ijt} = \log \left(\left[E_i \times E_j \times I_i \times I_j \right]^{\frac{1}{4}} \right). \quad (2)$$

I use bilateral trade data from 1995 to 2012.

2.3. Foreign portfolio investment

I use the Coordinated Portfolio Investment Survey dataset in which the IMF provides annual data on the end-of-year bilateral holdings in equity. For each year t , the value (in USD) of the security holdings from country j in the portfolios of investors from country i (w_{ijt}) is compared to the weight that corresponds to the International CAPM model (w_{ijt}^* , which is the ratio of the market value of securities from country j to the market value of securities from all countries)⁵:

$$FPI_{ijt} = \log \left(\frac{w_{ijt}}{w_{ijt}^*} \right). \quad (3)$$

I compute the relative level of portfolio investment separately for equity and debt securities. The bilateral holdings data is from 2001 to 2012.

⁵ A more detailed description of how this variable is computed can be found in Beugelsdijk and Frijns [2010].

2.4. Mergers and acquisitions

Data on cross-border mergers and acquisitions (M&As) is sourced from DealWatch. I consider only cross-border M&A deals in which the country of origin of the buyer and seller are specified. I use data on all deals made between 2003 and 2012 that meet this condition. The dependent variable is the logged USD-value of the M&A deals between each country-pair [Ahern, Daminelli and Fracassi 2015].

2.5. Cross-listings

Information on the number of cross-listings between countries is sourced from the dataset provided by Sarkissian and Schill [2004]. The dependent variable is defined as the log of the sum of the number of cross-listings between countries and one.

2.6. Control variables

In the study I consider the effect of only a limited set of control variables. The main reason for doing so is to analyse the widest possible number of country-pairs – due to data limitations the addition of a more specific control variable often causes a considerable reduction in the number of observations. Also some variables have been shown to consistently affect most forms of economic interaction between countries, which allows us to construct parsimonious and consistent specifications. I control for the effect of the core variables in the gravity equation i.e. geographic distance between countries and the GDP of both countries. Moreover I control for each country's wealth by including GDP *per capita* levels of the interacting countries in the regressions. I also use dummy variables that account for the commonality of language, religion or origin of the legal system⁶. Finally I control for the impact of cultural distance between the interacting countries, based on the initial four dimensions of national culture proposed by Hofstede [1980].

2.7. Research methods

Two of the forms of economic activity used in this study concentrate on cross-sectional data (cross-listings and M&As) and two on panel data

⁶ The data for almost all the control variables is sourced from datasets provided by Mayer and Zignano [2011] and the World Bank (World Development Indicators).

(trade and foreign portfolio investment). When using the former I am restricted to the use of the random-effects model, due to the time-invariant nature of personality traits. In order to insure that the inferences are robust I use heteroscedasticity-consistent standard errors for cross-sectional data and cluster-robust standard errors for panel data. In regressions based on panel data I include country fixed effects (for both interacting countries) and time effects.

3. Results

3.1. Mean and extreme personality distance

In Table 1 I report the mean personality distance score for each of the 39 countries studied in this paper⁷. The mean scores range from a minimum score of 2.20 (Thailand) to a maximum of 4.11 (Morocco), with an average score of 2.82. It is worth pointing out that the countries which I investigate are mainly from Europe and the Asia-Pacific region, with 19 (49% of the sample) and 12 (31%) of the countries, respectively, being located in these regions. The mean scores of countries from each region seem to be fairly equally distributed (with the notable exception of Morocco which is the only African country in the sample) i.e. there does not seem to be any regional clustering in the scores.

Table 1. Mean personality distance scores

Country	Mean personality distance	Country	Mean personality distance
Morocco	4.108	Iran	2.727
Switzerland	3.599	Indonesia	2.721
Denmark	3.588	New Zealand	2.650
Germany	3.523	India	2.629
Czech Republic	3.269	Chile	2.615
Italy	3.267	Austria	2.602
Mexico	3.266	Canada	2.542
Philippines	3.218	Belgium	2.510

⁷ Although, as I have mentioned earlier, one of the reasons for including a limited number of control variables in the study is to investigate broader samples, the number of countries is nonetheless limited, due to availability of data on personality traits and cultural dimensions.

cont. Table 1

Country	Mean personality distance	Country	Mean personality distance
China	3.196	Slovenia	2.510
Brazil	3.182	Portugal	2.468
Malaysia	3.137	United States	2.456
Hong Kong	3.119	South Korea	2.342
United Kingdom	3.048	Spain	2.321
France	2.937	Peru	2.316
Malta	2.908	Slovakia	2.284
Argentina	2.886	Poland	2.269
Australia	2.866	Japan	2.241
Estonia	2.820	Croatia	2.232
Turkey	2.785	Thailand	2.199
Russia	2.756		
Mean			2.823
Median			2.756
Standard deviation			0.451

Notes: This table shows the mean personality distance scores (in descending order) for each country investigated in the study as defined in equation 1.

Table 2. Extreme personality distance scores

Most significant		Least significant	
Country pair	Personality distance	Country pair	Personality distance
Switzerland – Morocco	5.969	Slovakia – Thailand	0.527
Germany – Morocco	5.866	Peru – Thailand	0.667
Denmark – Morocco	5.596	Australia – New Zealand	0.747
Czech Republic – Morocco	5.372	New Zealand – United States	0.772
Chile – Morocco	5.205	Australia – Belgium	0.867
Denmark – Hong Kong	5.200	South Korea – New Zealand	0.885
Morocco – Turkey	5.125	Brazil – Malta	0.892
Brazil – Morocco	5.050	Estonia – Peru	0.956
Switzerland – Hong Kong	5.036	Spain – India	0.980
Austria – Morocco	5.030	South Korea – United States	0.980
Brazil – China	5.011	Croatia – Peru	1.000
Morocco – Malaysia	5.005	Belgium – New Zealand	1.005
Brazil – Mexico	4.841	Belgium – South Korea	1.087

cont. Table 2

Most significant		Least significant	
Country pair	Personality distance	Country pair	Personality distance
Germany – Hong Kong	4.832	Australia – United States	1.107
United Kingdom – Morocco	4.826	Indonesia – Russia	1.122
Switzerland – Estonia	4.737	Peru – United States	1.132
Denmark – Mexico	4.723	Croatia – Thailand	1.133
India – Morocco	4.698	Japan – Poland	1.145
Morocco – Philippines	4.688	India – Malaysia	1.152
Morocco – Portugal	4.662	Peru – Slovakia	1.155

Notes: This table shows the 20 least and most significant personality distance scores as defined in equation 1.

To give the reader more information on the distribution of personality distance, in Table 2 I have listed the 20 most and least significant personality distance scores for the pairs of countries analysed in the study. Personality distance ranges from 0.53 (the distance between inhabitants of Slovakia and Thailand) to 5.97 (in the Morocco – Switzerland dyad). Morocco is in 13 of the most significant distance scores which is not surprising given that it has the highest mean personality distance score in the sample. This corresponds to the results presented in Table 1, low personality distance scores include both intraregional and culturally similar pairings (Australia – New Zealand), interregional yet culturally similar pairings (New Zealand – United States), interregional and culturally dissimilar pairings (Peru – Thailand), and intraregional yet culturally dissimilar pairings (South Korea – New Zealand). In other words, based on the average similarity in personalities, a high level of similarity can be obtained regardless of geographic distance and cultural origins. Note that these patterns contrast somewhat to those presented in Allik and McCrae [2004], although these researchers have used self-rating scores, as opposed to the observer-rating scores from McCrae and Terracciano [2005] that were used in the study.

3.2. Regression results

In Table 3 I explore the link between personality distance and various forms of economic activity by regressing dependent variables that correspond to these activities on personality distance and all the controls. In order to demonstrate the influence of both countries' fixed effects, I construct

Table 3. Regression results based on the composite personality distance

Specification	Trade		Foreign equity investments		Foreign debt investments		Mergers & acquisitions	Cross-listings
Personality distance	0.044	0.040	0.007	0.050	0.012	0.212***	0.155	−0.109***
	(0.032)	(0.027)	(0.081)	(0.068)	(0.102)	(0.075)	(0.100)	(0.038)
Geographic distance	−0.979***	−1.250***	−0.795***	−0.881***	−0.901***	−0.765***	−0.294***	−0.079**
	(0.025)	(0.029)	(0.065)	(0.084)	(0.088)	(0.081)	(0.088)	(0.031)
Cultural distance	0.060***	0.014	0.207***	0.035	0.136**	−0.014	0.025	0.030
	(0.019)	(0.017)	(0.053)	(0.043)	(0.064)	(0.051)	(0.064)	(0.021)
GDP in country 1	0.921***	0.467**	−0.138**	−2.859*	−0.121	−2.803	0.586***	0.250***
	(0.018)	(0.231)	(0.061)	(1.658)	(0.076)	(1.947)	(0.068)	(0.038)
GDP in country 2	0.890***	−0.541**	0.307***	−1.630	0.371***	−2.166	0.414***	0.225***
	(0.018)	(0.228)	(0.057)	(1.169)	(0.071)	(2.274)	(0.069)	(0.033)
GDP <i>per capita</i> in country 1	−0.054*	0.325	1.063***	2.235	0.634***	2.930	−0.018	0.061*
	(0.027)	(0.233)	(0.086)	(1.652)	(0.117)	(1.954)	(0.089)	(0.027)
GDP <i>per capita</i> in country 2	−0.055*	1.303***	−0.014	1.589	0.805***	3.489	0.089	0.061
	(0.026)	(0.234)	(0.064)	(1.205)	(0.083)	(2.395)	(0.093)	(0.037)
Common language	0.828***	0.385***	1.274***	0.742***	−0.036	0.142	0.819**	0.676***
	(0.089)	(0.074)	(0.210)	(0.205)	(0.362)	(0.185)	(0.276)	(0.126)
Common religion	−0.336***	−0.107	0.500***	0.110	0.210	0.211	−0.044	0.025
	(0.056)	(0.070)	(0.151)	(0.235)	(0.189)	(0.266)	(0.183)	(0.063)
Common legal origin	0.432***	0.416***	0.236	0.176	0.485**	−0.023	0.335	0.085

cont. Table 3

Specification	Trade		Foreign equity invest- ments		Foreign debt investments		Mergers & acquisitions	Cross-li- stings
	(0.056)	(0.056)	(0.137)	(0.111)	(0.179)	(0.184)	(0.191)	(0.068)
Country fixed effects	NO	YES	NO	YES	NO	YES	NO	NO
Time effects	YES	YES	YES	YES	YES	YES	NO	NO
Number of observations	25 797		6 561		5 383		461	540
Adjusted R ²	0.613	0.670	0.147	0.300	0.159	0.340	0.198	0.390
<i>F-statistic</i>	1 514.0	513.0	53.9	39.8	48.5	41.1	12.4	35.4

Notes: This table reports regression results where the form of the dependent variable is indicated in the header (the precise way of computing the dependent variable can be found in the text). GDP and GDP per capita is either in real terms (for panel data) or for the last year in the dataset (for cross-sectional data). Robust standard errors are shown in parentheses. In all cases, the F-test rejects the null hypothesis ($p < 0.01$), and thus the validity of each model is confirmed.

* Significant coefficient at the 10% level.

** Significant coefficient at the 5% level.

*** Significant coefficient at the 1% level.

pairs of specifications that either include or exclude these effects. A general observation from the results presented in Table 3 is that there is very little evidence for the existence of the hypothesized effect. The results show that personality distance is statistically significantly related in the anticipated (negative) direction only whilst explaining the number of cross-listings. In other cases personality distance is positively related to economic activity: in specifications that exclude the fixed effects, the link is mostly insignificant from a statistical perspective, although once I consider the country fixed effects, personality distance – surprisingly – seems to be significantly related to foreign debt investments.

As mentioned earlier, it is possible that individuals lack accuracy whilst assessing less ‘visible’ personality traits, which would in essence mean that even if there were considerable differences in these traits, they would not be identified. Moreover it is advisable to investigate to what extent each of the personality factors contribute to the final effect of personality distance. Therefore, to complement the analysis, in Table 4 I present the effect of differences between inhabitants of two countries on each of the five personality factors separately – the differences are computed analogously to Ahern,

Table 4. Regression results based on specific personality domains

Specification	Trade	Foreign equity investments	Foreign debt investments	Mergers & acquisitions	Cross-listings
Difference in neuroticism	−0.063	0.098	0.176	0.267	−0.123*
	(0.045)	(0.107)	(0.128)	(0.187)	(0.066)
Difference in extraversion	0.016	0.086	0.027	−0.026	−0.135**
	(0.039)	(0.107)	(0.117)	(0.166)	(0.068)
Difference in openness to experience	0.058	0.010	−0.002	0.281*	−0.039
	(0.040)	(0.105)	(0.126)	(0.155)	(0.061)
Difference in agreeableness	0.151***	0.081	0.230	−0.161	−0.062
	(0.046)	(0.136)	(0.161)	(0.219)	(0.071)
Difference in conscientiousness	−0.078**	−0.008	−0.016	0.102	−0.047
	(0.037)	(0.089)	(0.108)	(0.169)	(0.060)
Geographic distance	−1.250***	−0.879***	−0.744***	−0.300***	−0.081**
	(0.029)	(0.084)	(0.081)	(0.090)	(0.031)
Cultural distance	0.015	0.033	0.004	0.028	0.028
	(0.017)	(0.043)	(0.052)	(0.066)	(0.023)

cont. Table 4

Specification	Trade	Foreign equity investments	Foreign debt investments	Mergers & acquisitions	Cross-listings
GDP in country 1	0.467*	−2.860	−2.803	0.580***	0.254***
	(0.231)	(1.659)	(1.948)	(0.070)	(0.039)
GDP in country 2	−0.541*	−1.639	−2.190	0.408***	0.231***
	(0.228)	(1.169)	(2.276)	(0.072)	(0.033)
GDP <i>per capita</i> in country 1	0.325	2.236	2.929	−0.013	0.061*
	(0.233)	(1.653)	(1.956)	(0.090)	(0.027)
GDP <i>per capita</i> in country 2	1.303***	1.598	3.512	0.091	0.049
	(0.234)	(1.206)	(2.398)	(0.093)	(0.039)
Common language	0.383***	0.740***	0.131	0.805**	0.674***
	(0.074)	(0.205)	(0.194)	(0.278)	(0.126)
Common religion	−0.100	0.106	0.211	−0.118	0.010
	(0.070)	(0.232)	(0.269)	(0.188)	(0.065)
Common legal origin	0.424***	0.195	−0.039	0.329	0.092
	(0.056)	(0.118)	(0.189)	(0.193)	(0.069)
Country fixed effects	YES	YES	YES	NO	NO
Time effects	YES	YES	YES	NO	NO
Number of observations	25 797	6 561	5 383	461	540
Adjusted R ²	0.671	0.299	0.337	0.196	0.388
F-statistic	495.2	37.5	38.3	9.0	25.5

Notes: This table reports regression results where the form of the dependent variable is indicated in the header (the precise way of computing each dependent variable can be found in the text). The difference in the interacting countries' mean scores on each personality factor from the Five-Factor Model is defined as $\log(1+|\Delta \text{score}|)$. In all cases, the F-test rejects the null hypothesis ($p < 0.01$), and thus the validity of each model is confirmed.

* Significant coefficient at the 10% level.

** Significant coefficient at the 5% level.

*** Significant coefficient at the 1% level.

Daminelli and Fracassi [2015], that is I have logged the sum of the absolute difference of scores and one. A general observation from the analysis of parameter estimates is that there is little consistency in the results. More specifically there are no instances when a 'non-aggregated' personality distance score would have an effect in the same direction for all of the investigated forms of economic activity and only one instance, where the sign of all coefficients that relate to the effect of differences on each personality

factor, would be the same. Adding to the first point differences in conscientiousness – although not entirely having the same effect for all forms of activity – seem nonetheless to support the hypothesis, as for four forms of economic activity the relationship is negative (albeit significant in only one case i.e. trade). In relation to the second point the results demonstrate that each of the non-aggregated personality distance scores have the anticipated effect only when considering the number of cross-listings between countries. Some further observations seem noteworthy. The positive link between personality distance and foreign debt investments that was demonstrated in Table 3 seems to be driven by the positive effect of differences in agreeableness and neuroticism, which on their own do not seem to be significantly related with this form of economic activity. Finally there are two coefficients that are positive and statistically significant (differences in agreeableness for trade and differences in openness to experience for mergers and acquisitions). However these variables are not positively and statistically significantly related to economic activity in any other instances and thus it would be hard to argue that differences in these scores between countries are indeed positively related to economic activity in a general sense⁸.

4. Discussion

The results that have been presented in Tables 3 and 4 give very weak evidence (at best) for the existence of a negative relationship between personality distance and economic activity. As demonstrated in Table 4, there is no evidence that the ‘visibility’ of a personality trait seems to be an important cause of the very weak support for the hypothesis (for cross-listing, the only personality distance measures that are statistically significant are extraversion and neuroticism, with the former considered a ‘visible’ trait, and the latter less so [Funder 2012]). In this section I discuss possible reasons I was unable to demonstrate a consistent link between the investigated variables.

It remains possible that the difficulty of establishing a clear link could be the result of certain factors at play that were identified by Shenkar [2001], who has discussed a series of issues related to using cultural distance as a determinant of international business operations. One of the issues men-

⁸ These results are surprising given that individuals are poor in assessing these factors in others.

tioned in the paper that could also affect the efficacy of personality distance is the illusion of symmetry. Given that distance is by definition symmetrical I have assumed in the paper that the effect of personality distance is the same for trade or investment made from China into the Netherlands and from the Netherlands into China, which does not necessarily have to be true.

An even more plausible reason for the lack of a salient effect can stem from the greater difficulty in assessing the personalities of individuals from other cultures. People are imperfect in assessing their own personalities (the correlations between self-judged and actual scores on factors from the 'Big Five' range from 0.01 to 0.57; the accuracy of judgments falls when assessing the personality of other people [Furnham 1997; Furnham and Chamorro-Premuzic 2004]). Judging the personality of individuals from other countries can be an even more daunting task as the judgment can be distorted by cultural differences [Triandis and Suh 2002; Hofstede and McCrae 2004]. Also the variation of personality traits is greater within a country than between average inhabitants of different countries [Schmitt et al. 2007] and thus even if the assessments are not biased by cultural differences, the mean differences could simply not be identified by individuals. Alternatively the propensity to engage in economic activity with inhabitants from other countries could be determined not by personality differences, but by national stereotypes, and either these do not correspond with the mean personality traits or the differences between stereotypes and true personality characteristics are unsystematic (i.e. home country and foreign country stereotypes are affected by different biases).

Conclusions

In the present study I have investigated the possible effect of incongruity in the personalities of individuals from two countries engaging in various forms of economic activity. The main object of analysis was a composite personality distance measure which was based on differences in each of the personality factors from the Five-Factor Model of personality. This analysis was complemented by a separate investigation of the absolute difference in each of the five factors. The results show, at best, very weak results, contrary to the predictions derived from the similarity-attraction hypothesis, which posits that a greater level of similarity (e.g. in personalities) should increase the attractiveness of interaction. The hypothesized negative re-

relationship between economic activity and personality distance was only demonstrated when investigating the number of cross-listings and was not consistently related to trade, foreign portfolio investment, and mergers and acquisitions.

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