The cultural proximity effect on retail investors' foreign investing
A disaggregated analysis of the Belgian French- and Dutch-speaking investors

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Abstract

In this paper, we investigate the influence of cultural proximity on retail investors' foreign investing. Several papers have already highlighted that retail investors tend to favor stocks listed in culturally close countries. Unlike precedent papers, we provide evidence that the difference of culture within a same country matters to understand foreign investing. We indeed study the cultural proximity effect by distinguishing the two language groups that compose the Belgian population. We investigate whether the cultural difference between French- and Dutch-speaking induces differences in their investment behavior. Our results support our hypothesis by showing that French(Dutch) stocks are more traded by French(Dutch)-speaking investors. More importantly, we show that the preference for culturally close stocks is not due to superior information but because of a bias. In the second part, we investigate whether the cultural proximity effect varies across investors' and firms characteristics. As for investors' characteristics, our results suggest that a highly sophisticated older male investor displays a higher trading activities on culturally close countries. Concerning firms' characteristics, we show that the inclusion of a French(Dutch) stock in a stock index reduces significantly the cultural proximity effect. It may suggest that stocks in a national stock index tend to attract more foreign investors in general and not particularly culturally close foreign investors.

1 Introduction

When investors overcome the well-known home bias and decide to invest abroad, what drives their choice of foreign countries ?

As stated by Bailey et al. (2008), Traditional Finance principles emphasize the benefits of investing in foreign stocks[1] but typically ignore another important side of the issue : while some investors select foreign equities they may do so for the wrong reasons as a result of their behavioral biases. Investors may favor foreign stocks because of familiarity instead of improvement of the risk-return trade-off. In his model, Merton (1987) suggests that foreign investors tend to invest in stocks that they are familiar with.

Familiarity may be defined as "a state of close relationship" (Bhattacharya and Groznik (2008)). Huberman (2001) is the first to tie investors' familiarity with a company to their decisions to purchase its stock. However, familiarity may appear under different facets. According to Bhattacharya and Groznik (2008), there are 6 measures of familiarity. The first one is the country of residence, the so-called home bias[2]. The second one is geographical distance. The third measure is language. The fourth measure is race, then religion and finally the national origin.

In this paper, we study the influence of one notion closely related to familiarity, the cultural proximity. Cultural proximity may be a channel to familiarity as it encompasses different facets of familiarity. As Giannetti and Yafeh (2012) states "familiarity is enhanced by cultural similarity". Kirkman et al. (2006) state that a greater cultural distance is associated with unfamiliarity and leads to economic decisions in which risk is reduced either by choosing a certain type of investment or by investing less. According to Grinblatt and Keloharju (2001), a firm language and culture are important familiarity attributes that might explain an investor's preference to certain firms.

Several papers have already highlighted that, at the opposite of Traditional Finance principles, investors tend to favor investment activity in culturally close countries. Chan et al. (2005) find evidence that mutual fund investors prefer to invest in foreign countries that share a common language with the home country. Kang and Kim (2010) find evidence that foreign acquires whose countries share a common language and a common culture with the US are

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[1]Grubel (1968), Levy and Sarnat (1970), Lessard (1976), Lessard (1983), Solnik (1974), Grauer and Hakansson (1987), Kaplanis and Schaefer (1991), Cooper and Kaplanis (1994)

[2]French and Poterba (1991), Cooper and Kaplanis (1994) and Tesar and Werner (1995) were the first to provide evidence of investors home bias

more likely to engage in post-acquisition governance activities. They state that common language and culture reduce information disadvantage. Burtch et al. (2014) find that participants at a global online crowdfunding platform prefer to lend at culturally similar borrowers.

We investigate whether Belgian retail investors display a tendency to have a higher trading activity on foreign stocks listed in culturally close countries. However, in this paper, the culture proximity effect on foreign investing is studied by distinguishing the two language groups that compose the Belgian population. As Grinblatt and Keloharju (2001) state for Finland, the languages difference makes Belgium interesting to study. There are three national languages in Belgium but the two most spoken languages are French and Dutch[3]. The difference of languages allows us to account for a difference of culture among the Belgian population as we assume the difference of languages to be correlated with a difference of culture. Hofstede (1980) states that language is both the vehicle of most of cross-cultural research and parts of its object. According to the author, culture includes language as language is the most recognizable part of culture. This culture difference may lead to behavior difference : while being Belgian, French- and Dutch-speaking investors may culturally differ and this intra-country cultural difference may induce differences in their investment behavior.

As a consequence, we wonder whether the language spoken by retail investors as well as the underlying culture induce a tendency to invest heavily in stocks of foreign countries that share the same language and are culturally closer. When Belgian investors are about to invest in foreign companies we may expect that French (Dutch) companies tend to attract more French(Dutch)-speaking investors than Dutch(French)-speakers.

The two papers that are the closest to ours are Grinblatt and Keloharju (2001) and Beugelsdijk and Frijns (2010). Grinblatt and Keloharju (2001) show evidence of the language and culture effect on trades realized by retail investors in Finland. They show that the mother tongue (either Finnish or Swedish) plays a significant role in the choice of the companies in which investors invest. Swedish-speaking investors tend to invest more in Swedish companies located in Finland. They also show that investors prefer to hold and trade firms whose CEO is of similar cultural origin. Beugelsdijk and Frijns (2010) show that the cultural proximity between domestic investors and a foreign country increases the preference of the investors to

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[3]58% of the Belgian population lives in the Dutch-speaking part of the country, 41% in the French-speaking part and 1% in the German-speaking part (Sources: `http://www.federation-wallonie-bruxelles.be/index.php?id=fwb_gographie_donnes`, `http://www.belgium.be/fr/publications/publ_belgique_communaute_germanophone_en_bref.jsp`)

invest in that country. They find that the lower the cultural distance between two countries the lower the foreign bias between those countries.

Our paper differs from the precedent ones in the following way. As Belgian investors differ in languages and in culture, we disaggregate our analysis of the Belgian population in the two language subgroups. We look at the language and culture influence on foreign investing by distinguishing French- and Dutch-speaking investors. So far papers have only investigated cross-countries trades by highlighting the role of national culture differences. They typically consider a "common" national culture shared by the whole population by referring to the Hofstede (1980)'s notion of national culture which remains the reference in terms of culture definition (Beckmann et al. (2008)). However among a specific country there might be cultural differences. In that perspective, Baskerville (2003) discusses issues raised by anthropologists and sociologists regarding the cultural approach of Hofstede. The first element subject to critics is the chosen methodology in which Hofstede equates nation states with culture instead of allowing for maximal diversity also within a nation state. While being Belgian, French- and Dutch-speakers may culturally differ and this intra-country cultural difference may induce differences in their investment behavior. We observe that culture differences inside a country lead investors from the same nationality to behave differently while so far papers have treated Belgium as a unique culture country. To the best of our knowledge, the only paper who presents results for language subgroups among the same nation is Grinblatt and Keloharju (2001). However, unlike this paper, we study foreign transactions of Belgian investors. Grinblatt and Keloharju (2001) focus on trades realized inside Finland and not cross-border transactions towards neighboring countries[4].

In the first part of the paper, we observe cultural differences inside a country to lead investors from the same nationality to behave differently. French(Dutch) stocks are more traded by French(Dutch)-speaking investors. However we observe different results between French- and Dutch-speaking investors. While French-speakers display a much more higher trading activity on French stocks the result is less straightforward when it comes to Dutch-speaking investors. They trade more stocks listed in the Netherlands than French-speakers but there is no significant difference between their French and Dutch trading activities. Dutch stocks attract more Dutch-speaking investors than French-speaking investors but they are equally attracted by Dutch and French stocks. The reason may lie in the study of Hofstede

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[4]A minor unreported analysis studies the trading activity on Finnish stocks of investors domiciled in Sweden. The authors state that Swedish-speaking investors domiciled in Sweden are more likely to hold shares of Finnish firms whose CEO is of Swedish cultural origin

(1980). On one side, Dutch-speakers share the same language with the Netherlands but on the other side they are culturally not so far from France.

More importantly, we investigate the reason of the preference towards culturally close stocks. We wonder whether an higher trading activity on culturally close stocks is due to superior information or is a reflect of a bias towards these stocks. There is nowadays no consensus on literature about the reason why retail investors favor "familiar" stocks in general. Some papers argue that it is a rational choice (Massa and Simonov (2006), Ivković and Weisbenner (2005) and Coval and Moskowitz (1999)) and others that it is due to a bias (Huberman (2001), Grinblatt and Keloharju (2001), Seasholes and Zhu (2010) and Pool et al. (2012)). In line with behavioral finance principles, we find that the preference for culturally close stocks is not information-driven. French(Dutch)-speaking investors are on average not able to generate cumulated net profits significantly positive on these stocks. Furthermore, even the most sophisticated investors do not generate significantly positive net profits. They therefore do not have superior information and are rather subject to a bias.

In the second part we investigate whether the cultural proximity effect varies across investors' and firms characteristics.

As for the investors' characteristics, we study the influence of the age, gender and financial sophistication that we derive from MiFID tests. We find that a highly sophisticated older male investor displays a higher trading activities on culturally close countries. However, as stated before, these investors do not succeed in generating significantly net profits.

Concerning the firms characteristics, we analyse the effect of stocks being included in a stock market index. Overall, the cultural proximity effect is reduced for stocks listing in a stock index. While CAC40 (AEX25) firms always display a majority of French(Dutch)-speakers, the proportion of trades made by French(Dutch)-speaking investors on stocks included in the CAC40 (AEX25) index is significantly lower than for stocks not included. One of the reasons might be that stocks included in a stock index are more "visible" to all Belgian investors in general and not for a particular language group. It may be evidence of the "attractiveness" of stocks that are in an index for foreign investors in general. This result is in line with the paper of Kang and Stulz (1997) who find that large firms attract more foreign investors and with Dahlquist and Robertsson (2001) who find a positive relationship between foreign ownership and firms listed on international stock exchanges. Our result may suggest that stocks in a stock index tend to attract more foreign investors in general and not particularly culturally

"close" foreign investors. It is also in line with Covrig et al. (2006) who provide evidence of the stronger "firm visibility" effect among foreign investors.

The remainder of the paper is structured as follows. Section 2 reviews the literature on the effect of culture and cultural proximity on investment behavior. Section 3 presents the hypotheses to be tested. Section 4 describes our data. We report our empirical work and its results in Section 5. Section 6 concludes.

2   Literature

Defining culture and cultural proximity is not an easy task. However authors have attempted to propose definitions and the work of Hofstede (1980) has appeared as a reference (Beckmann et al. (2008)). He defines culture as "the collective programming of the mind that is primarily manifested in values and norms, but also more superficially visible in rituals and symbols" (as quoted in Beckmann et al. (2008)). This so-called mental programming is stable over time and implies the same person showing consistently similar behavior in similar situations. In complement to this definition, Tabellini (2008) describes culture as a system of values, providing scripts for behavior and perceptions of the world transmitted through socialization and from parents to children. In his definition, Hofstede (1980) refers to the concept of national culture. In his work, he attempts to culturally describe a nation. In this purpose, he uses a cultural framework in which four dimensions of culture are taken into account: Power Distance, Individualism, Masculinity and Uncertainty Avoidance. These four dimensions are assumed to capture cross-cultural differences and to reflect key aspects of a society's culture. For each of these 4 dimensions, an ordinal scale is defined where every countries are positioned. Based on Hofstede (1980), Kogut and Singh (1988) develops an index of cultural distance between countries. For each of the four dimensions they calculate the difference of scores between two countries and then average the result. Recently, another way to measure cultural distance has been developed: the World Value Survey (as presented in Giannetti and Yafeh (2012)). The survey consists of a questionnaire administered in face-to-face interviews about concrete aspects of life. Cultural distance between any pairs of countries is measured as the Euclidean distance between traditional versus secular and the survival versus self-expression orientations.

Papers have already highlighted the role of culture and cultural proximity in different fields of research. Roth and O'Donnell (1996) state that an increase in cultural distance leads to more difficulties and higher expenses for headquarters to obtain information about

their foreign subsidiaries. Kogut and Singh (1988) show that cultural distance impacts the choice of entry mode by foreign companies. Giannetti and Yafeh (2012) show that cultural proximity/difference affects financial contracts outcomes. The bigger the cultural difference between banks and borrowers the less favorable is the loan for the borrower. More recently, Burtch et al. (2014), using the World Value Survey, find that participants at a global online crowdfunding platform prefer to lend at culturally similar borrowers.

Focusing on our research topic, papers have already highlighted the role of culture on investors' choices. Beckmann et al. (2008) find cultural differences to have an influence on the behavior and views of asset managers. According to the authors, there are country-specific differences that are not explained by Traditional Finance theory but well by cultural differences. They find that asset managers from the more individualist western countries (USA and Germany) seem to orientate themselves less on others than the more collectivist eastern counties do (Japan and Thailand). It results for example in less pronounced herding behavior among the western countries. Beugelsdijk and Frijns (2010) find that the degree of a nation's uncertainty avoidance and individualism affect the foreign bias of its investors. Anderson et al. (2011) find that mutual funds from countries characterized by higher uncertainty avoidance are associated with more home bias and less foreign diversification. They also find that funds from high level of masculinity countries display lower levels of home bias and are more diversified abroad.

More interestingly regarding the scope of our paper, studies have highlighted the role of language and culture proximity on investment decisions. The founding paper is the one of Grinblatt and Keloharju (2001). They show evidence of the language and culture effect on trades realized by retail investors in Finland. They show that the mother tongue (either Finnish or Swedish) plays a significant role in the choice of the companies in which the investors invest. Swedish-speaking investors tend to invest more in Swedish companies located in Finland. Using the name and native language of the CEO as a proxy for culture, they provide evidence that investors in Finland prefer to hold and trade firms whose CEO is of similar cultural origin. While their study mostly focuses on trades inside Finland, they state that the cultural proximity effect also applies outside national borders. Swedish-speaking investors domiciled in Sweden are more likely to hold shares in a Finnish company whose CEO is of Swedish cultural origin. Hau (2001) provides evidence that non-German-speaking traders underperform significantly German-speaking ones on German stocks. The reason may be that traders outside Germany in non-German-speaking locations face an information disadvantages and trade less profitably (in medium- and long-term).

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Chan et al. (2005) find evidence that mutual fund investors prefer to invest in foreign countries that share a common language with the home country. They state that common language contributes to predict the likelihood of information flow between countries, to measure the barriers that foreign investors face when accessing information overseas and indicate the extent information asymmetry between foreign and domestic investors. Covrig et al. (2006) find that US investors prefer stock of firms from countries that use English as an official language, particularly Canadian firms. Bhattacharya and Groznik (2008) find that the size of a foreign-origin group from a country living in the US is positively correlated with US investment in that country. Kalev et al. (2008) show that, relative to foreign investors, local Finnish investors are more present on stocks that are only listed in Finland and generate on these stocks higher trading advantages than foreign investors. The assumed reason is that local investors do not face language, distance or culture barriers, while Finnish cross-listed stocks and internationally known stocks are more appealing to foreign investors. More importantly, Kang and Kim (2010) find evidence that foreign acquires whose countries share a common language and a common culture with the US are more likely to engage in post-acquisition governance activities. They state that common language and culture reduce information disadvantage.

One of the closest papers to ours is Beugelsdijk and Frijns (2010). They find that cultural differences with a foreign country reduces the preference of the investors to invest in that country. They find, for developed markets only, that the lower the cultural distance between two countries the lower the foreign bias between those countries. In a similar perspective, Anderson et al. (2011) find that mutual fund managers underweight culturally distant target markets and that the economic significance of cultural closeness is roughly equal to the economic significance of geographical distance.

3   Hypotheses

Drawing on our literature review, we formulate hypotheses about the effect of cultural proximity on Belgian investors' foreign investing distinguishing the two language groups.

- H1: When they decide to invest abroad, Belgian investors tend to trade more stocks from firms listed in country that are culturally close

  - H1a: French-speaking investors trade more French stocks
  - H1b: Dutch-speaking investors trade more Dutch stocks

We hypothesize that French (Dutch)-speaking investors are culturally closer to France (the Netherlands) as they share the same language. We assume common language to be correlated with cultural proximity. This assumption is based on several previous studies. Hofstede (1980) states that language is both the vehicle of most of cross-cultural research and parts of its object. According to the author, culture includes language as language is the most recognizable part of culture. Hau (2001) states that "linguistic and cultural borders often coincide with international borders and represent formidable information barriers". As a consequence, investors in the same linguistic and cultural borders may face less barriers and difficulties to interact. We also establish the relationship between language and culture as it has been done in previous papers. Grinblatt and Keloharju (2001) use language to identify the culture of the CEO when they cannot user other proxies. Chan et al. (2005) use common language as their first familiarity variable. They state that common language contributes to predict the likelihood of information flow between countries, to measure the barriers that foreign investors face when accessing information overseas and indicate the extent information asymmetry between foreign and domestic investors.

Hofstede (1980) studies the Belgian culture in details in comparison with its neighboring countries. Figure 1 present scores to the four Hofstede cultural dimensions for Belgium, France and the Netherlands[5]. Belgium's culture in general is very close to France's culture while differs largely from the Dutch culture. The gap occurs especially in Power distance, Uncertainty avoidance, and Masculinity.

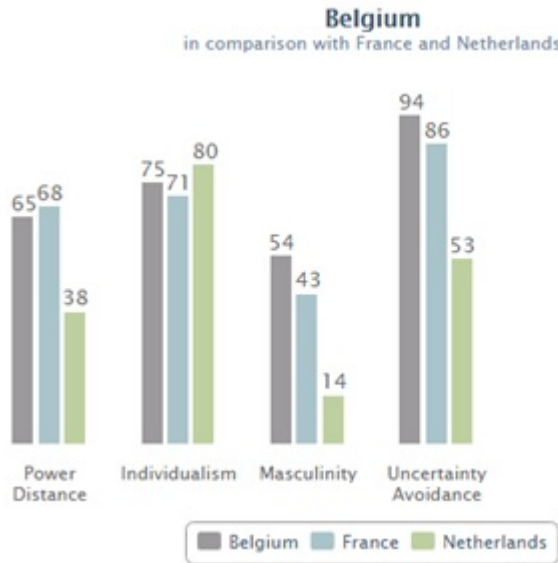[5]http://geert-hofstede.com/belgium.html

Figure 1: Hofstede culture

The Belgium-France cultural proximity is also confirmed in the World Values Survey as presented in Giannetti and Yafeh (2012). France and Belgium are in the same "Catholic Europe" culture while the Netherlands is in another cluster called "Protestant Europe".

However according to the author, Belgium is interesting to study as we can disaggregate the analysis at a lower level taking into account the differences between French- and Dutch-speakers. While the two language groups have a culture that resembles the French one, Dutch-speakers are closer to the Netherlands than French-speakers. Nevertheless, the cultural proximity between Dutch-speakers and the Netherlands is less pronounced than between French-speakers and France. As a consequence, in our choice to split our analysis between French- and Dutch-speaking investors, we expect the trading activity of Dutch-speaking investors on Dutch stocks to be less important that French-speaking investors' activity on French stocks.

- H2: French(Dutch)-speaking investors display a higher trading activity on French(Dutch) stocks because of superior information

Through this hypothesis, we investigate the reason of the cultural proximity effect. We hypothesize that French(Dutch)-speakers are more active on French(Dutch) stocks because they have superior information that allow them to realize profits. The alternative hypothesis

states that French(Dutch)-speakers display a bias towards stocks listed in culturally close stocks. They favor culturally close stocks because either they simply like these stocks or they have a false sense of control (Langer (1975)). As stated in Goetzmann and Kumar (2008), experiments have shown that when factors such as familiarity are introduced into chance situations people begin to believe that they can control the outcome. They state that familiarity with local stocks could exacerbate the illusion of control. An illusion of control could create an inappropriate level of overconfidence.

The reason of the preference towards "familiar" stocks in general has already been addressed in the literature but there is nowadays no consensus about the most valid reason. Massa and Simonov (2006) show that familiarity is not a behavioral bias, but is information-driven. Ivković and Weisbenner (2005) find that households generate additional returns significantly higher (3.2% annualized) on local positions relative to others. This would suggest that households could exploit local information. In line with these papers, Coval and Moskowitz (1999) document that mutual fund managers prefer to hold locally headquarted firms and this may be driven by easier access to information. However, more recently, Seasholes and Zhu (2010) find counter-evidence, which confirms previous work of Huberman (2001) and Grinblatt and Keloharju (2001) (see Ivković and Weisbenner (2005). Lütje and Menkhoff (2007) confirm identification of informational and behavioral determinants of home bias. However their analysis shows the power of the behavioral reason. Pool et al. (2012) find that managers overweight companies headquarted in the states where they grew up. More importantly, the reason is not an informational advantage but well a familiarity bias. A fund holdings in its managers home-state firms do not outperform its other holdings. Managers are simply more familiar with home-state companies, even if they have no real information about them.

- H3: The cultural proximity effect varies across investors' characteristics

As stated in Bailey et al. (2008), there are very few studies that relate individual investor characteristics to foreign investment decisions.

First of all, we investigate whether the age and gender play a significant role. According to the literature, these socio-demographics variables are known to have an impact on investors' behavior in general. Barber and Odean (2001) show for example that sex matters in investment choices. While to the best of our knowledge, no precedent papers investigate the impact of the age and gender on the cultural proximity effect, we review some that are related to ours. Karlsson and Nordén (2007) find that the home bias increases with a higher age. Graham et al.

(2009) find that home bias is higher for older female investors. Lütje and Menkhoff (2007) find German fund managers displaying a higher home bias level tend to be older, less experienced and to be female.

In a second part we wonder whether the financial sophistication of one investor impacts significantly the cultural proximity effect on his foreign investing.

This question deserves attention as number of papers have already highlighted the effect of investor's financial sophistication on all types of behavior and biases (overconfidence, disposition effect, ...). More precisely, several papers have already studied the relationship between the financial sophistication and home/foreign investing.

Grinblatt and Keloharju (2001) show evidence that the distance, language and culture effect is less prominent among the most savvy institutions than among both households and less savvy institutions. They use the number of different stocks held as proxy of sophistication and find that the greater the number of different stocks the smaller the influence of distance.

In line with his paper, Graham et al. (2009) study the link between the competence effect (feeling skillful or knowledgeable) and the home bias. Their results suggest that investors who feel competent trade more often and have more internationally diversified portfolios. However, they only focus on the holding of at least one foreign asset in the portfolio. They find that if investor competence rise to its maximum (as measured in their work) the probability that he holds foreign assets rises to 73%.

Ivković and Weisbenner (2005) explain variation of a local investment proxy thanks to variables related to investors such as household income and other variables.

Massa and Simonov (2006) find that familiarity mostly affects the less informed investors. They use the level of wealth and the liquidity of the portfolio as a proxy for the degree of informativeness. Lütje and Menkhoff (2007) provide evidence that home biased equity managers tend to show overconfidence. They also show that home biased German fund managers display a higher disposition effect. Bailey et al. (2008) show that investors who are more affluent or experienced are more likely to invest abroad. They also show that wealthier investors with relatively large domestic portfolios and relatively greater investment experience (age and trading experience) are more likely to invest abroad. They also provide evidence that investors subject to narrow framing bias, disposition effect and local bias are less likely to trade foreign equities.

- H4: The cultural proximity effect varies across firms characteristics

We investigate whether firms characteristics have a significant effect on investors' cultural proximity effect.

Papers have already shown that firms' characteristics play a role in foreign investing.

Kang and Stulz (1997) provide evidence of the relationship between the proportion of foreign ownership and firms own characteristics. Without surprise, the size effect is the most significant characteristic. Foreign investors tend to invest more in larger Japanese companies. According to the authors, this size effect reflects different dimensions. As authors state, more information is available for large firms: large firms stocks are more liquid, easier tradable and large firms are "known" more by foreign investors. Results of Dahlquist and Robertsson (2001) support the findings of Kang and Stulz (1997). They show that foreign investors tend to favor large firms. They find a positive correlation between foreign investing and market capitalization, amount of cash in balance sheet and low dividend yield. According to the authors, these attributes are proxies for firm recognition and investor influence.

More interestingly for ours, papers have already shown that the inclusion of a firm in a stock market index affects significantly foreign investing.

Covrig et al. (2006) hypothesize that if foreign fund managers are less informed than their domestic counterparts, then they would likely to invest in stocks with high visibility abroad or worldwide recognition. They find that firms with extensive analyst coverage and whose stocks have foreign listings and index membership attract more foreign managers. However the effect of the different proxies or investor recognition and firm visibility is stronger among foreign investors.

Ke et al. (2010) find evidence that mutual fund around the world tend to invest more in firms stocks with S&P500 membership.

Kalev et al. (2008) provide evidence that Finnish stocks that are only listed in Finland attracts more local Finnish investors than foreign ones (75% versus 25%). However internationally well-known stocks, with the most famous case of Nokia, are held on average at 90% by foreign investors.

4 Data and Sample Characteristics

4.1 Data

In the database we get from an online Belgian brokerage house, we have information about the language spoken by retail investors as well as the nationality of the financial instruments thanks to the ISIN code[6].

Over the 2000-2012 period, our data contain 4 137 741 trades on stocks made by 49 302 investors. 44% of the investors are French-speakers and 56% Dutch-speakers.

Over the entire amount of stock trades, there are 65 different nationalities.

4.2 Investors' characteristics

In this section, we characterize our overall sample of 49 302 investors using socio-demographics data (age and gender) and the answers given by these investors to some MiFID questions. We will use these characteristics to explain heterogeneity among investors' behavior regarding the cultural proximity effect.

Table 1 presents the proportion of women (gender=0) and men (gender=1) as well as the average and median age computed in 2012, distinguishing French- and Dutch-speaking investors.

Table 1: Socio-demographics statistics

Gender	0	1
French-speakers	16%	84%
Dutch-speakers	14%	86%
Age_2012 (in years)	Mean	Median
French-speakers	48	47
Dutch-speakers	48	47

The first panel of the table reports the proportion of female and male distinguishing the two "language" groups. The second panel presents the average and median age for the two "language" groups.

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[6]The first two digits refer to the nationality.

There is no significant difference between French- and Dutch-speakers in our sample what concerns socio-demographics data. While there are proportionally more women in the French-speaking population, they both display the same age.

The data also encompass the answers to the Appropriateness test that makes part of the MiFID test. MiFID is a European directive that came into force in 2007 across the EU member states. One of its objectives was to increase the level of protection for investment firms' clients. In order to reach this objective, MiFID requires investment firms to qualify their clients and the services requested through the Suitability and the Appropriateness tests. Retail investors are therefore required to fulfill the MiFID tests before asking services. The answers they give to these questions may be informative to explain the heterogeneity among investors' behavior.

We focus on three questions of the Appropriateness test that have been asked to the investors in our sample: The financial literacy, the number of order in complex instruments and the level of education. We will use answers to these questions as a measure of the investors' financial sophistication.

Table 2 reports the empirical frequencies for the three MiFID items that interest us, distinguishing French- and Dutch-speaking investors.

Table 2: MiFID

Financial literacy	0	1	2	3
French-speakers	25%	28%	36%	11%
Dutch-speakers	26%	29%	34%	11%
Number of orders per year on "complex" instruments	0	1	2	3
French-speakers	31%	35%	21%	13%
Dutch-speakers	25%	38%	26%	11%
Level of education	0	1	2	
French-speakers	10%	18%	72%	
Dutch-speakers	9%	23%	68%	

The table reports the empirical frequencies for the three items of the MiFID tests dealing with the financial literacy, the number of orders on "complex" instrument and the level of education. It distinguishes the two "language" groups.

Such as for the socio-demographics data we cannot observe significant differences between both "language" groups.

However there is a high heterogeneity among the investors regarding the three MiFID items.

On average, only 11% of the investors consider themselves as a really experienced investor and only 12% report to have the highest trading activity in complex instruments during the last year. For the level of education, the vast majority reports a university or equivalent degree.

5 Empirical work

5.1 Cultural proximity effect

In this subsection, we providence empirical evidence of the cultural proximity effect on Belgian foreign investing.

Columns 2 and 3 of Table 3 reports the number and proportions of trades of stocks listed in the 7 most traded countries in our sample[7]. Column 4 presents the world-weight market capitalization for each country[8].

Table 3: Frequency table

Nationality	Number trades	Proportion (%)	World-weight market cap (%)
Belgian	1 657 865	40.06	0.55
USA	969 444	23.42	46.85
France	672 385	16.25	4.32
The Netherlands	317 333	7.66	1.97
Germany	181 711	4.39	3.99
Canada	85 681	2.07	2.44
UK	52 824	1.27	8.13
Others	200 498	4.84	31.66

The table reports the proportion of trades on Belgian and foreign stocks. The last column presents the World-weight market capitalization for each country

Belgium represents almost twice as the amount of trades on US stocks. The trading activity on Belgian stocks is over-represented given its relative size in the world financial market.

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[7]On average the Belgian investor invests in 4 different nationalities. Median = 3 and standard-deviation =3.
[8]Chan et al. (2005)

Regarding foreign investing, France and the Netherlands are the only countries to display the same results as the domestic country (results for Germany is less pronounced). The trading activity on French and Dutch stocks is higher than their relative size. In addition, 40% of the foreign trades are related to stocks from French and Dutch companies.

Concerning their foreign investing, Belgian investors seem to favor stocks from countries with which they share the same language.

However, as Belgian investors differ in languages we study whether French- and Dutch-speakers behave differently on French and Dutch stocks.

Table 4 reports the dispersion of trades on French and Dutch stocks among the French-and Dutch-speaking populations.

Table 4: Contingency table

Languages		Nationalities		
		French	Dutch	Total
French	(#)	487879	113033	600912
	(%)	49.29	11.42	60.72
	(r%)	81.19	18.81	100
	(c%)	72.56	35.62	
Dutch	(#)	184506	204300	388806
	(%)	18.64	20.64	39.28
	(r%)	47.45	52.55	100
	(c%)	27.44	64.38	
Total	(#)	672385	317333	989718
	(%)	67.94	32.06	100.00

Statistic	Value	P-value
χ^2	123336	<.0001

The contingency table reports respectively, for each pair of responses, the empirical frequencies (#), the total percentages (%), the row percentages (r%) and the column percentages (c%). Languages are positioned in row while nationalities in columns. The results for the Chi-Square test for the null hypothesis of independence is also provided.

French-speaking investors realize a higher number of trades than Dutch-speaking investors. 60.72% of the trades are realized by French-speakers while 39.28% by Dutch-speakers.

Based on the Chi-Square value we can reject the independence hypothesis between the nationality of a stock and the language spoken by an investor. If we look at columns, we can see that French stocks are traded massively more by French-speaking investors than Dutch-speaking investors (72.56% vs. 27.44%) while for Dutch stocks it is the opposite (35.62% vs 64.38%). Comparing unconditional to conditional frequencies, a French (Dutch) stock is much more likely to be traded by a French(Dutch)-speaking investor. While the unconditional empirical frequency for French stocks is 67.94%, the corresponding proportion increases to 81.19% when it is a trade made by a French-speaking investor. As for the Dutch stocks, while the unconditional empirical frequency for Dutch stocks is 32.06%, the corresponding proportion increases to 52.55% when it is conditioned to the fact of considering Dutch-speakers[9].

Table 5 reports, for the two language groups, the average proportion of trades on French and Dutch stocks relative to the total amount of trades.

Table 5: Comparison of proportions

Variables	French-speaker	Dutch-speaker	Difference
Proportion_trades_French_companies	20%	7%	***
Proportion_trades_Dutch_companies	4%	7%	***

The table reports at the first line the average proportion of trades on French stocks for both groups as well as the significance of the difference. At the second line, it reports the average proportion of trades on Dutch stocks for both groups as well as the significance of the difference.

In line with previous results, the trading activity on French (Dutch) companies is significantly higher among the French(Dutch) population[10]. Being a French(Dutch)-speaker increases significantly the trading activity on French(Dutch) stocks.

However, while French-speakers display a much more higher trading activity on French stocks the result is less straightforward when it comes to Dutch-speaking investors. They trade more stocks listed in the Netherlands than French-speakers but there is no significant difference between their French and Dutch trading activities. Dutch stocks attract more Dutch-speaking investors than French-speaking investors but they are equally attracted by Dutch and French stocks. The reason may lie in the study of Hofstede (1980). On one side, Dutch-speakers share

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[9]Results are qualitatively the same if we study the total volume (in euros) instead of the number of trades

[10]For the mean comparisons, we use the Satterthwaite method as a previous test rejects variance equality.

the same language with the Netherlands but on the other side they are culturally not so far from France.

5.2 Information-based trading activity or Bias?

In this section we investigate the reason of the Belgian investors' preference towards culturally close stocks.

We compute the trading performance of French(Dutch)-speaking investors on French (Dutch) stocks to assess whether they make significant profit. Table 6 reports the (gross and net) realized cumulated profit in euros of French(Dutch)-speakers on French (Dutch) stocks.

Table 6: Profit

	French-speaking investors		
	Mean	Median	N
Gross realized cumulated profits on French stocks	3156*	12.5	14201
Net realized cumulated profits on French stocks	2063	-19.3	14201
	Dutch-speaking investors		
Gross realized cumulated profits on Dutch stocks	3405	89.3	12568
Net realized cumulated profits on Dutch stocks	2966	-5.4	12568

The net trading profit is never statistically different from zero. Only the profit before transaction costs of French-speakers is (marginally) significantly positive. In addition, 50% of the investors lose money on culturally close stocks.

The results suggest that Belgian investors are on average not able to make a net cumulated profit which is different from zero on culturally close stocks. It therefore indicates that Belgian investors do not have superior information on culturally close stocks that underlies their trading activities. They are are rather suspected to display a bias towards these stocks.

5.3 Investors' characteristics

In this part, we wonder whether investors' characteristics may help explain heterogeneity among investors' behavior regarding the cultural proximity effect.

5.3.1 Age and gender

We compute the proportions of trades on French (Dutch) stocks as presented in Table 5 and explain cross-sectional variations of thanks to three variables: A dummy for being a French(Dutch)-speaker, a dummy for the gender and the age.

As mentioned in some papers, given the bounded nature of the dependent variables, OLS may not be suitable. As stated by Baum (2008), using a linear regression for proportions may lead to nonsensical predictions outside the 0-1 interval. In addition, OLS is not appropriate when normality of the dependent variable cannot be assumed[11] (Johnston (1993)).

Confronted to the same issue[12], Bailey et al. (2008) use the Tobit censored regression model.

Table 7 reports parameters estimates obtained thanks to doubled censored Tobit regressions.

Table 7: Regression

Dependent variables	Language	Gender	Age	MacFadden's pseudo r^2	N
Proportion_trades_French_companies	0.21***	0.02***	0.002***	8.3%	49302
Proportion_trades_Dutch_companies	0.06***	0.04***	0.003***	4.5%	49302

The table reports results for the two Tobit censored regressions. Estimates of the parameters of the *Language*, *Gender* and *Age* variables are reported as well as their significance. MacFadden's pseudo r^2 are also reported

First of all, cultural proximity increases the trading activity. Being a French(Dutch)-speaker increases significantly the trading activity on French(Dutch) stocks, which parallels our previous findings. Secondly, as for the trading activity on French and Dutch stocks, the

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[11]Estimates may not be consistent

[12]They study the cross-sectional variation of the relative foreign portfolio holding, which is also bounded by nature.

age and the gender display the same results. A higher age and being a male increase the trading activity on stocks listed in culturally close countries[13].

This result is in line with Barber and Odean (2001) who shows that sex matters in investment choices. It may also be consistent with the following papers that focus on the home bias. Karlsson and Nordén (2007) find that the home bias increases with higher age. Graham et al. (2009) find that the home bias is higher for older female investors. Lütje and Menkhoff (2007) German fund managers displaying higher home bias level tend to be older and to be female.

5.3.2 MiFID tests

To investigate the relationship between the extent to which an investor is affected by the cultural proximity and his financial sophistication, we use the information contained in three questions that make part of the Appropriateness test in the MiFID tests: The financial literacy, the number of order in complex instruments and the level of education as reported in Table 2.

Table 8 reports by category the average proportions of trades on French(Dutch) stocks. The last column reports the ANOVA F-stat values as well as their significance. As Volpe et al. (2002) do in their paper, the ANOVA allows us to test the null hypothesis of means equality across categories.

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[13]The results remain qualitatively the same if we replicate the same analysis by splitting the subsamples between French- and Dutch-speakers and run on each a regression

Table 8: MiFID comparison

Financial literacy	0	1	2	3	ANOVA F-stat
Proportion_trades_French_companies of French-speakers	11.81%	12.76%	14.22%	15.18%	48.87***
Proportion_trades_Dutch_companies of Dutch-speakers	4.94%	5.69%	6.40%	7.49%	62.74**
Number of orders per year on "complex" instruments	0	1	2	3	ANOVA F-stat
Proportion_trades_French_companies of French-speakers	13.77%	12.49%	13.10%	15.35%	30.44***
Proportion_trades_Dutch_companies of Dutch-speakers	5.28%	5.53%	6.61%	7.43%	57.11***
Level of education	0	1	2		ANOVA F-stat
Proportion_trades_French_companies of French-speakers	13.08%	11.85%	13.80%		33.77***
Proportion_trades_Dutch_companies of Dutch-speakers	5.68%	6.58%	5.82%		15.22***

The table reports by category the average proportions of trades on French(Dutch) stocks for each MiFID questions. The last column reports the ANOVA F-stat values as well as their significance.

We can strongly reject the null hypothesis that the cultural proximity effect doesn't vary across the financial sophistication. This result is in line with papers highlighting the effect of financial sophistication on investment behavior.

Overall, our results suggest that the highest sophisticated investors trade the most stocks listed in culturally close countries.

Is this behavior justified by higher "skills" or superior information?

To answer this question we replicate the same analysis as for Table 6 including only the subsample of investors having selected the highest category for the "financial literacy" MiFID question[14].

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[14]Results remain qualitatively the same if we choose the 2 other MiFID questions

Table 9: Profit of the highest sophisticated investors

French-speaking investors			
	Mean	Median	N
Gross realized cumulated profits on French stocks	4109**	48.8	1876
Net realized cumulated profits on French stocks	2216	-32.1	1876
Dutch-speaking investors			
Gross realized cumulated profits on Dutch stocks	18625	176	1744
Net realized cumulated profits on Dutch stocks	17869	43.7	1744

The conclusions remain the same as for the whole sample. While on average the profits are higher than for the whole sample of investors, they remain statically insignificant. Results still suggest that even the most sophisticated investors are not able to make a net cumulated profit which is different from zero on culturally close stocks. The results therefore indicate that even the most sophisticated Belgian investors do not have superior information on culturally close stocks and are rather suspected to display a bias towards these stocks.

5.4   Firms characteristics

In this part, we study the influence of firms characteristics on the behavior of French(Dutch)-speaking investors towards French (Dutch) stocks.

Table 10 reports the (weighted) average proportion of trades made by French(Dutch)-speaking investors in firms listed in France (the Netherlands)[15].

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[15]Results are qualitatively the same if we compute the proportions in total volume (in euros) instead of number of trades

Table 10: Firm effect

Variables	French companies	Dutch Companies	Difference
Proportion_French_speakers	73%	37%	***
Proportion_Dutch_speakers	27%	63%	***

The table reports the proportion of trades made by French(Dutch)-speakers on French and Dutch companies. The last column reports the significance of the difference.

Table 10 confirms the cultural proximity effect. A French(Dutch) stock attracts a significantly higher proportion of French(Dutch)-speaking investors[16].

Building on the literature related to the impact of firms' characteristics on foreign investing (Kang and Stulz (1997) and Grullon et al. (2004)), we investigate whether some firms characteristics may explain variations in the proportions of French(Dutch)-speakers.

We study the effect of the inclusion of a firm in a stock index as it has already been highlighted in the literature (Dahlquist and Robertsson (2001), Covrig et al. (2006), Kalev et al. (2008) and Ke et al. (2010)).

5.4.1 Index inclusion

In this subsection we investigate whether the inclusion of a French (Dutch) company in the CAC40 (AEX 25) index impacts the proportion of French-speakers (Dutch-speakers) who trade its stocks.

Panel A of Table 11 reports the average proportion of trades made by French-speaking investors on French stocks that are included (or not) in the CAC40[17].

Panel B of Table 11 reports the average proportion of trades made by Dutch-speaking investors on Dutch stocks that are included (or not) in the AEX25[18].

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[16]For the mean comparisons, we use the Satterthwaite method as a previous test rejects variance equality

[17]`http://www.boursorama.com/bourse/actions/cours_az.phtml?MARCHE=1rPCAC`. We look at the composition of the CAC40 at the moment of our analysis (i.e. 2015).

[18]`http://www.boursorama.com/bourse/actions/inter_az.phtml?PAYS=31&BI=1rAAEX`. We look at the composition of the AEX25 at the moment of our analysis (i.e. 2015)

Table 11: Index inclusion effect

Panel A			
	Non-CAC40	CAC40	Difference
Proportion_French_speakers	76.60%	67.81%	***
Panel B			
	Non-AEX25	AEX25	Difference
Proportion_Dutch_speakers	64.26%	61.21%	***

The table reports the average proportion trades made by French(Dutch)-speaking investors on French (Dutch) stocks that are included (or not) in the CAC40 (AEX25)

Overall, the cultural proximity effect is reduced for stocks listed in a stock index. While CAC40 (AEX25) firms always display a majority of French(Dutch)-speakers, the proportion of trades made by French(Dutch)-speaking investors is significantly[19]lower than for stocks not included.

One of the reasons might be that stocks included in a stock index are more "visible" to all Belgian investors in general and not for a particular language group. This result also suggests that for stocks being in the CAC40 (AEX25) index the proportion of Dutch(French)-speakers rises significantly. It may be evidence of the "attractiveness" of stocks that are in an index for foreign investors in general.

This result is in line with the paper of Kang and Stulz (1997) who find that large firms attract more foreign investors and with Dahlquist and Robertsson (2001) who find a positive relationship between foreign ownership and firms listed on international stock exchanges. Our result may suggest that stocks in a stock index tend to attract more foreign investors in general and not particularly culturally "close" foreign investors. It is consistent with Covrig et al. (2006) who shows that the "firm visibility" effect is stronger among foreign investors.

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[19]For the mean comparisons, we use the Satterthwaite method as a previous test rejects variance equality

6   Concluding remarks and further work

This paper studies the cultural proximity effect on Belgian foreign investing. Our empirical analysis confirms previous findings by showing that Belgian retail investors tend to have a higher trading activity on stock listed in culturally close countries: France and the Netherlands. However, unlike precedent papers we disaggregate our analysis between Belgian French- and Dutch-speakers and show that the difference of culture within a country matters to explain foreign investing. We provide evidence that, while being Belgian, French-speakers and Dutch-speakers differ in their investment behavior. While French stocks tend to be more traded by French-speakers stocks listed in the Netherlands are more traded by Dutch-speaking investors. However the effect of cultural proximity is much more pronounced for French-speakers towards French stocks than for Dutch-speakers towards Dutch stocks. This result is in line with Hofstede (1980) who find that French-speakers are close to France than Dutch-speakers to the Netherlands.

More importantly, we find that the higher trading activity on culturally close stocks is not information-driven. Even the most sophisticated French(Dutch)-speakers do not succeed in generating significantly positive trading profits on French (Dutch) stocks. The result suggests that investors are rather suspected to display a bias towards stocks listed in culturally close countries.

In the second part of the paper, we investigate whether some variables related to investors' and firms characteristics may impact significantly the cultural proximity effect.

Concerning investors' characteristics, the age, the gender and the financial sophistication play a significant role in the variation of the cultural proximity effect. A highly sophisticated older male investor displays a higher trading activities on culturally close countries.

As for firms characteristics, we analyse the effect of stocks being included in a stock market index. It seems that the cultural proximity effect is reduced for stocks listing in a stock index. While CAC40 (AEX25) firms always display a majority of French(Dutch)-speakers, the proportion of trades made by French(Dutch)-speaking investors on stocks included in the CAC40 (AEX25) index is significantly lower than for stocks not included. One of the reasons might be that stocks included in a stock index are be more "visible" to all Belgian investors in general and not for a particular language group. This result is in line with the paper of Kang and Stulz (1997) who find that large firms attract more foreign investors and with Dahlquist and Robertsson (2001) who find a positive relationship between foreign ownership and firms

listed on international stock exchanges. Our result may suggest that stocks in a stock index tend to attract more foreign investors in general and not particularly culturally "close" foreign investors. It is in line with Covrig et al. (2006) who provide evidence that the "firm visibility" effect is stronger among foreign investors.

As for further research, it would be interesting to replicate the same study with investors located in Switzerland. This country has three different languages but depicts another cultural landscape (Hofstede (1980)). The difference of culture between the three language groups seems indeed stronger than in Belgium. We may therefore expect the cultural proximity effect on Swiss foreign investing to be stronger with its neighboring countries: Italy, France and Germany.

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