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Is local bias a cross-border phenomenon? Evidence from individual investors' international asset allocation

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ABSTRACT

Extant literature consistently documents that investors tilt their domestic equity portfolios towards regionally close stocks (*local bias*). We hypothesize that individual investors' local bias is not limited to the domestic sphere but instead also determines their international investment decisions. Our results confirm the presence of a cross-border local bias. Specifically, we show (i) that the stockholdings of individual investors living within regional proximity to a foreign country display a significantly lower *foreign investment bias* towards investment opportunities in that country and (ii) that this drop in foreign investment bias levels is disproportionately driven by investments in regionally close neighbor-country companies. The impact of cross-border local bias on investors' bilateral foreign equity investments is economically significant and holds even after controlling for previously identified explanations of international asset allocation.

1. Introduction and related research

International portfolio diversification allows investors to yield a risk-return trade-off which is superior to what a portfolio of domestic assets offers. Yet, despite these undisputed benefits and an increasingly easier access to financial markets worldwide (Baele and Inghelbrecht, 2009), investors do not exploit cross-border diversification opportunities as extensively as one would expect in light of the fundamental tenets of portfolio theory. Empirical evidence documents that in reality, investors' equity holdings deviate significantly from what would be an optimal portfolio composition and presents three stylized facts regarding the geography of investment. First, investors tend to allocate a disproportionately large fraction of their equity investments to domestic stocks, leading to the well-researched *home bias*.[1] Second, their already trivial cross-border assets are concentrated in only a handful of host-country markets. This lack of diversification with regard to the international component of the portfolio, i.e. the extent to which investors underweight or overweight foreign markets, is referred to as the *foreign investment bias*. Third, investors tend to tilt their domestic portfolios towards local stocks an –investment anomaly which has been dubbed *local bias* in the literature. The goal of this study is to investigate whether the local bias phenomenon extends beyond domestic borders, i.e. whether investors' international equity allocation is also affected by their propensity to overweight regionally close companies in their stock portfolios.

1.1. International equity allocation and the role of geography

On an international scale, the geographical distance between home and host country has proved particularly powerful in explaining foreign investment bias. Aviat and Coeurdacier (2007, p. 47) illustrate this strong link by stating that "if the distance between two countries doubles, bilateral asset holdings are almost divided by two, [although] (...) geography should not shape asset trade in a globalized world". The puzzling impact of physical proximity is substantial and persists even after controlling for a number

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[1] See Lewis (1999) and Karolyi and Stulz (2003) for surveys of the voluminous literature on the equity home bias puzzle.

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of country-level[2] and firm-level[3] determinants that have also been shown to affect international equity allocation.

In recent contributions, the relation between individual investor characteristics and the choice of foreign equity has come to the fore.[4] Karlsson and Nordén (2007) study the selection of mutual funds by Swedish pension-plan beneficiaries and find that socio-economic variables such as age, education, marital status, and gender partially explain the extent to which individual investors allocate funds to foreign investment opportunities. Their analysis suggests that older, unmarried, and less sophisticated male investors have a higher likelihood of being home-biased and thus underinvested in foreign stocks. In a similar study, Goetzmann and Kumar (2008) find that US individual investors who hold relatively better diversified domestic stock portfolios are also more likely to hold foreign stocks in general. Behavioral traits have also been found to impact peoples' propensity to invest abroad. Bailey et al. (2008) argue that individual investors not only underuse but also misuse foreign equities. Their research implies that investors who display behavioral biases are less likely to invest in foreign equities and tend to offset the benefits of international portfolio diversification with their faulty investment decisions. Graham et al. (2009) document that individual investors who–arguably overconfidentially–perceive themselves as knowledgeable have more internationally diversified portfolios; however, Abreu et al. (2011) challenge this overconfidence explanation only recently. Their findings provide evidence in support of a learning process, in which the experience that individual investors acquire on the domestic market is a key determinant of their foreign market involvement.

A major caveat of the above-mentioned studies, however, lies in the fact that they focus on national borders when addressing the impact of geographical distance on an investor's decision to allocate funds to foreign markets. Typically, the straight-line distance between the capitals of home and host country is the only coarse proxy to capture location-related differences in foreign equity investments at the country level. The oversimplification underlying this approach is that, within a given country, all investors are assumed to exhibit identical investment patterns, regardless of their individual geographic location. Thus, the literature trying to explain the foreign investment bias neglects the findings of the local bias literature, which documents that individual investors systematically tilt their stock portfolios towards locally headquartered companies and thus shows that an investor's location proves a significant determinant of her equity allocation decision.

[2] Several studies highlight the predictive power of country-level economic geography variables on bilateral equity allocation. These include bilateral informational links (Chan et al., 2005; Aviat and Coeurdacier, 2007; Lane and Milesi-Ferretti, 2008; Diyarbakirlioglu, 2011), institutional similarities (Berkel, 2007) and cultural ties (Beugelsdijk and Frijns, 2010; Anderson et al., 2011) between home and host country. Stock market development, size, and openness as well as the level of investor protection also influence a country's ability to attract foreign funds (Portes and Rey, 2005; Bekaert and Wang, 2009). Finally, a source-country investor's familiarity with the target country has been shown to affect the extent of her stockholdings in that country (Bhattacharya and Groznik, 2008). Interestingly, none of these studies find evidence for a substantial exploitation of diversification benefits when investing abroad. See section 3.3 for details on the above-mentioned country-level variables.

[3] Foreign investors prefer large firms with less financial risk and transparent accounting policies (Kang and Stulz, 1997; Aggarwal et al., 2005) as well as a cross-listing on the home market (Ahearne et al., 2004) or a physical presence in the home country (Ke et al., 2010). Likewise, they allocate less funds to closely-held foreign companies with poor investor protection (Dahlquist et al., 2003; Leuz et al., 2009) and reduced global visibility in terms of analyst coverage and index membership (Ferreira and Matos, 2008). Recently, Kang et al. (2010) argue that the over- and underweighting of foreign securities likely arises from valuation differences between domestic and foreign investors.

[4] Note, however, that these analyses are not concerned with explaining the determinants of bilateral foreign investment but instead aggregate investors' non-domestic stockholdings to a single foreign equity position.

1.2. Domestic stockholdings and the role of regional proximity

Local bias has been shown to be a robust phenomenon across different markets and for individual and institutional investors alike.[5] However, evidence of local bias is limited to the domestic component of investors' equity portfolios so far. This appears to be an undue reduction, since Coval and Moskowitz (1999, p. 2048), in their seminal on local bias, hypothesize that a substantial portion of the lacking international portfolio diversification can be explained by local overinvestment and highlight the need to investigate "the importance of distance in international portfolio choice relative to that of national boundaries, assessing how much of the home bias phenomenon can truly be considered an international puzzle". To the best of our knowledge, no research has yet been done on how investor locality impacts portfolio choice in a cross-country setting.

1.3. A cross-country perspective on local bias

The present study fills this gap and asks if local bias is a truly national phenomenon or if it can help explaining empirically observable patterns of cross-border investments among individuals and thus affects international portfolio allocation as well.

Finding answers to this question is relevant because the impact of local bias has been shown to be strong enough to affect stock market efficiency. Pirinsky and Wang (2006) find that the price formation in equity markets has a significant geographic component linked to the trading patterns of local individuals, a result which has only recently been confirmed by Korniotis and Kumar (2012) and Liao et al. (2012). Similarly, Shive (2012) finds that the investment decisions of local residents contribute disproportionately to stock liquidity and price discovery, while Hong et al. (2008) show that, in the presence of locally biased investors, the valuation of a company domiciled in a given region is negatively related to the density of corporate headquarters in that region. Finally, Loughran and Schultz (2004) and Jacobs and Weber (2012) show that a preference for local equity among investors also has a significant impact on firm-level turnover. Taken together, this evidence implies that local investors have a hand in the valuation of stocks; thus, extending the local bias research to a cross-border setting adds to improve our understanding of the market impact of geography.

Our results provide strong evidence in support of the notion that individual investors' equity local bias is not limited to the domestic sphere but instead extends beyond national borders. Analyzing a rich data set covering the equity investments which German individual investors hold in each of Germany's nine neighbor countries, we reveal two novel patterns in international equity allocation related to the investor's place of residence. First, we find that the portfolio holdings of individual investors living within regional proximity to a foreign country display a significantly lower foreign investment bias towards investment opportunities in that country. Second, our results show that, on aggregate, this sharp drop in foreign investment bias levels is disproportionately driven by holdings in regionally close neighbor-country companies. Together, these results indicate the presence of a cross-border local bias among individual investors. The impact of cross-border local bias on investors' bilateral foreign equity investments is

[5] Ivkovic and Weisbenner (2005) and Seasholes and Zhu (2010) find that local stocks are overrepresented in the equity portfolios of US discount brokerage clients. Grinblatt and Keloharju (2001) provide qualitatively similar evidence for private households in Finland. Massa and Simonov (2006) and Bodnaruk (2009) document that Swedish individual investors overweight firms with geographically close premises, while Seasholes et al. (2011) and Baltzer et al. (2012) document a local equity preference among Chinese and German retail investors, respectively. Coval and Moskowitz (1999) and Baik et al. (2010) show that, while less pronounced in magnitude, local bias is also observed among US fund managers.