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FACULTY OF ECONOMICS AND BUSINESS ADMNISTRATION
DOCTORAL SCHOOL OF ECONOMICS
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THESIS SUMMARY

Supervisor: **Doctoral student:**

Professor dr. Habil. TODEA Alexandru   **HARIN Cristina**

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THESIS SUMMARY

FLEXIBILITY OF SOCIAL NORMS AND DIVERSIFICATION OF EQUITY PORTFOLIOS

Supervisor: **Doctoral student:**

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CONTENTS

INTRODUCTION

International portfolio diversification is a fundamental tenet of modern finance, offering investors the opportunity to minimise risk and achieve higher returns. However, empirical evidence shows that investors frequently exhibit home bias (HB), a preference for domestic over foreign assets, even when diversification would be beneficial (French and Poterba, 1991). This leads to inefficient investment allocations, reducing the potential benefits of international risk sharing. Relatedly, foreign bias (FB) refers to the preference for certain foreign stocks over others, which deviates from the market portfolio. Both phenomena have significant implications for financial stability, market efficiency and overall capital allocation (Cooper and Kaplanis, 1994b).

HB and FB indicate suboptimal diversification, but manifested in distinct ways. While HB involves concentrating investments in the investing country, FB distorts the distribution of foreign equities, leading to inefficient portfolio diversification on a global scale. The literature attributes these phenomena to several factors, including transaction costs (Glassman and Riddick, 2001), information asymmetries (Portes and Rey, 2000) and regulatory barriers (Bhamra et al., 2014). Behavioural explanations emphasise psychological factors such as familiarity bias, which lead investors to prefer familiar markets (Chan et al., 2005). Cultural explanations suggest that societal values, norms and institutional frameworks influence investment behaviours and levels of risk-taking (Beugelsdijk and Frijns, 2010).

A cultural aspect relevant for explaining the propensity of investors to step out of their "comfort zone", i.e. the domestic market, and diversify internationally is cultural tightness-looseness (CTL), which measures the degree to which societies apply strict norms and tolerate deviations. (Gelfand et al., 2011.) In tight societies, where compliance is strongly enforced and deviations are sanctioned, investors may be more risk averse and tend to favour familiar markets. On the other hand, in loose societies, where rules are more flexible and innovation is more valued, investors may be more willing to explore external opportunities and accept higher risks associated with international markets.

In this study we validate the impact of CTL on home bias and foreign bias, identifying that investors in countries with a strict culture exhibit higher levels of home bias because social norms

reinforce preferences for familiar markets. At the same time, we distinguish the role of financial education in reducing the impact of CTL on HB, suggesting that information about diversification can counter cultural constraints. We also find that a higher degree of economic openness contributes to lower HB by increasing exposure to global financial markets. In terms of the HB, we identify a lower level of HB for investors from countries with more relaxed cultural norms, where the attachment to local norms is low, thus lowering the psychological barrier to investing abroad. Moreover, we clarify the association between FB and cultural values and highlight the moderating effect of CTL on the relationship between cultural values and FB.

The motivation of the study derives from the intention to highlight the role of cultural and social norms in shaping financial decisions. Cultural factors influence how individuals perceive and respond to financial risk, which directly affects their investment decisions. Understanding the cultural determinants of these biases is relevant given the integration of global financial markets and the persistence of under-diversification of investment portfolios.

The objective of the research is to quantify the role of CTL in modelling HB and FB phenomena. We also explore the moderating effects of financial literacy and economic openness on these relationships and analyse how CTL interacts with other cultural dimensions to shape international portfolio allocation.

The research methodology comprises a quantitative approach based on a panel dataset of portfolio holdings. This includes the formulation of testable hypotheses and the use of econometric modelling to estimate the effects of CTL on HB and FB, including the application of robustness tests to validate the results.

The originality of the study is characterised by its contributions to the international finance literature. Our study is among the first to empirically link CTL to investment biases. By analysing financial literacy and economic openness, we provide new insights on the reduction of cultural constraints. We corroborate with other studies such as Elster and Gelfand (2021) that document the predictive power of CTL in moderating the relationship between cultural values and behaviours.

Chapter 1 includes an exhaustive description of the concepts of HB and FB, as well as a review of the literature on the determinants of these puzzles. We also identify methods to quantify

the degree of HB and examine their evolution in different countries and over time, highlighting the main patterns and deviations from optimal diversification models.

Chapter 2 explores the role of cultural values and social norms in shaping human behaviour. It presents CTL as a framework for understanding societal differences in norm enforcement and tolerance for deviations, including discussing methodologies for measuring CTL. In addition, it reviews the existing literature on how culture influences financial decision-making, in particular investment behaviour.

Chapter 3 presents the empirical evidence on the relationship between CTL and HB. We identify a positive association between cultural tightness and the level of HB, driven by the perceived additional cost associated with investing in foreign markets. We also find that both financial literacy and economic openness have a moderating effect on this relationship and emphasise their power to mitigate the cost of foreign investment.

Chapter 4 explores the association between CTL and FB, where we reinforce the role of permissive social norms in mitigating deficient diversification and capture the moderating effect of CTL for the relationship between cultural values and FB. We also bring out different results showing that the association between values such as invidivualism or masculinity and FB becomes more amplified for investors from strict countries, while the effect of values such as long-term orientation and power gap on FB is stronger for permissive cultures.

By highlighting how cultural norms influence investment decisions, this study underlines the crucial role of culture in shaping investment behaviour. By identifying the key moderators of the relationship between CTL and HB, as well as highlighting other processes moderated by culture, the study provides a nuanced understanding of the broader implications of cultural frameworks for investment choices. These insights provide valuable guidance for policy-makers, enabling them to design more culturally tailored financial policies that promote optimal diversification and minimise market inefficiencies in an increasingly interconnected global economy.

SUMMARY OF CHAPTER 1 - HOME AND FOREIGN BIAS - DEVIATIONS FROM THE MARKET PORTFOLIO

Investors' primary objective is to maximise their utility function through an investment decision that generates the maximum expected return. Depending on their financial objectives and risk preferences, investors can identify their market portfolio by assessing all assets available in the market, taking into account their return, risk and correlations. This conservative approach works in efficient markets where all barriers to trading have been removed and the distribution of information is sufficiently homogenous for investors to be able to make decisions and no human biases prevent choice.

Contrary to market portfolio theory, domestic equities are disproportionately concentrated in investors' portfolios. This phenomenon is widely known in the finance literature as *home bias* (HB). It has captured the attention of researchers in an attempt to rationalise the behaviour of investors who do not fully exploit the benefits of diversification (French and Poterba, 1991). The propensity to overinvest in domestic assets implies that foreign markets are generally underweighted in investors' portfolios. The extent to which investors undervalue or overvalue foreign markets is described in the literature as *foreign bias* (FB) (Chan et al., 2005). This bias does not reflect a direct preference for foreign over domestic investment, but rather a selective allocation within international markets that is inconsistent with objective benchmark allocations

Quantifying the HB and FB phenomenon involves capturing the deviation between the actual portfolio allocation and the benchmark portfolio allocation. While the actual portfolio allocation can be easily computed from portfolio holdings data, the optimal portfolio allocation is subject to interpretation, given the multitude of methodologies adopted in the literature. According to Baele et al. (2007), a distinction can be made between a "model-driven" and a "data-driven" approach for estimating optimal weights. The model-based approach, also referred to as the positive approach, is consistent with portfolio theory, where optimal allocation weights can be derived from observed weights in the world market capitalisation. The data-driven approach, also referred to as the normative approach, suggests that optimal portfolio holdings can be estimated based on the mean-variance criterion for efficient portfolio selection.

The presence of HB and FB is regarded as a violation of the diversification law imposed by financial portfolio theory. However, a huge constraint of market portfolio theory is the assumption that investors face equal opportunities, which does not reflect reality. In fact, investors differ across countries, and various sources of this heterogeneity have been explored in the literature in an attempt to explain investors' preference for domestic assets. In general, international portfolio allocation has been documented in the literature to be influenced by a multitude of factors such as: hedging of non-diversifiable risks (Fidora et al., 2007), barriers to capital flows (Cooper et al, 2013), informational barriers (Ahearne et al., 2004), financial educational background (Hiraki and Liu, 2021), institutional quality (Mishra, 2015), familiarity (Aggarwall et al., 2012) and behavioural factors (Drobetz et al., 2023).

As a result of the recent significant acceleration in trade liberalisation and financial integration, investors can benefit from reduced trade barriers and exemptions from financial market regulation. However, the contraction in HB and FBs is occurring at a slower pace than globalisation (Baele et al., 2007), a phenomenon that favours further analysis of the propensity of investors to direct their investments towards the domestic market.

Cooper et al. (2013) show that, despite the US accounting for at least one-third of global market capitalisation, investors originating from the US select inefficient portfolios located in the lower half of the mean-variance frontier, investing more than 75% of their equity portfolio in the country. The average U.S. investor forgoes nearly 50 basis points of additional return by owning only 22 per cent of foreign equities, while they can expect even lower returns from investors holding a full domestic portfolio while retaining the same level of risk. Cooper et al. (2013) also observe, using 8 alternative measures of HB, that industrialised countries hold better internationally diversified portfolios than emerging markets. Drobetz et al. (2023) present a bilateral equity investment allocation matrix for an extended period between 2000-2017, which shows that European countries, along with Hong Kong and Singapore, are , countries that overvalue each other's markets. Despite being the largest capitalised market in the world, the US is the country that institutional investors underweight the most.

SUMMARY OF CHAPTER 2 - SOCIAL NORMS - PART OF A NATION'S CULTURE

Chapter 2 explores the concept of social norms and discusses their role in shaping financial behavior. When a society is relatively homogeneous, the norms and values of individuals belonging to the same group are strict. If a member of the group deviates from these norms, the group expels the individual from the group, thus showing low tolerance for deviant behaviour. Such societies are considered *tight* in that they have clear norms that are reliably enforced (Pelto, 1968). When the rejection of group members is too emotionally demanding, cultures develop tolerance for deviant behaviour, which in turn leads to heterogeneous societies composed of groups with different norms. Such cultures are considered *loose*.

In an endeavour to extend the dominant paradigm in cross-cultural research, which is largely value-based, Gelfand et al. (2006) continue to promote the theory of cultural tightness looseness (CTL), and its moderating power on individuals and organisations. The authors reinforce the definition of CTL as the force of social norms as well as the force of sanctioning deviant behaviour. The concept of CTL is central to understanding behaviour because it reflects the extent to which societies enforce social norms and tolerate deviance. *Tight* cultures tend to have clear and strict rules, and people face strong social and institutional pressures to conform. In contrast, *loose* cultures are more permissive, allowing a wider range of behaviours and encouraging individuality.

We walk through the basic elements of cultural identity such as personal values (Schwartz et al., 2012) and cultural values (Hofstede, 1998; Hofstede et al., 2010) to provide a distinct definition of social norms. The study by Rohan (2000) and Fischer and Schwartz (2011) emphasise that although personal values, cultural values and social norms overlap, they differ in function and influence. Personal values motivate internal behaviour, cultural values shape broader societal goals, and social norms regulate conformity and expected behaviour.

Among the measures of cultural tightness used in the literature we can distinguish between Gelfand et al. (2011) and that of the Uz measure (2015). In a 2011 study, Gelfand et al. focus on the concept of cultural firmness by providing evidence on how the strength of social norms varies in modern societies, as well as modelling how tight and loose cultures have formed, maintained

and changed. The authors drew on data from 33 nations, drawn from 6,823 respondents from diverse backgrounds, to measure the strength of social norms and tolerance of deviant behaviour. In contrast to an existing measure of perceived cultural firmness (Gelfand et al., 2011), Uz's (2015) study exploits actual variation at the cultural level to quantify variation in norms, values and behaviours, CTL. To this end, the measure is implemented using the dispersion construct. This study advances on previous contributions in the literature and provides three alternative indices of cultural freedom, calculated based on a sample of 68 countries and the differences between them in their support for different values as reported by the European Values Study Group and the World Values Survey Association.

Understanding cultural constraints helps to explain why similar behaviours may be encouraged in one society but discouraged in another, highlighting the influence of wider cultural contexts on how norms are interpreted and applied. The literature is replete with evidence of the economic effects of culture, exploring in detail how personal values, cultural values and variation in social norms determine and shape financial behaviour and attitudes to risk. In cultures characterised by cultural tightness, in which compliance with norms is strictly enforced and deviance is discouraged, individuals and organisations tend to exhibit more risk-averse financial behaviour (Beugelsdijk and Frijns, 2010; Ge and Sarigollu, 2023), preferring stability and predictability. Conversely, in loose cultures, where tolerance for deviations is higher, there is more openness to risk-taking, innovation and unconventional financial strategies (Anderson et al., 2011; Eun et al., 2015; Schomaker and Deckert, 2020;2022). Following the findings of Taras et al. (2010), the study by Elster and Gelfand (2021) complements existing studies on the moderating effects of CTL by finding that personal values, cognitive representations of motivational goals, are strong predictors of human behaviours in looser societies and rather inhibited in stricter societies.

SUMMARY OF CHAPTER 3 - EFFECTS OF STRICT SOCIAL NORMS ON HOME BIAS

Despite the recent accelerated integration of financial markets, the *equity home bias* phenomenon is still widespread, even for the most developed stock markets. The literature has found empirical associations between *equity home bias* and transaction costs (Obstfeld and Rogoff, 2000), internal risk hedging motives (Fidora et al., 2007; Coeurdacier and Rey, 2013), institutional quality (Baele et al., 2007) and asymmetric information (Bekaert and Wang, 2009; Mishra, 2015). A latter part of the literature has delved deeper into behavioural finance in an attempt to solve the HB puzzle, identifying that overconfidence in domestic equities (Huberman, 2001), lack of familiarity (Chan et al., 2005) and cultural divergence (Anderson et al., 2011) may explain why investors forgo the potential benefits of international diversification in favour of the "comfort" of domestic equities.

In this chapter of our research, we investigate the impact of within-country variation in cultural values, as measured by the strength of social norms and the degree of sanctioning within societies, on investors' propensity to deviate from the benchmark allocation by overinvesting in domestic markets. Using data on foreign portfolio holdings of investors in 28 countries over the period 2001-2022, we test and validate three main hypotheses. We identify empirical support that investors from more culturally strict countries exhibit higher HB through aversion to foreign equities and due to perceived unfamiliarity. At the opposite pole, more permissive investors manage to overcome the cost associated with foreignness through higher risk-taking behaviour and openness to cultural exchange. We also identify financial literacy as a moderator of the relationship between CTL and HB and corroborate its power to mitigate the impact of homogeneity of social norms on increasing levels of HB. Finally, we highlight the economic openness of a source country as a facilitator, reinforcing the beneficial effect of cultural permissiveness on international portfolio diversification.

The hypotheses of the study were validated by specifying several models in which an extensive set of control variables was utilised, taking into account country-specific characteristics such as economic development and barriers to capital flows, familiarity proxies such as language distance and trade openness, and investors' cultural values. We assessed the robustness of our

results by using alternative indicators for both dependent and independent variables, thus delaying the main results. In an attempt to verify that our results were not driven by outliers, we explored the appropriateness of our model using different country and time samples. We also applied different estimation methods to account for the lack of variability of our CTL measure and ensured the validity of the causal inferences made in our regression analysis by instrumenting CTL by Kinship and by instrumenting financial literacy by PISA maths scores. In the additional analysis investigating the relevance of our moderators, we find that investors in emerging market countries may benefit more from increased financial education and economic openness to diversify their portfolios internationally. We also find that within-group cultural variation has greater explanatory power for HB outside of turbulent periods.

In general, the empirical results presented in detail in this chapter support the implication that investors in societies with stricter rules and lower tolerance for deviant behaviour are more prone to over-allocate in domestic equity markets. This relationship is attenuated by higher levels of financial literacy and economic openness of the source country. This study is consistent with previous studies suggesting that HB results from a combination of socio-behavioural characteristics, asymmetric information and financial market interactions. This paper leaves room for further exploration with a larger dataset for future research. Since only countries with highly integrated equity markets are considered, most developing markets are not included in the sample.

The results provide meaningful feedback to policy makers, especially in emerging markets where there is a higher level of HB. In particular, policy makers should interpret our estimates as recognising the power that variation in social norms exerts on financial outcomes and promote cross-cultural awareness and integration. Moreover, greater attention should be paid to increasing financial education and financial literacy, as well as enforcing regulations to reduce barriers to foreign investment in order to counterbalance excessive focus on the domestic market.

SUMMARY OF CHAPTER 4 - FOREIGN BIAS AND SOCIAL NORMS

In this chapter, we have analysed the direct and moderating relationship between CTL and FB. The theoretical arguments and empirical results show that culture guides investment behaviour not only through cultural values but also through social norms. Strict adherence to social norms and lower tolerance for deviant behaviour exacerbates the tendency of investors to under-diversify their international equity portfolio. At the same time, investors from more culturally permissive countries more easily overcome informational barriers to exposure to international markets. We have argued that strict rules and low tolerance for deviant behaviour in tight societies inhibit creativity and reduce confidence, leading to a lower propensity of investors to participate internationally. Investors in loose societies, who are not constrained by strict social norms and fear of sanctions, diversify their portfolios better abroad because their creativity and confidence are higher. The association of CTL with FB is also economically significant, being comparable to that of its most important cultural determinants, such as individualism (IDV), uncertainty avoidance (UAI) and power distance (PDI).

The literature emphasises that endogeneity caused by measurement errors are a specific concern of culture-related research (Karolyi, 2016). As the CTL variable is derived on a survey basis, we address this issue by instrumenting the CTL using the kinship measure, which captures the extent to which individuals are integrated into extended family networks. Instrumental variable (IV) estimation results indicate that the estimated effects of CTL remain consistent and significant, suggesting that endogeneity does not pose a major threat to the validity of the findings.

Given some inconclusive or contradictory results in the literature (Aggarwal et al., 2012; Anderson et al., 2011; Beugelsdijk and Frijns, 2010), this study clarifies the association between FB and some of Hofstede's cultural dimensions. For example, the association between FB and PDI is positive in Beugelsdijk and Frijns (2010) study and negative in Aggarwal et al. (2012). We find that investors in countries characterised by IDV, masculinity (MAS) and long-term orientation (LTO) exhibit greater diversification in foreign markets. Investors from countries characterised by UAI and PDI diversify less in foreign markets. At the same time, to the best of our knowledge, this is the first study investigating the relationship between FB and indulgence - restraint (IVR). We

find that investors from countries characterised by indulgence diversify their portfolios internationally better than those characterised by withholding.

CTL also indirectly influences FBs through its moderating effect on their relationship with cultural values. We found that this moderating effect manifests itself differently depending on the cultural dimension analysed. The cultural values of IDV, MAS, UAI and IVR more strongly influence investment behaviour in restrictive countries compared to more permissive ones and confirm the predictions made by Taras et al. (2010) or Elster and Gelfand (2021). At the same time, a rather opposite effect was found for PDI and LTO. The average marginal effects of CTL on FB levels for different values of the cultural dimensions show that these moderating effects are more complex and require further future investigations. For example, the impact of PDI on FB is only found for strict societies. Therefore, we can say that the tightness-looseness variable is an omitted variable in previous studies investigating the relationship between cultural values and international portfolio allocation, and its introduction allows us to better understand cross-country differences in FB.

The results demonstrating a positive association between the degree of cultural strictness of investors and the level of FB were subjected to a series of robustness checks to ensure their validity and reliability. Firstly, an alternative measure of FB was used, which produced consistent results thus confirming the initial findings. The measure introduced by Bekaert and Wang (2009) is devoid of the effect of domestic over-allocation, thus clearly delineating the effect of CTL on investors' propensity to favour certain foreign markets over less preferred ones. The study's hypotheses were also tested with other interpretations of FB in the literature, such as the distance aversion measure by Cooper et al. (2018) Similarly, we used an alternative measure of CTL by Gelfand et al. (2011) to test whether the observed relationship is sensitive to the operationalisation of the construct, with the results remaining robust. Moreover, we included as an additional control variable the degree of CTL of the destination country to account for its potential influence on foreign investment patterns. This adjustment revealed that, in addition to being determined by their own level of CTL, investors tend to allocate capital investment to markets with greater heterogeneity in terms of norms, values and behaviours.

Motivated by the guidance of Kirkman et al. (2006) to adopt alternative cultural frameworks to Hofstede's, we used the cultural dimensions from House et al. (2004) and Schwartz

(1999) to control for the positive association between CTL in the investing country and FB. Finally, we applied alternative estimation procedures, such as random effects and the Heckman procedure, to address potential methodological issues, including heteroscedasticity and selection bias. Across all robustness measures, the findings consistently supported the hypothesised relationships, highlighting the reliability of the results and their implications for understanding the cultural determinants of international investment behaviour.

These results have a number of practical implications for both investing and destination countries with respect to foreign portfolio investment flows. From the perspective of investing-country investors, the existence of a two-way interaction effect of cultural values and norms on the phenomenon of FB might be of interest to investment fund managers who diversify their portfolios internationally. Thus, they should enhance the creativity of their work team by choosing an optimal configuration of the cultural dimensions of its members by introducing people from other cultures into the team (Gedik and Ozbek, 2020). At the same time, managers should be concerned with fostering the interpersonal trust of their work team members by providing an appropriate work environment (Costa et al., 2018).

From the perspective of destination countries, attracting foreign portfolio investment is more difficult when investors come from culturally strict societies. However, destination countries can enhance their attractiveness for equity capital by fostering a more culturally permissive environment, in particular by promoting innovation, which Schomaker and Deckert (2020) empirically found to be a determinant of cultural permissiveness. Also, according to the study by Aktas et al. (2016), a participative leadership style is associated with higher levels of CTL. By adopting such cultural change, countries can signal openness and adaptability, which are critical factors for international investors seeking dynamic and growth-oriented markets.

This study has several limitations. First, both measures of CTL do not vary over time, which does not allow for the introduction of fixed effects to control for omitted variable bias due to unobserved heterogeneity. Second, due to data availability for these CTL measures, the sample is limited to only 37 and 29 investing countries, respectively. Third, only Hofstede's cultural Hofstede measures were exhaustively analysed, despite criticisms of their reliability (Venaik and Brewer, 2016). We used these cultural values because the previous literature mainly focuses on the study of the relationship between them and FB, thus theoretical and empirical results exist. Finally,

a limitation of the study is to use the country level of CTL instead of the individual level. This choice may be problematic, as investment decisions are made by individuals or institutional investors, and cultural aggregation at the country level does not fully capture variations in perception and behaviour at the individual level. Thus, the results may reflect general societal trends, but not necessarily how cultural factors directly influence the decisions of individual investors.

GENERAL CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

Understanding home bias and foreign bias phenomena is essential considering their global influence on capital flows, risk diversification and overall market efficiency. Despite the extensive literature on their economic and institutional determinants - such as transaction costs, information asymmetry and regulatory barriers - the role of culture has often been ignored as a key explanatory factor. Traditional financial theories assume that investors make rational choices based solely on risk-return trade-offs, but persistent deviations from optimal diversification suggest that non-economic factors, including cultural norms and values, shape investor behaviour in fundamental ways. In particular, the CTL framework - which captures the extent to which firms enforce norms and tolerate deviations - provides a new lens through which to analyse how cultural constraints influence investment decisions. By integrating CTL into the study of HB and FB, this research addresses a significant gap in the literature by clarifying how deep-rooted cultural biases influence portfolio allocation at both the individual and institutional levels.

Investors often tend to over-allocate equity investments to their home markets and favour certain foreign markets while under-investing in others, suggesting a willingness to forego the benefits of diversification according to their own preferences. While rational factors, such as hedging market risks and transaction costs, provide an economic justification for these tendencies from a utility maximisation perspective, behavioural influences - including familiarity, overconfidence and patriotism - also play a crucial role, as highlighted in the literature. By analysing extensive time-series data, this study has revealed global trends in the international distribution of equity capital, revealing variations in HB and FB that cannot be fully explained by the determinants documented so far.

The CTL framework provides a valuable perspective to better understand how regulatory constraints shape investment behaviour, directly influencing risk-taking, investment preferences and market participation. We explore the concept of CTL by examining its definition across various elements of cultural identity and its measurement using established frameworks such as Uz (2015) and Gelfand et al. (2011). By analysing the behavioural and social patterns that distinguish *tight* from *loose* cultures, we highlighted how cultural norms shape individual and collective actions, influencing levels of compliance, innovation and risk tolerance. We also detail the economic and financial implications of CTL, illustrating how cultural tightness or looseness affects financial decisions, investment behaviours and institutional structures. This discussion provides a basis for understanding how cultural norms extend beyond societal organisation to influence economic outcomes, paving the way for further exploration of their role in shaping financial behaviours.

We identify empirical evidence that investors in more culturally strict countries face higher levels of HB, influenced by aversion to foreign equities and perceived unfamiliarity. At the opposite pole, investors from more loose countries manage to overcome the cost associated with international investments through higher risk-taking behaviour and openness to cultural exchange. We also empirically validate financial literacy as a moderator of the relationship between CTL and HB and highlight its power to mitigate the impact of homogeneity of social norms on the increase in the level of HB. Finally, we identify the economic openness of a source country as a facilitator, reinforcing the beneficial effect of cultural relaxation on international portfolio diversification. These results provide directions for policy makers to focus on financial literacy programmes, regulatory reforms, and digital accessibility to ensure that in particular investors from culturally strict societies benefit from a lower cost of investing in the international market.

In FB, we show that investors in culturally strict firms hold less internationally diversified portfolios than investors in relaxed firms. CTL also indirectly influences FB through its moderating effect on the relationship between FB and cultural values. We find that this moderating effect manifests itself differently depending on the cultural dimension analysed. The cultural values of IDV, MAS, UAI and IVR more strongly influence investment behaviour in strict compared to permissive countries and confirm the predictions made by Taras et al. (2010) or Elster and Gelfand (2021). At the same time, a rather opposite effect was found for PDI and LTO. Thus, we can say that the CTL variable is an omitted variable in previous studies investigating the relationship

between cultural values and FB, and its introduction gives us a better understanding of cross-country differences in international portfolio diversification.

This study is consistent with previous studies suggesting that portfolio allocation decisions result from a combination of socio-behavioural characteristics, asymmetric information and financial market interactions. This research makes both theoretical and empirical contributions to the literature on international portfolio allocation by examining the role CTL plays in modelling HB and FB. From a theoretical perspective, the study extends existing frameworks on cultural determinants of financial behaviour by integrating CTL as a key explanatory factor, demonstrating how societal norms and regulatory constraints influence investment preferences beyond traditional cultural dimensions such as IDV or UAI. Moreover, this study advances our understanding of moderators in the relationship between CTL and portfolio allocation decisions, highlighting how factors such as financial literacy condition the extent to which cultural strictness reinforces HB or facilitates global diversification. Empirically, using extensive cross-country data, this research provides strong evidence that CTL systematically moderates the impact of cultural dimensions on FB in a systematic way. By uncovering these mechanisms, this study not only refines the cultural explanations of HB and FB, but also provides practical insights into how cultural constraints shape financial decisions at the macro and micro levels.

While this study provides valuable insights into the role of CTL in shaping international portfolio allocation, several limitations must be acknowledged. First, the CTL measure is time-invariant, which limits the ability to introduce fixed effects to control for omitted variable bias, a limitation that also applies to the financial education measure. This constraint prevents us from fully capturing possible temporal variation in the cultural and educational influences on investment behaviour. Second, our analysis focuses exclusively on 29 developed markets, which limits the generalisability of our findings. Given that developing markets often exhibit different institutional frameworks, investor behaviours, and cultural dynamics, future research could explore how CTL affects international portfolio allocation in these contexts. Also, while we rely on Hofstede's cultural dimensions as a framework for contextualising cultural influences on financial behaviour, these dimensions have been criticised on their reliability and static nature, suggesting that alternative cultural models could complement our approach. Finally, we recognise that other cultural factors - such as trust, social uncertainty or historical financial experiences - may also play

a role in shaping investment decisions, and incorporating these elements in future research could provide a more comprehensive understanding of the impact of culture on portfolio diversification.

Based on the findings of this study, several avenues for future research could further improve our understanding of the relationship between CTL and international portfolio allocation. First, although this research focuses on equity investments, future studies could extend the analysis to other asset classes, such as debt securities, real estate or alternative investments, to examine whether cultural influences extend beyond equity markets and shape broader portfolio diversification strategies. At the same time, our study is based on country-level aggregates, which, while informative, may miss important variations within countries. Exploring regional differences or individual-level investor behaviour could provide deeper insights into how cultural restrictiveness and permissiveness interact with financial decision-making at a more granular level. Moreover, it would be interesting to investigate whether, in times of financial crisis, investors from strict cultures, under the threat of the financial crisis, will withdraw their portfolio investments more than investors from societies with a higher degree of variation in social norms. Finally, beyond portfolio allocation, future research could examine how CTLs affect other financial outcomes, such as foreign direct investment, cross-border mergers and acquisitions, or financial market integration, to develop a more comprehensive understanding of how cultural norms shape global financial interactions.

This research highlights the profound influence of cultural factors on investment behaviour, demonstrating that financial decisions are shaped not only by economic fundamentals but also by deeply rooted societal norms. By integrating the CTL framework into the study of international portfolio allocation, this paper provides a novel perspective on how regulatory constraints and flexibility influence HB, FB and global capital flows. As financial markets become increasingly interconnected, understanding these cultural dynamics is essential for investors, policy makers and financial institutions seeking to navigate global capital allocation efficiently. Ultimately, this study contributes to a more comprehensive and culturally sensitive approach to international finance, opening new avenues for future research on the intersection of culture and financial decision-making.

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