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In the name of the law: How does legal distance affect US international mutual funds' financial performance?

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ABSTRACT

In this research, we investigate how the distance in legal features between investor and investee countries affects international mutual funds' financial performance. We analyse a sample formed by 1160 US equity mutual funds in the period 2000–2021 (73,256 monthly portfolios) with an international investment vocation. Our results show that managers of mutual funds holding a portfolio that is exposed to more distant markets in terms of legal features jeopardize the financial performance delivered to investors. We also find a moderating factor whereby investing in larger stock markets alleviates the negative effect of the legal distance.

1. Introduction

International mutual funds invest in foreign markets. The reduction of risk from the global diversification of mutual funds' portfolios could be beneficial for investors (Kong and Zhao, 2024). However, this investment policy challenges mutual fund managers, who face heterogeneous institutional environments when making investment decisions. Dang et al. (2023) explain that foreign investors, compared to domestic ones, cope with informational disadvantages arising from geographical, cultural, and legal constraints. Hasan et al. (2022) point out that institutional distance between foreign institutional investors and their investee companies leads them to face additional relational costs related to monitoring costs, lack of trust in local managers, and the opportunistic behaviour of local managers.

Academic literature analyses this kind of fund, revealing a home bias puzzle that affects financial performance positively. French and Poterba's (1991) study is the first to raise the issue of the low diversification in international equity markets. Chan et al. (2005) investigate how mutual funds in 26 developed and developing markets allocate their resources between domestic and foreign stocks, detecting a significant home bias. Hau and Rey (2008) analyse the portfolio holdings of a sample of global funds, finding a positive relationship between the size of the fund and the home bias. Ke et al. (2010) obtain empirical evidence showing that mutual fund managers in 22 countries prefer to invest in US companies with a presence in their domestic market. Coval and Moskowitz (1999),

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(2001) find that US mutual fund managers prefer to invest in companies headquartered locally and explain that home bias exerts a positive impact on the financial performance of investment portfolios due to the informational advantage of managers when trading nearby stocks. Similarly, Massa and Simonov (2006) explain that investing in nearby stocks provides investors with familiarity and lower informational costs. Ferreira et al. (2013) point out that geographical proximity constitutes a source of informational advantage that can be exploited by mutual fund managers to foster their financial outcomes. Agoraki et al. (2024) find the existence of a flight home-effect in capital flows of equity and bond funds as geopolitical risk rises, meaning that mutual fund managers show a tendency to reallocate money to the domestic market. Lee et al. (2023) perform an exhaustive literature review explaining the reasons behind the home bias puzzle analysing the theories backing these reasons.

In this way, the distance between investor and investee countries' characteristics is a source of transaction costs hampering the investment decision-making process (North, 1990). Panicker et al. (2019) explain that the distance in institutional features may cognitively affect perceptions of risk and, more specifically, "the institutional framework of a country can change the perceived riskiness of decision situations by affecting the nature and availability of information related to the decision, and the perceived consequences of it" (p. 324). These transaction costs arise mainly from the informational asymmetries faced by mutual fund managers when making investment decisions in unfamiliar markets. Bell et al. (2012) point out that differences in the general legal environments of home and host countries lead investors from one country to avoid trading in another. Lee et al. (2023) explain that differences in accounting and reporting standards entail additional information costs for foreign investors which could explain the home bias puzzle. In fact, the measures taken to reduce the informational disadvantages of foreign investors seem to be effective in attracting money flows, alleviating the home bias. Thus, Covrig et al. (2007) find that the adoption of the International Accounting Standards (IASs) reduced home bias since it contributed to increasing the information available on local issues. Similar empirical evidence is obtained by Chauhan and Kumar (2019a). Ahearne et al. (2004) explain that foreign countries with a greater share of firms that have public US listings (debt or equity) reduce the informational costs to US investors and, consequently, weigh more in US equity portfolios. Chauhan and Kumar (2019b) find that foreign investors prefer to select firms that disclose information related to ESG (environmental, social, and governance). Lee et al. (2023) point out that foreign investors cope with higher information costs when investing in companies with poor records in corporate governance issues. Besides, several authors, such as Goergen et al. (2006), Yung and Zender (2010), and Mohd-Rashid et al. (2019), use company market capitalization as a proxy for informational asymmetry. Mohd-Rashid et al. explain that, for larger companies, more information is available for foreign investors. Galloppo et al. (2024) explain that achieving high-market capitalization allows companies to obtain financial resources under favourable conditions.

The impact of institutional distances on international mutual funds' performance is a more rarely analysed topic. Baik et al. (2013) conclude that foreign institutional investors trading in the US market show poor skills in predicting stock returns due to the "liabilities of foreignness" (LOFs) that they suffer. In a more recent study, Abou Tanos (2022) finds that selecting securities from familiar, culturally proximate markets significantly spurs the financial outcomes of international investment portfolios. Abou Tanos and Jimenez-Garcès (2022) show that investing in familiar markets is not enough to enhance financial performance during market turmoil. Kempf et al. (2023) reveal that the political ideology distance is a relevant factor in explaining the cross-border capital allocation of mutual funds. Fleta-Asín and Muñoz (2023) report that distance in formal institutional features negatively affects the financial performance of US international equity mutual funds.

Despite the empirical evidence described above, very significant issues remain unexplored. This is the case of the impact of distance in legal frameworks on international mutual funds' financial performance. Legal environments determine capital markets' development and functioning (La Porta et al., 1997; La Porta et al., 2013). Mutual fund managers making investment decisions in unfamiliar legal frameworks could face more difficulties in trading successfully, jeopardizing the financial results delivered to investors. In this research, we contribute to filling this gap in the academic literature by studying the impact of the distance between different legal dimensions on the financial performance of a sample of US international equity mutual funds in the period 2000–2021.

We consider a broad set of legal environment proxies, including the legal origin of the country (common law versus civil law), which approaches investors' degree of protection (La Porta et al., 1998), the corrected version of the Antidirector Rights Index (Spamann, 2010), which is an alternative proxy for investor protection, and securities laws related to both private and public enforcement, addressed through the factors proposed by La Porta et al. (2006) (LLSS). We build variables at the monthly portfolio level that reflect the Euclidean distance between the US market (the country where the international funds in our sample are domiciled) and the investee countries represented in that monthly portfolio. We consider 41 markets that allow us to control a high percentage of the portfolio allocation.

We perform a plethora of further research analyses to give robustness to our main empirical evidence by considering alternative proxies for the legal distance and the financial performance of mutual funds, by studying the impact of the subprime mortgage crisis in our empirical evidence and by studying a sample of international mutual funds domiciled in the French market. The rest of the paper is structured as follows: the second section poses the research hypotheses; the third section explains the data and methods used; the fourth section provides the empirical results obtained and a discussion of our main empirical evidence and the further research analyses; and the fifth section ends the paper with the main implications, limitations and further research.

2. Research hypotheses

Countries can be classified into two broad subsets according to their legal origin, that is, common law countries (i.e. *ius commune*) and civil law countries (i.e. *ius civile*) (Siems, 2007). Each legal origin has distinctive features, constituting a path-dependent phenomenon that holds some of its original characteristics (David, 1994; Fleta-Asín et al., 2022; La Porta et al., 2008). Thus, the origins matter in the present because the rules and laws that emanate from each source are influenced by these primeval particularities

(Glaeser and Shleifer, 2002; Heine and Kerber, 2002; Zucker, 1977).

Common law has its roots in the sixteenth and seventeenth centuries in England as a consequence of the conflict between the Crown, representing the interests of the monarchy and nobility and aiming to maintain their privileges, and the Parliament, defending the interest of landowners and merchants, who wanted to change the *status quo* in favour of the private initiative (Djankov et al., 2007; Milsom, 2014). This conflict led to the Crown's power to intervene in the market being trimmed, reinforcing the property rights of private agents (Siems, 2007). Civil law originates from ancient Rome, the legal framework of which aimed to develop common rules that guaranteed the centralizing role of the state and the power of the emperor (Dainow, 1966; Watkin, 2017). Thus, it is considered that, differently from common law tradition, civil law puts institutions and state interests before individuals (Fleta-Asín et al., 2022).

Another distinctive characteristic between the two legal traditions is the main source of laws. In the case of common law, norms arise mainly from jurisprudence following the principle of *stare decisis* (La Porta et al., 1999, 2008; Plucknett, 2001). This means that judges solve issues following their predecessors' criteria when these issues share similar elements of judgement and have the authority to judge unprecedented events, building jurisprudence for similar subsequent cases (Siems, 2007). Instead, in civil law tradition, norms are codified in a written legal body, and, consequently, different judges must interpret a situation when enforcing a specific norm (Hazard, 1997). Besides, some novel situations might not be reflected in the written legal body, hampering judges' ability to solve unprecedented events. Thus, common law, in comparison with civil law, can adapt quickly to a changing environment and features less ambiguity in conflict resolution (La Porta et al., 2000, 2008).

In this framework, La Porta et al. (1997), (1998), (1999) conclude that legal origin is relevant to several dimensions of financial markets. More concretely, these authors point out that investors enjoy stronger protection in common law markets than in civil law ones. Besides, it is associated with greater development of capital markets and greater ownership dispersion of listed firms. Ergungor (2004) investigates how legal tradition determines whether countries are market or bank based. Concretely, this author explains that civil law countries are less effective than common law ones in resolving conflicts due to their lack of flexibility in interpreting the codified norms and making new rules. This makes bank-oriented financial systems predominate in civil law countries because banks emerge as primary contract enforcers. Conversely, common law countries tend to present market-oriented financial systems since courts enforce laws more effectively, providing stronger creditor and shareholder protection and greasing the development of capital markets. Similarly, Kwok and Tadesse (2006) explain that, in Anglo-Saxon countries, financial systems are more market oriented, whereas, in continental Europe and Japan, they tend to be bank oriented. Ferreira et al. (2013) find that mutual funds from countries with a common law legal origin and stronger investors' protection achieve better financial performance. In a more recent work, Abou Tanos and Jimenez-Gàrces (2022) find a positive relationship between foreign mutual fund performance and the strength of investors' protection. However, other authors obtain empirical evidence that contradicts La Porta et al.'s (1997, 1998, 1999) findings. Thus, Aggarwal and Goodell (2010) find that a common law origin hampers capital market development, favouring bank-oriented financial systems. These authors explain that an English legal origin reinforces minority owners' rights, trimming the benefits of control by larger shareholders and, consequently, the advantages of financial markets. Spamann (2010) corrects the Antidirector Rights Index (ADRI) proposed in the seminal paper of La Porta et al. (1998) and finds that the previous empirical evidence provided by these authors does not hold with the new index, specifically that relating common law positively to investor protection.

Beyond determining which legal origin would be more suitable for investors' interests, we hypothesize that the distance in the legal origin between the country where an international mutual fund is domiciled and the countries in which this fund invests is a relevant factor that hampers the investment decision-making process. Bell et al. (2012) expand the liability of foreignness phenomenon from the product market to the capital one. These authors find that institutional distance negatively affects companies when raising capital abroad. They explain that "foreign subsidiaries experience a competitive disadvantage because local firms have better information about the local competitive environment, including the economy, language, social needs and preferences, law, and politics" (Bell et al., 2012, p. 109). Lee et al. (2023) point out that "foreign investors encountering severe information asymmetry face high information costs on foreign investments" (p.8). In the same vein, Gu et al. (2019) show that institutional distance increases the cost of debt when companies raise debt capital abroad. Baik et al. (2013) explain that differences in legal systems constitute a significant source of the LOF costs faced by foreign investors. Mutual fund managers facing unfamiliar legal frameworks when making investment decisions will bear informational disadvantages leading to transaction costs that jeopardize their outcomes. Thus, our first research hypothesis proposes the following:

H1. *Legal origin distance jeopardizes the financial performance of international mutual funds.*

Capital markets' legal origin constitutes an appropriate proxy for studying the impact of legal distance on the financial performance of international mutual funds for the reasons exposed above. We use the corrected version of the ADRI index proposed by Spamann (2010) as an additional indicator to approach investors' protection, allowing us to give robustness to H1. However, we want to take a step further and use an alternative lens of analysis closer to specific capital market regulations. Thus, we analyse the distance in the securities laws identified by La Porta et al. (2006) (LLSS) as relevant to the explanation of capital market development. These authors propose several indicators related to laws facilitating private and public enforcement.

LLSS explain that there are three broad hypotheses about the optimal legal structure of securities markets. The first one suggests that it is more appropriate to leave stock markets unregulated. Thus, reputational, legal and contractual penalties for misreporting, the existence of additional mechanisms to signal issuer quality, such as auditor companies, or the norms set out by private stock exchanges for disclosure and monitoring the compliance of listed companies to promote trading would be enough for securities markets to work and prosper (DeLong, 1991; Miller, 1991; Ross, 1979). Thus, securities laws would be irrelevant (due to being unnecessary) or even prejudicial since they would establish constraints distorting the proper functioning of capital markets (Coase, 1975). Alternatively, securities laws would be necessary for the correct working and development of stock markets. Public authorities should set out specific

rules to reduce the enforcement costs and opportunistic behaviour of issuers and protect investors' interests. In this vein, we find two alternative hypotheses according to the type of laws promoted, that is, those aiming to reinforce private enforcement versus those boosting public enforcement. On the one hand, one of the hypotheses establishes that, to enhance market discipline and private litigation, the government should standardize the private contracting framework. LLSS focus on two aspects of standardization: i) laws related to the disclosure of particular information; and ii) laws related to the liability facing issuers and intermediaries when investors litigate to be compensated for the damages suffered when the issuer fails to comply with its reporting obligations. On the other hand, the other hypothesis establishes that a public enforcer is necessary to deter opportunistic behaviours and guarantee efficiency in trading. Thus, the existence of a market regulator to be independent, with the capacity to intervene ex ante by establishing legal obligations and ex post by imposing sanctions, promotes the proper functioning and development of securities markets. In their seminal work, LLSS find strong (weak) evidence that private (public) enforcement benefits stock markets. We can find a plethora of later academic works using the indicators proposed by LLSS and finding mixed empirical evidence (see, among others, Abou Tanos and Jimenez-Garcès, 2022; Aitken et al., 2015; Aussenegg et al., 2018; Cumming et al., 2018; Ferreira et al., 2013; Hutton et al., 2022; Jackson and Roe, 2009).

Again, our focus in this research extends beyond establishing which alternative is better for the proper functioning and development of capital markets (unregulated, private enforcement laws or public enforcement ones). Thus, we are interested in the effect of the distance in securities laws between investor and investee countries. Bell et al. (2012) explain that international financial markets feature an unequal distribution of information between national and foreign investors. Thus, an important source of such asymmetry arises from "uncertainties regarding the codified rules regulating the behavior and activities of company insiders in foreign markets" (Bell et al., 2012, pp. 113–114). We hypothesize that those international mutual fund managers making investment decisions in more distant markets in terms of securities laws will face greater informational asymmetries and consequently suffer higher transaction costs, negatively affecting their financial performance. Thus, our second research hypothesis is as follows:

H2. *Securities laws' distance jeopardizes the financial performance of international mutual funds.*

There could be factors that alleviate the informational asymmetries generated by legal distance, consequently curbing the potential negative impact on foreign investors' outcomes. This is the case of the size of the securities markets in which these investors trade. Portes and Rey (2005) analyse the determinants of cross-border equity flows and identify market size as a relevant factor driving these flows. Similarly, Baele et al. (2007) point out that larger stock markets feature lower costs of financial intermediation, higher liquidity and better investment opportunities, being more attractive to foreign investors. Kho et al. (2009) show that market capitalization and home bias are negatively correlated. Chan et al. (2005) explain that, when a host market is more developed, that is, with larger market capitalization, transaction costs are lower and foreign investors will invest more in that market. More concretely, these authors explain that "when a country is more developed or less remote from the rest of the world, this reduces deadweight costs for foreign investors investing in local equities, resulting in smaller domestic and foreign biases" (Chan et al., 2005, p. 1498). Larger capital markets are more liquid, more visible and more recognized; consequently, the informational disadvantages emerging from legal distance and the transaction costs from trading could be alleviated when mutual fund managers trade in these markets. Thus, we establish the following research hypothesis:

H3. *The size of the investee capital markets moderates the negative impact of legal distance on the financial performance of international mutual funds.*

3. Data and methods

To test the research hypotheses set out in Section 2, we analyse a sample of international equity mutual funds domiciled in the US market in the period 2000–2021. We select all the mutual funds labelled in the Morningstar Direct Database, such as US Fund Foreign equity and US Fund World equity. For these funds, we obtain information on monthly returns and total net assets (expressed in $ millions; we determine the fund size as the log of this variable),[1] net expense ratios, turnover ratios, the inception date of the oldest share class (which allows us to determine the fund age expressed in years) and the monthly portfolio allocation across 41 different markets (those covered by the LLSS indicators and for which Morningstar Database provides information; see Appendix I). We establish a minimum threshold of size and age to avoid noisy empirical evidence, following previous literature. Thus, we discard all the monthly portfolios of funds below $10 millions of total net assets and 2 years of age (see, among others, Chevalier and Ellison, 1997; Muñoz et al., 2022). Our final sample is formed by 1160[2] mutual funds (73,256 monthly portfolios).

For each monthly portfolio, we build several indicators. First, we compute the home bias degree (HOMEBIAS) as the weight of the US stocks in the portfolio. Second, as a proxy for the country concentration (CC) of the portfolio, we compute the Herfindahl index for each fund/month observation from the equity country allocation information.

[1] From the monthly returns and total net assets, we obtain the relative monthly net money flows: $NCF_{j,t}=[TNA_{j,t}-TNA_{j,t-1}(1+r_{j,t})]/TNA_{j,t-1}$, where $TNA_{j,t}$ represents the total net assets of fund j in period t and rj,t the return of fund j in period t. Following Galloppo et al. (2024), Alda et al. (2022) and Kostovetsky and Warner (2020), among others, we winsorize the NCF at the 1 % and 99 % levels.

[2] The sample is formed by 5329 different share classes, but we aggregate the information at the fund level since all the share classes in a fund share the same geographical allocation of the portfolio holdings. We perform the method described by Renneboog et al. (2011) to merge the information regarding share classes.

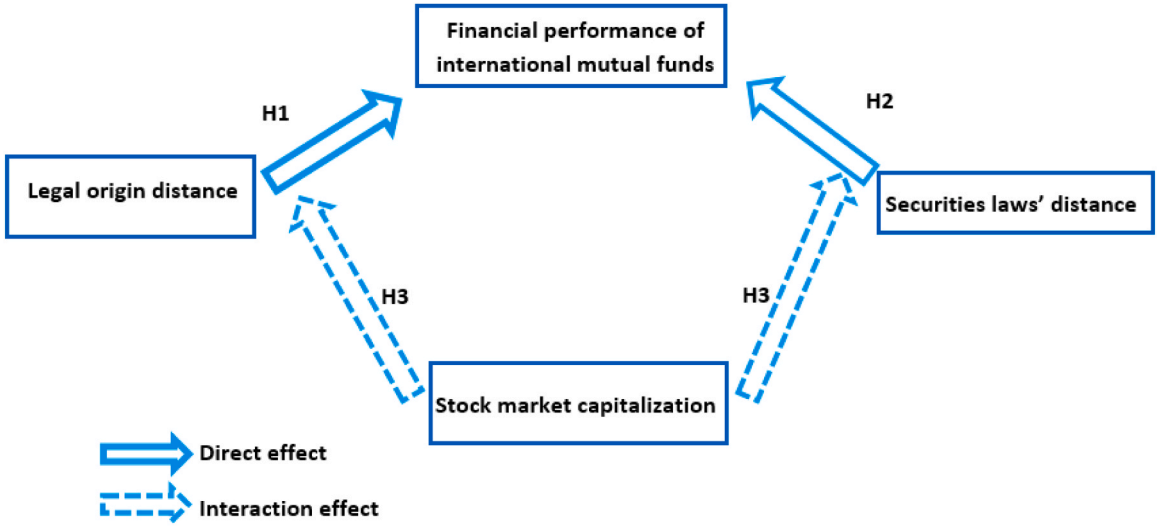

Fig. 1. Summarizes our research hypotheses.

$$CC_{j,t} = \sum_{i=1}^{41} \omega_{i,t}^2 \tag{1}$$

where $\omega_{i,t}$ is the exposure of fund j to country i in month t. Additionally, we build a variable representing the size of the investee capital markets. Thus, we consider the host market capitalization as a percentage of the GDP (Chan et al., 2005; Portes and Rey, 2005).

$$MC_{j,t} = \sum_{i=1}^{41} \omega_{i,t} * MC_{i,t} \tag{2}$$

where $MC_{j,t}$ is the market capitalization of the investee countries for fund j in period t, $\omega_{i,t}$ is the percentage of the portfolio of fund j invested in country i in period t and $MC_{i,t}$ represents the value of the market capitalization expressed as a percentage of the GDP of country i in period t.

Third, we build several legal distance variables covering different dimensions. First, we consider the level of investors' protection by using three proxies. For the first one (CL), following LLSS, we classify the 41 markets in our sample into common law and civil law countries through a dummy variable adopting the value of 1 for common law countries or 0 for civil law ones. For the second one (LO), we build an ordinal variable taking values in the range 1–4 that considers different sub-families within civil law countries (that is, we consider four legal origins: English, German, Scandinavian and French; LLSS). In addition, we consider the corrected Antidirector Rights Index (ADRI) of Spamann (2010) (it adopts values in the range 1–6, with higher values meaning more protection). Second, we consider a set of securities law indicators from LLSS representing private and public enforcement.[3] More concretely, for private enforcement, we employ two indicators: i) the Disclosure Requirement Index (DRI), which measures the mandatory delivery of information to investors; and ii) the Liability Standard Index (LSI), which measures how easily investors can legally claim damages from issuers when they do not comply with their disclosure obligations. For public enforcement, we consider five indicators: i) the Supervisor Characteristics Index (SCI), which measures the independence of the stock market supervisor; ii) the Rule-Making Power Index (RMPI), which measures the power of the supervisor to issue regulations affecting capital market functioning; iii) the Investigative Powers Index (IPI), which approaches the power of the supervisor to intervene to the market to detect opportunistic behaviours; iv) the Orders Index (OI), which covers the authority of the supervisor to impose non-criminal sanctions when detecting opportunistic behaviours; and v) the Criminal Index (CI), which quantifies the authority of the market supervisor to impose sanctions for infractions considered criminal. All the LLSS indicators adopt values in the range 0–1 (higher values mean better records in securities law dimensions).[4]

For each of the legal proxies, we estimate the Euclidean distance between the US market (the country where the funds in our sample are domiciled) and the investee countries included in our sample.

$$D_{US,i} = \sqrt{\left(I_{k,US} - I_{k,i}\right)^2} \tag{3}$$

[3] A more detailed description is available in the seminal paper of LLSS.

[4] These indicators are used in previous articles studying financial markets, such as Abou Tanos and Jimenez-Gàrces (2022); Çolac and Öztekin (2021); Cumming et al. (2022); Doidge et al. (2017); Ferrell et al. (2016); Lee and Yeo (2016); and Uribe-Bohorquez et al. (2018).

where $I_{k,US}$ represents the value of legal factor k in the US market and $I_{k,i}$ is the value of legal factor k in country i. For each fund/month, we match the information on the equity country allocation of the portfolio holdings and the information on the legal distance to compute our proxy for the legal distance at the fund level. See Eq. 4.

$$LD_{j,t} = \sum_{i=1}^{41} \omega_{i,t} * D_{US,i,t} \tag{4}$$

where $LD_{j,t}$ is the level of legal distance for fund j in month t, $\omega_{i,t}$ is the percentage of the portfolio of fund j invested in country i in period t and $D_{US,i,t}$ is the legal distance between the US market and country i in period t. We compute this variable for each of our proxies for the legal environment. We build two additional legal distance proxies, one from the private enforcement proxies (Private Enforcement Index) and the other from the public enforcement proxies (Public Enforcement Index). Thus, we first compute the Euclidean distance between the US market and the investee market in the two (five) dimensions of private (public) enforcement, and, subsequently, we match this information with that of the country's monthly allocation of funds' portfolios.[5]

$$D^{*}_{US,i} = \sqrt{\sum_{k=1}^{n} \left(I_{k,US} - I_{k,i}\right)^2} \tag{5}$$

$$LD^{*}_{j,t} = \sum_{i=1}^{41} \omega_{i,t} * D_{US,i,t} \tag{6}$$

To approach the financial performance of the funds in the sample, we run 36 monthly rolling-window regressions to estimate the monthly six-factor alphas. We obtain information on the international factors from Kenneth French's website.[6] The specification of the six-factor model (Fama and French, 2018) is provided in Eq. 7.

$$r_{j,t} = \alpha_j + \beta_{MKT}\left(R_{M,t} - R_{f,t}\right) + \beta_{SMB}SMB_t + \beta_{HML}HML_t + \beta_{MOM}MOM_t + \beta_{RMW}RMW_t + \beta_{CMA}CMA_t + \varepsilon_{j,t} \tag{7}$$

where $r_{j,t}$ is the excess return of fund j on the free-risk asset in month t; $(R_{M,t}\text{-}R_{f,t})$ is the excess return of the market benchmark on the free-risk asset in month t; and SMB_t, HML_t, MOM_t, RMW_t and CMA_t are, respectively, the size, book-to-market, momentum, profitability and investment factors in month t (see Fama and French, 2018, for a more detailed explanation).

Table 1 reports the summary statistics for the variables described above, and Tables 2 and 3 contain the correlation matrix.

From Table 1, we can draw some characteristics of the mutual funds analysed. Thus, we can observe that the funds in our sample have an average age of 14 years and the mean TNA is $2300 million. Furthermore, we observe that, in average terms, these funds underperform the market since the estimated alpha is negative and they invest 18.5 % of their portfolio in US stocks. Table 2 reveals some relevant relationships. We can observe that financial performance is positively correlated with the home bias and the country concentration of the portfolios but negatively correlated with the legal distance proxies. Another interesting aspect reflected in the correlation matrix is the high negative correlation between the home bias/country concentration level of the portfolio and the legal distance factors. On the one hand, the negative correlation between the home bias and the legal distance is not striking since the more money invested in the home country, the less exposure to diverse legal environments. On the other hand, the negative correlation between the country concentration and the legal distance reveals that mutual funds holding a country's concentrated portfolio invest in proximate legal environments. Besides, we can observe that the different proxies for the legal distance are highly correlated. These correlations prevent us from including the home bias, country concentration and legal distance proxies together in the same models since multicollinearity problems will bias the estimated coefficients, distorting the potential causal relationships between these factors and the financial performance of international mutual funds.

Given the nature of our data, we estimate fixed-effect panel data models. First, as the base model, we regress the estimated alphas on fund control variables (Eq. 8). At the fund level, we include the relative net cash flows received by the fund, the net expense ratio, the turnover ratio, the size of the fund approached as the log of the TNA expressed in millions and the age and size of the investee securities markets. Following the academic literature, we consider all these controls lagged by one month (see, among others, Abou Tanos, 2022; Fleta-Asín and Muñoz, 2023).

$$\begin{aligned}\alpha_{j,t} = {} & \alpha_0 + \beta_1 * NCF_{j,t-1} + \beta_2 * NER_{j,t-1} + \beta_3 * TR_{j,t-1} + \beta_4 * SIZE_{j,t-1} + \beta_5 * AGE_{j,t-1} + \beta_6 \\ & * MC_{j,t-1} + fundfixedeffects + timefixedeffects + \varepsilon_{j,t}\end{aligned} \tag{8}$$

where $NCF_{j,t\text{-}1}$ is the relative net cash flows, $NER_{j,t\text{-}1}$ is the net expense ratio, $TR_{j,t\text{-}1}$ is the turnover ratio,[7] $SIZE_{j,t\text{-}1}$ is the size of the funds approached by the log of total net assets expressed in $ millions, $AGE_{j,t\text{-}1}$ is the age of the fund measured in years and $MC_{j,t-1}$ indicates

[5] Alternatively, we compute the average distance from private and public enforcement indicators, and the results remain the same.

[6] We thank Kenneth French for making this information available on his website.https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

[7] The TR and NER information is yearly. Following Muñoz (2019), among others, we consider these variables to adopt the same value for all the months in a year.

Table 1
Summary Statistics of variables across models.

Label	Obs.	Mean	SD	10th perc	Median	90 th perc	Source
6-FACTOR ALPHA	73,256	−0.0018187	0.0038185	−0.0059962	−0.0018307	0.0022193	Morninsgtar and Kenneth French's website
NCF	73,256	0.0001897	0.0553042	−0.0315932	−0.0033142	0.0319275	Morningstar
NER	73,256	0.0110286	0.0044907	0.0051134	0.0109195	0.0162721	Morningstar
TR	73,256	0.5997675	0.5268195	0.11	0.458	1.25	Morningstar
SIZE	73,256	6.064444	1.724321	3.856485	6.013129	8.344588	Morningstar
TNA	73,256	2321,86	12187.54	47.3	408.76	4207.35	Morningstar
AGE	73,256	14.04367	9.219759	4.545206	12.11233	25.40274	Morningstar
MC	73,256	1.131876	0.3151975	0.7802265	1.105708	1.473563	Morningstar and World Bank
HOMEBIAS	73,256	0.185054	0.2579948	0	0.0279676	0.5787631	Morningstar
CC	73,256	0.187623	0.1558272	0.0825777	0.1265421	0.3610965	Morningstar
CL_Dist	73,256	0.5484007	0.1917547	0.2651323	0.6269474	0.7328653	Morninsgtar & LLSS
LO_Dist	73,256	1.291239	0.4522006	0.6275394	1.436846	1.747811	Morninsgtar & LLSS
ADRI_Dist	73,256	2.001125	0.6697284	0.9757712	2.361589	2.548234	Morningstar and Spamann
DRI_Dist	73,256	0.2406372	0.0820591	0.1150129	0.2786906	0.3124454	Morninsgtar & LLSS
LSI_Dist	73,256	0.3803437	0.1326971	0.178539	0.4380021	0.4991785	Morninsgtar & LLSS
PRIV_ENFORC_Dist	73,256	0.4631546	0.1585483	0.221224	0.5354694	0.6007458	Morninsgtar & LLSS
SCI_Dist	73,256	0.5659265	0.1934679	0.2712367	0.6623254	0.7335517	Morninsgtar & LLSS
RMPI_Dist	73,256	0.3471205	0.1391172	0.1408927	0.3934794	0.4898512	Morninsgtar & LLSS
IPI_Dist	73,256	0.3760887	0.1449531	0.1626399	0.4296867	0.5216914	Morninsgtar & LLSS
OI_Dist	73,256	0.4387037	0.1632969	0.1955246	0.503414	0.5987625	Morninsgtar & LLSS
CI_Dist	73,256	0.1729366	0.0660743	0.0762265	0.1931474	0.2408551	Morninsgtar & LLSS
PUBLIC_ENFORC_Dist	73,256	1.061039	0.3659509	0.5047567	1.24897	1.372456	Morninsgtar & LLSS

This table reports the descriptive statistics for the variables used across the models for the sample analysed. Specifically, it provides information about the monthly six-factor estimated alphas considering a 36-month rolling window as well as net money flows in addition to the net expense ratio, turnover ratio, fund size (expressed as the log of TNA in $ millions; the statistics for the TNA are also reported in $ millions), the fund age (expressed in years), the proxy for portfolios' market capitalization exposure (MC), the level of portfolio home bias (HOMEBIAS), the level of portfolio country concentration (CC) and the legal distance variables: for the legal origin distinguishing between common and civil law countries (CL_Dist), for the legal origin distinguishing different subtypes within civil law countries (LO_Dist), for the level of investors' protection approached through the corrected ADRI, for the different private enforcement securities law factors provided by LLSS (DRI_Dist, LSI_Dist and Priv_Enforc_Dist) and for the different public enforcement securities law factors identified by LLSS (SCI_Dist, RMPI_Dist, IPI_Dist, OI_Dist, CI_Dist and Public_Enforc_Dist). The mean, the 10th percentile, the median, the 90th percentile and the standard deviation are provided for each variable. The number of observations and the sources are also reported.

Table 2
Correlation Matrix (Part I).

	6-FACTOR ALPHA	NCF	NER	TR	SIZE	AGE	MC	HOMEBIAS	CC
NCF	0.092								
NER	0.009	−0.043							
TR	0.028	−0.026	0.330						
SIZE	0.059	0.024	−0.417	−0.228					
AGE	−0.023	−0.094	−0.030	−0.073	0.275				
MC	0.157	0.011	−0.060	−0.080	0.014	0.028			
HOMEBIAS	0.317	−0.033	0.147	0.069	−0.141	0.077	0.301		
CC	0.281	−0.031	0.107	0.093	−0.132	0.091	0.218	0.885	
CL_Dist	−0.293	0.025	−0.162	−0.065	0.150	−0.028	−0.334	−0.928	−0.826
LO_Dist	−0.272	0.023	−0.137	−0.049	0.136	−0.027	−0.323	−0.891	−0.812
ADRI_Dist	−0.322	0.028	−0.143	−0.062	0.143	−0.074	−0.334	−0.988	−0.858
DRI_Dist	−0.297	0.031	−0.129	−0.055	0.134	−0.055	−0.366	−0.959	−0.854
LSI_Dist	−0.315	0.027	−0.131	−0.067	0.148	−0.041	−0.339	−0.955	−0.842
PRIV_ENFORC_Dist	−0.311	0.029	−0.130	−0.064	0.144	−0.045	−0.347	−0.963	−0.854
SCI_Dist	−0.320	0.030	−0.135	−0.063	0.130	−0.079	−0.297	−0.973	−0.839
RMPI_Dist	−0.285	0.019	−0.174	−0.056	0.143	−0.033	−0.346	−0.883	−0.753
IPI_Dist	−0.287	0.024	−0.166	−0.069	0.139	−0.042	−0.305	−0.906	−0.778
OI_Dist	−0.288	0.024	−0.151	−0.066	0.142	−0.039	−0.320	−0.917	−0.805
CI_Dist	−0.263	0.028	−0.189	−0.074	0.132	−0.080	−0.144	−0.896	−0.768
PUBLIC_ENFORC_Dist	−0.316	0.028	−0.153	−0.067	0.142	−0.061	−0.317	−0.977	−0.846

This table reports the pairwise correlation for the different variables considered across models.

the size of investee securities markets.

Then, we include the home bias indicator in the base model (Eq. 8) to analyse the impact of home bias on financial performance. Thus, we obtain Eq. 9:

Table 3
Correlation Matrix (Part II).

	CL_Dist	LO_Dist	ADRI_Dist	DRI_Dist	LSI_Dist	PRIV_ENFORC_Dist	SCI_Dist	RMPI_Dist	IPI_Dist	OI_Dist	CI_Dist
LO_Dist	0.973										
ADRI_Dist	0.918	0.877									
DRI_Dist	0.954	0.918	0.942								
LSI_Dist	0.946	0.906	0.942	0.973							
PRIV_ENFORC_Dist	0.955	0.919	0.949	0.988	0.996						
SCI_Dist	0.890	0.823	0.968	0.930	0.923	0.929					
RMPI_Dist	0.897	0.832	0.901	0.871	0.862	0.867	0.868				
IPI_Dist	0.952	0.952	0.898	0.922	0.909	0.916	0.921	0.914			
OI_Dist	0.964	0.964	0.909	0.940	0.917	0.929	0.916	0.920	0.985		
CI_Dist	0.823	0.823	0.895	0.800	0.794	0.800	0.897	0.870	0.864	0.844	
PUBLIC_ENFORC_Dist	0.948	0.884	0.974	0.957	0.949	0.957	0.981	0.930	0.968	0.970	0.904

This table reports the pairwise correlation for the different variables considered across models.

$$\alpha_{j,t} = \alpha_0 + \beta_1 * NCF_{j,t-1} + \beta_2 * NER_{j,t-1} + \beta_3 * TR_{j,t-1} + \beta_4 * SIZE_{j,t-1} + \beta_5 * AGE_{j,t-1} + \beta_6 * MC_{j,t-1} + \beta_7 * HOMEBIAS_{j,t-1} + fundfixedeffects + timefixedeffects + \varepsilon_{j,t} \quad (9)$$

To assess the impact of holding a country-concentrated portfolio on mutual fund financial performance, we add the CC variable to the base model (see Eq. 10).

$$\alpha_{j,t} = \alpha_0 + \beta_1 * NCF_{j,t-1} + \beta_2 * NER_{j,t-1} + \beta_3 * TR_{j,t-1} + \beta_4 * SIZE_{j,t-1} + \beta_5 * AGE_{j,t-1} + \beta_6 * MC_{j,t-1} + \beta_7 * CC_{j,t-1} + fundfixedeffects + timefixedeffects + \varepsilon_{j,t} \quad (10)$$

To test H1/H2, we add legal distance indicators to the base model (see Eq. 11).

$$\alpha_{j,t} = \alpha_0 + \beta_1 * NCF_{j,t-1} + \beta_2 * NER_{j,t-1} + \beta_3 * TR_{j,t-1} + \beta_4 * SIZE_{j,t-1} + \beta_5 * AGE_{j,t-1} + \beta_6 * MC_{j,t-1} + \beta_7 * LD_{j,t-1} + fundfixedeffects + timefixedeffects + \varepsilon_{j,t} \quad (11)$$

Finally, we include interaction terms between MC and LD variables to test H3. We demean these variables to avoid multicollinearity problems (Aiken et al., 1991).

$$\alpha_{j,t} = \alpha_0 + \beta_1 * NCF_{j,t-1} + \beta_2 * NER_{j,t-1} + \beta_3 * TR_{j,t-1} + \beta_4 * SIZE_{j,t-1} + \beta_5 * AGE_{j,t-1} + \beta_6 * MC_{j,t-1} + \beta_7 * LD_{j,t-1} + \beta_8 MC_{j,t-1} * LD_{j,t-1} + fundfixedeffects + timefixedeffects + \varepsilon_{j,t} \quad (12)$$

4. Empirical results and discussion

4.1. Main analysis

Table 4 reports the results for models 1–6.

Model 1 provides the estimated coefficients for the base model. We can observe that the controls obtaining significant coefficients are the net cash flows, the size and the age of the funds. Thus, the funds receiving more inflows in the previous month obtain better financial performance. This finding suggests the smart money effect among the investors in the sample analysed since they select the funds that subsequently achieve better financial performance (Zheng, 1999; Galloppo et al., 2024). The size of the fund exerts a positive impact on the financial outcomes, suggesting potential scale economies in the management of larger amounts of money. The age of the funds negatively affects the financial performance of mutual funds. This could reflect the greater flexibility of younger funds to adapt to changes in the markets and their stronger commitment to delivering sound financial performance to survive (Ferreira et al., 2013). The estimated coefficient for the size of investee securities markets factor is positive but non-significant. Thus, the size of the capital markets where international mutual funds invest does not directly affect their financial outcomes. Larger stock markets feature greater information availability, more agents trading, lower transaction costs and, consequently, more efficient functioning (Chan et al., 2005). Although these aspects could help to alleviate the informational disadvantages of foreign investors, at the same time, they hinder investors' ability to beat the market (Fama, 1970). Regarding the diagnosis tests, we can observe that the explanatory variables included are reliable, the fixed-effect model is preferred to a pooled OLS regression and there are no multicollinearity problems.[8]

Model 2 adds the home bias proxy to model 1. First, the LR chi-test allows us to check that this model is better than the base one.[9] Regarding the control variables, the estimated coefficients are consistent with those obtained in model 1. HOMEBIAS's estimated coefficient is positive and significant, meaning that those mutual funds holding a portfolio that is more exposed to the local market (US) achieve better financial performance. This is consistent with the empirical evidence obtained in the previous academic literature (see, among others, Coval and Moskowitz, 1999, 2001) and reflects the informational advantage of mutual fund managers trading in nearby stocks. This finding motivates interest in the topic analysed in this research. Model 3 analyses the impact of the portfolio country concentration on financial performance. The estimated coefficient for CC is positive and significant, meaning that those funds that hold a more country-concentrated portfolio achieve better financial performance. This result reveals that mutual fund managers concentrate their holdings in those markets in which they enjoy an informational advantage to obtain better financial results and is consistent with the previous empirical evidence presented by Choi et al. (2017), Fleta-Asín and Muñoz (2023) and Hiraki and Liu (2021), among others, related to the informational advantage theory (Van Nieuwerburgh and Veldkamp, 2009).

Models 4–6 test H1 with three different proxies. Model 4 considers the impact of legal origin distance between the US and the investee countries based on the common or civil law nature of the countries. Model 5 includes, as a proxy for the legal origin distance, a variable that differentiates the several families existing within civil law countries, that is, Scandinavian, German and French. In both cases, the legal origin determines investor protection (LLSS). Thus, a third proxy for H1 is the corrected version of the Antidirector Rights Index, first proposed by LLSS and subsequently corrected by Spamann (2010). The three models allow us not to reject H1 since we find negative and significant coefficients for the three variables, meaning that greater distance worsens financial performance.

Models 7–15 reported in Table 5, assess the impact of the distance in LLSS securities law factors on the financial performance of the international funds, allowing us to test H2.

Models 7–9 study the impact of private enforcement laws' distance. In the three cases, we reveal a negative and significant impact

[8] The diagnosis tests lead us to similar conclusions across the models performed in this research.

[9] In all the cases, the LR chi-test allows us to conclude the goodness of fit of the models proposed.

Table 4
Home Bias, Country Concentration and Legal origin distance.

	Model 1: Base Model	Model 2: Home Bias	Model 3: CC	Model 4: CL_Dist	Model 5: LO_Dist	Model 6: ADRI_Dist
HOMEBIAS		0.0037***				
		(5.45)				
CC			0.0028***			
			(3.32)			
Legal Distance (H1)				−0.0029***	−0.0010***	−0.0014***
				(−3.8)	(−3.27)	(−5.38)
NCF	0.0058***	0.0059***	0.0059***	0.0058***	0.0058***	0.0058***
	(10.52)	(10.68)	(10.66)	(10.6)	(10.6)	(10.64)
NER	−0.0101	−0.0145	−0.0101	−0.0138	−0.0122	−0.0133
	(−0.28)	(−0.4)	(−0.28)	(−0.38)	(−0.33)	(−0.36)
TR	−0.0001	−0.0001	−0.0001	−0.0001	−0.0001	−0.0001
	(−0.56)	(−0.41)	(−0.43)	(−0.49)	(−0.51)	(−0.39)
SIZE	0.0002***	0.0002**	0.0002***	0.0002***	0.0002***	0.0002***
	(2.77)	(2.51)	(2.61)	(2.72)	(2.78)	(2.61)
AGE	−0.0001***	−0.0001***	−0.0001***	−0.0001***	−0.0001***	−0.0001***
	(−3.9)	(−3.67)	(−3.43)	(−3.45)	(−3.56)	(−3.88)
MC	0.0004	0.0003	0.0004	0.0001	0.0002	0.0002
	(1.21)	(0.84)	(1.05)	(0.36)	(0.48)	(0.54)
Intercept	−0.0012	−0.0016*	−0.0017*	0.0007	0.0004	0.0020*
	(−1.24)	(−1.77)	(−1.85)	(0.66)	(0.38)	(1.7)
Model F-test	23.33***	23.58***	23.57***	23.47***	23.33***	23.44***
Fixed Effects F-test	34.33***	22.99***	25.65***	23.92***	25.25***	22.78***
Adj-R2	0.2511	0.2595	0.2554	0.2549	0.2544	0.2591
Mean VIF	1.15	1.18	1.16	1.18	1.18	1.18
LR-Chi Test		831.45***	423.36***	377.44***	377.44***	791.87***
Obs	73,256	73,256	73,256	73,256	73,256	73,256

This table reports the results from the monthly panel regressions with time and fund fixed effects for Eqs. 8–11. The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. Across models, the explanatory variables include the following fund controls: relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. Model 2 adds the home bias proxy to model 1. Model 3 adds the country concentration proxy to model 1. Models 4–5 add the different legal origin distance proxies that allow us to test H1 to model 1. Model 6 adds the distance in the corrected ADRI as an alternative proxy for investors' protection to model I. All the explanatory variables are one-period lagged. The table shows the estimated coefficients, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared, the mean VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models (we compare models 2–6 with model 1), and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

on financial performance. Those mutual funds investing in countries that are more distant regarding disclosure requirement laws (model 7), liability standards and norms (model 8) and the Private Enforcement Index encompassing the previous two issues (model 9) obtain a worse financial performance. Models 10–15 focus on the distance in the public enforcement law factors. In all the cases, we find empirical evidence consistent with the rest of the legal distance proxies. Those mutual funds investing in securities markets that are more different with regard to supervisor independence (model 10), the authority of the supervisor to issue norms conditioning market functioning (model 11), the capability of the supervisor to intervene in the market to detect fraud and opportunistic behaviours (model 12), the power of the supervisor to impose sanctions for non-criminal/criminal behaviours (models 13/14) and the index encompassing the previous five dimensions (model 15) obtain a worse financial performance. Overall, these results lead us not to reject H2.

The empirical findings of models 4–15 are consistent with our hypothesis and previous reasoning. Thus, investing in markets with a greater legal distance would cause informational asymmetries to arise, leading to a rise in transaction costs, hindering the investment decision-making process of international mutual funds' managers. This would jeopardize the financial performance delivered to investors. This explanation is supported by the transaction cost theory (TCT; Williamson, 1979), which points out that uncertainty and information asymmetry hamper transactions. Baik et al. (2013) point out that a difference in legal rules can hinder foreign investors' securities selection abilities and performance. Our findings are also aligned with those obtained previously in the academic literature on the impact of institutional distance (either cultural or formal) on international mutual funds' financial performance (Abou Tanos, 2022; Abou Tanos and Jimenez-Gàrces, 2022; Fleta-Asín and Muñoz, 2023).

Tables 6 and 7 report the results of interacting the market capitalization of the investee securities markets and the different legal distance proxies.

We hypothesize that the size of the investee markets moderates the negative effect of investing in distant legal frameworks. As can be seen, for all the legal distance proxies except one (model 26 refers to the capability of the supervisor to impose criminal sanctions), the empirical findings reveal the same effect. Thus, in all these cases, the estimated coefficient for the interaction term is positive and significant, meaning that investing in larger markets alleviates the negative effect of legal distance or, to put it in other words, legal distance negatively affects the financial performance of international mutual funds to a greater extent when these funds invest in smaller markets than in larger ones. This is consistent with our third research hypothesis (H3). In larger capital markets, more

Table 5
Securities laws distance.

	Model 7: DRI_dist	Model 8: LSI_Dist	Model 9: Priv_Enforc_dist	Model 10: SCI_dist	Model 11: RMPI_dist	Model 12: IPI_dist	Model 13: OI_dist	Model 14: CI_dist	Model 15: Public_Enforc_dist
Securities laws distance (H2)	−0.0073*** (−3.82)	−0.0055*** (−5.04)	−0.0046*** (−4.77)	−0.0046*** (−6)	−0.0019* (−1.92)	−0.0028*** (−3.21)	−0.0026*** (−3.17)	−0.0051** (−2.5)	−0.0022*** (−5)
NCF	0.0058*** (10.61)	0.0058*** (10.66)	0.0058*** (10.65)	0.0058*** (10.67)	0.0058*** (10.52)	0.0058*** (10.57)	0.0058*** (10.56)	0.0058*** (10.54)	0.0058*** (10.62)
NER	−0.0160 (−0.44)	−0.0166 (−0.45)	−0.0168 (−0.46)	−0.0140 (−0.38)	−0.0105 (−0.29)	−0.0132 (−0.36)	−0.0125 (−0.34)	−0.0106 (−0.29)	−0.0142 (−0.39)
TR	−0.0001 (−0.54)	−0.0001 (−0.49)	−0.0001 (−0.51)	−0.0001 (−0.38)	−0.0001 (−0.46)	−0.0001 (−0.5)	−0.0001 (−0.51)	−0.0001 (−0.46)	−0.0001 (−0.4)
SIZE	0.0002*** (2.67)	0.0002*** (2.65)	0.0002*** (2.65)	0.0002** (2.36)	0.0002*** (2.75)	0.0002*** (2.65)	0.0002*** (2.66)	0.0002*** (2.67)	0.0002** (2.51)
AGE	−0.0001*** (−3.78)	−0.0001*** (−3.67)	−0.0001*** (−3.73)	−0.0001*** (−3.62)	−0.0001*** (−3.74)	−0.0001*** (−3.53)	−0.0001*** (−3.62)	−0.0001*** (−3.58)	−0.0001*** (−3.56)
MC	0.0001 (0.35)	0.0002 (0.47)	0.0001 (0.39)	0.0003 (0.9)	0.0003 (0.84)	0.0003 (0.74)	0.0002 (0.7)	0.0005 (1.54)	0.0002 (0.61)
Intercept	0.0010 (0.91)	0.0013 (1.19)	0.0014 (1.25)	0.0017 (1.53)	−0.0004 (−0.4)	0.0001 (0.09)	0.0002 (0.22)	−0.0005 (−0.49)	0.0015 (1.35)
Model F-test	23.38***	23.4***	23.39***	23.92***	23.31***	23.77***	23.64***	23.64***	23.73***
Fixed Effects F-test	23.52***	22.70***	22.83***	23.73***	25.40***	24.72***	24.59***	25.89***	23.18***
Adj-R2	0.2552	0.2571	0.2568	0.2590	0.2521	0.2534	0.2536	0.2526	0.2572
Mean VIF	1.19	1.18	1.19	1.17	1.19	1.18	1.18	1.15	1.18
LR-Chi Test	402.66***	593.31***	564.47***	782.42***	98.39***	229.3***	245.23***	155.03***	610.44***
Obs	73,256	73,256	73,256	73,256	73,256	73,256	73,256	73,256	73,256

This table reports the results from the monthly panel regressions with time and fund fixed effects for Eq. 11. The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. Each model in the table adds the different LLSS securities law distance factors to model 1. All the explanatory variables are one-period lagged. The table shows the estimated coefficients, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared, the mean VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models (we compare each model with model I), and the number of observations.

*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 6
Market capitalization interaction effect with legal origin and private enforcement distances.

	Model 16: CL	Model 17: LO	Model 18: ADRI	Model 19: DRI	Model 20: LSI	Model 21: Priv_Enforc
MC	0.0003	0.0004	0.0002	0.0003	0.0002	0.0002
	(1.05)	(1.24)	(0.75)	(1.01)	(0.81)	(0.81)
Legal Distance	−0.0028***	−0.0010***	−0.0014***	−0.0071***	−0.0055***	−0.0046***
	(−3.7)	(−3.18)	(−5.48)	(−3.76)	(−5.05)	(−4.78)
MC*Legal Distance (H3)	0.0025***	0.0012***	0.0007***	0.0064***	0.0032**	0.0030***
	(2.87)	(3.25)	(2.75)	(3.03)	(2.48)	(2.75)
Fund Controls	YES	YES	YES	YES	YES	YES
Model F-test	25.16***	25.46***	25.05***	25.26***	24.92***	25.13***
Fixed Effects F-test	24.02***	25.35***	22.84***	23.64***	22.76***	22.90***
Adj-R2	0.2564	0.2567	0.2602	0.2569	0.2581	0.258
Mean VIF	1.19	1.18	1.19	1.19	1.18	1.19
LR-Chi Test	149.54***	177.36***	113.36***	175.44***	102.25***	130.68***
Obs	73,256	73,256	73,256	73,256	73,256	73,256

This table reports the results from the monthly panel regressions with time and fund fixed effects for Eq. 12. The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. All the models are estimated with the fund controls included in the previous tables. Models 16–17 report the interaction effect between the market capitalization and the different proxies for legal origin distance. Model 18 reports the interaction effect between the market capitalization and the distance in the corrected ADRI. Models 19–21 report the interaction effect between the market capitalization and the different factors of LLSS's private enforcement securities law distance. The variables are one-month lagged, and the interaction effect variables are demeaned. The table shows the estimated coefficients, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared, the mean VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models (we compare each model with the corresponding model provided in Tables 4 and 5 without including the interaction term), and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 7
Market capitalization interaction effect with public enforcement distance.

	Model 22: SCI	Model 23: RMPI	Model 24: IPI	Model 25: OI	Model 26: CI	Model 27: Public_Enforc
MC	0.0003	0.0004	0.0004	0.0004	0.0006*	0.0003
	(0.94)	(1.33)	(1.25)	(1.3)	(1.75)	(0.88)
Legal Distance	−0.0046***	−0.0018*	−0.0028***	−0.0026***	−0.0049**	−0.0023***
	(−6.06)	(−1.83)	(−3.13)	(−3.08)	(−2.47)	(−5.07)
MC*Legal Distance (H3)	0.0015*	0.0021*	0.0023*	0.0023**	−0.0017	0.0011**
	(1.69)	(1.81)	(1.95)	(2.17)	(−0.58)	(2.23)
Fund and Country Controls	YES	YES	YES	YES	YES	YES
Model F-test	24.9***	23.9***	24.71***	24.84***	23.45***	25***
Fixed Effects F-test	23.77***	25.47***	24.80***	24.69***	25.83***	23.26***
Adj-R2	0.2594	0.2526	0.2541	0.2545	0.2527	0.2581
Mean VIF	1.17	1.19	1.18	1.18	1.16	1.18
LR-Chi Test	42.02***	54.61***	67.55***	94.04***	9.14***	79.61***
Obs	73,256	73,256	73,256	73,256	73,256	73,256

This table reports the results from the monthly panel regressions with time and fund fixed effects for Eq. 12. The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. All the models are estimated with the fund and country controls and report the interaction effect between market capitalization and the different factors of LLSS public enforcement securities law distance. The variables are one-month lagged, and the interaction effect variables are demeaned. The table shows the estimated coefficients, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of the independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared, the mean VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models (we compare each model with the corresponding model provided in Table 5 without including the interaction term), and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

information is available to the agents trading there, and they work more efficiently, lowering the transaction costs (Chan et al., 2005). Thus, those international funds that invest in bigger securities markets could partly offset the informational disadvantages that they suffer when operating in distant legal frameworks, moderating the negative impact of legal distance on their outcomes.

To analyse further the empirical evidence related to the impact of investee markets' capitalization on legal distance's influence, we focus on the marginal effects of the latter variable on fund performance when market capitalization adopts several values representing different market sizes. Thus, we analyse, for each of our legal distance proxies, these marginal effects when investee markets' capitalization is 2/1 standard deviations below/above the mean. These results are reported in Tables 8 and 9 and plotted in Appendix II.

As can be seen, in all the cases except one (model 26, referring to the CI indicator), the negative impact of legal distance on financial performance becomes less relevant as the size of the investee securities markets rises. This pattern is observed in 11 out of the 12 proxies for legal distance and, in some of the cases, this impact is found to be negative and significant when investee markets'

capitalization is small and becomes non-significant when funds operate in bigger markets (this occurs for the CL, LO, DRI, RMPI, IPI and OI distances).

Alternatively, Appendix III provides the marginal effects of the portfolios' investee market capitalization on international mutual fund financial performance when the different legal distance proxies adopt several values representing less/more legal distance. Concretely, we compute these marginal effects when the legal distance proxies adopt values 2/1 standard deviations below and above the mean. The results achieved point out that, when the legal distance is small, portfolios' investee market capitalization does not significantly affect their financial performance, but, as the legal distance increases, this impact becomes positive and significant. This occurs in 11 out of the 12 legal distance proxies considered.

4.2. Further research analyses

In this section, we perform a plethora of further research analyses[10] to give robustness to our previous empirical evidence. Firstly, we study the impact of alternative legal distance indicators. More concretely, we compute the distance variable from the Judicial Efficiency Index (JEI) proposed by La Porta et al. (1998) to determine the efficiency of the national legal system. We also compute the legal distance variable from the Anti-Self-Dealing Index (ASDI) described by Djankov et al. (2008) to measure the legal protection of minority shareholders against expropriation by corporate insiders. These two indicators are time invariant, like the legal origin proxies or the securities laws indicators used in the main analyses. Thus, we compute one additional legal distance proxy from indicators that vary across time. Specifically, following Wang and Cheng (2023), we compute the legal system distance (LSD) factor, which is based on four indicators: i) the creditor right (CR) protection indicator, adopting values in the range 0–12 and measuring the degree to which the Guarantee Law and Bankruptcy Law protect creditors' rights; ii) the information coverage (IC) indicator, taking values in the range 0–8, which represents the rules and practices related to the coverage, scope and openness of credit information; iii) the Bankruptcy Processing Index (BP), adopting values in the range 0–16, which approaches the efficiency of the bankruptcy processing; and iv) the Judicial Process Quality Index (JPQ), assuming values in the range 0–18 and quantifying the efficiency of the legal framework to resolve business disputes.[11]

In this way, we first compute the degree of difference in these indicators between the US market and each one of the other markets in our sample.

$$LSD_{i,t} = \sum_{k=1}^{4} \left[\frac{(LS_{kUSt} - LS_{kit})^2}{V_{kt}} \right] / 4 \tag{13}$$

where LS_{kUSt} represents the value of indicator k in the US market in year t, LS_{kit} represents the value of indicator k in country i in year t and V_{kt} represents the variance of indicator k in year t. Having computed the indicator for each of the countries in our sample, we compute the LSD variable at the portfolio level as follows:

$$LSD_{j,t} = \sum_{i=1}^{41} \omega_{i,t} * LSD_{i,t} \tag{14}$$

where $LSD_{j,t}$ is the level of legal distance for fund j in month t, $\omega_{i,t}$ is the percentage of the portfolio of fund j invested in country i in period t and $LSD_{i,t}$ is the legal distance between the US market and market i in that month.[12]

Table 10 reports the results for the new indicators.

Regarding the impact of the legal distance on the financial performance of international mutual funds, the results are provided in the first row. As can be seen, the estimated coefficients for the legal distance proxies are negative in the four cases and significant in three of them. Thus, more distance in terms of the Anti-Self-Dealing Index and LSD factor (for the two versions of this measure) negatively affects the financial performance of the US international mutual funds considered in our sample, these results being consistent with the empirical evidence achieved from the legal origin and securities law indicators. The empirical evidence for the interaction effect between the legal distance and the market capitalization of the investee portfolio is reported in the second row. As can be seen, in three out of the four cases, the estimated coefficient for the interaction term is positive and significant, being consistent with the empirical evidence obtained from the legal origin and securities law indicators. For the LSD factor in 2005–2015, the estimated coefficient for the interaction term is negative and significant. Given the time covered by this indicator, this result, contrary to the empirical evidence obtained from the remaining legal distance proxies, could be generated by the impact of the global financial crisis of 2008–2009, which could bias the results. In fact, when studying the interaction effect for the LSD indicator in 2016–2020, the estimated coefficient for the interaction term achieves the expected sign and significance.

[10] We thank the anonymous referee for suggesting all these analyses.

[11] The information for the indicators is obtained from the World Bank's "Doing Business" database (https://databank.worldbank.org/source/doing-business). The information for the CR, IC and BP indicators is available yearly from 2005. The information for the JPQ indicator is available yearly from 2016. The last year with available information is 2020. Thus, we compute two versions of the LSD indicator. The first one refers to the period 2005–2015 from the first three indicators. The second one concerns the period 2016–2020 from the four indicators.

[12] Since LSD indicators vary yearly whereas we analyse monthly portfolios, we consider the LSD to adopt the same value in all the months in a specific year.

Table 8
Marginal effects for legal distance proxies (Models 16–21).

	Model 16: CL	Model 17: LO	Model 18: ADRI	Model 19: DRI	Model 20: LSI	Model 21: Priv_Enforc
MC −2 SD below the mean	−0.0044***	−0.0018***	−0.0019***	−0.0111***	−0.0075***	−0.0065***
	(−4.49)	(−4.26)	(−5.92)	(−4.66)	(−5.4)	(−5.32)
MC −1 SD below the mean	−0.0036***	−0.0014***	−0.0016***	−0.0091***	−0.0065***	−0.0055***
	(−4.34)	(−3.97)	(−5.93)	(−4.45)	(−5.51)	(−5.32)
MC +1 SD above the mean	−0.0020**	−0.0006*	−0.0012***	−0.0050**	−0.0045***	−0.0036***
	(−2.56)	(−1.86)	(−4.48)	(−2.58)	(−3.93)	(−3.64)
MC +2 SD above the mean	−0.0012	−0.0002	−0.0010***	−0.0030	−0.0035***	−0.0027**
	(−1.34)	(−0.55)	(−3.26)	(−1.35)	(−2.62)	(−2.33)

This table reports the marginal effects of the legal distance indicators considered in models 16–21 when the market capitalization variable is two/one standard deviations below (above) the mean. The estimated marginal effects and the z-statistics measuring their significance are reported.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 9
Marginal effects for legal distance proxies (Models 22–27).

	Model 22: SCI	Model 23: RMPI	Model 24: IPI	Model 25: OI	Model 26: CI	Model 27: Public_Enforc
MC −2 SD below the mean	−0.0056***	−0.0031**	−0.0042***	−0.0040***	−0.0038	−0.0029***
	(−6.07)	(−2.56)	(−3.64)	(−3.67)	(−1.44)	(−5.3)
MC −1 SD below the mean	−0.0051***	−0.0025**	−0.0035***	−0.0033***	−0.0044**	−0.0026***
	(−6.4)	(−2.35)	(−3.63)	(−3.6)	(−2.03)	(−5.42)
MC +1 SD above the mean	−0.0041***	−0.0012	−0.0021**	−0.0018**	−0.0055**	−0.0019***
	(−5.01)	(−1.11)	(−2.17)	(−2.09)	(−2.44)	(−4.16)
MC +2 SD above the mean	−0.0037***	−0.0005	−0.0014	−0.0011	−0.0060**	−0.0016**
	(−3.78)	(−0.43)	(−1.2)	(−1.08)	(−2.16)	(−3.03)

This table reports the marginal effects of the legal distance indicators considered in models 22–27 when the market capitalization variable is two/one standard deviations below (above) the mean. The estimated marginal effects and the z-statistics measuring their significance are reported.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 10
Empirical evidence from alternative legal distance indicators.

	Model 28/29: JEI_dist	Model 30/31: ASDI_dist	Model 32/33: LSD 2005–2015	Model 34/35: LSD 2016–2020
Legal Distance (H1/H2)	−0.00001	−0.01238***	−0.00063*	−0.00045*
	(−0.04)	(−5.54)	(−1.92)	(−1.73)
Legal Distance*MC (H3)	0.00106**	0.00523**	−0.00180***	0.00175***
	(2.05)	(2.13)	(−5.84)	(5.26)
Fund and Country Controls	YES/YES	YES/YES	YES/YES	YES/YES
Model F-test	23.6***/24.33***	23.8***/24.84***	21.61***/22.24***	31.82***/44.14***
Fixed Effects F-test	32.43***/32.50***	22.64***/22.69***	32.31***/32.30***	25.74***/26.80***
Adj-R2	0.2511/0.2521	0.2594/0.2601	0.3029/0.3105	0.3406/0.3529
Mean VIF	1.17/1.15	1.17/1.17	1.13/1.12	1.24/1.26
LR-Chi test	0.05/99.01***	821.06***/68.57***	88.02***/407.63***	51.56***/479.93***
Obs	73,256	73,256	37,144	25,380

This table reports the results from the monthly panel regressions with time and fund fixed effects for the impact of the legal distance on the financial performance of US international mutual funds (models 28, 30, 32 and 34) and the impact of the interaction effect between the legal distance and the market capitalization of the investee portfolio on the financial performance of international mutual funds (models 29, 31, 33 and 35). The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. All the explanatory variables are one-period lagged. Models 28–29/30–31/32–33/34–35 consider the legal distance indicator computed from JEI/ASDI/LSD 2005–2015/LSD 2016–2020. The table shows the estimated coefficients for the research hypotheses' variables, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared and the VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models, and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Second, we analyse the consistency of our previous empirical evidence using alternative proxies for the financial performance of mutual funds. We can find in the previous academic literature papers that have provided robustness to the empirical evidence achieved by considering different versions of risk-adjusted financial performance measures (see among many others, Fleta-Asín and Muñoz, 2023; González et al., 2024; Liu et al., 2024; Lestari and Frömmel, 2024). More concretely, we analyse our research hypotheses when the financial performance is computed from the three-factor model (Fama and French, 1992), the four-factor model (Carhart, 1997) and the five-factor model (Fama and French, 2015).[13] The results are provided in Tables 11–13.[14]

The results for the impact of the legal distance on financial performance are provided in the first row of each table. As can be seen, in most of the models, the estimated coefficients for the legal distance proxies are negative and significant, being consistent with our previous empirical evidence. This occurs for eight out of nine models in the case of the four-factor alpha (Table 12) and in seven out of nine models in the cases of the five- and three-factor alphas (Tables 11 and 13). The results for the interaction effect between the legal distance proxies and the market capitalization are provided in the second row of the tables. Differently from the empirical evidence obtained for the impact of legal distance on financial performance, the results for the interaction effect vary across alphas. Thus, results that are more consistent with our previous empirical evidence are obtained for the four-factor alpha model (in six out of nine models, we find positive and significant estimated coefficients for the interaction term). In the case of the results from the five-factor alpha models, the estimated coefficients for the interaction terms are mostly positive (seven out of nine models) but significant only in one case. For the three-factor alpha models, the estimated coefficients are not consistent with our previous empirical evidence, either in sign or in significance. All these results together reveal how the lack of controls for risk factors when measuring the financial performance of mutual funds could bias the empirical evidence obtained. More concretely, the interaction effect between the legal distance and the market capitalization of the investee portfolio seems to be especially sensitive to the momentum factor since, when this interaction effect is analysed using alphas that do not control for the momentum factor (the five-factor and three-factor models), the moderation effect of market capitalization on the impact of legal distance on financial performance becomes non-significant.

Thirdly, we analyse the impact of special events that occurred in the period analysed on the empirical findings. More specifically, the sample period encompasses the 2008–2009 global financial crisis, which could affect the financial performance of the international mutual funds analysed and bias the results. With this aim, following Wang and Cheng (2023), we rerun the models by excluding the data from 2008–2009. The empirical findings are reported in Table 14.

As can be seen, the results achieved are highly consistent with our previous empirical evidence. In the case of the impact of direct legal distance on financial performance, in all the cases, the estimated coefficients for the legal distance proxies are negative and significant in seven out of eight models. In the case of the interaction effect, the estimated coefficients for the interaction term are positive and significant in seven out of eight models. Besides, the negative estimated coefficient for the interaction term for the LSD factor 2005–2015 shown in Table 10 (without crisis control) becomes non-significant in Table 14 (when controlling for financial crisis).

Finally, we analyse the impact of the legal distance on the financial performance of international mutual funds when the legal distance proxies are computed, taking a civil law country as a reference. With this aim, we build a sample of international equity mutual funds domiciled in France. We obtain the information from the Morningstar Database. The sample is formed by 185 mutual funds existing in the period spanning from January 2003 to December 2021. The total number of monthly portfolios analysed is 9866.[15] The empirical findings are provided in Table 15.

The first row presents the empirical evidence for the direct impact of legal distance on financial performance. As can be seen, in eight out of nine models, the estimated coefficients for the legal distance proxies are negative, being significant in five of them. This empirical evidence points out that, as in the case of the US market, the distance in legal features between the investor and the investee countries negatively affects the financial performance of international mutual funds. The second row in Table 15 shows the empirical evidence for the interaction effect between the legal distance and the size of the investee markets. In this case, the empirical evidence is mixed and scarcely significant. More concretely, the estimated coefficient for the interaction term is positive (negative) in five (four) out of nine models. Besides, the only significant estimated coefficient is achieved in model 123 (the LSD proxy in the period 2016–2020), in which the estimated coefficient is significant at the 10 % level and reaches a negative sign (opposite to our expectation). Overall, these findings lead us to conclude that the legal distance exerts a negative impact on the financial performance of international mutual funds when these funds are domiciled in both common law countries and civil-law ones. However, the moderator effect of the market capitalization of investee portfolios is only detected in the case of the US market. Thus, the analysis of other factors that could moderate the negative impact of legal distance on the outcomes of the international mutual fund managers arises as a relevant issue that could be analysed in further research.

[13] The three-factor model (Fama and French, 1992) considers the market, size and book-to-market factors; the four-factor model (Carhart, 1997) incorporates the market, size, book-to-market and momentum factors; and the five-factor model (Fama and French, 2015) includes the market, size, book-to-market, profitability and investment factors. All of them are less complete risk-adjusted financial performance models than the six-factor model (Fama and French, 2018), which considers the market, size, book-to-market, momentum, profitability and investment factors.

[14] For the sake of brevity, in the case of the securities law indicators, we focus on the results from the indicators that combine the private securities laws and the public ones.

[15] We cannot include the net expense ratio and the turnover ratio among the models' controls due to this information rarely being available for mutual funds domiciled in France. Besides, the lower number of observations in comparison with those available for the US market leads us to establish time yearly controls. However, our previous empirical evidence for the US market is robust when considering these issues.

Table 11
Empirical evidence from 5-factor alphas.

	Model 36/37: CL_Dist	Model 38/39: LO_Dist	Model 40/41: ADRI_Dist	Model 42/43: Priv_Enforc_dist	Model 44/45: Publ_Enforc_dist	Model 46/47: JEI_dist	Model 48/49: ASDI_dist	Model 50/51: LSD 2005–2015	Model 52/53: LSD 2016–2020
Legal Distance (H1/H2)	−0.00204*** (−2.79)	−0.00080*** (−2.62)	−0.00129*** (−5.11)	−0.00362*** (−3.89)	−0.00181*** (−4.07)	0.00002 (0.06)	−0.01095*** (−4.93)	−0.00036 (−1.14)	−0.00047* (−1.83)
Legal Distance*MC (H3)	0.00064 (0.78)	0.00049 (1.4)	0.00014 (0.55)	0.00080 (0.78)	−0.00009 (−0.19)	0.00063 (1.24)	0.00076 (0.31)	−0.00216*** (−4.92)	0.00156*** (4.62)
Fund and Country Controls	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES
Model F-test	22.09***/ 22.28***	22.14***/ 22.65***	22.32***/ 22.56***	21.97***/22.24***	22.3***/22.24***	22.36***/ 22.7***	22.39***/ 22.53***	18.93***/20.77***	32.24***/ 41.98***
Fixed Effects F-test	22.42***/ 24.43***	25.26***/ 25.26***	23.57***/ 23.57***	23.52***/23.53***	23.85***/23.83***	29.83***/ 29.84***	23.27***/ 23.27***	28.48***/28.58***	27.21***/ 28.16***
Adj-R2	0.2144/0.2145	0.2145/0.2175	0.2186/0.2187	0.2159/0.2159	0.2163/0.2163	0.2128/ 0.2131	0.2183/0.2183	0.2850/0.2954	0.2975/0.3089
Mean VIF	1.18/1.19	1.18/1.18	1.18/1.19	1.19/1.19	1.18/1.18	1.17/1.15	1.17/1.17	1.13/1.15	1.24/1.26
LR-Chi test	156.37***/ 7.77***	159.59***/ 28.01***	549.57***/3.60*	288.51***/7.41***	327.17****/0.43	0.09/ 28.70***	520.79***/1.17	26.83***/ 542.84***	62.03***/ 418.14***
Obs	73,256	73,256	73,256	73,256	73,256	73,256	73,256	37,144	25,380

This table reports the results from the monthly panel regressions with time and fund fixed effects for the impact of the legal distance on the financial performance of US international mutual funds (models 36, 38, 40, 42, 44, 46, 48, 50 and 52) and the impact of the interaction effect between the legal distance and the market capitalization of the investee portfolio on the financial performance of international mutual funds (models 37, 39, 41, 43, 45, 47, 49, 51 and 53). The dependent variable is the monthly five-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. All the explanatory variables are one-period lagged. Models 36–37/38–39/40–41/42–43/44–45/46–47/48–49/50–51/52–53 consider the legal distance indicator computed from the CL/LO/ADRI/Private_Enforc/Public_Enforc/JEI/ASDI/LSD 2005–2015/LSD 2016–2020. The table shows the estimated coefficients for the research hypotheses' variables, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared and the VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models, and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 12
Empirical evidence from 4-factor alphas.

	Model 54/55: CL_Dist	Model 56/57: LO_Dist	Model 58/59: ADRI_Dist	Model 60/61: Priv_Enforc_dist	Model 62/63: Publ_Enforc_dist	Model 64/65: JEI_dist	Model 66/67: ASDI_dist	Model 68/69: LSD 2005–2015	Model 70/71: LSD 2016–2020
Legal Distance (H1/H2)	−0.00200*** (−3.11)	−0.00078*** (−2.88)	−0.00096*** (−4.35)	−0.00313*** (−3.76)	−0.00152*** (−3.87)	0.00016 (0.6)	−0.00784*** (−4.01)	−0.00049* (−1.74)	−0.00039* (−1.84)
Legal Distance*MC (H3)	0.00173** (2.16)	0.00094*** (2.71)	0.00041* (1.7)	0.00210** (2.1)	0.00054 (1.24)	0.00082** (1.98)	0.00215 (0.94)	−0.00151*** (−5.57)	0.001161*** (4.37)
Fund and Country Controls	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES
Model F-test	22.13***/ 23.04***	22.1***/ 23.35***	22.35***/ 23.13***	22.1***/23.12***	22.29***/22.76***	22.14***/ 22.75***	22.38***/ 22.69***	18.47***/ 18.55***	31.05***/ 39.39***
Fixed Effects F-test	23.47***/ 23.54***	24.05***/ 24.15***	23.45***/ 23.49***	23.23***/23.29***	23.51***/23.54***	29.39***/ 29.46***	23.39***/ 23.40***	27.62***/ 27.61***	28.64***/ 29.36***
Adj-R2	0.2048/0.2056	0.2048/0.2062	0.2069/0.2073	0.2057/0.2064	0.2059/0.2061	0.2029/ 0.2035	0.2064/0.2065	0.2757/0.2822	0.2883/0.2970
Mean VIF	1.18/1.19	1.18/1.18	1.18/1.23	1.19/1.19	1.18/1.18	1.17/1.15	1.17/1.17	1.13/1.15	1.24/1.26
LR-Chi Test	186.92***/ 71.05***	189.88***/ 128.76***	377.65***/ 37.41***	267.37***/63.80***	288.29***/20.28***	7.02***/ 60.30***	330.74***/ 11.63***	61.69***/ 334.95***	56.52***/ 311.23***
Obs	73,256	73,256	73,256	73,256	73,256	73,256	73,256	37,144	25,380

This table reports the results from the monthly panel regressions with time and fund fixed effects for the impact of the legal distance on the financial performance of US international mutual funds (models 54, 56, 58, 60, 62, 64, 66, 68 and 70) and the impact of the interaction effect between the legal distance and the market capitalization of the investee portfolio on the financial performance of international mutual funds (models 55, 57, 59, 61, 63, 65, 67, 69 and 71). The dependent variable is the monthly four-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: the relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. All the explanatory variables are one-period lagged. Models 54–55/56–57/58–59/60–61/62–63/64–65/66–67/68–69/70–71 consider the legal distance indicator computed from the CL/LO/ADRI/Private_Enforc/Public_Enforc/JEI/ASDI/LSD 2005–2015/LSD 2016–2020. The table shows the estimated coefficients for the research hypotheses' variables, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared and the VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models, and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 13
Empirical evidence from 3-factor alphas.

	Model 72/73: CL_Dist	Model 74/75: LO_Dist	Model 76/77: ADRI_Dist	Model 78/79: Priv_Enforc_dist	Model 80/81: Publ_Enforc_dist	Model 82/83: JEI_dist	Model 84/85: ASDI_dist	Model 86/87: LSD 2005–2015	Model 88/89: LSD 2016–2020
Legal Distance (H1/H2)	−0.00132* (−1.96)	−0.00055* (−1.95)	−0.00078*** (−3.37)	−0.00210** (−2.42)	−0.00115*** (−2.77)	0.00042 (1.29)	−0.00607*** (−2.9)	−0.00019 (−0.6)	−0.00042** (−1.99)
Legal Distance*MC (H3)	−0.00015 (−0.17)	0.00020 (0.51)	−0.00022 (−0.81)	−0.00022 (−0.2)	−0.00063 (−1.3)	0.00030 (0.66)	−0.00244 (−0.93)	−0.00230*** (−5.05)	0.00104*** (3.78)
Fund and Country Controls	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES
Model F-test	21.41***/ 21.27***	21.44***/ 21.59***	21.61***/ 21.22***	21.4***/21.23***	21.58***/21.05***	21.5***/ 21.63***	21.65***/ 21.26***	18.28***/19.21***	30.89***/ 37.58***
Fixed Effects F-test	23.09***/ 23.08***	23.41***/ 23.41***	23.00***/ 22.99***	22.89***/22.88***	23.10***/23.07***	26.92***/ 26.92**	22.92***/ 22.89***	24.75***/24.86***	28.89***/ 29.48***
Adj-R2	0.2089/0.2089	0.2090/0.2090	0.2103/0.2104	0.2092/0.2092	0.2096/0.2098	0.2086/ 0.2086	0.2099/0.21	0.2978/0.3095	0.2447/0.2522
Mean VIF	1.18/1.19	1.18/1.18	1.18/1.19	1.19/1.19	1.18/1.18	1.17/1.15	1.17/1.17	1.13/1.15	1.24/1.26
LR-Chi Test	63.58***/0.45	75.01***/ 4.37**	195.33***/ 8.30***	94.56***/0.56	129.23***/21.36***	36.09***/ 6.10**	155.44***/ 11.66***	7.72***/627.09***	69.48***/ 257.31***
Obs	73,256	73,256	73,256	73,256	73,256	73,256	73,256	37,144	25,380

This table reports the results from the monthly panel regressions with time and fund fixed effects for the impact of the legal distance on the financial performance of US international mutual funds (models 72, 74, 76, 78, 80, 82, 84, 86 and 88) and the impact of the interaction effect between the legal distance and the market capitalization of the investee portfolio on the financial performance of international mutual funds (models 73, 75, 77, 79, 81, 83, 85, 87 and 89). The dependent variable is the monthly four-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. All the explanatory variables are one-period lagged. Models 72–73/74–75/76–77/78–79/80–81/82–83/84–85/86–87/88–89 consider the legal distance indicator computed from the CL/LO/ADRI/Private_Enforc/Public_Enforc/JEI/ASDI/LSD 2005–2015/LSD 2016–2020. The table shows the estimated coefficients for the research hypotheses' variables, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared and the VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models, and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 14
Influence of global financial crisis.

	Model 90/91: CL_Dist	Model 92/93: LO_Dist	Model 94/95: ADRI_Dist	Model 96/97: Priv_Enforc_dist	Model 98/99: Publ_Enforc_dist	Model 100/101: JEI_dist	Model 102/103: ASDI_dist	Model 104/105: LSD 2005–2015
Legal Distance (H1/ H2)	−0.00374*** (−4.42)	−0.00142*** (−4.05)	−0.00178*** (−6.37)	−0.00604*** (−5.74)	−0.00271*** (−5.52)	−0.00049 (−1.34)	−0.01554*** (−6.42)	−0.00077** (−2.44)
Legal Distance*MC (H3)	0.00560*** (5.92)	0.00252*** (6.52)	0.00224*** (7.03)	0.00818*** (6.32)	0.00336*** (5.53)	0.00239*** (4.46)	0.01916*** (6.02)	−0.00044 (−1.1)
Fund and Country Controls	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES
Model F-test	23.1***/ 26.23***	22.98***/ 26.51***	23.18***/27.99***	22.99***/27.07***	23.29***/26.95***	23.03***/ 24.34***	23.37***/27.2***	21.6***/21.59***
Fixed Effects F-test	23.31***/ 23.73***	24.51***/ 24.96***	22.01***/22.49***	22.11***/22.53***	22.68***/23.15***	32.21***/ 32.59***	22.34***/22.83***	29.90***/29.78***
Adj-R2	0.2398/0.2469	0.2395/0.2483	0.2468/0.2567	0.2434/0.2522	0.2427/0.2497	0.2336/0.2384	0.2466/0.2548	0.2846/0.2850
Mean VIF	1.19/1.21	1.19/1.19	1.2/1.21	1.2/1.21	1.19/1.21	1.17/1.15	1.18/1.18	1.14/1.18
LR-Chi Test	599.40***/ 622.59***	574.27***/ 770.75***	1210.74***/ 882.67***	912.85***/776.70***	849.66***/624.05***	56.97***/ 417.80***	1194.13***/ 727.68***	121.70***/18.97***
Obs	66,485	66,485	66,485	66,485	66,485	66,485	66,485	30,373

This table reports the results from the monthly panel regressions with time and fund fixed effects for the impact of the legal distance on the financial performance of US international mutual funds (models 90, 92, 94, 96, 98, 100, 102 and 104) and the impact of the interaction effect between the legal distance and the market capitalization of the investee portfolio on the financial performance of international mutual funds (models 91, 93, 95, 97, 99, 101, 103 and 105), excluding the data from 2008–2009. The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: relative net cash flows, net expense ratio, turnover ratio, size, age and size of the investee securities markets. All the explanatory variables are one-period lagged. Models 90–91/92–93/94–95/96–97/98–99/100–101/102–103/104–105 consider the legal distance indicator computed from the CL/LO/ADRI/Private_Enforc/Public_Enforc/JEI/ASDI/LSD 2005–2015. The table shows the estimated coefficients for the research hypotheses' variables, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared and the VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models, and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table 15
Empirical evidence for a sample of international mutual funds from French market.

	Model 106/ 107: CL_Dist	Model 108/ 109: LO_Dist	Model 110/111: ADRI_Dist	Model 112/113: Priv_Enforc_dist	Model 114/115: Publ_Enforc_dist	Model 116/ 117: JEI_dist	Model 118/ 119: ASDI_dist	Model 120/121: LSD 2005–2015	Model 122/123: LSD 2016–2020
Legal Distance (H1/H2)	−0.00204 (−1.64)	−0.00090** (−2.11)	−0.00099** (−2.27)	−0.00318* (−1.67)	−0.00117 (−1.1)	−0.00107* (−1.82)	−0.00395 (−0.94)	−0.00165*** (−3.03)	0.00002 (0.1)
Legal Distance*MC (H3)	0.00035 (0.18)	−0.00011 (−0.15)	0.00021 (0.27)	0.00067 (0.22)	−0.00145 (−0.85)	−0.00045 (−0.43)	0.00356 (0.57)	0.00017 (0.17)	−0.00056* (−1.95)
Fund and Country Controls	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES
Model F-test	7.6***/7.7***	7.66***/ 7.91***	7.65***/7.72***	7.65***/8.14***	8.45***/8.35***	7.8***/8.14***	7.46***/ 7.74***	6.88***/6.46***	5.08***/5.1**
Fixed Effects F-test	25.22***/ 25.12***	25.43***/ 25.32***	25.11***/ 25.11***	24.46***/24.37***	25.63***/25.59***	25.24***/ 25.11***	25.23***/ 25.03***	17.81***/17.40***	43.22***/ 41.62***
Adj-R2	0.1450/ 0.1471	0.1490/0.1490	0.1493/0.1494	0.1478/0.1478	0.1453/0.1456	0.1470/0.1471	0.1448/0.1428	0.1898/0.1899	0.079/0.086
Mean VIF	1.27/1.28	1.26/1.28	1.23/1.21	1.23/1.22	1.05/1.12	1.19/1.28	1.2/1.24	1.17/1.15	1.12/1.12
LR-Chi test	37.78***/0.34	59.98***/0.24	64.12***/0.64	45.89***/0.50	17.54***/3.96**	37.18***/1.33	11.58***/2.59	136.41***/0.35	0.11/38.12***
Obs	9866	9866	9866	9866	9866	9866	9866	4927	4095

This table reports the results from the monthly panel regressions with time and fund fixed effects for the impact of the legal distance on the financial performance of French international mutual funds (models 106, 108, 110, 112, 114, 116, 118, 120 and 122) and the impact of the interaction effect between the legal distance and the market capitalization of the investee portfolio on the financial performance of international mutual funds (models 107, 109, 111, 113, 115, 117, 119, 121 and 123). The dependent variable is the monthly six-factor estimated alphas considering a 36-month rolling window. Across the models, the explanatory variables include the following fund controls: relative net cash flows, size, age and size of the investee securities markets. All the explanatory variables are one-period lagged. Models 106–107/108–109/110–111/112–113/114–115/116–117/118–119/120–121/122–123 consider the legal distance indicator computed from the CL/LO/ADRI/Private_Enforc/ Public_Enforc/JEI/ASDI/LSD 2005–2015/LSD 2016–2020. The table shows the estimated coefficients for the research hypotheses' variables, the t-ratios computed with robust standard errors, the model F-test, assessing the reliability of independent variables, the fixed-effect F-test, which verifies that the fixed-effect model is preferred to a pooled OLS regression, the adjusted R-squared and the VIF evaluating multicollinearity problems, the likelihood (LR chi test), which compares the goodness of fit between models, and the number of observations.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

5. Implications, limitations and further research

In this research, we analyse the impact of trading in distant legal markets on international mutual funds' financial performance. With this aim, we analyse a sample of US international equity mutual funds in the period 2000–2021 (73,256 monthly portfolios from 1160 different mutual funds). Besides, we consider a broad set of legal environment proxies and 41 securities markets.

We first analyse the impact of the home bias and portfolio country concentration on financial performance. We find that both dimensions affect financial results positively. These findings align with those previously reported in the academic literature and motivate the interest of our research. Besides, the high negative correlation between the portfolio country concentration and the legal distance proxies suggests that international mutual fund managers concentrate on proximate legal markets (this finding is consistent with the informational advantage theory). Concerning the impact of legal distance on international mutual funds' performance, our findings are clear: trading in legally distant markets jeopardizes the financial performance delivered to investors. This occurs for more generic proxies of the market legal origin and more specific indicators about local securities laws and is consistent with the prediction of TCT that uncertainty emerging from informational asymmetries is a source of transaction costs, hampering market transactions and the LOF phenomenon broadly analysed in product markets. Another interesting finding of our research reveals a moderator for this effect, that is, trading in larger capital markets. Our empirical evidence shows that investing in larger securities markets alleviates the negative effect of trading in unfamiliar legal environments. This is relevant and useful to investors seeking international mutual funds that deliver good financial outcomes and for international mutual fund managers aiming to attract investors' money flows.

Additionally, we perform a plethora of research analyses to check the consistency of our main empirical evidence. First, the findings from alternative proxies for legal distance are mostly consistent with our previous empirical evidence. Second, the use of alternative measures for the financial performance of mutual funds reveals the relevance of controlling for risk factors when studying financial performance to avoid biased empirical evidence. Third, our findings are robust when controlling for the impact of the subprime mortgage crisis. Finally, when analysing a sample of international mutual funds domiciled in a civil law country (France), we find that the legal distance jeopardizes the financial performance of these portfolios (as in the case of the US market, a common law country); however, we do not find empirical evidence supporting the moderator effect of the market capitalization of investee portfolios in the case of France. Accordingly, further research should enlarge the empirical evidence found in this paper by exploring the impact of legal distance, taking other markets as a point of reference. Besides, revealing the factors that contribute to moderating the liability of trading in legally distant markets in other mutual fund industries arises as a relevant issue to explore in further research.

Declaration of Interests

None.

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CRediT authorship contribution statement

Fernando Muñoz: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Jorge Fleta-Asín:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Appendix I

We match the Morningstar Direct Database information about the monthly asset allocation of mutual funds' portfolios across markets and the countries for which LLSS provide information about securities law indicators, obtaining a sample of 41 countries. More concretely, these countries are (ordered by legal origin):

Common Law Countries: Australia, Canada, Hong Kong, India, Ireland, Israel, Malaysia, New Zealand, Pakistan, Singapore, South Africa, Thailand, the United Kingdom and the United States.

Civil Law Countries: Argentina (FR), Austria (GE), Belgium (FR), Brazil (FR), Chile (FR), Colombia (FR), Denmark (SC), Finland (SC), France (FR), Germany (GE), Greece (FR), Indonesia (FR), Italy (FR), Japan (GE), Mexico (FR), the Netherlands (FR), Norway (SC), Peru (FR), the Philippines (FR), Portugal (FR), South Korea (GE), Spain (FR), Sweden (SC), Switzerland (GE), Taiwan (GE), Turkey (FR) and Venezuela (FR).

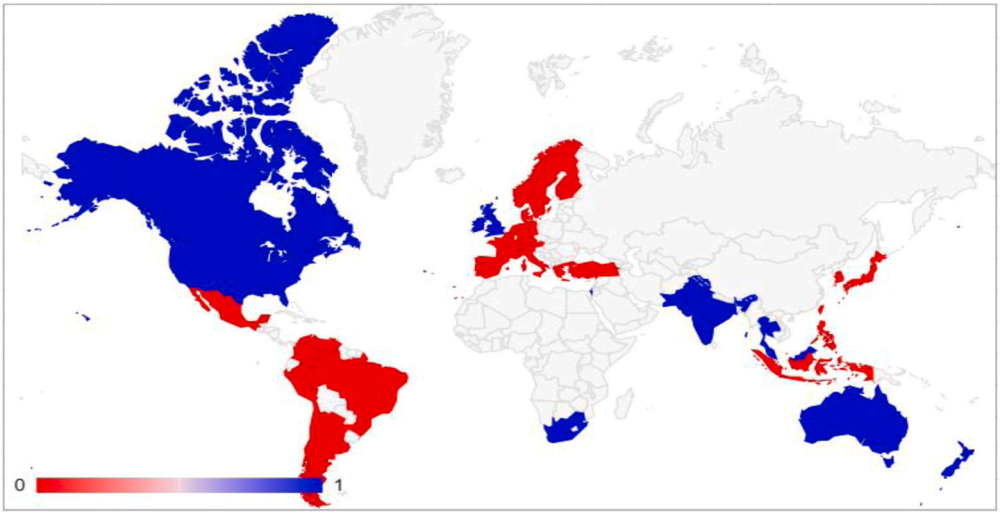
FR: French; GE: German; SC: Scandinavian.

Some relevant markets identified by LLSS as having a socialist legal origin lack in our sample since LLSS do not provide indicators for them. However, these markets are not very relevant in the portfolios of funds in our sample since we reach a high percentage of mutual funds' portfolio allocation being controlled. The following table provides the descriptive statistics of the percentage of portfolio

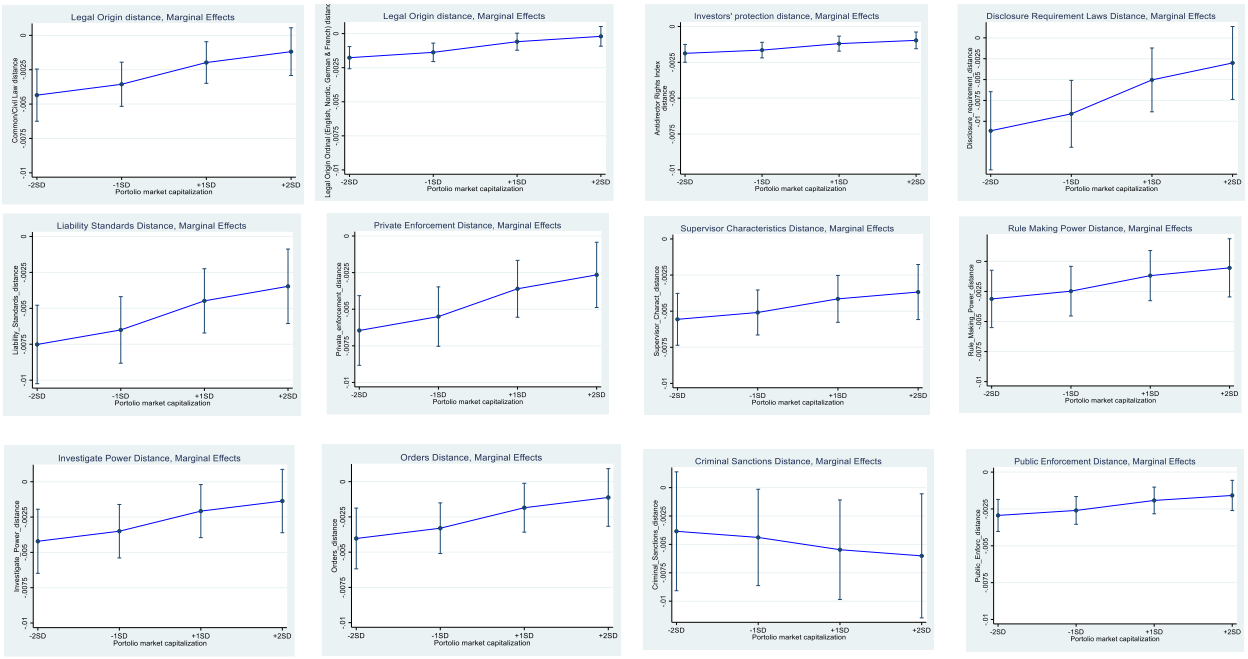
allocation controlled:

Label	Obs.	Mean	SD	10th perc.	Median	90th perc.
% PORTFOLIO CONTROLLED	73,256	0.914	0.080	0.833	0.931	0.983

As can be seen in the table, in average terms, the percentage of the controlled portfolio is 91.4 % and the median is 93.1 %. This guarantees the accuracy of our legal distance proxies. The next figure plots the countries in our sample classified into common law countries (blue) and civil law countries (red).



Appendix II: Marginal effects of legal distance plots



Appendix III: Marginal effects of portfolio market capitalization at different values of legal distance proxies

Table III.1.
Marginal effects for Portfolio Market Capitalization (Models 16–21).

	Model 16: CL	Model 17: LO	Model 18: ADRI	Model 19: DRI	Model 20: LSI	Model 21: Priv_Enforc
LD −2 SD below the mean	−0.0007	−0.0008*	−0.0007	−0.0008	−0.0006	−0.0007
	(−1.37)	(−1.65)	(−1.42)	(−1.57)	(−1.2)	(−1.42)
LD −1 SD below the mean	−0.0002	−0.0002	−0.0002	−0.0002	−0.0002	−0.0002
	(−0.49)	(−0.61)	(−0.64)	(−0.65)	(−0.47)	(−0.63)
LD +1 SD above the mean	0.0008**	0.0009***	0.0007**	0.0008***	0.0007**	0.0007**
	(2.53)	(2.87)	(2.19)	(2.61)	(2.13)	(2.3)
LD +2 SD above the mean	0.0013***	0.0015***	0.0012***	0.0014***	0.0011***	0.0012***
	(3.12)	(3.47)	(2.85)	(3.23)	(2.7)	(2.93)

This table reports the marginal effects of the portfolio market capitalization at different levels of the legal distance proxies considered in models 16–21, that is, when the legal distance proxy is two/one standard deviations below (above) the mean. It provides the estimated marginal effects and the z-statistics measuring their significance.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Table III.II
Marginal effects for Portfolio Market Capitalization (Models 22–27).

	Model 22: SCI	Model 23: RMPI	Model 24: IPI	Model 25: OI	Model 26: CI	Model 27: Public_Enforc
LD −2 SD below the mean	−0.0003	−0.0002	−0.0003	−0.0004	0.0008	−0.0005
	(−0.53)	(−0.32)	(−0.54)	(−0.72)	(1.58)	(−0.97)
LD −1 SD below the mean	0.0000	0.0001	0.0001	0.0000	0.0007*	−0.0001
	(0.03)	(0.35)	(0.13)	(0.01)	(1.82)	(−0.31)
LD +1 SD above the mean	0.0006*	0.0008**	0.0007**	0.0008**	0.0004	0.0007**
	(1.82)	(2.34)	(2.34)	(2.59)	(1.18)	(2.14)
LD +2 SD above the mean	0.0009**	0.0010**	0.0010***	0.0011***	0.0003	0.0014***
	(2.16)	(2.44)	(2.69)	(2.96)	(0.64)	(2.64)

This table reports the marginal effects of the portfolio market capitalization at different levels of the legal distance proxies considered in models 12–27, that is, when the legal distance proxy is two/one standard deviations below (above) the mean. It provides the estimated marginal effects and the z-statistics measuring their significance.
*** Significant at 1 %; ** significant at 5 %; * significant at 10 %.

Data availability

Requests for data availability will be considered by the authors.

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