



Comparative study of the performance of Spanish and foreign equity and fixed-income collective investment schemes (CIS) distributed in Spain

Juan-Pedro Gómez

Working paper
No. 85



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Executive summary

- i) On average, during the period from January 2018 to October 2023, equity collective investment schemes (CIS) marketed in Spain, both Spanish and foreign, have a negative alpha or risk-adjusted return: -0.6 percentage points (pp) per year in the case of Spanish CIS and -1.68 p.p. per year in the case of foreign CIS.
- ii) Spanish fixed-income CIS have an alpha of -0.12 p.p. per year compared to an alpha of -0.36 p.p. per year for foreign CIS.
- iii) However, this comparison fails to acknowledge the significant institutional, asset type, and investor differences between Spanish and foreign CIS marketed in Spain.
- iv) Spanish CIS – both equities and fixed income – invest significantly more in small-capitalization stocks (or *small stocks* for short), belong to managers with lower aggregate assets, charge a lower expense ratio, and require a lower minimum investment than foreign ones.
- v) When adjusting for these characteristics to compare truly similar CIS, there is no statistically significant difference in risk-adjusted returns or alphas between Spanish and foreign equity CIS distributed in Spain.
- vi) In the case of fixed-income CIS, the average alpha of Spanish CIS is 0.8 percentage points per year lower than that of comparable foreign CIS after accounting for the characteristics referred to above.

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1 Introduction

This study compares the performance of equity and fixed-income collective investment schemes (CIS) domiciled and sold in Spain and those domiciled abroad and distributed in Spain during the period between January 2018 and October 2023.

Equity and fixed-income CIS are analysed separately. The equity sample comprises 348,707 monthly observations corresponding to 5,208 series or classes of 1,621 CIS. The fixed-income sample consists of 279,647 monthly observations, 4,274 classes or series and 1,732 CIS. Three performance measures are analysed: *net (of fees) return*, *relative return* against the benchmark and *risk-adjusted return* or *alpha*.

Spanish CIS of both equities and fixed income are, on average, significantly smaller (in terms of Total Net Assets – TNA), belong to a smaller fund family, charge a lower expense ratio, and require a lower minimum investment than their foreign counterparts.

The Spanish sample consists almost exclusively of investment funds distributed only in Spain. In contrast, 75% and 82% of foreign equity and fixed-income CIS are UCITS domiciled in Luxembourg (mainly variable capital investment companies – SICAVs), which are distributed in an average of 16 countries. Therefore, Spanish funds are compared to international funds, rather than national funds from other European countries.

In terms of investment style, Spanish equity funds invest on average more in *small stocks* (15% of Spanish observations compared to 5% of foreign observations in this style). They also invest much more in *value stocks*, with 49% of Spanish observations associated with this style, compared to 25% of foreign observations. In contrast, foreign equity CIS are much more focused on investments in large-capitalization stocks (or *large stocks* for short) and, above all, on *growth stocks*. In fixed-income CIS, foreign CIS invest mainly in global bonds (outside the euro area), while Spanish CIS invest mostly in eurozone bonds with target maturity or in money market securities.

This suggests a market segmentation between Spanish and foreign funds. Spanish funds would specialise in less financially sophisticated investors (with a much lower minimum investment), investing mainly in value and domestic equities or in more conservative fixed-income investments, while foreign funds target (or are sought after by) more sophisticated investors who are willing to invest more money in riskier equity strategies with a longer investment horizon (growth stocks) or in bonds from outside the eurozone. Although these hypotheses are not tested directly, they are consistent with the findings from the available data.

In the case of **equity** funds, the net of fees return is on average 1.2 percentage points lower per year for Spanish CIS than for foreign CIS. When adjusting for all the previously described variables (including fund and family size, expense ratio, minimum investment, year and fund style fixed effects), both Spanish and foreign

funds, on average, underperform compared to their benchmark. However, Spanish funds experience an additional relative loss of 0.7 percentage points per year compared to foreign funds. The risk-adjusted return, or alpha, is negative on average in both sub-samples, but statistically indiscernible. Taking alpha as the most representative performance measure, we find no evidence of a significant difference in performance between Spanish equity CIS and similar foreign CIS distributed in Spain.

In the **fixed-income** sample, Spanish and foreign CIS show negative but statistically indistinguishable returns. However, when the control variables are considered, the return of Spanish CIS relative to the index is 0.5 percentage points per year lower than that of their foreign counterparts. When comparing the alpha of both fixed-income sub-samples, on average, Spanish CIS have a risk-adjusted return 0.8 p.p. lower than foreign CIS of similar characteristics distributed in Spain.

The report is structured as follows. Section 2 presents the motivation and contributions of the study. Section 3 introduces the data and Section 4 presents the empirical strategy to test the performance difference hypothesis. Empirical results are included in Section 5. Section 6 presents the conclusions of the study. The appendix includes the definition of the Refinitiv Lipper data base variables used in the work and the additional robustness tests conducted.

2 Motivation and contributions

This study is motivated by the evidence documented in the report by Pedrón (2022) for the CNMV. The main conclusion of the report is that Spanish equity CIS have an annual return 7.1 percentage points lower and a current expense ratio 0.24 percentage points higher than foreign equity CIS distributed in Spain. In the case of fixed-income CIS, the annual return of Spanish CIS is on average 1.2 percentage points lower and the current expense ratio 0.18 percentage points lower than that of foreign CIS. These findings prompted the need to further investigate the potential reasons for the higher returns and lower costs (in the case of equities) of foreign funds distributed in Spain.

The contribution of this study can be summarised on four fronts:

- i) Extending the sample over the period to October 2023.
- ii) Cleaning the data to ensure the comparability of the two sub-samples of CIS. This was done by using three common filters in the study of investment fund performance (e.g. Ma, Tang and Gomez, 2019). First, only CIS that invest at least 75% of their assets in, respectively, equities or fixed income and whose investment style is catalogued by Refinitiv Lipper, are included. Second, passive management and index funds have been eliminated. Finally, those series or classes that require a minimum investment of more than €50,000 or that are specifically aimed at institutional investors have been eliminated. In short, only actively managed equity or fixed-income funds targeted at retail investors are analysed to ensure comparability and accurate classification.
- iii) Introducing a set of standard controls in this type of studies to isolate the effects of CIS and family size, minimum required investment, expense ratio, geographic scope of distribution, and CIS style on fund performance (e.g., Chevalier and Ellison, 1997; Sirri and Tufano, 1998; Zheng, 1999).
- iv) Adjust the return for the systematic risk assumed by investors. This is referred to as the *alpha* of the CIS (e.g. Jensen, 1968; Grinblatt and Titman, 1989; Ippolito, 1989; Brown and Goetzmann, 1995; Malkiel, 1995; Gruber, 1996; Carhart, 1997; Ferreira et al., 2013).

3 The data

3.1 Sample delimitation

We use the study by Pedrón (2022) to determine the original sample. The unit of observation in Pedrón (2022) is the share class or series and year, both for CIS domiciled in Spain and for foreign CIS (domiciled outside Spain) but distributed in Spain between 2018 and 2021. It covers practically the entire universe of CIS distributed in Spain. In this study, we use the same sample of monthly share class observations, although empirical robustness tests have been performed using only one (“primary”) observation per fund. The sample has been updated to October 2023. The data have been obtained from Refinitiv Lipper. Some national CIS variables have been supplemented with data reported directly to the CNMV.

To ensure the robustness and clarity of the findings, a set of typical filters used in such studies has been implemented. The initial database (containing all categories) comprises 88,601 observations across 1,430 categories and 1,003 Spanish CIS. Regarding foreign entities, it encompasses 649,720 observations across 9,777 categories and 3,080 CIS.

The following filters are applied to this original database. First, the funds corresponding to equities and fixed income are identified, since as is customary in the literature, these two categories will be analysed separately. We use Lipper to sort CIS into equity funds (*Asset type = Equity*) and fixed-income funds (*Asset type = Bond*). The analysis also includes what are known as balanced funds with an investment in, respectively, equities or bonds as of October 2023 equal to or greater than 75 % of the fund’s assets.

Second, only actively managed funds are analysed. Passively managed or index funds have a different objective (replicating an index) than actively managed funds (beating an index) and their risk-adjusted return is measured differently. To this end, those funds identified as indexed by Lipper (*Index Tracking = 1*) are excluded in the sample. Third, all classes belonging to institutional investors are excluded. Given that institutional shares have notably lower annual expenses compared to others, this disparity could skew the study’s outcomes. A double criterion is applied to identify them: share classes identified by Lipper as institutional (*Institutional Share = 1*) plus those requiring a minimum initial investment of €50,000 are eliminated.

After applying these 3 filters, the Spanish equity CIS observations are reduced to 44,790, belonging to 738 classes and 516 funds. For foreign CIS, 413,884 observations passed the three filters, corresponding to 6,523 classes and 1,900 funds. For fixed-income CIS, the sample consists of 43,811 observations from 702 classes and 552 Spanish CIS. For foreign CIS, 235,836 observations are available for 3,572 classes and 1,180 CIS.

To compare CIS with similar investment styles, they are grouped based on different objectives. The Lipper primary style classification matrix is used for equity CIS. This variable is not available for all funds in the sample. However, we will show that the subsample for which investment style is available is very similar to the sample of equity funds resulting from the application of the three filters explained above. This suggests that adding this extra filter does not introduce any bias to the sample. After requiring that funds are catalogued by style, the final equity sample consists of 24,936 Spanish CIS observations corresponding to 409 classes of shares and 263 funds, compared to 323,771 observations from 4,851 share classes and 1,358 foreign funds.

For fixed-income CIS, the Lipper Global Classification system classification will be used. These categories are reorganised into eight groups, as explained in the next section. All fixed-income observations in the sample have this classification.

3.2 Description of variables

This section presents the variables used in this study. The primary objective of the analysis is to investigate whether, after controlling for characteristics known to be linked to investment fund performance in the literature, there is evidence that Spanish CIS have lower risk-adjusted return compared to similar foreign CIS distributed in Spain. Thus, the variables have been classified into three large groups. On the one hand, it is necessary to determine the return of the fund. These have been called *dependent variables*. On the other hand, the *independent variable* of interest: the *nationality* of the CIS (Spanish versus foreign). The third group includes the set of *control variables* that help explain fund performance are presented.

3.2.1 Dependent variables

To evaluate the performance of Spanish and foreign equity and fixed-income CIS, three return variables are created for each share class in the sample and each month. The first measure of return is *net return*, which is calculated as the monthly percentage change in the net asset value after deducting fees and expenses for each share class, as per Lipper's definition:¹

$$R_{c,i,t} = \frac{P_{c,i,t} - P_{c,i,t-1}}{P_{c,i,t-1}} \quad (1)$$

where $P_{c,i,t}$ is the share price net of fees of class c belonging to CIS i in month t in euros. For each fund, Lipper identifies a benchmark to compare the fund's performance with the performance of the best passive management index that replicates the style of the CIS. The second measure of return is the *relative return against the benchmark* of the fund. For this purpose, the benchmark return, which corresponds

1 Table A1 in the appendix defines all the variables used in the study and their source. The net asset value recorded by the CNMV for the Spanish CIS and the price reported in Refinitiv Lipper have a virtually identical distribution and a correlation of 99.97%. Given this evidence, the sample of domestic fund net asset values not reported in Lipper has been completed with its equivalent in the CNMV database.

to the CIS i in month t ($R_{i,t}^b$), is defined analogously to the class return in equation (1) and subtracted from the class return in the same month to obtain the relative return against the benchmark:

$$\bar{R}_{c,i,t} = R_{c,i,t} - R_{i,t}^b \quad (2)$$

Finally, the *risk-adjusted return* or *alpha* is calculated. The relative return defined in equation (2) assumes that all funds with the same benchmark assume the same systematic or *beta* risk relative to the benchmark and equal to 1. However, the financial theory based on the Capital Asset Pricing Model or CAPM (see, for example, the historical review by Perold, 2004) predicts a higher return for funds with greater systematic risk or beta. The systematic risk-adjusted expected return of the fund or alpha of a class c , belonging to CIS i in month t , is defined as:

$$\alpha_{c,i,t} = R_{c,i,t} - R_{f,t} - \beta_{c,i,t} \times (R_{i,t}^b - R_{f,t}) \quad (3)$$

where $R_{f,t}$ is the (monthly) return of the 3-month Euribor in month t and $\beta_{c,i,t}$ is the coefficient of the regression of the excess return (relative to the Euribor) of the series or class c of fund i in month t with respect to the excess return of the benchmark calculated during the previous 36 months counted from the month of January of the current year.²

3.2.2 Independent variables

This section introduces the variables that are commonly identified in the investment fund literature as predictors of expected fund returns. The aim is to use these variables as controls in a regression analysis to assess the performance of domestic funds in comparison to genuinely similar foreign funds. These variables are standard in empirical studies examining the performance of CIS. Specifically, all these variables were featured in the analysis of international funds conducted by Ferreira et al. (2013), which will be used as a reference for this study and as a source of motivation for the selection of these variables.³ Each of these variables and their motivation in the theoretical and empirical academic literature is analysed below.

Size of the CIS

The size of the fund (TNA of the CIS) is one of the most studied variables in the literature on investment funds. To date, there is no consensus as to why and in which direction fund size should influence fund performance. There are argu-

2 Each beta is therefore updated annually and used to predict returns over the next 12 months. To estimate the beta there must be at least 12 monthly observations available over the last 3 years. This criterion is very similar to that followed by Ferreira et al. (2013) and Servaes and Sigurdsson (2022).

3 There are some variables in the Ferreira et al. (2013) analysis that could not be replicated with the data available in Refinitiv Lipper for a significant number of observations. These are fund age, subscription and redemption fees, net capital flow and the size of the management team (individual or group). In general, these variables are only reported for a minority of domestic funds and it has not been possible to supplement them with the data available at the CNMV.

ments in favour of a positive relationship: funds with larger investment could benefit from economies of scale in costs and thus reduce transaction costs and spreads in equity trading (Brennan and Hughes, 1991). This saving could, in principle, be passed on to investors, who would benefit from a higher net return. On the other hand, the fund manager may appropriate these savings through higher fees and not pass them on to investors. It is important to consider that as the investment volume increases, it becomes inherently more challenging for the manager to discover investment opportunities with positive alpha (a phenomenon referred to as *diseconomies of scale in skills*). Even if such opportunities are found, the market may not be liquid enough to capitalise on them without being detected and replicated by competitors, thereby eroding the risk-adjusted return or alpha (Yan, 2008). The arguments in favour of an inverse relationship between size and return have been modelled by Berk and Green (2004) in a very influential article and put to the test in numerous works (e.g. Chen et al., 2004; Berk and Binsbergen, 2015). Grinblatt and Titman (1989 and 1994), on the other hand, do not find conclusive evidence on the relationship between size and return of funds in the United States.⁴

Family size

The size of the fund management company or fund family also leads to economies of scale and scope when it comes to sharing relevant information to exploit investment opportunities with positive alpha, launch new funds, or lower transaction costs and spreads. This has been documented by Khorana and Servaes (1999) and Chen et al. (2004), among others.

For this study, this variable (*family size*) was constructed by aggregating the TNA of all equity funds (for the equity sub-sample) and fixed-income funds (for the fixed-income sub-sample) managed each month by the same manager, irrespective of where they are distributed.

Expense ratio

This variable has been approximated through the Refinitiv Lipper *TER* (*Total Expense Ratio*) variable for all classes in the sample.⁵ It is defined as the ratio of the total cost borne by investors (including an apportionment of subscription and redemption fees) divided by the average TNA during the month. While the management fee is usually consistent across all share classes within a fund, subscription and redemption fees may vary among different classes of the same fund. This is one of the reasons for taking the class or series as the empirical observation.

It has been documented that larger funds and managers often have lower costs, while funds distributed in more countries tend to have higher costs (Khorana, Servaes, and Tufano, 2009; ESMA, 2023). Moreover, there is evidence suggesting that funds with higher operating costs (TER) tend to underperform even before factor-

4 The correlation between the observations on the size of the domestic funds collected by the CNMV and the one available on Refinitiv Lipper is 99.83%. The distribution of both samples is practically identical. Based on this evidence, the Lipper sample has been completed with the CNMV data when the former were not available, in order to maximise the sample size.

5 For this variable, the correlation between the data obtained from CNMV and the data downloaded from Refinitiv Lipper is only 32.22%. To maintain consistency, it has been determined to solely use Lipper data.

ing in costs and fees, both in the United States (Gil-Bazo and Verdú, 2009) and Europe (e.g. Otten and Bams, 2002; Dahlquist, Engström, and Söderlind, 2000).

Minimum investment required by the CIS

This variable is often used as an approximation to investors' degree of financial sophistication (Ma, Tang and Gomez, 2019; Massa and Patgiri, 2009). The higher the minimum required investment, the more likely it is that the average investor in the fund will have a higher level of wealth and financial literacy. Therefore, this variable predicts a higher expected return.

Number of countries where the CIS is distributed

There are two main reasons to believe that the number of countries in which a fund is distributed can affect its performance. On the one hand, when capital flows are spread out across multiple countries and potential shocks do not have perfect correlation, a fund with a wider geographic distribution benefits from greater diversification. This, in turn, typically results in a lower cash position and a higher return on investment. On the other hand, it has been documented (e.g. Nanda, Wang and Zheng, 2004) that fund managers benefit from the pull effect of star funds: inflows into all of the manager's funds increase when a fund is launched with a higher return than its peers in the country. This should increase the likelihood of launching a new fund (which performs better than its competitors) in new countries.

Investment style

For the equity sub-sample, the Refinitiv Lipper 12-style classification matrix is considered. This matrix divides equity funds into 12 different styles, depending on the capitalization (*large, multi, mid* or *small*) and investment strategy (*value, core* or *growth*).⁶ For fixed-income funds, the Lipper Global classification will be regrouped into eight broad categories: alternative, euro fixed income, EMU government, global, mixed fixed income, money market, euro target maturity and others.

6 This is an expanded version, incorporating a new multi dimension, of Morningstar's traditional 3x3 investment objective matrix commonly used to compare performance across investment funds.

4 Empirical strategy

The aim of this study is to evaluate the relative return and the risk-adjusted return, or alpha, as discussed in Section 3.1 (dependent variables), of both Spanish and foreign Collective Investment Schemes (CIS) after adjusting for the control variables outlined in Section 3.2. Therefore, in line with standard practice in the investment fund literature, we will be comparing Spanish and foreign CISs that exhibit similar characteristics. The aim is therefore to answer whether, beyond what is predicted by the size of fund and its family, the expense ratio, the minimum investment required, the number of countries in which the fund is distributed, the risk of the fund and its style, Spanish funds perform differently from their foreign peers.

To do so, we estimate the following ordinary least squares (OLS) regression on the panel of observations:

$$y_{c,i,t} = a + b \times n_i + c \times \text{Ln}(C_{c,i,t}) + d \times \text{No. Countries} + \text{Year}_t + \text{Style}_i + \varepsilon_{c,i,t} \quad (4)$$

$y_{c,i,t}$ is, respectively, the return relative to the benchmark and the risk-adjusted or alpha return of class c of fund i in month t . $n_{c,i}$ is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\text{Ln}(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined in Section 3.2 for class c of fund i in month t : fund size, family size, expense ratio, and minimum required investment. The number of countries in which the fund is distributed is also included. Year_t and Style_i are fixed effects, respectively, for the year to which the month t belongs and the style (the matrix of 12 categories of Refinitiv Lipper) of the CIS i .

The fundamental objective is the estimation and interpretation of the coefficient b in the regression equation (4). The null hypothesis is that this coefficient is not significantly different from zero. In other words, once we adjust for the specified variables and compare similar CIS on several dimensions, including style and risk, we do not expect to find a significant difference in performance between Spanish and foreign CIS. Since the sample includes very anomalous years in terms of yields due to COVID-19, the fixed effects per year are also included. The residuals are clustered by CIS. All variables are winsorised at 1%.

A possible criticism of the regression estimates (4) is that foreign CIS have more share classes (on average 7, both for equities and fixed income) than Spanish ones (on average 2.5 for equities and fixed income). This may be skewing the results. To address the issue of over-representation of foreign classes in the sample, two alternative tests are conducted, following Servaes and Siggurdson (2022).

First, we perform a weighted least squares regression of equation (4), where each observation (share class or series) is weighted by the inverse of the number of CIS

classes in the sample. This weighting gives more (less) *weight* to CIS with fewer (more) classes.

Second, the regression coefficients in (4) are estimated using only one class or series per CIS. This class, referred to as the primary class by Refinitiv Lipper, typically corresponds to the class with the highest fund assets.

5 Analysis of the results

This section analyses the equity and fixed income sub-samples separately. For each sub-sample, the statistics of the sub-sample are presented first, distinguishing between Spanish and foreign CIS. The results of the empirical test of the hypothesis of a difference in returns between Spanish and foreign CIS are presented below.

5.1 Equity CIS

5.1.1 Sample description

Table 1 presents the main statistics on the net of fees return (1), the return relative to the benchmark (2) and the risk-adjusted return or alpha of the sample (3), distinguishing between Spanish funds in Panel A and foreign funds in Panel B. A comparison of the average values of the two sub-samples shows that, consistent with the study by Pedrón (2022), the average annual net return of domestic funds, 3.72 p.p. ($= 0.31 \times 12$) is lower than the average annual net return of foreign funds, 4.8 p.p. ($= 0.4 \times 12$), although the difference in returns is smaller in the sample of this study. An examination of the relative performance of the funds reveals that, on average, both domestic and foreign funds have a return lower than their respective benchmarks. However, Spanish funds exhibit poorer relative return against the benchmark than their foreign counterparts: -3.48 pp ($= -0.29 \times 12$) versus -2.76 p.p. ($= -0.23 \times 12$). Nonetheless, Spanish funds have an alpha or risk-adjusted return higher than foreign funds (although in both cases it is negative): -0.6 % ($= -0.05 \% \times 12$) vs. -1.68 p.p. ($= -0.14 \times 12$).⁷ In qualitative terms, the comparison of median values, as opposed to mean values, leads to similar conclusions. Table 2 validates the statistical significance of the previously noted differences in means.

The univariate comparative analysis of the sub-samples of Spanish and foreign CIS reveals that, on average, Spanish funds exhibit lower net returns and returns relative to the index compared to foreign funds. However, these same Spanish funds demonstrate higher risk-adjusted returns or alpha. Additionally, the average distribution of betas is very similar between Spanish and foreign funds: an average of 0.97 for domestic CIS and 0.96 for foreign CIS. These values suggest that, on average, the CIS included in the sample, whether Spanish or foreign, despite being classified as actively managed funds, exhibit behaviours that closely resemble those of index funds, with a correlation to the benchmark of close to 1. The difference in performance between domestic and foreign funds does not appear to be primarily influenced by the lower systematic risk taken by domestic funds, on average.

⁷ The fact that the alpha is, on average, negative has been widely documented in the literature in different periods and countries. See, e.g., Sharpe (1966), Jensen (1968), Gruber (1996), Carhart (1997), or Ferreira et al. (2013).

However, it should not be forgotten that both samples contain funds which, even if they are equity funds, can differ greatly in dimensions such as size, investment style or strategy, fees or geographical distribution. These differences must be understood and considered in this analysis to compare truly comparable Spanish and foreign CIS.

In the equity sample, the average domestic CIS is almost 8 times smaller than the average foreign CIS, with TNA of 154 million euros. Even if there is no clear a priori prediction about the relationship between size and performance, this factor should be controlled for to compare similar companies in both sub-samples.

The difference in size between domestic and foreign fund families is even larger than in the case of CIS. The average domestic fund family, with net assets of € 2.1 billion, is 17 times smaller than the average foreign family. The assets of the largest domestic family (€17.53 billion) are comparable with the 25th percentile of the size distribution of foreign families (€13.846 billion). They are therefore very different managers. If family size is positively correlated with the fund's performance, then, all else being equal, we expect that domestic CIS will underperform foreign funds. In any event, it is a crucial factor to consider when aiming for a comparable analysis. Finally, it is worth noting that this variable is inherently highly correlated with another variable, which will be examined subsequently: the number of countries where the fund is distributed.

In terms of investor costs, and contrary to the findings of Pedrón (2022), the Spanish CIS in the sample of this study have, on average, an expense ratio that is 0.26 percentage points lower than the foreign CIS. It should be noted that the samples of both studies are not directly comparable: the sample of this study extends to October 2023 and is smaller after applying the four filters described above.

In the sample, the average minimum investment required by Spanish CIS (€447) is significantly lower than that required by investors in foreign CIS (€2,662). It appears likely that the average investor in foreign funds is more financially sophisticated, with a higher level of wealth and financial education compared to the average investor in Spanish CIS.

The distribution of the fund varies significantly between the sub-samples. Spanish CIS are exclusively distributed in Spain, while foreign CIS are typically sold in an average of 17 countries. Therefore, it is important to note that we are comparing Spanish CIS with pan-European or international CIS, rather than comparing Spanish national CIS against national CIS from another country. It is also important to analyse the legal identity of the CISs of both sub-samples. 95% of Spanish CISs are investment funds and only 5% are SICAVs (investment companies with variable capital). In contrast, 75% of foreign CIS are UCITS domiciled in Luxembourg (mainly SICAVs). In line with the findings of Khorana, Servaes and Tufano (2009) and, more recently, ESMA (2023) for European funds, foreign CIS spread across more than two countries have a higher average expense ratio than Spanish CIS.

Table 2 compares the difference between the mean values of all variables of the two sub-samples, domestic and foreign CIS, and shows that they are highly statistically significant.

Finally, regarding investment style, Table 3 shows the distribution of observations and their percentage for the total observations of the two sub-samples. Spanish

funds invest on average more in small stocks (13 % of Spanish observations compared to 5% of foreign observations in this style). They also invest much more in value stocks, with 50% of Spanish observations associated with this style, compared to 26% of foreign observations. In contrast, foreign equity CIS are much more focused on investments in large-cap assets and above all on growth stocks.⁸

Table A2 in the appendix shows the statistics of the sample before applying the investment style filter. When comparing these statistics with those in Table 2 for the equity sample, where style identification is available, we observe that the distributions are very similar for both the Spanish and foreign CIS sub-sample. As a result, there is no indication to suggest that the style filter could influence the findings of this study.

5.1.2 Empirical testing of the return differences hypothesis

Table 4 presents the results of the least squares estimation. The relative return in (1) – without controls – and (2) – with controls – and the risk-adjusted returns or alpha in (3) – without controls – and (4) – with controls – are used. Consistent with the univariate analysis in Tables 1 and 2, the return relative to the benchmark (1) is, on average, lower (more negative) for Spanish funds than for foreign funds, even after adjusting for style and year. On average, -0.8 p.p. (= -0.067 x 12) lower per year. This difference is significant at 1%. When the controls are introduced in specification (2), the difference, also significant at 1%, decreases slightly to -0.7 p.p. (= -0.059 x 12) per year.

The coefficients of the control variables have the expected signs based on the theory and evidence presented in Section 3.2. Thus, the size of the fund (the family) is negatively (positively) correlated with its performance (not statistically significant for family size). The expense ratio is negatively related to the relative return (significant at 1%) while the initial minimum investment is positively related (significant at 10%). As for the size of the coefficients, since the variables are expressed in logarithms, each percentage point change in the corresponding control can be interpreted as elasticities. For example, for each percentage point increase in the fund size's assets, the return of the average series relative to its benchmark is expected to decrease by 0.17 p.p. (= 0.014 x 12) per year. The magnitude of these coefficients is in line with that documented in other international reference studies such as Servaes and Siggurdson (2022) and Ferreira et al. (2013).

The relative return in relation to the index is a uniform method of standardising the risk exposure of investors in different CIS. However, it assumes that all classes and funds with the same benchmark take the same systematic risk relative to the benchmark (i.e. all have a beta of 1). Although the average beta for both sub-samples is very close to 1 (0.97 for Spanish CIS and 0.96 for foreign CIS), Table 1 shows that there is variation in the betas. Therefore, not all funds (or classes) have the same systematic risk. It is important to control for systematic risk because theory predicts that the higher the (systematic) risk, the higher the expected return. For this reason, relative return is replaced by alpha in specifications (3) – without controls – and (4) – with controls – in Table 4. Without controls, Spanish CIS have

8 According to the CNMV's target classification, 57.31% of the observations for Spanish CIS correspond to "international equities", 28% to "euro equities", 14.5% to "global" and the remainder to "mixed".

a 0.5 p.p. higher alpha ($= 0.042 \times 12$), significant at 5% level. However, when controls are introduced, the difference in alphas between the two samples is not statistically different from zero.

The coefficients of the controls related to the fund size and the management company have the expected signs and are significant at 1% and 5% respectively. The coefficients of the expense ratio and the minimum investment, although they have the expected signs, are not statistically significant. Finally, for each additional country in which the fund is distributed, the return relative to the benchmark and the alpha increase by 0.05 p.p. ($= 0.004 \times 12$), significant at 1%.⁹

To summarise, when adjusting for the variables that allow predicting the performance of CIS, their systematic risk, fund style and factors specific to each year of the sample, it is concluded that there is no significant difference in risk-adjusted return or alpha between Spanish and foreign CIS.

One possible criticism of the estimates in Table 4 is that foreign CIS have more share classes (7 on average) than Spanish CIS (2.5 on average). This may be skewing the results. To address the issue of over-representation of foreign classes in the sample, two alternative tests are conducted, following Servaes and Siggurdson (2022).

Table A3 in the appendix presents the regression coefficients from regression (4) estimated by weighted least squares, where each observation (class) is weighted by the inverse of the number of CIS classes in the sample. This gives more (less) weight to CIS with fewer (more) classes. The results are qualitatively analogous to those in Table 4.¹⁰

Table A4 of the appendix presents the regression coefficients from regression (4) when only one class or series per CIS is considered. This class, referred to as the primary class by Refinitiv Lipper, typically corresponds to the class with the highest fund assets. Yet again, the results are qualitatively analogous to those in Table 4.

5.2 Fixed-income CIS

5.2.1 Sample description

Table 5 presents the distribution of the dependent and independent variables of the sub-sample of fixed-income CIS for Spanish funds (in panel A) and foreign funds (in panel B). Panel C presents the matrix of correlations between the independent variables. The table shows the t-tests of all variables.¹¹

Relatively speaking, the same patterns are repeated in the comparison between Spanish and foreign CIS as in the sub-sample of shares, albeit in a qualitatively more nuanced form. Thus, foreign CIS have 5 times more assets than Spanish CIS;

9 When the variable *No. countries* is removed from the regression, the results are qualitatively similar.

10 Although the coefficient of the *National* variable is positive and significant at 5%, this result is very sensitive to the inclusion of the variable *No. countries* (when omitted, the coefficient is not significantly different from zero). In the rest of the tests, the result is robust to the elimination of this variable.

11 All variables are winsorised at 1%.

their fund families are almost 4 times larger; the expense ratio is 1.5 times higher, and the minimum investment is almost €1,200 higher. Foreign CIS are distributed on average in 15 countries compared to Spanish CIS, which are only distributed in Spain. Similar to equity CIS, almost all Spanish fixed-income CIS are investment funds (only 6% of observations correspond to variable capital investment companies). A total of 82% of foreign observations come from UCITS domiciled in Luxembourg.

In terms of performance, it cannot be statistically ruled out that foreign and Spanish CIS have, on average, the same net return and the same risk-adjusted return or alpha, namely approximately -0.36 p.p. ($= -0.03 \times 12$) per year. Foreign and Spanish CIS have on average underperformed their benchmark. However, with an average annual relative return of -0.72 p.p. ($= -0.06 \times 12$), Spanish CIS show a 1.32 p.p. higher (less negative) relative return than foreign CIS. Finally, the average beta is significantly smaller for Spanish fixed-income CIS (0.58) than for foreign CIS (0.74).

In terms of investment styles or objectives, the Lipper Global classification was used, which is divided into eight categories. The distribution of observations in the fixed-income sample between Spanish and foreign CIS is shown in Table 6. The hypothesis of segmentation of supply and demand for funds between these two sub-samples becomes more plausible when analysing this table. Thus, 70% of the foreign observations are in global fixed-income funds (not denominated in euros), compared with only 30% in the case of the Spanish ones. Of the latter, 21% invest in euro-denominated target maturity funds, a style followed by less than 3% of the observations for foreign CIS. Almost 9% of Spanish observations are invested in money market funds, compared to just over 0.5% in the case of foreign funds. Together with the much lower minimum investment amount, this suggests a typical or average investor in Spanish CIS who is more conservative, more local, and less sophisticated than the average investor in foreign funds.

5.2.2 Empirical testing of the return differences hypothesis

Table 7 presents the results of the regression (4) for fixed-income CIS. Looking at specification (1) without a control variable, the return of the Spanish CIS compared to the benchmark is on average 0.78 p.p. ($= 0.065 \times 12$) higher per year than that of the foreign CIS. This regression includes fixed effects for year and investment style according to the categories described in Table 6. However, it is important to note that the comparison is not between similar institutions, as highlighted in the one-dimensional analysis in the previous section. Spanish and foreign fixed-income CIS significantly differ in terms of size (both for the fund and the family), fees, minimum investment requirements, and geographic distribution area. These variables have a documented effect on expected fund returns. When the effect of these variables is discounted in specification (2), the conclusion is very different. On average, Spanish CIS have a return relative to the benchmark of 0.44 p.p. ($= 0.037 \times 12$) lower than foreign CIS of comparable size, fees, and minimum investment. Regarding the coefficients of the control variables, fund size has a negative effect, albeit not significant, while family size is also negative, but significant at 1%. As expected, funds with higher expense ratios perform worse (significant at 1%), while the minimum investment or the number of countries in which the CIS is distributed do not significantly affect performance.

When evaluating the risk-adjusted return or alpha of both sub-samples, this finding is confirmed. With all controls considered in specification (4), Spanish fixed-

income CIS have, on average, an annual alpha that is 0.8 p.p. ($= 0.067 \times 12$) lower than foreign CIS. In other words, adjusting for the systematic risk they assume, Spanish CIS (with a lower average beta) have an alpha almost 1 p.p. lower than the alpha of similar foreign CIS, albeit with a higher average systematic risk (a higher beta).

These results are qualitatively robust when equation (4) is estimated using the weighted least squares method to limit the influence of the different number of share classes between Spanish and foreign funds (see Table A5 in the Appendix) or when only one “primary” share or series per CIS is considered (see Table A6 in the Appendix).

6 Conclusions

After analysing this study, the following conclusions are drawn:

- i) This study focuses on actively managed equity and fixed-income CIS and retail classes or series.
- ii) On average, without additional adjustments or controls, the Spanish **equity** CIS in the sample have a 1.2 percentage points lower annualised return after costs compared to their foreign counterparts in the period from January 2018 to October 2023.
- iii) The foreign equity CIS in the sample have, on average, compared to the Spanish ones: 8 times more assets, families with 17 times more aggregated TNA, a 0.26 p.p. higher total expense ratio, and a minimum investment €2,215 higher. They are sold in 16 more countries than Spanish funds, which are only sold in Spain.
- iv) In terms of investment style, Spanish CIS specialise in small-cap and value stocks, while foreign CIS invest more in growth stocks.
- v) These data suggest that there is a segmentation in supply and demand between Spanish and foreign equity CIS. The former are investment funds distributed only in Spain. The latter (75% of which are UCITS domiciled in Luxembourg) are distributed internationally and are aimed at a presumably more sophisticated average investor with a longer investment horizon.
- vi) Both Spanish and foreign equity CIS have a lower average return than their benchmark and a negative alpha (risk-adjusted return). Both have a beta close to one with respect to the benchmark, suggesting that, on average, despite being classified as actively managed funds, they closely resemble passive (index) funds.
- vii) To improve comparability between domestic and foreign CIS, we adjust for differences in funds and family size, costs, investor sophistication level (minimum investment), investment style, and systematic risk (beta) of investors. After accounting for these factors, it is determined that there is no statistically significant difference between the alpha or risk-adjusted return of Spanish and foreign CIS in the analysed sample.
- viii) The analysis of fixed-income CIS reveals qualitatively similar conclusions regarding the differences between Spanish and foreign fund managers and institutions, although with more nuanced quantitative differences. Using the same selection criteria as those applied in the equity sample, we find that foreign fixed-income fund managers, on average, are: 5 times larger in terms of assets, with families 4 times bigger, 1.5 more expensive (TER), and require an almost €1,200 higher minimum investment. Foreign CIS are, for the most

part, UCITS domiciled in Luxembourg that are distributed in 15 countries, compared to Spanish CIS, practically all of them sold only in Spain. This evidence indicates a segmentation in the supply and demand of fixed-income funds between investors in Spanish and foreign CIS.

- ix) The net return of Spanish and foreign fixed-income CIS is statistically similar over this period, averaging -36 percentage points per year. When adjusting for the mentioned variables, Spanish CIS exhibit a relative return that is 0.4 percentage points lower than their foreign counterparts and an alpha 0.8 percentage points lower per year.

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Tables

Statistics of the sample. Equity CIS

TABLE 1

Each observation corresponds to a month, fund and series (class) from January 2018 to October 2023. Net return is the percentage change in the price of a series (class) net of fees over one month. The relative return against the benchmark is the difference between the return of the series and that of the benchmark for the fund allocated by Refinitiv Lipper. Alpha is the difference between the return of the series and the expected return based on the beta calculated relative to the fund's benchmark over the previous three years. Beta is the coefficient of the regression of the outperformance of the Fund (relative to the 3-month Euribor) on the outperformance of the benchmark over the three years prior to January of the current financial year (with at least 12 observations over this period). *CIS size* is the TNA of the fund. *Family size* is the sum of TNA of all equity CIS managed by the fund management company globally in that month according to Refinitiv Lipper. *Expense ratio* corresponds to the *Total Expense Ratio* (over series assets) reported in Refinitiv Lipper. *Minimum investment* is the value in euros of the minimum initial outlay to participate in the fund. *No. countries* is the number of countries in which the fund is distributed. Panel A shows the statistics for the sub-sample of Spanish CIS, panel B for foreign CIS, and panel C the correlation matrix for all observations in the sample. All variables and their equivalent in Refinitiv Lipper are described in Table A1 in the appendix. All variables are winsorised at 1%.

Panel A: Spanish CIS

Variables	Mean	Std. dev.	Min.	p25	Median	p75	Max.	Obs.
Net return (p.p.)	0.31	4.50	-10.93	-2.50	0.57	3.11	10.64	24,936
Relative return (p.p.)	-0.29	2.32	-6.60	-1.55	-0.25	0.98	5.67	24,936
Alpha (p.p.)	-0.05	2.38	-6.95	-1.26	-0.01	1.21	5.92	21,953
Beta	0.97	0.30	-0.17	0.83	0.95	1.08	2.00	21,953
CIS size (millions of euros)	154.12	343.94	2.51	12.86	42.09	141.13	7,385.63	23,971
Family size (millions of euros)	2,108.06	3,463.36	0.00	192.20	494.69	2,782.64	17,529.67	24,625
Expense ratio (p.p.)	1.54	0.60	0.12	1.09	1.58	2.01	3.00	24,106
Minimum investment (euros)	447.41	2,696.49	0.00	1.00	5.00	50.00	30,000.00	24,936
No. countries	1.00	0.00	1.00	1.00	1.00	1.00	1.00	24,936

Panel B: Foreign CIS

Variables	Mean	Std. dev.	Min.	p25	Median	p75	Max.	Obs.
Net return (p.p.)	0.40	4.83	-10.93	-2.63	0.73	3.50	10.64	323,771
Relative return (p.p.)	-0.23	2.24	-6.60	-1.48	-0.20	1.05	5.67	323,771
Alpha (p.p.)	-0.14	2.29	-6.95	-1.40	-0.09	1.15	5.92	305,273
Beta	0.96	0.17	-0.17	0.87	0.96	1.05	2.00	305,273
CIS size (millions of euros)	1,197.56	1,833.51	2.51	196.90	542.34	1,403.56	14,347.99	319,278
Family size (millions of euros)	35,808	27,327.67	0.00	13,845.90	27,984.62	55,234.18	97,262.55	323,729
Expense ratio (p.p.)	1.80	0.52	0.12	1.480	1.83	2.10	3.00	321,817
Minimum investment (euros)	2,662.59	6,175.61	0.00	1.00	1,000	2,500	39,021.81	323,771
No. countries	17.12	7.48	1.00	12.00	17.00	22.00	32.00	323,771

Panel C: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)
(1) CIS size	1.00				
(2) Family size	0.25	1.00			
(3) Expense ratio	-0.06	0.11	1.00		
(4) Minimum investment	0.03	0.30	0.01	1.00	
(5) No. countries	0.19	0.56	0.05	0.21	1.00

T-test. Equity CIS

TABLE 2

The table presents the mean of the national sub-sample, the foreign sub-sample, the difference between both means and the p -value of the test, where the null hypothesis is that said difference is zero. The variables and the sample are described in Table A1 in the appendix. All variables are winsorised at 1%.

	Domestic mean	Foreign mean	Difference	p -value
Net return (p.p.)	0.31	0.40	-0.10	0.00
Relative return (p.p.)	-0.29	-0.23	-0.06	0.00
Alpha (p.p.)	-0.05	-0.14	0.10	0.00
Beta	0.97	0.96	0.02	0.00
CIS size (millions of euros)	154.12	1,197.56	-1,043.44	0.00
Family size (millions of euros)	2,108.06	35,808.00	-33,699.95	0.00
Expense ratio (p.p.)	1.54	1.80	-0.26	0.00
Minimum investment (euros)	447.41	2,662.59	-2,215.18	0.00
No. countries	1.00	17.12	-16.12	0.00

Investment style. IIC de renta variable

TABLE 3

Each style is a combination of the fund stocks average asset capitalisation (Large/Multi/Mid/Small) and strategy (Value/Core/Growth) according to the corresponding primary fund's Refinitiv Lipper classification.

CIS style	CIS domicile			
	Spain		Foreign	
	Obs.	%	Obs.	%
<i>Large-Value</i>	3,369	13.51	25,916	8.00
<i>Large-Core</i>	2,644	10.60	49,949	15.43
<i>Large-Growth</i>	2,665	10.69	60,414	18.66
<i>Multi-Value</i>	6,540	26.23	50,493	15.60
<i>Multi-Core</i>	2,831	11.35	46,215	14.27
<i>Multi-Growth</i>	1,999	8.02	51,130	15.79
<i>Mid-Value</i>	905	3.63	5,827	1.80
<i>Mid-Core</i>	417	1.67	7,762	2.40
<i>Mid-Growth</i>	300	1.20	8,272	2.55
<i>Small-Value</i>	1,621	6.50	1,287	0.40
<i>Small-Core</i>	888	3.56	3,907	1.21
<i>Small Growth</i>	757	3.04	12,599	3.89
Total	24,936		323,771	

The table shows the coefficients of the following regression obtained by ordinary least squares (OLS):

$$y_{c,i,t} = a + b \times n_i + c \times \ln(C_{c,i,t}) + d \times Nr.Países + Año_t + Estilo_i + \varepsilon_{c,i,t}$$

$y_{c,i,t}$ is, respectively, the return relative to the benchmark in (1) and (2) and the risk-adjusted return or alpha in (3) and (4) of class c of fund i in month t . n_i is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\ln(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined for class c of fund i in month t : CIS size, family size, expense ratio, and minimum required investment. $Year_t$ and $Style_i$ are fixed effects, respectively, for the year to which the month t belongs and the style (the matrix of 12 categories of Refinitiv Lipper) of the CIS i . The residuals are clustered by CIS. All variables are winsorised at 1%. t -values in parentheses. ***, **, * denote statistically significant at 1%, 5%, and 10%, respectively.

Variables	(1) Relative return	(2) Relative return	(3) Alpha	(4) Alpha
Domestic	-0.067*** (-2.69)	-0.059* (-1.77)	0.042** (2.19)	0.039 (1.42)
Ln(CIS size)		-0.014** (-2.35)		-0.049*** (-9.27)
Ln(Family size)		0.002 (0.24)		0.013** (2.35)
Ln(TER)		-0.115*** (-9.18)		-0.003 (-0.24)
Ln(Minimum investment)		0.004* (1.71)		-0.000 (-0.02)
No. countries		0.004*** (3.59)		0.004*** (4.63)
Constant	-0.377*** (-13.68)	-0.331*** (-4.78)	0.279*** (12.94)	0.385*** (6.68)
Observations	348,707	340,246	327,226	321,264
Adjusted R-squared	0.01	0.01	0.02	0.02
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes

Each observation corresponds to a month, fund and series (class) from January 2018 to October 2023. Net return is the percentage change in the price net of fees of a series (class) over one month. The relative return against the benchmark is the difference between the return of the series and that of the benchmark for the fund allocated by Refinitiv Lipper. Alpha is the difference between the return of the series and the expected return based on the beta calculated relative to the fund's benchmark over the previous three years. Beta is the coefficient of the regression of the outperformance of the Fund (relative to the 3-month Euribor) on the outperformance of the benchmark over the three years prior to January of the current financial year (with at least 12 observations over this period). *CIS size* is the TNA of the fund. *Family size* is the sum of TNA of all fixed-income CIS managed by the fund manager globally in that month according to Refinitiv Lipper. *Expense ratio* corresponds to the *Total Expense Ratio* (over series assets) reported in Refinitiv Lipper. *Minimum investment* is the value in € of the minimum initial outlay to participate in the fund. No. countries is the number of countries in which the fund is distributed. Panel A shows the statistics for the sub-sample of Spanish CIS, Panel B for foreign CIS, and Panel C the correlation matrix for all observations in the sample. All variables and their equivalent in Refinitiv Lipper are described in Table A1 in the appendix. All variables are winsorised at 1%.

Panel A: Spanish CIS

Variables	Mean	Std. dev.	Min.	p25	Median	p75	Max.	Obs.
Net return (p.p.)	-0.03	1.38	-10.93	-0.3	0.00	0.38	10.64	43,811
Relative return (p.p.)	-0.06	1.53	-6.60	-0.68	0.00	0.61	5.67	43,811
Alpha (p.p.)	-0.01	1.15	-6.95	-0.29	0.01	0.34	5.92	37,087
Beta	0.58	0.61	-0.17	0.12	0.43	0.84	2.00	37,087
CIS size (millions of euros)	271.77	580.9	2.51	23.24	67.93	214.68	8,669.22	42,944
Family size (millions of euros)	7,331.51	8,469.02	0.00	499.67	4,139.39	11,238.35	36,663.01	43,475
Expense ratio (p.p.)	0.81	0.51	0.12	0.41	0.67	1.13	3.00	42,601
Minimum investment (euros)	784.46	3,514.04	0.00	1.00	6.00	200	35,000	43,811
No. countries	1.00	0.04	1.00	1.00	1.00	1.00	2.00	43,811

Panel B: Foreign CIS

Variables	Mean	Std. dev.	Min.	p25	Median	p75	Max.	Obs.
Net return (p.p.)	-0.02	2.23	-10.93	-0.96	0.05	1.05	10.64	235,836
Relative return (p.p.)	-0.16	1.68	-6.60	-0.82	-0.08	0.55	5.67	235,836
Alpha (p.p.)	-0.03	1.53	-6.95	-0.55	0.02	0.59	5.92	224,235
Beta	0.74	0.45	-0.17	0.42	0.84	1.02	2.00	224,235
CIS size (millions of euros)	1,434.27	2,321.72	2.51	191.61	577.68	1,669.34	14,347.99	233,014
Family size(millions of euros)	28,274.77	20,051.16	0.00	9,878.81	24,651.47	43,094.48	75,241.59	235,294
Expense ratio (p.p.)	1.24	0.47	0.12	0.90	1.24	1.53	3.00	234,703
Minimum investment (euros)	1,963.21	5,077.58	0.00	1.00	100	1,968.58	40,000	235,836
No. countries	15.34	7.25	1.00	10.00	15.00	20.00	32.00	235,836

Panel C: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)
(1) CIS size	1.00				
(2) Family size	0.32	1.00			
(3) Expense ratio	0.09	0.11	1.00		
(4) Minimum investment	0.07	0.17	0.03	1.00	
(5) No. countries	0.32	0.51	0.21	0.19	1.00

T-test. Fixed-income CIS

TABLE 6

The table presents the mean of the national sub-sample, the foreign sub-sample, the difference between both means and the p -value of the test, where the null hypothesis is that said difference is zero. The variables and the sample are described in Table A1 in the appendix. All variables are winsorised at 1%.

	Domestic mean	Foreign mean	Difference	p -value
Net return (p.p.)	-0.03	-0.02	-0.01	0.27
Relative return (p.p.)	-0.06	-0.16	0.11	0.00
Alpha (p.p.)	-0.01	-0.03	0.02	0.07
Beta	0.58	0.74	-0.16	0.00
CIS size (millions of euros)	271.77	1,434.27	-1,162.50	0.00
Family size (millions of euros)	7,331.51	28,274.77	-20,943.26	0.00
Expense ratio (p.p.)	0.81	1.24	-0.43	0.00
Min. investment (euros)	784.46	1,963.21	-1,178.74	0.00
No. countries	1.00	15.34	-14.34	0.00

Investment style. Fixed-income CIS

TABLE 7

Observations and percentage of fixed-income funds classified by style. The styles come from the Refinitiv Lipper Global classification grouped into 8 categories.

CIS style	CIS domicile			
	Spain		Foreign	
	Obs.	%	Obs.	%
Alternative	221	0.50	6,441	2.73
Fixed income bonds	9,319	21.27	40,539	17.19
EMU sovereign	849	1.94	5,620	2.38
Global	12,963	29.59	163,878	69.49
Balanced fixed income	7,198	16.43	8,635	3.66
Money market	3,904	8.91	1,283	0.54
Target maturity euros	9,330	21.30	6,946	2.95
Other	27	0.06	2,494	1.06
Total	43,811		235,836	

The table shows the coefficients of the following regression obtained by ordinary least squares (OLS):

$$y_{c,i,t} = a + b \times n_i + c \times \ln(C_{c,i,t}) + d \times \text{No. Countries} + \text{Year}_t + \text{Style}_i + \varepsilon_{c,i,t}$$

$y_{c,i,t}$ is, respectively, the return relative to the benchmark in (1) and (2) and the risk-adjusted return or alpha in (3) and (4) of class c of fund i in month t . n_i is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\ln(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined for class c of fund i in month t : CIS size, family size, expense ratio and minimum required investment. Year_t and Style_i are fixed effects, respectively, for the year to which the month t belongs and the style (the matrix of 12 categories of Refinitiv Lipper Global) of the CIS i . The residuals are clustered by CIS. All variables are winsorised at 1%. t -values in parentheses. ***, **, * denote statistically significant at 1%, 5%, and 10%, respectively.

Variables	(1) Relative return	(2) Relative return	(3) Alpha	(4) Alpha
Domestic	0.065*** (4.68)	-0.038* (-1.80)	-0.037*** (-2.71)	-0.067*** (-3.63)
Ln(CIS size)		-0.008 (-1.55)		-0.010*** (-2.75)
Ln(Family size)		-0.014*** (-3.42)		-0.006* (-1.66)
Ln(TER)		-0.132*** (-13.14)		-0.018** (-2.41)
Ln(Minimum investment)		-0.002 (-1.17)		-0.000 (-0.30)
No. countries		-0.000 (-0.14)		0.001 (1.13)
Constant	-0.115 (-1.61)	0.103 (1.22)	-0.148*** (-3.16)	-0.037 (-0.61)
Observations	278,877	272,032	260,564	255,765
Adjusted R-squared	0.01	0.01	0.01	0.01
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes

Appendix

Name of variables in Refinitiv Lipper

TABLE A1

Sample variable	Refinitiv Lipper variable
Price per share	<i>Price Default euros</i>
CIS size	<i>Fund Value euros</i>
Name of the fund manager	<i>Fund Management Company Name</i>
Expense ratio	<i>TER</i>
Minimum investment	<i>Minimum Invested Initial</i>
Benchmark	<i>Technical Benchmark Name</i>
Asset type	<i>Asset Type</i>
Investment by asset type	<i>Top Holdings (1-10)</i>
Countries where the CIS is sold	<i>Countries Notified for Sale</i>
Equity investment style	<i>Primary Style Matrix</i>
Fixed income investment style	<i>Schemes (Lipper Global)</i>
Legal structure of the CIS	<i>Legal Name</i>
Index fund	<i>Index Tracking</i>
Institutional class	<i>Institutional Share</i>

Statistics of the sample unfiltered by styles. Equity CIS

TABLE A2

Each observation corresponds to a month, fund and series (class) from January 2018 to October 2023. Net return is the percentage change in the price per share of a series (class) net of fees over one month. The relative return against the benchmark is the difference between the return of the series and that of the benchmark for the fund allocated by Refinitiv Lipper. *Alpha* is the difference between the return of the series and the expected return based on the beta calculated relative to the fund's benchmark over the previous three years. Beta is the coefficient of the regression of the outperformance of the Fund (relative to the 3-month Euribor) on the outperformance of the benchmark over the three years prior to January of the current financial year (with at least 12 observations over this period). *CIS size* is the TNA of the fund. *Family size* is the sum of TNA of all equity CIS managed by the fund manager globally in that month according to Refinitiv Lipper. *Expense ratio* corresponds to the *Total Expense Ratio* (over series assets) reported in Refinitiv Lipper. *Minimum investment* is the value in euros of the minimum initial outlay to participate in the fund. No. countries is the number of countries in which the fund is distributed. Panel A shows the statistics for the sub-sample of Spanish CIS, panel B for foreign CIS, and panel C the correlation matrix for all observations in the sample. All variables and their equivalent in Refinitiv Lipper are described in Table A1 in the appendix. All variables are winsorised at 1%.

Panel A: Spanish CIS

Variables	Mean	Std. dev.	Min.	p25	Median	p75	Max.	Obs.
Net return (p.p.)	0.25	4.39	-10.93	-2.42	0.48	2.92	10.64	44,790
Relative return (p.p.)	-0.33	2.23	-6.60	-1.49	-0.28	0.85	5.67	44,790
Alpha (p.p.)	-0.07	2.27	-6.95	-1.17	-0.03	1.08	5.92	38,173
Beta	0.97	0.32	-0.17	0.83	0.95	1.07	2.00	38,173
CIS size (millions of euros)	130.79	318.74	2.51	9.57	32.3	106.55	7,385.63	42,649
Family size (millions of euros)	2,319.7	3,829.69	0.00	143.03	472.44	3237.8	17,529.67	44,339
Expense ratio (p.p.)	1.66	0.65	0.12	1.17	1.67	2.16	3.00	42,905
Minimum investment (euros)	429.04	2,507.73	0.00	1.00	1.00	50.00	30,000	44,790
No. countries	1.00	0.06	1.00	1.00	1.00	1.00	2.00	44,790

Panel B: Foreign CIS

Variables	Mean	Std. dev.	Min.	p25	Median	p75	Max.	Obs.
Net return (p.p.)	0.39	4.79	-10.93	-2.58	0.7	3.45	10.64	413,884
Relative return (p.p.)	-0.25	2.28	-6.60	-1.51	-0.22	1.04	5.67	413,884
Alpha (p.p.)	-0.15	2.31	-6.95	-1.4	-0.09	1.15	5.92	390,868
Beta	0.95	0.19	-0.17	0.86	0.96	1.05	2.00	390,868
CIS size (millions of euros)	1,111.4	1,788.12	2.51	161.87	464.15	1,259.53	14,347.99	407,970
Family size (millions of euros)	34,353.43	26,904.6	0.00	12,155.93	26,930.15	52,838.89	97,262.55	413,842
Expense ratio (p.p.)	1.83	0.53	0.12	1.55	1.84	2.15	3.00	411,242
Minimum investment (euros)	2,448.74	5,946.19	0.00	1.00	866.85	2,500	40,000	413,884
No. countries	16.41	7.39	1.00	11.00	16.00	21.00	32.00	413,884

Panel C: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)
(1) CIS size	1.00				
(2) Family size	0.29	1.00			
(3) Expense ratio	-0.06	0.07	1.00		
(4) Minimum investment	0.05	0.29	-0.01	1.00	
(5) No. countries	0.23	0.57	0.00	0.22	1.00

The table shows the coefficients of the following regression obtained by weighted least squares (WLS):

$$y_{c,i,t} = a + b \times n_i + c \times \ln(C_{c,i,t}) + d \times \text{No. Countries} + \text{Year}_t + \text{Style}_i + \varepsilon_{c,i,t}$$

$y_{c,i,t}$ is, respectively, the relative return (against the benchmark) in (1) and (2) and the risk-adjusted return or alpha in (3) and (4) of class c of fund i in month t . The weight is the inverse of the number of classes of the fund. n_i is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\ln(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined for class c of fund i in month t : CIS size, family size, expense ratio, and minimum required investment. Year_t and Style_i are fixed effects, respectively, for the year to which the month t belongs and the style (the matrix of 12 categories of Refinitiv Lipper) of the CIS i . The residuals are clustered by CIS. All variables are winsorised at 1%. t -values in parentheses. ***, **, * denote statistically significant at 1%, 5%, and 10%, respectively.

Variables	(1) Relative return	(2) Relative return	(3) Alpha	(4) Alpha
Domestic	-0.076*** (-3.19)	-0.046 (-1.51)	0.054*** (2.79)	0.056** (2.13)
Ln(CIS size)		-0.011** (-2.01)		-0.040*** (-7.70)
Ln(Family size)		0.004 (0.71)		0.011** (2.05)
Ln(TER)		-0.131*** (-8.93)		0.001 (0.03)
Ln(Minimum investment)		0.004** (2.11)		-0.000 (-0.15)
No. countries		0.004*** (4.32)		0.003*** (3.47)
Constant	-0.366*** (-14.41)	-0.356*** (-5.96)	0.276*** (11.91)	-0.194*** (-3.63)
Observations	348,707	340,246	327,226	321,264
Adjusted R-squared	0.01	0.01	0.02	0.02
FE year	Yes	Yes	Yes	Yes
FE style	Yes	Yes	Yes	Yes

Ordinary least squares regression. *Primary classes only.*
Equity CIS

TABLE A4

The table shows the coefficients of the following regression obtained by ordinary least squares (OLS):

$$y_{c,i,t} = a + b \times n_i + c \times \text{Ln}(C_{c,i,t}) + d \times \text{No. countries} + \text{Year}_t + \text{Style}_i + \varepsilon_{c,i,t}$$

$y_{c,i,t}$ is, respectively, the relative return (against the benchmark) in (1) and (2) and the risk-adjusted return or alpha in (3) and (4) of class c of fund i in month t . The sample only includes the class with the most assets of each CIS, called “*primary*” in Refinitiv Lipper n_i is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\text{Ln}(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined for class c of fund i in month t : CIS size, family size, expense ratio, and minimum required investment. Year_t and Style_i are fixed effects, respectively, for the year to which the month t belongs and the style (the matrix of 12 categories of Refinitiv Lipper) of the CIS i . The residuals are clustered by CIS. All variables are winsorised at 1%. t -values in parentheses. ***, **, * denote statistically significant at 1%, 5%, and 10%, respectively.

Variables	(1) Relative return	(2) Relative return	(3) Alpha	(4) Alpha
Domestic	-0.122*** (-5.21)	-0.074** (-2.38)	0.019 (1.03)	0.018 (0.65)
Ln(CIS size)		-0.017*** (-2.95)		-0.053*** (-9.24)
Ln(Family size)		0.007 (1.10)		0.008 (1.37)
Ln(TER)		-0.103*** (-3.65)		-0.001 (-0.03)
Ln(Minimum investment)		0.006*** (2.80)		-0.003 (-1.03)
No. countries		0.004*** (3.89)		0.006*** (5.13)
Constant	-0.288*** (-10.98)	-0.286*** (-4.49)	-0.078*** (-3.34)	-0.077 (-1.30)
Observations	94,465	91,296	90,200	87,546
Adjusted R-squared	0.01	0.01	0.02	0.02
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes

The table shows the coefficients of the following regression obtained by weighted least squares (WLS):

$$y_{c,i,t} = a + b \times n_i + c \times \text{Ln}(C_{c,i,t}) + d \times \text{No. Countries} + \text{Year}_t + \text{Style}_i + \varepsilon_{c,i,t}$$

$y_{c,i,t}$ is, respectively, the relative return (against the benchmark) in (1) and (2) and the risk-adjusted return or alpha in (3) and (4) of class c of fund i in month t . The weight is the inverse of the number of classes of the fund. n_i is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\text{Ln}(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined for class c of fund i in month t : CIS size, family size, expense ratio, and minimum required investment. Year_t and Style_i are fixed effects, respectively, for the year to which the month t belongs and the style (reorganised into 8 categories according to the Refinitiv Lipper Global classification) of the CIS i . The residuals are clustered by CIS. All variables are winsorised at 1%. t -values in parentheses. ***, **, * denote statistically significant at 1%, 5%, and 10%, respectively.

Variables	(1) Relative return	(2) Relative return	(3) Alpha	(4) Alpha
Domestic	0.054*** (4.24)	-0.016 (-0.88)	-0.023* (-1.73)	-0.045** (-2.53)
Ln(CIS size)		-0.003 (-0.75)		-0.014*** (-4.14)
Ln(Family size)		-0.010*** (-2.60)		-0.001 (-0.47)
Ln(TER)		-0.112*** (-11.45)		-0.005 (-0.59)
Ln(Minimum investment)		0.000 (0.09)		0.001 (0.83)
No. countries		-0.000 (-0.20)		0.001 (0.69)
Constant	0.183*** (2.82)	0.295*** (4.00)	-0.337*** (-8.58)	-0.253*** (-4.77)
Observations	278,877	272,032	260,564	255,765
Adjusted R-squared	0.01	0.01	0.01	0.01
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes

Ordinary least squares regression. *Primary classes only*
Fixed-income CIS

TABLE A6

The table shows the coefficients of the following regression obtained by ordinary least squares (OLS):

$$y_{c,i,t} = a + b \times n_i + c \times \text{Ln}(C_{c,i,t}) + d \times \text{No. Countries} + \text{Year}_t + \text{Style}_i + \varepsilon_{c,i,t}$$

$y_{c,i,t}$ is, respectively, the relative return (against the benchmark) in (1) and (2) and the risk-adjusted return or alpha in (3) and (4) of class c of fund i in month t . The sample only includes the class with the most assets of each CIS, called “primary” in Refinitiv Lipper n_i is a dichotomous variable (*dummy*) which takes the value 1 if the CIS i is Spanish and 0 otherwise. $\text{Ln}(C_{c,i,t})$ is the Neperian logarithm of each of the control variables defined for class c of fund i in month t : CIS size, family size, expense ratio, and minimum required investment. Year_t and Style_i are fixed effects, respectively, for the year to which the month t belongs and the style (reorganised into 8 categories according to the Refinitiv Lipper Global classification) of the CIS i . The residuals are clustered by CIS. All variables are winsorised at 1%. t -values in parentheses. ***, **, * denote statistically significant at 1%, 5%, and 10%, respectively.

Variables	(1) Relative return	(2) Relative return	(3) Alpha	(4) Alpha
Domestic	-0.005 (-0.40)	-0.048*** (-2.64)	-0.033** (-2.22)	-0.038** (-2.13)
Ln(CIS size)		0.008** (1.98)		-0.006 (-1.64)
Ln(Family size)		-0.012*** (-3.23)		-0.005* (-1.65)
Ln(TER)		-0.080*** (-7.02)		0.011 (1.14)
Ln(Minimum investment)		0.000 (0.12)		0.001 (0.91)
No. countries		-0.001 (-0.47)		0.001 (1.59)
Constant	0.255*** (3.64)	0.488*** (5.97)	-0.138*** (-2.61)	-0.043 (-0.67)
Observations	94,401	91,136	88,335	85,824
Adjusted R-squared	0.01	0.01	0.01	0.01
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes

