



# Periodic public information on investment funds and how it influences investors' decisions

Ramiro Losada

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Ramiro Losada<sup>1</sup>

## Abstract

This article analyses how the information contained in the periodic publications of investment funds affects the decisions of their participants. One of the objectives of this type of regulatory text is to reduce the amount of asymmetric information faced by investors, especially retail investors, keen to participate in the securities markets. Specifically, two types of texts are analysed: the first, dedicated to describing the fund's investment policy; the second, known as an explanatory appendix, dedicated to describing the performance of the fund in the last quarter and the manager's forecasts for the next quarter. From the results obtained, it can be deduced that they could influence the volume of both subscriptions and redemptions. However, their influence seems to be very limited. At the same time, there is weak evidence that these texts could reduce the participation costs of investors when making their decisions to buy and sell funds.

*Keywords:* investment funds, periodic public information, text analysis, subscriptions, redemptions, participation costs

*JEL classification codes:* G23, G11

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# 1 Introduction

One of the most important regulatory tools for the protection of investors in the capital markets is the information they receive about the issuers and about the actual financial instruments and securities on which they rely to obtain a return. In the specific case of investment funds that are marketed to retail clients, EU regulations guarantee that their actual and potential participants can have access to a number of documents: the fund's prospectus, the periodic public information and the key investor information document (KIID).<sup>1</sup> These documents must be drawn up and made available to investors by the fund management companies.

This EU Regulation is transposed into Spanish legislation and expanded by Law 35/2003 of 4 November on Collective Investment Schemes (CIS) and its implementing regulations. For example, article 17 of this law establishes that: "The management company, for each of the investment funds it manages, and investment companies, must publish for dissemination among shareholders, unitholders and the general public, a prospectus, a document with the key investor information, annual, half-yearly and quarterly reports, so that all the circumstances that may influence the assessment of the value of the assets and prospects of the institution, in particular the inherent risks, as well as compliance with applicable regulations are made known publicly in up-to-date form". As mentioned above, this law applies to any investment fund that can be marketed to retail clients. This implies that its scope covers both UCITS and other funds that are considered as alternative funds for regulatory purposes.<sup>2</sup>

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1 Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS). "An investment company and, for each of the common funds it manages, a management company, shall publish the following: a) a prospectus; b) an annual report for each financial year, and c) a half-yearly report covering the first six months of the financial year". In the case of funds that are considered as alternative, Directive 2011/61/EU of the European Parliament and of the Council, of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No. 1060/2009 and (EU) No. 1095/2010 also establishes the obligation for their management companies to prepare a prospectus as described in article 23 of the Directive. In addition, Regulation (EU) No. 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for packaged retail and insurance-based investment products (PRIIPS) ensures that investors and potential investors have access to a document known as a key investor information document (KIID). The purpose of this document is to summarise the main characteristics and risks of investment funds that fall within the PRIIPS regulation.

2 In EU law, UCITS are defined and funds regulated by Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) and its implementing regulations. Alternative funds for their part are regulated by Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No. 1060/2009 and (EU) No. 1095/2010.

The information contained in these documents can be split into two types: that aimed at informing new and potential investors and that intended to inform the participants about the progress of the funds' investments. For new and potential investors, not being familiar with the fund, any information to which they have access may add value, although the prospectus and KIID seem to be the most important documents when marketing these investment products. On the other hand, for investors who have been participants in a fund for some time, it is more important to have access to the periodic public information, in which the recent behaviour of the fund is described and the manager explains its future potential and risks.

About these documents, one of the aspects that most concerns regulators is their accessibility to investors. This accessibility could be translated into two aspects: On the one hand, these documents must be easily accessible to investors (current and potential). To this end, article 18 of Law 35/2003 on CIS guarantees that both fund managers and marketers have the obligation to deliver and make available the prospectuses, periodic public information and KIID both electronically and physically, in the event that the investor requires it. In addition, investors can, through the website of the National Securities Market Commission (CNMV), consult the latest available version of each of the aforementioned documents. In addition to guaranteeing that investors have these documents, the regulation also tries to ensure that the information they receive is accessible in the sense that it is understandable by its recipients. The regulations, both EU and Spanish, are full of references to the comprehensibility of the documents available to investors. For example, article 17 of Law 35/2003 on CIS states the following: “[...] Said document shall be written concisely, in non-technical language and presented in a common format allowing the average investor to make comparisons and to easily analyse and understand it so as to be in a reasonable position to understand the essential characteristics, nature and risks of the investment product offered and to make informed investment decisions without needing to have recourse to other documents”.<sup>3</sup> The spirit of this article is that the information obtained from the documents should enable investors to make informed investment decisions.

Therefore, both the information that appears in these documents and the way in which it is expressed might not be neutral for the management companies that produce them. Although these informative documents have a regulatory defined structure, there are parts in which the manager decides both the amount of information and the style and ease of understanding and, therefore, they vary from one fund to another.

The purpose of this article is to analyse how the readability of the documents available to actual and potential unitholders may influence their investment decisions. Due to this possible influence, the incentives of companies to make their documents more understandable are also studied, especially when its yields are below those

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3 Other legal references with a similar content can be found: in article 69 of Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) or in article 23 of Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No. 1060/2009 and (EU) No. 1095/2010.

offered by most of its peers. This relationship between readability and investment behaviour has not been studied in the literature in the context of investment funds.

In the Spanish market, one of the documents on which this analysis can be based is the quarterly periodic public information that management companies have to disclose to their investors. The format of this periodic public information is defined in CNMV Circular 4/2008 of 11 September on the content of quarterly, half-yearly and annual reports of collective investment schemes and their statements of position and subsequent amendments. It is a very complete document that contains important information on the characteristics of the fund itself and on the investments and divestments made during the period covered by the document. Objective information appears in the document, such as data tables on the fund's assets, its positions in securities, the yield obtained and the expenses incurred. However, there are other parts in which managers can express their views on the evolution of the investment fund.

These characteristics of the quarterly published information allow us to have access to the available information that may be important for decisions both to subscribe to and to withdraw from investment funds. In the first part of the quarterly periodic public information, a description of the current investment policy is given, which, in turn, is a fundamental part of the prospectus of the fund itself. This information is usually important to potential investors deciding to subscribe to the fund. There is also a section in which the manager provides information in text form on the fund's performance, the macroeconomic situation and the financial markets in general. This information can be considered as relevant for investors when making the decision to remain in the fund or redeem part or all of their position in it.

Throughout the article, two important assumptions are made regarding the behaviour of investors in collective investment funds. The first is that investors infer the skill of the fund managers from the performance of the funds and the information they provide to investors. The second is that investors face participation costs when they decide to invest in investment funds. This means that, when an investor considers participating in the investment fund market, he or she must collect information and process it so as to be able to evaluate one or more funds and their possible investment alternatives.

The remainder of the article is structured as follows: Section 2 addresses a review of the literature relevant to this article. Section 3 deals with describing how the readability of a text can be measured. Section 4 presents data on the characteristics of Spanish investment funds and the periodic public information documents that they must send to their investors. Section 5 describes the results of the descriptive analysis of the data presented. In Section 6 the econometric analysis is performed. Lastly, Section 7 presents the conclusions.



## 2 Related literature

The aims of this article are related to two lines of finance literature. On the one hand, in recent years, a literature has been developed that investigates how the ‘soft’ information received by the agents participating in the financial markets is related to their decisions and how it can affect them. This literature usually uses text analysis techniques to extract their characteristics and be able to relate them to key variables such as performance or investment inflows and outflows in different assets. The other line of literature relating to this article is the one dedicated to the study of the determinants of investment flows of investment funds, both subscriptions and redemptions.

As for how investors interpret the information contained in the texts analysed, this varies in the different articles that make up this literature. Tetlock et al. (2008) showed how issuers’ share prices reacted to negative press news in which the issuer played the main role. The authors’ interpretation of this result was that investors behaved rationally, as this news contained relevant information that helped to predict the issuer’s future profits. By the same token, Tetlock (2007) and García (2013) found evidence that negative news puts downward pressure on stock prices. However, the same article by Tetlock (2007) also pointed out that, after the initial reaction, share prices reversed movement back towards the price supported by their fundamentals. This second movement was considered to be related to an irrational interpretation of the information received by investors. This last result was given continuity in Tetlock (2011), where it was observed how investors, individually, could operate based on outdated news that first provoked a reaction in the share price and later a reversion to the mean. In any case, in these articles investors’ behaviour is not directly observed but rather inferred from the reaction of share prices to news published about issuers.

More directly related to this article, in 1998 the US Securities and Exchange Commission (SEC) required the language used in issue prospectuses to which investors have access to be as simple as possible.<sup>4</sup> In addition, the SEC also recommended that clear and plain language to be used in all documents that issuers were required to prepare and send to their investors. In a series of articles, Tim Loughran and Bill McDonald analysed how this rule affected various aspects of the equity markets. Thus, Loughran and McDonald (2013) analysed the possible impact that the language used in S-1 documents could have on the price and volatility of shares listed and admitted to trading on US stock markets.<sup>5</sup> They particularly looked at the clarity

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4 See <https://www.sec.gov/rules/proposed/34-38164.txt>.

5 The S-1 is the standard SEC document that companies seeking to go public must use to register their securities with the SEC. This obligation stems from the 1933 Securities Act. The S-1 document contains the basic information that every issuer must publish in order to carry out a public offer for the sale or

and tone of the language in which prospectuses were written. From their results it can be deduced that the less clear documents with a more negative tone were more difficult for investors to assimilate. This translated into a greater increase in the share price on its first day of trading and an increase in volatility in subsequent sessions. For their part, Loughran and McDonald (2014b) studied S-1 IPO prospectuses, issuers' 10-K annual reports, and the 424 prospectuses typically used for debt issues. From their analysis it can be deduced that, once the SEC's rule advocating the use of clear and simple language came into force, the documents became more accessible to investors. These authors also made fundamental contributions on what can be considered clear and simple language, as well as on the tone (positive or negative) in the context of the financial sector (Loughran and McDonald, 2011, 2014a, 2015). For example, Loughran and McDonald (2014a) propose a new measure to establish the readability and complexity of the 10-K forms that US issuers must periodically submit to the SEC.<sup>6</sup>

Other authors also based their research on the readability of the documents to which, by regulation, stock market investors must have access. Li (2008), using SEC 10-K filings, found that companies with lower readability rates reported lower profits. This evidence seems to show that managers of issuers have an incentive to hide what they consider to be poor results by making the reports that they must send to their investors more difficult to read and understand. Also using SEC 10-K filings, Lawrence (2013) found that retail investors were more likely to invest in stocks of companies whose 10-K filings were shorter and easier to read. Meanwhile, Miller (2010) showed how the shares of issuers with more understandable reports traded more in the days before and after their publication. The finding that greater readability of reports leads to greater volumes traded was confirmed in other works (De Franco et al., 2013; Dougal et al., 2012; You and Zhang, 2009). Also noteworthy is the correlation between lower readability and higher number of analysts covering an issuer's shares; furthermore, the dispersion of opinion among them seems to be greater and the predictive success rate lower (Lehavy et al., 2011).

In this literature, there are several articles that focus on the information received by mutual fund investors. Among these articles we can highlight those by Kostovetsky and Warner (2020) and Hillert et al. (2016). The first of these articles used the prospectuses of new mutual funds to establish a measure of how different and innovative they are from their competitors. Through this measure, they concluded that the most innovative funds tend to be launched by small and new managers. This is because this is a dimension in which they can compete with the major players, which beat them in terms of economies of scale. These more innovative funds tend to attract more investment flows and produce more profits in their first years of life. In addition, the investment they attract seems to be more stable, which would reduce the volatility of the assets managed by their managers.

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subscription of securities. Investors can use the information contained in the document to assess the issuer of the offering and make informed investment decisions. Basically, whether to participate or not and, if so, what weight the shares of the new issuer can have in their investment portfolio.

<sup>6</sup> The 10-K is an annual report required by the SEC that provides a detailed summary of the activities and financial performance of a US publicly traded company.

For their part, Hillert et al. (2016) based their analysis on the tone used by managers in the periodic public information that they must send to investors. Among other results, these authors found that a more negative tone in the information to their investors reduced the inflows of investment funds. Furthermore, if this information was written in a more personal tone, the correlation with investment inflows increased. Both findings suggest that managers could use the periodic public information as a strategic instrument to reduce redemptions, especially when their funds obtain returns below expectations.

However, none of these articles studies the relationship between the information that investors receive and the ease with which they can understand it and their investment behaviour. That is why this article is also related to the financial literature that studies what determines whether investors decide to invest or disinvest in investment funds and how it does so. On this topic, there is extensive empirical literature focusing on the equity fund market in the United States, although it does not take into account the contribution that the information investors receive about their possible decisions may have. The main goal of this literature is to establish the relationship between the investment decisions of fund participants, through their inflows and outflows, and the ability of their managers measured by the returns obtained.

One of the main results of this literature is that there is a non-linear relationship between the net subscriptions of investment funds and their performance (for example: Ippolito, 1992; Gruber, 1996; Goetzmann and Peles, 1997; Sirri and Tufano, 1998; Chevalier and Ellison, 1997; Del Guercio and Tkac, 2002; Huang et al., 2007). Thus, it can be deduced from these articles that there is a positive relationship between net subscriptions and the funds that have obtained the best returns. However, they do not show that this relationship also exists for funds with worse results or with results around the average.

The literature has also studied this matter from a theoretical point of view. In the seminal article by Berk and Green (2004), past performance by a manager is assumed to be a good sign of their ability. Every time new results are published, fund investors can update the manager's skill through the Bayes' rule.<sup>7</sup> This article shows that funds with good results would get more subscriptions than requests for redemption. For the same reason, the opposite would happen for the worst performing funds. These predictions do not match what is described in the empirical articles, and this is because Berk and Green (2004) assume that investors do not face participation costs when they invest in mutual funds.

Two later articles, Huang et al. (2007) and Dumitrescu and Gil-Bazo (2018) extended the Berk and Green (2004) model and introduced participation costs for mutual fund investors. In both cases, their predictions are in line with the empirical literature and they observe a non-linear relationship between the returns obtained by the funds and their net subscriptions. Participation costs make investors to reduce the

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7 Bayes' rule allows an investor to update the degree to which he or she believes in the measurement of a variable that is not directly observable (in this case, the manager's ability to choose assets that offer good returns for the funds under management) by reference to an observed signal linked to the unobservable variable (in this case, the past performance of the funds).

number of funds they invest in, causing subscriptions to be concentrated in the best performing funds. The authors referred to this as the ‘winner-picking effect’.

These articles, both empirical and theoretical, focus on understanding the relationship between a fund’s performance and its net subscriptions. However, it is also important to differentiate what behaviour investors may have when deciding to invest in a fund through a subscription or disinvest through a redemption. Especially when investment decisions can be made for reasons different from those leading to disinvestment decisions. Although this literature is less extensive and presents mixed evidence, it is possible to find examples that shed light on the determinants of investors’ decisions about subscriptions and redemptions in investment funds.

For example on the one hand, some of these articles (Bergstresser and Poterba, 2002; Johnson, 2007; Ivkovic and Weisbenner, 2009) find no evidence of a relationship between low returns and higher redemption rates for equity funds. On the other hand, other articles (O’Neal, 2004; Jank and Wedow, 2013; Cashman et al., 2014) did show how investors obtaining poor results reacted by increasing their redemptions.<sup>8</sup> This difference in the results could be due to the fact that the first articles were made with data that is not random and that may not be representative of the universe of funds that they aim to study.<sup>9</sup>

Specifically, Cashman et al. (2014) show how investors decide to redeem more from the worst-performing funds than from the best-performing funds. Although there is a response to both types of performance, it is asymmetric. The amount of redemptions increases to a greater extent for the funds with the worst performance and decreases for those that offer better returns. At the same time, for gross subscriptions, they also find it significant that investors react to returns that can be viewed as low or high. As in the case of redemptions, these reactions are asymmetric. This last result offers a different view of fund subscriptions from that offered by the previous literature, in which investors only increased their subscriptions to the best-performing funds. Jank and Wedow (2013) also found similar results, although with one important caveat: investors in funds with higher yields exhibited a greater propensity to take part of their profits. This behaviour is known in the financial literature as the ‘disposition effect’.

Goldstein et al. (2017) carried out an analysis similar to that of the articles cited so far, although their main contribution is that they focused on investment funds whose portfolio was made up of fixed-income assets. In general, its results do not differ much from the trends pointed out in the articles described up to this point, although it can be highlighted that one of its main results is that fund investors are more sensitive to poor returns, especially in times of financial stress.

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8 All the articles mentioned have the United States market as a reference, except for the article by Jank and Wedow (2013), which focused on data from the German market.

9 Bergstresser and Poterba (2002) confine themselves to the 200 funds with the most assets. In the article by Johnson (2007), the author studied a smaller number of funds, all belonging to the same manager. For their part, Ivkovic and Weisbenner (2009) limited themselves to studying the behaviour of retail investors within the sphere of a fund marketer.

Regarding the participation costs that investors must bear when entering the fund market, Capon et al. (1996) pointed out that they must be incorporated when trying to discover the determinants of investment flows. Indeed, it would be inappropriate to think that we would be able to understand how these flows behave by looking only at yields.<sup>10</sup> Several articles in this literature also took this dimension into account when preparing their analyses. Sirri and Tufano (1998) and Huang et al. (2007) found evidence that participation costs were a driver of why funds with similar characteristics can have different net subscriptions. Thus, from their results it can be deduced that the managers with the largest market share enjoy net subscriptions above those obtained by their rivals. This result was extended by Jank and Wedow (2013) to gross subscriptions and redemptions, and they found that larger managers had more subscriptions and redemptions than smaller managers.

Finally, in addition to fund returns and investor participation costs, mutual fund flows also tend to show persistence (Patel et al., 1994; Kempf and Ruenzi, 2008). This is because investors have a tendency to subscribe to funds that they have already subscribed to in the past. This behaviour is considered suboptimal by Kempf and Ruenzi (2008), who called it 'status quo bias'.

For the Spanish market, this literature on investment flows was covered in the analysis carried out by Cambón and Losada (2015) for equity funds. Based on the econometric model proposed by Cashman et al. (2014), these authors found that Spanish investors reward funds with good performance by increasing their subscriptions. They also showed how the worst performing funds receive lower net subscriptions. Regarding gross redemptions and subscriptions, redemptions are higher for the worst performing funds, but there is no reaction when the performance is good. On the other hand, subscriptions are higher when funds perform well and lower when they perform poorly. Regarding investors' costs of participation, the article shows that they play an important role, in the Spanish market, as also does persistence.

The analysis of this article is based in turn on Cambón and Losada (2015) and could be considered as an extension of that paper. The same elements as in that article will be considered to analyse investment and divestment flows in the Spanish investment fund market, but we will also study how the information received by investors can influence them. In principle, this information should help investors to reduce their costs of participating in this market. This would be so because this information should help to them reduce their participation costs, by enabling them to compare different funds more easily. It should also help investors who already own shares or units in a mutual fund to decide whether to continue with their investment or whether it would be appropriate to maintain or expand their positions. The more accessible this information is to all investors, the more likely these assumptions are to be true. At the same time, it is important to point out that the degree to which investors can easily understand the texts also plays a key role.

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10 The importance of this assumption appeared in a 1990 report on the mutual fund market by the United States Bureau of Labor Statistics. Although performance was considered the most important factor in this market, other factors were also considered significant, for example fund purchase fees, as well as fund management fees and type of manager. These factors can be considered as variables that include the participation costs of investors in the investment fund industry.



### 3 Analysis of the readability of a text

The readability of texts can be interpreted as the ease with which a text can be understood and assimilated by the reader. Readability depends on factors such as the length of the words used, as well as the length of the sentences. Of course, the recipient of the text is also crucial, especially as regards education and reading comprehension. In any case, in order to analyse the readability of a text, it is necessary to use a methodology that allows it to be objectively rated and, at the same time, to be able to compare it with others.

In this regard, there are several alternatives to be able to carry out the analysis of the readability of a text. These methodologies were developed in the twentieth century and usually had English texts as their first testing ground. These methodologies are based on the elaboration of indices that allow the readability of a text to be determined and, at the same time comparisons to be made among different texts. The indices that were developed are of two types: the first type based on the weighting of the number of words per sentence and the number of syllables per word (Flesch, 1948; Dale and Chall, 1948). The second type are based on the weighting of the number of words per sentence and the number of words considered complex as a proportion of the total number of words. Within this last type, the one known as the Fog index stands out in the financial world (Gunning, 1968).<sup>11</sup> This is because it was considered by the US SEC as a possible way of measuring whether the information that investors received in the 10-K documents was clear enough for them.<sup>12</sup>

Some of these formulas were adapted to the characteristics of Spanish by various authors. Fernández Huertas (1959) modified Flesch's (1948) formula as follows in order to measure readability:

$$L = 206.84 - 0.6 * P - 1.02 * F,$$

where  $P$  represents the average number of syllables per word and  $F$  the average number of words per sentence. Much later, this same formula was also adapted by Szigriszt Pazos (2001), constituting the index:

$$L = 206.835 - \frac{62.3 * S}{W} - \frac{W}{F},$$

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11 The Fog index, in general, considers a complex word to be one that has three syllables or more.

12 However, authors such as Loughran and McDonald (2014) argued that this index was not the most suitable for measuring the readability of financial texts and that there are other better alternatives, since this type of text contains a large number of words with several syllables that are easily understood by investors.

where  $S$  is the total number of syllables in the text,  $W$  is the total number of words and  $F$  the total number of sentences. In practice, the results of both indices are highly correlated and the Szigriszt Pazos (2001) index is the most used when analysing texts for a general public (Barrio Cantalejo, 2007).<sup>13</sup> This index is also known as the Flesch-Szigriszt index.

Apart from obtaining a quantitative index to measure the readability of a text, it is also necessary to transfer that index to an understandable scale that puts into context the difficulty in understanding any text. In the case of the Flesch-Szigriszt index, the author himself proposed a scale, which however was criticised by Barrio Cantalejo (2007), as the author did not use a sufficient and representative sample of texts for its calibration. For this reason, Barrio Cantalejo (2007) herself proposed the scale that can be seen in Table 1 and is known as INFLESZ:<sup>14</sup>

**INFLESZ scale for the Flesch-Szigriszt index**

TABLE 1

Index value		
0-40	Very difficult	University graduate, scientist
40-55	Somewhat difficult	Baccalaureate, specialised press
55-65	Normal	Compulsory Secondary Education, general press
65-80	Quite easy	Primary education, popular novels
80-100	Very easy	Primary education, comics

Source: Barrio Cantalejo (2007) and INFLESZ software.<sup>15</sup>

As can be seen, the degree of education necessary for a text to be readable is inversely proportional to the index number obtained by the text by applying the Szigriszt Pazos formula (2001).

Due to the criticism made in Loughran and McDonald (2014) about the use of readability indices in their English versions, a simpler version that takes account only of the number of words per sentence will also be included. One of the biggest criticisms that Loughran and McDonald (2014) made of this type of index when applied to financial texts was that there were many long words in the jargon that readers could understand perfectly.

13 The article by Barrio Cantalejo (2007) focuses on the readability of medical documents intended for the general public. Therefore, the audience of the texts that his article analyses can be assumed to be very similar to the potential audience of the regulatory information available on investment funds: mainly prospectuses and periodic public information.

14 Barrio Cantalejo (2007) obtained her scale through a calibration carried out with 210 texts in Spanish that she considered representative.

15 The INFLESZ software was developed from the work of Barrio Cantalejo (2007). It allows a text to be entered and its readability checked on various scales, including that of the Flesch-Szigriszt index.

## 4 Database

To carry out the analysis, we used documents and data that the CNMV gathers as part of its supervisory work. The documents consist of the periodic public information that each CIS must publish quarterly and that must be available to all investors.<sup>16</sup> All these texts are in Spanish. The other source of data used is the ‘reserved’ (confidential) statements of the CISs, which the CNMV also periodically gathers. These statements inform about the characteristics of the funds such as: their name, style, NAV, assets and fees charged to investors. The frequency of the data is quarterly and the period analysed is from the second quarter of 2009 to the first quarter of 2020.

The analysis includes the entire universe of investment funds registered with the CNMV, including funds that were withdrawn or merged. Due to their different characteristics, the funds were divided into four categories: equity funds, fixed income funds, guaranteed funds and other funds. The first category includes pure equity funds and mixed equity funds. The second category is made up of fixed income funds and mixed fixed income funds. In the third category are guaranteed equity and fixed income funds, as well as passively managed funds. Lastly, the other funds category is made up of global funds and absolute return funds.

From the periodic public information documents of each of the funds in each of the quarters, the readability of two of their parts will be analysed. Specifically, we will analyse section 1, “Investment policy and currency of denomination”, and section 9, “Explanatory appendix to the periodic report”. In appendix I, an example can be seen of the information contained in each of these two sections. These two sections focus on two main and complementary aspects of each of the funds. The first section explains the universe of financial instruments in which the fund can invest, in addition to its risk profile and style. For its part, the explanatory appendix seeks to explain to the investor the reasons why and the environment in which the fund has obtained a certain return during the quarter last ended, and also usually includes comments by the managers and their forecasts of future performance of the fund, as well on the financial markets in general.

Given the characteristics of the periodic published information, the data for each sub-fund/quarter are considered as one observation. On this basis the initial base contains 90,971 observations.<sup>17</sup> In any case, as can be seen in Table 2, the number of funds containing more than one sub-fund is very limited. For this reason and because each sub-fund may have independent management within a fund, in this study ‘fund’ will continue to be used to refer to each of the observations that make up the database.

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16 By virtue of Law 35/2003, of 4 November on Collective Investment Schemes and its enabling legislation.

17 Out of the total of 90,971 observations: 25,263 correspond to funds considered to be in the equity group, 23,156 to fixed income funds, 29,042 to guaranteed funds and 13,510 to other funds.

This database mainly includes variables that measure the characteristics of investment funds. In addition, it also has a variable that seeks to characterise the manager of the fund. Thus, the variables used in the empirical analysis are the following:

- Readability measures of the fund policy included in the periodic public information:
  - The Flesch-Szigriszt index.
  - The average number of words per sentence.
- Readability measures of the explanatory appendix of the fund included in the periodic public information:
  - The Flesch-Szigriszt index.
  - The average number of words per sentence.
- Net subscriptions: volume of subscriptions in the quarter minus the volume of redemptions in the quarter divided by the assets of the fund at the beginning of the quarter.
- Gross subscriptions: volume of subscriptions made in the quarter divided by the fund's assets at the beginning of the quarter.
- Gross redemptions: volume of redemptions made in the quarter divided by the fund's assets at the beginning of the quarter.
- Performance measurements:
  - Gross Return: defined as the quarterly percentage change in the Fund's NAV.
  - Sharpe ratio: quarterly gross return minus the quarterly return on the risk-free asset divided by the standard deviation of the daily gross returns.<sup>18</sup>
- Volatility: quarterly standard deviation of the daily returns recorded during the quarter.
- Fees borne by the investors of the funds: both those paid implicitly and those paid explicitly are considered in the event that the fund charges them; they include:
  - Management fees.
  - Depository fees.
  - Subscription fees.
  - Redemption fees.

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18 In this work, the three-month bills issued by the Government of Spain have been considered as risk-free assets. Their performance has been obtained from the Refinitiv Datastream database.

- Fund assets: total assets in euros at the end of the quarter.
- Assets under management: total assets managed by the manager in charge of the fund at the end of the quarter.

For all variables, the data have been winsorised to 98%, removing the top and bottom 1%.<sup>19</sup> Table 2 shows the descriptive statistics for each of the variables in this database. In addition to the mean and standard deviation, the minimum and maximum are also displayed, as well as the 5%, 25%, 50% (median), 75%, and 95% percentiles. Appendix II contains four similar tables, one for each of the four groups of funds considered.

It is important to note that the variables used to evaluate the performance of the funds analysed are the gross performance and the Sharpe ratio. Most articles evaluating the relationship between investment flows in funds and their performance have used only the universe of equity funds.<sup>20</sup> In these papers, in addition to the performance measures described, another alternative measure is usually considered. This measure consists of evaluating performance based on the excess return over a market index, or applying the Fama-French-Carhart four-factor model. However, in this article all funds registered in Spain have been considered without restricting their style, and this type of measure cannot be applied to all the funds analysed.<sup>21</sup> Another important issue in this regard is that, as pointed out in Barber et al. (2016), less sophisticated investors use less sophisticated performance measures. Taking account of this and of the fact that the Spanish market is mainly a retail market, the metrics used to measure performance can be considered appropriate (Cambón and Losada, 2015).<sup>22</sup>

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19 Winsorisation consists of replacing the data corresponding to the most extreme values of a distribution by the values of a percentile close to those extreme values. In the case of this work, it has been decided that for the lowest values of all the distributions the percentile is 1%. For the highest values, the percentile is 99%.

20 See the section of this article devoted to the review of the literature.

21 The Fama-French-Carhart four-factor model is applied to equity funds. Although there are models with factors for other styles, it is difficult to find an analogous model for guaranteed funds.

22 In Cambón and Losada (2015) a fund was considered retail if owners of the fund whose investment is less than €150,000 owned more than half of the fund. In the sample analysed, 69.1% of the funds can be considered retail, accounting for 77.6% of the total assets of investment funds in Spain.

## Descriptive statistics of the database<sup>1</sup>

TABLE 2

Variable	Average	Standard deviation	Min.	P5	P25	P50	P75	P95	Max.
Readability of the fund invest. policy (Flesch-Szigriszt index)	53.1	6.2	36.3	42.8	48.9	53.0	57.1	63.7	71.1
Readability of the fund appendix (Flesch-Szigriszt index)	58.5	5.9	31.5	48.7	54.7	58.7	62.5	67.8	77.1
Words per sentence, fund policy (mean)	12.6	3.5	3.5	6.4	10.5	12.7	14.7	18.3	22.8
Words per sentence, fund appendix (mean)	18.1	4.4	5.8	11.5	14.9	17.9	20.8	25.9	35.2
Number of words, fund policy	208.7	130.2	66	93	128	172	249	432	1,150
Number words, fund appendix	1,171.0	709.2	12	316	659	1,001	1,543	2,517	4,787
Number of sub-funds	0.1	0.6	0	0	0	0	0	0	11
Series number	0.4	1.0	0	0	0	0	0	2	8
Net subscriptions <sup>2</sup>	0.016	0.160	-0.300	-0.181	-0.051	-0.010	0.020	0.379	0.887
Gross subscriptions <sup>2</sup>	0.442	0.834	0.000	0.000	0.002	0.110	0.512	1.869	7.730
Gross redemptions <sup>2</sup>	0.407	0.726	0.003	0.012	0.056	0.168	0.445	1.494	8.011
Quarterly return (%)	0.02	3.17	-35.22	-3.58	-0.33	0.07	0.77	3.65	15.86
Sharpe ratio	-0.13	1.96	-36.98	-1.37	-0.42	0.02	0.45	1.18	11.59
Quarterly volatility (%)	3.17	5.71	0.00	0.06	0.56	1.67	4.48	10.58	30.67
Management fees (%)	1.07	0.55	0.10	0.25	0.62	1.00	1.43	2.20	2.25
Depository fees (%)	0.09	0.05	0.00	0.02	0.05	0.10	0.10	0.20	0.20
Subscription fees (%)	1.16	2.03	0.00	0.00	0.00	0.00	2.00	5.00	5.00
Redemption fees (%)	1.05	1.70	0.00	0.00	0.00	0.00	2.00	5.00	5.00
Fund assets (tens of millions of euros)	7.6	15.6	0.1	0.3	1.0	2.5	7.0	31.9	164
AuM of the management company (hundreds of millions of euros)	105	129	0.1	1.4	8.9	45.8	165	395	475
Risk-free asset return (%)	0.06	0.18	-0.17	-0.14	-0.10	0.03	0.17	0.43	0.48

Number of observations: 90,971

Source: CNMV and authors.

- 1 All variables have been winsorised to 1% at both extremes of their distributions.
- 2 Divided by the fund's assets at the beginning of the quarter.



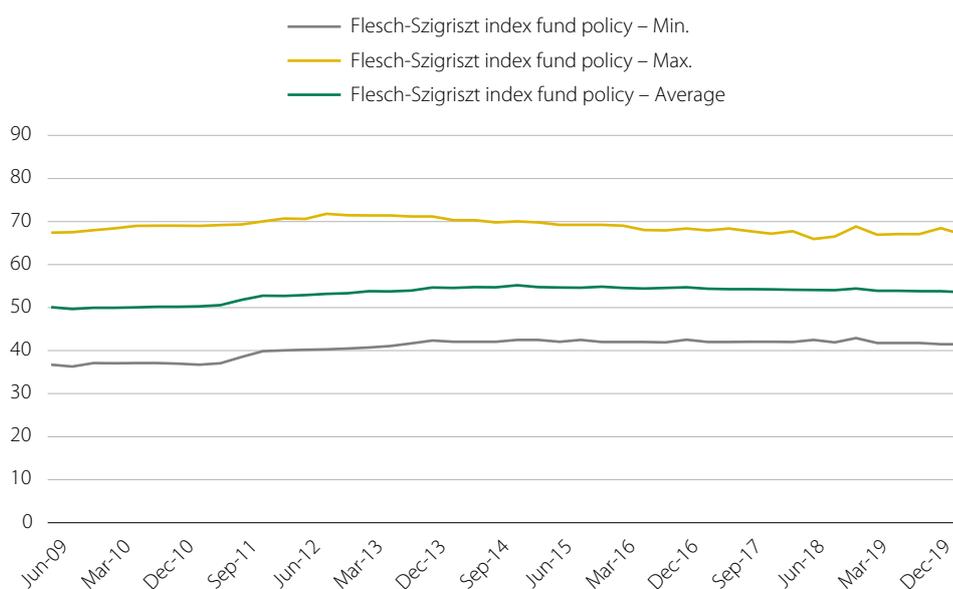


of the readability index is 58.5 and its standard deviation is 5.9. Based on the average, these texts can be classified as normal texts (see Table 1) and their difficulty is assimilated to the level required for Compulsory Secondary Education (ESO). As for the investment policy texts, their mean is 53.1 and their standard deviation is 6.2. This means, according to the same Table 1, that the average can be translated as a difficulty equivalent to somewhat difficult texts and the educational level necessary to be able to understand them adequately would be that of Baccalaureate. Therefore, one of the first conclusions that can be drawn is that, in general, for investors, the texts that describe the investment policy of the funds are more difficult to read than the texts of the explanatory appendices.

As can be seen in Appendix II, on average, the readability of the texts varies little between the four groups of holdings into which the universe of Spanish holdings has been divided. This variability is even less for the texts dedicated to the explanatory appendices, which can be classified as being of normal readability for investors. Regarding the texts of the investment policies, the guaranteed funds and those of passive management exhibit a higher degree of readability than the funds of the other groups, although all of them fall within the group of text that is somewhat difficult for their readers.

In any case, the evolution of the readability index for the texts that describe the investment policy has been positive. Figures 3 and 4 show the readability of both types of texts throughout the period between June 2009 and March 2020. It can be seen how, on average, the indices have risen compared to June 2009 and how, furthermore, the gap between the minimum and the maximum has been reduced. This trend is especially emphasized in the case of the texts of the explanatory appendices.

**Flesch-Szigriszt index applied to the description of the investment policy contained in the periodic public information of investment funds** FIGURE 3

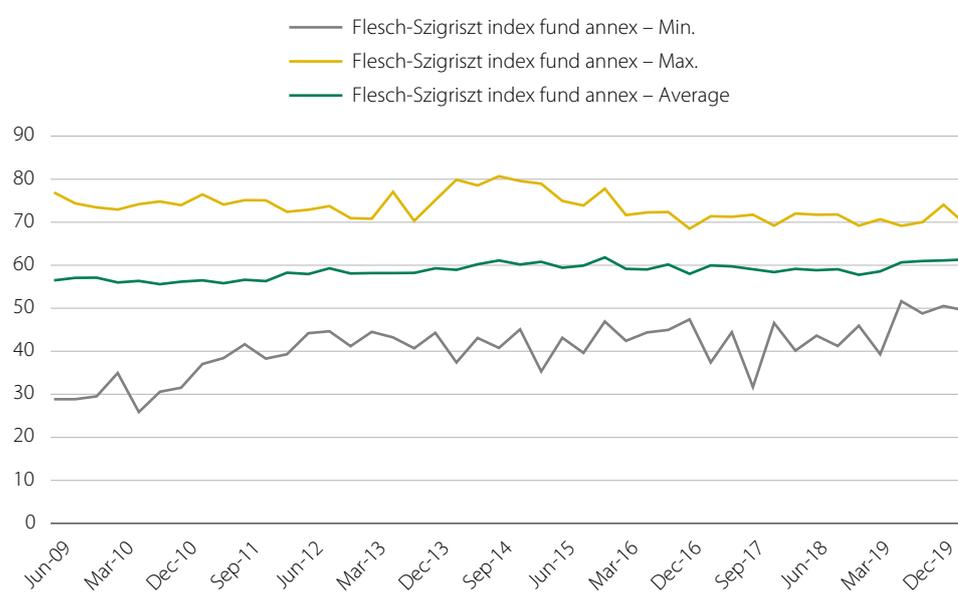


Source: CNMV and authors.

When the evolution of both graphs is compared, it can be seen that the series of investment policies are less volatile than those of the explanatory appendices. This may be found as natural, given the characteristics of both types of texts, since investment policy texts are subject to fewer changes over time. In addition, the gap between minimum and maximum of the texts of the explanatory appendices has been reduced by more. At present, almost all explanatory appendix texts can be described as normal with respect to readability, and very few are considered somewhat difficult. This situation is not reproduced in the texts that describe the policies, among which a significant percentage can be classified as somewhat difficult to read. As can be seen in Appendix III, the trends expressed for the fund universe as a whole are replicated when each of the four groups into which the sample has been divided is analysed.

**Flesch-Szigriszt index applied to the explanatory appendix contained in the periodic public information of the investment funds**

FIGURE 4



Source: CNMV and authors.

It is also important to establish the possible relationship that may exist between the flows of investment funds and their return, as it was done in Cambón and Losada (2015) and, previously, for example, in Sirri and Tufano (1998). To do so, the funds that make up the sample have been ordered according to their Sharpe ratio for each of the quarters in deciles. Thus, the weighted average of net subscriptions, gross subscriptions and gross redemptions has been calculated in order to assign each observation to the corresponding decile and quarter.

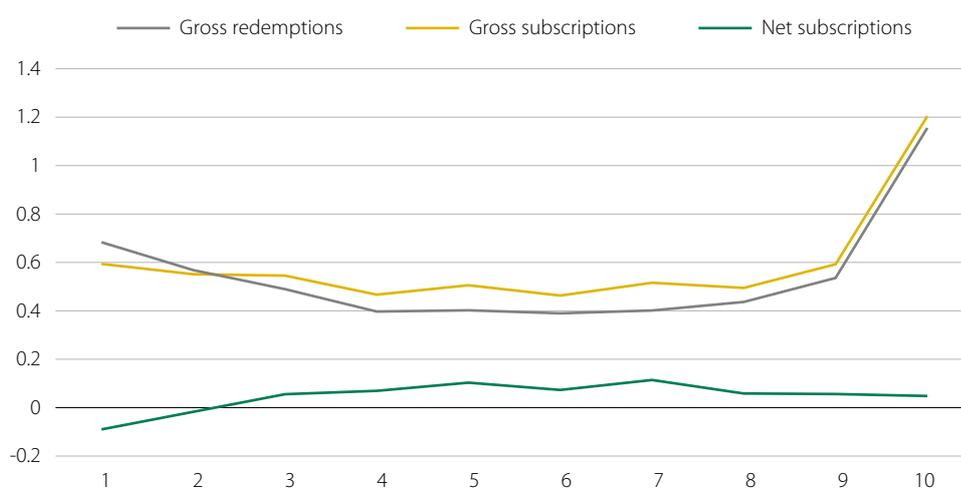
The results obtained are shown in Figure 5. In the first place, it can be deduced how, in the period covered by the data, the growth of the assets of the funds was substantial. According to the data from the CNMV, the assets of investment funds registered in Spain went from €167.16 billion in June 2009 to 250.13 billion in March 2020. The figure also shows how investors respond to the results that the funds obtain, especially when they are good or bad. For funds that perform around the median distribution, investors are more erratic in their investment decisions and there

is no obvious relationship between returns and flows. These flow-to-return ratios are more significant for gross subscriptions and redemptions, especially for funds that exhibit better returns.

In the case of net subscriptions, they move more sharply for funds with returns in the worst-performing deciles. This last result differs from several of the articles in the previous literature, which only found a relationship between flows and returns for the case of the funds with the best performance.<sup>25</sup> It also differs on the same point with Cambón and Losada (2015), where an analogous relationship was found for the funds with the best performance.

**Relationship between flows and yields<sup>1</sup>**

FIGURE 5



Source: CNMV and authors.

1 Each quarter, the funds have been classified into 10 groups according to the decile to which their Sharpe ratio belongs. The figure shows for each group the average of net subscriptions, gross subscriptions and gross redemptions (divided by the assets of the funds).

These results for net flows have their origin in the behaviour of gross flows. In the case of gross subscriptions, a recurring result in the literature known as the winner-picking effect, whereby the funds with the best results obtain subscriptions well above the average (Sirri and Tufano, 1998; O’Neal, 2004; Cambón and Losada, 2015). From Figure 5 it can be deduced that this behaviour also exists in this sample. However, a distinguishing feature of these data is that there is also a similar response in gross redemptions for the better performing funds. When the analysis focuses on the worst performing funds, it can be seen that there is a lower response in both gross subscriptions and gross redemptions. Although, as expected, this time the redemptions are significantly higher than the subscriptions.

In previous articles, this U-shaped relationship for redemptions also existed, although the difference between gross subscriptions and redemptions was very much in favour of the former in the better performing funds. This apparent paradox could be explained by some investors thinking that when a fund obtains a very high

25 For example: Sirri and Tufano (1998), Ippolito (1992), Goetzman and Peles (1997), Chevallier and Ellison (1997), Del Guercio and Tkac (2002), or Berk and Green (2004).

return it is the right time to cash some profits by redeeming part of their investment. Some of these investors can even be considered short-term, since in many of these funds the explicit entry and exit costs are not very high.<sup>26</sup> The main difference between this work and that carried out previously in Cambón and Losada (2015) is the interest rate environment caused by monetary policy, with rates remaining very low in general throughout the period from June 2009 to March 2020. This may have increased incentives for investors to see mutual funds as a good alternative for their savings compared to other savings products such as deposits. If we add to this the market power of credit institutions over retail investors in Spain, this may have led to the loss of the relationship that existed in the past between inflows and past performance of investment funds (Cambón and Losada, 2014). Also, although perhaps more focused on the wholesale market, given gains in higher-yielding funds, there has been an increase in redemptions of these funds. Another possible reason why the pattern may have changed for net subscriptions is that the frequency of the data is quarterly, whereas in Cambón and Losada (2015) it was annual. Finally, it could also be relevant that in the previous literature this study is usually considered only for a part of the market, that of equity funds, whereas in this article the total universe of investment funds registered in Spain has been considered.

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26 Articles such as: Bhargava and Dubosky (2001), Chalmers et al. (2001) and Goetzmann et al. (2001) point out the existence of short-term investors whose behaviour they call rapid trading.

## 6 Econometric analysis

The econometric analysis presented is based on a linear equation that relates the investment flows of the funds, both gross and net, with the variables chosen to measure readability, in addition to other relevant variables such as past performance. In the case of readability, the Flesch-Szigriszt index and the average number of words per sentence have been chosen for its measurement. As discussed in section 3, both ways of measuring the readability of a text have complementary characteristics. As it was done in Cambón and Losada (2015), in order to model the performance of the funds, in each quarter the funds have been ordered assigning a value of 0 to the fund with the worst performance and 1 to the fund with the best performance. It should be pointed out that this process has been carried out for each fund within the group it belongs to: fixed income funds, equity funds, guaranteed and passive management funds, and other funds. The metrics used to measure performance are the gross return and the Sharpe ratio. Once the funds were ordered, they grouped them depending on which tercile they belong to. The purpose of this splitting is to try to capture the possible non-linear relationship between the flows and the performance of the funds, as shown in Figure 5.<sup>27</sup> In addition to the variables that include the readability of the texts that investors receive and the performance of the funds, the regression equation considers other control variables such as: the volatility of the returns, the implicit and explicit fees that the investors pay (management, deposit, subscription and redemption fees) and the size of the fund's assets and of its management company (in logarithms). The equation used is as follows:

$$Flow_{ijkt} = \alpha Flow_{ijkt-1} + \beta_1 Political\ readability_{ijkt-1} + \beta_2 Readability\ of\ the\ appendix_{ijkt-1} + \beta_3 Poor\ performance_{ijkt} + \beta_4 Average\ yield_{ijkt} + \beta_5 High\ yield_{ijkt} + \delta \chi_{ijkt} + \gamma_j + \theta_k + \lambda_t + \varepsilon_{ijkt},$$

where the dependent variable may be gross or net subscriptions, as well as the gross redemptions of the fund  $i$ , which belongs to the style group  $j$  and the manager  $k$  in quarter  $t$ . In all cases, the variable *flow* is expressed as a percentage of the fund's assets at the beginning of the quarter. The variables that reflect the readability of the texts come from the texts published in the periodic public information of the previous quarter, which are public during the quarter in which the investors make their investment decisions. The performance variables are those reported in quarter  $t$

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27 In the regression equation, the value for each fund in the underperforming tercile is defined as the min. {fund rank, 0.33}, value in median return tercile is defined as min. {fund rank-underperforming tercile value, 0.33} and the value in the higher performing tercile is defined as {fund rank – average return tercile value – low tercile value}. Thus a fund classified according to its return at 0.90 will obtain values of 0.33 for the low return tercile, 0.33 for the medium return tercile and 0.24 for the high performance tercile. If the fund were classified according to its return at 0.50, then it would have values of 0.33 for the low return, 0.17 for the medium return and 0 for the high return variable. Finally, a fund ranked at 0.23 for return would have values of 0.23 for the low and 0 for the medium and high return variables.

grouped into the three terciles (low, medium and high). In addition to control variables such as volatility, fees paid by investors and size of the fund and its manager, the following are also included: a dummy variable for each of the style groups into which the sample has been divided and a dummy variable for each quarter of the sample. Finally, the possibility of persistence in the flows is also taken into account, and therefore the dependent variable is incorporated into the equation with a lag.

The corresponding equations have been obtained by applying the Fama-MacBeth method (1973).<sup>28</sup> Although the equations could have been obtained using other methods such as pooled ordinary least squares (OLS), as in Petersen (2009), the estimates using the Fama-MacBeth method are more accurate when there is serial correlation in a panel. As derived from Cambón and Losada (2015), serial correlation is usually present in this type of data. It is important to point out that for this econometric analysis, funds with assets of less than €1 million at the end of each quarter were excluded. In addition, all the variables were winsorised so that, for each variable, the 1% of both tails at their distribution were not considered.

## 6.1 Net subscriptions

The determinants of net subscriptions to investment funds are presented in Table 3. Regarding the relationship between the readability of the investment policies and the explanatory appendix and net subscriptions to the funds, the results found are diverse. Thus, it can be established that there is no empirical relationship between the readability of the description of the investment policy of the funds and their net subscriptions. In contrast, a negative relationship can be established between the readability of the explanatory appendix and net subscriptions when readability is measured by the Flesch-Szigriszt index. Therefore, greater readability in this type of text could result in lower net subscriptions. However, this influence on net subscriptions would be limited, judging by the small values obtained in the point estimates of these coefficients. This result would not be in line with the conclusions of Lawrence (2013) for the 10-K reports that issuers have to prepare in the United States. This author showed evidence that investors tended to invest more in companies whose reports were easier to understand.

It is also important to point out how, based on the results, a non-linear relationship can be established between the returns of the funds and their net subscriptions. Although in this case, it should be noticed that these non-linear relationships differ depending on whether the gross yield or the Sharpe ratio is taken as the return variable. In the former case, a positive slope is found for the funds with the best performance and non-significant coefficients for the medium and low performance tranches. On the other hand, when the Sharpe ratio is considered as the variable that measures performance, the positive slope is found in the low performance range and non-significance in the medium and high ranges. Although it is beyond the scope of this article to determine which of the two return indicators predominates

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28 With the Fama-MacBeth method, the estimates of the coefficients are obtained as the mean of the estimates of said coefficients on the cross-section regressions; in this case, one per quarter. This methodology allows us to obtain standard errors corrected for the possible existence of correlation between cross-sections. This property is highly desirable when time fixed effects exist.

in investors' decisions, one might well imagine that gross yield as a key variable would fit better with a 'search for yield' strategy.

As for the rest of the variables, it should be noted that for this sample there is almost no persistence in net subscriptions to investment funds. Comparing our results with Cambón and Losada (2015), we see how persistence has decreased over time. In that article the estimated annual persistence was between 21-22% of total net subscriptions. In any case, this result does not mean that such persistence cannot exist, both in terms of subscriptions and redemptions, for gross flows.

There is also evidence that investors tend to increase their net subscriptions in funds with higher volatility. On the other hand, the fees paid by investors play only a limited role. Only weak evidence is found of a relationship whereby higher redemption fees would imply higher net subscriptions. This result could be interpreted as certain investors assuming the existence of redemption fees as a sign that these funds would obtain a higher return than the all the others.

In terms of fund types, equity funds attract higher net subscriptions than fixed income funds, as do other funds. On the other hand, *ceteris paribus*, guaranteed funds attract the least net subscriptions. Regarding this result, it should be remembered that in the period analysed the group of funds that grew the least was that of guaranteed funds. Finally, regarding the size variables, it is found that larger funds attract more net subscriptions, while funds belonging to larger managers would attract a smaller volume of net subscriptions. Because the funds with the greatest amounts of assets are usually managed by the biggest managers, it is not easy to discern which of these two effects might dominate.

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Lagged net subscriptions	0.002*	0.002*	0.002*	0.002*
Readability of investment policy	0.000	0.002	0.000	0.002
Readability of explanatory appendix	-0.001**	0.005	-0.000**	0.005
Low performance tercile <sup>4</sup>	0.001	0.001	0.063***	0.063***
Median performance tercile <sup>4</sup>	0.012	0.012	0.014	0.014*
High performance tercile <sup>4</sup>	0.040***	0.040***	-0.025	-0.024
Volatility	0.084*	0.081*	0.198***	0.196***
Management and deposit fees	-0.002	-0.002	-0.001	-0.001
Subscription fees	-0.001*	-0.001*	-0.001	-0.001
Redemption fees	0.001*	0.001*	0.001*	0.001*
Dummy equity funds	0.022***	0.022***	0.016***	0.016***
Dummy guaranteed funds	-0.026***	-0.025***	-0.028***	-0.027***
Dummy other funds	0.015**	0.015**	0.013**	0.013**
Fund assets	0.013***	0.013***	0.013***	0.013***
AuM of the mgt. company	-0.006***	-0.006***	-0.006***	-0.006***
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.0957	0.0958	0.0976	0.0976

Source: Compiled by the authors.

- 1 Subscriptions in the fund in the quarter minus redemptions in the quarter divided by the assets of the fund at the beginning of the quarter.
- 2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.
- 3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.
- 4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as: fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

## 6.2 Gross subscriptions

To carry out the analysis of gross subscriptions, two alternative models were used. In the first, a possible persistence on the part of investors who decide to subscribe to investment funds was taken into account. In the second, in addition to persistence, a variable was incorporated that included the possible existence of short-term trading by a significant portion of investors, as has been documented in some of the previous literature.<sup>29</sup>

29 See Bhargava and Dubosky (2001), Chalmers et al. (2001), Goetzmann et al. (2001), Greene and Hodges (2002), Zitzewitz (2006), and Cambón and Losada (2015).

Tables 4 and 5 show the results of the econometric analysis carried out on both models. In both cases it can be clearly seen that the readability of the investment policies of the funds is a significant variable when explaining these gross subscriptions. In addition, it can be established that the greater the readability of the investment policies, the lower the gross subscriptions that a fund would receive. This result, again, would not be in line with the results of Lawrence (2013). On the other hand, if the value of the estimated coefficients is taken into account, these are not very large, which, as for net subscriptions, limits their influence. Furthermore, in the case of the readability of the explanatory appendices, only weak evidence appears when measured by the Flesch-Szigriszt index. In this case, in terms of sign and magnitude, its interpretation would be analogous to that of the readability of the investment policy. Both models also share the fact that investors' persistence in subscribing to investment funds is very low, close to zero. Therefore, at least on a quarterly basis, investors who decide to subscribe to a mutual fund do not increase their subscription to the same fund during the following quarter.

Regarding the relationship between gross subscriptions and fund yields, leaving aside the participation of very short-term investors, it can be established that there is a non-linear relationship between both variables. In this case, it can be seen from the analysis that investors do not react to the returns of funds in the low and medium yield tranches. On the other hand, there would be a significant and positive relationship for the funds that present a high yield. This pattern of behaviour would be compatible with the winner-picking effect, substantially increasing subscriptions to better-performing funds compared to the rest. This result must be qualified when the presence of short-term investors is taken into account. In this case, when investors take gross return as the most important variable when considering a fund's performance, the result holds. However, when investors measure performance using the Sharpe ratio, there would not be a clear relationship between their subscriptions and the funds' performance. When these results are compared with those obtained in Cambón and Losada (2015), we see how persistence now plays a less significant role. It should also be noted that the winner-picking effect has become more important in recent years. At the same time, investors' sensitivity to poor results seems to have diminished.

As for the rest of the explanatory variables, the coefficients obtained for volatility in both specifications are shown as positive and significant. This means that investors in the period analysed have preferred to subscribe to funds with the highest volatility and, therefore, with more risk.

Gross subscriptions (excl. short-term trading)<sup>1, 3</sup>

TABLE 4

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Lagged gross subscriptions	0.011*	0.011*	0.011*	0.011*
Readability of investment policy	-0.002***	0.019***	-0.002***	0.019***
Readability of explanatory appendix	-0.001*	0.001	-0.001*	0.001
Low performance tercile <sup>4</sup>	-0.027	-0.026	-0.027	-0.027
Median performance tercile <sup>4</sup>	0.026	0.023	0.033	0.032
High performance tercile <sup>4</sup>	0.092**	0.097**	0.090***	0.096***
Volatility	1.407***	1.432***	1.467***	1.491***
Management and deposit fees	-0.045***	-0.045***	-0.043***	-0.043***
Subscription fees	-0.003*	-0.004**	-0.003*	-0.004**
Redemption fees	-0.009***	-0.008***	-0.009***	-0.009***
Dummy equity funds	-0.041***	-0.038**	-0.046***	-0.042**
Dummy guaranteed funds	-0.232***	-0.227***	-0.234***	-0.229***
Dummy other funds	-0.045***	-0.043***	-0.046***	-0.044***
Fund assets	0.027***	0.027***	0.027***	0.027***
AuM of the mgt. company	0.011***	0.011***	0.011***	0.011***
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.210	0.209	0.210	0.209

Source: Compiled by the authors.

1 Subscriptions made to the fund divided by the assets of the fund at the beginning of the quarter.

2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.

3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.

4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

Regarding the role played by fees, a significant negative relationship is obtained for both specifications, for both management and depository fees and redemption fees. On the other hand, subscription fees do not seem to play a significant role in investors' decisions to subscribe to a fund.

It should also be noted how, when using the model with possible persistence in gross subscriptions, equity, guaranteed and other funds present, *ceteris paribus*, lower subscriptions than fixed income funds. This result is nuanced when short-term investment is introduced: in this case, only the guaranteed funds would present lower gross subscriptions. Also in both models there is evidence that larger funds receive more gross subscriptions. However, when the size of the manager is taken into account, the results differ. In the case of the model in which only persistence is considered, the relationship is positive and significant. On the other hand, when short-term investment is introduced, the relationship becomes negative and also loses significance for the case in which the performance of the funds is measured through the Sharpe ratio.

Gross subscriptions (with short-term trading)<sup>1,3</sup>

TABLE 5

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Lagged gross subscriptions	0.011*	0.011*	0.011*	0.011*
Contemporary redemptions	0.528***	0.531***	0.529***	0.531***
Readability of investment policy	-0.001***	0.020**	-0.001***	0.021***
Readability of explanatory appendix	-0.001***	0.007	0.001***	0.006
Low performance tercile <sup>4</sup>	-0.039	-0.038	0.050	0.050
Median performance tercile <sup>4</sup>	0.026	0.025	0.038	0.038
High performance tercile <sup>4</sup>	0.119***	0.122***	0.020	0.024
Volatility	0.891***	0.899***	1.105***	1.113***
Management and deposit fees	-0.033***	-0.033***	-0.031***	-0.031***
Subscription fees	0.002	0.002	0.003*	0.002
Redemption fees	-0.005***	-0.005***	-0.005***	-0.005***
Dummy equity funds	0.008	0.012	-0.003	0.000
Dummy guaranteed funds	-0.190***	-0.143***	-0.154***	-0.147***
Dummy other funds	0.002	0.003	-0.001	0.000
Fund assets	0.031***	0.031***	0.031**	0.031***
AuM of the mgt. company	-0.003**	-0.003***	-0.003*	-0.003*
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.326	0.325	0.325	0.324

Source: Compiled by the authors.

1 Subscriptions made to the fund divided by the assets of the fund at the beginning of the quarter.

2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.

3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.

4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

### 6.3 Gross redemptions

For this analysis, we used the same two types of models as for gross subscriptions. In the first model, the possible existence of persistence in gross redemptions was taken into account, while in the second, in addition to persistence, the possible existence of short-term investment by a significant number of investors was also taken into account. For assessing the influence of the information contained in the periodic public information, only the explanatory appendix was taken into account. In this case, it was assumed that the investment policy would be known to investors requesting redemptions. Therefore, only the explanatory appendices would add to the information held by investors who are already participants in a fund.

Tables 6 and 7 show the results. According to these, the influence of the readability of the explanatory appendix on redemptions is limited. When the existence of short-term investors is not taken into account, it is found to be a non-significant variable. There is positive, albeit weak, evidence that readability of the appendices would tend to increase redemptions when short-term investors are taken into account. As in the previous cases, when the readability of the appendix is presented as significant, it can be seen that its estimation per point yields results that tend towards zero, which significantly limits its possible influence.

**Gross redemptions (without short-term trading)<sup>1, 3</sup>**

TABLE 6

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Lagged gross redemptions	0.142***	0.142***	0.143***	0.142***
Readability of explanatory appendix	0.000	-0.011	0.000	-0.010
Low performance tercile <sup>4</sup>	0.011	0.012	-0.155***	-0.155***
Median performance tercile <sup>4</sup>	-0.007	-0.008	-0.010	-0.010
High performance tercile <sup>4</sup>	-0.043*	-0.042*	0.128***	0.128***
Volatility	0.880***	0.877***	0.607***	0.603***
Management and deposit fees	-0.018***	-0.018***	-0.018***	-0.018***
Subscription fees	-0.010***	-0.010***	-0.010***	-0.010***
Redemption fees	-0.007***	-0.007***	-0.007***	-0.007***
Dummy equity funds	-0.084***	-0.084***	-0.071***	-0.071***
Dummy guaranteed funds	-0.137***	-0.138***	-0.134***	-0.134***
Dummy other funds	-0.079***	-0.080***	-0.075***	-0.075***
Fund assets	-0.007***	-0.007***	-0.006***	-0.006***
AuM of the mgt. company	0.024***	0.024***	0.024***	0.024***
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.265	0.265	0.270	0.270

Source: Compiled by the authors.

- 1 Redemptions divided by the fund's assets at the beginning of the quarter.
- 2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.
- 3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.
- 4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

Unlike what was observed in the case of subscriptions, net and gross, and as in Cambón and Losada (2015), there is persistence when gross redemptions of investment funds are considered. In this case, around 13-14% of the redemptions recorded in one quarter would be repeated in the next. It should also be noticed that the relationships between the returns obtained by the fund and the redemptions made depend on which variable is considered relevant when measuring the returns. When measured by gross return, only investors in the best-performing funds reacted to the

good results by making fewer subscriptions. In contrast, when investors measure performance using the Sharpe ratio, the relationship between performance and gross redemptions is U-shaped. This means that investors penalise the worst performing funds. At the same time, redemptions on better-performing funds would also increase, indicating that some of these investors take advantage of their good performance to unwind part of their positions. The same result also appears in Jank and Wedow (2010).

**Gross redemptions (with short-term trading)<sup>1, 3</sup>**

TABLE 7

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Lagged gross redemptions	0.129***	0.129***	0.129***	0.129***
Contemporary subscriptions	0.225***	0.225***	0.224***	0.224***
Readability of explanatory appendix	0.000*	-0.012	0.000**	-0.011
Low performance tercile <sup>4</sup>	0.015	0.015	-0.145***	-0.145***
Median performance tercile <sup>4</sup>	-0.009	-0.009	-0.014	-0.014
High performance tercile <sup>4</sup>	-0.062***	-0.061***	0.106***	0.106***
Volatility	0.612***	0.608***	0.328***	0.323***
Management and deposit fees	-0.008*	-0.008*	-0.009*	-0.009*
Subscription fees	-0.009***	-0.009***	-0.010***	-0.010***
Redemption fees	-0.005***	-0.005***	-0.006***	-0.006***
Dummy equity funds	-0.076***	-0.076***	-0.063***	-0.063***
Dummy guaranteed funds	-0.093***	-0.093***	-0.089***	-0.090***
Dummy other funds	-0.071***	-0.071***	-0.066***	-0.067***
Fund assets	-0.011***	-0.011***	-0.011***	-0.011***
AuM of the mgt. company	0.022***	0.022***	0.022***	0.023***
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.363	0.363	0.367	0.367

Source: Compiled by the authors.

- 1 Redemptions divided by the fund's assets at the beginning of the quarter.
- 2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.
- 3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.
- 4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

As for the rest of the variables considered, it is important to point out how greater volatility influences the increase in redemptions, although to a lesser extent than it does with gross subscriptions. In this case, fees help smooth out the redemptions made by investors. Since the bank-owned fund managers charge the highest fees on average, this result could show that these managers continue to exercise some market power, a result that was already found in Cambón and Losada (2015). By type of fund, it can be seen that, compared to fixed income funds, all types of funds experi-

ence lower redemptions. Unsurprisingly, that difference is larger for guaranteed funds. Finally, the largest funds would experience less redemptions, while the size of the manager would positively influence and increase the redemptions of the funds it manages.

#### **6.4 Readability of regulatory texts and participation costs**

In the previous literature, one of the aspects that have been highlighted is how investors must face participation costs when they approach the investment fund market and invest in it. For example, in Huang et al. (2007), it is stated that these costs are revealed in the non-linear relationship between the investment flows received by the funds and their performance. This is also especially relevant for investors in the retail sector (Cambón and Losada, 2015). These participation costs are especially linked to the information available to investors and how they can evaluate the funds before investing and during the time they make their investment. The information available to them notably includes the regulatory texts analysed in this article, which form part of the periodic public information. These texts are always available, since their production is mandatory and they must also be accessible to investors and the general public through the web pages of the managers, marketers and the CNMV itself. Therefore, these texts could contribute to reducing the costs of participation that investors must face. For this, two conditions would have to apply: first, investors really use these texts as one of the key pieces of information when making their investment decisions, both to invest and to disinvest from a fund. Second, the information these texts contain can really be understood and assimilated by investors. Thus, as previously mentioned, in this article readability metrics have been used as the best approximation available to be able to assess the ease with which investors understand and process periodic published information.

Regarding the first condition, it is the investors themselves who decide to what extent they base their investment decisions on the regulatory texts to which they have access. This could account, at least in part, for the low estimates of the degree of influence of the readability of the texts on investment flows. Regarding the readability and accessibility of the texts by investors, it would be interesting to know whether managers have an incentive to choose different levels of readability in the documents they produce depending on past performance of their funds. Specifically, we would like to know whether, when a fund obtains poor results, a manager could intervene to avoid investment flows being contrary to its interests. One of the possibilities would be to try to decrease readability and increase participation costs to try to increase subscriptions or decrease redemptions. Of course, if that possibility were to exist, it could have implications for one of the main objectives of financial regulation: investor protection.

Tables 8 and 9 show the results when gross subscriptions are taken into account. At the same time, Tables 10 and 11 show those corresponding to gross redemptions. These tables could reveal whether the necessary conditions exist for managers to have an incentive to make their texts more or less readable according to their interests. Thus, the tables with the results on gross subscriptions give evidence of how readability does not influence the participation costs that investors have to face in most of the scenarios considered. This possible influence only appears significant

when considering gross performance as the variable measuring performance and the number of words per sentence as that measuring readability. If the readability of the investment policy description were increased, it would result in a decrease in subscriptions. On the other hand, opposite results are obtained for the texts dedicated to explanatory appendices. Therefore, in this scenario, managers might have incentives to produce less readable investment policy texts.

**Effect of readability on gross subscriptions<sup>1,3</sup>**  
(with persistence and without short-term trading)

TABLE 8

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Readability of investment policy	-0.001	-0.011	-0.001	0.008
Readability of explanatory appendix	-0.002***	0.026*	-0.001**	0.012
Low performance tercile* Readability of policy <sup>4</sup>	-0.003	0.115**	-0.002	0.036
Median tercile performance* Readability of policy <sup>4</sup>	0.001	-0.001	-0.000	0.001
High performance tercile* Readability of policy <sup>4</sup>	-0.001	-0.012	0.003	0.025
Low performance tercile* Readability of appendix <sup>4</sup>	0.003	-0.102**	-0.001	-0.052
Median tercile performance* Readability of appendix <sup>4</sup>	-0.001	0.008	0.001	0.005
High performance tercile* Readability of appendix <sup>4</sup>	0.003*	0.063	0.001	0.029
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.221	0.220	0.219	0.219

Source: Compiled by the authors.

1 Subscriptions in the fund during the quarter divided by the assets of the fund at the beginning of the quarter.

2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.

3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.

4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

**Effect of readability on gross subscriptions<sup>1,3</sup>**  
(with persistence and with short-term trading)

TABLE 9

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Readability of investment policy	-0.000	-0.010	-0.001*	0.010
Readability of explanatory appendix	-0.002***	0.029**	-0.001*	0.008
Low performance tercile* Readability of policy <sup>4</sup>	-0.004	0.116**	-0.000	0.008
Median tercile performance* Readability of policy <sup>4</sup>	0.001	-0.010	-0.001	0.040
High performance tercile* Readability of policy <sup>4</sup>	-0.001	0.015	0.001	0.028
Low performance tercile* Readability of appendix <sup>4</sup>	0.003	-0.100**	0.001	0.005
Median tercile performance* Readability of appendix <sup>4</sup>	-0.001	0.021	0.001	-0.0025
High performance tercile* Readability of appendix <sup>4</sup>	0.003*	0.040	0.001	0.006
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.336	0.336	0.333	0.334

Source: Compiled by the authors.

- 1 Subscriptions in the fund during the quarter divided by the assets of the fund at the beginning of the quarter.
- 2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.
- 3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.
- 4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

There is also a relationship between the texts of the explanatory appendices and the participation costs that investors face when redeeming their shares when the performance is measured by means of the Sharpe ratio. However, the evidence obtained is mixed and crucially depends on how the readability of texts is measured. Thus, when this is measured by the Flesch-Szigriszt index, an increase in readability would translate into a decrease in redemptions for funds with worse returns and an increase for those with better returns. However, this result would not be robust when readability is measured by the number of words per sentence.

On the one hand, it is normal to find empirical evidence for the texts of the explanatory appendices, given the greater variability of the readability of this type of text over time compared to those from the description of investment policies (Figures 3 and 4). Another significant aspect of the estimates obtained is that they have small values in absolute terms, which again suggests that these texts have only a limited influence on the investment decisions made by the participants in this market.

**Effect of readability on gross redemptions<sup>1,3</sup>**  
**(with persistence and without short-term trading)**

TABLE 10

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Readability of explanatory appendix	-0.000*	-0.007	0.001***	-0.003
Low performance tercile* Readability of appendix <sup>4</sup>	-0.000	-0.007	-0.002***	-0.053***
Median tercile performance* Readability of appendix <sup>4</sup>	-0.000	-0.008	-0.000	-0.005
High performance tercile* Readability of appendix <sup>4</sup>	-0.000	-0.006	0.001***	0.027***
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.274	0.274	0.282	0.282

Source: Compiled by the authors.

- 1 Redemptions in the quarter divided by the fund's assets at the beginning of the quarter.
  - 2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.
  - 3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.
  - 4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.
- \*\*\* Significance at 1%.  
 \*\* Significance at 5%.  
 \* Significance at 10%.

**Effect of readability on gross redemptions<sup>1,3</sup>**  
**(with persistence and with short-term trading)**

TABLE 11

	Gross yield		Sharpe ratio <sup>2</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Readability of explanatory appendix	0.001***	-0.007	0.001***	0.002
Low performance tercile* Readability of appendix <sup>4</sup>	-0.000	-0.007	-0.002***	-0.050***
Median tercile performance* Readability of appendix <sup>4</sup>	-0.000	-0.009	-0.000	-0.006
High performance tercile* Readability of appendix <sup>4</sup>	-0.001***	-0.015**	0.001***	0.167***
Number of observations	68,746	68,746	68,746	68,746
R <sup>2</sup>	0.371	0.371	0.377	0.377

Source: Compiled by the authors.

- 1 Subscriptions in the fund during the quarter divided by the assets of the fund at the beginning of the quarter.
  - 2 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.
  - 3 Fama-MacBeth estimation methodology with standard errors robust to serial correlation.
  - 4 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.
- \*\*\* Significance at 1%.  
 \*\* Significance at 5%.  
 \* Significance at 10%.

## 6.5 Determinants of the readability of regulatory texts

In the foregoing section, an attempt has been made to find out how the characteristics of the information in the regulatory texts that investors receive influence their investment decisions in investment funds. To complement the analysis, it would be interesting to know how the decisions of investors and the characteristics of the funds influence the characteristics of the regulatory texts. In other words, the question is how investor decisions and fund characteristics influence the readability of the description of the investment policy and the explanatory appendix that appear in the quarterly periodic public information of investment funds.

The econometric analysis carried out is based on a linear equation that relates the readability of the texts to the gross investment flows of the funds, in addition to other relevant variables such as past performance. As in the previous section, to model the performance of the funds, it has been sorted out assigning a value of 0 to the fund with the worst performance and 1 to the fund with the best performance in each quarter. This process has been carried out for each fund within the group to which it belongs: fixed income funds, equity funds, guaranteed and passive management funds, and other funds. The metrics used to measure performance are the gross return and the Sharpe ratio. Once the funds were ordered, they were grouped depending on which tercile they belong to. In addition to the variables that include the readability of the texts that investors receive and the performance of the funds, the regression equation considers other control variables such as: the volatility of the returns, the implicit and explicit fees that the investors pay (management, deposit, subscription and redemption fees) and the size of the fund's assets and of its management company (in logarithms). Specifically, for each type of text, the equation used is the following:

$$\text{Readability}_{ijkt} = \beta_1 \text{Gross subscriptions}_{ijkt} + \beta_2 \text{Gross redemptions}_{ijkt} + \beta_3 \text{Poor performance}_{ijkt} + \beta_4 \text{Average yield}_{ijkt} + \beta_5 \text{High yield}_{ijkt} + \delta \chi_{ijkt} + \gamma_j + \theta_k + \lambda_t + \mu_i + \varepsilon_{ijkt} .$$

Where the dependent variable can be the readability of the text corresponding to the background  $i$ , which belongs to the group of vocations  $j$  and the manager  $k$  in quarter  $t$ . Readability has been measured using the Flesch-Szigriszt index and the number of words per sentence. In all cases, the variables reflecting gross subscriptions and redemptions have been expressed as a percentage of the fund's assets at the end of the quarter. The performance variables are those posted in quarter  $t$  grouped into the three terciles (low, medium and high). In addition to control variables such as volatility, fees paid by investors and size of the fund and its manager, the following are also included: a dummy variable for each of the style groups into which the sample has been divided and a dummy variable for each quarter of the sample. Lastly, the possibility that there are fixed effects is also taken into account and, therefore the equation incorporates an error which varies only individually with each fund.<sup>30</sup>

The estimates of the parameters of the equations have been obtained by applying the method of fixed effects clustered by quarters proposed by Correia (2016). It is

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30 The model has been estimated under the assumptions of random effects and fixed effects. Once the Hausman (1978) test had been applied, it was concluded that fixed effects must appear in the specification of the model.

important to point out that for this econometric analysis, funds with assets of less than €1 million at the end of each quarter were excluded. In addition, all the variables were winsorised so that for each variable, the 1% of both tails at their distribution were not considered.

As it can be seen in Table 12, the readability of the descriptions of the investment policy of the funds is more sensitive to subscription and redemption flows when measured by the Flesch-Szigriszt index. In this sense, readability would increase with higher redemptions and there is weaker evidence that it would decrease with increasing gross subscriptions. This result could show how the managers make an effort to attract new investors in the face of an increase in the outflow of money from their funds. This result is only partially confirmed when readability is measured by the number of words per sentence. In that case, there is weak evidence that readability is higher when redemptions increase.

**Investment policy readability<sup>1</sup>**

TABLE 12

	Gross yield		Sharpe ratio <sup>4</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Contemporary gross subscriptions <sup>2</sup>	-0.220*	0.002	-0.219*	0.002
Contemporary gross redemptions <sup>3</sup>	0.182***	0.006*	0.179***	0.007*
Low performance tercile <sup>5</sup>	-0.375**	0.007	0.026	0.012
Median performance tercile <sup>5</sup>	-0.008	-0.006	-0.009	-0.132
High performance tercile <sup>5</sup>	0.253	-0.001	0.489**	-0.019**
Volatility	2.214***	-0.216**	2.374***	-0.216**
Management and deposit fees	1.199***	-0.007	1.212***	-0.007
Subscription fees	0.027	0.002	0.027	0.002
Redemption fees	0.070*	0.001	0.070*	0.001
Dummy equity funds	-1.702***	-0.050***	-1.727***	-0.050***
Dummy guaranteed funds	0.039	-0.159***	0.047	-0.159***
Dummy other funds	-1.243***	-0.055***	-1.261***	-0.055***
Fund assets	-0.203***	-0.001	-0.202***	-0.01
AuM of the mgt. company	0.286***	-0.026***	0.287***	-0.026***
Number of observations	76,166	76,166	76,166	76,166
R <sup>2</sup>	0.771	0.809	0.771	0.809
Fixed effects funds	Yes	Yes	Yes	Yes
Quarterly fixed effects	Yes	Yes	Yes	Yes

Source: Compiled by the authors.

1 The model has been estimated using the fixed effects model and with time clusters per quarter.

2 Subscriptions made to the fund divided by the assets of the fund at the beginning of the quarter.

3 Redemptions divided by the fund's assets at the beginning of the quarter.

4 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.

5 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.

When trying to establish the relationships between the readability of the investment policy texts and the returns obtained by the funds, interesting results are found from the point of view of investor protection. Thus, when performance is measured by gross return, the readability measured by the Flesch-Szigriszt index is higher for funds that belong to the low return tercile. On the other hand, when performance is measured through the Sharpe ratio, the funds with the best performance would have an investment policy that is more accessible to their investors. In addition, no sensitivity is found between the readability of investment policies and the worst-performing funds.

The results are robust in that the funds with the highest volatility would be associated with investment policies that try to be more accessible to their investors and potential investors. Regarding the type of investment funds, fixed income funds offer investment policies that are easier to read than equity funds and those that belong to the category of other funds. As for the other variables considered, the fees paid by investors would not play a large role in determining the readability of investment policies. Only management and depository fees appear as relevant when readability is measured in terms of the Flesch-Szigriszt index. In this case, the funds with higher fees would have more readable investment policies. This result could be positive from an investor protection point of view. This is because the higher fee funds are often held by retail investors. By the same token, the larger managers would also write texts that would be easier for investors to read. It should be remembered that these types of managers are usually linked to banks and that a very important part of their business is linked, again, to the retail market.

Table 13 shows the results in terms of which variables would have a significant effect on the readability of the explanatory appendices contained in the periodic public information of the investment funds. When the results are observed, one of the first conclusions is that the variability of the readability of this type of text depends more on the investment flows than on the returns experienced by the fund. It is established that readability increases with gross subscriptions and tends to decrease when redemptions increase. While it is true that the variation in gross subscriptions seems to weigh more, the coefficient being more than double that associated with redemptions. On top of this, there is little evidence that the fund's returns influence the readability of the explanatory appendices contained in the periodic published information.

As for the other variables, neither the returns nor the volatilities of the funds seem to play a significant role. On the other hand, the fees paid by investors do seem to influence the readability of these texts. In particular, higher management and deposit and redemption fees would result in less readable texts. The opposite happens with subscription fees, which would contribute to increasing the readability of these texts.<sup>31</sup> In contrast to the results of the texts that describe the investment policy, in this case, the texts available to retail investors could have less readability. This effect could be lower in the case of guaranteed funds, because they are the only ones that exhibit greater readability in their appendix compared to other

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31 It is appropriate to recall that most retail funds, except for guaranteed funds, do not usually apply subscription or redemption fees.

types of funds. Finally, the size variables show opposite signs. On the one hand, the larger funds would have greater readability in their texts, while the larger managers would tend to produce less readable texts for their clients. Due to the magnitude of the signs, the second effect would dominate over the first and, since this type of manager dominates the retail segment, this type of investor could receive texts with a lower readability.

## Readability of the explanatory appendix<sup>1</sup>

TABLE 13

	Gross yield		Sharpe ratio <sup>4</sup>	
	Flesch-Szigriszt index	Words per sentence	Flesch-Szigriszt index	Words per sentence
Contemporary gross subscriptions <sup>2</sup>	0.596***	-0.018**	0.599***	0.018**
Contemporary gross redemptions <sup>3</sup>	-0.262***	0.002	-0.263***	0.002
Low performance tercile <sup>5</sup>	0.318	-0.018*	0.002	0.003
Median performance tercile <sup>5</sup>	0.073	0.006	0.352	-0.024**
High performance tercile <sup>5</sup>	-0.037	-0.016	-0.579*	0.023*
Volatility	2.536	-0.000	2.223	0.014
Management and deposit fees	-0.334**	0.017**	-0.341**	0.017**
Subscription fees	0.188***	-0.006**	0.188***	-0.006**
Redemption fees	-0.316***	0.015***	-0.316***	0.015***
Dummy equity funds	-0.362	-0.016	-0.013	-0.016
Dummy guaranteed funds	1.320***	-0.096***	1.330***	-0.096***
Dummy other funds	0.438*	-0.007	0.453*	-0.007
Fund assets	0.182***	-0.009***	0.181***	-0.009***
AuM of the mgt. company	-0.295**	0.007	-0.296***	0.007
Number of observations	76,166	76,166	76,166	76,166
R <sup>2</sup>	0.461	0.477	0.461	0.477
Fixed effects funds	Yes	Yes	Yes	Yes
Quarterly fixed effects	Yes	Yes	Yes	Yes

Source: Compiled by the authors.

1 The model has been estimated using the fixed effects model and with time clusters per quarter.

2 Subscriptions made to the fund divided by the assets of the fund at the beginning of the quarter.

3 Redemptions divided by the fund's assets at the beginning of the quarter.

4 The Sharpe ratio is calculated by subtracting the risk-free interest rate from the gross return and dividing the result by the volatility of the fund's returns.

5 The underperforming tercile is defined as min. (fund rank 0.33), median return tercile is defined as min. (0.33 fund rank – low return tercile) and high return tercile is defined as fund rank – medium return tercile – low return tercile.

\*\*\* Significance at 1%.

\*\* Significance at 5%.

\* Significance at 10%.



## 7 Conclusions

In recent years, a growing literature has been developed in finance on how the information to which investors are exposed could affect their decisions. In principle, this literature focuses on analysing the information contained in texts that come from both the media and the regulations that emanate from the principle of investor protection. Investors, especially retail investors, when they want to invest through the financial markets, often have to deal with a problem of asymmetric information. This fact leads them to have to face participation costs. That is why the regulation requires both issuers of securities and fund managers to issue certain documents that can help them when trying to figure out their investment decisions.

This article has evaluated how the information contained in the periodic public information of investment funds can influence the investment decisions of their participants. Specifically, the analysis has focused on how these decisions are influenced by the ease with which investors can understand and assimilate the information contained in those documents. To do this, two texts from the periodic public information of the funds have been considered: the one that describes their investment policy and the explanatory appendix, in which the managers describe the evolution of their portfolio and their forecasts for the future. The article covers the entire universe of investment funds registered with the CNMV and covers the period from the second quarter of 2009 to the first quarter of 2020.

Two types of analysis have been carried out: one that can be considered descriptive and the other econometric. Within the descriptive analysis, it can be noted that the texts of the investment policy are usually more difficult to understand than those dedicated to the explanatory appendices. Thus, on average, the level of studies necessary for investment policy texts to be accessible to investors is Baccalaureate. On the other hand, those of the explanatory appendices would be accessible to investors with Compulsory Secondary Education. Another interesting result is that throughout the period considered, the readability of both types of texts has improved.

In the econometric analysis, an extension of the model used in Cambón and Losada (2015) has been used. In that model, it was assumed that both net and gross subscriptions and redemptions depended non-linearly on the returns obtained by the fund and on other characteristics of the fund such as: its volatility, its size and the fees it charges its participants. In this article, the model has been extended to include as explanatory variables the readability of the texts that describe the investment policy and the explanatory appendix contained in the periodic public information. The size of the management companies and the existence of different types of funds have also been considered in the equation, by expanding the universe of funds analysed to all the funds registered with the CNMV, not just equity funds.

From the analysis of how the readability of the texts of the periodic public information influences the net subscriptions of funds, it can be concluded that the readability of the texts that describe the investment policy has no influence. On the other hand, the readability of the texts of the explanatory appendix is negatively related to the net subscriptions registered by the funds. Therefore, increases in the readability of these texts could translate into lower net subscriptions for investment funds, although the coefficients obtained are small, which can be interpreted as a rather limited influence.

Regarding its influence on gross subscriptions, it can be seen how these are negatively related to the readability of the investment policy. However, in this case, the readability of the explanatory appendices tends not to have an influence on the gross subscriptions registered in the investment funds. For its part, the empirical evidence found on the relationship of the readability of the explanatory appendices with redemptions is positive. Investors' redemptions seem to increase when appendices are more readable. In any case, the results of the estimates of the coefficients, both for gross subscriptions and redemptions, are small and the influence on them would again be limited.

A fundamental aspect is to know whether these regulatory texts could help reduce the costs of participation faced by investment fund participants. The results show how the ease of understanding these texts plays a role that can be described as not very significant in this regard. Among the results found, there is weak evidence that an increase in the readability of investment policies would reduce the cost of participation of investors in funds with worse results. In this case, the managers could find incentives to write less readable texts for these funds. Regarding the managers' incentives, the opposite would happen with redemptions and the explanatory appendices. In this case, an increase in readability would reduce the participation costs of investors in the worst performing funds and thereby reduce the propensity of these investors to redeem their participations.

The results show that the texts contained in the periodic public information could have a limited influence on the investment decisions made by current and potential participants. This result reveals how, for the information contained in the periodic published information to help improve the participation costs faced by investors, two conditions must be met at the same time. The first is that they are easily comprehensible texts. The second is that investors use and incorporate the information into their decision-making. Therefore, in addition to any improvement in the readability of regulatory texts, it would be appropriate to encourage their use by investors and thereby reduce their participation costs.

Another of the aspects that completes the analysis is the attempt to ascertain the factors playing a role in the readability of the texts, both of the investment policies and of the explanatory appendices. For this, a model with fixed effects has been used, in which the readability of the texts depends linearly on: the gross flows registered by the fund, the volatility, its size and that of its manager, and the fees charged to the investors. In this model and analogously to the model that has been used to analyse the flows, the readability of the texts also depends non-linearly on the yields of the funds.

Regarding the readability of investment policies, it is found that they depend positively on the redemptions made by investors. There is also weaker evidence that the

relationship with gross subscriptions is negative. These results could point out that managers try to attract new investors when there is a large outflow of money from their funds. There is also evidence that the funds with the best returns are those that have a description of their investment policy that is more accessible to their investors. For the case of funds with worse results, no sensitivity is found. On the other hand, the study shows how funds with higher volatilities would have more readable investment policy texts. Regarding the type of funds, fixed income funds would offer investment policies that are easier to understand than those of equity funds and those of the category of other funds. Fees paid by investors would play a limited role: there is weak evidence that funds with higher management and deposit fees would have higher readability. This last result reflects a positive trend, as these are funds that are usually linked to retail investment.

With regard to the readability of the explanatory appendices, it is established how it increases with gross subscriptions and tends to decrease when redemptions increase. In any case, the variation in gross subscriptions seems to weigh more, the coefficient being more than double that associated with redemptions. As for the returns on the funds, there is little evidence that they influence the readability of the appendices. Regarding the rest of the variables, higher management and deposit and redemption fees would result in less accessible texts. A similar result is obtained when the size of the fund managers is taken into account. Therefore, in contrast to the texts of the investment policies, the texts of the explanatory appendices available to retail investors would have a tendency to show less readability.

Regarding the rest of the results derived from the econometric analysis, it is interesting to notice that in comparison with Cambón and Losada (2015), the flows of funds show less persistence, especially in the case of net and gross subscriptions. It is also worth noting that net subscriptions have lost sensitivity to better performing funds. However, this is not because gross subscriptions have lost sensitivity to better performing funds. On the contrary, the winner-picking effect continues to operate more strongly than in Cambón and Losada (2015). What is shown differently in this article is that investors in the best performing funds would make redemptions that are at a level similar to that of gross subscriptions. In this sense, it would be interesting to study in more depth whether the low interest rate policy could have changed the behaviour and incentives of investors in recent years. Nevertheless, it should be borne in mind in these comparisons with Cambón and Losada (2015) that in their work only equity funds were considered whereas in this work all categories of funds that can be registered with the CNMV are considered. Another important difference is that in Cambón and Losada (2015) the time period was different and their data frequency was annual, while in this work it is quarterly.



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# Appendix I

In the first quarter of 2010, the investment fund with registration number 27, called “Caixa Catalunya Forecast FI”, published in its periodic information the following information in section 1: “Investment policy and denomination currency” and in section 9: “Explanatory appendix to the periodic report”:

## 1. Política de inversión y divisa de denominación

<b>Categoría</b> Vocación inversora: Garantizado de Rendimiento Fijo    Perfil de Riesgo: Bajo
<b>Descripción general</b> Política de inversión: El patrimonio del Fondo se invertirá fundamentalmente en activos de Deuda pública, tanto nacional como la emitida por el resto de Estados miembros de la Unión Europea, sin dar preferencia a una sobre las otras, Deuda de las Comunidades Autónomas, Pagarés de Empresa, títulos hipotecarios, así como en otros activos de Renta Fija privada, tanto nacionales como extrajeros, indistintamente. La inversión se realizará en emisiones que tengan calificación crediticia al menos igual a BBB según la agencia S&P, o su equivalente en Moody's o Fitch IBCA. Si alguna emisión no ha sido calificada, se tendrá en cuenta la calificación crediticia del emisor.
<b>Operativa en instrumentos derivados</b> Se han realizado operaciones en instrumentos derivados.
Una información más detallada sobre la política de inversión del Fondo se puede encontrar en su folleto informativo.
<b>Divisa de denominación</b> EUR

## 9. Anexo explicativo del informe periódico

<p>La incertidumbre que acompañó gran parte de los dos primeros meses del año, acompañada por la situación de Grecia y su abultado nivel de endeudamiento, tuvo un impacto negativo en los mercados de renta variable, si bien el último mes del trimestre compensaba gran parte de estas caídas ante una mejora en el sentimiento económico.</p> <p>Así, el Índice MSCI World finaliza el trimestre con un +2,74%, gracias al +5,93% de marzo. En Estados Unidos, el Índice S&amp;P ha acumulado en el trimestre un +4,87%, el tecnológico Nasdaq un +5,27% y el Dow Jones un +4,11%.</p> <p>Marzo también fue un buen mes para las bolsas europeas, si bien en algunos casos fue insuficiente para situar la rentabilidad del trimestre en positivo, como es el caso del Eurostoxx, con un -1,14%, o el caso más significativo del Ibex 35, que pese al avance del 5,20% en marzo, cierra el trimestre con una rentabilidad negativa del -8,95%.</p> <p>En el resto de las principales plazas europeas, el comportamiento fue más análogo al estadounidense, con el Dax subiendo un 3,29% o el Footsie, un +4,93%.</p> <p>Los mercados emergentes cierran de media con un +2,11%. En Europa del Este (+4,84%) destaca Rusia, con un +11,65%, y en Latam (+1,97%), encontramos rendimientos trimestrales positivos como los de Méjico (+3,57%) o Brasil (+2,60%). Asia no ha experimentado en general un comportamiento tan favorable, con China retrocediendo en el trimestre un -3,10%. India se sitúa ligeramente en positivo con un +0,36%.</p> <p>Japón destaca favorablemente dentro de los mercados de renta variable, gracias al 7,85% del Topix en el trimestre o el +5,15% del Nikkei.</p> <p>Factores como las dudas sobre la capacidad de Grecia para hacer frente a su deuda han impulsado la depreciación del euro que retrocede ante el dólar un -5,57%, al igual que frente al yen (-5,27%).</p> <p>El Euribor 12 cerró a niveles del 1,212%, mientras que el 3 meses lo hizo en el 0,635%. Los tipos de interés de las principales economías se han mantenido en niveles mínimos. Así, la Reserva Federal estadounidense los mantuvo en el 0,25%, y afirmó que ante las perspectivas de evolución de las principales variables económicas, los tipos se mantendrían probablemente en niveles mínimos durante un prolongado periodo de tiempo. El Banco Central Europeo tampoco efectuó modificaciones, dejando los tipos en el 1%.</p>
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## Appendix II

**Descriptive statistics of the database (fixed income funds)<sup>1</sup>**

TABLE 14

Variable	Average	Standard deviation	Min.	P5	P25	P50	P75	P95	Max.
Readability of the fund invest. policy (Flesch-Szigriszt index)	53.6	5.6	38.4	44.7	50.0	53.5	57.0	62.1	68.9
Readability of the fund appendix (Flesch-Szigriszt index)	58.6	5.6	26.3	49.2	54.9	58.8	62.6	67.6	71.0
Words per sentence, fund policy (mean)	13.5	2.7	7.2	9.5	11.7	13.3	15.1	18.8	21.2
Words per sentence, fund appendix (mean)	18.4	4.2	9.8	11.9	15.3	18.3	21.0	26.0	30.4
Number of words, fund policy	219.4	136.6	78	95	134	182	262	442	924
Number words, fund appendix	1,218.4	731.9	178	358	658	1,044	1,621	2,645	3,596
Number of sub-funds	0.04	0.42	0	0	0	0	0	0	10
Series number	0.56	1.10	0	0	0	0	1	3	8
Net subscriptions <sup>2</sup>	0.033	0.223	-0.256	-0.230	-0.074	-0.017	0.052	0.614	0.811
Gross subscriptions <sup>2</sup>	1.207	2.579	0.000	0.000	0.068	0.287	0.901	8.258	11.675
Gross redemptions <sup>2</sup>	0.934	1.719	0.011	0.016	0.131	0.318	0.777	5.645	7.743
Quarterly return (%)	0.00	1.07	-5.82	-1.60	-0.12	0.05	0.33	1.44	2.96
Sharpe ratio	-0.25	2.26	-14.8	-2.68	-0.64	-0.01	0.54	1.79	6.72
Quarterly volatility (%)	1.03	1.18	0.00	0.02	0.17	0.66	1.38	3.60	5.88
Management fees (%)	0.83	0.45	0.10	0.20	0.50	0.80	1.10	1.68	2.25
Depository fees (%)	0.09	0.05	0.00	0.01	0.05	0.10	0.10	0.20	0.20
Subscription fees (%)	0.16	0.79	0.00	0.00	0.00	0.00	0.00	0.50	5.00
Redemption fees (%)	0.27	0.87	0.00	0.00	0.00	0.00	0.00	2.00	5.00
Fund assets (tens of millions of euros)	1.2	2.4	0.1	0.3	1.2	3.6	11	58	149
AuM of the mgt. co. (hundreds of millions of euros)	97	125	0.3	1.3	8.0	42.7	147	391	454
Risk-free asset return (%)	0.06	0.18	-0.17	-0.14	-0.10	0.03	0.17	0.43	0.48
Number of observations 25,263									

Source: CNMV and authors.

1 All variables have been winsorised to 1% at both extremes of their distributions.

2 Divided by the fund's assets at the beginning of the quarter.

**Descriptive statistics of the database (equity funds)<sup>1</sup>**

TABLE 15

Variable	Average	Standard deviation	Min.	P5	P25	P50	P75	P95	Max.
Readability of the fund invest. policy (Flesch-Szigriszt index)	50.9	5.5	32.6	41.5	47.3	51.2	54.7	60.0	65.7
Readability of the fund appendix (Flesch-Szigriszt index)	58.0	5.7	31.2	48.2	54.3	58.2	62.0	67.1	76.9
Words per sentence, fund policy (mean)	13.8	2.7	8.1	9.7	11.8	13.5	15.4	18.7	20.5
Words per sentence, fund appendix (mean)	18.0	4.4	9.2	11.4	14.7	17.8	20.9	25.9	30.5
Number of words, fund policy	220.0	152.5	74	88	130	178	266	450	1098
Number words, fund appendix	1,270.9	729.5	172	397	723	1,092	1,683	2,710	3,636
Number of sub-funds	0.10	0.76	0	0	0	0	0	0	11
Series number	0.57	1.01	0	0	0	0	1	3	6
Net subscriptions <sup>2</sup>	0.055	0.201	-0.189	-0.157	-0.041	-0.001	0.070	0.586	0.773
Gross subscriptions <sup>2</sup>	0.849	1.664	0.002	0.004	0.069	0.233	0.689	5.408	7.401
Gross redemptions <sup>2</sup>	0.601	1.095	0.009	0.013	0.092	0.208	0.489	3.684	4.901
Quarterly return (%)	0.00	4.19	-18.38	-7.10	-1.72	0.43	2.37	5.94	8.53
Sharpe ratio	0.08	0.52	-1.14	-0.77	-0.30	0.09	0.44	0.98	1.28
Quarterly volatility (%)	6.89	4.14	0.95	1.89	4.13	5.95	8.58	15.57	22.08
Management fees (%)	1.56	0.52	0.10	0.55	1.25	1.60	2.00	2.25	2.25
Depository fees (%)	0.11	0.05	0.00	0.02	0.08	0.1	0.15	0.2	0.2
Subscription fees (%)	0.05	0.42	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Redemption fees (%)	0.53	1.12	0.00	0.00	0.00	0.00	0.00	4.00	5.00
Fund assets (tens of millions of euros)	5.4	11.7	0.1	0.2	0.7	1.6	4.4	23.4	85.7
AuM of the mgt. co. (hundreds of millions of euros)	88.9	123.0	0.2	1.1	5.9	29.2	127	391	461
Risk-free asset return (%)	0.06	0.18	-0.17	-0.14	-0.10	0.03	0.17	0.43	0.48
Number of observations 23,156									

Source: CNMV and authors.

1 All variables have been winsorised to 1% at both extremes of their distributions.

2 Divided by the fund's assets at the beginning of the quarter.

**Descriptive statistics of the database (guaranteed funds)<sup>1</sup>**

TABLE 16

Variable	Average	Standard deviation	Min.	P5	P25	P50	P75	P95	Max.
Readability of the fund invest. policy (Flesch-Szigriszt index)	54.5	7.5	38.7	42.1	49.8	55.0	60.0	67.9	78.1
Readability of the fund appendix (Flesch-Szigriszt index)	58.7	6.0	32.2	48.7	54.7	59.0	62.8	68.4	78.5
Words per sentence, fund policy (mean)	9.9	3.3	3.5	4.9	7.2	9.9	12.1	15.7	18.3
Words per sentence, fund appendix (mean)	18.1	4.4	8.1	11.5	15.0	17.8	20.7	26.0	29.9
Number of words, fund policy	181.7	96.7	79	93	117	153	213	384	606
Number words, fund appendix	1,002.8	604.1	116	190	584	860	1,320	2,180	3,042
Number of sub-funds	0.00	0.02	0	0	0	0	0	0	1
Series number	0.22	0.79	0	0	0	0	0	2	6
Net subscriptions <sup>2</sup>	-0.033	0.082	-0.309	-0.248	-0.039	-0.014	-0.003	0.056	0.149
Gross subscriptions <sup>2</sup>	0.140	0.344	0.000	0.000	0.000	0.000	0.020	1.056	1.348
Gross redemptions <sup>2</sup>	0.211	0.358	0.002	0.003	0.023	0.067	0.195	1.179	1.541
Quarterly return (%)	0.22	1.32	-4.27	-1.70	-0.13	0.05	0.52	2.55	5.73
Sharpe ratio	-0.09	1.06	-6.92	-1.29	-0.40	-0.00	0.39	1.14	1.73
Quarterly volatility (%)	1.93	2.53	0.01	0.07	0.39	1.08	2.36	7.00	14.63
Management fees (%)	0.89	0.43	0.10	0.25	0.55	0.87	1.17	1.70	2.25
Depository fees (%)	0.08	0.04	0.00	0.03	0.05	0.09	0.10	0.16	0.20
Subscription fees (%)	3.41	2.13	0.00	0.00	1.00	5.00	5.00	5.00	5.00
Redemption fees (%)	2.56	1.93	0.00	0.00	0.00	3.00	5.00	5.00	5.00
Fund assets (tens of millions of euros)	6.2	7.7	0.2	0.5	1.6	3.3	7.5	22.3	43.7
AuM of the mgt. co. (hundreds of millions of euros)	142	133	2.3	6.9	25.6	77.9	235	398	453
Risk-free asset return (%)	0.06	0.18	-0.17	-0.14	-0.10	0.03	0.17	0.43	0.48
Number of observations 29,042									

Source: CNMV and authors.

1 All variables have been winsorised to 1% at both extremes of their distributions.

2 Divided by the fund's assets at the beginning of the quarter.

**Descriptive statistics of the database (other funds)<sup>1</sup>**

TABLE 17

Variable	Average	Standard deviation	Min.	P5	P25	P50	P75	P95	Max.
Readability of the fund invest. policy (Flesch-Szigriszt index)	52.1	5.1	38.2	43.9	48.2	52.2	55.5	60.4	67.1
Readability of the fund appendix (Flesch-Szigriszt index)	58.8	5.7	29.0	48.4	55.1	59.2	63.0	67.9	72.9
Words per sentence, fund policy (mean)	14.1	2.8	8.5	9.6	12.3	14.0	15.9	19.2	22.5
Words per sentence, fund appendix (mean)	17.5	4.3	9.0	11.1	14.2	17.1	20.1	25.7	29.9
Number of words, fund policy	228.5	131.7	74	104	150	196	265	419	1026
Number words, fund appendix	1,257.9	720.1	183	370	723	1,102	1,638	2,684	3,723
Number of sub-funds	0.13	0.91	0	0	0	0	0	0	11
Series number	0.43	0.92	0	0	0	0	0	2	6
Net subscriptions <sup>2</sup>	0.053	0.234	-0.223	-0.196	-0.052	-0.001	0.001	0.684	0.912
Gross subscriptions <sup>2</sup>	0.632	1.269	0.000	0.000	0.028	0.154	0.548	3.921	5.752
Gross redemptions <sup>2</sup>	0.393	0.626	0.000	0.001	0.059	0.169	0.400	2.077	2.782
Quarterly return (%)	-0.13	2.35	-11.70	-3.90	-2.29	0.08	0.83	2.95	5.67
Sharpe ratio	-0.00	0.65	-1.96	-1.09	-0.41	0.01	0.44	1.03	1.49
Quarterly volatility (%)	2.98	2.92	0.08	0.32	0.97	2.14	6.35	8.70	16.45
Management fees (%)	1.07	0.44	0.10	0.35	0.75	1.00	1.35	1.85	2.25
Depository fees (%)	0.09	0.04	0.00	0.02	0.07	0.10	0.10	0.15	0.20
Subscription fees (%)	0.15	0.77	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Redemption fees (%)	0.18	0.78	0.00	0.00	0.00	0.00	0.00	1.00	5.00
Fund assets (millions of euros)	5.6	13.1	0.1	0.2	0.5	1.4	4.1	25.0	90.9
AuM of the mgt. co. (millions of euros)	69.2	119	0.1	0.6	3.0	11.6	60.2	385	461
Risk-free asset return (%)	0.06	0.18	-0.17	-0.14	-0.10	0.03	0.17	0.43	0.48

Number of observations 13,510

Source: CNMV and authors.

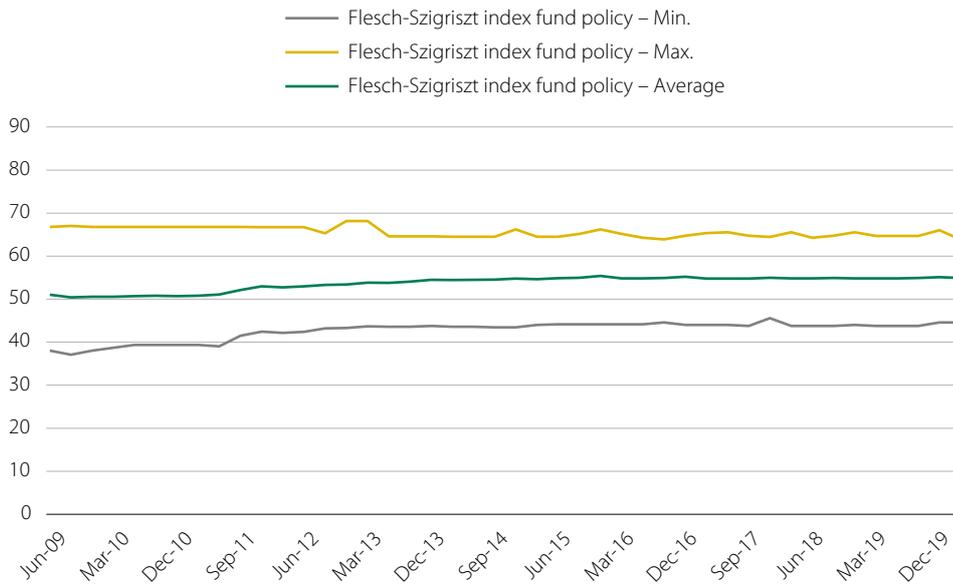
1 All variables have been winsorised to 1% at both extremes of their distributions.

2 Divided by the fund's assets at the beginning of the quarter.

# Appendix III

**Flesch-Szigriszt index applied to the description of the investment policy contained in the periodic public information of fixed income investment funds**

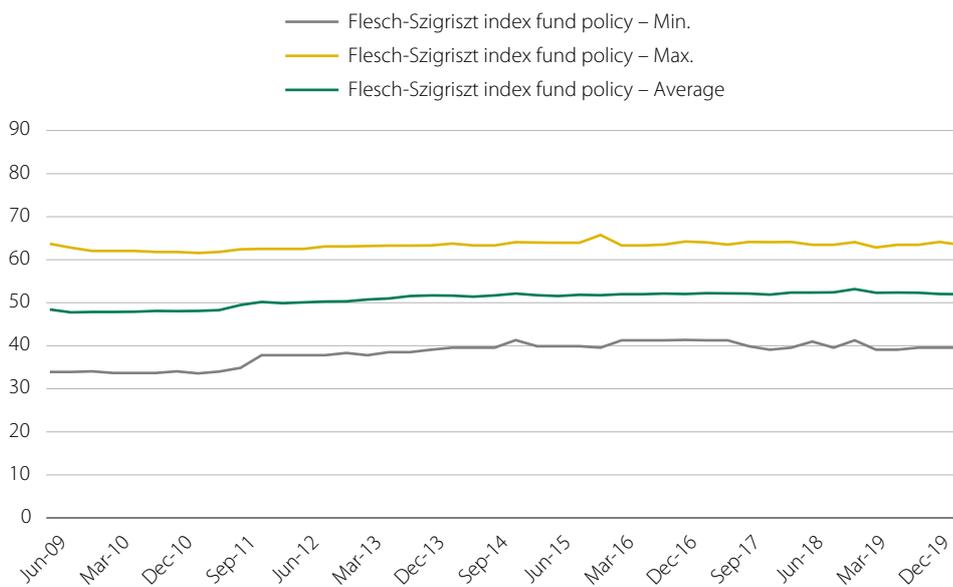
FIGURE 6



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the description of the investment policy contained in the periodic public information of equity investment funds**

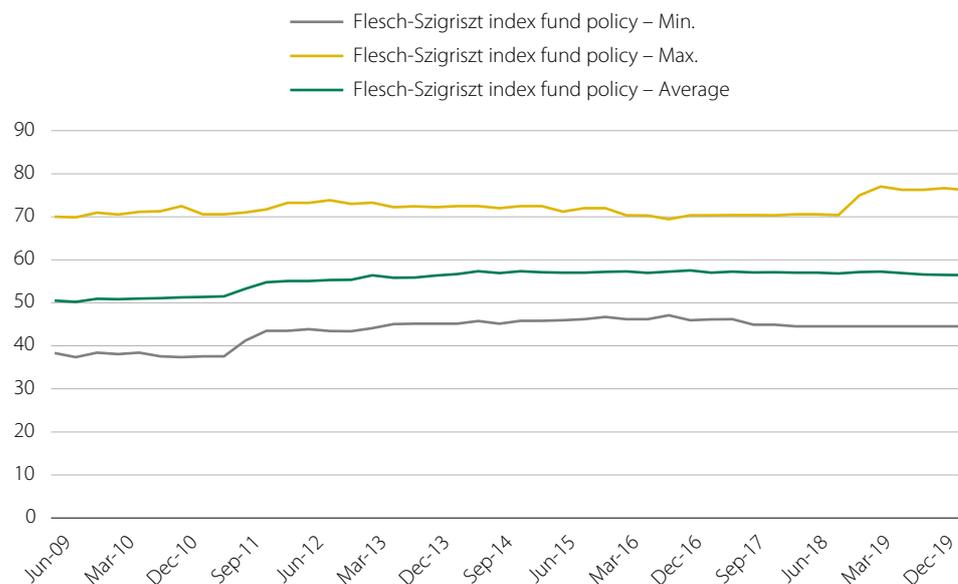
FIGURE 7



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the description of the investment policy contained in the periodic public information of guaranteed investment funds**

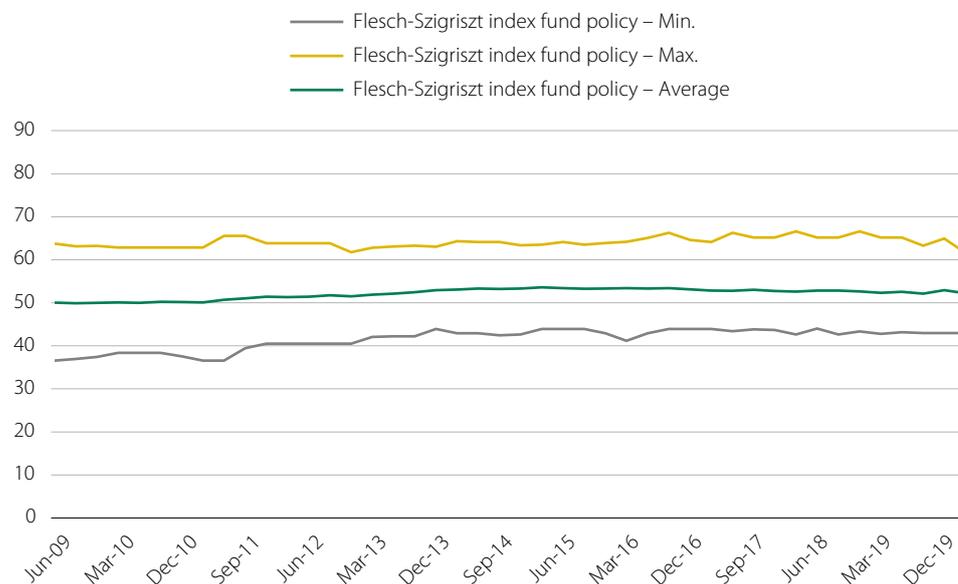
FIGURE 8



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the description of the investment policy contained in the periodic public information of other investment funds**

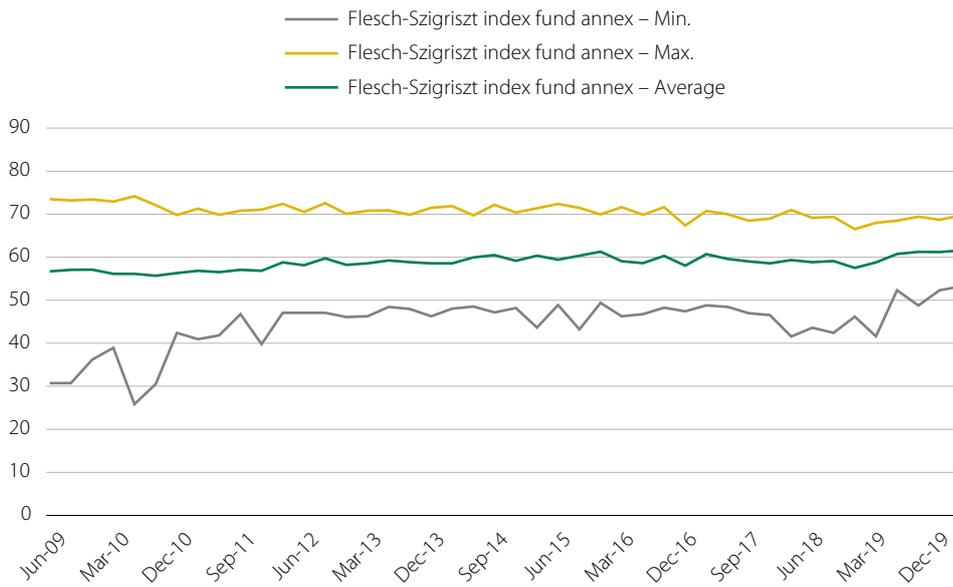
FIGURE 9



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the explanatory appendix contained in the periodic public information of fixed income investment funds**

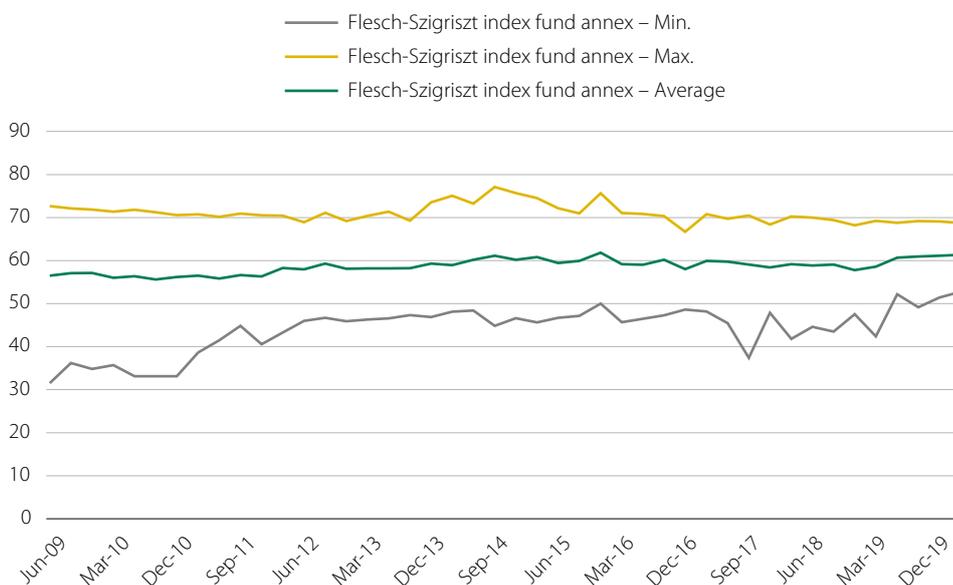
FIGURE 10



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the explanatory appendix contained in the periodic public information of equity investment funds**

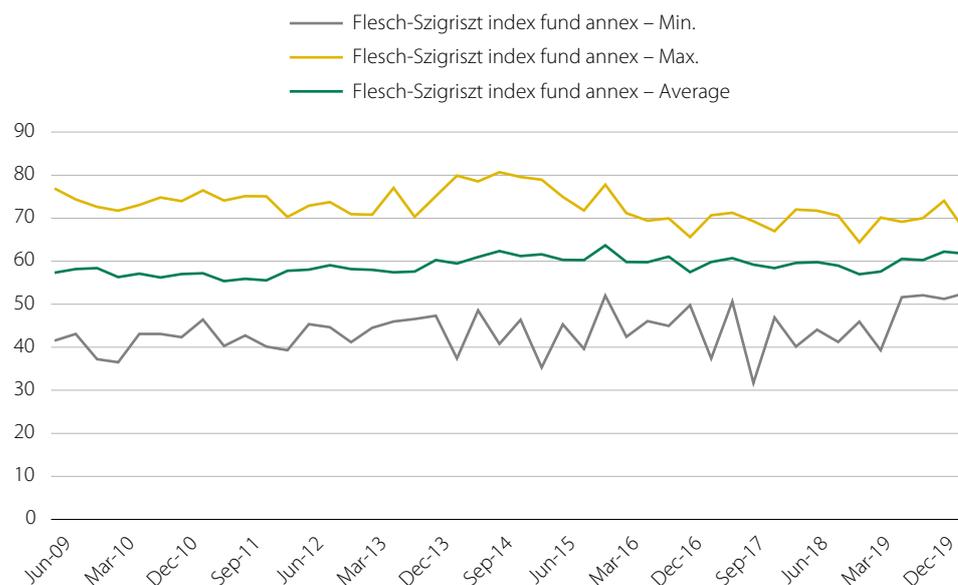
FIGURE 11



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the explanatory appendix contained in the periodic public information of guaranteed investment funds**

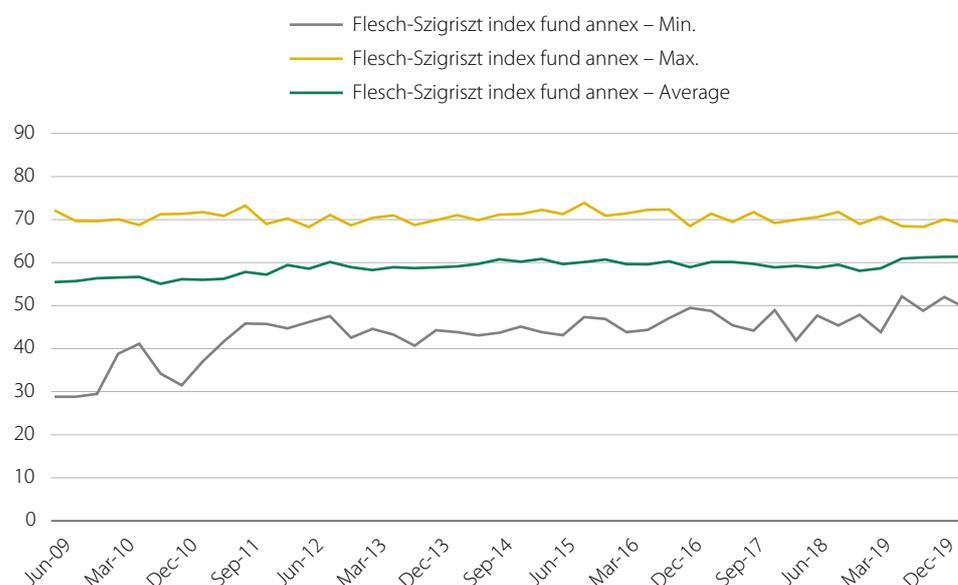
FIGURE 12



Source: CNMV and authors.

**Flesch-Szigriszt index applied to the explanatory appendix contained in the periodic public information of other investment funds**

FIGURE 13



Source: CNMV and authors.



