Mutual funds withdraw shield: performance or agency costs driver?

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Abstract

In this paper, using a unique database, we compare the performance of a set of equity mutual funds to a set of equity savings funds, which are similar to equity mutual funds in all but one characteristic: the tax regime that strongly penalizes withdrawals from equity savings funds. We found evidence consistent with the hypothesis that mutual funds less subject to liquidity shocks exhibit higher performances.

Keywords: mutual fund performance, withdrawals, liquidity shocks, fiscal policy
JEL Classification Codes: G23, G28, H39

1. Introduction

In the past few decades, mutual fund performance has been under the constant scrutiny of both academics and practitioners. There has been ample discussion on whether some mutual fund managers achieve a persistently higher performance that justifies the higher costs of actively managed funds. Several empirical studies reject the existence of superior performance in mutual funds (e.g. Elton et al., 1996; Fletcher and Forbes, 2002), while many others support such a hypothesis (e.g. Grinblatt and Titmann, 1993; Otten and Bams, 2002).

However, there is scarce literature on the causes of abnormal performance, and in particular on the effect of inflows and outflows on mutual fund returns. There is consensus amongst researchers that capital fund flows are sensitive to past performances in developed markets (Goetzmann and Peles, 1997; Sirri and Tufano, 1998; and Christoffersen, 2001), but for a small market Alves and Mendes (2011), instead of the convex flow-performance relationship usually documented for the US, found an absence of reaction to past performance. There is also evidence that back-end load costs are an obstacle to performance reaction (Alves and Mendes, 2007).

Nevertheless, there is limited research on the relationship between capital flows and mutual fund performance. Nanda et al. (2000) developed a model that sustains that mutual fund managers less subject to liquidity shocks exhibit higher performances. However, this theoretical prediction has not yet been found empirically.

Working with, as far as we know, a unique dataset, which includes a set of mutual funds that are subject to withdrawals and another set of mutual funds that are protected from withdrawals, we can directly evaluate the effect of potential liquidity shocks on mutual fund performance. Our database includes all equity funds (EF) that invest mainly in Portuguese stocks and all equity savings funds (ESF). These two types of mutual funds are equal in all but one characteristic: the tax regime that heavily penalizes withdrawals from ESF. The legal framework that supports ESF was created as an incentive to equity investing, during the privatization "boom" in the 1990s, when many state-owned companies were partially or totally sold on the Portuguese stock market. These ESF had important tax benefits that investors could only completely take advantage of for holding periods of 5 to 8 years. We must note that: i) this fiscal advantage is directly appropriated by the investor (not by the ESF); ii) there are no investment restrictions either for EF or ESF, except (for both) that they must invest mainly in Portuguese stocks; iii) given the small size of the Portuguese stock market, there are no differences of style (e.g. growth versus value) between these funds; iv) EF and ESF are managed by the same mutual fund companies and, given the small size of the Portuguese mutual fund industry, inside each company (presumably) by the same managers. This allows us to evaluate the effect of potential withdrawals, comparing the performance of the two groups.

The peculiarities of ESF can lead to different expectations regarding their performance when compared to equity funds. Given the nature of ESF tax benefits, investors will not normally withdraw money from them, since that would lead to the loss of those benefits. Therefore, ESF have lower liquidity needs. This means that ESF managers do have more resources available to invest in higher return securities than EF managers, which would lead us to expect better ESF performances («liquidity hypothesis»). However, this protection from withdrawals may have a perverse effect. In fact, ESF investors are discouraged to move away from poor performers given the strong tax disadvantage on withdrawals, and thus the fund managers will not be penalized for poor performances. This can induce managers to act in their own interest or in the interest of the company to which they belong. If this effect is dominant, we would expect ESF to exhibit poorer performances than EF («agency costs hypothesis»).

2. Data and methodology

Our sample includes a total of 30 EF – all Portuguese open-end mutual funds which were classified as "domestic equity funds" by APFIN[1] – and 17 ESF – all "equity savings funds" in existence –, between 31st December 1993 and 31st December 2004, and is therefore identical to the population.[2] The daily data for each fund is from DATHIS.[3] All funds in existence for all or part of the period were included in the sample, and thus our sample is free from survivorship bias.

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[1] APFIN is the Portuguese association of mutual fund management companies.
[2] The special tax regime for ESF ended on 31st December 2004. Therefore, we cover the entire period during which this regime was in force.
[3] Financial information disclosure service of Euronext Lisbon.

We use three different measures of performance: abnormal cumulative returns (ACR)[4], risk-adjusted excess returns (alpha) using one-factor CAPM and risk-adjusted excess returns using Carhart's (1997) four-factor model. The analysis is conducted on both sets of funds and we then compare the two sub-samples in order to determine whether ESF and EF have different performances.

3. Analysis and results

i) Analysis of Betas

The average EF betas are lower, both in bull and bear years (see Table 1). This could be explained by the fact that ESF are not subject to frequent withdrawals, the managers of these funds not being subject to liquidity shocks. Thus, they can invest a higher proportion of their portfolios in stock. EF, on the other hand, need to allocate part of their portfolios to liquid assets, which have betas of around zero.

Table 1. Average Betas

	CAPM Model			Carhart Model		
	EF	ESF	ESF-EF	EF	ESF	ESF-EF
Bull Years						
Average	0.60	0.74	0.14[***]	0.59	0.74	0.14[***]
Standard Deviation	0.21	0.07	0.14[***]	0.22	0.07	-0.14[***]
Bear Years						
Average	0.45	0.78	0.33[***]	0.38	0.75	0.33[***]
Standard Deviation	0.23	0.04	-0.20[***]	0.22	0.05	-0.20[***]
Entire Period						
Average	0.54	0.75	0.21[***]	0.51	0.74	0.21[***]
Standard Deviation	0.22	0.06	-0.16[***]	0.24	0.06	-0.16[***]

Obs.: (*i*) In this table we present the average EF and ESF betas (i.e. the market excess return coefficient) calculated using one year of past returns, with CAPM and Carhart Models; (*ii*) the market return proxy was the PSI General index (the Euronext Lisbon general index); (*iii*) Bull market years were defined as years when the value of the PSI General index at the end of the year was higher than its value at the beginning of the year, while bear market years were defined as years when the value of the PSI General index at the end of the year was lower than its value at the beginning of the year; (iv) The symbol *** shows statistical significance at the 0.01 level for the t-test of equal means (equal variances not assumed) and the test of homogeneity of variance (Levene Statistic) based on the mean.

The ESF betas have lower variability, and this is confirmed by Levene's test of homogeneity of variances. Thus, ESF managers seem to target betas and stick to that target, rather than dramatically changing the risk level of their portfolios according to market fluctuations. A t-test of equal sample means provides similar conclusions: average betas are higher for ESF than for EF (one percent significance level).

ii) Analysis of Performance

For each type of fund, we computed the average performance of portfolios constructed in two distinct ways. Firstly, all existing funds at the end of each quarter were assigned the same weight (EW). Secondly, the weight of each fund was assumed to be the weight of the fund's net asset value in the total net asset value of all within the same category

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[4] The daily abnormal return is the difference between each fund's daily return and the market daily return (proxied by the PSI General index). The cumulative abnormal return is the sum of the daily abnormal returns.

(NAVW). These portfolios were rebalanced quarterly. For each of the 2 portfolios (one with EF, the other with ESF) and each quarter, we then computed the following yearly performance. The average abnormal returns achieved by these portfolios are in Table 2[5].

The average annual performance of the EF portfolios is only statistically different from zero for the ACR equal weight case. Thus, we conclude that there is evidence that, on average, EF do not add value, but also do not destroy it. Given that the performance metrics are net of operating expenses (but gross of management fees and of subscription and redemption fees), we conclude that these Portuguese mutual funds create enough value to compensate for their operating expenses.

As for ESF, the average performance is always positive, and it is statistically significant in all (but one) cases. In fact, only with ACR and the equal weight portfolios is performance not statistically significant.

In order to further verify whether this difference between EF and ESF has some impact on investors' money, we compare an investment made in EF to an investment made in ESF. For each quarter, we compute an equal weight portfolio which includes all the existing EF funds, and another equal weight portfolio which includes all ESF funds. We assume a buy-and-hold investment of one EUR in each of the portfolios from the date when most ESF were established (January 1996) until the end of 2004. These portfolios were rebalanced quarterly. Over the whole sample period, the ESF portfolios yield a return that is roughly 18 percent bigger (EUR 3.70 versus EUR 3.12). This means that the investment in equity savings funds offered higher returns than the investment in equity funds.

Table 2. Equity funds and equity saving funds portfolio performance

Average Performance	Equity Funds		Equity Savings Funds		ESF minus EF	
	EW	NAVW	EW	NAVW	EW	NAVW
ACR	-1.04%[**]	-0.18%	0.70%	0.82%[*]	1.74%[**]	1.00%
t-Stat	-1.69	-0.26	1.05	1.36	1.92	1.09
CAPM	1.06%	2.79%	4.86%[***]	4.29%[**]	3.81%	1.50%
t-Stat	0.40	1.17	2.49	1.95	1.17	0.47
Carhart Model	0.75%	2.70%	4.98%[***]	4.07%[**]	4.23%	1.37%
t-Stat	0.28	1.11	2.59	1.82	1.29[*]	0.42

Obs.: (*i*) In this table we present the global average annual performance of the EF and ESF portfolios; (*ii*) EW is the average performance of an equal weight portfolio of all equity funds/equity savings funds, rebalanced quarterly; (*iii*) NAVW is the average performance of a portfolio of funds with weights equal to the proportion of the fund's net asset value on the total net asset value of the relevant fund category; (*iv*) The performance figures are annualized; (*v*) The t-stat reported in the «Equity Funds» and «Equity Saving Funds» columns refers to the null hypothesis of average performance equal to zero, and the t-stat reported in the «ESF Minus EF» columns refers to the null hypothesis of equal EF and ESF averages; (*vi*) The symbols ***, ** and * show statistical significance at 0.01, 0.05 and 0.1, respectively; (*vii*) the alternative hypothesis is always one-sided.

4. Conclusion

We found evidence that EF portfolios have consistently lower betas than ESF. This is consistent with the hypothesis that EF hold more liquid assets, because they are subject to redemptions motivated by investor liquidity shocks.

A comparison of the performance of the two categories of mutual funds studied suggests that ESF perform better than EF. These results support the liquidity hypothesis

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[5] The following quarter abnormal returns were also computed, but not reported. The conclusions are similar.

and do not support the agency costs hypothesis. They also support the thesis according to which mutual fund managers less subject to liquidity shocks, such as the ESF managers, will exhibit higher performances.

Our results also support tax policies that require longer investment horizons.

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