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Influential Factors of the Fixed Income ETFs' Development in the Tehran Stock Market

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Abstract

Investment fund managers have been trying to provide more attractiveness for investors by earning higher yields and generating liquidity. The investment rate of return of a mutual fund is obtained from the difference between the issuance and redemption of Net Asset Values (NAVs) per investment unit. However, the Exchange Traded Funds'(ETFs') yield should be calculated differently, and investors must consider the changes in market prices (Not only the NAVs), which are not usually announced through the Ads, so they disregard the investors. Investment fund managers believe that the attractiveness of the rate of return, even to a small extent, leads to over-welcoming of the investors and a

faster growth of the funds' size. According to the information available in recent years, investors have shown more interest in fixed-income investment funds, and the growth of ETFs has been significant compared to the growth of total funds, so it can be assumed that investors are more interested in ETFs. Thus, in this research, we will identify factors affecting the development of ETFs, especially fixed-income ones. To fulfill our purpose, we examined all active fixed-income investment funds that are traded in the Tehran Stock Exchange and the Iran Farabourse from March 2021 to September 2023, including 25 ETFs. We analyzed our panel data through ordinary least squares. Analyzing the effective rate of returns of 25 Fixed Income ETFs, which have been active from March 2021 to September 2023, our results showed that ETFs development is significantly related to the fund size, daily price volatility, and liquidity. Despite our expectations, rate of return, fund age, and price adjustment do not have a significant effect on the development of investment funds. The result showed that a higher rate of return did not have a significant effect on the attractiveness and acceptance of investors, but the liquidity of investment units positively affects the development of fixed-income ETFs. We also found that the daily volatility of the final price inversely impacted the fund's size. This is consistent with investors' low risk-taking spirit in fixed-income funds and emphasizes their preference to avoid liquidity risk and price volatility risk.

Keywords: ETFs, Fixed income ETFs, Development of investment funds, Investment Return of funds, Liquidity

JEL Classification: G01, G11, G12

Introduction

One of the most important functions of financial markets is to provide a relationship between companies and investors with the purpose of maintaining the value of their money, and along this process, the lack of liquidity of companies and financing will be resolved. (Karami Ardali, Marzban, Samadi, & nazemi, 2023). This transaction, which can meet the needs of both sides, has led to the emergence of various investment financial instruments, including investment funds, over time. The first investment funds were established in Europe at the end of the 18th century. In England, 18 investment funds had been organized and activated according to the laws of this country in 1875, and these funds spread up to other countries, including the United States (Mirlohi et al., 2018), and the capital markets witnessed the expansion of these funds. In the following figure, the global growth of assets under the management of

investment funds is presented during the years 2016 to 2021. As observed, at the end of 2021, the value of assets under management of mutual investment funds and ETFs is more than 8 trillion dollars. This graph shows that in a short period, the mutual fund industry has grown more than twice.

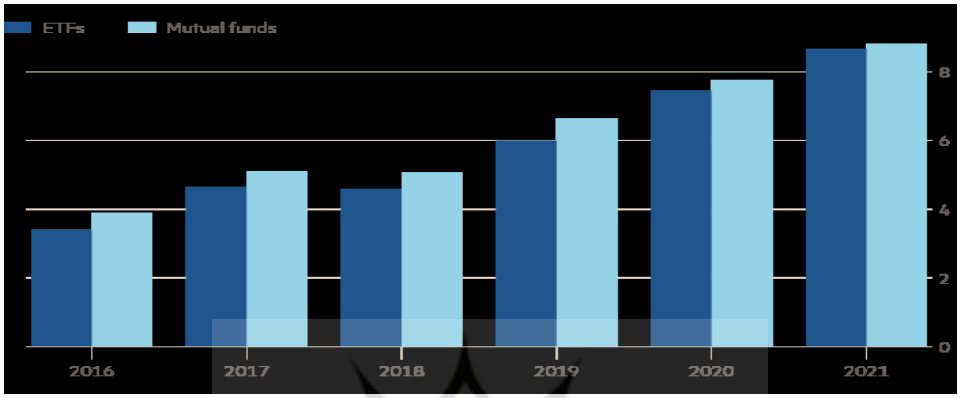

Figure 1. Global value trends of assets under management of Mutual funds and ETFs (trillion dollars)

Source: Morningstar dataset

The chart below illustrates the growing number of ETFs around the world. By the end of 2022, about 2,000 ETFs have been traded around the world. Note that the growth of fixed-income ETFs in comparison to other funds shows its greater popularity among investors.

Figure 2. The tremendous number of ETFs worldwide up to the end of 2022

Source: Stata

In Iran, investment funds were approved as a financial institution by the Exchange Market Law in 2005, and thereafter, the financial industry grew rapidly due to its high ability to attract investors with various risk appetites and diversification goals. As a noticeable point, the focus of this growth is on fixed-income ETFs, according to the next figure, which increased from 3 ETFs with a total value of 418 billion Rials at the beginning of 2010 to 133 ETFs with a total value of 5,310,000 billion Rials by the end of September 2023.

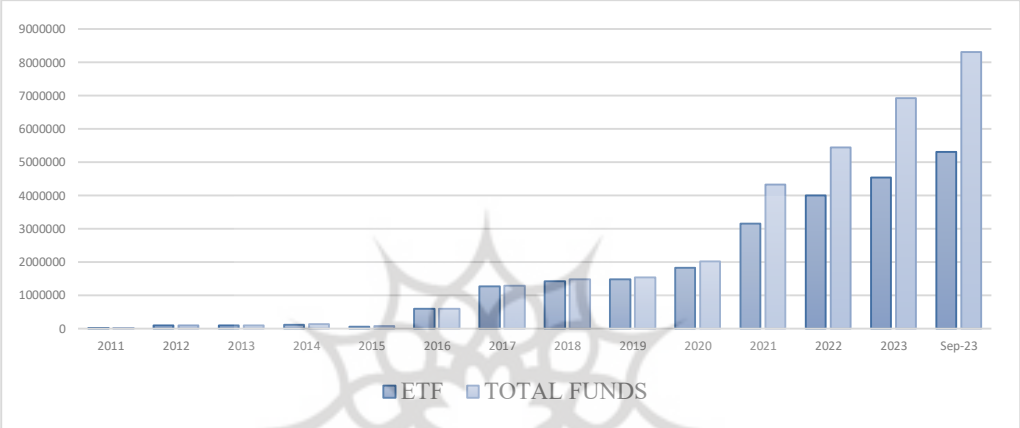

Figure 3. The growth trend of the net asset value of funds and fixed-income investment funds

Source: The Fipiran dataset

Among all, fixed-income ETFs are highly regarded by investors because of their special features, including high liquidity, diversification plans, and reduction of investment risk based on investors' goals. In fact, by reducing the risk of investing in the capital market, the presence of funds can encourage risk-averse investors to invest in the stock market in addition to risk-taking investors. On the other hand, due to the high liquidity of these funds, the realization of productive investment plans and the prosperity of the production sector become possible, and the circumstances of economic growth are also provided even if they have been stagnant because of liquidity restrictions.

Statement of Problem / Purpose

As it is observant, according to the information available in recent years, investors have shown more interest in fixed-income ETFs, and their growth has been significant compared to the total growth of funds, so it can be assumed that investors have been more obsessed with them. As a result, if we want to associate the capital market with the growth of this industry, the focus can be on the development of fixed-income ETFs. In this research, we will identify the

factors affecting the development of fixed-income ETFs so that we can investigate the growth and development factors of these funds as much as possible by determining the interests of investors. In practice, most fixed-income fund managers are concerned about the fund's short-term yields, and they believe that a slight difference in the returns leads to the investor's reaction and directly impacts the size of the fund; therefore, they do their best to outperform the funds. In this paper, we are investigating the effective rate of return based on market prices of ETFs, which greatly impacts the investors' decision in selecting a fund. We also were interested in what other factors (such as liquidity, age, volatility, and fund price adjustment) could influence their decision.

Literature Review

The mutual fund has intense literature among researchers worldwide. Briefly, we can find about 160,000 papers around this area studying different related aspects (as we have just seen 162,460 in the Science Direct database). The ETFs' literature also sounds like an even more exciting and narrower topic (about 10,000 papers). In this study, we have aimed to examine the scope of fixed-income ETFs. The review of extant literature reveals that the joint topic (i.e., ETF and fixed income together) has rarely been addressed in the literature. We have visually analyzed the most relevant literature through the VOS viewer 1.6.18 to depict it more appropriately. You could easily observe that the most recent studies are associated with fintech Covid-19, ESG, and Covid-19.

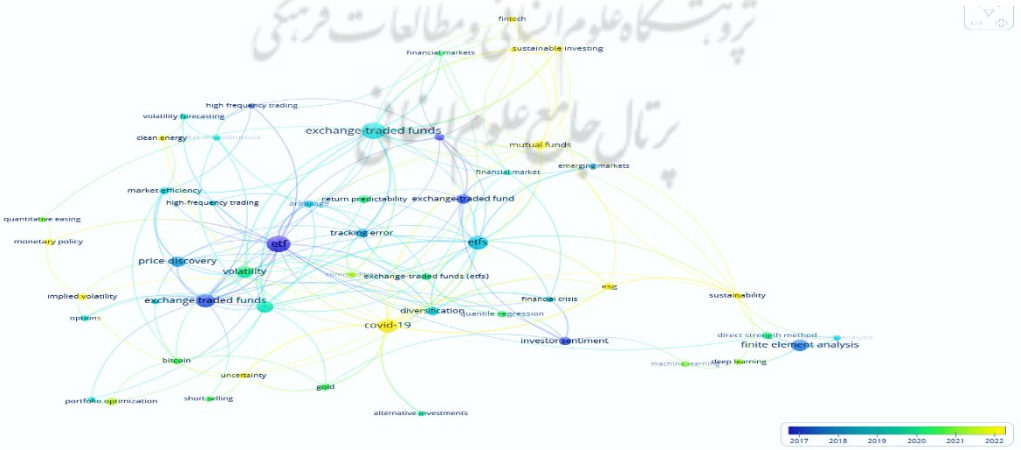

Figure 4. Literature Review of ETFs

According to our survey, only a few studies highlight the fixed income ETFs. Regarding the literature, we could categorize the factors affecting the ETF's development, liquidity, and risks. There are also some articles focusing on investors' behavior and decision-making as an underlying item. Thereafter, we will review the most relevant ones.

Anjani et al. (2017) and Cecily (2022) both did research to discover factors affecting the investors' decision and preference to invest.

Anjaneyulu et al. (2017) pointed out the reasons for the popularity of investment funds in India, which showed that a high percentage of people are aware of the investment funds' advantages, which is a positive sign for the expected growth of investment funds in this region. Safety in the market is the main investment priority for many investors. The method that was used was random sampling to carry out a structured questionnaire. They used this method to identify investors' preferences for investment opportunities such as bank deposits, insurance products, commodity markets, real estate, and equity investments compared with mutual funds. Because of high yields and liquidity parameters, investors prefer mutual funds over banks. Besides, mutual funds are their priority rather than investment in real estate because of safety, liquidity, convenience, and tax benefits, which are provided more by funds. This comparison can be used while comparing mutual funds with equity shares. Another finding that can be apparent is about futures and options and the commodity market. Because of the higher returns and the safety of mutual funds, they can be a better choice rather than futures options and commodity markets from an investor's point of view. (Anjaneyulu & et. al., 2017)

Related to this subject, Singal and Manrai (2018) carried out studies with the aim of discovering the factors influencing investors' behavior in decision-making. They also tried to find the factors that prevent people from investing in investment funds. These findings help investment fund companies to identify approaches for improvement. The method used in this study is a self-administered structured questionnaire, and the Survey method of descriptive design showed the primary data investment in mutual funds. The results of this review article showed that there are some retail investors who prefer high-risk taking, but most investors are more interested in safer benefits rather than taking risks. They believed that funds should create plans that can meet the needs of all investors. Also, the range of investment funds and different financial instruments should be increased to cover more people's preferences for their investment schedules. They also emphasized that Mutual funds should provide investors with appropriate information and knowledge to make them

trust. (Singal & Manrai, 2018)

Regarding the expansion and development of mutual funds in Nepal after the mutual fund regulations in 2010, Dipesh Pute Shrestha and Yogesh Man Shrestha (2020) explored a study to determine the important factors affecting investment in mutual fund plans in that country. Based on the review of the literature, they identified five factors that could have significant impacts on investors' decisions, and those factors are perception towards Mutual Funds, ease of investment, the performance of mutual funds, corporate governance and transparency, and fund managers' qualities. Descriptive and explanatory research designs were used to analyze whether there is a relationship between dependent and independent variables. The results of the research showed that these factors they examined didn't have a relatively high relationship with investment in the investment fund; perception, ease of investment, and performance factors had a statistical and positive relationship with investment in investment funds. Furthermore, it was found that investors were dependent on their own perceptions when making investment decisions regarding mutual funds. (Singal & Manrai, 2018)

Shrestha & Shrestha (2020) believed that the primary goal of any investment is generating returns, but mutual fund performance had the lowest weight among factors, indicating that monetary benefits were not the most important factor for investors, which contradicted other research findings. In addition, liquidity was an important factor affecting mutual fund investment, and the lack of this item reduced investment. Corporate governance and the quality of fund managers had no significant relation with investment in the investment fund. Nevertheless, strong corporate governance and ease of investment are always a priority for mutual fund investors. (Shrestha & Shrestha, 2020)

Due to the significant growth that has happened in the assets of different funds in India, Meena and Sankar (2020) conducted research that concentrated on discovering and analyzing factors affecting investors' preferences and identifying reasons that assume as obligations for investors to invest. They found that tax benefits, return potential, liquidity, capital increase, and transparency are the most significant factors that investors pay attention to while investing in investment funds and encourage them to invest. As a result, they state that liquidity, diversification in the portfolio, and risk affect investors' final decisions. (Meena & Sankar, 2020)

As mentioned in previous paragraphs about factors affecting the investors' decision, the results of Cecily's research referred to factors such as lack of

awareness about various benefits of investment funds (like flexibility, diversity, liquidity, profitability, and tax benefits) that is observant about the majority of investors, and people's preference to take risks based on their age conditions and their characteristics. He considered low risk-taking and lack of awareness as a reason to avoid investing. (Cecily, 2022)

Matallín-Sáez et al. (2022) in an article pointed to a positive relationship between the net cash flow of funds and their past results, measured by return and performance, and the investors' sensitivity to the past results of funds. They first examined if flows can be related to the past results of the funds. Then, they tried to analyze whether there is a relation between cash flow past results and other mutual fund factors by using a multivariate regression model. In this study, in addition to the effect of past results, we also considered the effect of other variables on the demand for funds. In general, inflows and outflows of conventional funds are positively related to specific risks, costs, and turnover but negatively related to size and age. In addition, the output flow showed a positive relationship with the risk of the fund. It is determined in this research that net flows of funds have a positive relationship with risk and specific size, while it has a negative relationship with age, risk, costs, and turnover. (Matallín-Sáez, Soler-Domínguez, Navarro-Montoliu, & de Mingo-López, 2022)

Farid and Wahba (2022) tried to find out the relation between mutual fund performance and its size. However, other factors were considered too. Secondary data and panel data were used, which pointed to time series and cross-sections. The results showed that NAV and age have a significant negative impact on mutual fund performance. The researcher also concluded that the fund type has a significant effect on mutual funds' performance. At the same time, the total fund expense has a significant positive impact on mutual funds' performance. The results show that there is a huge variation in the performance between different funds. (Farid & Wahba, 2022)

In research by Nedomparambil and Kumar Bhandari (2022), risk factors were investigated for investors in finding profitable investment opportunities, and fund flows were used as a measure of investors' response to identifying investment opportunities with net present value. The main interest of this study is to find an asset pricing model that helps investors in decision-making by examining the relation between the flow of funds and alternative performance measures of mutual funds. They examined their model via flow–performance relation using the methodology proposed by Berk and van Binsbergen (2016) and found a relation between quarterly performance measures and fund flows.

They also found that most mutual fund investors in India are naive and make investment decisions based on superficial information. Also, using the Economic Policy Uncertainty Index, Baker et al. (2016) confirmed that uncertainty has a negative effect on mutual funds. (Nedumparambil & Bhandari, 2022)

Because of the importance of past cash flows, Yamani (2023) examined whether mutual fund flow information can be used as a predictor of future fund performance by using empirical analysis. The main finding is that investors can improve their fund selection ability by predicting the expected fund returns resulting from fund flows in an out-of-sample forecast context correctly. In fact, the analysis showed that the historical fund flows provided some insights for the future. (Yamani, 2023)

As was considered in some papers, the performance of funds can impact investors' decisions. Christa and Sihombing (2023) measured the performance of funds with different factors in Indonesia. They determined factors that impact on the performance of stock and bond-based Exchange Traded Funds. A quantitative approach is used in this research, which produces the results of analysis of the relationship between the independent variable and the dependent one. The results of this study indicated that risk has a positive effect on the performance of stock and bond-based ETFs. Tracking errors had a significant negative effect on stock and bond-based ETFs, and the expense ratio had no significant effect on the performance of these funds. (Christi & Sihombing, 2023)

In Iran, research is commonly focused on the factors affecting the performance of these funds, including yields, timing of cash flows, risk management, and liquidity risks of mutual funds. For example, Mirlohi et al. (2020) investigated the factors that are essential for investors' demand to invest in these funds using a panel method to test hypotheses. Investors have different reactions towards market conditions (increasing and ascending market), and the decisions related to asset allocation will be different. When the market return is expected to increase, return, risk, and cash flow of the past period have a positive and significant relationship with their demand. In fact, when market conditions arise, investors have an optimistic view of the market conditions, and this is the factor that reduces the risk aversion of investors and makes them accept more risk to achieve higher yields. Of course, this result is valid when the implicit flow measure is used to calculate cash flow, and if the net cash flow measure is used, the risk relationship will not be positive and direct. Also, in a bearish market, the relationship between risk and demand will not be positively correlated. In general, regardless of what measure will be used to

estimate the demand, investors will choose the fund according to the risk and return and the cash flows that have entered the fund in the past period. They pay much attention to these variables, and of course, the effect of these factors on investors' decisions would be different according to the market conditions. (Hedayat et al., 2020)

Another factor that can affect the behavior of investors is the management of these funds in a way that can generate liquidity for unitholders and increase the attractiveness of these funds. In fact, the activeness of these stock portfolios of funds compared to the index funds depends on the management. Sepahvand and Nabizadeh (2020) conducted research in this direction by using the Fama – French five factors model and mutual funds' monthly return, the value of alpha and R-squared indicating the performance and passiveness of fund, respectively, and the results of this research emphasized the existence of an inverse and significant relationship between the level of management activity and the performance of mutual investment funds, and funds with a larger size and a higher cost ratio have higher performance. Also, there is a direct and significant relationship between the ratio of natural shareholders and the performance of funds. (Nabizade & Sepahvand, 2020)

Kazemi Najafabadi (2021) investigated the factors affecting the return of equity mutual funds using the activity records of these funds in Iran's economy. The model parameters were estimated by ordinary Least-squares (OLS) regression and panel data. The results confirmed a significant relationship between the return of the fund and variables such as mean deviation, ownership of all real investors, and the market index in the trailing period. On the other hand, a negative linear relationship was observed between yield, the life of the fund, and the inflation rate. (Kazeminajafabadi, 2021)

Toloe Sadegh and Abdullahi Kiewani (2022) carried out another research regarding the key factors of this yield. The statistical method used for data analysis is correlation and multivariate regression. Their evidence indicated the existence of a positive and significant relationship between the number of investment units, fund life, and yield, as well as a significant negative relationship between the amount of cash held and the yields of mutual investment funds. (toloe sadegh & Abdollahi Keiwani, 2022)

Another factor that has attracted researchers' attention is liquidity and its risk, which has been the subject of many articles. Sabzeali et al. (2021) worked on two articles in 2021 and 2022 regarding the importance of liquidity in this industry. In their first paper, they examined the factors affecting liquidity timing in mutual investment funds. To achieve this goal, the required

information was collected through a survey and a questionnaire designed by investors and professionals active in the capital market of Iran. The questionnaire was then analyzed using the fuzzy Delphi method. The results were divided into two categories: external and internal factors. The returns of parallel markets and stocks, bank interest rates, and political developments were external factors that affected the liquidity and timing of the fund's liquidity. Also, three internal variables, which include ability and skill of fund management, net value, and percentage of cash assets of the fund and risks funds would face, had the greatest effect on liquidity and timing of liquidity in mutual investment funds. (Sabzali & et. al., 2021)

In the second paper, besides completing these effective factors, they present a model using the SEM structural equation modeling method to explain the effective factors on liquidity timing in mutual investment funds of Iran. With this approach, an attempt has been made in that study to model the effective factors on the timing of liquidity in mutual investment funds of Iran using the SEM structural modeling method. According to the research results, in addition to the factors mentioned in their previous findings, inflation rate, oil revenues, and economic growth are other external factors, and the relative size of the fund and, on the other hand, returns, profitability, capital expenditure of the fund and the number of industries in the fund's investment portfolio are other internal factors that have a significant effect on liquidity. They found that internal factors have a stronger effect on the liquidity timing of mutual investment funds than external factors. (Sabzali & et. al., 2021)

Since the existence of investors' trust leads to the development and expansion of their investment in these funds, it will be important to monitor other risks and the performance of the funds apart from the discussion of liquidity risk. Masoudi et al. (2021) realized the importance of this issue and carried out research and put their sample in different quantiles to use the Panel Quantile Regression Approach. They found that the components of profitability, liquidity quality, asset quality, and sensitivity to market risks had a negative and significant impact on the risk of low and high quotients. Also, the effect of management quality and sensitivity to market risks in the middle quantile was negative and significant. Therefore, the supervisory body should regulate and implement the regulatory rules based on financial wealth, emphasizing these components, especially in high-quotient funds, to protect the interests of investors, which ensures and welcomes them to invest and develop the funds through their investment. (Masoudi, Cheshomi, & Razmi, 2021)

Also, providing a model that can provide sufficient returns for investors is very important. Pakbaz Kataj and Farid (2022) compared the performance of

optimization models with equity mutual funds, and by examining the models (the optimal portfolio of the Black-Letterman model), investment has a better performance compared to other optimization models and funds. Also, the return created by all the optimization models at the market risk level was significantly higher than the average yield of stock investment funds and superior investment funds. This means that, in general, using these models generates greater returns and can be a solution to create liquidity. (Pakbaz kataj & Farid, 2022)

Considering all the mentioned articles, to find out the importance of cash flows in mutual funds, Hosseini et al. (2023) realized the importance of liquidity risk in this industry and sought to know the liquidity risk management tools of mutual investment funds. This research was conducted by the Delphi method and in the form of a questionnaire in two steps, and the results showed that there is an agreement between experts in the use of fluctuating pricing tools and anti-dilution costs in any situation which can be possible by the discretion of fund managers and the use of tools repurchase with securities and restriction of repurchase. On the other hand, there needs to be more disagreement about the necessity of providing auxiliary tools. (hosseini, ebrahimi sarveolia, & Peymani, 2023)

Summarizing the reviewed materials and research determines that the key factors that were investigated in previous research related to funds were mostly associated with risk, yield, and liquidity. In this study, while considering the liquidity and monthly yield of the funds, we also examine the volatility and price adjustments as effective factors in the growth of this fund.

Research Methodology

The population used in this research is all the active fixed-income ETFs registered in the capital market, which are traded in the Tehran Stock Exchange and the Iran Farabourse until the end of September 2023, which includes 39 funds. The analytic sample in this research is investment funds tradable fixed-income securities that were active until the end of September 2023, and at least one year has passed since their establishment. To prepare data on funds' characteristics, such as size and age, we searched each fund's website. We also need market-related data for each fund, such as volume and trading price. To gather them, we have used the www.tsetmc.com and www.fipiran.com websites in our research. Since several fixed-income funds have changed their fund type during their age, our sample is excluded from them. As a result, the number of samples includes 25 fixed-income ETFs, as described in the

following table:

Table 1. Our sample

	No. of ETFs
All Fixed income ETFs	39
Fixed income ETFs changed activity type	(4)
Fixed-income ETFs with an age of less than one year	(10)
Our sample	**25**

Research variables

Our dependent and independent variables of the ordinary least square are as follows.

Dependent variable

- Development of funds (Growth it): Average of the daily growth rate of the number of investment units of fund i in month t

Independent variables

- Annualized monthly return (Monthly Ret it): The monthly return of fund i in the month t, which is calculated based on the rate of growth of the closing price in that month t, and then we put the annualized rate in the model.
- Liquidity (Liquidity it): The average daily trading volume of the symbol compared to the total number of fund i units in month t.
- Daily Volatility (Daily Volatility it): Daily mean natural logarithm of lowest divided by the highest trading price of fund i in month t.
- Price adjustment (Daily Adjustment it): Daily mean natural logarithm of adjusted exit NAV divided by the unadjusted NAV of fund i in month t, which indicates the amount of expert price applied to the fund. Note that the adjusted and unadjusted NAV are disclosed daily on the funds' websites.

Controlling variables

- Age (Age it): Natural logarithm of the number of days since the foundation of the fund i
- Size (Size it): Natural logarithm of the value of the total net assets of fund i at the end of month t

Our Model

$$\text{Growth}_{it} = \beta_0 + \beta_1.\text{Monthly Ret}_{it} + \beta_2.\text{Liquidity}_{it} + \beta_3.\text{Daily Volatility}_{it} + \beta_4.\text{Daily Adjustment}_{it} + \beta_5.\text{Age}_{it} + \beta_6.\text{Size}_{it} + \varepsilon_{it} \quad (1)$$

Results

Descriptive statistics of research variables are presented in Table 2. As it is obvious, the average daily growth rate of fixed-income funds is 0.2%, and the highest growth rate is 6.3%, and the lowest is 2.8%. On average, 3% of the total units of the ETFs are traded in the markets, and this ratio is 15% for the most liquid fund. Also, the highest price volatility was 0.017. The average daily price adjustment was 0.002. The oldest fixed-income ETF is 32.727 (i.e., 3,041 days old), and its average age is 24.017 (i.e., 975 days).

On average, the size of these funds is 5.608 (i.e., 25,100 billion Rials), and the total net asset value of the largest fund is 8.019 (i.e., 163 thousand billion Rials). The average annualized return of the month was 23%, and the highest percentage was 63%.

Table 2. Descriptive statistics of research variables

Variable Name	Annualized return of the month(%)	Price adjustment	Daily Volatility	Age	Size	Liquidity (%)	Development of funds(%)
Mean	23	0.002	0.000	24.017	5.608	3	0.2
Median	25	0.000	0.000	29.159	6.383	2	0.0
Standard Deviation	9	0.012	0.001	11.899	2.402	5	0.8
Max	63	0.064	0.017	32.727	8.019	15	6.3
Min	0	-0.044	0.000	0.000	0.000	0	-2.8
Skewness	-128	1.396	8.231	-1.487	-1.528	1,629	209.4
Kurtosis	625	7.572	93.564	3.302	4.088	686	1,417

Source: Research findings

The collinearity analysis of the independent variables indicates that the variance inflation statistic of all the independent variables is less than five, and there is no collinearity problem between independent variables.

Table 3. Collinearity test of independent variables

Variable name	1/VIF	VIF	Eggen value
Age	0.962	1.039	1.742
Size	0.913	1.094	1.136
Annualized return of the month(%)	0.762	1.311	1.111
Daily Volatility	0.798	1.253	0.777
Price adjustment	0.854	1.169	0.686
Liquidity (%)	0.942	1.060	0.546

Source: Research findings

First, we checked the unit root test (Fisher). The next table summarizes the results:

Table 4. Unit root test

Variable	Modified inv. chi-squared	P-value
Age	7.687	0.000
Size	5.421	0.004
Annualized return of the month(%)	25.032	0.000
Daily Volatility	33.329	0.000
Price adjustment	2.754	0.002
Liquidity (%)	7.688	0.000
Growth	32.897	0.000

Source: Research findings

In order to fit the model, Chau, and Hausman tests are used according to the type of data panel. The F statistic of Chau's test is presented in the table below, which indicates the priority of the fixed effects model over the pool model.

Table 5. Chau's test

F. Stat	5.37
Sig.	0.000

Source: Research findings

According to the significance level in the Hausman test, the null hypothesis based on the random effects model is rejected, and therefore, the model is a fixed effects model according to the table below.

Table 6. Hausman test

Chi square	77.20
Sig.	0.000

Source: Research findings

The results of the heterogeneity of variance test showed that the null hypothesis of the test (based on the homogeneity of variances) is rejected, and therefore, it is necessary to use White's correction.

Table 7. Heterogeneity of variance test

Chi-square	1,312.95
Sig.	0.000

Source: Research findings

Based on this, the final model was fitted as follows White's correction:

Table 8. Ordinary Least Square of the ETFs' growth

Growth	Coefficient	Standard Deviation	t stat	Sig.
Age	0.000	0.000	1.08	0.292
Size	-0.006	0.001	-5.77	0.000
Annualized return of the month (%)	-0.002	0.014	-0.17	0.866
Daily Volatility	-1.254	0.372	-3.37	0.003
Price adjustment	-0.019	0.022	-0.89	0.381
Liquidity (%)	0.168	0.033	4.95	0.000
Constant	0.043	0.007	5.43	0.000
R square	Within	0.25	No. observation	541
	Between	0.08	No. groups	24
	Overall	0.12	F. stat	0.000

Source: Research findings

As it is clear from the significance level included in the explanatory model of fund development factors, size variables, daily price volatility, and liquidity are significant at the 95% level, and rate of return, fund age, and price adjustment do not have any significant impacts on the development of ETFs.

Discussion and Conclusion

In practice, most fixed-income fund managers are concerned about the fund's short-term yields because they believe that a slight difference in the returns leads to the investor's reaction and directly impacts the size of the fund; therefore, they do their best to outperform the fund. In this paper, we are investigating whether the effective rate of return based on market prices of ETFs greatly impacts the investor's decision to select a fund. We also were interested in what other factors (such as liquidity, age, volatility, and fund price adjustment) could influence their decision. Thus, we have studied the factors affecting the development of fixed-income funds through a sample of 25 ETFs

from March 2021 to September 2023.

Like Cecily (2022), Meena and Sankar (2020), and Singal and Manrai (2018), our results showed that ETFs' development is significantly related to the fund size, daily price volatility, and liquidity. Surprisingly, we found that the rate of return, fund age, and price adjustment do not significantly impact the development of investment funds. The result sounds like a higher rate of return did not have a significant effect on the attractiveness of investors, but the liquidity of investment units positively affects the development of fixed-income ETFs. We also found that the daily volatility of the final price inversely impacted the funds' size. The research finding can be justified by investors' low risk-taking spirit in fixed-income funds and emphasizes their preference to avoid liquidity risk and price volatility risk. In other words, it is okay to earn a far great yield for the investors to choose your fixed fund, and the most important matter is to give the investor a feeling of safety.

This paper makes two contributions to existing literature: First, as there are very few studies about fixed-income mutual funds focusing on their tremendous development in the last decade, we expand the literature empirically and explain the influential factors in practice more closely and precisely. Second, we have answered a substantial question that mutual fund managers usually ask in practice. They are interested in whether a slight increase in fund yields matters to investors and leads to huge inflows to the funds. Our results showed that according to the investor characteristics of these funds, which are risk-averse, the volatility, liquidity, and not the funds' aggressive yields impact fixed-income mutual fund development. So, we recommend that fixed-income fund managers have a strong strategy for increasing the liquidity of ETFs, which can act as a powerful reason to support the growth of these funds. Also, as another suggestion, we offer asset managers the ability to control fund price volatility through sound and effective market-making activity. So, the straight solution could be to focus on liquidity by providing via the vast majority of demanding orders and diminishing the daily volatility price through sound market-making activity.

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