Macroeconomic Factors Influencing the Growth of Mutual Fund Industry in Pakistan: A Regression Analysis of ten Years

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Abstract

This article aims to investigate the factors that influence the mutual fund industry's growth in Pakistan. Financial markets are always exposed to systematic risks which are out of one's control. Mutual funds being part of this market are dependent on the macroeconomic factors in the country. Pakistan's financial market is quite volatile thus slightly change in any economic indicator can affect the growth of mutual funds. Globally, Mutual fund industry is expanding day by day and Pakistan is still far behind to meet with other country like USA, UK, and India as it contributes only 1.6% of the GDP in the year 2020. In this article, influence of four independent macroeconomic factors i.e. GDP growth rate, interest rate, inflation rate and exchange rate was analyzed against the dependent value of Asset under Management. Fiscal year data from 2011-2020 was taken from different authentic sources to perform the regression analysis using SPSS tool. Study concluded that GDP growth rate, interest rate and inflation rate have negative impact on the growth of mutual fund industry which means the value of AUM decreases when these factors tend to increase in the economy. Further, exchange rate has positive impact indicating that the value of AUM increases with the increase of this factor in the economy in Pakistan.

Keywords: Mutual Funds, Growth, Asset Under Management, Macroeconomic Factors, Regression Analysis, Pakistan.

Introduction

With the development of capital market, investment in financial products emerged as a great opportunity rather than investing in physical assets to generate higher returns. But in developing countries like Pakistan, investors may face risk associated with insufficient investment knowledge and facilities about the capital market. Emergence of mutual fund industry is a good option so that investors by taking lower risk can transfer all the investment decisions to investment experts. A mutual fund is a financial instrument in which investors' money is pooled to achieve a shared financial aim. Mutual fund companies invest in capital market. Income generated by these investments as well as capital appreciation is distributed to investors proportionately to the number of units they own. Furthermore, mutual funds provide liquidity because open-ended funds can be redeemed at any time, whereas in the secondary market, close-ended fund can only be sold.

In an economy, micro variables are non-systematic risks that can be managed by individual businesses but macroeconomic variables are a type of systematic risk that cannot be managed. These can include a variety

of events such as the global financial crisis, crude oil prices, exchange rates, and inflation etc. Investors are often tempted to participate in the financial market, but they hesitate to do so due to uncontrolled variables and economic instability. Pakistan has a large investment potential, however macroeconomic factors impact the financial market activity. Over the previous five years, AUM of mutual fund industry in Pakistan has grown 57 % from 2016 till 2020. However, there is still a lot of room for growth, since mutual funds contribution to Pakistan's GDP in 2020 was just 1.6 %, compared to 101 % in the United States, 58 % in the United Kingdom.

Mutual Fund Industry in Pakistan

Mutual funds were first created in Pakistan with the public selling of NIT Units in 1962 (National Investment Trust). It is the public sector's only open-ended mutual fund (AFZA & RAUF, 2009). The Investment Corporation of Pakistan (ICP) was founded in 1966 and issued a series of closed-ended mutual funds (Asad & Siddiqui, 2019). Following the privatization of the ICP in the year 2000, the mutual fund market in Pakistan experienced rapid expansion and attracted the attentions of both domestic and global investors. Pakistan's mutual fund business has grown to become a significant nonbanking financial institution and is regulated by the SECP (Ahmed & Siddiqui, 2019). Pakistan has only 1.33 percent of its mutual fund assets allocated to primary securities, compared to 3.7 percent in India, 4.0 percent in Malaysia, 20.3 percent in Hong Kong, and 16.5 percent in South Korea. These statistics show that the mutual fund business in Pakistan has a lot of room to grow(Khorana, Servaes, & Tufano, 2005). At June 30, 2020, there have been 19 Asset Management Companies handling 300 funds including 279 open end, 19 Voluntary Pension Schemes and 2 exchange trade funds under the umbrella of SECP. Close end funds are no more traded. The Assets under management AUM on June 30, 2020 was Rs. 772.69 billion consisting Rs. 741.86 billion in Open-ended, followed by Rs. 30.71 billion in Voluntary Pension Schemes and Rs .087 billion in exchange trade funds. Overall Pakistan mutual fund industry grew in financial year 2020 by 42.9%. NAV Increased from PKR 540 to 772 billion.

Literature Review

As per previous literature available we can identify the impact of many macroeconomic conditions on the growth of the financial market and because mutual funds are a part of the financial market, their growth is inextricably related to that of the market. Almost all developed countries show a favorable relationship between macroeconomic factors and growth of mutual fund's AUM. According to Giri et al. (2017), the financial market's movement is influenced by macroeconomic indicators. The financial market's ups and downs are closely connected to changes in GDP. Investors place their money in the market based on the direction of the economy's real GDP. The study by Bali et al. (2014) emphasizes the connection between AUM growth and macroeconomic variables. When it comes to determine the future growth of financial products, the uncontrollable element beta is important. The stock's beta is influenced by massive fluctuations in any macroeconomic indicator. Hypotheses were put up by Mohammadreza, Monjazeb, and Esmaeel Ramazanpour, (2013). In the first place, the model's estimation was validated, and the results obtained that the exchange rate has a favorable impact on mutual fund returns. Another finding indicated that inflation rate had a beneficial impact. According to Emily Chelanget Kariuki, (2014), the 5 macroeconomic variables, namely money supply, interest rate, inflation rate, GDP, and exchange rate, all affected the NAV of Kenya's mutual fund. These elements contribute for over 70.9 percent of Kenya's mutual fund returns. Money supply, interest rate, inflation rate, and GDP have a positive impact, whereas the exchange rate has a negative impact. Hamdan, (2014) study looks at the link between the stock market and interest rates in Pakistan during a ten-year period, from 2004 to 2013. Regression and correlation were used in the study. According to the study, there is an indirect link between interest rates and the stock market, which means that interest has indirect influence on stock price. The study of Zahid Mehmood Akhtar, (2017) investigates the association between macroeconomic variables and stock price in Pakistan. The study came to the conclusion that there is a long-term association in stock price and macroeconomic factors. The connection between industrial production and GDP was favorable. The discount rate and

inflation have a negative impact on stock prices, but exports, the exchange rate, and the money supply have a positive impact.

Research Problem

The above literature analysis indicates that there is minimal evidence of research focused on macroeconomic factors driving the expansion of Pakistan's mutual fund business. The major issue is determining the macroeconomic factors that influence the growth of mutual fund's AUM. Furthermore, to find either they have positive or negative impact.

Research Questions

This research addresses the following questions to be answered:

Question 1: Is the growth of Asset under Management (AUM) of mutual fund industry in Pakistan related with the change in Gross domestic product?
Question 2: Is the growth of Asset under Management (AUM) of mutual fund industry in Pakistan related with the change in interest rate?
Question 3: Is the growth of Asset under Management (AUM) of mutual fund industry in Pakistan related with the change in Inflation rate?
Question 4: Is the growth of Asset under Management (AUM) of mutual fund industry in Pakistan related with the change in Exchange rate?

Purpose of the Study

Macroeconomic factors play a significant role in the expansion of the financial industry in developing countries. Certain macro-economic indicators have been related to the mutual fund industry over the years, according to relevant research. The expansion of the financial market is driven by global dynamics such as foreign direct investments, foreign institutional investors/investments, foreign currency risk/volatility, gold prices, and trade agreements. Fiscal variables, such as interest rate, inflation, money supply, and tax rate, on the other hand, can often prevent the normal functioning of the financial market. This research differs from the previous literatures as they do not discuss all factors that affect the growth of the mutual fund industry in one paper. As Pakistan's mutual fund market continuously growing, there is a need to identify the factors that have actually driven the growth of AUM.

Conceptual Framework
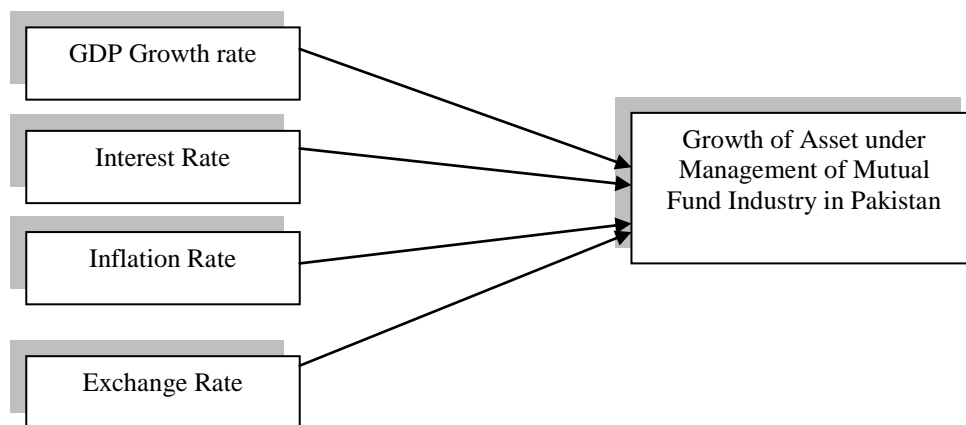
Research Methodology

Data

Secondary data is used in order to find the factors affecting the growth mutual fund industry in Pakistan. Data consist of four independent macro-economic factors which include GDP growth rate, interest rate, inflation rate and exchange rate per US dollar. And the dependent variable taken is the value of asset under management in PKR billion of mutual fund industry in Pakistan.

Source of Data and Sample Size

Sample size for this research is 10 years as data from 2011-2020 fiscal years was taken into consideration from different authentic sources. The values of AUM are taken from Mutual Fund Association of Pakistan (MUFAP) year book 2020. The data for macroeconomic factors was taken from the World Bank website.

Regression Model

The study will employ multiple regression analysis to examine the influence of macroeconomic factors on the growth of Asset under management. SPSS tool is used to perform the data analysis. Regression model is divided into two equations for the accuracy and fulfillment of multiple regression analysis assumptions.

The regression equations obtained are:

1. $Y = \beta o + \beta_1 x_1 + \beta_2 x_2 + \in$ (GDP growth rate and interest rate)
2. $Y = \beta o + \beta_3 x_3 + \beta_4 x_4 + \in$ (Inflation rate and exchange rate)

Where

Y = Dependent Variable AUM
βo = intercept
$\beta_1 \ldots. \beta_4$ = slope
$X_1 \ldots. X_4$ = Independent Macroeconomic Variables
$\in$ = Residual or error term
A brief description of each variable is as following,

Asset Under Management

The market value of an asset that has been pooled from many investors is known as asset under management (AUM). This asset is handled by a financial institution or an investment firm. AUM is a measure that indicates the size of a fund. The assets maintained can be for a specific client or for all clients. AUM is a dynamic figure that fluctuates with the amount of money invested in a mutual fund.

Gross Domestic Product

GDP depicts the country's financial health. A high GDP suggests a high level of earnings, while a low GDP indicates a low level of earnings. As a result, investors pay close attention to the fluctuation of GDP.

Interest Rate

The interest rate is used to manage inflation and shape monetary policy. Interest rate decisions in Pakistan are made by the State Bank, and they are based on the economic conditions. Interest rate has negative

impact on funds return which means that the fund's return decrease with the increase on interest rate(Asad & Siddiqui, 2019).

Inflation Rate

Krishnamurthy, (2014) studied that Inflation is directly related to the purchase of equities mutual funds. When there is a high rate of inflation, the investment corpus of the investors is reduced, and vice versa. Inflation reduces investors' risk aversion capacity, causing them to shift away from high-risk investments and toward low-risk investments.

Exchange Rate

The rate of return for foreign investors who prefer to invest in the local market and domestic investors who prefer to invest in the foreign market is influenced by the exchange rate. The US Dollar (US$) is the most widely used currency. In such a case, the share price is expected to fall if the rupee appreciates against the US dollar.

Hypothesis

H1: Growth of Asset under Management (AUM) of mutual fund industry in Pakistan is influenced by the change in Gross domestic product.
H2: Growth of Asset under Management (AUM) of mutual fund industry in Pakistan is influenced by the change in Interest rate.
H3: Growth of Asset under Management (AUM) of mutual fund industry in Pakistan is influenced by the change in Inflation rate.
H4: Growth of Asset under Management (AUM) of mutual fund industry in Pakistan is influenced by the change in Exchange rate.

Data Analysis and Interpretation

Table-1: Fiscal year data of AUM and Macroeconomic factors in Pakistan.

Year	AUM	GDP growth rate	inflation rate	interest rate	exchange rate
	PKR Million	**%**	**%**	**%**	**PKR/USD**
2011	250,758	2.748	11.916	14.419	86.343
2012	380,538	3.507	9.682	13.519	93.395
2013	361,689	4.396	7.692	11.986	101.629
2014	416,160	4.675	7.189	11.73	101.1
2015	443,470	4.731	2.529	10.156	102.769
2016	490,370	5.527	3.765	8.755	104.769
2017	622,352	5.554	4.085	8.21	105.455
2018	609,759	5.836	5.078	8.531	121.824
2019	539,968	0.989	10.578	12.233	150.036
2020	772,698	0.526	9.74	10.758	161.838

*The data is calculated manually from different sources by the researcher and represented into tabular form using Excel.

Table-2: Model summary of two factors (GDP growth rate and interest rate)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944[a]	.891	.860	56905.94902

a. Predictors: (Constant), Interestrate, GDPGrowthrate
b. Dependent Variable: Assetundermanagement

Table-2 shows that the independent macroeconomic factors i.e. GDP growth rate and interest rate explain 89.1% of variance in the growth of AUM as represented by R square.

Table-3: ANOVA details of two factors (GDP growth rate and interest rate)

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	184891144242.267	2	92445572121.133	28.548	.000[b]
	Residual	22668009235.333	7	3238287033.619		
	Total	207559153477.600	9			

a. Dependent Variable: Assetundermanagement
b. Predictors: (Constant), Interestrate, GDPGrowthrate

Table-3 shows that our model is significant at α=.05, F (2, 7) =28.548 and p = .000 which is less than .05

Table-4: The table shows the significant value

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1625563.013	151762.988		10.711	.000
	GDPGROWTHRATE	-66250.435	12191.566	-.822	-5.434	.001
	INTERESTRATE	-79947.370	10801.508	-1.120	-7.402	.000

a.   Dependent Variable: ASSETUNDERMANAGEMENT

Table-4 shows that GDP growth rate and interest rate have significant amount of explain variance in the growth of AUM as their p values are .001 and .000 respectively which are less than .05

Hence the Regression Model looks like:

$Y = \beta o + \beta_1 x_1 + \beta_2 x_2 + \in$

$Y = 1625563.013 - 66250.435 x_1 - 79947.370 x_2$

Table-5: Model summary of two factors (Inflation rate and exchange rate)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904[a]	.817	.765	73615.38008

a. Predictors: (Constant), EXCHANGERATE, INFLATIONRATE
b. Dependent Variable: ASSETUNDERMANAGEMENT

Table-5 shows that the independent macroeconomic factors i.e. Inflation rate and exchange rate explain 81.7% of variance in the growth of AUM as represented by R square.

Table-6: ANOVA details of two factors (Inflation rate and exchange rate)

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	169624584184.186	2	84812292092.093	15.650	.003[b]
	Residual	37934569293.414	7	5419224184.773		
	Total	207559153477.600	9			

a. Dependent Variable: AssetunderManagement
b. Predictors: (Constant), Exchangerate, Inflationrate

Table-6 shows that our model is significant at α=.05, F (2, 7) =15.650 and p = .003 which is less than .05

Table-7: The table shows the significant value

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6982.073	119492.513		.058	.955
	INFLATIONRATE	-19669.301	7752.467	-.419	-2.537	.039
	EXCHANGERATE	5525.469	1021.776	.894	5.408	.001

a. Dependent Variable: ASSETUNDERMANAGEMENT

Table-7 shows that Inflation rate and exchange rate have significant amount of explain variance in the growth of AUM as their p values are .039 and .001 respectively which are less than .05

Hence the Regression Model looks like:

$Y = \beta o + \beta_3 x_3 + \beta_4 x_4 + \in$
$Y = 6982.073 - 19669.301 x_3 + 5525.469 x_4$

Discussion

Regression analysis was used at 95% significance level to examine the influence of macroeconomic factors on the growth of mutual fund industry. The value of R square in the model summary was used to account for the variation in dependent variable caused by the change in independent variables. In

coefficient table Beta value shows the extent to which AUM can be changed for every 1 unit change in macroeconomic factors. The study also examines which factors have positive or negative impact on the growth of AUM. GDP growth rate has influence on the growth of AUM as Significance value is .001 which is less than .05 and negative Beta coefficient shows that the growth of AUM will decrease if GDP growth rate increases. Interest rate has influence on the growth of AUM as Significance value is .000 which is less than .05 and negative Beta coefficient shows that the growth of AUM will decrease if interest rate increases. Inflation rate has influence on the growth of AUM as Significance value is .039 which is less than .05 and negative Beta coefficient shows that the growth of AUM will decrease if Inflation rate increases. Exchange rate has influence on the growth of AUM as Significance value is .001 which is less than .05 and positive Beta coefficient shows that the growth of AUM will increase if Exchange rate increases.

Table-8: Summary of results

Hypothesis	Results	Impact
H1: Growth of AUM of mutual fund industry in Pakistan is influenced by the change in Gross domestic product.	Fails to reject	Negative
H2: Growth of AUM of mutual fund industry in Pakistan is influenced by the change in Interest rate.	Fails to reject	Negative
H3: Growth of AUM of mutual fund industry in Pakistan is influenced by the change in Inflation rate.	Fails to reject	Negative
H4: Growth of AUM of mutual fund industry in Pakistan is influenced by the change in Exchange rate.	Fails to reject	Positive

Conclusion

Mutual funds provide access to professionally managed and diverse portfolios for smaller investors. Investors can choose from a wide range of funds based on their unique objectives. However, any uncertainty, whether political, social, or economic, can have an adverse impact on the stock market and, as a result, on mutual funds. Financial market of Pakistan provides numerous attractive opportunities for investment which encourage investors. Since a few years, the mutual fund market in Pakistan has grown significantly as various new funds and fund categories, such as Exchange Traded Funds, have been introduced. Furthermore, the Islamic mutual funds industry has experienced tremendous growth as a result of the various types of Islamic funds offered by major AMCs, such as Al Meezan Mutual Fund, UBL Islamic Funds, and others(Asad & Siddiqui, 2019). As a result of this expansion and various market structures, an attempt is made to understand the factors that influence the mutual fund market and guiding investors or fund managers to identify the linkages and plan their investment strategies accordingly. Pakistan's economy has begun to recover gradually from the effects of the COVID-19, which halted industrial and business activities. Large Scale Manufacturing Industries have grown 7.41% in the first five months of FY21. As a result of economic recovery, the stock market is moving in a positive direction. The KSE-100 Index return was observed 7% in December 2020 and is likely to maintain its growth with the financial market's stability. The KSE-100 benchmark has crossed above 45,000 points after a two-year stutter in 12-Jan-21(PACRA, 2021). The mutual fund business has seen tremendous growth in recent months, with total industry AUMs rising to PKR955 billion in December 2020. This increase in AUMs can be attributed to increased returns as well as additional growth of mutual fund industry (PACRA, 2021). The decision by the SBP to reduce the policy rate to 7% in the final quarter of FY20 reduced finance costs. The country's inflation rate has also decreased. The average inflation rate in the first half of FY21 was 8.74%, compared to 10.7% in the previous fiscal year. Furthermore, in the foreseeable future, the exchange rate is projected to remain constant. However, there is still uncertainty due to COVID-19 in the market. While global capital markets are improving, a rigorous lockdown or closure of economic activity in major economies could have an indirect influence on Pakistan's market, which is dominated by export destinations.

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