



## ORIGINAL RESEARCH PAPER

## Management

### THE MUTUAL FUND SUBSCRIPTION AND REDEMPTION IMPACT ON EQUITY MARKET DURING COVID-19- A STUDY

**KEY WORDS:** ARCH Effect, Asset management company, Mutual Funds, redemption, Subscription and VIX Index.

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#### ABSTRACT

The present study has been emphasized on the role of mutual fund subscription and redemption in Indian equity market during covid-19. The study has considered the data from the year 2011 to 2022. The VIX index has been considered to know the impact of mutual fund subscription and redemption on market volatility during covid-19. The ARCH model has been applied and the result states that the VIX is getting influenced by the subscription and redemption amount of mutual funds. The ordinary least square method result indicated that the mutual funds subscription and redemption impact is observed on the Indian equity market capital during covid-19. This study is useful for the equity retail investors, mutual funds AMC's, regulators and other market stake holders.

#### INTRODUCTION

The role of mutual funds in the Indian equity market is increasing day by day, as new investors are entering into the equity market through mutual funds in India. The role of mutual funds in Indian equity market is equally predominant with the foreign institutional investors. The investors invest their money in the stock market to increase their wealth so one of the main consequences of stock market volatility is affecting the returns of the investors. The present study has been focussed on one such wealth maximization sources of investors which are Mutual Funds and study will analyse and examine how market volatility is getting influenced by the Mutual Fund subscription and redemption.

The growth of the equity market depends on many things such as presence of long term sustainable equity investments through domestic and foreign. The study made an attempt to know the impact of the mutual funds subscription and redemption on the growth of the equity market capital.

#### Review of Literature

**Rajeshwari. T.R, Moorthy Rama V.E., Srinivasan Ajay (2020):** In this study the authors had conducted a survey on mutual fund investors in urban and semi-urban areas to study the selection behaviour of retail investors on the factors influencing the fund/schemes. To attract and retain the investors from this market segment selection, continuous product development and introduction of innovative products should be acquired. The study found that AMC's should design products consciously to meet the investor's needs and should active to adopt the changing market moods and work innovatively.

**SEBI – NCAER Survey (2000):** This article is focused on the perception of Indian investors in rural and semi-urban areas for investing in mutual fund. It has estimated the number of households and the population of individual investors, their economic and demographic profile, portfolio size and investment preference for equity as well as other savings instruments. The study found that the higher income groups have higher share of investments in mutual funds (MFs) signifying that mutual funds have still not become truly the investment vehicle for small investors.

**Bodla B. S., Bishnoi Sunita (2008):** The study illustrates the Emerging Trend of Mutual Funds in India including the category and type of schemes. Schemes with variety of categories such as cumulative interest income, monthly income plans, sectorial plans, money market schemes, open-end and close-end schemes etc have registered excellent growth in fund mobilization. The study found that UTI's share in total assets under management has come down to 11.8 percent in 2006 from 82.5 percent in 1998 and also concluded that presently mutual fund investors have 609 variety featured schemes.

**V. Rathnamani (2013):** The study examines the Investors Preference towards Mutual Fund Industry in Trichy. The author focused on the investment mode preferred by the investors in Mathura and to check the preference of investors to invest in mutual funds amidst availability of other traditional investment avenues. The study found that the preference of many investors to invest in mutual fund to have high return at low level of risk including safety liquidity.

**Mallikarjuna Rao (2014):** This study is focused on the rural and semi-urban investors' perceptions on mutual funds and to analyse the satisfaction level of investors in Rayalaseema region of Andhra Pradesh. The results of the study have significant implications to mutual fund companies. Investors' perception on rural and semi-urban areas is an important task for the assets managers in order to be successful in facing many challenges and opportunities.

**Vikas Chaudhary (2019)** "Performance evaluation of mutual funds: a study of selected diversified equity mutual funds in India" To study the performance of Selected Diversified Equity Mutual Funds in India, to compare the performance of Selected Diversified Equity Mutual Funds in India. The data of 8 mutual fund schemes was taken as secondary source after that many tools like standard deviation and other tools were used to consider the beta means systematic risk.

#### Objectives of the Study

1. To study the mutual fund subscription and Redemption effect on Volatility of equity market during covid-19.
2. To study the Impact of mutual fund subscription and redemption on Equity market Capital.

#### Hypothesis of the Study

- **H<sub>0</sub>:** There is no effect of mutual fund subscription and Redemption on the Volatility of equity market.
- **H<sub>0</sub>:** There is no impact of mutual fund subscription and redemption on Equity market Capital.

#### Scope of the study:

The study has been emphasized on the secondary data from the period of 2011 to 2022. The following are the variables were considered in the study.

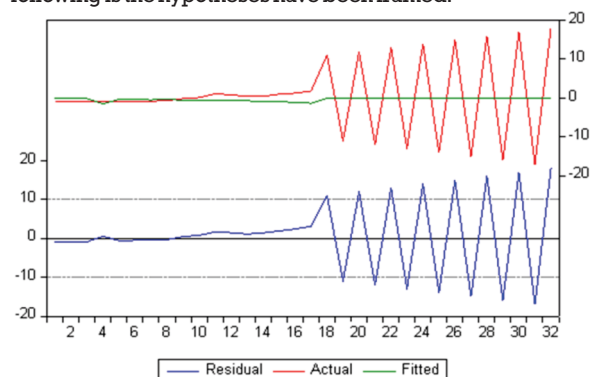
- Mutual fund Subscription amount,
- Mutual fund Redemption amount,
- VIX Index and
- Equity market Capital.

**Research Methodology:** The present study has considered the time series data from the period of 2011 to 2022. The ARCH model has been applied to know the volatility effect of mutual funds subscription and redemption on the equity markets. The ordinary least square method has been applied to know the impact of MF subscription and redemption on the growth of the equity market capital.

### Data Analysis with interpretation:

1<sup>st</sup> Objective: To study the mutual fund subscription and Redemption effect on Volatility of equity market.

To study the objective VIX index has been considered from NSE India as a bench mark index for volatility. The subscription and redemption amount has been considered as an independent variables and VIX as dependent variable. The following is the hypotheses have been framed.



Source: Compiled through secondary data, AMFI

The residual graph states that the actual trend lines are crossed fitted lines. Hence the residual graph indicates the volatility exists due to the mutual fund subscription and redemption with the volatility of VIX index.

**Null hypothesis:** There is no arch effect

**Alternative hypothesis:** There is an arch effect

**Table – 1 ARCH Model**

Subscription				Redemption				Coefficient
	Coefficient	Std. Error	z-Statistic	Prob	Coefficient	Std. Error	z-Statistic	
ARC	1.097	1.193	0.919	0.00	ARC	1.04	0.871	1.19
H	6	1	9	26	H	04	4	39
GARCH	0.029	0.836	0.034	0.07	GARCH	0.11	0.882	0.13
CH	2	3	9	21	CH	78	8	34
TARCH	-0.87	1.191	-0.73	0.01	TARCH	0.80	1.633	0.48
CH	47	1	45	27	CH	01	2	98
PARCH	6.011	2.902	20.70	0.00	PARCH	4.97	1.742	28.6
CH	3	8	01	23	H	08	1	353

Source: Compiled through secondary data, AMFI

The above ARCH family model depicts that the normal distribution of mutual fund subscription influence on the volatility of VIX index. Result indicates that p value for the ARCH model and PARCH model seems to be statistically signifies this two models are used to find out the volatility influence is observed. Further analysis illustrate that ARCH model co-efficient value is having positive influence where as TARCH is having negative influence among ARCH and PARCH, ARCH model is observe to be fit for volatility.

The ARCH family model depicts that the normal distribution of mutual fund redemption influence on the volatility of VIX index. Result indicates that p value for the ARCH model, GARCH model and PARCH model seems to be statistically signifies this three model are used to find out the volatility between the variables. Further analysis illustrate that all the models co-efficient values are having positive influence on the volatility of VIX index. Hence it states that **null hypotheses is rejected and accepted the alternative hypotheses is accepted, which indicates that the mutual fund subscription and redemption is having the influence on the volatility of VIX index.**

2<sup>nd</sup> Objective: To study the Impact of mutual fund subscription and redemption on Equity market Capital

To study the objective the following hypotheses has been framed.

**Null Hypotheses:** There is no impact of mutual fund subscription on Equity market Capital

**Table – 2 Subscription Influence on Equity market Capital**

Method: Least Squares				
Sample: 1 32				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Equity Market Cap	4.9808	5.207	0.094699	0.0042
R-squared	0.682463	Mean dependent var		0.875000
Adjusted R-squared	0.422463	S.D. dependent var		16.94370
S.E. of regression	16.96456	Akaike info criterion		8.530881
Sum squared resid	8921.680	Schwarz criterion		8.576685
Log likelihood	135.4941	Hannan-Quinn criter.		8.546064
Durbin-Watson stat	3.757678			

Source: Compiled through secondary data, AMFI

The table illustrates the ordinary least square method result that the mutual fund subscription impact on the growth of equity market capital. The probability value is observed to be less than 0.05%, which signifies that co-efficient value mutual fund subscription influence (4.9808) on equity Market Capital, which indicates that one point increase in mutual fund subscription, corresponding (equity market Capital) value increases by 4.9808. Hence, it concluded that null hypothesis has been rejected and alternative hypothesis have been accepted i.e., which states that the influence is observed of mutual fund subscription on the equity market capital.

**Null Hypotheses:** There is no impact of mutual fund redemption on Equity market Capital

**Table – 3 Subscription Influence on Equity market Capital**

Dependent Variable: REDM				
Method: Least Squares				
Included observations: 17				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EQU	4.1408	2.7708	1.496000	0.0041
R-squared	0.632712	Mean dependent var		0.000000
Adjusted R-squared	0.382712	S.D. dependent var		0.953962
S.E. of regression	0.893516	Akaike info criterion		2.669718
Sum squared resid	12.77393	Schwarz criterion		2.718730
Log likelihood	21.69260	Hannan-Quinn criter.		2.674589
Durbin-Watson stat	0.208649			

Source: Compiled through secondary data, AMFI

The table illustrates the ordinary least square method result that the mutual fund redemption impact on the growth of equity market capital. The probability value is observed to be less than 0.05%, which signifies that co-efficient value mutual fund subscription influence (4.1408) on equity Market Capital, which indicates that one point increase in mutual fund redemption the corresponding (equity market Capital) value increases by 4.9808. Hence, it concluded that null hypothesis has been rejected and alternative hypothesis have been accepted i.e., which states that the influence is observed of mutual fund redemption on the equity market capital.

**Findings of the Study:** The following are the findings were derived through the statistical analysis based on the two objectives. The findings are as follows,

1. It is found from ARCH family model that, Under mutual fund subscription, ARCH model is considered as best model to evaluate volatility effects and also found from Residual Graph that Volatility effects is exist between the mutual fund subscription with VIX Index.
2. The study found from ARCH family model that ,Under Mutual fund redemption, ARCH model is considered as best model to find out volatility effects and also stated form Residual graph that Volatility effects is exist between Mutual fund redemption with VIX Index.
3. The study found that the probability value is observed to be less than 0.05%, which signifies that co-efficient value mutual fund subscription influence (4.9808) on equity Market Capital
4. The study found that the probability value is observed to be less than 0.05%, which signifies that co-efficient value mutual fund Redemption influence (4.1408) on equity Market Capital

#### CONCLUSION OF THE STUDY:

The study concludes the titled The Mutual Fund Subscription and Redemption on Equity market. The study has considered the secondary data from the period of 2011 to 2022. The study observed that the mutual fund subscription and redemption influence on the VIX has been studied. The study found that the volatility is having the stronger influence by the mutual fund subscription and redemption amount. The subscription and redemption amount is having the stronger influence on the equity market capital growth during covid-19. Hence there is a need to do further research in this area by considering the select assets along with the economic factors influence on the mutual funds subscription and redemption.

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