Who Drives Whom? Mutual Funds VS Stock Market

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Introduction:

Mutual fund mobilizes financial resources and commingles the money of investors into a single but diversified portfolio. Along with spread of risk mutual funds also enjoy the economies of scale. While open end mutual funds sell new units to investor and redeem back outstanding units on demand at fair market value (Saunders and Cornett, 2005). These unique features of mutual funds always attract investor to make investment indirectly in mutual funds rather than directly investing in the shares of any company.

Since, active portfolios and funds are administered by artifice and professional managers. Thus portfolio management requires strong understanding, ample experience, appraisal and re-evaluation of securities market, individual securities and sectors within the economy. That's why research on the mutual fund industry has become important (Kumar and Kumar, 2011). The study already conducted by Kumar and Kumar (2011) is confined to the Close end and tax saver funds. But the existing study focused the Open end funds due to which it seems to be contribution in the existing literature available on mutual fund and stock market.

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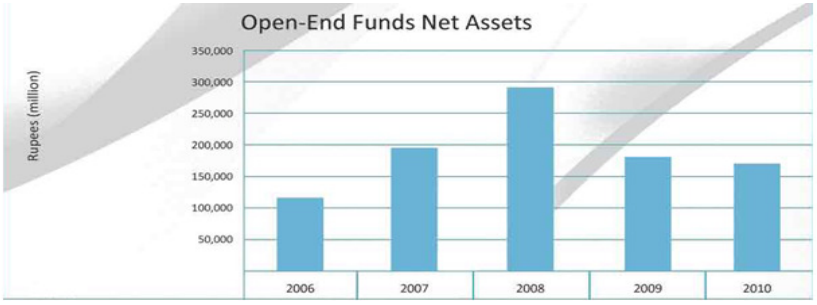
Mutual Funds in Pakistan:

Though the first mutual fund was established in 1924 at Boston, but in Pakistan open end mutual fund was launched in 1962 with the name of NIT (National Investment trust). Then ICP Investment Corporation of Pakistan was established in 1966, which introduced a large number of close ended fund. Until 1990 ICP launched twenty six close end mutual fund, but after that in process of restructuring financial sector of Pakistan government of Pakistan wind up ICP in June, 2000. As a consequence of this wind up 0ut of twenty six mutual funds twelve were acquired by a private investment company, JS ABAMCO and the remaining were owned by PICIC at that time. At the time of inception of mutual funds in Pakistan, participation of both private and public sector was allowed. But later on in the period of nationalization this sector was completely dominated by government and failed in achieving its objective of resource mobilization due to which government allowed the private sector to launch mutual funds. Now a day's almost every commercial bank along with the investment companies has introduced mutual funds. The success story of this industry reveals that mutual fund industry has not increased in terms of growth in net assets, but as well in number of mutual funds. A graphical representation of open end fund shows the asset value of open end mutual fund industry has declined drastically in last few years.



Source: Mutual Funds Association of Pakistan

Review of Literature:

Peter Fortune (1998) asserts that security returns affect the future fund flows and similarly some fund flows also affect the future security returns. More specifically returns on long term treasury bonds and on the S&P 500 appeared as more statistically significant predictor of more investment in bond and equity funds. Moreover,

disturbances to security return do have effect on future fund flow as well. They also observed reverse causation though it was less strong.

Golaka C Nath, G.P. Samantha (2003), observed negative association between stock prices andexchange rate for the period. And concluded at the end that no casual linkage exist between exchange rate and stock prices for the period 1993 to 2003. While contrary to this study Frank and Young (1972) used the six different exchange rates and explored the significant relationship between stock prices and exchange rate. Similarly, Ma and Kao (1990) observed a negative relationship whereas Oskooe and Sohrabian (1992) affirmed bidirectional Granger causality with absence of long-term association.

According to John R freeman (1983) Granger Causality may not be a perfect substitute for theoretical enquiry. His emphasis was that Granger Causality must be guided by theoretical expectations. The results of his study proved that Granger Causality test can contribute to understanding of politics even though study failed to confirm the causal relationship.

Moreover, Solnik (1987) found positive and negative relationship between exchange rate variation and real stock returns variations for different periods.

Similarly, Low, Soo-Wah (2010) examined the association between fund characteristics and fund performance. Study captured the performance of fund by risk adjusted return while used the fund age, fund size and service charges as fund specific characteristics. Study observed at the end fund size is not significantly linked with firm performance. Moreover he also observed as the fund grows in size its efficiency tends to decrease.

The most recent study of Kumar and Kumar (2011) was conducted to find the effect of stock performance of stock on performance of mutual fund and vice versa. According to Granger Causality statistics study observed at the end among the mutual funds few of the mutual funds shows bilateral causality and few of the mutual funds did not show any causality while just one fund showed unidirectional causality. So, it means still persuasion is required in the answer of question of who drives whom?Moreover, Kumar and Kumar just focussed the tax saver close end funds while Low, Soo-Wah (2010) just observed the relationship between fund specific characteristic and fund performance. thus study on especially open end mutual fund performance and stock market seems to be missing in the previous literature available

on mutual funds due to which this study seems to be a contribution in existing literature available on mutual funds.

Hypothesis -1

H_0 : Stock market (indices) does not Cause Variation in NAV of Open End Mutual Funds.

H_1: Stock market (indices) does Cause Variation in NAV of Open End Mutual Funds.

Hypothesis-2

H_o : NAV of Open End Mutual Funds Cause Variation inStock Market (Indices)

$H_{1:}$ Net Asset Value of Open End Mutual Funds does Cause Variation in Stock Market (Indices)

The following methodology is used to assess these hypothesises

Methodology

Data and Data Sources:

In this study we considered only five open end mutual funds launched in market before 2006. These funds includes: 1) JS Large Capital fund, 2) Pakistan stock fund, 3) JS Asset Allocation Fund, 4) Pakistan Income Fund and 5) JS value Fund. The daily NAV of these mutual funds were collected for January 2006 to 31 December 2010 from association of mutual funds in Pakistan. While the daily indices values were collected from Karachi Stock Exchange for the same period.

Estimations:

Following pair of regression is used to assess the relationship between open end mutual fund and stock market.

$$NAV_t = \sum \alpha_j M_{t-i} + \sum \beta_j NAV_{t-j} + U_{1t} \quad \textbf{(1)}$$

$$M_t = \sum \lambda_j NAV_{t-i} + \sum \sigma_j M_{t-j} + U_{2t} \quad \textbf{(2)}$$

Results:

Results in table 1 focuses the fitness of regression model. The selected open ended mutual funds are regressed with first order lagged NAV restriction as explanatory variable. The results clearly indicate that restricted regression model is significant at 5% level of significance. These results illustrate current NAV variation might be predicted by first order lagged NAV. So, from these results it could be concluded that momentous NAV contains much of information to predict the current level of NAV. Study used only the first order lagged NAV by conducting Auto-Correlation up to 20 lags.

Table 1: Restricted Regression Model with Lagged NAV.

Sr. No.	Fund Name	F Statistics	Significance
1	JSASA	337228.9	0.0000
2	JSLCF	215543.4	0.0000
3	JSVAL	327854.2	0.0000
4	PI F	231.8783	0.0000
5	PSF	208879.1	0.0000

Table 2 explains the results of unrestricted regression with all dependent variable i.e NAV and two explanatory variables first order lagged indices and first order lagged NAV. The significant results in table 2 shows that first order lagged indices and NAV predict current NAV.

Table 2: Unrestricted Regression model with Lagged NAV and Lagged Indices Value

Sr.No	Fund Name	F-Statistics	Significance
1	JSASA-KSE 100	168486.1	0.0000
2	JSLCF-KSE 100	107735.2	0.0000
3	JSVAL-KSE 100	164844.5	0.0000
4	PIF-KSE 100	122.2475	0.0000
5	PSF-KSE 100	104358.9	0.0000

Table 3 exhibits the significance of explanatory variables. Results in table 3 clearly illustrate that lagged indices of JSVAL and PIF are just significant while the lagged indices of other funds are insignificant at 5% level of significance. These results show that lagged indices may not captured the useful information to predict

current NAV of those funds. More importantly the lagged NAV significantly predicted the current NAV.

Table 3: Significance of explanatory variable (Lagged NAV and Lagged Indices)

Sr. No	Fund Name	Unstandardized coefficients			T		Significance	
		C	Lag_ NAV	Lag_ Indices	Lag_NAV	Lag_ Indices	Lag_NAV	Lag_ Indices
1	JSASA-KSE 100	-0.0180	1.66E-05	0.997322	507.8112	0.378011	0.0000	0.7055
2	JS LCF-KSE 100	0.134384	0.994486	3.31E-05	274.8531	0.784306	0.0000	0.4330
3	JSVAL-KSE 100	-0.067231	0.992346	1.65E-05	340.8082	2.695456	0.0000	0.0071
4	PIF-KSE 100	30.39412	0.399823	8.00E-05	14.61456	3.260600	0.0000	0.0011
5	PSF-KSE 100	0.299346	0.996871	-1.06E-05	354.2089	-0.360671	0.0000	0.7184

Table: 4 unrestricted regression model.

Sr.No.	Fund Name	F-Statistics	Significance
1	KSE 100-JSASA	82911.98	0.0000
2	KSE 100-JS LCF	82917.44	0.0000
3	KSE100-JSVAL	83273.49	0.0000
4	KSE100-PIF	83174.26	0.0000
5	KSE100-PSF	82972.05	0.0000

Table: 5 Significance of dependent variables.

Sr.No	KSE100-Fund	Unstandardised Coefficients			t		Significance	
		c	Lag NAV	Lag Indices	Lag NAV	Lag Indices	Lag Nav	Lag Indices
1	KSE 100-JSASA	37.24706	-0.020708	0.996875	-0.16554	356.4372	0.8685	0.0000
2	KSE 100-JSLCF	37.43714	-0.112224	0.997705	-0.317562	241.936	0.7509	0.0000
3	KSE 100-JSVAL	24.89145	-4.303939	1.003885	-2.212532	245.9978	0.0271	0.0000
4	KSE100-PIF	-225.1917	5.198433	0.995938	1.886551	402.7737	0.0595	0.0000
5	KSE 100-PSF	36.44939	0.275393	0.994826	0.914441	315.0532	0.3607	0.0000

Table 4 explains the unrestricted regression model with all the dependent variables i.e KSE 100 indices, lagged first order KSE indices and first order lagged NAV. The results show that unrestricted regression model is robust, because values are significant at less than 0.05 level of significance, and reveal that these two dependentvariables help us to predict the dependent variable KSE 100 indices. While Table 5 shows the results of explanatory variable. These results reflect thatlagged NAVs of JSASA, JSLCF and PSF at first order does not predict the stock market i.e (KSE 100 indices). Thus lagged NAVs at first order does not have any information to predict current stock market i.e KSE 100 indices. Moreover, the results of the study are consistent to Kumar and Kumar (2011) and inconsistent to the study of Golaka C Nath, G.P. Samantha (2003).

Table-6 Granger Causality Statistics

S. No.	Relationship(Null Hypothesis)	F and Prob	Decision
1	JASA to KSE 100	0.10180 (0.9032)	Do not Reject
	KSE 100 to JSASA	0.51002 (0.6006)	Do not Reject
2	JSLCF to KSE 100	0.50541 (0.6034)	Do not Reject
	KSE 100 to JSLCF	1.80516 (0.1649)	Do not Reject
3	JSVAL to KSE100	2.60824 (0.0741)	Reject
	KSE 100 to JSVAL	3.83257 (0.0219)	Reject
4	PIF to KSE 100	2.01073 (0.1344)	Do not Reject
	KSE 100 to PIF	3.73406 (0.0242)	Reject
5	PSF to KSE 100	0.36399 (0.6950)	Do not Reject
	KSE 100 to PSF	0.10681 (0.8987)	Do not Reject

Table-6 indicates the statistics of Granger Causality which arededuced as bidirectional

causality, unidirectional causality and no causality. The above table reveals there is unidirectional causality with only fund i.e PIF VS KSE 100 and it shows, KSE affects NAV of PIF. However, no reverse causation is observed from PIF to KSE 100. Moreover, there is one fund namely JSVAL has bidirectional causality with KSE 100 indices. It indicates causality is from NAV to indices and from indices to Net Asset Value. Similarly there are three funds namely JS Asset Allocation Fund, JS Large Capital Fund and Pakistan Stock Fund revealed that direction of causality is independent. It suggests that direction is neither from NAV to KSE 100 indices and not from KSE 100 indices to NAV. Again these results o are consistent with Kumar and Kumar (2011) and inconsistent to the study of Golaka C Nath, G.P. Samantha (2003).

Conclusion

From the above result we can conclude that market performance depends upon the mutual fund performance. We can also conclude that mutual fund performance also depends upon the market performance as one of the fund revealed bidirectional causality. Because two of the funds showed independent direction which reveals that for mutual fund performance the market performance may be one of the factor, but not the only factor. Moreover, increased savings may improve our economy.

Moreover, the historic NAVs and Indices also predicedt the current NAV and current Indices which means the past NAV and Indices contain the useful information to predict the current NAV and Current Indices. Moreover, Lagged NAVs did not predict the current indices and similarly first order Lagged indices also not predicted the current NAV. Which means further research is required to explore this fact by including the lagged values of macroeconomic variables in the model.

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