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Investors' attention and American depository receipts pricing: evidence from Indian stocks

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ABSTRACT

This paper is an attempt to examine the impact of investors' attention on returns and the traded volume of American Depository Receipts prices for selected ten Indian Stocks. The Google search volume index has been used as a proxy for investors' attention in this paper. However, factors such as size and book to market ratio were used to indicate as control variables. The results reveal that investors' attention variable significantly affects ADRs traded volume, but has no impact on the ADR prices.

Contribution/Originality

Literatures on investors' attention provides enough evidences on impact of investors' attention on stock return, traded volume and liquidity. There are limited studies that examining the relationships for the Indian stocks in ADR market. Foreign investors mainly depend on online information for their investment decisions. Therefore, this makes an attempt to examine such issues for Indian stocks in foreign market.

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1. INTRODUCTION

Prices of stocks many times show fluctuations without any changes in the fundamentals of the company. Even the asset pricing models are not able to capture the cause of these short-term fluctuations in stock prices. Investor's sentiment is the probable explanation of these unexplained price changes (Barber and Odean, 2008). These behavioural aspects of investors can be measured by investor attention for a stock. Investor attention brings pressure to bear on stock prices and its trading volumes. This aim of this article is to investigate the impact of changes in investors' attention on stock prices and trading volumes for Indian stocks listed in US stock market.

In today's highly connected world information is transmitted quickly. There is a vast amount of information available out there, but investors have limited span of time to process all these information and whichever stock captures investors' attention experience short term changes in prices and trading volume. Internet plays an important role for investors in decision making as it provides opportunities for disseminating and gathering information. Investors' such online activities capture researchers, attention to examining how investors' attention changes investment decisions. A sudden change in investors' recognition towards a particular stock may affect price and volume of a stock. These variations in stock prices because of investors' attention will be better studied in stocks listed in the foreign market since investors are not fully aware about the fundamentals of foreign stocks and thus prices are mostly getting affected by the behavioural aspects of investors.

Study by Da *et al*. (2011) used Google search intensity as a measure of investors' attention. They set up a positive link between investor's attention and prices and trading volume of stocks. They further established that Google search intensity measures mostly retail investor's attention. Further studies did previously depict the correlation between investor's behaviour and stock prices and returns and thus established the "Price pressure hypothesis" and "Attention theory" by (Barber and Odean, 2013). Joseph *et al*. (2011) studied the findings of Da *et al*. (2011) through a sample of S&P 500 stocks from 2005 to 2008 across weekly intervals. They further established that stock difficult to arbitrage experience higher price pressure because of investor attention. Also, the positive correlation experiences a reversal when the investment horizon increased beyond 5 weeks. Since increased investor attention increases traded volume of stocks and thus increase liquidity and reduces the firm specific risk which further decreases the expected returns (Joseph *et al*., 2011). Also, increased investor attention increases recognition for the stock and prices return to their fundamental values. Thus, investor attention leads to negative long-term returns. Any news or stock caught the attention of institutional investors, experiences an upward price pressure and in turns increases retail investor's attention and increases price further (Ben-Rephael *et al*., 2017). Mondria *et al*. (2010) provide empirical support for using internet search query data to measure investors' attention. They find that equity home bias is lower while investors pay more attention to a country's stock market. Nieuwerburgh and Veldkamp (2009) found that US investors trade ADRs whose underlying stocks are traded in countries they pay attention to, which would reduce the mispricing of the ADR.

Effect of investors' attention on stock prices can also determine market efficiency level. In semi strong markets stock returns depend on both past values and investors' attention, in strong market there is no autocorrelation between past prices and stock returns are affected only by investors' attention and for weak markets returns are largely based on past returns (Han *et al*., 2018). Vlastakis and Markellos (2012) reported significant positive impact of investors' attention on implied measures of volatility and trading volume after controlling for market return and information supply for 30 stocks traded in NYSE and NASDAQ. Bank *et al*. (2011) further support that increased search intensity on Google causes rises in stock liquidity, volume and return to the German stock market. While Takeda and Wakao (2014) provide mixed opinion on the relationship between Google search intensity and traded volume in the Japanese stock market. Eichler (2012) examined whether

investors' attention lead to better exploitation of arbitrage opportunities in the ADR market. He found that investors' attention plays an important role in explaining the mispricing of ADRs. Ding and Hou (2015) found that retail investor attention, reflected by the level of change in the search volume index, significantly improves stock liquidity. While literature provides mixed opinion on impact of investors' attention on stock return, traded volume and liquidity, this paper examines the impact of investors' attention on stock return, traded volume for Indian stocks in foreign market, which is unexplored area.

2. METHODOLOGY

Google Search Volume Intensity (SVI) gives a good proxy for investor's attention (Da *et al*., 2011). Search interest is a relative measure which considers all the searches for the prescribed keyword in mentioned timeframe and provide the index values between 0 to 100, 100 being the highest search interest for the day showing highest search queries within mentioned timeframe. These SVI data are downloadable from Google. ADRs returns for Ten Indian Companies were taken from Yahoo Finance. To find the relation between investor's attention and ADR returns and they traded volume Regression models were used. Fama French factors for simulating the Fama French model with investor's attention variable were taken from the data library for Indian market (IIM –A).

2.1. Data analysis and findings

SVI data for the ten companies for a period from 1st January 2015 to 31st December 2017 were downloaded using the stock symbol. Google gives daily SVI value for short intervals of 90 days; SVI values for more than 90 days are represented weekly. Thus, SVI values were re-indexed as follows

Weekly average SVI (WAVG) were calculated using daily SVIs

$$Adj\ Daily\ SVI = \frac{Daily\ SVI}{WAVG}\ X\ Matched\ weekly\ average \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Variable Abnormal Search Volume index (ASVI) is defined to measure the investor's attention.

$$ASVI_{i,t} = \log(SVI_{i,t}) - \log(\ median\ (SVI_{i,t-1} \ldots\ldots SVI_{i,t-5}) \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Log ($SVI_{i,\ t}$) is the logarithm of SVI on day t and Log[Median($SVI_{i,t-1}$……..$SVI_{i,t-5}$) is the logarithm of median of SVI last five days which also represents normal search level. A dummy variable Absolute SVI (ABSVI) is introduced to capture increase of Google search intensity. $ABSVI_{i,t}$ = 1 if Log ($SVI_{i,\ t}$) is greater than one standard deviation of Log[Median($SVI_{i,\ t-1}$……..$SVI_{i,\ t-5}$), else $ABSVI_{i,t}$ = 0. Researchers have extensively used historical data from yahoo finance (Dodonova and Khoroshilov, 2007). Hence, the data for ADRs returns and volume traded was taken from Yahoo Finance.

2.2. Investor attention and short-term returns

Regression analysis was used to study relation between investor's attentions (IA), defined by variables ASVI and ABSVI and stock returns. ASVI and ABSVI improved the Fama French model. IA variable was included in Fama French model as an additional explanatory variable.

$$R_{i,t} - Rf_t = \alpha + \beta_{IA} IA_{i,t} + \beta_m (R_m - Rf_t) + \beta_{SMB}\,\mathrm{SMB}_t + \beta_{HML}\,\mathrm{HML}_t + \varepsilon \quad \ldots\ldots\ldots\ldots \quad (3)$$

Where, α is the abnormal returns and IA is the investor attention measured by ASVI and ABSVI. SMB refers to small market capitalization minus big market capitalization, while HML refers to high book to market ratio minus low book to market ratio. Mkt-Rf is the market risk premium.

Table 1: OLS results of stock return on Fama French factors

Independent Variable	Co-efficients	SE	P-value
Intercept	-0.001	0.000	0.00
Mkt-Rf	0.009	0.000	0.00
SMB	0.002	0.001	0.00
HML	-0.001	0.001	0.04
Observations	7520		
Number of Stocks	10		
Adj R^2	0.092		

Adjusted R square is increased because of IA variables. Market risk premium, SMB and HML all are significant while market risk premium and SMB is affecting the returns positively, HML is affecting it negatively.

Table 2: OLS results of stock return on Fama French three factors and investors' attention (ASVI) as additional factors

Independent Variable	Co-efficients	SE	P-value
Intercept	-0.001	0.000	0.00
ASVI	-0.001	0.002	0.31
Mkt-Rf	0.010	0.000	0.00
SMB	0.003	0.001	0.00
HML	-0.001	0.001	0.04

Table 3: OLS results of stock return on Fama French three factors and investors' attention (ABSVI) as additional factors

Independent Variable	Co-efficient	SE	P-value
Intercept	0.000	0.001	0.86
ABSVI	-0.002	0.001	0.02
Mkt-Rf	0.010	0.000	0.00
SMB	0.003	0.001	0.00
HML	-0.001	0.001	0.04
Adj R^2	0.093		

Table 2 and 3 report estimated results of equation (3). This study examines the relationship between stock return and investors' attention using pooled OLS methods. Fama – French Model with ASVI as one of the explanatory variable result is reported in Table 2 and ABSVI as one of the explanatory variable in Table 3.

Market risk premium, SMB is positively impacting the stock return while HML is negatively impacting the stick returns. Table 2 and Table 3 are consistent for the Fama- Factors. However impact of ASVI on stock return is not significant while impact of ABSVI on stock return is statistically significant at 5% confidence level. Coefficient of ABSVI is negative and thus indicates that more an investor is searching about a company, it is negatively affecting the prices. These results suggest that surge in the investor attention is negatively impacting stock return on a short-term basis.

2.3. Effect of investor's attention on trading volume of stocks

To study investor's attention on trading volume of stocks, variable $TV_{i,t}$ was defined as $TV_{i,t} = P_{i,t}V_{i,t}$, where $P_{i,t}$ is the price of stock at time *t* and $V_{i,t}$, is the volume traded. Abnormal trading volume is calculated as $ATV_{it} = (TV_{it} - TV_{i},avg)/TV_{i},avg$, where TV_{i},avg is the average volume traded in a month for the stock *i*.

Effect of investor's attention on trading volume were studied by regression analysis. Investor's attention (IA) was measured by ASVI and ABSVI by including alternatively in the model.

$$ATV_{i,t} = \alpha + \beta_{IA} IA_{i,t} + \sum \frac{ATV_{i,t}}{N} + \varepsilon \quad \text{..... (4)}$$

Table 4: OLS results of traded volume on Fama French three factors and investors' attention (ASVI) as additional factors

	Coefficients	Standard Error	P-value
Intercept	4.497	1.407	0.00
ΣATV/N	0.673	0.057	0.00
ASVI	4.104	2.033	0.04
Adjusted R^2	0.019		

Table 5: OLS results of traded volume on Fama French three factors and investors' attention (ABSVI) as additional factors

	Coefficients	Standard Error	P-value
Intercept	5.425	1.681	0.00
ΣATV/N	0.670	0.0571	0.00
ABSVI	-0.863	0.933	0.36

Table 4 reports result of equation (4) in which ASVI is investors' attention variable. Table 5 is output of the equation with ABSVI as investors' variable. ASVI is statistically significantly with 5% confidence level and it is affecting the trading volume positively. In table 5 ABSVI is not statistically significant. These results support findings of previous studies that trading volume is influenced by search intensity; higher search intensity is associated with higher traded volume.

3. CONCLUSION

The attention of the Investors was measured by variables by abnormal search index volume and absolute search volume index, apart from traditional search values. Their attention had significantly affected the stock prices as measured by the absolute search volume index, whereas the. Stock returns had been negatively impacted by an absolute search volume index, which means that investors should be inclined to search more through google search about any company when negative information abounds its occurrence in the market.

The results of our research provide enough evidence that temporary price decrease and any eventual reversal are associated with investors' attention for foreign stocks. The Indian stocks listed in US markets could be associated with the dissemination of poor information along with lower recognition of its investors. Therefore, investors immediately make attempts to collect more information about overseas companies to adjust their expectations, even when any negative information emerges therein.

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References

Bank, M., Larch, M., & Peter, G. (2011). Google search volume and its influence on liquidity and returns of German stocks. *Financial Markets and Portfolio Management, 25*(3), 239–264. doi.org/10.1007/s11408-011-0165-y.

Barber, B. M., & Odean, T. (2008). All that glitters: the effect of attention and news on the buying behavior of individual and institutional investors. *The Review of Financial Studies, 21*(2), 785–818. doi.org/10.1002/9781118467411.ch7.

Barber, B., & Odean, T. (2013). *The Behaviour of individual investor*. In Handbook of The Economics of Finance. Elsevier.

Ben-Rephael, A., Da, Z., & Israelsen, R. D. (2017). It depends on where you search: institutional investor attention and underreaction to news. *The Review of Financial Studies, 30*(9), 3009–3047. doi.org/10.1093/rfs/hhx031

Da, Z., Engelberg, J., & Gao, P. (2011). In search of attention. *The Journal of Finance, 66*(5), 1461-1497.

Ding, R., & Hou, W. (2015). Retail investor attention and stock liquidity. *Journal of International Financial Markets, Institutions and Money, 37*, 12-26. doi.org/10.2139/ssrn.1786762.

Dodonova, A., & Khoroshilov, Y. (2007). Buying winners while holding on to losers: an experimental study of investors' behavior. *Economics Bulletin, 7*(8), 1-8.

Eichler, S. (2012). Limited investor attention and the mispricing of American depositary receipts. *Economics Letters, 115*(3), 490-492. doi.org/10.1016/j.econlet.2011.12.111.

Han, L., Li, Z., & Yio, L. (2018). Investor attention and stock returns: international evidence. *Emerging Markets Finance and Trade, 54*(14), 3168-3188. doi.org/10.1016/j.bir.2018.10.003

Joseph, K., Wintoki, M., & Zhang, Z. (2011). Forecasting abnormal stock returns and trading volume using investor sentiment: Evidence from online search. *International Journal of Forecasting, 27*(4), 1116-1127.

Mondria, J., Wu, T., & Zhangc, Y. (2010). The determinants of international investment and attention allocation: Using internet search query data. *Journal of International Economics, 82*(1), 85-95. doi.org/10.2139/ssrn.1033067.

Nieuwerburgh, S. V., & Veldkamp, L. (2010). Information acquisition and under-diversification. *The Review of Economic Studies, 77*(2), 779–805. doi.org/10.3386/w13904.

Takeda, F., & Wakao, T. (2014). Google search intensity and its relationship with returns and trading volume of Japanese stocks. *Pacific-Basin Finance Journal, 27*(1), 1-18. doi.org/10.2139/ssrn.2332495

Vlastakis, N., & N.Markellos, R. (2012). Information demand and stock market volatility. *Journal of Banking & Finance, 36*(6), 1808-1821. doi.org/10.2139/ssrn.1558434.