

CAN INVESTOR'S SENTIMENTS AFFECT INDUSTRY STOCK RETURN: EVIDENCE FROM PAKISTANI INDUSTRIES

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Abstract

This study has explored the effect of investor's sentiments on industry stock return. Moreover, the study has also evaluated the disposition effect with context of Pakistan. A sample of comprised of 30 industries and quarterly panel data has been taken from 2003-2014. The independent variables of the study includes investor's sentiments, dependent variable includes industry returns while control variables includes consumers price index (CPI) and gross domestic product (GDP). The panel regression model has been used for data analysis. The results showed a significant relationship between investor's sentiments and industry returns. The study also found that effect of investor's sentiments is varying with respect to varying states of economy, so the disposition affect theory has been supported by the study.

Keywords: Investors sentiments, Industry stock return, Disposition effect, Consumer price index (CPI) and Gross domestic product (GDP).

Introduction

The measurement of the investors sentiments were considered very difficult until the emergence of the behavioral finance theories. According to traditional finance theories investor's sentiments can be affected by arbitrage or rational investors. However in recent time several studies found that investors' sentiment can affect the stock prices which cannot be reversed by arbitragers.

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In traditional finance normally it is considered that risk and return have a direct relationship. However, this concept was dramatically changed after the study of Basu, (1977) when he found a close link between risk-adjusted returns and earning to price (P/E) ratio of the stocks. He further concluded that a firm's share can earn high abnormal return when its price to earnings (P/E) ratio is low. The study of Basu was supported by Benz, (1981) who concluded that large firm's shares have a low risk adjusted returns as compares to small firms. Later, the argument of Basu was supported by Banz (1981), who found that small firm stocks have higher risk-adjusted returns than large firm's stocks. According to the prospect theory of Kahneman & Tversky (1979) investors are more emotionally attached with loss instead of profit. After that the disposition effect theory, of Shefrin & Statman (1985) supported the prospect theory, which suggested that investors always reluctant about their losses because they think about profits.

According to DeLong et al. (1990) investors always trade their securities on the basis of their sentiments which are related to their pessimistic and optimistic approach. Even many studies found that investors do stock valuation and stock returns on the basis of their sentiments. (Brown & Cliff 2005) (Barker & Wulger 2006) and (Schmeling 2009).

Investor's sentiments have a close links with economic situations as it is changing with different economic situations. When it comes to Pakistani economy, it is changing quickly due to different crises like energy crises, terrorism and political instability. In Pakistan the topic of investor's sentiments and stock return has been given little attention by the researchers. Therefore this study has explored the relationship between investor's sentiments' and industries stock returns in context of Pakistan which is the main problem of this study.

From the purpose of the study the researcher extract two research question of the study:

1. What is the link between investor's sentiments and industry stock return in developing country like Pakistan?

2. Does disposition effect exist in Pakistan?

Literature Review

The feelings and expectations of investors regarding changing market condition is called investor's sentiments. In the field of classical finance the investor's sentiments were given no importance; however after the emergence of behavioural finance researchers introduced different indicators of investor's sentiments. The direct indicators of investor's sentiments include Gallup economic outlook, The Michigan consumer sentiments index, the conference board consumer's confidence index and the American association of individual investors (AAII). The indirect indicators includes institutional and market indicators. Institutional indicators includes investors confidence index proxy while market wide indicators includes closed ended fund discounts, put to call option ratio, turnover ratio of NYSE, share of equity, closed-end funds, average IPO's first day returns, number of IPO, and dividend premium.

There is a waste literature available regarding the relationship between investor's sentiments and market returns. Lee, Shleifer, & Thaler (1991) argued that investor's sentiments can influence both small stocks and closed ended mutual funds when discount are offered on mutual funds. In other study of Bodurtha, Kim, & Lee, (1995) suggested that the share prices are changing in relation to the risk level, which is based on the market sentiments. On the other hand the studies found insignificant association between market sentiments and stock returns (Baur, Quintero, & Stevens 1996) and Elton, Gruber, & Busse (1998). Ahmed, Ali, & Mahmood, (2012) concluded that there is a negative association between investor's sentiments and stock returns. However the study of Rehman (2013) found a positive and significant relationship between investor's sentiments and stock returns. The results supported the previous study of Ahmad & Ullah (2013) who found a significant positive relationship between investor's sentiments and stock returns. The Current study is based on the previous study of (Chen et al., 2013)

study who investigated the asymmetric effect of investors' sentiment and its impact on the industry stock returns. However in contrast to the Chen et al., (2013) the current study has only focused local investor's sentiments. The independent variables include Investors sentiments, consumer price index and gross domestic products (GDP) while industry stock return has been considered as dependent variable.

From the above discussions it can be concluded that most of the previous studies have found a significant association between investor's sentiments and stock returns Chen et al. (2013), Rehman (2013) Oprea & Brad (2014). On the basis of the above discussion we have constructed the following hypothesis.

H_0 = There is a no significant relationship between investors' sentiments and industry stock return.

H_1 = There is a significant relationship between investor's sentiments and industry stock return.

Methodology

The population of this study includes all the 35 financial and no financial industries listed in Karachi Stock Exchange (KSE). From these 35 industries we select 30 industries as a sample of the study. Quarterly data of the above mentioned industries have been taken from 2003-2014 in order to check the relationship between variables.

The independent variables of the study includes investor's sentiments, dependent variable includes industry returns while control variables includes consumers price index (CPI) and gross domestic product (GDP). This study has used trading volume as a proxy for investor's sentiments that has already been used by (Baker & Stein 2004), Scheinkman and Xiong (2003), Baker and Wurgler (2007) and Chen et al. (2013). Consumer price index is basically an indicator of inflation

rate which is used as micro indicator in the economy. Most of the previous studies have found a negative relationship between consumer price index (CPI) and stock return (Ahmed & Ullah 2013), (Ammer 1994) and (Tripathi & Kumar 2014). The GDP value is normally calculated annually in Pakistan however for research requirement it can be converted into quarterly data with the help of interpolation method (Denton, 1971). The industry returns has been measured by using the average of firms' stock returns. This study has used different statistical techniques to analyze the data like descriptive statistic, correlation analysis and panel regression analysis. This study has used panel regression model which have already been used by the study of Baker & Wurgler (2006), Schmeling (2009), and Chen et al. (2013). The following is the model of the study.

$$IND_Ri_t = C + \beta_1(L_VOL)_t + \beta_2(CPI)_t + \beta_3(GDP)_t + \varepsilon_t \dots \dots (1)$$

Where, IND _Ri = Industry average stock returns, L_ VOL = Log of industry average trading volume, CPI = Consumer price index, C = Constant, GDP = Gross domestic product and the subscript t shows values of a given variable at time t.

In the panel data regressions, different techniques such as Chow Test, Hausman Test and Breusch-Pagan Lagrange multiplier (LM) test are applied to check that whether fixed effect model, random effect model or pooled OLS model are appropriate for the analysis.

$$IND_Ri_{it} = C + \beta_1(L_VOL)_{it} + \beta_2(CPI)_{it} + \beta_3(GDP)_{it} + \varepsilon_{it} \dots \dots (2)$$

Where, IND _Ri = Industry average stock returns, L_ VOL = Log of industry average trading volume, CPI = Consumer price index, GDP = Gross domestic product, C = Constant and the subscripts *it* shows value of a given variable for the firm *i* at time *t*.

Threshold Models

The rationale for using threshold model in the study is that there is a non-linear/asymmetric relationship among investors’ sentiment and industry stock returns (Chen et al., 2013). Hansen (2000) threshold model is used to find a threshold estimation value.

$$IND_R_{it} = C + \beta_1 L_VOL_{it} I(L_VOL_{it} \leq \gamma) + \delta_1 I(L_VOL_{it} \leq \gamma) + \beta_2 L_VOL_{it} I(L_VOL_{it} > \gamma) + \phi_1 CPI_{it} + \phi_2 GDP_{it} + \epsilon_{it} \dots \dots \dots (3)$$

In the above threshold model econometric equation *I* is an indicator function of threshold values. Log of industry average trading volume is the threshold variable, and γ is the threshold value of investors’ sentiments which is unknown. β is a coefficient that illustrate the marginal impact of regime.

$$(IND_R_{it}) = C + \beta_1(L_VOL)_{it} + \beta_2(CPI)_{it} + \beta_3(GDP)_{it} + \beta_3(Regime)_{it} + \epsilon_{it} \dots \dots \dots (4)$$

$$(IND_R_{it}) = C + \beta_1(L_VOL)_{it} + \beta_2(CPI)_{it} + \beta_3(GDP)_{it} + \beta_3(Regime)_{it} + \epsilon_{it} \dots \dots \dots (5)$$

After using threshold model for nonlinear behavior of the data, a new dummy variable (Regime) is generated on the basis of threshold estimation value γ . This dummy variable divides data into two sub groups of optimism and pessimism. Log trading volume having higher value than threshold estimation value is considered as optimism and log trading volume values with lower than threshold estimation is considered as pessimism.

$$IND_R_{it} = C + \beta_1(L_VOL)_{it} + \beta_2(CPI)_{it} + \beta_3(G_GDP)_{it} + \beta_3(Regime)_{it} + \epsilon_{it} \dots \dots \dots (6)$$

$$IND_R_{it} = C + \beta_1(L_VOL)_{it} + \beta_2(CPI)_{it} + \beta_3(F3_GDP)_{it} + \beta_3(Regime)_{it} + \epsilon_{it} \dots \dots \dots (7)$$

$$IND_R_{it} = C + \beta_1(L_VOL)_{it} + \beta_2(CPI)_{it} + \beta_3(F3_G_GDP)_{it} + \beta_3(Regime)_{it} + \epsilon_{it} \dots \dots \dots (8)$$

In equation # 6, G_GDP shows the growth of gross domestic product. In equation # 7, F3_GDP shows three quarter forward data of gross domestic product. Moreover, in equation # 8 both growth rate and three

quarter forward gross domestic product data is used to check the significance GDP and average industry stock returns. The tabulated result of equation # 6, 7 and 8 are given the appendix of the data.

DATA ANALYSIS AND DISCUSSION

This section reports and discusses descriptive statistics, correlations, and result of the regression analysis.

The descriptive statistics has been explained in the Table 3. The descriptive statistics shows that the industry mean stock return is 0.17 while the standard deviation is .197. The mean value for GDP is 6.447 while standard deviation is .085. The mean value and standard deviation for the industry trading volume is 10.69 and 2.99 respectively. The mean value for consumer price index (CPI) is .0274 while the standard deviation is 0.14.

Table 3: Descriptive Statistic (Cash flow based model with control variables)

Variable	Obs	Mean	Std. Dev.	Min	Max
Ind_Ri	1438	.017	.197	-.938	.967
GDP	1438	6.447	.085	6.272	6.565
Vol	1438	10.69	2.99	-.405	17.404
CPI	1438	.0274	.014	.008	.053

Regression analysis:

In the regression model we are interested to explore impact of average industry trading volume on industry stock return.

In order to check multicollienarity in the model, correlation matrix of each industry with others is estimated. The results of correlation analysis for all the variables were less than .80 which shows that there is no high correlation among the independent variables (Buda & Jarynowski, 2010).

Table 4: Regression Analysis without Regime from 2003-2014

Ind_avg_ri	(O&G)	(CH)	(P&B)	(IM&M)	(C&M)	(GI)	(E&E)	(Eng)	(A&P)	(Bev)
VARIABLES	Ind_1	Ind_2	Ind_3	Ind_4	Ind_5	Ind_6	Ind_7	Ind_8	Ind_9	Ind_10
L-Vol	0.0669** (0.0273)	0.0526** (0.0198)	0.0024 (0.0102)	0.0137 (0.0176)	0.0561** (0.0214)	0.0404** (0.0168)	0.0435*** (0.0148)	0.0484*** (0.0113)	0.0413* (0.0217)	0.0023 (0.0123)
CPI	-1.6825 (2.3319)	-2.8415* (1.6176)	-1.1992 (1.6271)	-3.6713 (2.2893)	-4.0127** (1.6076)	-3.1681 (2.1657)	-2.9482* (1.5893)	-5.5483*** (1.2506)	-4.1583* (2.2676)	-2.8540 (2.5072)
L_GDP	-0.0285 (0.3364)	0.0185 (0.2426)	-0.5241** (0.2531)	0.0750 (0.3751)	0.0023 (0.2675)	-0.4835 (0.4795)	-0.3013 (0.2554)	0.4402** (0.2178)	0.0308 (0.3919)	-0.2375 (0.4460)
Constant	-0.5753 (2.1360)	-0.6210 (1.5678)	3.4433** (1.6052)	-0.4198 (2.4464)	-0.5724 (1.6710)	2.7613 (2.9461)	1.7255 (1.5983)	-3.3277** (1.4566)	-0.4640 (2.5902)	1.4538 (2.8824)
Observations	48	48	48	47	48	48	48	48	48	47
R-squared	0.2022	0.2830	0.1267	0.0924	0.2727	0.2041	0.3191	0.4885	0.1587	0.0312
(Food)	(HG)	(PG)	(Tob)	(HE&S)	(P&BT)	(Med)	(FL&T)	(Elec)	(G&W)	(C&B)
Ind_11	Ind_12	Ind_13	Ind_14	Ind_15	Ind_16	Ind_17	Ind_18	Ind_19	Ind_20	Ind_21
0.0750***	0.0394 (0.0237)	0.0414** (0.0166)	0.0336* (0.0184)	0.0210 (0.0223)	0.0506*** (0.0166)	0.0278 (0.0190)	0.0587** (0.0257)	0.0378** (0.0168)	0.0408* (0.0219)	0.0330* (0.0189)
-5.3904***	-6.4609** (2.7866)	-5.0157*** (1.4462)	-6.0119** (2.7765)	-1.0410 (2.6770)	-1.9760 (1.6648)	-1.2865 (2.7514)	-3.7462* (1.9454)	-4.6868** (1.8268)	-3.5287** (1.3391)	-5.5660*** (1.5803)
-0.6839**	-0.0869 (0.3253)	-0.0417 (0.2494)	0.4985 (0.4733)	0.2611 (0.4442)	-0.1487 (0.2785)	-0.6446 (0.4617)	0.6192 (0.3905)	-0.2344 (0.2948)	0.0035 (0.2148)	0.1815 (0.2577)
3.6620*	0.3066 (1.9522)	-0.1100 (3.1057)	-3.3267 (1.5504)	-1.9041 (3.0781)	0.3740 (2.9618)	4.0270 (1.7550)	-4.4248 (2.9214)	1.1711 (2.6588)	-0.4319 (1.8785)	-1.3291 (1.6246)
48	48	48	48	48	48	48	48	48	48	48
0.3773	0.1561	0.2888	0.1695	0.0308	0.2112	0.0882	0.1541	0.1943	0.2481	0.3096
(NL&I)	(L&I)	(RE&S)	(FS)	(EI&I)	(HT&E)	(MF)	(LC)	(Mis)		
Ind_22	Ind_23	Ind_24	Ind_25	Ind_26	Ind_27	Ind_28	Ind_29	Ind_30		
0.0601***	-0.0111 (0.0127)	0.0470*** (0.0174)	0.0633*** (0.0147)	-0.0006 (0.0181)	0.0499*** (0.0155)	0.0235 (0.0208)	0.0238* (0.0120)	0.0540** (0.0206)		
-3.1768**	-2.6882 (1.3480)	-4.8298*** (1.5450)	-4.4863*** (0.9996)	-3.4320 (2.7468)	-4.2356*** (1.5324)	-1.4138 (2.6401)	-3.7320** (1.7727)	-3.5732** (1.3904)		
0.2608	-1.1158** (0.2245)	0.0015 (0.2540)	-0.2775 (0.1863)	-0.0199 (0.5146)	-0.1454 (0.2613)	-0.5782 (0.5185)	-0.1166 (0.2856)	0.1838 (0.2388)		
-2.2919	7.3373** (1.4804)	-0.5147 (1.6350)	1.2449 (1.1299)	0.2700 (3.3596)	0.4549 (1.6370)	3.5134 (3.1608)	0.5491 (1.8631)	-1.7583 (1.6400)		
48	47	48	48	48	48	48	48	48		
0.4269	0.1308	0.2656	0.4862	0.0375	0.2782	0.0686	0.2282	0.2811		

*Note: The above regression table illustrates the values of coefficient estimates of intercept and slopes with their p-values and standard errors for thirty industries listed on the Karachi Stock Exchange (KSE) with quarterly data from 2003 to 2014. $(Ind_Ri)_t = c + \beta_1(L_Vol)_t + \beta_2(CPI)_t + \beta_3(L_GDP)_t + \epsilon_t$ is the econometric representation of the model. Where Ind_Ri is the average industry returns for each industry, L_Vol represents log of average trading volume for each industry (a proxy used for investors sentiments) for each industry, CPI represents inflation rate, L_GDP shows log of gross domestic product. Standard errors are reported in the parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels respectively.*

The table 4 shows the regression analysis of each independent variable to check the casual relationship of each independent variable with dependent variables for each industry. First the model has been applied without regime variable. The log of industry volume (L_Vol) which is used as a proxy for investor's sentiments has a positive and significant relationship with industry stock return for majority of the industries. The results are in line with disposition effect theory which states that investors redeem more shares in good months than poor months (Shefrin & Statman 1985). The results also supported the previous studies of Oprea & Brad (2014), Huang & Tu (2014), Reneboog, Palomino & Zhang (2008) and Chen et al. (2013). However in life insurance and equity investments industries the relationship between investor's sentiments and average trading volume is insignificant which is in the parallel of empirical evidence provided by (Lutz, 2013; Barker & Wurgler, 2006). Consumer price index (CPI) has shown mixed results in different industries regressions. Similarly the log of gross domestic product (GDP) also shows mixed results both in term of sign and statistical significance in regression model. The coefficient of determination (R^2) has different values for different industries while it is the highest value for Non-life insurance L&I and financial services industries which is 42% and 48% respectively.

The table 5 describes the results of fixed effect regression model for panel data of 30 cross sectional and 48 time series observations. To check choose between random effect model and fixed effect models Housman test has been applied. The Housman test suggested that the fixed effect is an appropriate model for analysis.

Table 5: Panel Fixed Effect Regression Model for thirty Industries

VARIABLES	Coefficients Values
L_Vol	0.0055*** (0.0017)
CPI	-3.8971*** (0.3676)
L_GDP	-0.0261 (0.0605)
Constant	0.2340 (0.3879)
Observations	1,437
R-squared	0.0881

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results in table 6 show that the L_GDP have insignificant negative impact on average industry stock return. The log of industry average volume has a significant positive impact on average industry stock return while the relationship between CPI and average industry stock return is negative and highly significant. The value of R^2 of 8.8% represents that 8.8% variations in the industry average stock returns are explained by independent variables.

Table 6: Regression Analysis with Regime

	(O&G)	(Ch)	(P&B)	(IM&M)	(C&M)	(GI)	(E&E)	(Eng)	(A&P)
VARIABLES	Ind_1	Ind_2	Ind_3	Ind_4	Ind_5	Ind_6	Ind_7	Ind_8	Ind_9
L_Vol	-0.0123 (0.0331)	0.0796** (0.0317)	0.0356** (0.0163)	0.0039 (0.0227)	0.0938*** (0.0331)	0.0606** (0.0237)	0.0416** (0.0199)	0.0235 (0.0162)	0.1092*** (0.0295)
CPI	0.1752 (2.1422)	-2.8860* (1.6148)	-0.5537 (1.5569)	-3.3997 (2.3366)	-4.2213*** (1.5929)	-3.7043* (2.2008)	-2.9862* (1.6284)	-5.9421*** (1.2203)	-3.9637* (2.0732)

L_GDP	-0.3806	0.0191	-0.2886	0.0897	0.0492	-0.1787	-0.2962	0.4278**	-0.2087	
	(0.3157)	(0.2421)	(0.2564)	(0.3780)	(0.2659)	(0.5406)	(0.2607)	(0.2101)	(0.3663)	
Regime	0.2861***	-0.0762	-0.2299**	0.0589	-0.1052	-0.1527	0.0082	0.1086**	-0.3600***	
	(0.0810)	(0.0701)	(0.0910)	(0.0853)	(0.0713)	(0.1273)	(0.0567)	(0.0521)	(0.1157)	
Constant	2.4963	-0.8766	1.6954	-0.4825	-1.2599	0.6790	1.7029	-2.9744**	0.4508	
	(2.0914)	(1.5821)	(1.6656)	(2.4631)	(1.7138)	(3.4070)	(1.6239)	(1.4143)	(2.3853)	
Observations	48	48	48	47	48	48	48	48	48	
R-squared	0.3817	0.3022	0.2396	0.1026	0.3077	0.2298	0.3195	0.5354	0.3133	
(Bev)	(Food)	(HG)	(PG)	(Tob)	(HE&S)	(P&BT)	(Med)	(FL&T)	(Elec)	(G&W)
Ind_10	Ind_11	Ind_12	Ind_13	Ind_14	Ind_15	Ind_16	Ind_17	Ind_18	Ind_19	Ind_20
-0.0035	0.0829***	-0.0053	0.0763***	0.0057	0.0004	0.0732***	0.0035	0.0622	0.0411*	0.0144
(0.0146)	(0.0275)	(0.0326)	(0.0250)	(0.0201)	(0.0273)	(0.0254)	(0.0304)	(0.0371)	(0.0211)	(0.0363)
2.3895	-5.4436***	-6.2909**	-4.8386***	-4.8482*	-1.3952	-1.8985	-0.8512	-3.6853*	-4.6191**	-3.7635***
(2.5956)	(1.5875)	(2.7049)	(1.4118)	(2.6345)	(2.6710)	(1.6592)	(2.7825)	(2.0187)	(1.8631)	(1.3660)
-0.2196	-0.6326*	-0.1620	0.0895	0.3576	0.2971	-0.1104	-0.8428*	0.6174	-0.2737	0.0470
(0.4489)	(0.3501)	(0.4858)	(0.2531)	(0.4461)	(0.4417)	(0.2793)	(0.5003)	(0.3952)	(0.3311)	(0.2204)
0.1228	-0.0337	0.2182*	-0.1219*	0.3034**	0.1368	-0.0880	0.1433	-0.0129	-0.0190	0.0637
(0.1642)	(0.0798)	(0.1127)	(0.0662)	(0.1128)	(0.1058)	(0.0753)	(0.1398)	(0.0955)	(0.0699)	(0.0696)
1.2701	3.2574	1.2099	-1.3429	-2.2973	-1.8879	-0.1040	5.4398*	-4.4409	1.3854	-0.3898
(2.9077)	(2.1907)	(3.0490)	(1.6518)	(2.9063)	(2.9395)	(1.7948)	(3.2289)	(2.6917)	(2.0559)	(1.4315)
47	48	48	48	48	48	48	48	48	48	48
0.0439	0.3799	0.2237	0.3408	0.2890	0.0670	0.2355	0.1099	0.1544	0.1957	0.2624
(C&B)	(NL&I)	(L&I)	(RE&S)	(FS)	(EI&I)	(TH&E)	(MF)	(LC)	(Mis)	
Ind_21	Ind_22	Ind_23	Ind_24	Ind_25	Ind_26	Ind_27	Ind_28	Ind_29	Ind_30	
0.0329	0.0290*	-0.0229	0.1087***	0.0791***	0.0123	0.0282	-0.0196	0.0127	0.0569**	
(0.0250)	(0.0156)	(0.0176)	(0.0261)	(0.0218)	(0.0233)	(0.0230)	(0.0292)	(0.0187)	(0.0273)	
-5.5647***	-3.4076***	-1.4833	-	-4.6497***	-3.5060	-3.9525**	-1.6814	-3.8438**	-3.5571**	
(1.6161)	(1.2414)	(3.3993)		(1.4261)	(1.0139)	(2.7550)	(1.5381)	(2.5535)	(1.7864)	(1.4094)
0.1815	0.2881	-1.0881**	-0.0142	-0.2806	0.0627	-0.1788	-0.9489*	-0.1370	0.1664	
(0.2607)	(0.2065)	(0.5369)	(0.2339)	(0.1864)	(0.5244)	(0.2609)	(0.5328)	(0.2881)	(0.2637)	
0.0004	0.1939***	0.1803	-	-0.0435	-0.0863	0.0939	0.2654**	0.0738	-0.0097	
(0.0710)	(0.0643)	(0.1918)		(0.0733)	(0.0444)	(0.0978)	(0.0740)	(0.1301)	(0.0945)	(0.0594)
-1.3281	-2.2601	7.0744**	-1.1269	1.1165	-0.2826	0.8548	6.3036*	0.7740	-1.6797	
(1.6527)	(1.3608)	(3.4867)	(1.5189)	(1.1379)	(3.4258)	(1.6560)	(3.3454)	(1.8935)	(1.7264)	
48	48	47	48	48	48	48	48	48	48	
0.3096	0.5268	0.1487	0.3919	0.4974	0.0546	0.3042	0.1508	0.2390	0.2816	

Note: The above regression table illustrates the values of coefficient estimates of intercept and slopes with their p-values and standard errors for thirty industries listed on the Karachi Stock Exchange (KSE) with quarterly data form 2003 to 2014. $(Ind_Ri)_t = c + \beta_1(L_Vol)_t + \beta_2(CPI)_t + \beta_3(L_GDP)_t + \beta_4(Regime)_t + \epsilon_t$ is the econometric representation of the model. Where *Ind_Ri* is the average industry returns for each industry, *L_Vol* represents log of average trading volume for each industry (a proxy used for investors sentiments) for each industry, *CPI* represents inflation rate, *L_GDP* shows log of gross domestic product and regime demonstrate the dummy variable on the basis of threshold estimates. Standard errors are reported in the parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels respectively.

To test the data for different regimes a threshold model has been applied. A dummy variable with the name of “Regime” is constructed on the basis of estimated values of threshold extracted for each industry. The stock average trading volume above than threshold values are represented by “1” (Optimism) and lower value of average industry stock trading volume than threshold estimated value are represented by “0” (Pessimism). The results have shown that regimes effects exists in oil And gas, chemicals, engineering, household goods, personal goods, tobacco, non-life insurance, real estate investment and service and mutual fund industries.

The average industry trade volume (Investors sentiments) has a negative and insignificant relationship with industry average stock return in oil and gas, beverage, household goods, life insurance and mutual fund industries. This results supported the previous studies of (Chen et al., 2013; Barker & Wurgler, 2006; Lutz, 2013) which argue that investors sentiments negatively related with average stock returns. However the other industries results have shown a positive relationship between investors sentiments and average industry stock return but the results were mixed in term of significance.

However all other remaining industries average industry trading volume (investors' sentiments) are positively related with average stock returns but few of them are statistically insignificant.

The results also supported the disposition effect theory presented by (Shefrin & Statman, 1985). On the basis of the above results the alternative hypothesis of the study has been accepted. The study does not found any significance association between GDP and average industry stock return.

After testing the effect of regimes individually in the data the result suggested that few of the industries have a significant value of coefficients as shown in table 7.

Table 7: Fixed Effect Regression Model with Regime for thirty Industries

VARIABLES	Coefficient Values
L_Vol	0.0016 (0.0018)
CPI	-3.7415*** (0.3647)
L_GDP	-0.0507 (0.0600)
Regime	0.0612*** (0.0107)
Constant	0.3986 (0.3847)
Observations	1,437
R-squared	0.1083

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Researcher employed regression model to check the impact of regime on aggregate level. The regime value is highly statistically significant at 1% of significance level. The statistical value of significance (P-value) of regime suggests that different regimes are available in the data. This suggests that there is disposition effect in the industry stock returns.

Conclusion

This study explored the relationship between investor's sentiments and market stock return. The independent variable of the study is investor's sentiment that has been measured by using industry average trading volume. The controls variables include consumer price index (CPI) and gross domestic product. The data of the study has been taken quarterly from 30 industries and the time period of data is from 2003 to 2014. The study applied regression model to all industries separately, while fixed effect model has been applied to panel data. The results showed that a significant relationship between investor's sentiments and industry returns. The study also found that effect of investor's sentiments is varying with respect to varying states of economy, so the disposition affect theory has been supported by the study. Future study should focus on comparing the investor's sentiments globally among different economies. Researchers should use other proxies like initial public offering (IPO), dividend premium, net asset value (NAV) and Consumer confidence index (CCI) etc.

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