



Examining the Effect of Foreign Direct Investment and Exports on Stock Market Performance: Evidence from India Based Bound Testing to Cointegration ARDL Approach

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Abstract

This article looks at the major macroeconomic factors that affect the performance of the Indian stock market, including exports, industrial value added, money supply (M2), inflation, and foreign direct investment. Statistical dynamics, both short- and long-term, have been determined using the unit root test, co-integration test, and autoregressive distributed lag (ARDL) using yearly time series data (1988 to 2022). The study's conclusions establish co-integration, which is indicative of a long-term relationship, between macroeconomic variables and the performance of the Indian stock market. The ARDL attests to the substantial and favorable effects that exports, industrial value addition, and foreign direct investment have on market capitalization. The importance of macroeconomic factors on a developing economy's stock market performance is emphasized in this study. This aids in providing these economies' policy makers with a set of guidelines.

Keywords: India, Stock markets, Time series analysis, performance, cointegration, ARDL

1. Introduction

Stock exchanges have usually been run as mutual organizations with domination power in any economy of world, but in recent years they have practiced new challenges that have short and long term ramifications on their operations. Additionally, following financial crises, the nations in this part of the world have to deal with debt related to finance and growth as well as the significance of financial institution regulation. Among other things, financial regulators, like the Securities and Exchange Board of India, keep an eye on the capital markets in the areas they have been assigned and make sure investors are safe from fraud (Song et al., 2024).

Numerous elements influence the performance of a firm. These variables, however, might vary between economies and countries—more especially, between established and emerging economies. The institutional constraints, legal and regulatory frameworks, and work cultures in developing nations such as India are not the same as those in other developed nations (Deshpandé & Farley, 1999; Gupta & Mahakud, 2020; Huang et al., 2024). According to the World Economic Forum (2020), the Indian economy is now the fifth largest in the world in terms of nominal GDP. With its "Make in India" campaign, the country hopes to establish itself as a major hub for global manufacturing. In India, the manufacturing sector makes up approximately 16% of the GDP, and by 2025, that percentage is predicted to rise to 25% (Shahid et al., 2024).

Since the 2008 financial crisis, the stock market has experienced a robust recovery. For example, since 2002, the BSE Sensex, or Bombay Stock Exchange Sensitive Index, has increased by an astounding amount. The success of the stock market is crucial to the economic prosperity of any nation in the world. And in order for a country to achieve economic development and reach economic growth, economic planning is essential. This is especially true for developing nations like India. The Indian economy is self-sufficient in the early morning hours. India, which was formerly known as the "Land of Charmers," is now known as the "Land of Opportunities." India, home to more than a billion people, is the world's largest democracy and, after the US, China, and Japan, has the fourth-largest economy. India implemented significant economic reforms in 1991, focusing on industry deregulation, fostering foreign investment, and advancing a privatization agenda. Economists believe that India has a bright future ahead of it, predicting GDP growth of 10% in the next three to four years due to increased export and domestic demand (Zhao et al., 2023).

The size of global stock market is \$36.6 trillion in 2008 where as performance of Indian stock market is worst with 10.55% decline in 2010. Indian stock market is the oldest stock market in Asia region. In terms of P/E ratios, the Indian stock markets have moved extremely near to the danger zone (Minhas et al., 2024). Investor caution is warranted given the ongoing uncertainty on national debt, bank vulnerability, and slow economic growth plaguing the world markets. P/E ratios and global market conditions, in our opinion, indicate a strong likelihood that the market is overdue for a change. Investors in the Indian market may wish to protect themselves by purchasing the few cheap blue chips that are still in existence, or they may choose to hold off on increasing their exposure to this market until more clarity regarding the trajectory of the US and EU economies is provided. [Belle Kumar (2010)]. Informal reports confirm that theft and corruption account for up to 50% of all government spending, with the fiscal deficit ratio reaching 10.2% of GDP in 2009–2010 (Javaid et al., 2023).

Many of the same risks that faced India around the start of 2008 still exist as we move into 2011. The equities market has moved into a region it last visited precisely two years ago. In a similar vein, the Bombay Sensitive Index, which measures the stock market, is almost at 20,032, meaning it has grown by 150% over that time. Over the past two years, the Indian Broad Market Index (NIFTY) has performed astronomically, yielding total returns of 115%. In the end, this increment adds 6% to the GDP. These valuations, however, are not supported by the fundamentals of business. The stock market frequently serves as a gauge of the confidence of businesses, thus a significant decline would have immediate repercussions (Shahzadi et al., 2023).

Studying stock market fluctuations is a really fascinating subject. This study uses the Johanson cointegration technique to examine how macroeconomic variables affect stock market performance fluctuations. Small investors and overseas investors won't be involved in capital market activities until stock markets offer specialized services. India cannot afford to jeopardize the capital market path, as it is one of the primary sources of long-term financing for industrial projects. NSE becomes increasingly significant in the Indian capital market structure in this way.

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The current study is divided into five sections: section II reviews the literature; section III includes the data set and research methodology; section IV includes the findings and interpretation of the estimations; and section V includes the study's scope and conclusion.

2. Literature Review

Macroeconomic factors have a variety of effects on company performance, as the literature makes clear. It was shown by Issah and Antwi (2017) that different industries are affected differently by the GDP growth rate with regard to business success. Additionally, this study promoted the idea that the influence of macroeconomic parameters can differ between economies and also rely on the MEF proxy. The studies described above have demonstrated that favorable macroeconomic conditions have a positive impact on firm characteristics, and that developed economies' firm performance is positively impacted by GDP growth rates. Therefore, it is anticipated that the MEF, as measured by the GDP growth rate, will directly affect how well businesses perform (Zahra et al., 2023; Ahmad Shahid et al., 2023). According to Iqbal et al. (2020), a firm's size determines its financial limits. Ibhagui and Olokoyo (2018) noted that in this particular setting, high levels of leverage have a greater impact on small business performance. Nevertheless, as firms grow, these negative effects diminish and eventually vanish when the firm size reaches a certain threshold. Furthermore, it has been found that, when it comes to increasing performance, gender diversity on the board only helps small-sized companies (Li & Chen, 2018). According to Mansour et al.'s study from 2023, finance has a greater favorable impact on large-size enterprises' market performance. As a result, small businesses are more susceptible to firm attributes than big businesses. Furthermore, studies show that because of their standing, connections, and accessible collateral, small businesses have greater financial constraints than larger ones (Gertler & Gilchrist, 1994; Iqbal et al., 2020; Tabassum et al., 2023).

Yousf and Majid (2008) examine that in Malaysia Islamic stock market performance is more significant to attract the foreign portfolio investment. Naceur, Ghazouani & Omran (2007) explore that saving rate has significant impact on 12 countries of Middle-Eastern and North African region stock market performance. Xu and Oh (2011) observe that China's stock market performance is integrated with financial development as a response to changes in political limitations as well as the demands of economic growth by using conceptual method. Goyal, (2004) carry out a study that stock market development is correlated with population age though application of lifecycle models. Stock return is positively correlated to middle age people and negatively correlated with old age people with evidence of U.S economy (Ullah et al., 2023).

Billmeier and Massa (2008) use the monthly data over the period 2001-2006 to analyze the Egyptian stock market performance in two ways first they find that the stable relation among Egyptian index and its fundamental value and second there is cointegration between Egypt and other stock market. Using a multiple regression equation, Agarwal, Liu, and Rhee (2008) investigate the relationship between pre-offering demand and aftermarket performance of 256 initial public offering (IPO) firms in the Hong Kong stock market. High investor demand for an IPO can result in both positive and negative long-term returns, but low investor demand for an IPO can have negative consequences between 1993 and 1997 (Shahid et al., 2023). Using regression analysis and the stochastic dominance approach, Mishra & Smyth (2010) look into the relationship between the performance of the Indian cricket team in one-day matches and the performance of the Indian stock market over the 1995–2005 period. A cricket match's outcome has no statistically meaningful effect on stock market return, while a one-day match's loss does (Hafiza et al., 2022).

Goonatilake & Herath (2007) examine that stock market performance is influenced by news items. Market fluctuation (increased, decreased and unchanged) of DJIA and crude oil stock price has significant association over the ten week period of data. Stock market performance is interrelated with transaction cost with indication in London stock exchange from 1870-1986 (Zulfiqar et al., 2022). Transaction cost has positive relation with market volatility and adverse relation with fundamental volatility. [Green, Maggioni & Murinde (2000)]. Zhang, Y. L., (2004) conduct a study to examine the ongoing efforts to modification in the state owned enterprises. Corporatization and Stock Market Listing not play up to mark role in China's economy. Complete privatization is required to resolve the conflicts and move on the way to gain profit (Li et al., 2022). Bollen, Mao & Zeng (2011) Examine the possibility of predicting stock market performance. For example, see the correlation between the value of the Dow Jones Industrial Average (DJIA) and the volume of large-scale Twitter feeds from February 28 to December 8, 2008. By utilizing the Google-Profile of Mood States and Opinion Finder, which assesses one's mood (positive versus negative). that measure in 6 dimension 86.7% predict the up and down in the value of DJIA. Kala and Sil (1999) explore that The United Kingdom stock market performance is predicted by taking the macroeconomic variables such dividend growth rate and interest rate etc. stock return is positively linked with dividend growth rate in case of British equity market (Investment et al., 2022).

Meschil (2005) investigated that stock market performance is estimated by joint venture partners sell offs though implication of resource based view with sample of 151 European selling partners. Firth (1997) analyzes impact of unseasoned new issue (initial public offering) on New Zealand stock market performance over the time spanning 1979-1987(Qureshi et al., 2022) ;Brown, Rhee & Zhang (2008) evaluate the four Asian stock market performances and conclude that Hong Kong & Korea stock market have high value premia where as show decline value premia and value discount in Singapore & Taiwan stock markets. Goldberg & Kabir (2002) determine that stock market return has significant impact on central bank stock return of Belgium and Japan. Białkowski and Otten (2011); (Info, 2022) make clear that under developed stock market performance is negatively connected with mutual fund performance. Pal, & Mittal. (2011) find that The stock market is greatly impacted by macroeconomic factor performance over the period 1995-2008 by using co integration technique (Shahid, 2023).

Garefalakis, Dimitras, Koemtzopoulos & Spinthiropoulos (2011) explain the positive relation among the Hong Kong stock market performance and gold return by using Generalized Autoregressive Conditional Heteroskedasticity model (Hakim Ali et al., 2021) ;Nazir, Nawaz, Anwar, Ahmed (2010) assess that dividend policy measures has significant positive impact on Karachi stock market performance.

3. Data Set and Research Approach

The data of this paper is covering the time period from 1988 to 2022. The total numbers of variables are four which are use for subsequent estimation, market capitalization (MRKCAP), exports (EXP). inflation (INF), foreign direct investment (FDI), money supply (M2) and industry value added (IVA). Data on market capitalization of listed companies (current US\$), money supply, inflation, and consumer prices (annual%) Currency and quasi-currency (M2) to total reserves ratio and foreign direct investment and industry value added (LCU) with annual frequency in case of India.

The following null hypothesis have been made for estimation

- H01. Inflation has no significant impact on market capitalization
- H02. Money supply has no significant impact on market capitalization.
- H03. Industry vale added has no significant impact on market capitalization.
- H04. foreign direct investment has no significant impact on market capitalization
- H05. exports has no significant impact on market capitalization

And alternative hypothesis are

- H'1. Inflation has significant impact on market capitalization
- H'2. Money supply has significant impact on market capitalization.
- H'3. Industry vale added has significant impact on market capitalization.
- H4. foreign direct investment has positive significant impact on market capitalization
- H55. exports has positive significant impact on market capitalization

3.1. Econometric Model for Estimation

Research methodology is required to attain the goal of the research. In this investigation to examine the impact of inflation, money supply and industry value added on stock market performance proxies by market capitalization the following econometric equation is made:

$$\ln(\text{MRKCAP}_t) = \beta_0 + \beta_1 \ln(\text{INF}_t) + \beta_2 \ln(\text{M2}_t) + \beta_3 \ln(\text{EXP}_t) + \beta_4 \ln(\text{FDI}_t) + \beta_5 \ln(\text{IVA}_t) + \varepsilon_t$$

The variables MRKCAP, INF, FDI, EXP, M2, and IVA in the equation above stand for market capitalization, inflation, FDI, and exports. industry value added and money supply. Furthermore, the long run elasticities of MRKCAP with regard to INF, FDI, EXP, M2, and IVA are denoted by the parameters β_1 , β_2 , and β_3 , respectively, and by the constant term β_0 . The series of econometric variables is represented using the natural logarithmic form, or ln. When analyzing data where every variable is stationary at first difference, the Johansen cointegration model is employed. $\ln(\text{MRKCAP}_t) = \beta_0 + \beta_1 \Delta \ln(\text{INF}_t) + \beta_2 \Delta \ln(\text{M2}_t) + \beta_3 \Delta \ln(\text{EXP}_t) + \beta_4 \Delta \ln(\text{FDI}_t) + \beta_5 \Delta \ln(\text{IVA}_t)$

Here in the model Δ represents the first difference operator and β_1 , β_2 and β_3 are the short run dynamics of model whereas β_4 , β_5 and β_6 represent the long run elasticities.

4. Empirical Findings and Interpretation

To conduct the econometric analysis there are a number of preliminary steps are necessary such as time series data typically contains a trend which must be removed prior to undertaking any assessment. For stationery of time series data whether it is stationery or not there are numerous unit root tests have been existing in economic literature; the most common test, and the one we utilize, is the Augmented Dickey-Fuller test and Phillips-Perron test. The time series data is said to be stationary if mean variance is constant over mentioned time of period and covariance of two time period is depend upon the gap between the two time period, not on actual time period.

Table 1: Unit Root Tests Results

Variables	Augmented Dickey Fuller Test Statistic (At 1 st difference)	t-statistics	Prob
$\ln \text{MRKCAP}_t$	1 st difference	-5.579694*	0.0002
$\ln \text{INF}_t$	1 st difference	-5.602279*	0.0002
$\ln \text{IVA}_t$	1 st difference	-3.187857**	0.0360
$\ln \text{M2}_t$	1 st difference	-3.307679**	0.0309
$\ln \text{FDI}_t$	1 st difference	-4.1102234*	0.0001
$\ln \text{EXP}_t$	1 st difference	-3.157346**	0.0340

*and ** represent the 1% and 5% level of significant respectively

The macroeconomic variables, as determined by the Phillips Perron test and the Augmented Dickey-Fuller test, are all stationary at first difference form. Table 1 demonstrates that, under the Phillips Perron and Augmented Dickey-Fuller tests, market capitalization and inflation are stationary at the one percent level of significance, whereas the money supply and industry value added are stationary at the five percent level of significance. The existence of stable long-term linkages between the variables is indicated by cointegration tests when numerous independent time-series variables are found to be integrated of order one. One method for estimating whether or not a long-term relationship exists between the variables in time series data is the Johanson (1988) cointegration methodology [Saunders, J P., & Wassell, J. S. C.].

Table 2

Variables	Phillips-Perron test statistics- critical value- 5% (At 1 st difference)	t-statistics	Prob
$\ln MRKCAP_t$	1 st difference	-5.587254*	0.0002
$\ln INF_t$	1 st difference	-5.694605*	0.0002
$\ln IVA_t$	1 st difference	-3.259234**	0.0312
$\ln M2_t$	1 st difference	-3.788621**	0.0104
$\ln FDI_t$	1 st difference	-4.941623*	0.0001
$\ln EXP_t$	1 st difference	-3.35784**	0.0324

*and ** represent the 1% and 5% level of significant respectively

Table 3: Johanson Co-Integration Test
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.827141	52.19083	47.85613	0.0185
At most 1	0.453260	17.08524	29.79707	0.6338
At most 2	0.192503	5.009612	15.49471	0.8078
At most 3	0.036001	0.733304	3.841466	0.3918
At most 4	0.115963	5.009778	12.4452	0.8021
At most 5	0.032401	0.73291	3.46382	0.3823

Table 3 shown that the trace statistic value 52.19083 greater than critical value 47.85613 at five percent level of significant i.e. $52.19083 > 47.85613$. The trace statistic value indicates that there is one long run co integration equation exist at 5% level of significant. The presences of long run relation agree to us error correction mechanism is applicable in case of Indian stock market.

4.1. Bound Test for Co-integration

To determine if the parameters are jointly significant, we use the F-statistic. The estimated F-statistic value is then compared to the critical values of the upper and lower bounds, denoted as $I(1)$ and $I(0)$, respectively. In cases where the estimated F-statistic exceeds the critical value for the upper limit, we accept the existence of co-integration; in contrast, if the F-statistic falls below the critical value for the lower bound, we deny the existence of co-integration. If F-statistic falls between the critical values for the lower and upper bound, the result will remain ambiguous. If co-integration between variables is absent, then that is the null hypothesis of the F-statistic test. The bound test for co-integration findings are displayed in Table 4.

Table 4: Bound Test

Test Statistic	Value	k	Critical Value Bounds		
			Significance	I_0 Bound	I_1 Bound
F-Statistic	6.7823	5	10%	2.26	3.35
			5%	2.62	3.79
			2.50%	2.96	4.18
			1%	3.41	4.68

The co-integration relationship between the dependent and independent variables cannot be conducted in the ARDL approach until the bound test has been verified. The results of the bound test indicate that, at the 5% significant level, the F-statistic of 6.7823 is more than the crucial value for the upper bound. This shows that there may be co-integration between the variables for India. In other words, there is a long-term link between MRKCAP and the explanatory factors (FDI, IVS, EXP, M2, and INF). We proceed to do the long run estimations of the model based on the bound test results.

4.2. ARDL, Long Run Association

Exports and foreign direct investment have a strong and positive relationship with India's market capitalization, as seen by the co-integration results between market capitalization (MRKCAP) and each of the explanatory variables in Table 5. According to the findings, market capitalization rises by 4.2% for every 10% increase in foreign direct investment. The impact of exports on market capitalization is also noteworthy. According to the results, market capitalization rises by roughly 2.0% for every 10% increase in exports.

Based on the coefficient of foreign direct investment, there is a 4.2% increase in market capitalization for every 10% increase in $\Delta \ln FDI$. Our findings on foreign direct investment are consistent with earlier research conducted in the context of Pakistan and India (Ali, Li and Kamran, 2015; Rehman, 2015; Ullah, Shan and Khan, 2014; Gul & Naseem, 2015). Our results are consistent with those obtained in other countries as noted in the literature (Chandran and krishnan 2009; Fakhreddin, Nezakati, & Vaighan, 2011; de Mello and Sinclair, 1995).

Market capitalization increases by 4.2% for every 10% increase in $\Delta \ln$ FDI, according to the coefficient of foreign direct investment. Regarding foreign direct investment, our results align with previous studies carried out in Pakistani and Indian contexts (Ali, Li and Kamran, 2015; Rehman, 2015; Ullah, Shan and Khan, 2014; Gul & Naseem, 2015; (Ur Rahman & Bakar, 2019). Our findings are in line with findings from other nations as reported in the literature by Chandra and Krishnan (2009), Fakhreddin, Nezakati, and Vaighan (2011); (Rahman & Bakar, 2019), and de Mello and Sinclair (1995).

Table 5: Estimated Results of Long Run, ARDL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
\ln FDI	0.42651	0.112271	3.79894	0.002
\ln EXP	0.206992	0.045775	4.521949	0.0005
\ln (IVS_t)	7.725033	2.325727	3.321557	0.0055
\ln ($M2_t$)	-0.296065	0.381228	-0.776609	0.4513
\ln (INF_t)	-0.147442	0.241651	-0.610146	0.5523
C	-12.28442	4.880880	-2.516845	0.0258

The value of adjusted R-square signify that 44% variation in market capitalization is due to inflation, money supply & industry value added and remaining 56% is unexplained variation. F-statistics with value 3.264 and prob= 0.0313 represent that the selected model is good fit. And also table shows that industry value added is key macroeconomic determinant of Indian stock market performance in short run as well as long run. The effect of industry value added is significant at one percent level of significant. Table designate the positive impact of industry value added on market capitalization. The 7.725033 value coefficient of $\Delta \ln$ (IVS_t) reflects that one percent increase in industry value added conveys 7.725033% addition in market capitalization at one percent level of significant in short run. And also coefficient value of \ln (IVA_t) 1.657532 reveal that one percent raise in industry value added express 1.657532% amplify in market capitalization in India at one percent level of significant in long run. Other two variables i.e inflation and money supply has no significant impact on Indian stock market performance in short run as well as long run which oppose to existing literature.

4.3. ARDL, Short Run Dynamics

The short run dynamics results are shown in Table 6. For India, the coefficient of variation in the ECM results is adversely significant. With a 21% speed of adjustment throughout the current era, the Model (MRKCAP) adjustment mechanism turns out to be extremely slow. Consequently, this indicates that within a year, 21 of the model's disequilibrium will be fixed. Thus, it is verified that the MRKCAP adjustment process, or error correction term (ECT-1) is extremely sluggish.

Table 6: ARDL Estimation Results of Short Run Relationship

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$d(MRKCAP_t(-1))$	-0.23629	0.151721	-1.55737	0.1417
$\Delta \ln$ (FDI)	0.003988	0.006989	0.570609	0.5773
$\Delta \ln$ (FDI(-1))	-0.01227	0.009573	-1.28213	0.2206
$\Delta \ln$ (FDI(-2))	0.014659	0.008635	1.697599	0.1117
$\Delta \ln$ (FDI(-3))	0.017187	0.00687	2.501834	0.0254
$\Delta \ln$ (EXP)	-0.00905	0.003545	-2.55235	0.023
$\Delta \ln$ (EXP(-1))	-0.00564	0.003882	-1.45246	0.1684
$\Delta \ln$ (EXP(-2))	0.003822	0.004407	0.867119	0.4005
$\Delta \ln$ (EXP(-3))	-0.01731	0.003701	-4.67755	0.0004
$\Delta \ln$ ($M2$)	0.001282	0.003132	0.409445	0.6884
$\Delta \ln$ ($M2$ (-1))	-0.00468	0.003816	-1.22731	0.2399
$\Delta \ln$ ($M2$ (-2))	-0.00755	0.002796	-2.69943	0.0173
$\Delta \ln$ ($M2$ (-3))	-0.00878	0.00252	-3.48297	0.0037
$\Delta \ln$ (IVA)	-0.00465	0.000842	-5.51686	0.0001
$\Delta \ln$ (IVA (-1))	0.004144	0.000811	5.112442	0.0002
$\Delta \ln$ (IVA (-2))	0.005831	0.000944	6.1783	0.0000
$\Delta \ln$ (IVA (-3))	0.001684	0.000777	2.168451	0.0478
$\Delta \ln$ (INF)	0.005358	0.0011	4.870504	0.0002
$\Delta \ln$ (INF)	0.002648	0.001198	2.211365	0.0441
$\Delta \ln$ (INF)	-0.00842	0.0035	-2.40642	0.0305
$\Delta \ln$ (INF)	0.011223	0.003323	3.377783	0.0045
ECT	-0.21036	0.025004	-4.02876	0.0012

This demonstrates that MRKCAP has a long-term association with other explanatory variables, in addition to the findings of bound tests. The findings show that foreign direct investment significantly and favorably affects the market capitalization's third lag

(MRKCAP). The findings indicate that, in the short term, a 10% increase in foreign direct investment causes MRKCAP's third lag to grow by 0.017187%, while its first and second lags decrease by 0.003988 and 0.014659. In the near term, exports (EXP) have a large negative impact on the MRKCAP.

This suggests that a 10% rise in exports causes the MRKCAP's first and fourth delays to increase by -0.00905%. The second and third delays, by -0.00564 and 0.003822, have little relevance in MRKCAP, whereas and -0.01731 show a significant and negative connection. Additionally, we discovered that the money supply (M2) positively insignificantly affects the MRKCAP. It demonstrates that while a 10% increase in employment results in its second and third lags, -0.00755 and -0.00878, negative and significant increases in MRKCAP, a 10% increase in money supply causes MRKCAP to increase by 0.001.

The short-term impact of manufacturing value added (IVA) on India's MRKCAP is quite unfavorable. MRKCAP experiences large positive effects with a 10% increase in IVA (first to third lag), while a 10% increase in inflation causes a considerable short-term increase in MRKCAP (first lag to four lags by 0.005358, 0.002648, -0.00842, and 0.011223, respectively).

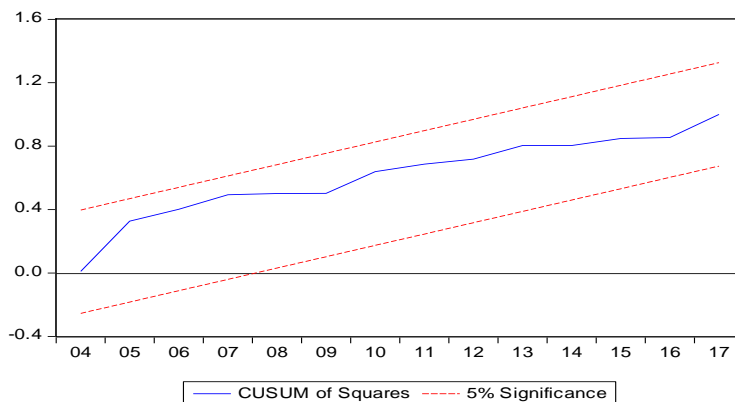
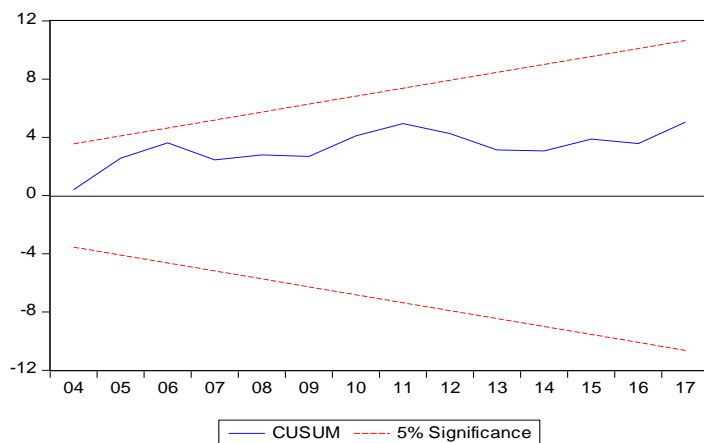
4.4. Diagnostic tests

To make sure the model fits and is stable, the study runs a few diagnostic tests. Table 7 shows that the model passes each and every one of the carried out diagnostic tests. For instance, at the 5% level, the autocorrelation and heteroscedasticity test results are not significant. It indicates that there are no issues with heteroscedasticity or serial correlation. Furthermore, the models appear to be stable and well-fitted as the results of the Ramsey RESET stability tests do not show statistical significance at the 5% level.

Table 7: Diagnostic tests Results

Model	Serial Correlation	Ramsey Reset Test	Heteroscedasticity
Manufacturing value added <i>MRKCAP</i>			
F - Statistics	1.5	0.0123	1.024
p-value	2.412	0.632	0.524

To check if our models are stable, we also use CUSUM and CUSUM of squares. Figures 3a and 3b, respectively, show the CUSUM and CUSUM of squares for India. A comparison of the CUSUM and CUSUM of squares lines with the test's 5% crucial lines shows that the two Figures show that the models are stable.



Plots of CUSUM and CUSUM of Squares for Pakistan

5. Conclusion

This study effort towards the look at the macroeconomic determinants of Indian stock market performance over the period 1988-2022 through applying the Johansen (1988) cointegration test and ECM. Due to globalization it is very necessary to understand that what factors affecting the stock market. Thus inflation rate, money supply and industry value added are the explanatory variables

and market capitalization is the dependent variable. The present study exposes that fluctuation in stock market performance is not only the selected macroeconomic variables but also some other determinants are present. According to empirical finding it is suggested that null hypothesis *H03* is rejected which means that industry value added has significant positive impact on stock market performance at one percent level of significant. And other two null hypotheses *H01* and *H02* are not rejected. The ARDL finding reveal that the exports, industry value added and foreign direct investment, have positive influence with market capitalization in long run. The performance of Indian stock market not up to extended because Indian equities have become very expensive, relatively few blue chips are available for trading, inflation runs double but no increase in interest rate and debts burden is also moving upwards with the passage of time. All the challenges under consideration India is still an eye-catching market to invest in, as its bright outlook offset the challenges if the government can get hold inflation in control. Because foreign direct investment plowed back over \$15.62 billion, Indian currency has valued significantly and saving rate is higher in all over the world but domestic investment is low. So there is need to enhance the domestic investment to boost up the stock market performance.

5.1. Future Scope and Implementation

The current study has more comprehensive results with longer time period and number of other macroeconomic variables. The implementation of this study is for Government that enhances the capital market performance a leading financial institution. And mobilizing the gross domestic saving in such a way that investment must be made in stock market directly and indirectly by using the various available financial instruments.

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