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Financial Market Integration: Empirical Evidence from the Economic Cooperation of India and Pakistan

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Abstract

The aim of this study was to explore the integration between financial markets of India and Pakistan with the help of economic cooperation among them. Monthly data from the period of January 2002 to December 2012, was applied for this stud, the data of Monthly stock price index and Trade was used. The results highlighted that there is cointegration between the two stock markets in short run, and as we have used 11 years data it is not appropriate to conclude the long run relationship on this basis, although the Johansen Cointegration test proves the presence of two cointegrating vectors. Therefore we may conclude that there is direct cause and effect relationship between stock markets of India and Pakistan with respect to trade and if the hindrances in trade are removed the financial markets will perform much better than now. Trade between India and Pakistan is of great importance for the development of both the nations as well as the regional development. There are ample opportunities available for the investors as well, they can reduce risk and earn higher returns by investing in each other's markets.

Key Terms: Financial Markets, Financial Markets Integration, Economic Cooperation, Cooperation versus Integration

1. Introduction

Financial Markets integration is a process of merging two or more markets and the risk associated with the financial assets, having comparable maturity across various markets. The process of integration is facilitated by the uninterrupted access of participants to various market segments. Today's financial markets are witnessing the transactions by the investors and portfolio managers across markets domestic, regional or international, this became possible with the increased flow of information, technological advancement, globalization and financial sector reforms. Centrals banks across the world has also made efforts to make their markets financially integrated, mainly after the experience of the Asian Crisis of 1990's which gave the Asian Economies severe shocks, therefore now the financial markets are more integrated as compare to previously isolated markets. It is commonly believed that the developed nations are more financially integrated as compare to the emerging economies but the financial sector reforms in emerging economies has allowed the removal of restrictions over pricing of financial assets, which is assumed to be one of the most important factors of integration. Flow of capital across borders has increased dependence on savings of other nations, as foreign investors invest in other countries market where they find low risk and higher return on their investments, and supplement their domestic savings. The advancement in information technology and communication has reduced the opportunities grabbed by the arbitrages and thereby easing the mobility of funds across borders.

For various reasons Financial Markets integration has gained tremendous importance in today's financial markets; firstly, it serves as a medium for financial institutions and regulators to transmit price signals, (Reddy, 2003), secondly, when financial markets are efficient and integrated they become an important vehicle in promoting domestic savings, economic growth and investments and thereby reducing unemployment rate (Mohan, 2005). Thirdly, financial markets integration is an important tool for the development of financial sector of a country as an international or regional financial sector (Reddy, 2003). The fourth advantage of financial markets integration is the increased competition, performance of intermediaries and the efficiency in their daily operations, efficient allocation of resources and the stability, which is the outcome of this advantage helps a country to grow, (Trichet, 2005). Markets become more innovative, cost effective, and productive, reducing the arbitrage opportunities and making available the financial services to general public, institutions and corporations, is the fifth advantage of financial markets integration, (Giannetti *et al*., 2002). With the integration of financial markets, discipline and efficiency of information it also improves and promotes the adoption of latest

technology and payment systems by the market participants and improves cost effectiveness in financial services.

The concept of Financial Markets Integration became more important after the Liberalization reforms and Globalization which has allowed investors to invest abroad freely with low risk and higher returns. This relatively new scenario has opened the door for researchers to work on financial markets integration. Various studies have been done on this area, some researchers has worked on to check integration of financial markets among developed nations and its spillover effects to the developing economies, Khalid (2011), while others have worked upon to check regional and domestic integration among financial markets using the Stock price index as a standard measurement tool. A few studies have been done on integration of financial markets of emerging economies i.e. India, Bangladesh, Sri Lanka and Pakistan, Khalid and Rajaguru (2006), in this study they have worked on the financial markets integration within Pakistan, using the Daily Stock Price index, exchange rate and the interest rate to measure integration among financial markets in Pakistan. The research on Financial Market dynamics between two cross border countries i.e. India and Pakistan still needs to be worked upon. India and Pakistan being the most important nations in South East Asia sharing their borders are proved to be of great importance for the Economic and regional development.

Developing countries have now become emerging market economies (EMEs) growing at an extraordinary rate, while quickly integrating their regional and global markets due to globalization, technological advancements and the integration of financial markets. It is believed that the financial integration of economies have two positive effects. First it can, improves the efficiency of capital allocation, and secondly, help diversify risks. But the global financial crisis of 2008 has raised many questions regarding the benefits of integrated markets. This has generated great interest of finance researchers towards a new dimension i.e. to examine the interrelationships between financial markets worldwide. Some researchers have worked to test the interrelationship between developed and developing economies; while others have worked on various forms of integration i.e. Domestic integration, regional integration or International Integration of financial markets.

1.1. Research Problem:

The research will be focusing on economic cooperation between India & Pakistan and the integration of financial markets of both the countries. Khan (2013) in his thesis identified further area of research in the field of Financial Markets Integration; an analysis of cross-country integration with respect to economic information. Thus, future research could see whether any integration among the markets is due to the linkages among economic fundamentals in the different markets. India and Pakistan are the rival nations in the South East Asia, however there is a great potential for trade between the two nations and the trade barriers are affecting not only both countries but also hindering regional development.

1.2. Objectives of the Study:

The main objectives of this research will be:

- The main objective of this study will be to check out the interdependence of the two cross border countries i.e. India and Pakistan.
- The study aims to examine the dynamic linkages between the Stock Price Indices of India and Pakistan both in the long run and short run
- To examine the significant correlations, long run co-integrated relationships and causality between financial markets of India and Pakistan
- To examine the effects of Pakistan India Trade relationship on stock exchanges/ financial markets of both the countries

1.3. Significance / Justification:

The research will be beneficial for investors, portfolio managers and financial institutions to utilize their capital across border in an efficient and smart manner. The research objective is to identify the linkages between the two nation's stock markets and to get utmost trade benefit in order to have economic development. The benefits of Financial Market integration can be utilized by the emerging economies to grow and develop and compete at international level. The other major significance of this research is it economic level where there are two major advantages of financial markets integration are known one is the improvement efficient allocation of resources and the other is help diversification in risk. When financial markets are integrated then the risk in investment is low as compare to the risk associated in investment of non-diversified portfolio. India and Pakistan are labor intensive countries and the allocation of resources efficiently helps reducing the cost and making business more profitable therefore, allowing the investors and shareholders to gain more returns.

1.4. Limitations:

Following are the limitations that could hinder the research study within its valid scope:

- The scope of this research is limited to the data of India and Pakistan only without incorporating other regional countries.
- Time is also a constraint for this research study
- The knowledge of researcher is also limited to the objectives of the research only

2. Literature Review

2.1. Backdrop of the Paper:

The era of liberalization reforms and globalization has given rise to many other forms of savings and investments opportunities, earlier they were carried out within boundaries of a country but now it has moved to regional and international level where investors from one country can invest their savings in another country to gain higher returns. The advancement in information and technology and the real time transactions across borders have given an advantage to the investors; resultantly this has increased integration among various cross border countries. Financial markets integration is relatively a new field of research in finance, the researchers are working towards exploring its merits and demerits to know what effects it could make in time of crisis if market of one country crashes then what would be the likely impact on other markets which are integrated to this one market. The researchers became active after the global financial crisis of 2008, when the financial markets of developed nations crashed affecting the big giant companies to file for chapter 11 of bankruptcy; however this crisis does not have any direct affect on the markets of emerging market economies.

The area of research on financial markets integration flourished in the mid 1980s and 1990s, when there was an increase in global investment and opportunity for the investors to diversify risk internationally. Most of the literatures on integration of Asian stock markets have concentrated on the relationships using co-integration and vector regression models (Nath and Verma, 2003; Lamba, 2005; Raj and Dhal, 2008; Auzairy and Ahmed, 2009; Korajazyk, 1995; Chittedi, 2009; Wong, Agarwal and Du, 2005; Abas, 2009; Aktan, Mandaci, Kopurla and Ersener, 2009 and Chattopadhyay and Behera, 2008). Fase (1976) in his study found that substantial degree of market integration is evident in 11 European countries; the research was based on monthly short-term interest rate data for the time span ranging from 1961-1972 and using the principle component analysis. The wave of globalization along with the financial sector reforms in the emerging countries during 1990s motivated many empirical studies in this area.

Khalid et al (2011), in their study on interrelationships among stock markets of developed and emerging economies, in which they studied the integration of stock markets between Pakistan, India and the US and found that no co-integration was found among these countries, while the Engle Granger (1987) causality test showed the unidirectional causality running from NY stock exchange to Karachi and Bombay stock exchange, the emerging markets share in total world financial markets is very minimum, this is the reason why NY stock exchange have influence on our markets but we do not have any on theirs. Tambi (2005) studied the developed nations; US, Canada, UK and emerging economies of India, Singapore and Malaysia by employing the alternative techniques, the results were contradicting literature, stating that the movements in international markets significantly influence national stock markets but they are mainly driven by the movements at domestic level.

Muhammad et al. (2011) research on financial markets integration in Pakistan, was carried out by using data of KIBOR, 3-months Treasury Bills, Pakistan Rupee against Dollar rate, stock price data from KSE-100 index and LIBOR, and by applying Johansen co-integration test it was found that there is a long run correlation among local foreign exchange market and LIBOR but this relationship is not robust due to high control of State Bank of Pakistan (SBP). Securities market is still found at the developing stage and not fully integrated with international financial market.

Narayan *et al*, (2004) studied the dynamic linkages between the stock markets of emerging economies that is Bangladesh, India, Pakistan and Sri Lanka by employing the Granger causality approach to check the regional integration among these four countries that are in South East Asian region. The results showed the unidirectional relationship among the stock markets i.e. stock prices is having an effect from Pakistan to India, Sri Lanka to India and from Pakistan to Sri Lanka, but in the short run. Bangladesh was the most exogenous of the four markets. Gupta and Agarwal (2011) in their paper observed the correlation of Indian Stock market with five other major Asian economies: Japan, Hong Kong, Indonesia, Malaysia and Korea. The results suggest a weak correlation between the Indian stock markets as they offers diversification benefits to institutional and international investors. Bhunia (2012), in his study examined the integration between India with the leading South Asian economies and explored the relationship using daily stock price index data for 10 years time period

and applying bivariate and multivariate co-integration tests and the Engle Granger (1987) causality tests. The results showed that there was a long run and short run relationship between these stock markets, the investors can reap more benefits in short run as compare to long run investments. Chan et al. (1997) stated that: "If two stock markets are collectively efficient in the long run, then their stock prices cannot be co-integrated. In other words, if two markets are co-integrated, then possible arbitrage profits can be explored". (p. 803)

Muhammad (2011) explored Pakistani equity markets are well correlated with United States market and the investors from other developed countries including; Germany, UK China and India can have more gains on their investment from Pakistan's Financial Markets, he tested this by JJ technique of co-integration and explored the long run relationship between Pakistani and US stock markets.

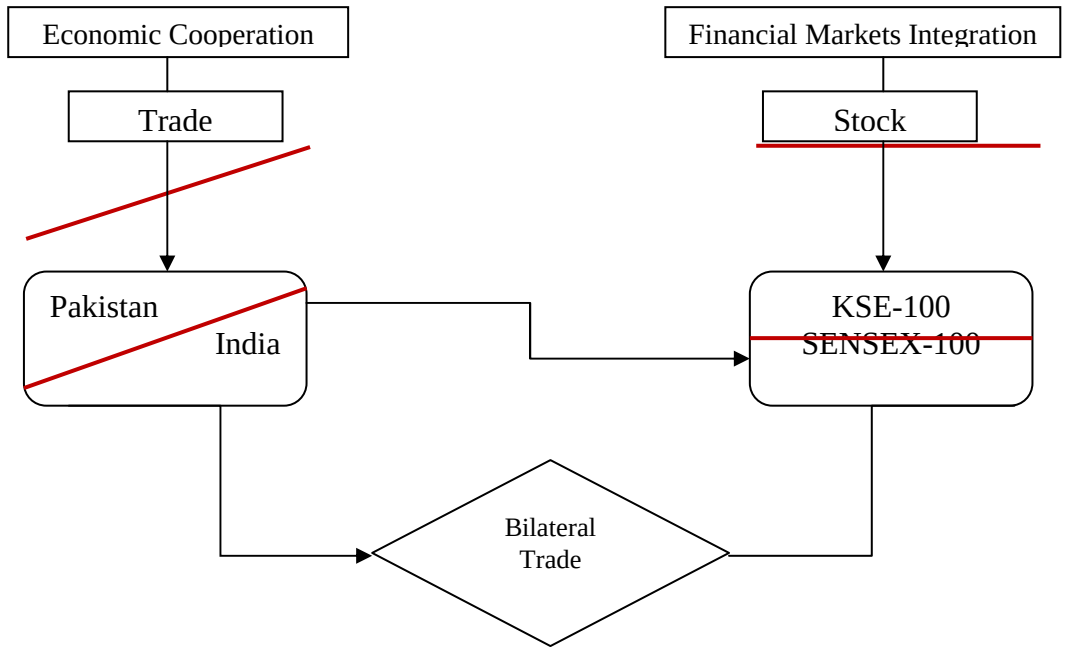
Khan (2013) in his Phd thesis had examined the long run relationship among four emerging markets, using multivariate co-integration tests, the Vector error correction model (VECM), Engle Granger causality test Impulse Response Function analysis and Variance Decomposition analysis. The results suggest that there are short and long run linkages among the four emerging economies. Khan (2013) in his thesis identified further area of research in the field of Financial Markets Integration; an analysis of cross-country integration with respect to economic information. Thus, future research could see whether any integration among the markets is due to the linkages among economic fundamentals in the different markets. India and Pakistan are the rival nations in the South East Asia, however there is a great potential for trade between the two nations and the trade barriers are affecting not only both countries but also hindering regional development.

The links between trade and financial cooperation is straightforward; the efforts taken to facilitate trade and finance are complementary and can be undertaken simultaneously (Rajan, 2004). Financial integration makes easier for a country to obtain trade financing that is required for the wheels of trade in a country (Jinjarak, 2004). The availability of finance promotes the cross border investments, and also promotes trade integration as a result of this Foreign Direct Investment increases among nations and thus the economic cooperation. In some instances cross border trade is assumed to be a crucial determinant of trade flows among nations. Trade integration and increased financial markets coordination leads to greater synchronization of business cycles, which leads to similar movements in interest rates means the financial markets integration. Forbes and Chinn (2003) in their research has identified that bilateral trade flows are one of the important determinant of cross-country financial linkages, in this study trade and the weaker forms of financial cooperation are studied together, the later part constitutes of stronger financial cooperation such as integration of institutional structures and harmonization of standards.

2.2. Conceptual Framework:

The conceptual framework or model emerged from the literature is shown in Figure 1, which contains the measurement and identification of the variables used in this study. The framework describes that we measure economic cooperation between the two cross border countries through trade i.e. imports and exports, the financial integration is measured by taking sample from the stock markets of both the nations. The changes in economic cooperation mainly occurs due to the bilateral trade negotiations between India and Pakistan, there are some other factors that may affect the relationship but the major role is played by bilateral trade. Good and bad events between India and Pakistan may affect the movements in stock markets but it could only be measured using daily stock price data, one of the limitation of this study is that the data we used is monthly and the effect of events on stock markets may not represent a true picture. The key research questions that were identified from the literature stands; are there any significant correlation among stock markets of India and Pakistan, their long run relationship and causality. In order to investigate this query following are the hypothesis that will were developed for both the countries.

Figure 2: Conceptual Framework



Following are the hypothesis emerged from the literature and the framework developed:
H1: *Pair wise stock returns in India and Pakistan are positively correlated*
H2: *Stock returns in both markets indicate at least one co-integrated equation*
H3: *Bilateral Trade between the two countries does not causes the change in return series of financial markets*

3. Research Methodology

The research is quantitative, time series, based on secondary data available on Karachi Stock Exchange (KSE) and Bombay Stock Exchange (SENSEX) to measure the financial integration between the two markets. SENSEX-100 is a diversified index of Indian Stock Market and represents the major sectors of the Indian economy. SENSEX 100 represents about 80% of the free float market capitalization as on 30 June 2013. The KSE-100 Index is a market capitalization-weighted average index and represents around 90 percent of the market capitalization of the stock exchange of the country. Both exchanges are the main trading stock markets of the representative markets.

The population for this study will be the Stock price index, monthly observations of Karachi and Bombay Stock Exchanges. The sample period spans from January 2002 to December 2012 i.e. complete 11 years data will be used for this study.For measuring the Economic Cooperation, Trade intensity between India and Pakistan will used, for the same period. The empirical analysis will be carried out by using monthly stock price index for the period from January, 2002 to December, 2012 i.e. complete eleven years data. Monthly 100 indices of Karachi Stock Exchange of Pakistan (KSE) and Bombay Stock Exchange (SENSEX) will be obtained from their respective websites. The data on Trade has been obtained from State Bank of Pakistan (SBP) official website. Secondary data will constitute all published material available on websites, research journals, and books on the Financial Markets integration.

The sample period spans from January 2002 to December 2012 i.e. complete 11 years data will be used for this study, by applying uni-variate co-integration test and the Granger causality tests. Statistical and econometric models will be used to study the long-term relationship among stock indices a common practice in the literature is to employ Johansen's co-integration method and the short-term relationship will be explored by using the Granger causality tests. Regression analysis will also be carried out to examine the cause and effect relationship between financial markets performance and trade. Some descriptive statistics will help us to identify the nature of data we are using for this study.

3.1. Econometric Model:

To identify and examine the dynamic relationship among various financial variables of domestic, regional and international financial markets, econometricians have proposed various models such as Engle and Granger (1987); Johansen & Juselius (1990, 1993). To measure the long run relationship between the stocks of India and

Pakistan we will be using Johansen Co-integration test, the data set we are using for this study is to check the multiple co-integrating relationships and estimates parameters in corresponding Vector Error correction models. Furthermore, Johansen method tests linear restrictions on both error-correction speeds and the space of co-integrating vectors, and estimates restricted model parameters. The literature suggests that for multivariate data Johansen Juselius provide less bias results as compare to Engle Granger (1987). The Vector Error Correction Model is used to fulfill the information of maximum likelihood estimation model, which allows VECM to test the complete system of the equation in a single step, without normalizing any specific variable, which is not compatible with the methodology of Engle Granger (1987). Another major advantage of Johansen's (1990, 1993) methodology is that it avoids key assumption of exogeneity and endogeneity of variables. The VCEM equation is as follows:

$$\Delta z_t = \tau_t \sum \Delta z_t + \ldots\ldots\ldots\ldots + \tau_{k-1} \Delta z_{t-k+1} + \Pi_{t-k} + \mu_t$$

Where Δ refers to the 1st difference

$$\Gamma = (I\text{-}A1\text{-}\ldots\ldots Al),\ I=(1,2\ldots\ldots K\text{-}1) \text{ and } \Pi = -(I\text{-}A1\ldots\ldots Ak),$$

The short run and long run adjustments are defined by Π *and* τ. Where Π is equal to $\alpha\beta$, and α represents the speed of adjustment whereas the β represents the long run coefficient and the relationship among variables and conforms that z cover long run steady state equilibrium.

Test for Stationarity and Lag Length:

To analyze the long term association between two or more variables it is very important to identify either the variables are stationary or not. The Augmented Dickey Fuller test (ADF) applies to identify whether the variables are stationary or not and if they are non-stationary then their first or second difference is taken to make them stationary for further processing of the data. The null hypothesis of ADF test is as follows:

$$H_o = \gamma = 0 \text{ in } \Delta y_t = \alpha + \gamma Y_{t-1} + \sum \beta \Delta y_{t-k} + \varepsilon$$

In this model ε refers to the white noise error in the data, which can be reduced by using lag length of time series data, too many lags would affect the reliability of the data and the degrees of freedom would reduce, so it is imperative to use Akaike information criterion (AIC) to identify the appropriate lag lengths Bhunia (2012). The AIC formula is as follows:

$$AIC = K \ln (\text{residual sum of squares}) + 2n \text{ and}$$

The AIC is reduced by reducing the natural log of residual sum of squares, for sample size n and the number of parameters, K, this is tested by making null hypothesis as there are at most r co-integration vectors that is (n-r) unit roots, therefore we write it as:

Ho: $\lambda i = 0$ where $i = r+1$
The λ test statistics is represented as,
n λ-trace = $-T \Sigma \log (1\text{-}\lambda i)$ r=0, 1, 2, …, n-2, n-1
The number of maximum co-integrating relationships is based on λ-trace test, which examines the specific hypothesis.

For the measurement of Economic Cooperation between India and Pakistan, the data of Trade that is imports and exports, will be used to identify the level of Economic Cooperation between the two cross border countries and their role in the regional development. The sample period spans from January 2002 to December 2012 i.e. complete 11 years data is used.Forbes and Chinn (2003) in their research has identified that bilateral trade flows are one of the most important determinant of cross-country financial linkages, in this study trade and the weaker forms of financial cooperation are studied together, the later part constitutes of stronger financial cooperation such as integration of institutional structures and harmonization of standards. The regression model will help us identify the economic cooperation between India and Pakistan, what impact does trade has on the financial markets of both the cross border countries, which will answer the fourth objective of this research. The variables will be as follows; dependent variable as financial markets of both the countries; KSE-100 and SENSEX-100, and independent variables will be import and exports between India and Pakistan. The regression model developed for this study is as follows:

$$\mathbf{Y_1\ (KSE) = b_o + b_1\ (Imports) + b_2\ (Exports) + \varepsilon}$$
$$\mathbf{Y_2\ (BSE) = b_o + b_1\ (Imports) + b_2\ (Exports) + \varepsilon}$$

4. Empirical Results

This section of the report discusses the results of econometric tests which we have performed, to determine whether the two cross border financial markets are integrated or not with the help of economic cooperation between them. Table 2, provides the descriptive statistics of the two country's financial markets in change form is calculated and trade performance in logarithm form, and then antilog is taken to normalize the data, in terms of financial markets performance SENSEX-100 is high on variability as compare to KSE-100 index, as the standard deviation in both the cases are far from mean, that is the data is more volatile. The below table also shows the distribution of stock returns of SENSEX-100 and KSE-100 Index both the stock markets are having thick tail, and distribution of stock return in left skewed. The Jarcque Bera test statistics shows that none of the markets are normally distributed. The p-value in both cases is less than 0.05 indicating the significance of the variables. Whereas the descriptive statistics of Economic Cooperation indicates that there is volatility in imports than exports and the data of export is normally distributed as compare to imports. The p-value of both variables of trade is less than p-value showing the significance of the variables for the study.

Table 2: Descriptive Statistics

	Financial Markets		Economic Cooperation	
	KSE-100	**SENSEX-100**	**EXPORT**	**IMPORT**
Mean	116.681	123.0205	9.6873	10.9427
Median	186.700	134.6300	9.7875	11.2419
Maximum	1,512.670	3,222.0000	11.2296	12.3210
Minimum	(3,322.090)	(3,072.3700)	8.1784	8.1519
Std. Deviation	692.105	947.8396	0.6594	0.8710
Skewness	(1.915)	(0.4364)	(0.4795)	(0.9812)
Kutrosis	9.699	5.1921	2.6485	3.1807
Jarque-Bera	325.035	30.3862	5.7373	21.3609
Probability	-	-	0.0568	0.0000
Observations	131	131	132	132

At 1% level of significance the coefficients are highly significant, the correlation between SENSEX-100 and KSE-100 are highly significant at 88.79%, whereas the correlation between Exports and Imports is 54.15% which is not so strong but still there is correlation between the two variables. The higher correlation does not indicate that there is sufficient evidence that there will be higher cointegration between the markets. Correlation matrix only shows the magnitude of relationship among variables whereas the coefficient of correlation shows the magnitude and direction of the relationship among variables. Markets are considered co integrated only if the value of assets traded is equal across the markets than only markets are said to be highly integrated and there are no arbitrage opportunities as well.

Table 3: Correlation Matrix

Correlations				
	KSE-100	**EXPORT**	**IMPORT**	**SENSEX-100**
KSE-100	1.000000			
EXPORT	0.613353	1.000000		
IMPORT	0.780127	0.541589	1.000000	
SENSEX-100	0.887910	0.577633	0.784513	1.000000

**. Correlation is significant at the 0.01 level (2-tailed).

4.1. Regression Analysis:

The summarized form of data is shown in Appendix-II Table 1 and 2, which provides the complete regression analysis of the dependent and independent variables. The regression equation generated from the data is as follows:

$$\textbf{Equation 1: } Y_1 \textbf{ (KSE)} = 3{,}064.97912 + 0.09146\, X_1 + 0.05403\, X_2 + \varepsilon$$
$$\textbf{Equation 2: } Y_2 \textbf{ (BSE)} = 3{,}581.1107 + 0.1052\, X_1 + 0.0818 X_2 + \varepsilon$$

Equation 1 shows the positive relationship between dependent and independent variables that is if the performance of Karachi stock exchange improves it will result in increased trade. Similarly equation 2, states

that if the stock market of Bombay improves it will increase the trade of the country. The variation in the independent variable explains a significant proportion of the variation in the dependent variables. Although the magnitude of the increment is low, (depending upon the trade figure), but it proves that the performance of financial markets is having an impact on the performance of trade between the two countries. The effect of increased trade benefit of Bombay stock exchange is high as compare to the Karachi stock exchange. At 1% level of significance we reject H3, that bilateral trade between the two countries does not causes change in return of financial markets, and conclude that it has a positive impact on the return of both countries stock markets.

4.2. Test of Stationarity:

Figures 1 and 2 in the Appendix contains plot of observed stock price indices in original form and natural log form (level series and first difference). Figure suggests that all natural log series of indices value can be stationary at first difference. The results are consistent using two different techniques on the sample period. Results of these tests are summarized in Table 4. The table below shows that the variables are non-stationary at level except the exports, meaning that there is unit root in the data and to remove this first level difference is taken to transform the series into Stationarity, which makes the series integrated at order I. once the first level is taken than the data is prepared to examine the short and long run integration.

Table 4: Unit Root Test

	At Level		At 1st Difference		Results
	t-Statistics	P-value	t-Statistics	P-value	
KSE	-0.81776	0.8105	-9.97334	0.000	Stationary at First Difference
BSE	-1.04506	0.7357	-11.2205	0.000	Stationary at First Difference
EXPORT	-6.22616	0.000	-	-	Stationary at Level
IMPORT	-2.76229	0.0666	-7.30445	0.00	Stationary at First Difference

4.3. Engle Granger Test for Cointegration:

"In the lines of Granger representation theorem, if two variables are co integrated then Granger causality exist at least one direction" (EG, 1989, cited in Muhammad, S. (2011)). Table 5, below concludes the Engle Granger causality test proves that changes in KSE affects the Imports and exports between India and Pakistan, similar is with BSE that it had an impact on Imports and exports between the two cross border countries. However there is no cause and effect relationship between stock markets of India and Pakistan. The results are analyzed on the basis of p-value < 0.05, indicates the significance of the relationship among variables in Table 4, the p-value is less than 0.05 in KSE and BSE impact on exports and imports. The results are significant at 1% level of significance indicating the strong relationship among variables. In summary, these results establish a link between financial markets and economic cooperation between India and Pakistan; therefore it is concluded that economic cooperation between the two countries may affect the performance of its financial markets.

Table 5: Engle Granger Causality Test

Ho:	F-Statistic	P-value
SENSEX does not Granger Cause KSE	1.52179	0.22234
KSE does not Granger Cause SENSEX	1.26689	0.2853
EXPORT does not Granger Cause KSE	0.01735	0.9828
KSE does not Granger Cause EXPORT	13.1512	0.0000066
IMPORT does not Granger Cause KSE	0.10723	0.8984
KSE does not Granger Cause IMPORT	10.6011	0.0000560
EXPORT does not Granger Cause SENSEX	1.87082	0.15828
SENSEX does not Granger Cause EXPORT	8.58974	0.00032
IMPORT does not Granger Cause SENSEX	0.63562	0.53131
SENSEX does not Granger Cause IMPORT	14.5458	0.0000021
IMPORT does not Granger Cause EXPORT	6.89588	0.00144
EXPORT does not Granger Cause IMPORT	4.20263	0.01712

4.4. Johansen Cointegration test:

The test of maximum likelihood based on Johansen (1988, 1991) and Johansen Juselius (1990) is used to examine the integration between variables and develops a integration vectors in a form of equations. The first test of to check the cointegration is Trace Statistics and the second is Max Eigen statistics test. Trace statistics is a joint test, in which Ho is the number of cointegrating vectors are less than or equal to r, against alternative hypothesis. Similarly the max-eigen test statistics conducts separate test on eigen values, the Ho is that there are r cointegrating vectors present against the alternative that is r+1. The distribution of both the statistics is non-standard and examines the long run relationship. Table 6 and 7 below discusses the results of Johansen Juselius cointegration between the two financial markets of India and Pakistan.

Table 6: J.J. Co-Integration Test (Trace Statistics)

Null Hypothesis	Trace Statistic	Critical Value	P-Value
r=0	80.95822	47.85613	0.0000
r=1	38.22205	29.79707	0.0043
r=2	3.651418	15.49471	0.9296
r=3	1.021317	3.841466	0.3122

Table 7: J.J. Co-Integration Test (Max-Eigen Statistics)

Null Hypothesis	Max-Eigen Statistic	Critical Value	P-Value
r=0	42.73617	27.58434	0.0003
r=1	34.57063	21.13162	0.0004
r=2	2.630101	14.2646	0.9683
r=3	1.021317	3.841466	0.3122

The Trace Statistics first examines the null hypothesis of r conitegrated relations against the alternative k cointegrating relations, where k is the number of variables. The second column of table 6 and 7, shows that the first two p-values are less than 0.05 and shows the significant relationship, at 5% level of significance we reject Ho r=0 and r=1, that there is no integration among variables, the calculated test value is 80.95 and 38.22 lies outside the interval. Therefore we conclude on the basis of Trace Statistics that there exits cointegration between stock markets of India and Pakistan. Similarly on the basis of Max-eigen test statistics we conclude that we reject null hypothesis at r=0 and r=1, as the test statistics values lies outside the interval, the p-values are also less than 0.05 which shows the significance of the relationship. For this study both the trace statistics and max-Eigen is calculated on 5% level of significance where the null is r=0 and r=1, we conclude that there are at least two cointegrating vectors in the data. When the critical value is less than the test statistics we conclude the presence of two cointegrating vectors.

5. Conclusion

The study examined the cointegration between two cross border countries, India and Pakistan, with empirical evidence from economic cooperation. The integration between the two countries provides positive investment benefits to the domestic and international investors, which may help the countries, invest in a friendly environment and have development growth. The liberalization reforms, globalization and advancement in information and technology have helped the investors of developed and developing nations to invest in foreign markets with reduced risk and higher returns. Muhammad et al, (2012) suggests increasing the liberalization of financial reforms and further increasing the degree of financial markets integration. To test the financial markets integration between India and Pakistan we have used Economic cooperation between the two countries as the variable which causes the change in performance of KSE and BSE, stock markets of both the countries.

Findings of this research paper provide some useful implications for both the financial markets participants and policy makers and participants of trade. Perera and Wickramanayake (2012) in their study argues, that the increased integration would mean the development of SAARC region it will become an attractive destination for the investors but on the other hand higher integration would result in limited opportunities in terms of diversification within the region and investors will focus to invest in other sectors and regions to gain more return on their investment and have more exposure abroad. Click and Plummer (2005) in their study indicated that investors from outside the region may value the benefits of regional stock markets such as high liquidity and low transaction costs, and may invest more capital to the region. This is a better for companies to expand their shareholder base and reduce the cost of capital.

Therefore it is concluded that there exists cointegration between financial markets of India and Pakistan, and with the help of this it is expected to enhance future as capital and financial markets will offer products that has same maturity and value in other markets as well. However, the degree of integration is mainly dependent on the policy and institutional infrastructure, therefore it is recommended that ongoing efforts should be made for the development of financial sector reforms and increased the trading of similar maturity assets between the two markets. The financial markets of India and Pakistan are closely linked to the development of the South Asian region; if the trade between the two countries increases it will result in additional benefits for both the countries as well as the region. Kleimeier and Sander (2000), in their study pointed out that only financial markets integration does not guarantee that a perfectly competitive market would establish, but to bring a change continuous financial reforms and structural change in policy is required for the dynamic growth.

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