GLOBAL MARKETS EFFECT ON STOCK MARKET VOLATILITY WITH REFERENCE TO SAARC NATIONS – A STUDY

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ABSTRACT

The south Asian countries economy is growing significantly for two decades. Among the SAARC nations, Chinese and Indian economies growth is observed to be tremendous. The present study is attempting to know the equity markets performance of SAARC nations. The study has considered the secondary data from the period of 2015 to 2020. The study measured the returns performance. The Modigliani approach stated that the Indian and Pakistan countries risk-return performance found to be greater than other SAARC nations. The study examined the volatility of the markets with the help of the ARCH model and found that the Indian and Bangladesh stock markets volatility were significantly influenced higher by the global equity market benchmark index volatility. This paper is mainly use the institutional investors, academicians, and various stakeholders of SAARC nations.

JEL CODES: C13, C52, G23, O16

Key words: Global Market, SAARC, Stock Market, Volatility.

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1. INTRODUCTION

The South Asian Association for Regional Cooperation (SAARC) is an economic and strategic body of eight countries mainly based in Asia. It was founded in 1985. The Secretariat is situated in Kathmandu, Nepal. The founding members were Bangladesh, India, Nepal, Bhutan, Maldives, Sri Lanka, and Pakistan. Afghanistan has been included in 2007. SAARC's goals were to foster the welfare state, standard of life and social self-reliance to boost socio-economic growth.

SAARC Stock Market Situation the capital markets of the SAARC countries are of various types. The difference is the size. Among the member countries, India is the largest

economy and has a significant impact on the relative development of the capital market. Among the sample countries, India has witnessed significant transformations in the field of information technology, market, and regulatory structure, and has invited foreign investment. The economic stability of this region is not strong enough.

Capital market integration enables the free movement of capital between the Member States. Investors may invest in any country where knowledge, legislation, trade practices, accounting rules, settlement structures, governance norms are of a similar nature. Companies may collect their funds from both domestic and international nations, consistent with similar rules and regulations. It also enables service providers to work in any area without any country-specific constraints. While SAARC countries have integrated capital markets, there is no cross-border integration between countries.

This analysis would analyse the viability of capital market integration after examining the essence of the instability of selected SAARC countries and their response to changes in global, political and financial factors. There is a connection between uncertainty and the capacity for capital market integration. Aizenman (1995) found that the same existence of uncertainty and the beneficial effect of shocks contributed to the likelihood of capital market convergence.

Stock exchange, also commonly referred to as "the market," is the most frequently followed investment market in the world where financial instruments or corporate profits claims are exchanged (Mishkin and Eakins, 2011). The market offers long-term funding to traded firms in stock markets by pooling funds from different institutions, allowing companies to grow their company and providing investors with an alternate investment option. Levine and Zervos (1990) have demonstrated the value of the financial sector in mobilising savings, allocating money, exercising corporate influence and easing risk management.

While equity markets in developing countries have experienced sustainable development and prosperity across the years, although the market collapses that shook the global capital markets (Hull, 2012) in emerging economies are known to remain the most volatile markets in the world (Engle and Rangel, 2005) and have risen dramatically over the last two and a half decades. They are therefore more susceptible to macroeconomic conditions, such as shifts in income levels, inflation, interest rates, etc.

In order to draw up a stock index, the market capitalization of the selected stocks is first determined by calculating the number of shares outstanding of each business at the existing share price of the company. Then the market weight, referred to as the index weight is determined by dividing the market capitalization of the business into the index by the overall market capitalization of the index.

2. REVIEW OF LITERATURE

Oura, Hiroko & Jobst, Andreas & Kramer, Charles & Purfield, Catriona. (2007). Asian stock markets have risen dramatically since the early 1990s, led by heavy foreign investor inflows, increasing regional finance convergence, capital account liberalisation, and systemic sector improvement. In order to promote expansion, the emergence of equity markets offers a more diversified range of financial intermediation networks, and the growing position of capital markets will theoretically alter the essence of financial stability and macroeconomic risks.

Deep Sharma, G., & Bodla, B. S. (2011): The area of South Asia has seen an impressive development in recent years. Capital inflows to the area grew at an annual pace of 7% between 2000 and 2007, in comparison to Europe and the Middle East alone. This has contributed to the region's stock markets become the mainstay of foreign investors. In order to maintain this, the SAARC nation's stock markets have sought to become more successful.

Tripathi, Vanita & Seth, Ritika. (2016). This research is a systematic effort to analyse the poor form of market performance in the SAARC countries ' financial markets. Only the financial exchanges of Bangladesh, India, Pakistan and Sri Lanka have been taken as a proxy to represent the SAARC nations owing to the lack of adequate data accessible to other SAARC countries. The present research is special with an emphasis on SAARC countries in the region under review.

Bhattarai, K. (2017): The momentum of economic development in the South Asian economies is evaluated on the based on stylized evidence of these economies and the developments in their fiscal and trade policies. Achieving higher rates of economic development requires a more comprehensive and scientific study of the potentials, capabilities and competitive advantages of these countries so that they can participate in the growth of the global economy. Policies should be coherent and detailed in connecting diverse markets, regions and nations to this long-term development route.

Sehgal, S., Pandey, P., Deisting, F., & McMillan, D. (2018): The paper addresses the strategic nature of the integration of the capital markets of South Asian countries in this report. Empirical results show that there is very little or no degree of convergence in the field between the sample countries. In the South Asian market, equity fund flows reinforce this trend of low consolidation in the area. It noted that to reach higher levels of financial integration, SAARC countries need to improve their trading links and trade barriers and develop their stock market infrastructure.

Kotishwar, A (2020) study focused on the high-frequency trading impact on the stock market. The study considered the 1 minute, 5 minutes, 10 minutes, 15 minutes, 30 minutes, and 1 hour time periods. The study considered the historical time-series data from NSE India for the period of three months, that is, April-June 2019. The ARCH method was applied with the GARCH, and the results indicated that the Nifty volatility had a significant impact on the Bank Nifty volatility. The ordinary least square method results indicated that the Nifty 1 minute had a greater effect than the other time periods on the Bank Nift

Kotishwar, A (2020) study made an attempt to investigate the impact of covid-19 virus spread on the stock markets. The study considered the positive cases growth of six countries (USA, Spain, France, Italy, China and India), which were affected worst from 11th, March to April of 2020 (WHO declared the COVID 19 as pandemic on 11 March 2020). The study applied the VECM to know the relationship and observed that the Covid-19 having the significant negative long run relationship with all the selected countries stock indices. The CAAR model has been applied and observed that the all the selected countries indices are positively reacted more in post period compared with the pre period. The study states that the investors are considering the long-term strategy and investing at every low level.

3. OBJECTIVES OF THE STUDY

- To analyze the performance of SAARC nations stock indices with respect to risk and return
- To study the global market effect on the Volatility of SAARC nations stock markets

4. HYPOTHESES OF THE STUDY:

H₀₁: There is no difference in SAARC nation's stock indices with respect to Returns and Risk.

H₀₂: There is no difference in SAARC nation's stock indices with respect to the volatility.

5. SCOPE OF THE STUDY

The present study has been emphasized to know the SAARC nations stock market returns performance from the period of 2014-15 to 2019-20 on daily returns with the monthly average. The study is considering the SAARC nations equity market indices. The SAARC nations equity indices are as follows,

Bhutan: GNH Index

Bangladesh: Index – DSE 30 Index,

India: NIFTY 50

Sri Lanka: S&P Sri Lanka 20 Index

Pakistan – KSE 30

Maldives: MASIX

Nepal: NEPSC index

6. RESEARCH METHODOLOGY

The present study is explorative research by considering the secondary data from the period 2015 to 2020. The study mainly focused to examine the risk return performance and volatility of the SAARC nations.

The SAARC nations have been formed in the year 1985 and in the year 2005 Afghanistan country became the new member. These countries are working together for the socio-economic development as the main objective. The study has not considered the Maldives and Afghanistan country stock market indices and the rest of the five countries' base indices were examined with the support of Global equity benchmark MSCI.

The study has framed mainly two objectives and applied the following statistical method. They are

Modigliani Miller Approach: The present study has considered the historical time series data and applied the MM approach to know the risk return adjusted based on performance for the selected five SAARC nations. The study has considered the LIBOR rate as a risk-free rate indicator and collected the five years of data.

ARCH Method: The study applied the Auto Regressive Conditional Heteroskedasticity test to know the global equity benchmark volatility influence on the SAARC nation's volatility.

The performance of SAARC nations stock indices with respect to risk and return

The study applied the Modigliani Miller Approach for the return performance of SAARC nations stock markets.

Table 1 Returns Performance of Colombo, Karachi, India, Dhaka and Nepal Stock exchange

Country name	Price	MSCI	Rp	Rf	D	Avg. d	std d	S	std b	Avg rf	M2
Colombo	1704773	4984.85	-68.92	1.18	-70.102	-33.74	37.724	-0.894	12.306	1.998	-9.012
Karachi	8378	4984.85	52.74	1.18	51.561	-1.774	48.339	-0.036	12.306	1.998	1.546
India	7612	4984.85	4.774202	-0.52	5.301413	183.93	69.63	0.42	40.44	1.998	2.92
Dhaka	1123.32	4984.85	-79.52	1.18	-80.71	-28.25	47.99	-0.58	12.31	1.998	-5.24
Nepal	2232.6	4984.85	15.17	1.18	-97.11	-27.31	63.61	-0.43	12.31	1.99	-3.28

Source: Author Calculation

The above table1 signifies the Returns Performance of SAARC countries stock indices. The study applied the risk return adjusted performance method of Modigliani Miller i.e., M^2 for the period of April 2015 to March 2020. The analysis result stated that Indian based Index

– Nifty (2.92) had given higher return performance among the SAARC nations followed by the Pakistan index – KSE. (i.e., 1.546). The Srilankan index – CSE (-9.012) has shown deteriorated performance followed by Dhaka and Nepal.

The global market effect on the Volatility of SAARC nations stock markets

The study applied the ARCH model to know the effect of the global stock exchange base index MSCI on the SAARC nations. The study has considered the five years historical time series data of SAARC nation's stock exchange indices. The E-views software has been used for the tabulation of data analysis.

Figure 1 Residual Graph for the SAARC Nations Indices

The above graph 1 states the residual graph of SAARC nations base indices volatility for the period of five years i.e., 2015-2020. The five nation's trend lines crossed the fitted lines, which indicates the existence of volatility. Therefore, the study applied the ARCH model to quantify the impact of MSCI on the SAARC nation's market volatility.

The study applied the ARCH model for the measurement of MSCI effect on the SAARC nation's volatility. The following hypothesis has been framed to test the objective.

H0: There is no Impact of MSCI volatility on the Volatility of SAARC nation's stock indices.

H1: There is an Impact of MSCI volatility on the Volatility of SAARC nation's stock indices.

Table 2 MSCI Effect on the Volatility Colombo, Karachi, India, Dhaka and Nepal Stock Exchange

Dependent Variable: RCSE,NSE,KSE,DHAKA,NPSE				
Method: ML ARCH - Normal distribution (BFGS / Marquardt steps)				
Sample (adjusted): 2 1210				
Included observations: 1209 after adjustments Convergence achieved after 20 iterations				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
CSE	0.01675	0.82605	0.717343	0.0032
NSE	0.47251	0.0572	1.056117	0.0009
KSE	0.00278	0.2852	3.017480	0.0025
DHAKA	-0.02785	0.129905	-1.125804	0.0002
NPSE	0.001263	0.262705	20.12913	0.0000

Source: Author Calculation

The table 2 illustrates the volatility of MSCI effect on the volatility SAARC nations' base indices. The global benchmark MSCI volatility impact has been observed on the selected SAARC nation's volatility as their P values are observed to be significant (i.e., < 0.5). The Auto Regressive Conditional Heteroscedasticity coefficient states reveal that the Indian stock exchange NSE – Nifty (0.47251) got influenced high followed by the Pakistan index Bangladesh exchange DSE (-0.02785). The rest of the countries' volatility was found to be lower compared with Indian and Bangladesh. Hence, the null hypothesis will be rejected and accepted the alternative Hypothesis. Therefore, it states that volatility of MSCI is having significant impact on the Volatility of the SAARC nation's base indices.

7. FINDINGS OF THE STUDY

- The study examined the performance of Indian and Pakistan Countries' stock returns performance was observed to be positive but the rest of the countries' returns performance was observed to be risk and non-performance.
- The study found that the Dhaka stock exchange and Nepal stock exchange has a Lower performance advantage which might have higher risk in comparison to MSCI.
- The study with the ARCH model stated that the Bangladesh stock exchange – DSE got influenced negatively by the MSCI.
- The study identified that Srilankan. Indian, Pakistan, and Nepal stock market indices were positively influenced by the MSCI volatility.

8. CONCLUSION OF THE STUDY

The study has been emphasized the equity markets performance and Volatility of SAARC nations. The study has considered the secondary data from the period of 2015-16 to 2019-20. The study measured the returns performance. The study applied the Modigliani risk adjusted Method to know the return performance and found that the Indian and Pakistan markets returns are observed to be positive and less risk but the rest of the countries' stock indices are having higher risk. The ARCH model has been used to know the global markets' effect on the SAARC nations stock indices and observed that the Bangladesh stock exchange – DSE got negatively influenced and other stock indices behaved positively with the influence of MSCI. Hence, there is a need to do further research in this area by considering the impact of select global economic factors on the SAARC Nations equity markets performance.

REFERENCES

- [1] Adam (2002,) Analyse, Compare, And Apply Alternative Indicators and Monitoring Methodologies to Measure the Evolution of Capital Market integration in the European Union. *Centre for Studies in Economics and Finance, University of Salerno*.
- [2] Ali, G., Hussain, H., & Islam, T. (2014). Interdependence of South Asian Equity Markets. *Research Journal of Applied Sciences, Engineering and Technology*, 7(13), 2762–2771.
- [3] Boubakri, S., & Guillaumin, C. (2015). Regional integration of the East Asian stock markets: An empirical assessment. *Journal of International Money and Finance*, 57, 136–160.
- [4] Chopra, Pran, Future of South Asia, Dhaka University Press, 1986.
- [5] Deep Sharma, G., & Bodla, B. S. (2011). Inter-linkages among stock markets of South Asia. *Asia-Pacific Journal of Business Administration*, 3(2), 132–148. <https://doi.org/10.1108/17574321111169821>
- [6] Goel, O.P., India and SAARC Engagements, Vol. I and II, Chawla Offset Press, Delhi, 2004.

- [7] James DeShaw Rae (1996): "Growing Areas of Cooperation", South Asian Survey, Vol. 3, No. 1-2, January-December, 1996.
- [8] Jha, Indra Mohan, SAARC – The Road Ahead, National Book Organisation, Marwah Publishers, New Delhi, 2004.
- [9] Keshab Raj Bhattarai, 2016. "Economic Growth and Development in India and SAARC Countries," EcoMod2016 9631, EcoMod.
- [10] Kotishwar, A. (2020). Impact of Covid-19 Pandemic on Stock Market with Reference to Select Countries-A Study. Academy of Accounting and Financial Studies Journal, 24(4), 72–80. <https://www.abacademies.org/articles/impact-of-covid19-pandemic-on-stock-market-with-reference-to-select-countriesa-study-9409.html>
- [11] Kotishwar, A. (2020). Impact of High Frequency Trading on Equity Market with Reference to NSE India. Indian Journal of Finance, 14(1), 58-76. doi:10.17010/ijf/2020/v14i1/149858
- [12] Mehrotra, L.L. and Chopra, H.S. and Kneek Gert W., SAARC 2000 and Beyond, Oemga Scientific Publishers, Delhi, 2005.
- [13] Oura, Hiroko & Jobst, Andreas & Kramer, Charles & Purfield, Catriona. (2007). Asian Equity Markets: Growth, Opportunities, and Challenges. IMF Working Papers. 06. 10.1080/17520840802252571.
- [14] Ross Massod Hussain "SAARC – Perspectives and prospects", South Asian Survey, vol. 3, No. 1-2, January-December, 2006. "South Asia without SAARC", Seminar, No. 517, September 2002.
- [15] Sehgal, S., Pandey, P., Deisting, F., & McMillan, D. (2018). Time varying integration amongst the South Asian equity markets: An empirical study. Cogent Economics & Finance, 6(1), 1452328. <https://doi.org/10.1080/23322039.2018.1452328>
- [16] South Asian Regional Cooperation Report of the Committee of the whole, Colombo, 31 August – 2 September 1981; From SARC to SAARC, p. 13.
- [17] Tripathi, Vanita & Seth, Ritika. (2016). Market Efficiency, Inter-Linkages and Volatility Transmission in Stock Markets of Selected SAARC Countries. South Asian Journal of Management., 23(4), 149–174. <https://www.questia.com/read/1P3-4320311971/market-efficiency-inter-linkages-and-volatility-transmission>
- [18] www.saarc-sec.org