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Military Expenditure and Economic Growth in SAARC Countries

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Abstract
To keep a sufficient defense system, it is a dire need in today's world to spend a good amount of national income on the defense and military to maintain security and sovereignty of the country. This paper aims to study the growth performance of four of the eight South Asian Association for Regional Corporation (SAARC) nations, that are Pakistan, India, Bangladesh and Sri Lanka, with special emphasis on the impact of military and defense expenditure on the economic growth of each country. The data consists of 31 years (1985-2015) time series of the selected dependent and explanatory variables of all the above mentioned countries. The objective of this study is to shed the light on both, theoretical as well as empirical evidence about the share of some of the important factors in the economy and to analyze the impact of a huge share of defense expenditures on the economic growth of a nation. The author's results indicate that military expenditure has a negative impact on economic growth in India and Pakistan, while in case of Bangladesh and Sri Lanka estimates suggest a positive impact of military expenditure and economic growth in both of the countries.
Keywords: SAARC, Economic Growth, Military Expenditure

INTRODUCTION

Many studies have been done so far to analyze the determinants of economic growth in an economy. Solow (1956) through is empirical study suggested that in an economy at the steady-growth level, GDP per capita is determined by the exogenous saving, population growth and technological progress. But most of the modern economists support the findings of endogenous growth model which assumes that economic growth in an economy is determined by the constant and increasing returns to scale. Endogenous growth theories also suggest that government expenditure has an important impact on long-run growth of an economy (Pieroni,2007). Many of the economists have also criticized the utilization of the neoclassical model that it fails to explain the difference in per capita income across countries. This gap and difference in the findings and implication of endogenous and exogenous models have opened new windows of research in the field of determinants of economic growth.

As many other important determinants, Government expenditure is one of the major determinant of economic growth. Government spends on the productive sectors of the economy to increase the over-all production and economic activity in the economy, while spending on non-productive sectors, government helps the economy to grow indirectly through improved infrastructure, human capital capabilities, etc. A noticeable amount of government spending is on the military sector, as the government plays an important role in financing the military sector.

When studying the role and impact of military expenditure on the economic development, There exist many arguments in favor that military expenditure helps the economy to grow. First, military expenditure can have an influence on economic growth. As according to Keynes, expenditure may stimulate growth, i.e. when aggregate expenditure increases, aggregate demand also increases, Thus, generating short run multiplier effects and higher growth rates. (Benoit, 1978). Second, expenditure on military sector can create a positive externality for the rest of the sectors in the economy. Import of state-of-the-art technology in the form of arms and ammunition, missiles, fighter jets etc. can be utilized in production of civilian goods as well. Third, a prominent amount of the military budget is spent on the development of roads, railway tracks, etc. that improves the infrastructure in the economy, which increases the productive capacity of different sectors. Forth, spending more on the military sector can increase the internal and external security in the country, which helps to improve the trade and investment climate for domestic as well as foreign investors. Fifth, high spending on military spending can increase the capabilities of workforce as human capital through the provision of improved education and skill development facilities.

The impact of military expenditure on economic growth and development of an economy is a controversial and debatable topic. As the arguments in favor of the positive influence of the military spending on economic growth, there exist empirical as well as theoretical evidences that provide arguments against the benefiting impact of military expenditure on economic growth. First, higher military expenditure can lead to the crowding out of public or private investment in the economy, which can be utilized in the production of civilian goods and services. Second, not only the investment, but pooling out of resources from public and private sector for the production of military goods and services can harm the other sectors in the economy. As Dagger (1983) argued in their study of the aforementioned relationship that defense expenditure takes away resources from the

productive investment in other sectors and fails to mobilize and generate additional savings.. Third, aggregate demand for the military goods and related services can create problem of balance of payment in the country. As in most of the less developed countries, most of the technology and high-tech finished goods are imported from the developed countries. Such high amounts of imports can create a dis-balance in the term-of-trade. Forth, especially in case of less developed countries, the higher the expenditure on military sector, the higher the share of it in the economy. And with higher share in the economy, sometimes lead to inefficient control of bureaucracy on the economy and state affairs, which can lead to politically and eventually economic instability in the country.

The aim of this paper is to analyze the impact or military spending in four of the south Asian countries, who are members of a regional trade bloc named SAARC(South Asian Association for Regional Corporation). The objective is to find out the trend of the aforementioned relationship in SAARC countries and whether the higher amount spent every year on the military budgets in these countries causing their unimpressive economic growth?

The paper is organized as follows. The next of the paper briefly discusses the related research literature. Section III will be about the methodological framework and the interpretations of the results found. The IV section of the paper will give a conclusion of the findings with policy recommendation from the author.

BACKGROUD OF SAARC

The South Asian Association for Regional Cooperation (SAARC) is the regional intergovernmental organization and geopolitical union of nations in South Asia. Its member states include Afghanistan, Bangladesh, Bhutan, India, Nepal, the Maldives, Pakistan and Sri Lanka. The establishment of SAARC passed through four phases that include: Conception (1977-80) The Meeting of Foreign Secretaries (1981-83), The Meeting of Foreign Ministers (1983- 85), and The Summits (1985-2004).

In the ending years of the 1970s, the seven South Asian nations that were Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka agreed upon the creation of a trade bloc and to provide a platform for the people of South Asia to work together in a spirit of friendship, trust, and understanding. President of Bangladesh, Ziaur Rahman later addressed official letters to the leaders of the countries of the South Asia, presenting his vision for the future of the region and the compelling arguments for region. After a series of quiet diplomatic consultations between South Asian foreign ministers of all the seven inner south asian countries, In 1983, the international conference held by Indian Ministery of external affairs , the foreign ministers of the inner seven countries adopted the Declaration on South Asian Association Regional Cooperation (SAARC) and formally launched the Integrated Programme of Action (IPA) initially in five agreed areas of cooperation namely, Agriculture; Rural Development; Telecommunications; Meteorology; and Health and Population Activities. In 2005, Afghanistan began negotiating their accession to SAARC and formally applied for membership on the same year. The issue of Afghanistan joining SAARC generated a great deal of debate in each member state, including concerns about the definition of South Asian identity because Afghanistan is a Central Asian country. Despite initial reluctance and internal debates, Afghanistan joined SAARC as its eighth member state in April 2007.The objectives of the Association as defined in the SAARC Charter are:

- To promote and strengthen collective self-reliance among the countries of South Asia.
- To contribute to develop mutual trust, understanding and appreciation of one another's problem;
- To promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields;
- To strengthen cooperation with other developing countries;
- To strengthen cooperation among themselves in international forums on matters of common interest; and
- To cooperate with international and regional organizations with similar aims and purposes.

Cooperation in the SAARC is based on respect for the principles of sovereign equality, territorial integrity, political independence, noninterference in the internal affairs of the member states and mutual benefit. Since 1985, SAARC has evolved slowly but continuously both in terms of institutions and programmes. However, it is true that most of the programmes and achievements of SAARC exist on paper. It is also true that most SAARC activities are confined to the holding of seminars, workshops, and short training programmes Iqbal, M. J. (2006) . In order to achieve the objectives the SAARC would have to evolve into a full-fledged 'regio,l entity' that can cultivate peace in the region. The realization of durable peace and the future of economic integration through SAARC depend upon the ability and interest of South Asian leaders to resolve domestic as well as long-standing differences through peaceful deliberations.

SAARC SUMMITS

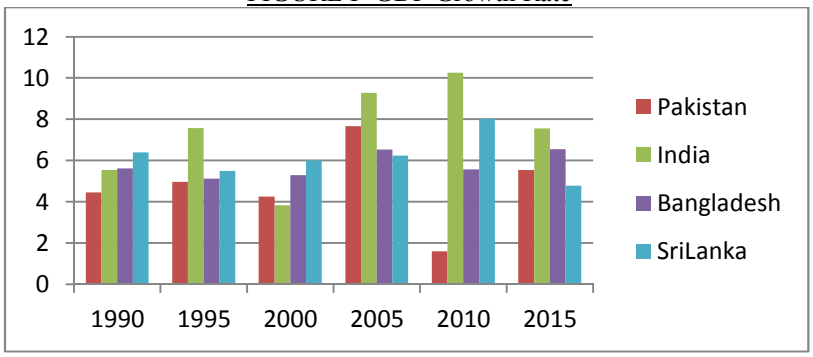
S. No.	Date	Country	Host
1	7–8 December 1985	Bangladesh	Dhaka
2	16-17 November 1986	India	Bengluru
3	1-4 Noveber 1987	Nepal	Kathmandu
4	29-31 December 1988	Pakistan	Islamabad
5	21-23 November 1990	Maldives	Male
6	21 December 1991	Sri Lanka	Colombo
7	10-11 April 1993	Bangladesh	Dhaka
8	2-4 May 1995	India	New Delhi
9	12-14 May 1997	Maldives	Male
10	29-31 July 1998	Sri Lanka	Colombo
11	4-6 January 2002	Nepal	Kathmandu
12	2-6 January 2004	Pakistan	Islamabad
13	12-13 November 2005	Bangladesh	Dhaka
14	3-4 April 2007	India	New Delhi
15	1-3 August 2008	Sri Lanka	Colombo
16	28-29 April 2010	Bhutan	Thimphu
17	10-11 November 2011	Maldives	Addu
18	26-27 November 2014	Nepal	Kathmandu
19	9-10 Novmber 2016 (CANCELLED)	Pakistan	Islamabad

Source: https://en.wikipedia.org/wiki/South_Asian_Association_for_Regional_Cooperation

COMPARISON OF ECONOMIC PERFORMACE OF SAARC MEMBER COUNTRIES

Figure 1 shows the annual growth rate of GDP of Pakistan, India, Bangladesh and Sri Lanka from 1990 t0 2015. The figure shows the performance of each economy in last twenty-five years. India has shown a tremendous growth reaching to a double digit growth percentage in 2010. In Case of Bangladesh and Sri Lanka, Both countries showed consistent growth with fluctuations in the growth rates in last twenty-five years. Pakistan on the other hand showed an inconsistent economic performance with a very poor 1.06% annual growth rate of GDP in 2010. While India is named as the fastest growing economy in the region, Pakistan sits behind Bangladesh, Bhutan and Nepal in growth rates. India's economic activity is expected to accelerate to 7.7 per cent in 2017, after maintaining a solid 7.6 per cent in 2016 due to a growth in consumption and increased foreign direct investment. While The recent report from World Bank indicates that Afghanistan's economy is expected to make a slow recovery over the next three years, while in Bangladesh, most economic indicators remain stable. According to the IMF, Bangladesh's economy is the second fastest growing major economy of 2016, with a rate of 7.1% with the 2nd largest financial sector in the subcontinent. While on the other hands, Sri Lanka has met the Millennium Development Goal (MDG) target of halving extreme poverty and is on track to meet most of the other MDGs, outperforming other South Asian countries. The resumption of the civil-war in 2005 led to a steep increase defense expenditures. The increased violence and lawlessness also prompted some donor countries to cut back on aid to the country and Economic growth of Sri Lanka slowed overall in 2016 sldo, as the country faced its worst drought in four decades. While GDP growth did manage to accelerate on the back of rapidly expanding industrial and services sectors but economy was left reeling from a growing humanitarian crisis as the agricultural sector suffered significant losses.

FIGURE I- GDP Growth Rate



Source: Author's Own Estimation

In developing and less developed nations, a huge amount of national income in cover up the expenditures of

non-productive sectors like military and defense. As objective of this study, table I shows the share of military expenditure in GDP in Pakitan, India, Bangladesh and Sri Lanka. Pakistan has been spending a very huge amount of GDP on the expenditures related to military and defense and due to the change in policy and strategies of recent political governments, Spending a sufficient share of GDP on military and defense in recent years. India recently (in February 2016) announced its 2016-17 fiscal budget and defense got $51 billion, 2.25% of India's GDP. In real terms though the Indian defense budget would be even higher since pensions, border forces, and nuclear warheads/missile development are not included in this amount. In comparison (as per analysis released by Pakistan Ministry of Defense) Pakistan's defense budget is the lowest in the region. It spends roughly the same allocation as a percentage of GDP (2.30%), but we all know that Pakistan's GDP is much smaller than that of India; about one eighth. The thing is that with India's economy expanding at a much higher pace than Pakistan's – India's GDP is growing at +7%, whereas, Pakistan's GDP growth still hovers around the 4% mark – and given that the existing Indian economy is already nearly 8 times the size of Pakistan's economy, essentially in economic terms India virtually adds one whole of Pakistan's total economic turnover to its economy every year. The next question which then arises is that are India's armed forces also expanding in the same proportion, i.e. adding to their military might every year equivalent to the whole of Pakistan's annual defense budget? The answer is: Yes.

TABLE I: Military Expenditure (% of GDP)

Years	Pakistan	India	Bangladesh	SriLanka
1990	7.126643	3.146215	0.001240396	2.328487433
1995	6.216766	2.578484	0.001637604	5.861132243
2000	4.168724	2.94893	0.001438584	5.033888979
2005	4.200141	2.754908	0.001165342	2.639533395
2010	3.423691	2.792285	0.00141879	2.70074784
2015	3.568757	2.421419	0.001372527	2.209560395

Source: World Development Indicators

LITERATURE REVIEW

The studies on the nexus between military spending and economic growth have been conducted since the early 1970s. The study of this issue was pioneered by Benoit (1973, 1978). The study conducted by Benoit, E. (1973) to analyze the relationship between expenditure on defense and economic growth of a country. Benoit conducted an empirical study on the 44 less-developed countries during the period of 1950 to 1965 and found a strong correlation between high defense expenditure and rapid growth rate In the sample countries, these results were supported with rank autocorrelation and regression analysis.

In continuation, Ball, N. (1983) conducted a critical review of Benoit's study and concluded that level of defense expenditure did not provide a good explanation of of the rate of economic growth of developing countries. Ball also recognized that the methodological framework used by Benoit was inadequate to analyze the relationship between military expenditure and third world development.

Chaudhry's (1981) study of the causal relationship between economic growth and defense expenditure, covering fifty-five developing countries and the application of the Grunder causal test, concluded that the relationship between defense expenditure and economic growth could not be generalized throughout the fifty-five developing countries.

Contrary to the above literature, Joerding, W. (1984) used the Granger causality to analyze the relationship between military expenditure and economic growth and concluded that military expenditure is not a strongly exogenous variable, relative to economic growth.

After a contrary result concluded by JOERDING, W. (1984), Charles J. Et, al. (1989) conducted a study to analyze the relationship of military expenditure and economic growth in 21 countries' pooled data and concluded that that neither economic growth nor defense can be considered exogenous.

Dagger (1986) established a negative relationship between military spending and economic growth in the less developed countries (LDCs), explaining that defense expenditure takes resources away from productive investments and gives way to mobilize and get extra savings.

K.Kabir et. All (2003) through their study about the major factors of economic growth in SAARC countries concluded that ICT, development, human capital, population growth, per capita income and military expenditure, all appear to have some relationship with economic growth. The results show a negative impact of military expenses on FDI but show a positive significant impact on the economic growth.

L. Pieroni (2009) has also done a research about the relationship between military expenses as a component of government spending and its influence on the economic growth. They concluded that there exist a non-linear negative relationship between military expenditure and economic growth when re-allocative term is excluded.

Similarly, J. Drèze (2006) also studied the relationship between military expenditure and economic growth and hence concluded that high levels of military expenditure are detrimental to economic growth. But he also concluded that it is not evident that a reduction in military expenses can lead to tangible economic benefits which highlight the difficulties in the conversion of military industries to civilian production.

J. Yildirim et. al(2005) has studied the impact of military expenditure on economic growth in middle eastern countries and Turkey. They concluded concluded a positive impact of military expenditure on economic growth in the middle eastern countries and Turkey. They also concluded through the study that factor productivity differential of defense sector shows that military sector is more productive than the civilian sector in the Middle Eastern countries. Candar, O. (2003) has done a similar study, analyzing the relationship between the military expenses and economic growth in Turkey during the period of 1950-2001. Through his empirical results he concluded a similar result as J. Yildirim et. Al.(2005) that in turkey there exist a positive relationship between the military expenditure and economic growth in turkey.

Biswas, B. And Ram, R (1986) did a different study in this respect, and studies whether there exist any externality created by military sector that can affect the civilian sector, and how the factor productivity differential can be different in both sectors. They conclude the absence of any externality effect of the military sector on any of the sectors of the society. They also concluded that there is statistically different in across civilian and military sectors in less developed countries.

Dunne, J. *Et al.* (2005) worked on the The reformulation of the Barro model used by Aizenman and Glick (2003), which allows for security effects on output seems potentially more promising. Security is measured by military expenditure relative to the threat and this produces a nonlinear effect of military expenditure. Military expenditure has a positive effect on output when the threat is high and a negative.

Dakurah, A. Et, al (2001) also used the similar Granger causality approach to analyze the above mentioned relationship in 62 less-developed countries and concluded mixed results. According to the empirical findings, there existed unidirectional causality in 23 countries, while bidirectional causality was found in 7 countries and causality did not exist in 18 of the sampled countries. This net positive effect supports the results of many researches that through the expansion of aggregate demand and improved infrastructure,the higher military expenditure, the higher the economy to grow in long and short-run.

Kollias, et, al (2004) analysis on 15 European Union countries also found mixed results in term of causal direction whereby the majority of the countries showing unidirectional causality from economic growth to spending expenditure. They conclude that an EU government derives defense expenditure based on the economic performance.

In the context of Asia, Moon and Hyun (1992) found through disaggregated analysis the effect of heavy defense to have entailed negative implications for growth, distribution and economic stability. Chan (1992) suggests that military spending has not been the direct determinant of Taiwan's economic growth despite the heavy burden on the defense.

Hirnisa, M. Et, al (2009) conducted a research to analyze the above mentioned relationship in 5 of the ASEAN countries for the period of 1965 to 2006 by using bound testing procedures and dynamic OLS, their results of cointegration analysis suggest that there are only 3 out of 5 countries are cointegrated. While for the case of Singapore, the causality is bidirectional, for Indonesia and Thailand it is unidirectional from military to economic growth, and For the Malaysia and Philippines no meaningful relationship could be detected.

Abu-Bader and Abu-Qarn (2003) conclude a negative effect between military burden and economic growth in Egypt, Israel and Syria. They also concluded that civilian expenditure caused positive economic growth in Israel and Syria.

Alptekin, A. and Levine, P. (2012) conducted a meta-analysis to analyze the thirty-two empirical studies of the aforementioned relationship and concluded that the positive effect of military spending and economic growth is sustained in developed countries, but is not maintained for less developed countries. The size of the effect of military expenditure and economic growth is the coefficient of economic growth correlation between partial and military expenditure level.

METHODOLOGICAL FRAMEWORK

Since the specification of the model has important effects on the findings, a model should specify relationships between the defense sector and the rest of the economy (Sandler and Hartley 1995). This research extents the study of Hassan et al (2003) with different estimation method and a different time period. In this study, the methodology is based on Ordinary least square regression analysis for the individual country model. The following cobb-dougle type function has been generated to analysis the relation between the military expenditure and economic growth

$$(GDP) = \beta + \beta 1(FDI) + \beta 2(INF) + \beta 3(ME) + \beta 4(GI) + \acute{e}$$

Where, *GDP* is Gross domestic product, which is taken as the dependent variable to analyze the aforementioned relationship in the context of four of the mentioned SAARC countries. *FDI* is the net inflows of

Foreign Direct Investment in each of the four countries in million dollars. *INF* is the annual inflation rate in each country prevailed during the observed time period. *ME* is the annual military expenditure in each country during the observed time-period. *GI* is the variable of globalization, which is computed by dividing the sum of export and imports by the GDP for each country separately. The variable shows the global trade openness in all the four countries. Variables of globalization, military expenditure and foreign direct investment are taken in current US$. The data set consists of thirty-one years (1985-2015) time series data of trade of four countries of SAARC named as Pakistan, India, Bangladesh and Srilanka. Complete data of all the variables of all countries are taken from World Development Indicators. For the regression, single source data have been used for all countries in order to make the time series comparable. Due to the unavailability of some observation for some years, especially in case of Bangladesh, the missing values have been generated by using the growth formula available on Microsoft Excel.

INTERPRETATION

Table I to IV shows the results of the multiple regressions run for each of the observed country separately. Following are the interpretations of the estimations

Pakistan (Table I)

In case of Pakistan, results of estimation show a significant negative impact of the FDI, global trade openness and expenditure on military expenditure, while variable of inflation shows a positive effect on the economic growth of Pakistan. As par the estimation, The significantly stable value of R square shows the data fits the regression line up to 67%.

India (Table II)

In case of India, results of estimation show a significant positive impact of the FDI, global trade openness and inflation, while, contrary to Pakistan, estimates show that expenditure on military and defense tend to affect the economic growth in India negatively. The significantly high value of R square shows the data fits the regression line up to 88%.

Table I

Explanatory Variable	**Coefficients**	**P-Value**
C	3.343	0.0089
FDI	-1.0557	0.0896
INF	2.48	0.0383
ME	-3.30	0.007
GI	-2.54	0.5992
R-Square	**Adjusted R-Square**	**Durbin-Watson Stat**
0.679	0.6303	0.1572

Table II

Explanatory Variable	**Coefficients**	**P-Value**
C	1.30	0.8391
FDI	22.63	0.0009
INF	2.85	0.08381
ME	-5.10	0.078
CI	1.68	0.0161
R-Square	**Adjusted R-Square**	**Durbin-Watson Stat**
0.8869	0.8695	0.72

Bangladesh (Table III)

In case of Bangladesh, results of estimation show a significant positive impact of the FDI, global trade openness and expenditure on military expenditure. while, variable of inflation shows a negative effect on the economic growth of Pakistan. As par the estimation, The significantly high value of R square shows the data fits the regression line up to 85%.

Sri Lanka (Table IV)

In case of Sri Lanka, results of estimation show a significant negative impact of the global trade openness and inflation on the economic growth of Sri Lanka. While variables of military expenditure and inflows of foreign direct investment show a positive significant effect on the economic growth. As par the estimation, The significantly high value of R square shows the data fits the regression line up to 92%.

Table III

Explanatory Variable	Coefficients	P-Value
C	-5.10	0.1984
FDI	1.790	0.0013
INF	-1.42	0.03555
ME	3.64	0.01805
GI	1.92	0.0106
R-Square	**Adjusted R-Square**	**Durbin-Watson Stat**
0.8536	0.829	0.1535

Table IV

Explanatory Variable	Coefficients	P-Value
C	4.42	0.0002
FDI	60.373	0
INF	-8.10	0.0074
ME	2.678836	0.988
GI	-4.33	0.0165
R-Square	**Adjusted R-Square**	**Durbin-Watson Stat**
0.9204	0.9082	1.3171

CONCLUSION

As the global competitiveness and technological improvements taking place in all the walks of lives around the globe, it has become a necessity for every economy to have the sufficient defense mechanism to secure the borders and to maintain peace around the region. To keep a sufficient defense system, it's a dire need in today's world to spend a huge amount of national income on the defense and military expenditure for the said purpose. How the spending on military and defense can be beneficial for an economy and how the performance of an economy is directly or indirectly related to the expenditure on its military sector is one of the most debatable and studied part of defense economics. The aim of this paper is to analyze the impact of military expenditure on economic growth in four of the SAARC countries (Pakistan, India, Bangladesh and Sri Lanka). For this purpose, time series data for the time-period of 1985-2015 is used and multiple regression analysis has been done for all four countries separately, in order to analyze the aforementioned relationship in each country. The results of the estimation show mix picture. Through the estimation it is concluded that there exist a positive relationship between military expenditure and economic growth in the context of Sri Lanka Bangladesh. The results suggest that increase in the expenditure on military sector can help these economies to grow and perform better through many of its direct and indirect effects for creating economic activities. While, the results of the estimations run for India and Pakistan shows clearly contradictory results. The results of the estimations suggest a negative relation between economic growth and military expenditure. Any increase in the expenditure on military and defense will distort economic performance in the country.

Hence it is evident that it is not necessary for every country to have the same effect of military expenditure on the economic performance of the country, but it also a notable fact that spending a higher amount of national income on non-productive sector like defense can become a shortage of resources and capital in the directly productive sector. In order to maintain balance between spendings on productive and non-productive sectors, it is a dire need for all the countries to maintain the peace and good economical as well as political relation with each other. Maintaining peaceful relation on economic and political grounds is a need of time for regional neighbhors like SAARC countries. SAARC nations can do much better for themselves and for region by increasing cooperation among them for the improvement of their patronage and economic welfare. But in current time, these relations are greatly affected due to political and terrorism acts, particularly the relations between India and Pakistan and nowadays these countries are trapped in many political and terrorism issues and blaming each other, and due to this, the trader acts are suffering a lot and GDP in both the economies is badly affected.

The data provide the evidence that there are differences in yield and consumption pattern in SAARC countries. The opportunities of investment, tax and non-tax structures, etc. are also dissimilar in our selected four SAARC countries. Hence, there is a considerable scope for trade expansion among the SAARC countries based on comparative advantage.

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