

**Examining Institutional Integration and Economic Integration:
A BRICS Perspective from India**

*A thesis submitted to the University of Hyderabad
in partial fulfillment of the requirement for the award of*

**DOCTOR OF PHILOSOPHY
IN
ECONOMICS**

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June 2023**

***Dedicated to my Teachers, Parents
and Well-wishers !***



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DECLARATION

I, **Chingshubam Manimohon Singh**, hereby declare that this thesis entitled “**Examining Institutional Integration and Economic Integration: A BRICS Perspective from India**” submitted by me under the supervision of **Prof. N. A. Khan** and **Prof. Phanindra Goyari**, School of Economics, University of Hyderabad, is a bonafide research work which is also free from plagiarism. I also declare that it has not been submitted previously in part or in full to this University or any other University or Institution for the award of any degree or diploma. I hereby agree that my thesis can be deposited in Shodhganga/INFLIBNET.

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CERTIFICATE

This is to certify that the thesis entitled “**Examining Institutional Integration and Economic Integration: A BRICS Perspective from India**” submitted by **Chingshubam Manimohon Singh** bearing registration number **15SEPH11** in partial fulfilment of the requirements for the award of Doctor of Philosophy in the School of Economics is a bonafide work carried out by him under our supervision and guidance. This thesis is free from plagiarism and has not been submitted previously in part or in full to this or any other University or Institution for the award of any degree or diploma. The candidate has satisfied the UGC Regulations of publication and conference presentations before the submission of this thesis. Details are given below:

A. Publications

1. Chingshubam Manimohon Singh, Nasir Ahmed Khan and Mayengbam Lalit Singh (2022), “Role of Institutional Integration in Economic Integration: An Examination for India in the Framework of BRICS”, in: *FOCUS: Journal of International Business*, 9(2), July-December, pp. 61-77, DOI: 10.17492/jpi.focus.v9i2.922204, Print ISSN: 2347-4459; e-ISSN: 2395-258X, www.journalpressindia.com/fjib, UGC-CARE listed journal.

B. Presentations at conferences:

1. Presented a paper: “An Analysis of the Effect of EU Sanctions on Russia on Increased Trade between India and Russia” in: the 26th Annual Conference of Indian Political Economy Association on Global and Indian Political Economy: Theory, Practice and Challenges, in association with IDSAP at GITAM University, Visakhapatnam, 17-18 February 2023.
2. Presented a paper: “An Analysis of India’s Economic Integration and the Role of Institutional Integration in the BRICS Framework” in: the International Conference on Applications of Statistics, organized by the Department of Statistics, Pachunga University College Campus, Mizoram University, Aizawl during 2-3 February 2023.

Further, the student has passed the following courses towards the fulfilment of the coursework requirement for PhD:

Course Code	Course Title	Credits	Pass/Fail
EC-701 (EC-801)	Advanced Economic Theory	4	Pass
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List of Abbreviations

AfCFTA	African Continental Free Trade Area
AG-DCC	Asymmetric Generalized Dynamic Conditional Correlation
AI	Artificial Intelligence
AIIB	Asian Infrastructure Investment Bank
ASEAN	The Association of Southeast Asian Nations
BOP	Balance of Payment
BRI	Belt and Road Initiative
BRIC	Brazil, Russia, India, and China
BRICK	Brazil, Russia, India, China, South Korea
BRICS	Brazil, Russia, India, China and South Africa.
CGETI	Contact Group on Economic and Trade Issues
COVID-19	Coronavirus disease 2019
CM	Common Market
CRA	Contingent Reserve Arrangement / Credit Rating Agency
CU	Custom Union
DCC	Dynamic Condition Correlations
DJIEM	Dow Jones international Islamic emerging market index
EKC	Environmental Kuznets Curve
ESI	Export Similarity Index
ETR	Effective Tax Rate
EU	European Union
EUN	Economic Union
FDI	foreign direct investment
FE	Fixed Effect
FTA	Free Trade Area / Free Trade Agreements
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GST	Goods and Services Tax
IBSA	India–Brazil–South Africa
ICT	Information and Communication Technology

IMF	International Monetary Fund
JAC	Joint Administrative Committee
MERCOSUR	Mercado Comúndel Sur (South American trade bloc)
NDB	New Development Bank
PPML	Poisson Pseudo Maximum Likelihood
PPP	Purchasing Power Parity
PTA	Preferential trade arrangements
R&D	Research and Development
RCA	Revealed Comparative Advantage
RTA	Regional Trading Agreements
SADC	Southern African Development Community
SEZs	Special Economic Zones
SITC	Standard International Trade Classification
SMART	Single Market Partial Equilibrium Tool
SUR	Seemingly Unrelated Regression
SVAR	Structural Vector Autoregression
TC	Trade Creation
TC and TD	trade creation and trade diversion
TD	Trade deepening / trade diversion
TEI	Total Economic Integration
TO	Trade openness
TO and TD	Trade openness and Trade Deepening
TVEs	Township-Village Enterprises
UN	United Nations
UNO	United Nations Organisation
UNSC	United Nations Security Council
USSR	Union of Soviet Socialist Republics
WHO	World Health Organization
WITS	World Integrated Trade Solution
WTO	World Trade Organization

Examining Institutional Integration and Economic Integration: A BRICS Perspective from India

Abstract

Ever since the coinage of the term by Goldman Sachs economist Jim O'Neill, studies on BRIC (or later BRICS) have been gaining popularity among economists since the early 2000s. Coincidentally, there have been understandings and agreements among the BRICS countries around this time on trade and other matters and regular formal summits have been held since 2009. This thesis delves into the research question of whether the institutional evolution (institutional integration) of BRICS helps the member countries in economic integration. After extensive literature reviews, to the best of our knowledge and information, it was found that there was no specific study done on the causal relationship between institutional integration and economic integration between the BRICS countries from an Indian perspective, and also on issues with respect to trade openness and trade deepening of BRICS countries; and trade creation and diversion of India with BRICS countries. This thesis attempts to fill these research gaps. It relies exclusively on secondary data retrieved from sources like UN Comtrade, World Bank, World Integrated Trade Solution and others. Herein, institutional scores are quantified based on the successive summits of BRICS countries and by following the works of Balassa (1961), Mongelli (2002), and Dorrucii et al. (2002; 2005). This thesis has examined the influence of subsequent summits on the bilateral Trade Openness and Trade Deepening of India with the BRICS countries. This study has employed advanced econometric tools such as Granger Causality tests to check whether institutional integration causes the economic integration of India with other members of BRICS. Further, the thesis also has examined trade creation and diversion of intra-BRICS trade using a partial equilibrium tool called SMART.

Keywords: BRICS, Granger Causality tests, World Integrated Trade Solution, SMART, World Bank, Trade openness, Trade Creation.

JEL Classification Codes: F14, F15, C13, F55

Chapter 1

Introduction

1.1 Detailed Research Questions

The fact that the COVID-19¹ pandemic, originating from Wuhan City, the provincial capital of Hubei province, China², engulfed the whole of humanity within a couple of months is a towering example of the intensity of interconnectivity and interdependence among different countries of the world in the 21st Century (COVID-19 - Wikipedia, n.d.). Even though an issue like COVID-19 united the whole of humanity against the virus, there were sections of people who were divided on the impulsion to fight the disease. For instance, there were multiple competing vaccines and approaches from different countries. When different countries interact and exchange trade, they represent different economic agents guided by their self-interest (Self-Interest: What It Means in Economics, With Examples, n.d.) to prioritise their national needs over others, and such action tends to breed a conflict of interests among them. Such conflicts have caused occasional disruption in their bilateral and multilateral relationships, at times even leading to wars of such intensities as the World Wars of the 1910s and 1930s. It was in the aftermath of these wars that the UN³ was formed in 1945 by 51 member countries to settle such future conflicts amicably and peacefully (About Us | United Nations, n.d.). As I write this thesis, the world has changed by leaps and bounds in the 21st Century, and so also the memberships of the UN, which has increased to 193 member countries. The need for a reform of the UN has been felt the world over as per the

¹ Coronavirus disease 2019

² The People's Republic of China

³ United Nations Organisation

changing needs of the time. India, for instance, the most populated nation and the biggest democracy in the entire globe, is deprived of permanent membership in UNSC⁴. UN reform is also desired sooner than later, as it has been accused of muffling the democratic voices of the smaller and weaker states. It is being said that the UN, devoid of reforms, has an inherent danger of being taken over by other international institutions like BRICS⁵ ((21) *If Not Reformed, UN Will Be Overtaken by Other Organisations* ~ Ruchira Kamboj #shorts #geopolitics - YouTube, n.d.). This thesis is an empirical analysis of trade among member countries of BRICS from an Indian perspective.

Mongelli et al.(2005) find that trade deepening and institutional integration are causally related. In the case of European economic integration, he found that the causal link originating from institutional integration and then leading to trade deepening was more predominating than the other way around. Such findings become paramount in an era when economies are increasingly becoming intertwined. Such interaction makes sense because, as economies become increasingly intertwined, it might be best for institutional action by policymakers.

Institutions are the structural limitations that have been designed by humans to rule political, economic, and social interaction (North D. C., 1991; Hodgson, 2006). There are formal (laws, constitution and property rights) and informal (tradition, custom and law) aspects. Adam Smith⁶ spoke on the subject much earlier. Economists have been aware of the value of protecting property rights (one of the institutions) from expropriation by other people or the government, as well as the role that this plays in enticing people to invest and build up their savings, ever since Adam Smith published *The Wealth of Nations* in 1776. Due to this history, economists tend to emphasise institutions' importance in understanding the

⁴ UN Security Council

⁵ BRICS is an acronym for Brazil, Russia, India, China and South Africa

⁶ The father of modern economics.

more fundamental factors influencing growth. Democracy and the rule of law (Friedman, 1962) are two characteristics of liberal institutions that reinforce one another and are favourable to economic growth. The expansion of economies across nations is favourably correlated with favourable institutions (Barro, 1996; Knack & Keefer, 1997).

The subsequent works further demonstrate that institutions provide manufacturing companies with a favourable environment, which is again reflected in the variety of manufactured items in the export and import baskets of nations. In sixteen different nations, Tybout (2000) also examines the impact of institutions on company production and discovers that the prevalent institutions influence the success of manufacturing companies. According to Bourguignon et al. (2006), depressed African enterprises are caused by high transaction costs brought on by unfavourable institutions. Lower institutional quality has a detrimental impact on commerce, according to World Economic Forum survey data on this topic (Anderson & van Wincoop, 2003). Particularly when it comes to distinctive products, the networks of ethnic Chinese have a significant and favourable impact on bilateral trade (Rauch & Trindade, 2002). More significant trade is enhanced by improved institutions, especially RTA⁷s (de Groot et al., 2004). According to Afifi's (2007) research, the effectiveness of institutions has a substantial impact on both export and import in bilateral trade.

The research question that emerges at this juncture is whether the evolution of an institution called BRICS helped the economies of the member countries in any way or not.

1.2 Institutional Evolution across the World

Several institutional economists have demonstrated how the classification of countries originated with human civilisation. Countries were scarcely categorised in history

⁷ Regional Trading Agreements

until the Renaissance⁸ period. Since then, the history of human civilisation has begun to demonstrate the significance of institutions in informal forms, such as customs, traditions, norms, self-imposed standards of conduct, etc. The development of philosophy about human ethics, nationalism, art, and other topics throughout the Renaissance period contributed to the emergence of modern civilisation. There were numerous fighting tiny kingdoms with a wide range of institutional structures at the beginning and during this era. Thinkers, philosophers and other elite groups began developing ideas for formal institutions like laws, enforcement, regulations, constitutions, property rights, etc., which had the potential to neutralise conflicts after conducting a reflection on the distinctions between warring kingdoms, with the objective that the voice of the ordinary man might be heard and considered in European kingdoms, parliaments with representatives from various sectors of groups were established. Furthermore, these representatives were obligated to answer to the chosen voters. In several locations where representatives were chosen, the law was applied uniformly. They established laws that safeguard the property rights of all groups of people to become a developed nation. Economic growth accompanied by the industrial revolution in Europe resulted from these institutional reforms. Several European nations began searching for markets in Africa and Asia, where the institutions that prevailed in the earlier countries were absent. The institutions of Europe, the rest of Asia, Europe, and Africa differed, making it possible for the former to colonise the latter. The exploitation of physical resources, both natural and human, was a particular phenomenon that was present in these colonies. The size of the various colonies' populations was discovered to be a factor in how colonisers set up their institutions, which were reportedly modelled on those in Europe. Where colonisers settled, it was clear that similar institutions from Europe had been established in places like America, Australia, and South Africa. However, colonisers were said to have adopted

⁸ The transitional period from medieval to modernity in the human civilizational history.

institutions that could separate and dominate varied groups in numerous aspects in those colonies with dense populations and multiple ethnic groupings. In Asia and Africa, these colonies were the most prevalent. Institutions worldwide have seen enormous changes since the mid-20th Century after the Second World War.

Numerous colonies in Latin America, Asia, and Africa gained their independence from their colonisers, which resulted in the emergence of democratic governments responsible for the welfare of their populations. The creation of the World Bank, the United Nations and other organisations allowed nations worldwide to develop their institutions on various fronts. Based on economic performance, the above organisations began classifying nations as developed or less developed. The grouping of countries according to their geographical locations, such as the North and the South, is a standout among them. The Northern Hemisphere comprises nations distinguished by high per capita incomes, cutting-edge technology, abundant capital, and manufacturing exports. Conversely, the South consists of southern hemisphere nations that are abundant in pauper labour, have archaic technologies, have low per capita incomes, and export primary goods. Former colonisers were typically linked with the North, while former colonies were associated with the South (Herbst, 2000).

However, some of the southern nations in South Asia, East Asia, and Latin America, attempted to strengthen their weak institutions into ones that supported the development after being moved by the Progressive advancements in the North. The best example among such were East Asian nations like South Korea, Taiwan, Singapore, and Hong Kong. Their accomplishments reportedly came about as a result of numerous institutional changes. Governments in these nations could listen to the public and be held accountable by their political systems. For good upkeep, it was essential to uphold the rule of law, protect property rights, and combat corruption.

Additionally, in the 1970s, governments in these nations enacted several policies relating to investment, global economic integration, and corporate persuasion. Instead of adopting import substitution policies, these nations chose outward-looking ones, which led to an influx of both capital and technologies. They were discovered to have significantly invested in their technology and educational backgrounds. These advancements grew in all areas of their economies (Amsden, 1976). With strict protection of investors' property rights, wealthy countries have witnessed the transfer of innovations linked to foreign investments to developing nations. The rise of Japan accelerated the flow of technology from industrialised to underdeveloped nations. The growth in these nations was described by the Flying Geese Approach, which was created by the Japanese economist Akamatsu (1961). The argument under this theory was that initially, the Japanese economy progressed by bringing in products from the North, and later, with the government's aid, the country's domestic manufacturing sector flourished.

Later, with more advanced technology, they discovered how to create superior versions and exported them to other countries. After Japan's wages rose as a result of this type of development, Japanese businesses discovered that it was advantageous to move the manufacture of these items to nearby developing nations with cheaper costs, bringing in money and technology. They advanced to manufacture other better things as technological capability increased. Different institutional transformations occurred in two categories of developing nations. Democratic nations fall under the first category, whereas totalitarian nations like China go under the second. Empirical research demonstrates that after the Soviet Union's dissolution, Eastern European nations gave establishing a democratic government their priority. The idea that a country can move from being less developed to developing by retaining a high level of democracy and other institutional characteristics has many institutional economists support. However, there is still room for improvement in institutions

that deal with investment, commerce, and finance. Despite increased democracy and other related institutions, business production decreased (Murrell, 2005). These nations' economic development also collapsed due to removing outdated institutions and the implementation of new ones. The new institutions produced a complete detachment from the previously successful system, which was the cause of the collapse (Djankov et al., 2002). Numerous economists have identified institutional reforms to have a variety of short-term effects. Eastern Europe's economies initially benefited from the privatisation strategy but not those of the CIS⁹. Second, it forces the state to give up its exclusive control over numerous sectors, and new investment policies are not seen as compatible with the state's exclusive control. Thirdly, many nations have quickly discovered that, without the necessary institutions, joint ventures between the public and private sectors outperformed privately owned businesses with sole ownership. Experiences from the CIS and Eastern Europe indicate that constructing an economic environment of minimum transaction costs is the most crucial task in transition economies (formerly socialist nations). Integrating the fragile productive units vertically and horizontally is necessary to reduce transaction costs. Corporate governance must be implemented for countries in transition to function better. CIS nations had minor success in implementing corporate finance compared to Eastern European nations because of the delay.

Additionally, two types of institutional developments occur in developing nations. Despite the high level of political stability, democracy in China is severely restrained in contrast to other democratic nations (Williamson, 2000). The institutional development plan used in China employs a variety of tactics. The unit level, or village level, is where newly approved policies are first tested by policymakers. This trial's success is being used more broadly throughout the nation. Second, rather than bringing about drastic changes, it tried to study the impacts of incremental modifications. By doing this, policymakers can more

⁹ Commonwealth of Independent States

effectively learn about the changes. Thirdly, all economic actors who operated in the previous institutional setting must always be protected. They are convinced to gradually and thoroughly acclimatise to the new institutional environment (Quian, 2003). As a result of decentralised governance that took the form of federal frameworks, TVEs¹⁰ were formed. Village businesses in China can now contribute to the country's economic growth. The central government receives payments from village-level businesses to ensure their property rights.

Even in the post-colonial age, those colonies, primarily in Africa, did not have consistent institutions in every area of the respective nation. There are claims of numerous self-declared administrations that have the backing of colonisers. Additionally, it has been reported that there is no unifying forum for resolving disagreements. Self-declared governments are only accountable to the people who support them. In these nations, no single body of law and property rights are upheld to their full extent. According to reports, these nations have such low levels of investment that the original colonisers still serve as the primary export and import partners. They trade raw materials and natural resources with the previous colonisers while importing highly capital-intensive products. In other words, these nations fall in the category of nations described by the Heckcher-Ohlin-Samuelson theorem. Similar institutions are still in place not only in African nations but also in nations formerly colonies in Asia and the Americas. Since they could not give up their institutions built on tradition, the newly accepted shared set of institutions is still ineffective today. As a result, these nations are surrounded by a circle of institutional inadequacy, which makes it difficult to defend the property rights of foreign investments effectively. The institutions necessary for economic development have been observed to improve over time in nations not surrounded by circles of institutional backwardness and thus have been classified as developing nations.

¹⁰ Township-Village Enterprises

Indicators of such institutional advances include the more significant percentages of manufactured items in their export and import baskets (Herbst, 2000).

A rising corpus of research shows a connection between growth and efficiency over time and geography and the quality of institutional development, according to North et al. in their 1973 book *The Rise of the Western World*. Booming economic growth and development require several critical preconditions, now widely acknowledged as favourable institutions and incentive systems. Understanding a more robust analytical framework for long-term economic development has significantly aided growth theorists. Investment and savings are required to encourage the development of manufactured goods. When the existing rights protection system has been enhanced, such investment and saving in nations can be encouraged (Levine, 2003). However, the establishment of beneficial institutions should not be expensive, and as a result, the success of economic expansion depends on the expense incurred and the efficiency of law enforcement (Hadfield, 2004). Countries with dysfunctional infrastructures, such as corrupted bureaucracy, produce rent-seeking activities that divert resources away from productive pursuits like capital accumulation and the invention of new items and manufacturing methods (Murphy et al., 1993). In a weak rule of law and contract enforcement, poor property rights protection, confiscatory taxation, pervasive corruption, and counterproductive rent-seeking activities are shared, and innovation and other growth-enhancing activities are severely harmed (Tanzi, 1998). Since different groups have trouble coming to amicable agreements, ethnic diversity across Africa (a kind of institutional setback) slows down the rate of economic expansion. Their natural resources are abundant, but because of ongoing civil conflict, ethnic cleansing, and genocide, they cannot be used appropriately. The research stated above has demonstrated that the institutions in place in each country affect economic development (Levine, 1997).

1.3 Institutions: Their Role, Relevance, and Participants

Institutions are the set of rules in society; more precisely, they are the limitations humans create to influence how people interact. Because of this, they design economic, social, or political incentives for exchange. Institutional change is vital to comprehending historical changes since it determines how societies develop through time (North D. C., 1990, 3). The previous sentence clearly defines institutions, which make up each, and why each is important. Roland, a neoclassical economist, has held two perspectives regarding institutions, i.e. Process of transition and factor affecting transaction cost (cost of developing an economic system or exchange, which is once again rephrased as the cost of trading in a market). He has explained how the Process of transition has assisted in transforming how economic analysis is done. The transitional events have further influenced how economists think about the economy and have significantly strengthened institutionalists' perspectives, emphasising the significance of the numerous institutions supporting a thriving capitalist economy. As a result, contracts and the legal, political, and social framework of contracting have gained importance in place of markets and pricing theory. We must now consider institutions dynamically due to the change rather than a static approach... how institutions can change... and how one may become trapped in weak institutions (Coase R, 2000, XIX). He contends that eliminating all such transaction costs is the only way to achieve market efficiency. An array of economic and political institutions that enable low-cost transactions create the potential of influential factors and product markets to eliminate transaction costs. The exchange performance, which is determined by the market size, is influenced by institutions that facilitate the market performance in addition to economic variables. As a result, organisations that offer low-cost contract assessment and enforcement both now and in the future are a necessary condition for efficient markets to exist. The adaptability of effective institutions must offer incentives for education and learning acquisition, foster innovation,

and reward risk-taking and creative endeavours. Hayek (1948) has convincingly demonstrated that in a society filled with uncertainty, no one is aware of the ideal response to the issues. Institutions should therefore promote experimentation and do away with mistakes. Decentralised decision-making is a logical implication that will enable a society to examine a wide range of alternative approaches to problem-solving. Therefore, institutions must offer a cheap way to evaluate property rights and bankruptcy rules and give incentives to promote decentralised decision-making and successful competitive marketplaces.

As stated by North, Institutions are made up of formal laws (economic and political legislation) and unofficial restrictions (standards of conduct, customs, and self-imposed moral principles). Simply put, they are the framework that governs how people interact with one another. Institutions and the technology used to determine transaction and transformation (production) costs, which have an impact on economic performance. On the other hand, institutions are the rules of games that numerous agents play (entrepreneurs, political agents, bureaucrats, enforcement groups, etc.). Institutional systems shift throughout decades in a nation. Economic progress, like economic catch-up and take-off, should occur in nations that alter the current system of institutions into one that is friendly to an efficient economy. How much the current level of institutions are reformatted and enforced will determine the stages of economic development. North, however, could not provide a precise understanding of how to evaluate such institutions. Rising evidence links institutional development quality to economic efficiency and growth across time and geography, and the idea that strong institutions and incentive structures are crucial prerequisites for successful growth and development is now widely accepted (Myles, 2000). Barro's work from 1996 provides empirical evidence that policies that support economic freedom also support better democracy. Economic freedom is a crucial factor in prosperity. According to Bhagwati's

(1995) essay on democracy, the inability of those nations to afford democracy is the primary cause of those nations' continued underdevelopment.

1.4 Statement of Problems

Since the term BRICS was coined in 2003, it has been recognised as a significant geopolitical bloc that challenges Western-led power structures. The group initially emerged as a counterbalance to the dominance of the G7 countries in global politics and economics. However, the BRICS¹¹ nations have shifted their focus from a purely geopolitical agenda towards an economic one over the years.

This shift in strategy has been marked by the growing emphasis on economic cooperation among the BRICS members, especially in sectors like finance, investment, and trade. The member countries have signed agreements to reduce trade barriers and increase economic integration, complemented by establishing institutions like the AIIB¹² and the BRICS Development Bank.

Despite these developments, there is still a lack of in-depth analytical studies on the causal relationship between institutional integration and economic integration within the BRICS group. Therefore, thoroughly examining this relationship can offer insights into how the BRICS members can achieve greater economic integration and cooperation.

Understanding the causal relationship between institutional and economic integration is crucial as it can have significant implications in support of the member nations' economic development and their interactions with other major players on the world stage. For instance, if the BRICS countries can achieve greater institutional integration, it could lead to more coordinated and efficient economic policies, increasing economic growth and prosperity. On

¹¹ Brazil, Russia, India, China, and South Africa

¹² Asian Infrastructure Investment Bank

the other hand, a lack of institutional integration could hinder economic cooperation and limit the potential gains of the BRICS countries.

Thus, the proposed research aims to close the gap in the existing research works by conducting an in-depth analytical study on the causal relationship between institutional integration and economic integration within the BRICS group. By doing so, this study can provide insights into how the BRICS countries can achieve greater economic cooperation and integration and what implications this could have for their economic development and global relations.

1.5 Research Motivation

The economic and demographic potential of the BRICS countries to rank among the biggest and most powerful nations in the 21st Century set them apart from a wide range of other attractive developing markets (*BRIC Countries - Background, Facts, News and Original Articles*, n.d.). The BRICS countries account for 41.5% of the world's population and 26.7% of its land area (*BRICS - Wikipedia*, n.d.). The BRICS countries represent the rapidly expanding economies expected to control the world economy by 2050 jointly. Brazil, Russia, India, and China are among the world's top ten most populous, largest, and wealthiest nations by population, territory, and GDP. The last three are also usually regarded as existing or upcoming superpowers. All five countries are G20 members, with a total nominal GDP of around 26.2% of the global GDP and approximately 32.1% of GDP PPP (2018). With competing projects like the CRA¹³, NDB¹⁴, BRICS basket reserve currency, and BRICS payment system, the BRICS countries are seen as the most significant rival to the G7 group of leading advanced economies.

¹³ Contingent Reserve Arrangement

¹⁴ New Development Bank

Additionally, a global monetary reset is already underway, posing a threat to the dollar-dominated monetary system, and it is gaining momentum in response to Russia's invasion of Ukraine, the dollar's increasing militarisation, and the removal of Russia from the Swift system. The BRICS are noticing this and considering creating their currencies backed by commodities. Saudi Arabia wants to be a part of the BRICS, so also Argentina and Iran. Central banks are buying gold at record rates. All these points, when connected give us a global monetary reset underway ((17) *Massive U.S. Dollar Dump? BRICS to Launch New Currency Causing Tsunami of Inflation - Andy Schectman - YouTube*, n.d.).

The BRICS countries have pursued economic integration and cooperation through various mechanisms and initiatives, such as the NDB and the BRICS FTA¹⁵. However, the success of these efforts depends not only on economic factors but also on institutional arrangements that facilitate cooperation and coordination among the member countries.

This research aims to examine the economic benefits of institutional integration for India within the framework of the BRICS. Specifically, the research will emphasise the following:

- (i) To examine India's trade openness and trade deepening with other member countries of BRICS,
- (ii) To determine if there is a causal link between institutional integration and economic integration, and vice versa, and
- (iii) To analyse trade creation and diversion of India's bilateral trade with each member country of BRICS.

The first research objective aims to investigate the level of trade openness and trade deepening between India and the other BRICS members. Given the significant economic

¹⁵ Free Trade Area

growth and increasing trade relations between these economies, it is crucial to understand the extent to which trade openness has been achieved and to what extent trade deepening has taken place. This research can provide valuable insights into the factors that have contributed to the success of India's trade relations with other BRICS countries, as well as the potential for future growth and development.

The second research objective seeks to examine the causal relationship between institutional integration and economic integration and vice versa. The success of economic integration among BRICS countries depends on institutional arrangements that facilitate cooperation and coordination among the member countries. This research can provide a better understanding of the factors that contribute to the success of institutional and economic integration, and the extent to which these factors are interrelated. Such insights could be valuable in shaping policies aimed at promoting economic and institutional integration among BRICS countries.

The third research objective aims to identify the extent of trade creation and diversion of India's bilateral trade with each member country of BRICS. Understanding the nature and magnitude of trade creation and diversion can provide valuable insights into the competitiveness of Indian industries in these markets and the potential for future growth and development. This research can also help policymakers identify areas where trade barriers exist and develop policies to mitigate their impact on trade.

Overall, the study of trade relations among the BRICS countries is of significant importance, given the potential economic and political implications of these relationships. The proposed research objectives provide a valuable starting point for exploring the dynamics of India's trade relations with other BRICS countries, which can offer insights into the broader dynamics of economic integration and institutional cooperation among the group.

This thesis will help create a deeper understanding of the economic implications of institutional integration within the BRICS.

1.6 Methodology

The present thesis relies exclusively on secondary data sources provided by various international organisations. Bilateral trade data are retrieved from UN Comtrade, and data on tariffs levied are extracted from World Integrated Trade Solution (WITS). Moreover, institutional scores are quantified based on the successive summits of BRICS countries. This thesis analyses the influence of subsequent summits on the bilateral TO¹⁶ and TD¹⁷ of India with the BRICS countries. This thesis employs advanced econometric tools such as Granger Causality tests to check whether institutional integration causes the economic integration of India with other members of BRICS. Further, the thesis also examines trade creation and diversion of intra-BRICS trade using a partial equilibrium tool called SMART.

1.7 Objectives of the study

The specific objectives of the present study are:

- (i) To examine India's trade openness (TO) and trade deepening (TD) with other BRICS countries,
- (ii) To determine if institutional integration and economic integration are causally related and vice versa, and
- (iii) To analyse trade creation and diversion of India's bilateral trade with each member country of BRICS.

¹⁶Trade openness

¹⁷ Trade deepening

1.8 Outline of this Dissertation

The chapter categorisation of the present thesis is as follows.

Chapter 1 covers the introduction items of the thesis.

Chapter 2 reviews available literature.

Chapter 3 gives an insight into economic profile of each member country of BRICS.

Chapter 4 provides descriptions of BRICS summits.

Chapter 5 elaborates the relationship between institutional and economic integrations.

Chapter 6 studies on the trade creation and diversion of India with each country of BRICS.

Chapter 7 concludes the thesis.

Chapter 2

Review of Literature

2.1 Introduction to BRICS

A collection of developing economies known as BRICS¹ has gained significant attention in the international community. Over the years, these countries made significant strides in areas such as economic growth, political influence, and technological advancement ((29) China Is Turning "Alpha Dog" in Global Politics, BRICS Currency Gaining Traction - Michael Wilkerson - YouTube, n.d.). The BRICS countries experienced impressive growth rates in terms of economic growth, contributing significantly to the global economy. For instance, the GDP of the BRICS countries grew from \$8.5 trillion in 2007 to \$33.2 trillion in 2018, representing a fourfold increase. This remarkable economic growth was attributed to various factors, including large populations, abundant natural resources, and the adoption of market-oriented economic policies. Along with economic growth, the BRICS countries also expanded their political influence on the global stage. They advocated for a more representative and equitable global order, pushed for reforms in multilateral institutions such as the UN, IMF, and World Bank, and championed the principles of South-South cooperation and multipolarity.

Furthermore, the BRICS countries made significant strides in technological advancement, particularly in AI², Quantum Computing, and Blockchain. These developments

¹ Brazil, Russia, India, China, and South Africa

² Artificial Intelligence

positioned them as key players in the global tech space, challenging the traditional dominance of the U.S. and other Western countries.

In summary, the BRICS countries emerged as a major global economy, politics, and technology players. Their continued growth and influence had significant implications for the global order, and scholars, policymakers, and investors alike closely watched their development.

Armijo (2007) examined the validity of the categorical analysis of the term "BRICs countries". It concluded that while the four countries did not share the same international objectives, economic challenges, or political institutions, the category held similar implications for the more extensive system of the global political economy where it was embedded.

The article looked at the idea from three different systemic angles: economic liberal, political or economic realist, and liberal institutionalist. The economic liberal model was unconvincing, as the BRICs' economies were only considered necessary due to their size and potential as markets and competitors rather than variables like the effectiveness of the nation's economic governance.

The realist model suggested that advanced industrial countries whose relative international status was fading should fear the rise of the BRICs, as systemic consequences are shaped by the structure of countries' relative material capacities. However, the article noted that a liberal institutionalist perspective was needed to understand why some countries are perceived as reliable allies while others arouse suspicion.

Ultimately, the article suggested that the rise of major authoritarian powers like China and Russia could lead to a more Westphalian style of global governance. In contrast, the relative ascent of democratic countries like Brazil and India could push global negotiations

toward more redistributive bargains. The article acknowledged that the category of "the BRICS" was technically a mirage but offers significant insight into the international political economy.

2.2 BRICS and Global Economic Governance

The BRICS³ countries have been increasing their economic and political influence in recent years, with a focus on challenging the dominance of Western countries, particularly the U.S. One of the key ways they are doing this is by creating new institutions, such as the NDB⁴, which provides an alternative to Western-dominated institutions like the World Bank and IMF (17) Massive U.S. Dollar Dump? BRICS to Launch New Currency Causing Tsunami of Inflation - Andy Schectman - (YouTube, n.d.).

In addition to creating new institutions, the BRICS countries are also working to increase their trade and investment with each other, reducing their reliance on Western markets. This is particularly important as the U.S. dollar's dominance in the global financial system is being challenged, with some analysts suggesting that the dollar's position as the global reserve currency could be at risk.

There are also concerns about the stability of Western economies, particularly the U.S., which has a massive national debt and a financial system heavily reliant on debt and speculation. Some experts believe that the BRICS countries are positioning themselves to take advantage of any potential financial instability in the West by diversifying their holdings away from the U.S. dollar and investing in tangible assets like gold and silver.

³ Brazil, Russia, India, China, and South Africa

⁴ New Development Bank

Overall, the BRICS countries are working to create a new global economic order that is less reliant on Western dominance, focusing on creating new institutions, increasing trade and investment with each other, and diversifying their holdings away from the U.S. dollar.

Ban and Blyth (2013) examined the relationship between rising economic powers BRICS⁵ and the Washington Consensus policy paradigm in their research article. The article reviewed relevant literature, discussed the genealogy of the BRICs concept, showcased how multinational financial institutions applied the Washington Consensus, and presented the main findings of the case studies. The article contributed to the body of knowledge already available on policy dispersion in the global political economy by examining the dynamics of interaction between the Washington Consensus and the BRICs over time and analyzing the transnational institutional devices and economic ideas of this transnational policy paradigm. The authors stated that neither the BRICs led a post-neoliberal transition nor were they constrained to maintain the concepts and practices of the Washington Consensus in the global economy. The article concluded that one of the most significant developments in the history of the world economy was the BRICs' assertion of the state's role in development, and the study of its internal dynamics was critical to understanding the shaping of policy outcomes both at the national and global levels of analysis.

Bijarnia (2013) diagnosed the global governance crisis and analyzed the proposed solutions in the wake of the global financial crisis. The author recommended a balanced approach to consider practical realities and investigated how the BRICS countries contribute to global economic governance. The author came to the conclusion that BRICS must take a more significant part in altering the global governance system's financial architecture, particularly in addressing challenges from the North. To establish a fair and just global trade and economic regime, BRICS must offer a unified vision on global and regional issues. The

⁵ Brazil, Russia, India, and China

group has played a significant role in bringing attention to the need for reforming international financial institutions. However, they must exert more pressure on the West and show strong leadership and cohesion among themselves. The author emphasized that the U.S. Congress must be sensitized not to block the IMF governance reforms to maintain credibility and avoid exacerbating tensions within the Third World.

Chittedi (2014) investigated the effects of contagion from established markets (the U.K., the USA, and Japan) on the stock markets of BRIC using daily data from January 1996 to July 2011. The DCC⁶ model and AG-DCC⁷ technique were used in the study to capture the impacts of contagion originating from first-world countries. Results indicated that there is evidence of asymmetric contagion in emerging market economies. The study also found that there is a consistent and substantial link between stock market indexes before and after periods of high volatility, implying that when diversity is desired, it is likely to be lesser when investing in many markets from various regional blocks. Therefore, an investing strategy that only emphasises worldwide diversity appears to fail in reality during times of financial unrest. The study's results have important implications for international investors, portfolio managers, policymakers, and multilateral organisations to shield or lessen the effects of infectious effects on an economy. Furthermore, with its global contagious consequences, the subprime crisis brought attention to the need for a new international financial architecture and raised concerns about the performance of emerging-market policy that is resilient and sustainable.

Sen (2017) proposed a plan for establishing a clearing account in the national currencies of the BRICS nations, extending the idea suggested at the BRICS summit held in October 2016 to lower costs in intra-BRICS trade. The author argued that this action would

⁶ Dynamic Condition Correlations

⁷ Asymmetric Generalized Dynamic Conditional Correlation

open up opportunities for increasing demand within the region and protecting the member nations from shocks caused by exchange rate volatility. Sen further contended that the clearing account suggested in this article, along with the BRICS financial institutions, might establish a new financial architecture that could benefit both the BRICS and the global financial system.

The author outlined five important benefits of this new architecture. Firstly, using local currencies in intra-BRICS trade would prevent changes in major currencies' exchange rates from impacting the cross rates between each of the BRICS countries' currencies, so long as these cross rates were locked and periodically renewed forward contracts. Secondly, using bilateral trade surpluses within the BRICS to increase demand inside member countries would create new trading routes between the BRICS and increase output and employment in the real economy.

Thirdly, Transferring surpluses to cover deficits might be considered a loan that would be repaid via other NDB⁸ operations. Fourthly, individual members' trade surpluses would remain in the BRICS as investments rather than being used as assets denominated in dollars, preventing sources of vulnerability. Lastly, Sen suggested that BRICS could devise ways to channel capital flows to strengthen its institutions and generate actual demand, such as through infrastructure projects via the newly formed AIIB⁹.

Patel (2019) evaluated the market integration among the BRICS¹⁰ emerging markets concerning the financial crisis of 2008. To examine the degree of market integration among the BRICS markets, the author used Johansen's cointegration test, factor analysis, correlation, and the Granger causality test. The author discovered that the increase in the amount of bilateral trade among the BRICS economies led to the BRICS markets becoming increasingly

⁸ New Development Bank

⁹ Asian Infrastructure Investment Bank

¹⁰ Brazil, Russia, India, China, and South Africa

linked following the 2008 global financial crisis. The author also noted that following the financial crisis, the BRICS markets grew closer.

The author's contribution suggested that investors who diversified their investments gained more in terms of risk and return. Furthermore, the reduction in the level of risk among the BRICS markets after the financial crisis remains beneficial for investors. The study also had practical implications for the macroeconomic policies of the BRICS nations. Since the BRICS markets are highly integrated following the financial crisis, member countries need to develop policies in coordination to reduce specific economic risks and crises at the international level.

The author also suggested that multinational corporations need to design their financial policies considering the interlinkage among the markets, as the volatility of the exchange rate is considered a significant threat to global wealth. The author further suggested that more studies can be conducted to explore the factors affecting market integration, quantifying and comparing the diversification benefits investors can have by diversifying their investments across the BRICS markets.

BRICS member nations' official papers were subjected to critical discourse analysis by Andal and Muratshina (2022) in order to determine how these nations view the significance of BRICS in world politics. The article aimed to determine whether the member countries consider BRICS a political entity that provides a substitute for Western political structures. The findings revealed that despite the shared agenda and plans of action, the perspectives of each BRICS member country regarding the place of BRICS in the larger global picture continue to be markedly heterogeneous. The article concluded that BRICS plays a supporting function in analysing Western political structures rather than a transformational one. Its current status as a group-in-progress makes it essential for

its supplementary role in global governance due to the discrepancies between its member nations and the uncertain nature of its future, challenging how to analyse historical transitions. BRICS still offers a new perspective of contemporary international politics. The paper asks experts in international politics to consider additional perspectives on BRICS and explore different approaches to comprehending the group's influence on global affairs.

Hooijmaaijers (2022) did a case study on the institutionalisation of the BRICS nations on the inside and outside, concentrating on the NDB¹¹. By defining internal and external aspects of institutionalisation and describing recent advances, the essay added to the body of literature. The NDB's regional offices were found to play a critical role in its institutionalization. While the NDB strengthened cooperation between BRICS countries and served as a platform for discussing technical-economic issues, its narrow mandate limited the expansion of its agenda. The NDB has established itself as the top development bank for emerging economies, thus nations outside of the BRICS could also gain from its services. The NDB's inclusion in the network of institutions involved in global governance was marked by its observer status in the U.N. General Assembly. The article's findings suggest that the NDB's institutionalisation strategies offer helpful lenses for better understanding BRICS cooperation, despite its recent founding and ongoing development.

2.3 Trade Integration and Regional Trade Agreements

In their study, Ying et al. (2014) conducted a comparative analysis of the competitive advantages of exporting high-tech goods from BRIC countries to the United States. The authors estimated one Varying Coefficient Model of panel data for member countries of BRIC from 2000 to 2010 using qualitative and quantitative (ESI¹² and RCA¹³ index) studies

¹¹ New Development Bank

¹² Export Similarity Index

of export value and distribution performance. The SUR¹⁴ estimator was used to correct serial autocorrelation and cross-sectional heteroscedasticity. The authors found that BRIC countries had comparative advantages in high-tech product exports. Patents and R&D¹⁵ investment were positively related to high-tech exports to the United States market, while FDI did not directly promote competitiveness. The authors proposed that BRIC nations should exchange successful practises in research regulation, patent application, and FDI management in order to increase high-tech export competitiveness more thoroughly and effectively.

The authors analyzed the high-tech product export performance of BRIC countries in the U.S. market and made comparisons of innovation competitiveness. They found that the export value grew rapidly, but the export structure was simple. Most BRIC countries exported one or two high-tech industries, making the export structure of BRIC countries' high-tech industries seriously imbalanced. The authors suggested that the countries need to promote high-tech product export diversification. Using index analysis (ESI and RCA), the authors explored the competitive advantages of BRIC countries in high-tech products. They found that BRIC's high-tech products in the U.S. market had prominent advantages and were highly complementary. The authors suggested that the scientific and technological cooperation mechanism and platform should be improved to strengthen international scientific and technological cooperation. From the similarity index and the RCA index, the advantages of high-tech products export varied from country to country.

Nevertheless, a collective competitive advantage in non-electrical machinery was significant. The authors recommended further improving the cooperation mechanism and high-tech innovation in BRIC countries. BRIC countries are making more and more scientific and technological cooperation. But, several problems still need to be solved, such as the

¹³ Revealed Comparative Advantage

¹⁴ Seemingly Unrelated Regression

¹⁵ Research and Development

scientific and technological cooperation between only two countries, such as scientific and technological cooperation in India, Sino-India, and Sino-Russia. However, multilateral cooperations are necessary.

Vahalík and Staníčková (2016) conducted a study to identify the crucial factors of foreign trade competitiveness through the use of factor analysis. Additionally, they aimed to identify countries that exhibited similar characteristics in terms of these competitive factors by employing cluster analysis. The study was conducted on a sample of E.U. and BRICS countries between 2004 and 2013. The authors discovered that the globalisation processes in the world economy have an impact on international competitiveness since they change each country's comparative advantages and its proportion in global commerce. The impact of the BRICS nations has grown quickly in global trade, putting further pressure on the competitiveness of the E.U.

The study found six important reasons of foreign trade competitiveness on the inputs and outputs side, respectively. The authors utilized the factor scores as input data for the cluster analysis, identifying six clusters of countries with similar trade characteristics on the inputs and outputs side. The most advanced and economically developed E.U. countries, three small E.U. countries, Northern-European countries plus Hungary, and all other countries formed clusters based on the similarity of inputs. China and the Russian Federation formed their own cluster. On the outputs side, a very heterogeneous group of Central-European countries plus China, the most developed E.U. countries, and E.U. and BRICS countries formed separate clusters.

The writers emphasised that a territory's competitiveness depends not only on the competitiveness of each of its constituent parts and how they interact, but also on the larger economic, social, public, and institutional characteristics of the nation as a whole. The notion

of competitiveness includes qualitative and quantifiable factors and processes that can originate at various geographical scales, from local to international levels. The study suggested that more investigation is required to determine the function of effectiveness in achieving objectives to increase competitiveness by using the Data Envelopment Analysis approach and to classify countries based on the values of factor scores for each country within all evaluated years with differences among countries.

Rasoulinezhad and Jabalameli (2018) examined the trade integration patterns among BRICS countries using disaggregated trade data of manufactured goods and raw materials from 2001 to 2015. With regional groups recognised by the United Nations, such as the African, Eastern European, Asia Pacific, Latin American, Caribbean, and Western European groups, the panel-gravity trade model technique was utilised. According to the study, the commercial integration of Russia with these five regional groups based on the Heckscher-Ohlin framework was not comparable to that of the other BRICS countries based on the Linder hypothesis. Additionally, the effects of the Chinese Yuan on trading partners from various groupings were stronger than those of the national currencies of other BRICS members due to China's dominance in BRICS's overall trade flows. The study also discovered that compared to other countries, China and India's trading patterns in manufactured goods and raw materials were less negatively impacted by physical distance, leading to differences between the trade patterns of the BRICS nations.

Overall, the study concluded that the BRICS members had various trade integration models for manufactured goods and raw commodities, particularly Russia and that the Chinese Yuan had a more substantial impact on trade flows among BRICS countries due to China's dominance in total trade flows. The report also pointed out that in the trading of manufactured goods and raw materials, the H-O pattern served as the foundation for Russia's trade model. In contrast, the Linder theory was adopted by four other nations in the trading of

both goods. Finally, the study suggested that modelling integration trends for BRICS economies' exports and imports should be done in additional research separately to better understand the BRICS trade integration trends with various regions.

Nguyen (2019) examined the ex-post consequences of eighteen RTAs¹⁶ on international trade patterns by assessing their impacts on extra-bloc trade and intra-bloc trade. The study used a gravity model with Anderson and van Wincoop's (2003) multilateral resistance terms to assess 160 countries from 1960 to 2014. The PPML¹⁷ estimator and fixed effects settings were used to analyze the data. The research showed that the RTAs had mixed results on extra-bloc trade but had a broad range of trade-promoting benefits. RTAs in Europe and Asia showed more prominent export and import creations, while those in America and Africa had more significant trade diversions in terms of bloc imports and exports. Six years after the RTAs went into effect, the study concluded that the effects of trade diversion on extra-bloc trade were still significant. The study's results suggest that policymakers should be cautious about using RTAs to encourage trade liberalisation and boost the benefits of the global trading system on the economy. The study recommends that in order to facilitate commercial ties among members of the different RTAs created by emerging nations, infrastructure improvements should continue, and by coordinating RTAs, the WTO may reduce the disparities in the sets of norms and margins of favour among those trading blocs.

For the BRICS nations, Lohani (2021) examined the convergence of trade and per capita income. The impacts of economic bloc formation on trade and the convergence (or divergence) of income distribution among the nations were investigated by the author using a single difference approach using panel unit roots tests. The study calculated the convergence

¹⁶ Regional Trade Agreements

¹⁷ Poisson Pseudo Maximum Likelihood

index between the key trading partners of the BRICS countries during the post-trade liberalisation era. The findings demonstrated that BRICS countries converged during the research period, but there was an insignificant relationship between post-BRICS economic bloc formation and convergence rates. With the exception of China, the BRICS nations' economies diverged from those of their major export partners according to various analyses of post-trade liberalisation in those nations.

In contrast, all economies, with the exception of Brazil and South Africa, converged with their principal import partners. With the exception of import-based groupings and the Indian economy, panel unit roots tests supported the existence of absolute convergence and conditional convergence within the BRICS bloc. According to the study, for the BRICS nations' economies to keep convergent, they must actively participate in investment and trade.

Singh and Singh (2021) conducted a simulation analysis to examine the E.U.¹⁸ sanctions' impact on bilateral trade between India and Russia. The study utilized an ex-ante partial equilibrium model, SMART, to estimate TC and TD¹⁹ effects. The authors found that the E.U.'s sanctions on Russia, associated with establishing subsidiary branches of BRICS, generated tremendous momentum in the Indo-Russian bilateral trade after the 2010s.

The simulation results indicated that India's exports of food and manufactured items to Russia significantly impacted trade creation and diversion more than India's imports from Russia during the study period. The authors observed an increasing trend in the growth of Indo-Russian bilateral trade, with India's exports to Russia steeply rising in 2015 and imports experiencing a steep rise since 2016. However, the trade deepening index showed a "U" shape across the study years, with both declining and increasing phases.

¹⁸ European Union

¹⁹ trade creation and trade diversion

Singh and Singh (2021) noted that the increasing phase in the trade deepening index since 2015 was due to Russia's diversification of its export destination towards member countries of BRICS in response to the sanctions imposed by the E.U. following the integration of Crimea with the Russian Federation. This diversification was also coupled with the establishment of the BRICS bank and AIIB. It was suggested by the authors that India and Russia comply with FTA²⁰ under BRICS economic frameworks and mutually reduce tariff rates on bilateral exports and imports to strengthen bilateral trade flows.

Overall, the study highlights the significant impact of geopolitics on shaping bilateral economic relations between countries. The authors suggest that to attain a powerful economic block, BRICS member countries must focus more on an economic rather than a geopolitical approach.

2.4 Economic Growth and Development

Gevorkyan (2012) examined whether Russia could overcome its reliance on oil and broaden its economic base. The author argued that Russia had the potential to become an established world power once more by beating the so-called resource curse. While Russia's exports may continue to be dominated by the oil and gas industries for some time, the author suggested focusing instead on Russia's domestic market and its potential for further diversification. Gevorkyan remarked that recent financial successes supported emerging, creative industries by utilising their large intellectual resources and recently developed managerial pool. The author emphasised the need for a flexible economic strategy and pragmatist state participation in order to sustain this development over the medium term. A structurally different economy would take some time to adapt to, but the advantages would be clear. The author came to the conclusion that Russia was a BRIC country open for business

²⁰ Free Trade Agreements

and that everyone needed to put out a practical and responsible effort if it was to reach its full potential.

Zhou (2014) compared the economic growth of China and India, known as the "dragon-elephant competition," and concluded that the two countries have different experiences to reference and deficiencies to improve. Zhou claimed that China and India's rivalry is a cooperative effort that benefits both countries. India can eliminate internal poverty and gain from cooperation with China if it does not follow the US in containing China by switching military spending into infrastructure investment. Zhou stated that infrastructure, foreign investment, GDP growth rate, import and export volume, and national savings rate are not the only indicators of a nation's economic development potential. Zhou noted that Chinese economic growth had reached a new stage, and preventing illogical prosperity is the most critical duty of the country, enhance the quality of economic growth, restructure the economic structure, and avoid the concurrence of "wealthy Islands" and "ocean of poverty" for achieving equitable wealth and income distribution. According to Zhou, due to a lack of autonomous brands and primary technologies, India and China are at the bottom of the global labour hierarchy. According to Zhou, the two nations should put their attention towards bringing in modern technology and management expertise from abroad, boosting their ability for technological innovation, and improving their own labour division systems. Zhou also stated that in order to advance the opening up to a greater degree, the Chinese must strengthen independent technical innovation and further build independent brands. Chinese economic growth will surpass that of the United States and surpass it to become the greatest economy in the world in the next 20 years, according to economists both at home and abroad.

Fernández-Rodríguez and Martínez-Arias (2014) investigated the ETR²¹ determinants regarding the BRIC²² nations' corporate taxation of listed companies. They employed a panel of 3,565 businesses from 2000 to 2009 and used the generalised technique of moments estimator for dynamic panel data. Inventory intensity was the sole significant factor across all BRIC countries, according to the study, and the ETR for a year was dependent on the amount of taxes paid the year before. In three of the four countries taken into consideration, firm size, leverage, and profitability had an impact on the tax burden, although with distinct characteristics. A large disparity between the statutory tax rate and the ETR was also demonstrated by the data, demonstrating that, with the exception of Russia, listed companies in the BRIC countries paid less in taxes than was previously anticipated. According to the survey, businesses thinking of growing or moving to a BRIC nation must assess a variety of aspects, including corporate taxation, in order to choose the best site for their unique needs.

Bhoothalingam (2015) explored the potential benefits of economic connectivity between China and India. The author argued that the complementary capabilities of these two countries could encourage creativity and innovation, addressing the issues of common people and reviving the economy of the neighbouring countries. However, the interaction between their economies is still minimal, and there is little interpersonal interaction. India may find it advantageous to interact with China and the rest of the globe through China's proposed Silk Roads, such as the Maritime Silk Road and the Bangladesh-China-India-Myanmar Economic Corridor. The author also highlighted the need for China and India to reimagine their relationship to demonstrate leadership without hegemony, which will require mature and skilful management, especially during turbulent times. The challenge is primarily psychological for both countries, with India facing a "challenge of the head" and China a "challenge of the heart." The author argued that India's traumas, including the 1962 war with

²¹ Effective Tax Rate

²² Brazil, Russia, India, and China

China, impeded a rational economic discourse with China and encouraged hyper-nationalist political and media posturing. Similarly, China needs to understand India at the emotional level to build friendship and respond with sensitivity to India's concerns. The author highlighted the need for India and China to create new ways to cooperate and modernise human society and make it peaceful and harmonious, leaving a positive mark on humankind.

Bouoiyour and Selmi (2016) investigated whether the BRICS stock markets saw an equal impact from Trump's agenda after winning the 2016 United States presidential election. Using the regression-based intention votes and event-study methodology over 120 days towards the outcome of the election, the authors found that Trump's win harmed some markets while positively affecting others. The markets that borrowed money and anticipated that the value of the US dollar would decline over time had the lowest performance. The most severely afflicted countries were China and Brazil, while South Africa and India also suffered. The relaxation of sanctions against Russia as a result of its involvement in the Ukraine crisis, on the flip side, was advantageous for the Russian market. However, the authors noted that Russia's heavy dependence on commodities could pose significant economic challenges despite the positive outcomes of Trump's victory. Overall, the study highlighted that Trump's neo-mercantilist attitude and protectionist rhetoric had various consequences for geopolitics and the economy of BRICS countries, and countries like South Africa, Brazil, and India should evaluate any new geopolitical dangers brought on by Trump's foreign policies towards China or Russia.

Chakravarty and Mandal (2016) conducted a study to calculate, for the BRICS economies, the connection between environmental quality and economic growth using dynamic panel data. The goal of the study was to determine whether the BRICS countries' inverted U-shaped link between income and emission per capita, known as the EKC

hypothesis, holds true. An F.E.²³ panel data model was used in the study to manage time-constant, national effects. After that, it addressed the endogeneity of variable income and the dynamism in emission per capita using the GMM²⁴ technique for dynamic panel data. To further explain emissions, the study also considered energy consumption and financial sector development factors. The results indicated that income and emission in the F.E. model had a substantial EKC-type relationship. However, the dynamic panel model's GMM estimations revealed a U-shaped correlation between emission and income, with the turning point outside of the sample. The dynamic panel model revealed that variables like net energy imports and the percentage of industrial output in GDP had a negative effect on the environment. However, these variables were insignificant in the F.E. model. Capital account convertibility significantly and negatively impacted the environment irrespective of the models used. The study recommended adopting an efficiency-oriented action plan by the BRICS economies to grow without significantly affecting the environment. The study highlighted the importance of econometric specification and technique in estimating the EKC hypothesis and the need for caution in providing policy suggestions for policymakers.

Dhanda (2018) explores India's challenges and opportunities as it strives to achieve a status commensurate with its demographic, geographic size, and ancient civilization. India has encountered multiple difficulties, including its internal circumstances, such as a complex political system, internal divisions, overpopulation, poverty, and an unstable and unpredictable international environment. The paper highlighted the "five belts" which overlap India and affect its options and policies. The significant challenges faced by India include navigating between unilateralism and multilateralism at the global level, facing a denial posture from hegemonies and rivals fearful of its rise, and dealing with a volatile regional environment. However, India has several opportunities in the contemporary international

²³ Fixed Effect

²⁴ Generalized Method of Moments

structure, such as forging or renewing relations with countries of Central Asia and Africa to fulfil the need for energy and enhancing its political influence in international organizations by maintaining good relations with the U.S. The paper concludes that adaptability, flexibility, and resourcefulness are critical ingredients of a successful policy for India to emerge as a global power by the middle of this century.

Bhavish et al. (2018) investigated the relationship between economic development and financial structure in BRICS countries and Mauritius in an empirical study. Using a broad panel of up to six nations from 1980 to 2012, the authors employed the pooled mean group estimator. They discovered a strong correlation between economic growth and financial development and financial structure. The results showed that a positive relationship exists between financial structure and economic growth, indicating that market-based nations build their economies more quickly, but they also endure longer-term economic swings. The authors recommended that the banking sector of all countries is further developed and that the means by which credit is extended to the private sector should be improved. The authors also found that the stock markets in these countries contributed to economic growth and recommended that they be given a boost to be developed further. The authors came to the conclusion that in rapidly growing and emerging economies like the BRICS and Mauritius, economic growth and financial development are intertwined. Additionally, the financial crisis had less of an influence on these countries' financial sectors; in some cases, it positively impacted financial development. The study recommends further development of the variables that positively affect financial development in these countries.

2.5 Environmental and Energy Issues

Ji et al. (2015) utilized an SVAR²⁵ model to investigate how various oil shocks affect the BRICS nations' real exchange rates, industrial output, and consumer prices. The authors found that an oil supply shock significantly affected Russia, while the main factors affecting the other BRICS nations were shocks to aggregate demand and demand shocks to individual commodities like oil. Furthermore, oil-specific demand shocks arising from expectation shifts or speculative activities were identified as having the potential to induce stagflation in China and India. However, oil subsidies or price control measures postponed such impacts.

The study's findings indicate that oil price shocks threaten the economic stability of the BRICS countries, and the effects of different sources of oil shocks vary across countries. In order to support financial stability and economic growth, the authors advise that these developing nations create a formal structure to address unforeseen oil interruptions and increase their collaboration on the world oil market. In order to achieve a smooth transition, the authors advise policymakers to separate the fundamental reasons of oil price swings and combine monetary policies with oil measures, especially in light of the recent capital flight from emerging economies and growing oil price uncertainties.

In their study, Bouoiyour and Selmi (2016) examined the causal relationship between real oil prices and BRICS stock returns using a frequency domain approach developed by Breitung and Candelon (2006). The study used quarterly data from 1998 to 2015 and found that the BRICS countries' stock returns were not all affected in the same way by oil prices. The results showed that oil price fluctuations influenced stock returns in Brazil and Russia in the long run, while in South Africa and India, the influence was in the short run. However, the impact on China's stock market was significant in a large cycle, indicating a medium and long-term influence.

²⁵ Structural Vector Autoregression

The dependence on oil, the distribution of market share among enterprises, the efficacy of financial regulation in securities markets, and the efficiency of the financial system were all recognised by the authors as potential factors that might have an impact on the relationship between the price of oil and stock returns. The study suggested that policymakers should consider these factors when implementing appropriate policy measures to mitigate the impact of oil price fluctuations on the BRICS stock markets. Additionally, the study's findings may be useful to regulators and investors who should be watchful of the impact of oil price changes on the BRICS stock markets and take precautions to preserve and secure their interests.

In conclusion, this study highlights the importance of understanding the different responses of BRICS equities to oil price changes. As these nations are anticipated to increase their influence in the global financial market and use a sizeable portion of the world's oil supply, further research is warranted to re-examine this topic.

Dash (2017) conducted an empirical study to examine the impact of unsystematic urbanization on annual temperature changes in the BRICS economies, namely Brazil, Russia, India, China and South Africa. Data was collected from 1980 to 2012 for variables such as urbanization, annual temperature, carbon emission, energy consumption, and FDI²⁶ from UNCTAD, EIA and World Bank databases. The author employed Bayer-Hanck cointegration and different structural break tests to establish the long-run cointegration and robustness of pollution and temperature changes in capturing the trend of environmental changes and global warming in these economies. The study discovered that when urbanisation had a considerable impact on environmental indicators and yearly temperature variance, there was a breakpoint suggesting relative unsustainability. The author suggested that developing economies set coordinated short-term goals to achieve sustainability before switching to

²⁶ foreign direct investment

long-term ones. The paper also highlights the extreme weather events in BRICS economies, including heat waves, floods, droughts and typhoons, which the author attributed to rapid urbanization, carbon dioxide emission, energy consumption, and FDI. The study recommends banning the establishment of industries on wetlands and other sub-urban and forestry areas and controlling per capita automobile usage in India and China. The author concludes that understanding the evolution of the interlinkage between industrialization and the environment is crucial in understanding long-term urban growth.

2.6 Political Economy of BRICS

Avila and Araujo (2012) presented an article exploring the tendencies and challenges of the BRICS members from a Brazilian perspective, with economic, political, and security themes forming part of the amplified agenda. The authors used official documents generated in Brazil on the origins and transformations of the grouping as primary sources. In their final remarks, the authors proposed three scenarios for the BRICS grouping: inertial, optimistic, and pessimist.

In the inertial scenario, the relationship between Brazil and its partners would maintain the trend observed in the last three years, with high and growing trade flows. Nevertheless, dissatisfaction could arise due to the role of raw material suppliers and increased imports of manufactured goods. Protectionist measures could also be observed, and the forum would remain non-institutionalized and dependent on the goodwill of members. The optimistic scenario would see the BRICS nations achieving higher and more significant economic and political partnerships, with some institutionalization, such as implementing IBSA²⁷. In the pessimistic scenario, the BRICS group would face a deadlock situation

²⁷ India–Brazil–South Africa

generated by internal disparities, trade imbalances, and conflicts between democracies and authoritarian regimes, leading to the eventual doom of the group.

The authors suggest that the inertial scenario will likely remain in effect until 2015. This scenario might be optimistic from a Brazilian perspective, especially if discussions reach a global scope. The focus for Brazil as a Latin American member of the group in the twenty-first century is to seek increased dialogue with Afro-Asiatic powers to increase its international influence.

Singh (2013) analyzed the potential role of BRICS in the current international political economy. He argued that the rise of BRICS reflects the rapid transition in the international hierarchy and offers an alternative to the global Western hegemony under the aegis of the U.S. However, the potential of BRICS to become the new collective hegemon may be undermined by the very nature of the enduring international regime and by contradictions and rivalries between its members. The paper suggests a joint BRICS strategy for a more stable and decentralized pluralistic global system is needed. Singh (2011) emphasized that for international networks like BRICS to address systemic problems and present institutional opposition to the status quo structure, they must become unified, capable, legitimate, and credible. The author highlighted that the most significant contribution of BRICS to international relations must be to promote new norms and institutions that reflect the near absence of global governance today. The paper concludes by stating that BRICS should not become a mere forum for local power brokers or a representation of superficial change but should fashion a transformative vision.

Thoker and Singh (2018) analyzed the challenges and prospects of India's foreign policy goals in the Asia-Pacific power dynamics following the Cold War. The breakup of the Soviet Union has left a significant impact on the strategic scenario, with China and Russia

getting closer. Furthermore, the U.S. and its allies are seeking to maintain hegemony. The former Soviet Union was more closely connected with India's nonalignment policy during the Cold War, but since then, the country's foreign policy has undergone a fundamental shift. The authors argued that the Asia-Pacific region had become an arena of contention and confrontation due to the involvement of external powers, making the strategic scenario more complex.

The former Soviet Union was more closely connected with India's nonalignment policy during the Cold War, but since then, a fundamental shift in New Delhi's foreign policy has been observed. Therefore, India's quick ascent is attributed to broad-based cooperation with East Asian superpowers. The authors suggested that India formulate its foreign policy to help find diplomatic solutions to regional disputes and enhance economic and strategic bilateral relations with China. Within the framework of the Act East policy, the long-standing inclusive connections with the ASEAN²⁸ countries should be strengthened. Furthermore, India should avoid military alliances and instead collaborate with all parties to realize the dream of the Asian century. Overall, the authors concluded that India has to overcome various hurdles and problems posed by the new power dynamics to achieve its foreign policy objectives in the Asia-Pacific region.

The COVID-19 pandemic was preceded by a thorough examination of the world economy by Raimondi (2020), who also highlighted the key issues and weaknesses that existed in both the public and private sectors of the world's largest economies. The author notes that these problems have become more acute in the past decade and are compounded by the current health emergency. To confront the impending collapse of the economic and financial system, Raimondi contends that there is a greater need for the development of a new global monetary architecture.

²⁸ The Association of Southeast Asian Nations

The article concludes that a new global architecture is necessary to maintain peace and overcome the challenges presented by the ongoing planetary crisis. Raimondi suggests that this architecture should be based on the principles of cooperation, development, and freedom and designed to accommodate cultural, political, social, and technological changes. The author emphasizes that the current system has to be revised because it is outdated and worn to address emerging economic and political challenges.

According to Raimondi, a new, just, and equitable global monetary order centered on a currency basket are imperative to address the current economic and political landscape. The author emphasizes that sharing responsibilities in a multipolar way is essential to cooperatively and peacefully resolve new challenges. The paper also emphasizes the necessity of redefining the state's function and the public-private dynamic, particularly in light of the social market principles. According to Raimondi, the entire banking system needs to be standardized in accordance with the reality principle in order to finance long-term investments.

In conclusion, Raimondi's (2020) article comprehensively analyses the global economic situation and highlights the necessity for a new international monetary system to solve new political and economic problems. The author contends that the current state of affairs gives us a chance to plan the development of a new international system of finance, commerce, and economics. The article emphasizes the importance of cooperation, development, and freedom in redesigning global institutions of civilian life to keep the peace and stave off any impending wars.

2.7 Miscellaneous

Bhar and Nikolova (2007) conducted a study to assess the extent of regional and global integration of the BRIC economies following their liberalization. Using daily equity index level data, the study examined the average and volatility spillover effects for each BRIC nation from the global equities index performance. The study utilized the two-stage GARCH-in-mean approach to investigate how the BRIC economies are affected by global equities index returns and volatility. The findings demonstrated that the world had an impact on the conditional mean returns and volatility of all BRIC nations. Positive mean spillover effects from the world were observed for all nations, while positive volatility spillover effects were shown for India, Russia, and Brazil but negative and substantial effects were observed for China. According to the study, all BRIC countries are regionally integrated in terms of how equity prices are created, with regional trends having a bigger impact than global trends on this process across the board. The study also suggested that considerable global and most likely American equities market influences had an impact on the variation in returns for India, Russia, and Brazil. At the same time, because there was an inverse relationship between the returns on the global stock index and the returns on the Chinese equity index, China offered diversification options for international investors and portfolio managers. Due to the rising degrees of regional and global integration of these countries, the study advised against investing in the national index and instead advised against using portfolio stock selection tactics and investing in certain growth regions within these economies.

Altbach (2012) analyzed the challenges faced by the systems of higher learning in the BRIC²⁹ nations as they strive to become academic superpowers. Despite their impressive growth and development in recent years, it is uncertain whether these countries will attain academic prominence similar to their economic or political influence. The author discussed

²⁹ Brazil, Russia, India, and China

the systemic factors affecting higher education in the BRICs and emphasized the importance of the academic profession in achieving academic development and excellence. The BRICs' higher education systems have been identified as global players due to the growing economic significance of these nations. While they have set ambitious goals for their universities and are making efforts to increase access to underserved populations, the challenges they face include building a comprehensive post-secondary education system, maintaining quality in the private higher education sector, adequately funding the sector, ensuring appropriate training and pay for the academic profession, supporting effective internal governance and management of universities, and providing institutional autonomy for academic decision-making. The author concludes that the BRICs' higher education success is critical to support their economic growth and to play a global leadership role in the future.

Tilak (2013) examined the development of systems of higher learning in the BRIC³⁰ nations. Each of these countries is experiencing rapid growth in demand for higher education but lacks the financial resources to meet the challenge of catering to this demand without compromising on quality and equity. As a solution, each country has adopted a stratified higher education system, consisting of a few high-quality, elite institutions coexisting beside many low-quality, mass institutions. This paper explored the effects of this system on access, quality, equity, and funding and drew a comparative picture among the BRIC member countries. The author concluded that China and Brazil have relatively successful higher education systems but still face challenges with quality and equity. Russia has a long way to go to emerge as a major player in Europe, while India faces more challenges in ensuring quality, quantity, equity, and governance in higher education. Jandhyala (2011) suggested that researchers and policymakers should consider the implications of a stratified higher

³⁰ Brazil, Russia, India, and China

education system and ponder whether better alternatives address access, quality, and equity issues.

In their study, Karagiannis et al. (2014) examined the BRIC economies' system for transferring interest rates by examining the transfer of interbank rates to bank retail rates and evaluating the symmetry hypothesis. To estimate interest rate pass-through and evaluate whether retail rates react symmetrically or asymmetrically to changes in upward/downward interbank rates, they employed a disaggregated general-to-specific model. According to the findings, the market rates for bank loans and deposits in the developing BRIC nations are only slowly and insufficiently passing through. The authors also discovered that banks change their behaviour at symmetrical rates in the loan and deposit markets. The study suggests the customer reaction hypothesis is consistent with the symmetric behaviour observed in the selected emerging retail banking markets. The outcomes can support the BRIC regulatory bodies' attempts to keep an eye on their banking systems and boost the stability and efficacy of their financial systems. The authors caution that the sample includes emerging countries, and Indian money markets are less established than those in the United States or Europe, while China's interest rates are still governed by the government. However, the authors note that recent changes in the Shibor can be interpreted as a sign of liberalization of interest rates.

Aras (2015) conducted a study investigating corporate governance practices' impact on firms' financial structure in emerging markets, specifically in BRICK³¹ countries and Turkey. The study analyzed various governance practices, including board independence, the board size, representation of women on the board, duality, ownership structures, minority shareholder rights, disclosures, and audit committee meeting frequency. In BRICK firms, the study revealed that board independence, women's representation on the board, duality, and

³¹ Brazil, Russia, India, China, South Korea

the frequency of board meetings all have crucial roles in determining corporate governance effectiveness. The study came to the additional conclusion that national characteristics have a significant impact on governance practices and business financial structure. The study suggested that improved governance practices can lead to better risk management, resulting in improved value generation for all stakeholders. Regulators should concentrate on enhancing the actual independence of board members and the oversight authority of supervisory directors to boost effective corporate governance practices. The study's conclusions can serve as a reference for governing bodies to strengthen corporate governance policies. However, the study also noted several limitations, including using only convenient governance practices and the lack of analysis of other governance mechanisms, such as ownership structure and transparency.

Montasser and Gupta (2016) investigated the persistence property of quarterly industrial production in the BRICS countries using a seasonal unit root test developed by Popp (2007). The study aimed to control for seasonal and trending behaviour, as well as for a break of unknown timing in seasonal means. The authors found that only China showed evidence of a seasonal unit root, specifically at the Nyquist frequency. The results suggested that policymakers in China should consider intra-annual changes in industrial production in addition to business cycle frequencies. Furthermore, identifying such a unit root could lead to more reliable predictions and inform other macroeconomic decisions. Future research could extend the methodology to monthly data and compare the results between developed and developing countries to understand differences in industrial production behavior.

In order to look into the role of safe-haven assets, such as gold and Islamic equities, in the time-frequency domain for BRICS markets throughout two crisis periods, Raza et al. (2016) used the wavelet coherency squared coherence technique. Between January 1st, 1996, and December 31st, 2014, the authors examined daily gold, DJIEM, and BRICS stock return

data. The results show that gold was a short-term hedge for stock markets, and that gold showed no association with stock prices during both crises. The authors conclude that gold's hedge and safe haven ability is market-specific. Gold was a robust safe haven for BRICS and the Islamic index during the Asian financial crises. However, because of its strong linkage with the BRICS equities markets, it was unable to provide a financial buffer against extremely damaging shocks during the 2007–2009 global financial crises.

The returns of Islamic stock markets, however, were negatively correlated over a range of frequencies with gold, which led to all other emerging Islamic markets globally. The authors also found that gold could diversify Islamic stock market portfolios due to its low correlation with them. Islamic emerging markets and the BRICS equities markets are cointegrated, according to the panel cointegration analysis, and international investors must carefully check their risk. Based on these findings, the authors concluded that while gold investing may be able to protect stock portfolios from extremely unfavorable market shocks in the near term, it is not a good safe haven over the long term. Considering that the DJIEM index only had a weak link with China's traditional stock market, the authors also make a case for the enormous benefits of diversification that investing in Islamic stocks can provide for Chinese investors.

Boye (2016) conducted a macro-modelling test to evaluate the collective policies of the BRIC³² grouping. The paper aims to test the claim that the BRIC countries could not complement one another and result in a whole bigger than its parts through collective actions beneficial to each of them. The test simulated three collective policies within an econometric global economy model from 2000 to 2009. The paper's main finding is that creating a joint reserve arrangement collectively benefits all BRIC countries. However, trade diversion from G7 countries and policy alignment with China's interest and exchange rates do not benefit all

³² Brazil, Russia, India, and China

BRIC countries. The paper concludes that BRIC countries need to adopt collective actions to avoid reducing their trade ties with G-7 countries and aligning with Chinese policies. The paper suggests that the BRIC grouping should pool future reserves, share them equally, and spend a fraction of future reserves in the domestic market. However, the paper cautions that implementing this collective action requires careful attention to avoid hyperinflation and imbalance in public finances. The implementation of the recommended collective action falls under the purview of the four BRIC governments that consult with one another through ministerial technical groups or head-of-state summits. The paper suggests that if the CRA³³ created by the BRIC heads of State in March 2013 can address the problems of BRIC countries, it is compatible with the paper's results. Otherwise, the paper recommends ramping up the CRA as much as possible using the BRIC grouping's excess reserves to address the problems of BRIC countries.

2.8 Conclusion

In conclusion, the literature reviewed in this study has demonstrated that while there have been many studies on various aspects of the BRICS countries, no specific research has been conducted on trade creation and diversion among these countries. Despite the growing importance of BRICS countries in the global economy, there is a lack of research on the specific topic of trade creation and diversion among these countries. This gap in the literature represents an important opportunity for further research, and this study aims to fill that gap by examining the impact of trade agreements on trade flows among the BRICS countries.

Despite this gap in the literature, the findings from studies on other regions suggest that trade creation and diversion effects can significantly impact trade flows and that factors

³³ Contingency Reserve Arrangement

such as bilateral or multilateral agreements and trade facilitation measures can play an essential role in promoting trade creation and reducing trade diversion. However, it is unclear how these factors specifically apply to the context of the BRICS countries and whether the impact of trade agreements on trade flows differs from what has been observed in other regions.

By filling this gap in the literature, this study aims to provide valuable insights into the factors that influence trade creation and diversion among BRICS countries and to contribute to a better understanding of the dynamics of regional economic integration. The findings of this study will have important implications for policymakers seeking to promote economic cooperation among the BRICS countries and for scholars seeking to expand their understanding of the global trade system.

In summary, this literature review has highlighted the need for further research on the impact of trade creation and diversion among BRICS countries. It has provided a foundation for the current study. By building on the existing literature and examining the specific context of the BRICS countries, this study aims to fill an important gap in the literature and contribute to a more comprehensive understanding of trade creation and diversion dynamics in the global economy.

Chapter 3

Economic Profile of BRICS Countries

3.1 Introduction

Five significant emerging economies make up the BRICS¹ alliance. This bloc of nations has garnered global attention due to their rapidly growing economies and increasing geopolitical influence. Before delving deeper into the intricacies of BRICS, it is vital first to understand the economic profiles of each of these five countries. Each nation has unique economic strengths and challenges, which must be carefully analyzed to comprehend the dynamics of the BRICS bloc fully.

Table 3.1.1: Profile of BRICS countries

	Brazil	Russia	India	China	South Africa
Geographical Size (sq. km) as of 2020 A.D.	8,358,140.0	16,376,870.0	2,973,190.0	9,424,702.9	1,213,090.0
GDP (Current US\$ in millions) as of 2021 A.D.	1,608,981.46	1,778,782.63	3,176,295.07	17,734,062.65	419,015.02
Population (Thousands) as of 2021	214,326.22	143,449.29	1,407,563.84	1,412,360.00	59,392.25
Per-Capita GDP (Current US\$) as of 2021	7,507.2	12,194.8	2,256.6	12,556.3	7,055.0
Purchasing Power Parity as of 2021	2.53	27.25	23.22	4.022	7.13
BOP, Current US\$(year) in thousands	-7,295,935.79 (2022)	63,566,909.89 (2021)	67,063,830.65 (2021)	189,512,939.06 (2021)	4,251,007.32 (2022)

Source: Scholar's own construction using World Bank data.

¹ Brazil, Russia, India, China, and South Africa

With a PPP² value of 2.53, the Brazilian real (pl. reais; sign: R\$; code: BRL) is the strongest currency among the BRICS countries. Brazil is the largest economy in South America and has a diverse economy with a mix of agriculture, manufacturing, and service sectors. However, the country is also grappling with high levels of income inequality and political instability.

Conversely, Russia is the largest country in the world in terms of geographical size. Russia is a major oil and gas exporter, making it highly dependent on fluctuations in global energy prices. The country also faces corruption and a lack of economic diversification.

India is the world's largest democracy, with a rapidly expanding middle class and a thriving service sector. However, the country also faces poverty, infrastructure, and bureaucracy challenges.

While China is the world's second-largest economy and a manufacturing powerhouse, it has the highest per capita income among the member countries of BRICS. China has the highest BOP³ among BRICS. The country has achieved remarkable economic growth in recent decades but also faces challenges related to environmental degradation, income inequality, and geopolitical tensions with other major powers.

South Africa has a better measure of PPP than that of Russia and India. Nevertheless, South Africa is the smallest economy in the BRICS bloc and has a highly unequal society. The country is located at the southern tip of the African continent which is strategically very important when placed alongside the untapped potential of this vast continent. The country has a well-developed financial sector and significant natural resources but faces high unemployment and political instability.

² Purchasing Power Parity

³ Balance of Payment

Studying the economic profiles of each BRICS country is essential for several reasons. Firstly, it allows policymakers and researchers to understand the unique challenges and opportunities each country faces regarding economic development. This knowledge is crucial when developing policies and strategies to promote economic growth and cooperation within the BRICS partnership.

Secondly, an understanding of the economic profiles of each BRICS country can help to identify potential areas of collaboration and cooperation. By identifying shared economic priorities and areas where each country has complementary strengths, the BRICS partnership can work together more effectively to achieve common goals.

Finally, studying the economic profiles of each BRICS country is crucial for understanding the overall dynamics of the BRICS partnership. Each country's economic strengths and weaknesses can impact the partnership's success as a whole, and an understanding of these factors can help policymakers develop more effective strategies for promoting economic cooperation and integration.

In conclusion, studying the economic profiles of each BRICS country is essential for understanding the unique challenges and opportunities facing each country and for identifying potential areas of collaboration and cooperation within the partnership. By doing so, policymakers can develop more effective strategies for promoting economic growth and integration within these five dynamic economies of the BRICS grouping. Therefore, a brief economic profile of these five emerging economies of the BRICS bloc is as follows:

3.2 Brazil

Brazil, a remarkable country, is considered one of the most captivating places in the world. It is known as South America's giant and boasts a stunning combination of powdery white-sand beaches, unspoiled rain forests, and lively metropolises bursting with energy and rhythm. Brazil's appeal extends beyond its charming, well-preserved colonial towns to encompass dramatic natural landscapes, including red-rock canyons, thunderous waterfalls, and peaceful tropical islands. Furthermore, Brazil is home to an unparalleled variety of plant and animal species, making it renowned for its biodiversity (*Brazil | BRICS CCI*, n.d.).

The economic profile of Brazil has undergone significant changes over time, broadly classified into three distinct phases that have significantly impacted its economic structure: the pre-globalization era, the conditions that led to globalization, and the post-globalization period.

3.2.1 Pre-globalisation era

Before globalization, Brazil had a primarily agrarian economy focused on producing primary commodities such as coffee, sugar, and soybeans for export. This was mainly due to the country's historical reliance on slavery and the concentration of land ownership in the hands of a few wealthy landowners. Industrialization began in the mid-20th century, with the government implementing policies to promote import substitution and protect domestic industries from foreign competition.

Brazil's economy before the onset of globalization was primarily dominated by state intervention and protectionist policies. The country's government-controlled much

of the economy, heavily emphasising import substitution industrialisation to promote domestic industries and reduce dependence on foreign goods. A lack of diversification and inefficiencies characterised Brazil's economy during this period. Nonetheless, Brazil's large size and natural resources, including vast agricultural land and mineral deposits, provided some economic stability and growth during this period.

3.2.2 Conditions that led to the globalisation of Brazil

The conditions that led to the globalisation of Brazil were multifaceted and occurred over several decades. In the 1980s, Brazil experienced a debt crisis that left the country unable to service its external debt. The country implements significant economic reforms to address this crisis, including liberalising trade and investment policies, privatising state-owned enterprises, and implementing macroeconomic stabilisation measures. These reforms aimed to reduce inflation, increase competitiveness, and attract foreign investment. Adopting the 1988 Brazilian Constitution, which aimed to promote democracy and social justice, also played a role in opening up the country to the global economy. Brazil also entered several regional and international trade agreements, including creating the Mercosur trading bloc to increase economic cooperation and integration among member countries. Brazil's membership in international organisations such as the WTO⁴ and the BRICS⁵ group has provided the country with greater access to global markets and increased its economic integration with other nations. The country's abundant natural resources, including agricultural land, minerals, and oil, attracted significant foreign investment and helped fuel Brazil's economic growth in the post-globalisation era.

⁴ World Trade Organization

⁵ Brazil, Russia, India, China, and South Africa

3.2.3 Post-globalisation period

After globalisation, Brazil experienced both economic growth and challenges. The country's economy became more integrated with the global economy, and trade expanded significantly. However, Brazil also faced the challenges of competing with lower-cost producers in Asia, as well as currency fluctuations and economic crises in other countries that impacted its exports. Brazil's domestic industry also faced challenges from foreign competition, which led to many factories closing and losing jobs.

In the 2000s, Brazil's economy experienced rapid growth and social progress, driven by the commodity boom and government policies to reduce inequality and poverty. However, the country's economy has faced challenges in recent years, including a recession in 2015-2016 and political instability. In addition, Brazil's economic growth has been heavily dependent on commodity exports, which has led to concerns about the sustainability of its development model.

Overall, Brazil's economic profile before its globalisation was primarily focused on agriculture and import substitution industrialisation, while its post-globalisation economy has become more integrated with the global market but also faced challenges from foreign competition and external factors such as currency fluctuations and economic crises. Despite these challenges, Brazil has experienced periods of significant economic growth and social progress.

3.2.4 Brazil today

Brazil is an important contributor to the global economy due to its size, diversity, and resources. Some of the key contributions of Brazil to the global economy include:

1. **Large economy:** Brazil is the ninth largest economy in the world in terms of GDP (PPP) and the second largest in the Americas after the United States. Brazil's economy accounts for approximately 3% of the global GDP.
2. **Major agricultural producer:** Brazil is one of the world's largest producers and exporters of agricultural products, including soybeans, coffee, sugar, beef, and poultry. The country's agricultural sector significantly contributes to its economy, and Brazil is a crucial food supplier to many countries worldwide.
3. **Natural resources:** Brazil is rich in natural resources, including iron ore, gold, bauxite, and other minerals. The country is a major producer and exporter of commodities, and its natural resources contribute to the global supply of key materials.
4. **Trade:** Brazil is a member of several trade blocs, including Mercosur and the BRICS group of emerging economies. The country is a major exporter of goods and services, and its trade relationships with other countries contribute to global economic activity.
5. **Investment destination:** Brazil is a popular destination for foreign investment, particularly in its energy, mining, and manufacturing sectors. The country's large domestic market, skilled workforce, and natural resources make it an attractive destination for businesses and investors.

Brazil's contributions to the global economy are significant and diverse, and the country plays a vital role in shaping economic activity in South America and beyond.

3.3 Russia

Among the 21 republics that form the Commonwealth of Independent States, the Russian Federation stands as the most extensive. The country dominates most of Eastern Europe and North Asia, reaching from the Baltic Sea to the Pacific Ocean and from the Arctic Ocean to the Black Sea and the Caucasus. Its enormous terrain encompasses the world's largest freshwater lake, dense forests, and rivers that support a diverse range of wildlife. In addition, the country boasts awe-inspiring volcanoes and towering mountains that leave visitors in awe. With its immense natural and cultural heritage, Russia is the most extensive country on the planet, inviting explorers to discover its wonders. Its borders connect with Norway, Finland, Estonia, Latvia, Belarus, Ukraine, Poland, Lithuania, Georgia, Azerbaijan, Kazakhstan, Mongolia, China, and North Korea (*Russia | BRICS CCI*, n.d.).

Russia's extensive land area is home to more than 144 million individuals, ranking it the world's ninth most populous country. The country is renowned for its rich culture and major contributor to the global economy through its abundant natural resources, including oil, gas, and minerals. Russia's varied topography features the Arctic tundra, vast forests, steppes, and remarkable natural wonders such as Lake Baikal, the world's deepest lake.

As the largest country globally, Russia has an economy valued at over 1.7 trillion US dollars, making it the eleventh largest globally. Natural resources, particularly oil and gas, are the mainstay of the Russian economy and form a significant part of its exports. Additionally, the country has diverse industries, including manufacturing, agriculture, and services. The aerospace industry is well-established in Russia, with locally produced

planes like the Sukhoi Superjet 100 gaining international recognition. Moreover, Russia is a leading manufacturer of military equipment, such as missiles, tanks, and helicopters.

Russia's economic landscape has experienced substantial transformations throughout its history, broadly categorised into three periods with significant influence on its economic structure: before globalisation, factors that precipitated globalisation, and post-globalisation.

3.3.1 Before Globalisation (from 1922 to 1991)

Before globalisation, Russia was known as the Soviet Union, a communist state from 1922 to 1991. During this time, the Soviet economy was primarily based on central planning, with the state owning and controlling most of the means of production. The government played a dominant role in the economy, with little private enterprise allowed. The economy was focused on heavy industry, such as steel production and machinery and equipment manufacturing.

The Soviet Union was isolated mainly from the global economy, and trade with other countries was limited. The country's economic policies focused on self-sufficiency, intending to develop a self-reliant economy. The government invested heavily in education, science, and technology to achieve rapid industrialisation and modernisation.

Therefore, the Russian economy before globalisation was largely state-controlled and planned, with limited participation in the global economy. The country's focus on heavy industry and defence production, coupled with its closed economic system, contributed to a lack of diversification and inefficiencies in the economy. However, Russia's vast natural resources and technical expertise allowed it to maintain a certain level of economic stability and military power during this period. The conditions leading to

globalisation, including the collapse of the Soviet Union and subsequent economic and political reforms, opened up new opportunities for Russia to participate in the global economy and attracted foreign investment.

3.3.2 Factors that precipitated globalisation

The conditions that led to the globalisation of Russia can be traced back to the country's transition to a market-oriented economy in the 1990s. Following the collapse of the USSR⁶, Russia embarked on a process of economic reform aimed at liberalising the economy and integrating it into the global market. The key factors that contributed to the globalisation of Russia are:

Economic Reforms: The government implemented economic reforms to promote private enterprise, reduce state ownership, and open the economy to foreign investment. This led to greater competition, efficiency, and innovation in the economy and created new opportunities for trade and investment.

Privatisation: The government privatised many state-owned enterprises, including banks, factories, and natural resource companies, which attracted foreign investors and helped to spur economic growth.

Trade Liberalisation: The government reduced trade barriers and tariffs and joined the WTO⁷ in 2012, which enabled Russia to access new markets and benefit from international trade.

⁶ Union of Soviet Socialist Republics

⁷ World Trade Organization

Natural Resources: Russia is rich in natural resources, including oil, gas, minerals, and timber. The country's natural resource wealth has made it an attractive destination for foreign investors and has contributed to its economic growth.

Geopolitical Factors: Russia's geopolitical position as a bridge between Europe and Asia has also contributed to its globalisation. The country's strategic location and natural resources have made it an important player in global politics and economics.

Therefore, the conditions that led to the globalisation of Russia were complex and multifaceted. The collapse of the Soviet Union and the subsequent economic and political reforms, coupled with a desire to integrate into the global economy and attract foreign investment, played a significant role. The country's vast natural resources, particularly oil and gas, have also been a driving force behind Russia's increased economic ties with other nations. However, Russia's transition to a market-oriented economy has not been without challenges, including political instability, corruption, and economic sanctions. Nonetheless, Russia's integration into the global economy has opened up new opportunities for the country and created new challenges for the global economic order.

3.3.3 post-globalisation era

The post-globalisation era of Russia began in the late 1990s and early 2000s after the country had transitioned to a market-oriented economy and integrated into the global market. Here are some of the economic conditions that have characterised Russia's post-globalisation era:

Economic Growth: Russia experienced rapid economic growth in the post-globalisation era, particularly in the early 2000s. GDP growth rates averaged around 7% per year

between 2000 and 2008, primarily due to the country's natural resource wealth and rising oil prices.

Diversification of the Economy: In the post-globalisation era, Russia's economy has diversified, with the services sector growing in importance alongside natural resources and manufacturing. However, the country remains heavily reliant on its natural resource exports, particularly oil and gas.

Foreign Investment: Russia has attracted significant foreign investments post-globalisation, particularly in natural resources and other strategic industries. However, the country's business climate has been hampered by corruption, political instability, and a lack of legal and regulatory transparency, discouraging some foreign investors.

Trade: Russia's trade has increased significantly since the country's integration into the global market. The country is a WTO⁸ member and has trade agreements with many countries worldwide. However, Russia has faced trade sanctions from the West due to its actions in Ukraine, which have impacted its economy.

Challenges: Despite the economic growth and diversification in the post-globalisation era, Russia continues to face significant economic challenges. The country's economy relies heavily on oil and gas exports, which are subject to price volatility. Due to corruption and political instability, the business climate remains challenging, and the country's ageing infrastructure requires modernisation.

Overall, the post-globalisation era of Russia has been marked by significant economic growth and diversification, challenges, and uncertainties. The country remains an important player in the global economy, but its future will depend on its ability to address these challenges and adapt to the changing global market.

⁸ World Trade Organization

3.3.4 Russia today

Today, the Russian economy is an essential player in the global economy, with several key characteristics that contribute to its significance:

1. **Natural resources:** Russia has many natural resources, including oil, natural gas, minerals, and timber. These resources are in high demand worldwide, making Russia a major supplier of raw materials to global markets.
2. **Large market:** Russia is one of the largest countries in the world, with a population of over 144 million people. This large market presents significant opportunities for businesses and investors looking to expand their operations.
3. **Strategic location:** Russia is strategically located between Europe and Asia, making it a key transit point for trade and transportation between the two continents.
4. **Military power:** Russia is a major military power with one of the world's largest armies. This military power gives Russia significant geopolitical influence and allows it to play a major role in international affairs.
5. **Technological advancements:** Russia has a strong tradition of scientific research and innovation, particularly in fields such as aerospace, nuclear technology, and information technology. Its advancements in these areas have contributed to global technological development.
6. **Economic partnerships:** Russia has established economic partnerships with several countries worldwide. These partnerships involve trade, investment, and technology transfers and contribute to the growth and development of the global economy.

3.4 India

India is a constitutional republic comprising 28 states and 8 union territories with varying degrees of control over their affairs. The national capital territory of Delhi houses India's capital, New Delhi. With 17.7% of the global population, India is the world's second most populous country, following China. Despite persistent domestic challenges and economic inequality, India's infrastructure, diversified industrial base, large pool of scientific and engineering personnel, rapid agricultural expansion, and vibrant cultural exports in music, literature, and cinema attest to its increasing physical prosperity and cultural dynamism (*India | BRICS CCI*, n.d.).

India has a rich and complex economic history, marked by various phases of growth and decline. The country's economy has undergone significant changes over the years, with three distinct periods that have had a significant impact on its economic profile: before globalisation, conditions leading to globalisation, and post-globalisation.

3.4.1 Before Globalisation (Pre-1991)

India's economy before globalisation was characterised by a heavily regulated economic environment with limited foreign investment and trade. The country's economic policies were influenced by socialist ideologies, focusing on self-sufficiency and import substitution. The government controls various sectors of the economy, including industries, banking, and the financial sector. This resulted in inefficiencies, low productivity levels, and a lack of competition, which harmed India's economic growth.

Low foreign investment and trade levels also marked India's economy during the pre-globalisation period. The country's trade policies were inward-looking, which meant that Indian companies were not exposed to global competition, leading to low levels of exports.

Moreover, India was often viewed as a closed economy and was not considered an attractive destination for foreign investors.

3.4.2 Conditions Leading to Globalisation (1991-2000)

In the early 1990s, India's economic policies underwent a significant change with the advent of liberalisation policies. These reforms were initiated in response to India's worsening balance of payments situation and the need to modernise and open up the economy. The government began to reduce regulatory control over the economy, liberalise trade policies, and ease restrictions on foreign investment. This shift towards a more open economy paved the way for globalisation in India.

The economic reforms led to increased foreign investment, and the country's economic growth rate improved significantly. The reduction of import tariffs led to an increase in imports and exports, and Indian businesses were able to compete in the global market. The liberalisation policies also led to new industries and the expansion of existing ones, creating new job opportunities.

3.4.3 Post Globalisation (2000-2021)

The post-globalisation era in India has been characterised by a continued focus on liberalisation, increasing foreign investment and trade. India's economy has achieved sustained growth rates over the last two decades, with GDP growth averaging around 7% annually from 2000 to 2019. The country has become one of the fastest-growing major economies in the world, and its economy is expected to surpass that of the US by 2050.

The post-globalisation period has also led to a shift in the country's economic structure, with a decline in the agricultural sector and an increase in the services and manufacturing sectors. The country has also emerged as a significant player in the global market, with many Indian companies expanding overseas.

Additionally, the government has continued implementing economic reforms to create a more business-friendly environment, including introducing the GST⁹, the Make in India campaign, and the Digital India initiative. These reforms have led to increased foreign investment and the continued growth of the Indian economy.

3.4.4 India today

India's economic profile has changed significantly over the years, moving from a heavily regulated economy to a more open and liberalised one. The country's shift towards globalisation has led to increased foreign investment and trade, resulting in sustained economic growth rates and a shift in the country's economic structure. India's continued focus on economic reforms and business-friendly policies will be crucial in maintaining its status as one of the fastest-growing major economies in the world.

India's prominence in the world economy today is evident from its growing influence on global trade, investment, and technology. India's economy is currently the sixth largest in the world by nominal GDP and the third largest by purchasing power parity. The following are some key factors that highlight India's significance for the world economy today:

⁹Goods and Services Tax

1. **Large market:** India is the second-most populous country in the world, with a population of over 1.3 billion people. This large market presents significant opportunities for businesses and investors looking to expand their operations.
2. **Economic growth:** India has been one of the fastest-growing major economies in the world in recent years, with an average growth rate of around 7% per year. Its strong economic growth has contributed to the global economy and has led to increased foreign investment in the country.
3. **Service sector:** India has a strong service sector, including IT services, business process outsourcing, and financial services. The country primarily provides these services to global markets, contributing significantly to the global service sector.
4. **Manufacturing:** India is a major manufacturer of several products, including textiles, pharmaceuticals, and automobiles. Its manufacturing sector contributes to global supply chains and is integral to the global manufacturing industry.
5. **Agricultural production:** India is one of the largest producers of several agricultural products, including rice, wheat, and cotton. Its agricultural sector contributes to global food security and supplies food products to several countries.
6. **Strategic location:** India's location in South Asia is a strategic gateway to the region and a hub for trade and commerce. Its ports and airports connect the country to global markets and contribute to its importance as an economic power.
7. **Innovation and entrepreneurship:** India is home to several startups and innovative companies in various sectors, including technology, healthcare, and finance. The country's entrepreneurial culture has contributed to the development of new products and services that have the potential to benefit the global economy.

8. **Demographic dividend:** India's young growing population is expected to continue to drive economic growth and contribute to the global economy in the coming years.

These factors demonstrate that India's economic significance is multifaceted and cannot be ignored by the rest of the world. Its large market, economic growth, service and manufacturing sectors, agricultural production, economic partnerships, innovation, entrepreneurship, and demographic dividend all contribute to its prominence in today's world economy.

3.5 China

China is a massive country on the eastern part of Eurasia and the western coast of the Pacific Ocean. Its land area covers 3,706,581 square miles (9,600,000 square kilometres), making it the world's third-largest country after Russia and Canada. China spans 3,231 miles from east to West and 3,417.5 miles from north to south, with a shape resembling a rooster. Its northernmost point is Mohe in Heilongjiang Province, while its southernmost point is Zengmu Ansha in the Nansha Islands. The easternmost point is at the confluence of the Heilongjiang River and the Wusuli River, and the westernmost point is at the Pamirs (*China* | *BRICS CCI*, n.d.).

The economic profile of China can be roughly segregated into three distinct phases: pre-globalisation, conditions leading to globalisation, and post-globalisation.

3.5.1 Pre-Globalisation (1949 – 1978)

The pre-globalisation period in China was characterised by a largely agrarian economy heavily centralised and controlled by the government. During this time, China

was ruled by the Communist Party, which implemented a series of policies to transform the country from an agrarian to an industrialised society.

One of the key policies during this period was the establishment of communes, which pooled together agricultural resources and labour to increase agricultural output. However, these communes often suffered from inefficiencies and shortages, and as a result, many people in China lived in poverty and experienced limited economic opportunities.

The government also implemented five-year plans to industrialise the economy, focusing on heavy industries such as steel production and coal mining. However, these efforts were often hindered by shortages of raw materials, inefficiencies, and corruption.

Overall, the pre-globalisation period in China was characterised by a highly centralised and controlled economy that was largely disconnected from the global markets. The country experienced significant economic challenges and limited growth during this period but laid the groundwork for its later economic transformation and emergence as a global economic power.

Before China's economic reform in 1978, the GDP growth rate was stagnant, the central government controlled the economy, and state-owned enterprises dominated the industrial sector. The government-controlled prices, production, distribution of goods and services, and foreign investment were severely restricted. This approach resulted in low productivity levels, technological innovation, and inefficiencies. As a result, China's GDP per capita was among the lowest of all Asian countries.

3.5.2. Conditions Leading to Globalisation (1978 – 2001)

The conditions leading to the globalisation of the Chinese economy can be traced back to the late 1970s and early 1980s when the government implemented a series of economic reforms to open up the country to global markets.

One of the key reforms was the establishment of SEZs¹⁰. In these designated areas, foreign investors could invest and trade with China without being subject to strict regulations and controls. The SEZs were initially established in coastal areas and successfully attracted foreign investment and promoted exports.

Another key reform was the liberalisation of the financial system, including establishing a stock market and introducing foreign exchange controls. These changes made it easier for foreign investors to invest in China and allowed Chinese companies to expand their operations globally.

The government also implemented policies to encourage foreign investment and trade, including reducing tariffs and establishing free trade zones. These policies helped to increase foreign investment and trade and allowed China to become a major player in the global economy.

China's economic liberalisation increased GDP growth rates, averaging around 9.4% per annum between 1980 to 2015. The country became an attractive destination for foreign investment, and its exports grew exponentially, making China a significant global manufacturing hub. The reforms also led to the emergence of a vibrant private sector, and the country saw the rise of successful entrepreneurs like Jack Ma of Alibaba and Robin Li of Baidu.

¹⁰ Special Economic Zones

Overall, the conditions leading to the globalisation of the Chinese economy were marked by a series of economic reforms aimed at opening up the country to global markets and promoting foreign investment and trade. These reforms successfully transformed China from an agrarian to an industrialised economy and laid the foundation for its emergence as a significant global economic power.

3.5.3 Post-Globalisation (2001 - Present)

China's economic growth has continued into the post-globalisation phase, with the country becoming the second-largest economy in the world. The government has continued implementing various measures to encourage economic growth, including tax incentives, infrastructure investment, and innovation promotion.

China's shift towards a knowledge-based economy has resulted in a decline in the dominance of the manufacturing sector and an increase in the services sector. In addition, China has made significant investments in renewable energy, which has propelled the country to become the world's largest renewable energy producer.

In recent years, China has also become a significant player in the global market, investing heavily in foreign companies and infrastructure projects. The country's One Belt One Road initiative, which aims to connect Asia with Europe and Africa through infrastructure development, has further increased China's global economic presence.

China's economic profile has transitioned from a centrally-planned economy to a market-oriented one, resulting in a significant increase in GDP growth rates and the country's integration into the global economy. The country's focus on economic liberalisation, investment in infrastructure, and innovation has led to its emergence as a global economic power.

3.5.4 China today

Today, China's prominence in the world economy is evident from its growing influence on global trade, investment, and manufacturing. China is currently the world's second-largest economy by nominal GDP and the largest by purchasing power parity. The following are some key factors that highlight China's significance for the world economy today:

1. **Manufacturing powerhouse:** China has become a global powerhouse, producing many goods, including electronics, textiles, machinery, and automobiles. Its manufacturing sector has contributed significantly to global supply chains and enabled businesses worldwide to lower production costs and improve efficiency.
2. **Large market:** China is the world's most populous country as of 2021 World Bank data, with over 1.4 billion people. Its large domestic market presents significant opportunities for businesses and investors looking to expand their operations.
3. **Economic growth:** China has been one of the fastest-growing major economies in the world over the past few decades, with an average growth rate of around 6-7% per year. Its strong economic growth has contributed to the global economy and has led to increased foreign investment in the country.
4. **Belt and Road Initiative:** China's BRI¹¹ is a global infrastructure development strategy to connect Asia, Europe, and Africa through a network of roads, railways, ports, and other infrastructure projects. This initiative has the potential to boost global trade and investment significantly and has already led to the development of several major infrastructure projects worldwide.

¹¹ Belt and Road Initiative

5. **Innovation and technology:** China has made significant strides in innovation and technology, focusing on areas such as artificial intelligence, biotechnology, and renewable energy. Its tech companies, such as Alibaba, Tencent, and Huawei, are among the largest in the world and have disrupted several industries globally.
6. **Service sector:** China has a growing service sector, including financial services, technology, and entertainment. The country is a major provider of these services to global markets, contributing significantly to the global service sector.
7. **Infrastructure development:** China has invested heavily in infrastructure development in recent years, including high-speed rail, airports, and ports. These investments have improved the country's connectivity and contributed to its economic growth.
8. **Foreign reserves:** China has the most significant foreign reserves of any country globally, with over \$3 trillion in foreign currency holdings. This makes China a major player in global financial markets and significantly influences the global economy.

These factors demonstrate that China's economic significance is multifaceted and cannot be ignored by the rest of the world. Its manufacturing prowess, sizeable domestic market, economic growth, Belt and Road Initiative, innovation and technology, economic partnerships, and foreign reserves all contribute to its prominence in today's world economy.

3.6 South Africa

South Africa, located at the southern end of the world's largest continent, boasts an unparalleled diversity of landscapes and wildlife, spanning from the Limpopo River's hippos to the Cape's penguins. With varied terrain that offers more opportunities for photographers than they could capture, South Africa encompasses the barren Kalahari, Namakwa's vibrant

wildflower display in spring, the iconic Table Mountain and Cape Point, Kruger National Park's savannah teeming with wildlife, and the Drakensberg mountain range that stretches through the country's eastern part and into Lesotho. iSimangaliso Wetland Park in KwaZulu Natal alone boasts five unique ecosystems that attract an array of animals, including zebras and dolphins (*South Africa* | *BRICS CCI*, n.d.).

The economic profile of South Africa has undergone significant changes over time, which can be broadly classified into three distinct phases that have greatly impacted its economic structure: the pre-globalisation era, the conditions that led to globalisation, and the post-globalisation period.

3.6.1 Pre-Globalisation era (Before the 1990s)

The pre-globalisation period of South Africa was marked by a highly regulated and protected economy isolated mainly from the global markets. During this time, the South African government implemented a system of apartheid, which institutionalised racial segregation and discrimination and resulted in economic sanctions from many countries.

The apartheid policies led to significant economic inequality, with the majority of the country's wealth controlled by a white minority. The government also implemented protectionist policies to shield local industries from foreign competition, resulting in high tariffs and restricted trade.

The mining industry, which a few large conglomerates dominated, was the cornerstone of the South African economy during this period. The industry was highly profitable, but the benefits were not equitably distributed, with many Black South Africans living in poverty and experiencing limited economic opportunities.

Overall, the pre-globalisation period of South Africa was characterised by a highly unequal and regulated economy, which was largely disconnected from the global markets.

3.6.2 Conditions Leading to Globalisation (the 1990s)

The conditions that led to the globalisation of South Africa were complex and varied. One of the primary factors was the end of apartheid in the 1990s, which led to the lifting of economic sanctions and the reintegration of South Africa into the global economy. The country's new government implemented market-oriented economic policies to attract foreign investment, liberalise trade, and promote economic growth. This included the privatisation of state-owned enterprises, the deregulation of industries, and the removal of trade barriers.

Another vital factor was South Africa's abundant natural resources, including minerals such as gold, diamonds, and platinum, which attracted significant foreign investment and helped fuel economic growth. The country's strategic location, advanced infrastructure, and well-developed financial sector made it an attractive destination for foreign investment and trade.

South Africa also pursued regional and international trade agreements, including establishing the SADC¹² and the AfCFTA¹³ to increase economic cooperation and integration among member countries. These various factors contributed to South Africa's integration into the global economy and its emergence as a prominent economic player in Africa and the world.

¹² Southern African Development Community

¹³ African Continental Free Trade Area

3.6.3 Post-Globalisation (after 2000)

The post-globalisation era in South Africa has been characterised by a continued focus on liberalisation, with the country's government implementing various policies to create a more business-friendly environment. These policies have included tax incentives, investment in infrastructure, and the increased use of public-private partnerships to reduce the role of government in the economy.

Despite these efforts, South Africa's economic growth rate has been hampered by high government debt levels, inequality, and high unemployment rates. In addition, the country's economy has been hit hard by the COVID-19 pandemic, with GDP contracting by 7% in 2020.

The country has also faced increasing competition from other emerging markets, particularly in Asia, where labour costs are often lower. Further, South Africa has faced increasing pressure related to climate change and environmental issues, highlighting the need for the country to transition to a more sustainable economic model.

South Africa's economic profile has undergone significant changes over the years, with the opening up of its economy to the global market in the 1990s signalling a turning point in the country's economic development. The country's focus on economic liberalisation, investment in infrastructure, and the promotion of exports has led to new industries and improved economic growth rates. However, the country faces challenges related to income inequality, high unemployment rates, and the need to transition to a more sustainable economic model.

3.6.4 South Africa today

South Africa plays a significant role in the world economy as a regional economic power and a gateway to the African continent. The country is a member of several international economic organisations, including the WTO¹⁴, the IMF¹⁵, and the G20. South Africa has also established economic partnerships with other countries, such as the BRICS¹⁶ group and the SADC¹⁷.

As an emerging market economy, South Africa is home to various industries, including mining, manufacturing, agriculture, and services. The country is rich in natural resources, including gold, platinum, diamonds, and coal, which have traditionally been major exports. The country has recently diversified its economy to include other sectors, such as tourism, finance, and technology.

South Africa's strategic location and economic potential make it an attractive destination for foreign investment. The country has a well-developed financial sector, and its stock exchange is the largest in Africa. The government has implemented policies promoting foreign investment, such as tax incentives, streamlined regulations, and infrastructure development.

However, South Africa faces several economic challenges, including high levels of inequality, poverty, and unemployment. The country's economic growth has been sluggish in recent years, and its credit rating has been downgraded to sub-investment grade. The government has implemented various measures to address these challenges, including social welfare programs, infrastructure investments, and labour market reforms.

¹⁴ World Trade Organization

¹⁵ International Monetary Fund

¹⁶ Brazil-Russia-India-China-South Africa

¹⁷ Southern African Development Community

Despite these challenges, South Africa's prominence in the world economy will likely continue. The country's economic potential, strategic location, and role as a gateway to Africa make it an essential player in the global economic landscape.

3.7 Conclusion

While the BRICS¹⁸ bloc is often discussed due to their rapidly growing economies and increasing geopolitical influence, a key aspect often overlooked is how the BRICS economies complement each other. Despite their different economic profiles and diverse political systems, these five countries have shown remarkable commonalities and complementarity, which has helped strengthen the bloc and increase its influence worldwide.

One of the key areas of complementarity between the BRICS economies is in terms of natural resources. Brazil, for instance, is a major producer of agricultural goods and raw materials, while Russia is a leading exporter of oil and gas. India is home to abundant mineral resources, while China is a manufacturing powerhouse that requires significant quantities of raw materials to fuel its industries. South Africa, meanwhile, has significant reserves of precious metals and minerals.

These complementary strengths have led to a natural division of labour within the BRICS bloc, with each country specialising in certain areas and contributing to the overall economic growth of the group. By working together and leveraging their complementary strengths, the BRICS countries have achieved remarkable economic growth and development in recent years.

¹⁸ Brazil, Russia, India, China, and South Africa

Another area of complementarity within the BRICS bloc is in terms of labour and human capital. India, for instance, has a large and highly skilled workforce in the service sector, particularly in the technology and IT sectors, while China is known for its efficient manufacturing processes. Brazil has a large pool of highly educated professionals in engineering and finance, while South Africa has a thriving financial industry. By pooling their resources and expertise, the BRICS countries can create a more diversified and resilient economy that can better withstand global economic shocks.

Also, the BRICS economies complement each other regarding their geographic reach. Brazil has strong ties to Latin America, while Russia has strong ties to Central Asia and Eastern Europe. India has strong cultural and economic ties to South and Southeast Asia, while China has a strong presence in Africa. South Africa is the gateway to the African continent. By leveraging their regional strengths, these countries can work together to create more integrated and interconnected regional economies.

Again, the BRICS countries' political impact complements one another. These countries can potentially shape global economic and political policies as major emerging economies. By working together, they can exert greater influence on international trade agreements, climate change policies, and global governance structures.

Further, one of the main ways the BRICS economies complement each other is through trade. These five countries are major trading partners, each exporting goods and services in demand in other member states. For example, China is a major exporter of manufactured goods and has a large market for these goods in other BRICS countries. Conversely, Brazil is a major exporter of agricultural goods in high demand in other member states.

In addition to trade, the BRICS economies are complementary in terms of investment. Each country has its strengths and weaknesses, and investors can take advantage of these differences to diversify their portfolios and reduce their risk exposure. For example, Chinese investors may be interested in investing in the natural resources of Brazil or South Africa. In contrast, Russian investors may be interested in investing in the technology sector in India.

The complementarity of the BRICS economies is also evident in their demographic profiles. Each country has its unique population structure, with different age groups, levels of education, and workforce participation rates. This diversity creates opportunities for collaboration and exchange, particularly in education and labour migration.

Another area where the BRICS economies are complementary is infrastructure. Many countries are upgrading their transportation networks, power grids, and other infrastructure systems. By working together, BRICS countries can leverage each other's expertise and resources to build more efficient and sustainable infrastructure systems that can benefit all members of the bloc.

Furthermore, the BRICS countries share several common challenges: poverty, inequality, and environmental degradation. By working together, the countries can share best practices and collaborate on initiatives to address these challenges, such as improving access to education and healthcare, promoting sustainable development, and enhancing regional infrastructure.

Finally, the BRICS economies are complementary in terms of their geopolitical influence. These five countries represent diverse cultures, languages, and political systems and have unique perspectives on global issues. This diversity can be leveraged to promote

greater cooperation and collaboration in international trade, climate change, and geopolitical stability.

In conclusion, the BRICS economies are highly complementary, with diverse strengths and resources that enable collaboration and cooperation across various areas. By leveraging these complementary strengths, the BRICS countries have the potential to play an increasingly important role in shaping the global economy and promoting sustainable and inclusive economic growth. As such, the BRICS grouping represents a unique opportunity for policymakers and analysts to understand global economic development's complexities better and work together towards a more prosperous and equitable future for all.

Chapter 4

BRICS Summits

4.1 Introduction

Literature on BRICS summits suggests that successive meetings have enhanced economic integration among member countries. However, to fully understand the impact of these summits on economic integration, it is necessary to examine the specific changes made at each summit to foster more extensive trade creation and diversion and promote trade openness and deepening.

As a group of emerging economies, BRICS has increasingly become an essential player in the global economy. Since the group's formation in 2006, its member countries have sought to increase their economic ties through various initiatives, including holding summits. These summits have focused on enhancing economic cooperation and promoting greater economic integration among member countries through trade creation and diversion, as well as trade openness and deepening.

While existing research has suggested that BRICS summits have positively impacted economic integration, examining the changes made at these summits is necessary to foster this integration. In particular, it is of the essence to understand how trade creation and diversion have been achieved through initiatives such as the creation of the BRICS Development Bank and the establishment of the Contingent Reserve Arrangement, as well as how trade openness and deepening have been promoted through measures such as the reduction of trade barriers and the promotion of investment.

Therefore, this chapter seeks to provide a comprehensive analysis of the successive summits of BRICS, focusing on the changes made to enhance economic integration. By examining the initiatives and agreements reached at each summit and the impact of these changes on member countries' economies, this chapter aims to understand better the role that BRICS summits have played in promoting economic integration among member countries.

Since its formation in 2006, each of the BRICS summits focused on enhancing economic integration among its member countries. The first BRICS summit was held in 2009 in Yekaterinburg, Russia. This summit discussed the global financial crisis and its impact on emerging economies, laying the foundation for future economic cooperation among member countries. The summit resulted in the signing of a declaration that highlighted the importance of promoting economic growth, stability, and cooperation among BRICS countries. Some of the important summits afterwards, which are worth considering from the perspective of trade creation and diversion, as well as trade openness and deepening among the member countries, are as follows:

4.2 BRICS Summit of 2010

The BRICS Summit 2010 was a significant milestone in the integration process and evolution of the BRICS group. The BRICS countries were still in the early stages of developing a partnership and a shared vision for cooperation. The summit provided an opportunity for the leaders of the five countries to come together and discuss ways to strengthen their ties, deepen their cooperation, and promote their shared interests (*BRICS Leaders Joint Statement, 2010, n.d.*).

One of the key outcomes of the 2010 summit was the establishment of the BRICS Business Council, which was intended to promote trade and investment among the BRICS

countries and to facilitate business partnerships and cooperation. Creating the Business Council was a significant step towards developing economic ties and building a common market among the BRICS countries. The council has since played an important role in promoting trade and investment among the BRICS countries and has helped to deepen economic cooperation and integration.

Another important outcome of the 2010 summit was the establishment of the BRICS Development Bank, which was intended to provide a source of financing for infrastructure and sustainable development projects in the BRICS countries and other emerging economies. The creation of the Development Bank was a major step towards increasing financial cooperation and integration among the BRICS countries and has helped to reduce their dependence on Western-dominated financial institutions such as the World Bank and the International Monetary Fund.

Furthermore, the 2010 BRICS summit provided a platform for the leaders of the five countries to express their shared vision of a more equitable and inclusive international system and to call for greater representation of developing countries in global governance institutions. This vision has since become a cornerstone of the BRICS group's agenda and has helped shape their approach to global trade, climate change, and development.

In conclusion, the 2010 BRICS summit was a significant event in the integration process and evolution of the BRICS group. It marked an important step towards building a partnership among the BRICS countries, developing economic ties and a common market, and promoting a more equitable and inclusive global system. The summit's outcomes, establishing the BRICS Business Council and the Development Bank, are examples of lasting impacts on the BRICS group's agenda and approach to global issues. Overall, the BRICS Summit 2010 played a critical role in shaping the integration process and evolution of BRICS

by providing a framework for cooperation and partnership among the five countries and laying the foundation for further collaboration in the years to come.

4.3 BRICS Summit of 2011

The BRICS Summit 2011 in Sanya, China, was another significant milestone in the integration process or evolution of BRICS. Here are some of the key outcomes of the summit and their significance:

1. **Launch of the BRICS Exchange Alliance:** One of the main outcomes of the 2011 summit was the launch of the BRICS Exchange Alliance. The alliance is a network of stock exchanges from the BRICS countries that aims to promote cross-border investments and enhance cooperation in trading, clearing, and settlement. The alliance has since been crucial in promoting greater collaboration among the member countries and increasing investment flows.
2. **Agreement on Currency Swap Arrangements:** The 2011 summit also led to an agreement on currency swap arrangements among the member countries. Under this agreement, the central banks of the BRICS countries agreed to provide short-term liquidity support to each other in their local currencies, thereby reducing their reliance on the US dollar for trade and investment transactions. This agreement has since helped strengthen the member countries' financial ties and reduce their exposure to external shocks.
3. **Joint Action Plan on Infrastructure Development:** The summit also adopted a joint action plan on infrastructure development, which aimed to promote greater cooperation among the member countries in transportation, energy, and telecommunications. The plan included several measures to enhance infrastructure

connectivity, such as developing new transportation corridors and constructing new energy pipelines.

4. **Discussions on Political Issues:** The 2011 summit also provided a platform for the member countries to discuss various political issues of mutual interest, such as Libya and Syria. The leaders expressed their support for the peaceful resolution of conflicts and emphasised the importance of respecting all countries' sovereignty and territorial integrity.

The BRICS Summit 2011 was notable in promoting greater economic and political collaboration among the member countries. The launch of the BRICS Exchange Alliance and the agreement on currency swap arrangements helped to strengthen the financial ties among the member countries, while the joint action plan on infrastructure development aimed to enhance connectivity and promote sustainable development. The summit also provided an opportunity for the member countries to discuss various political issues of mutual interest and express their support for peaceful conflict resolution.

4.4 BRICS New Delhi Summit 2012

The BRICS New Delhi Summit, held in 2012, was a significant event in the integration process or evolution of BRICS, particularly in economic outcomes. Here are some of the key economic outcomes of the summit and their significance:

1. **Launch of the BRICS Development Bank:** The most significant economic outcome of the 2012 summit was the launch of the BRICS Development Bank (now called the New Development Bank). The bank was established with an initial capital of \$50 billion to fund infrastructure and sustainable development projects in the BRICS countries and other emerging economies. Establishing the bank was a crucial

milestone in the economic integration of the BRICS countries, as it reduced their dependence on Western-dominated institutions such as the World Bank and the International Monetary Fund.

2. **Agreement on Trade Settlement in Local Currencies:** The summit also resulted in the member countries agreeing to settle their trade transactions in local currencies rather than US dollars. This move aimed to reduce the exchange rate risks and transaction costs associated with trading in US dollars and promote greater economic cooperation among the member countries.
3. **Discussions on Energy Cooperation:** The summit saw discussions on energy cooperation among the member countries, including the possibility of creating a BRICS energy research platform. The leaders recognised the importance of energy security and the need to explore new and renewable energy sources to meet the growing demand of their economies.
4. **Promotion of Technology Cooperation:** The summit also saw the promotion of technical cooperation among the member countries, particularly in ICT¹ and space technology. The leaders recognised the potential benefits of technology cooperation in promoting innovation, economic growth, and social development.

The 2012 BRICS summit was a successful event that brought about significant progress in economic cooperation among the member countries. This new approach to international cooperation challenged the dominance of Western institutions and created a more equitable platform for economic development. The focus on sustainable infrastructure projects and energy cooperation reflected a growing awareness of the need for environmentally responsible growth. By settling trades in local currencies, member countries

¹ Information and Communication Technology

were able to reduce their exposure to exchange rate fluctuations and increase economic stability. Technology cooperation also provided opportunities for innovation and growth, particularly in areas such as renewable energy and digital infrastructure. On the whole, this agreement represented a significant step forward in promoting global economic development that was both inclusive and sustainable.

4.5 BRICS Summit of 2013

The 2013 BRICS Summit, held in Durban, South Africa, was another significant event in the integration process or evolution of BRICS, particularly regarding its economic outcomes. Here are some of the key economic outcomes of the summit and their significance:

1. **Launch of the BRICS Contingent Reserve Arrangement:** The most significant economic outcome of the 2013 summit was the launch of the BRICS CRA². The CRA is a financial safety net mechanism that provides short-term liquidity support to member countries facing balance-of-payment difficulties. It was established with an initial capital of \$100 billion, with China contributing the largest share. The establishment of the CRA was a chief milestone in the economic integration of the BRICS countries, as it strengthened their financial cooperation and reduced their reliance on external sources of financing.
2. **Agreement on the BRICS Business Council:** The summit also resulted in an agreement to enrich the BRICS Business Council, a platform for promoting economic and trade ties among the member countries. The council aimed to facilitate business cooperation, promote investment flows, and identify new collaboration areas. It has since been crucial in enhancing economic integration among the member countries.

² Contingent Reserve Arrangement

3. **Discussions on Infrastructure Financing:** The summit saw discussions on infrastructure financing among the member countries, including the possibility of establishing a BRICS infrastructure fund. The leaders recognised the importance of infrastructure development for promoting economic and social development and discussed ways to increase investment flows in this area.
4. **Emphasis on Inclusive Growth:** The summit emphasised the importance of inclusive growth and sustainable development and called for a BRICS-led development bank. The leaders recognised the need to promote economic growth that benefited all sections of society and stressed the importance of social welfare programs and poverty reduction measures.

The BRICS summit in 2013 considerably boosted economic cooperation among member countries. The foundation of the BRICS Business Council provided a venue for promoting economic and trade ties among the member nations. At the same time, the establishment of the BRICS CRA enhanced their financial cooperation and reduced their reliance on foreign sources of finance. The necessity of sustainable development and social welfare measures was underlined during discussions on infrastructure funding and inclusive growth.

4.6 BRICS Summit of 2015

The 2015 BRICS Summit, held in Ufa, Russia, was another significant event in the integration process or evolution of BRICS, particularly in terms of its economic outcomes. Here are some of the key economic outcomes of the summit and their significance:

1. **Launch of the NDB³:** The most significant economic outcome of the 2015 summit was the official launch of the NDB, previously known as the BRICS Development Bank. The NDB was established with an initial authorised capital of \$100 billion, with the aim of financing infrastructure and sustainable development projects in the BRICS countries and other emerging economies. The establishment of the NDB was a major milestone in the economic integration of the BRICS countries, as it provided a new source of funding for development projects and reduced their dependence on Western-dominated institutions such as the World Bank and the International Monetary Fund.
2. **Agreement on the BRICS CRA⁴:** The summit also saw the signing of the operational documents for the BRICS CRA, established at the previous summit in 2013. The CRA is a financial safety net mechanism that provides short-term liquidity support to member countries facing balance-of-payment difficulties. The signing of the operational documents marked the final stage in establishing the CRA, further strengthening the financial cooperation among the member countries.
3. **Discussions on Trade and Investment:** The summit saw discussions on increasing trade and investment flows among the member countries. The leaders emphasised the importance of reducing trade barriers and promoting investment flows to strengthen economic cooperation among the member countries. They also discussed establishing a BRICS credit rating agency to provide an alternative to Western-dominated rating agencies.
4. **Emphasis on Innovation and Technology:** The summit emphasised the importance of innovation and technology for promoting economic growth and social

³ New Development Bank

⁴ Contingent Reserve Arrangement

development. The leaders discussed ways to promote innovation and technology cooperation among the member countries, including the possibility of establishing a BRICS innovation network. They also emphasised the importance of digital connectivity and e-commerce in promoting economic growth and improving people's lives.

5. **Emphasis on Inclusive Growth and Sustainable Development:** The summit emphasised the importance of inclusive and sustainable development and called for a BRICS-led development bank. The leaders recognised the need to promote economic growth that benefited all sections of society and stressed the importance of social welfare programs and poverty reduction measures.
6. **Discussions on the BRICS FTA⁵:** The summit saw discussions on establishing a BRICS FTA aimed at increasing trade and investment flows among the member countries. The leaders agreed to explore the feasibility of a trade agreement and tasked their trade ministers with developing a roadmap for establishing the FTA
7. **Focus on Agriculture Cooperation:** The summit emphasised the importance of agriculture cooperation among the member countries, particularly in food security and sustainable agriculture. The leaders agreed to establish a BRICS Agriculture Research Platform to facilitate cooperation in the research and development of agricultural technologies.
8. **Discussions on Energy Cooperation:** The summit discussed energy cooperation among the member countries, particularly in renewable energy and energy efficiency. The leaders recognised the potential benefits of energy cooperation in promoting innovation, economic growth, and social development and discussed ways to enhance collaboration in this area.

⁵ Free Trade Area

The 2015 BRICS summit significantly facilitated increased economic cooperation between the member nations. Establishing the NDB⁶ and signing the operational documents for the BRICS CRA enhanced their financial cooperation. They decreased their reliance on institutions dominated by the West. The emphasis of discussions on trade, investment, innovation, and technology was on promoting economic growth and social development through increased cooperation between member nations. The emphasis on inclusive growth and sustainable development emphasised the significance of economic integration and collaboration in promoting shared prosperity. Discussions on the BRICS FTA⁷ and agriculture cooperation opened new avenues for collaboration among member nations and highlighted their dedication to promoting trade and sustainable development. The member countries' emphasis on energy cooperation highlighted the need to ensure energy security and explore new and renewable energy sources due to their discussions on energy cooperation.

4.7 BRICS Summit of 2016

The 2016 BRICS summit in Goa, India, was another significant event in the integration process or evolution of BRICS, particularly in economic outcomes. Here are some of the key economic outcomes of the summit and their significance:

- 1. Adoption of the BRICS Action Plan on Economic Cooperation:** The most significant economic outcome of the 2016 summit was the adoption of the BRICS Action Plan on Economic Cooperation. The plan outlined a roadmap for enhancing economic cooperation among the member countries, focusing on areas such as trade and investment, innovation, infrastructure development, and the digital economy. Adopting the action plan was a significant milestone in the economic integration of

⁶ New Development Bank

⁷ Free Trade Area

the BRICS countries, as it provided a comprehensive framework for promoting economic cooperation and reducing trade barriers.

2. **Agreement on Taxation and Customs Cooperation:** The summit saw the signing of agreements on taxation and customs cooperation among the member countries. The agreements aimed to promote trade and investment flows among the member countries and reduce trade barriers.
3. **Launch of the BRICS Agriculture Research Platform:** The summit also saw the launch of the BRICS Agriculture Research Platform, a platform aimed at promoting research and development in agriculture among the member countries. The platform aimed to increase agriculture productivity and sustainability, reduce food waste, and promote agricultural technology transfer among the member countries.
4. **Discussions on the NDB⁸:** The summit saw discussions on the progress made by the NDB, launched at the previous summit in Ufa in 2015. The leaders discussed the bank's lending activities and plans for the future and emphasised the need to enhance its lending capacity and expand its membership.
5. **Emphasis on Innovation and Technology Cooperation:** The summit emphasised the importance of innovation and technology cooperation among the member countries. The leaders discussed the need to strengthen cooperation in science and technology, research and development, and innovation. They also highlighted the role of the private sector in driving innovation and economic growth.
6. **Emphasis on Green Growth and Sustainable Development:** The summit emphasised the importance of green growth and sustainable development and called for greater cooperation among the member countries in areas such as renewable

⁸ New Development Bank

energy, energy efficiency, and sustainable urban development. The leaders recognised the need to promote economic growth that is environmentally sustainable and socially inclusive.

7. **Launch of the BRICS Credit Rating Agency:** The most significant economic outcome of the 2016 summit was the launch of the BRICS Credit Rating Agency. The agency was created to provide an alternative to Western credit rating agencies, which BRICS countries have criticised for being biased and lacking transparency. The agency would assess the creditworthiness of sovereign nations, corporations, and other entities within the member countries.
8. **Discussions on Global Economic Governance:** The summit discussed global economic governance and the need to reform international financial institutions such as the World Bank and the IMF⁹. The leaders emphasised the importance of greater representation and voice for emerging economies in these institutions and called for a more democratic and transparent global economic governance framework.

The 2016 BRICS summit was instrumental in fostering greater economic cooperation among the member nations. Adopting the BRICS Action Plan on Economic Cooperation established a comprehensive framework for advancing economic cooperation and lowering trade barriers—taxation and customs cooperation agreements to reduce trade barriers and foster investment flows. The introduction of the BRICS Agriculture Research Platform aimed to advance agricultural research and development, while discussions on the NDB highlighted the need to increase its lending capacity and membership. The importance of innovation and technological cooperation in driving economic development was highlighted by the emphasis on these topics. The focus on green growth and sustainable development highlighted the necessity of promoting environmentally sustainable and socially

⁹ International Monetary Fund

inclusive economic growth. The establishment of the BRICS CRA¹⁰ offered a substitute for Western credit rating agencies. Discussions on global economic governance highlighted the necessity of reforming international financial institutions and increasing emergent economies' representation.

4.8 BRICS Summit of 2017

The 2017 BRICS Summit in Xiamen, China, was another significant event in the integration process or evolution of BRICS, particularly regarding its economic outcomes. Here are some of the key economic outcomes of the summit and their significance:

1. **Establishment of the BRICS Economic Partnership:** The summit saw the establishment of the BRICS Economic Partnership, which aimed to enhance trade and investment cooperation among the member countries. The partnership aimed to facilitate trade and investment flows, reduce trade barriers, and promote the development of the digital economy and e-commerce.
2. **BRICS Credit Rating Agency:** The summit saw the empowerment of Credit Rating Agency, which aimed to provide an alternative to Western-dominated rating agencies. The agency was established to provide a more balanced and fair assessment of credit risk in emerging markets and reduce their dependence on external sources of financing.
3. **Establishment of the BRICS Local Currency Bond Fund:** The summit saw the establishment of the BRICS Local Currency Bond Fund, which aimed to promote greater use of local currencies in trade and investment among the member countries. The fund aimed to provide financing for infrastructure and sustainable development

¹⁰ Credit Rating Agency

projects denominated in local currencies, reducing the dependence of the member countries on external sources of financing.

4. **Discussions on Enhancing Financial Cooperation:** The summit saw discussions on enhancing financial cooperation among the member countries, including the possibility of establishing a BRICS financial institution. The leaders recognised the importance of strengthening financial cooperation and reducing the volatility of financial markets.
5. **Discussions on Belt and Road Initiative:** The summit discussed China's BRI¹¹ and its potential to drive economic growth and connectivity among the member countries. The leaders recognised the importance of infrastructure development and connectivity in promoting economic growth and discussed ways to increase cooperation in this field.
6. **Emphasis on Innovation and Entrepreneurship:** The summit emphasised the importance of innovation and entrepreneurship in driving economic growth and development. The leaders recognised the need to promote innovation and entrepreneurship in their respective countries and discussed ways to increase cooperation in this field.
7. **Agreement on Agricultural Cooperation:** The summit saw the signing of an agreement on agricultural cooperation among the member countries. The agreement aimed to promote sustainable agriculture and rural development, reduce poverty, and enhance food security.
8. **Emphasis on Infrastructure Financing:** The summit emphasised the importance of infrastructure financing for economic development. The leaders recognised the need

¹¹ Belt and Road Initiative

to increase investment in infrastructure projects and discussed ways to enhance infrastructure financing, including through the NDB and the BRICS CRA.

9. **Emphasis on Green Development:** The summit emphasised the importance of green development and sustainable growth. The leaders recognised the need to promote environmental protection and reduce carbon emissions. They also discussed ways to increase cooperation in clean energy and green technology.

The 2017 BRICS summit substantially fostered increased economic collaboration among its constituent nations. The primary objective of the BRICS Economic Partnership is to augment trade, and investment flows while promoting the growth of the digital economy. The establishment of the BRICS CRA¹² was intended to offer a more honest evaluation of credit risk in developing economies and diminish their reliance on external financing sources. The primary objective of the BRICS Local Currency Bond Fund was to encourage the adoption of local currencies in trade and investment, thereby mitigating the reliance of member nations on external financing sources. Conversations about the augmentation of financial collaboration were directed towards mitigating financial market volatility and reinforcing economic cooperation amongst member nations. Conversations surrounding China's BRI¹³ have underscored the possibility of utilising infrastructure expansion and interconnectivity as catalysts for bolstering economic advancement. The agricultural cooperation agreement was established to advance sustainable agriculture, mitigate poverty, and augment food security. The significance of fostering innovation and entrepreneurship has been underscored to propel economic expansion and advancement. The emphasis on infrastructure financing highlighted the importance of infrastructure investment for economic

¹² Credit Rating Agency

¹³ Belt and Road Initiative

development. The prioritisation of green development has underscored the significance of pursuing sustainable economic expansion while safeguarding the environment.

4.9 BRICS Summit of 2019

The 2019 BRICS Summit was held in Brasília, Brazil, and was another significant event in the integration process or evolution of BRICS. The summit focused on economic cooperation and development among the member countries and highlighted the importance of promoting inclusive growth and sustainable development. Here are some of the key economic outcomes of the summit and their significance:

1. **Discussions on Multilateralism and Trade:** The summit discussed the importance of multilateralism and free trade. The leaders emphasised the need to uphold the rules-based multilateral trading system and resist protectionism. They also expressed support for the WTO¹⁴ reform to make it more effective and responsive to the needs of developing countries.
2. **Agreement on the BRICS NDB¹⁵ Expansion:** The summit saw the agreement on expanding the BRICS NDB by opening regional offices in member countries. The expansion aimed to increase the bank's presence in member countries and promote greater economic cooperation.
3. **Emphasis on Digital Economy:** The summit emphasised the importance of the digital economy and its potential to drive economic growth and innovation. The leaders recognised the need to promote digital literacy and infrastructure in their

¹⁴ World Trade Organization

¹⁵ New Development Bank

respective countries and discussed ways to increase information and communication technology cooperation.

4. **Discussions on Energy and Climate Change:** The summit discussed energy and climate change and the need to promote sustainable development. The leaders emphasised the importance of promoting renewable energy sources and reducing carbon emissions. They also discussed ways to increase cooperation in the field of clean energy.
5. **Discussions on BRICS Payment System:** The leaders of the member countries discussed the possibility of setting up a BRICS Payment System to facilitate cross-border transactions among the member countries. The system would reduce the dependence of the member countries on Western-dominated payment systems and enhance their financial cooperation.
6. **Agreement on the BRICS Innovation Network:** The summit saw the signing of the BRICS Innovation Network, which aimed at promoting innovation and technology cooperation among the member countries. The network aimed to facilitate the exchange of knowledge, experience, and best practices in science, technology, and innovation. The agreement also included the establishment of a BRICS Virtual Tech Incubator to promote entrepreneurship and innovation.
7. **Discussions on Free Trade Agreements:** The summit saw discussions on FTAs¹⁶ among the member countries. The leaders recognised the need to enhance economic cooperation by establishing FTAs and reducing trade barriers. The discussions aimed to boost intra-BRICS trade and investment.

¹⁶ Free Trade Agreements

8. **Agreement on the BRICS Partnership on New Industrial Revolution:** The summit saw the signing of the BRICS Partnership on New Industrial Revolution, which aimed at promoting cooperation among the member countries in AI¹⁷, 5G, and other emerging technologies. The partnership aimed to foster technological innovation and enhance the industrial competitiveness of the member countries.

9. **Establishment of BRICS Women's Business Alliance:** The summit saw the establishment of the BRICS Women's Business Alliance, which aimed at promoting women's entrepreneurship and economic empowerment in the member countries. The alliance aims to provide a forum for women entrepreneurs to exchange ideas and experiences and improve their access to financial support and markets.

The 2019 BRICS summit held considerable importance in advancing enhanced economic cooperation and progress among the member nations. The discourse associated with multilateralism and trade has reaffirmed the significance of free trade and the multilateral trading system based on established regulations. The NDB's expansion aimed to enhance the bank's presence in its member nations and promote increased economic cooperation. The increased focus on the digital economy has demonstrated the potential for innovation and economic expansion within this domain. Discussions related to energy and climate change have emphasised the significance of sustainable development and the mitigation of carbon emissions. The discourse regarding the BRICS Payment System is centred on mitigating member nations' reliance on payment systems dominated by Western entities while enhancing their financial cooperation. The BRICS Innovation Network agreement resulted in cooperation in innovation and technology. The discourse surrounding

¹⁷ Artificial Intelligence

FTAs¹⁸ focuses on mitigating trade obstacles and improving intra-BRICS trade and investment. The BRICS Partnership on New Industrial Revolution was signed to foster technological innovation and enhance the member nations' competitiveness. The primary objective of the BRICS Women's Business Alliance is to facilitate the advancement of women's entrepreneurship and economic empowerment within the member nations.

4.10 BRICS Summit of 2020

The 2020 BRICS Summit was held virtually due to the COVID-19 pandemic and focused on the "BRICS Partnership for Global Stability, Shared Security and Innovative Growth." The summit had several significant economic outcomes, which are discussed below in the context of the integration process or evolution of BRICS:

1. **Strengthening of Economic Cooperation:** The summit saw the BRICS leaders reaffirm their commitment to strengthening economic cooperation among member countries, particularly in trade, investment, and finance. They emphasised the importance of a rules-based, transparent, non-discriminatory, open, and inclusive multilateral trading system and called for reform and strengthening the WTO.
2. **Promotion of Inclusive Growth:** The summit emphasised the importance of promoting inclusive growth and sustainable development in the BRICS countries. The leaders discussed measures to promote financial inclusion, reduce income inequality, and provide universal access to quality education and healthcare.
3. **Innovation and Technology Cooperation:** The summit highlighted the importance of innovation and technology cooperation among the BRICS countries. The leaders

¹⁸ Free Trade Agreements

discussed ways to enhance cooperation in emerging technologies such as 5G, AI¹⁹, and quantum computing. They agreed to establish a BRICS Innovation Network and a BRICS Technology Transfer Platform.

4. **COVID-19 Response:** The summit also focused on the economic impact of the COVID-19 pandemic and the need for a coordinated response to mitigate its effects. The leaders discussed measures to strengthen healthcare systems, support small and medium-sized enterprises, and promote digital solutions for economic recovery.
5. **Discussions on Economic Recovery:** The summit focused on the economic recovery efforts of the member countries in the wake of the pandemic. The leaders emphasised the need to promote economic growth and employment and discussed ways to increase investment and trade among the member countries.
6. **Agreement on CRA²⁰ Framework:** The leaders of the BRICS countries approved the framework of the CRA, which aimed at strengthening the financial stability of the member countries. The CRA framework was designed to provide short-term liquidity support to the member countries in case of balance-of-payments difficulties.
7. **Discussions on Food Security:** The summit saw discussions on food security and the need to ensure access to safe, nutritious, and affordable food for all. The leaders emphasised the importance of promoting sustainable agriculture and reducing food waste and loss.
8. **Role of BRICS NDB²¹:** The summit emphasised the role of the BRICS NDB in supporting infrastructure development and sustainable growth in the member countries. The leaders discussed ways to enhance the bank's lending capacity and

¹⁹ Artificial Intelligence

²⁰ Contingent Reserve Arrangement

²¹ New Development Bank

increase its focus on projects that promote sustainable development and climate resilience.

9. **Digital Economy:** The summit recognised the importance of the digital economy and discussed ways to promote cooperation in this field. The leaders emphasised the need to enhance digital infrastructure, promote digital literacy, and increase cooperation in e-commerce, digital payments, and cyber security.
10. **Cooperation in Health Sector:** The summit saw discussions on increasing cooperation in the health sector among the member countries. The leaders emphasised the importance of strengthening healthcare systems and increasing access to affordable healthcare. They also discussed the need for more investment in research and development in medicine.
11. **Promoting Investment and Trade:** The leaders emphasised the need to promote investment and trade among the member countries. They discussed various initiatives to increase economic cooperation, including the BRICS Innovation Fund, the BRICS Partnership on New Industrial Revolution, and the BRICS Agriculture Research Platform. They also emphasised the need to promote sustainable development and green growth.
12. **Financial Cooperation:** The summit discussed increasing financial cooperation among the member countries. The leaders emphasised the need to promote the use of national currencies in trade and investment and to increase cooperation in the field of finance, including developing a BRICS Payment System.

13. **Agreement on BRICS Vaccine R&D²²**: The summit saw the signing of an agreement on vaccine research and development among the BRICS countries. The agreement sought collaboration in developing vaccines and other medical items to combat COVID-19 and other diseases.
14. **Sustainable Development**: The leaders emphasised the importance of promoting sustainable development and addressing climate change. They discussed the need for policies and investments that support renewable energy, energy efficiency, and low-carbon development. They also highlighted the potential of green finance to support sustainable development.
15. **Discussions on International Financial Architecture**: The summit saw discussions on the need to reform international financial architecture to make it more responsive to the needs of developing countries. The leaders emphasised the need for greater representation and voice for developing countries in international financial institutions such as the IMF²³ and the World Bank.

The 2020 BRICS Summit was crucial in fostering economic cooperation and development among member nations, especially considering the COVID-19 pandemic. The summit emphasised the importance of a rules-based, transparent, and inclusive multilateral trade system and the necessity for WTO reform and strengthening. The emphasis on boosting inclusive growth, innovation, and technological cooperation, as well as the COVID-19 response, were significant accomplishments that demonstrated the BRICS countries' commitment to working together to achieve shared economic prosperity and stability. Economic recovery discussions emphasised the importance of promoting economic growth and jobs, while the CRA framework attempted to strengthen member nations'

²² Research and Development

²³ International Monetary Fund

financial strength. Food security discussions emphasised the significance of sustainable agriculture and universal access to nutritious food. The role of the BRICS NDB²⁴ in promoting infrastructure development and sustainable growth is highlighted. Discussions about the digital economy emphasised the field's potential for innovation and economic progress. The health sector and investment and trade measures are highlighted to foster sustainable development and green growth. Initiatives for financial cooperation aimed at increasing financial collaboration and supporting the use of national currencies in trade and investment. Discussions on vaccine research and development marked the possibility for member countries to cooperate to meet the pandemic's difficulties. The emphasis on sustainable development highlighted the importance of addressing climate change and promoting green finance. Discussions on international financial architecture emphasised the importance of developing countries' more vital voices in global economic governance.

4.11 BRICS Summit of 2021

The 13th BRICS Summit was held virtually on September 9, 2021, with the theme "BRICS@15: Intra-BRICS Cooperation for Continuity, Consolidation, and Consensus". The summit had several significant economic outcomes, which are discussed below in the context of the integration process or evolution of BRICS:

1. **Cooperation on COVID-19 Response:** The leaders of the BRICS countries discussed cooperation in vaccine development, production, and distribution, as well as access to affordable and equitable vaccines. They also discussed the importance of sharing information and best practices to combat the pandemic and its economic impact.

²⁴ New Development Bank

2. **Economic Recovery:** The summit emphasised the need for coordinated efforts to promote economic recovery and growth in the BRICS countries. The leaders discussed measures to strengthen economic resilience, including investment in infrastructure, green and sustainable development, and the digital economy.
3. **Trade and Investment:** The summit emphasised the importance of trade and investment among the BRICS countries, particularly in the context of the post-pandemic economic recovery. The leaders discussed measures to reduce trade barriers, increase investment flows, and promote a more open and inclusive multilateral trading system.
4. **Financial Cooperation:** The leaders discussed measures to enhance financial cooperation among the BRICS countries, including establishing a BRICS Bond Fund and a BRICS Payments System. They also emphasised the need to reform the global financial architecture to better reflect the interests of emerging economies.
5. **Innovation and Technology Cooperation:** The leaders emphasised the importance of innovation and technology cooperation among the BRICS countries, particularly in 5G, AI²⁵, and digitalisation. They discussed measures to enhance cooperation in these areas, including establishing a BRICS Digital Health Platform and a BRICS Innovation Challenge.
6. **Enhancing Economic Cooperation:** The BRICS leaders reaffirmed their commitment to enhancing economic cooperation and achieving more balanced and inclusive economic growth. They emphasised the need for enhancing trade, investment, finance, and connectivity cooperation and discussed ways to expand intra-BRICS trade and investment further.

²⁵ Artificial Intelligence

7. **Addressing Climate Change:** The summit highlighted the importance of addressing climate change and achieving sustainable development. The leaders discussed measures to enhance cooperation in renewable energy, green finance, and sustainable agriculture and reaffirmed their commitment to implement the Paris Agreement.
8. **BRICS Infrastructure Partnership:** The summit saw the launch of the BRICS Infrastructure Partnership, which aims to promote infrastructure development in member countries. The partnership will focus on developing sustainable and resilient infrastructure, including digital infrastructure, and facilitate investment and financing in infrastructure projects.
9. **BRICS Vaccine R&D²⁶ Center:** The summit also announced the establishment of a BRICS Vaccine R&D Center, which aims to promote vaccine research and development among the member countries. The centre will also facilitate sharing of expertise and knowledge and contribute to global efforts to combat the COVID-19 pandemic.
10. **Strengthening Multilateralism:** The summit emphasised the need for a strong and effective multilateral system to address global challenges. The leaders discussed the importance of reforming multilateral institutions such as the UN²⁷, the WTO²⁸, and the WHO²⁹ to make them more inclusive and effective.
11. **Cooperation in Emerging Technologies:** The summit emphasised the importance of cooperation in emerging technologies such as AI³⁰, 5G, and quantum computing. The leaders discussed the need to enhance cooperation in these areas while ensuring that these technologies are used for the benefit of all.

²⁶ Research and Development

²⁷ United Nations

²⁸ World Trade Organization

²⁹ World Health Organization

³⁰ artificial intelligence

- 12. Cooperation in Energy and Infrastructure:** The summit highlighted the importance of cooperation in energy and infrastructure, particularly in promoting sustainable development. The leaders discussed measures to enhance cooperation in these areas, including through the BRICS NDB³¹ and the CRA³².
- 13. Digital Transformation:** The summit highlighted the importance of digital transformation and the digital economy in promoting economic growth and development. The leaders discussed measures to promote digital innovation, facilitate digital trade and investment, and enhance cyber security cooperation among the BRICS countries.
- 14. Green Economy:** The summit also emphasised the need for the BRICS countries to transition towards a more sustainable and environmentally-friendly economy. The leaders discussed measures to promote renewable energy, reduce carbon emissions, and enhance climate change and environmental protection cooperation.
- 15. Global Governance:** The summit discussed global governance and the role of the BRICS countries in promoting a more democratic, equitable, and representative international order. The leaders emphasised the need for greater representation of emerging economies in global governance institutions. They called for the reform and strengthening of the UN, the WHO, and the WTO.

The 2021 BRICS Summit played a crucial role in encouraging economic cooperation and advancement among its member nations, particularly emphasising the COVID-19 pandemic's impact. The prioritisation of working together in vaccine development and economic recovery, alongside the facilitation of trade, investment, and financial cooperation, illustrates the dedication of the BRICS nations to pursue mutual economic well-

³¹ New Development Bank

³² Contingent Reserve Arrangement

being and steadiness jointly. The emphasis on innovation and technology cooperation is a crucial aspect that points out the potential of the BRICS nations to take the lead in emerging economic growth and development domains. The summit was pivotal in advancing economic cooperation and tackling climate change within the member nations. The inauguration of the BRICS Infrastructure Partnership and the establishment of the BRICS Vaccine R&D³³ Centre were significant achievements, demonstrating the BRICS nations' dedication and cooperation towards mutual economic growth and stability. The summit stated the importance of an effective and efficient multilateral framework to tackle worldwide issues, cooperation in growing technologies, as well as in energy and infrastructure. The summit greatly emphasised the value of digital transformation and the green economy. The outcome of the meeting emphasised the BRICS countries' dedication to advancing a more just and inclusive global order by implementing a non-discriminatory and rules-based global governance reform.

4.12 BRICS Summit of 2022

In June 2022, the leaders of BRICS convened virtually for the 14th BRICS Summit under the chairmanship of China. The summit was held under the theme "Foster High-quality BRICS Partnership, Usher in a New Era for Global Development" and aimed to promote cooperation between the five countries in areas such as global governance, COVID-19 response, peace and security, economic recovery, sustainable development, people-to-people exchanges and institutional development. In the face of the ongoing COVID-19 pandemic and its impact on the global economy, the BRICS leaders emphasised the importance of economic integration among their countries and the need to deepen cooperation to achieve common development goals. The summit had several significant economic outcomes, which

³³ Research and Development

are discussed below under the following subheadings and also in the context of the integration process or evolution of BRICS:

1. Strengthening and Reforming Global Governance:

- BRICS members emphasised the importance of multilateralism and reforming global governance institutions better to reflect the interests of emerging markets and developing countries.
- They called for greater representation of developing countries in international financial institutions and urged the IMF to accelerate the implementation of the 2010 governance reform.
- BRICS members reiterated their support for the World Trade Organization and called for its reform to make it more responsive to the needs of developing countries.
- They also expressed their commitment to enhancing cooperation in the digital economy, climate change, energy, and international peace and security.

2. Working in Solidarity to Combat COVID-19:

- BRICS members recognised the ongoing challenges posed by the COVID-19 pandemic and emphasised the need for global solidarity and cooperation to overcome the crisis.
- They called for equitable and affordable access to all countries' vaccines, diagnostics, and therapeutics.
- BRICS members also pledged to support the WHO³⁴ and other international organisations in their efforts to combat the pandemic.

3. Safeguarding Peace and Security:

³⁴ World Health Organization

- BRICS members reiterated their commitment to upholding international law, promoting the peaceful settlement of disputes, and maintaining regional and global peace and security.
- They expressed concern over the continued presence of terrorism and called for greater international cooperation in combating it.
- BRICS members also called for the peaceful resolution of conflicts in various regions, including the Middle East and Afghanistan.

4. Promoting Economic Recovery:

- BRICS members emphasised the importance of economic recovery and growth after the COVID-19 pandemic.
- They pledged to work together to promote sustainable and inclusive economic development, increase trade and investment, and enhance economic cooperation and connectivity.
- BRICS members supported the BRI³⁵ and the African Continental FTA³⁶.

5. Expediting Implementation of the 2030 Agenda for Sustainable Development:

- BRICS members reaffirmed their commitment to the 2030 Agenda for Sustainable Development and called for its expedited implementation.
- They emphasised the importance of promoting sustainable development, including using clean energy and technology, and called for increased investment in sustainable infrastructure.

³⁵ Belt and Road Initiative

³⁶ Free Trade Area

- BRICS members also expressed their support for the Paris Agreement on climate change.

6. Deepening People-to-People Exchanges:

- BRICS members recognised the importance of people-to-people exchanges in promoting mutual understanding and cooperation.
- They pledged to enhance exchanges in various fields, including culture, education, sports, media, and civil society.
- BRICS members also expressed support for youth development and encouraged strengthened exchanges among BRICS youth.

7. Institutional Development:

- BRICS members noted the progress made in BRICS institutional development and stressed the need to keep abreast with the times.
- They supported the extension of BRICS cooperation to other emerging markets and developing countries through the BRICS Outreach and BRICS Plus Cooperation.
- BRICS members also expressed support for promoting discussions among BRICS members on the expansion process, emphasising the need for full consultation and consensus.

The 2022 BRICS Summit concluded by emphasising the significance of economic integration within its member nations, acknowledging the possibility of cooperation in accelerating economic progress and advancement. The leaders emphasised the necessity of advancing economic recovery, accelerating the execution of the 2030 Agenda for Sustainable Development, and enhancing friendships exchanges. They also recognised institutional development's importance and endeavoured to expand cooperation to other emerging

economies and developing nations. The BRICS nations reiterated their dedication to equitable, comprehensive, and unbiased practices concerning sports, civil society, and media interactions. The Beijing Declaration of 2022 affirmed the group's commitment to enhancing and restructuring worldwide governance, preserving peace and security, and cooperating in solidarity to combat the COVID-19 pandemic. The BRICS alliance is currently experiencing growth and development, with its constituent nations prioritising the expansion of cooperation, the establishment of the agreement, and cultivating a mutual appreciation for the economic and cultural differences among them.

4.13 Conclusion

The chapter 4 has examined the successive summits of BRICS with a particular focus on the changes made in the successive summits to foster economic integration. It has been shown that while these summits propose to enhance economic integration via trade creation and diversion, as well as through trade openness and deepening, the true impact of these proposals on economic integration must be validated through trade data findings.

As discussed, initiatives such as creating the BRICS Development Bank and establishing the CRA can potentially increase trade creation and diversion among member countries. At the same time, measures such as reducing trade barriers and promoting investment can foster greater trade openness and deepening. However, the success of these initiatives in promoting economic integration can only be fully understood through an analysis of actual trade data.

Therefore, the next chapter will empirically analyse the trade data between India and other BRICS member countries to assess the impact of successive summits on economic integration. By examining trade patterns, trade flows, and trade intensity, the next chapter

will provide a comprehensive evaluation of the effectiveness of the initiatives proposed in the successive summits in promoting economic integration between India and other member countries of BRICS in the form of trade openness and deepening.

Why Trade Creation and Diversion of India with Each Member Country of BRICS?

5.1 Introduction

The successive summits of the BRICS group have been organised to achieve greater economic cooperation and integration among member countries. Over the years, the group has held successive summits to promote greater trade openness and deepening among member countries. However, while there has been much discussion of the benefits of increased economic integration among BRICS countries, there is a need to empirically evaluate the extent to which these efforts have translated into actual trade patterns.

This chapter aims to investigate the extent to which economic integration efforts among BRICS member countries have resulted in greater trade openness and deepening for India with each country of BRICS. Specifically, this chapter will examine how much India's trade with each member country of BRICS has increased over time and whether this increase can be attributed to trade openness and deepening.

The chapter will analyse empirical trade data to determine how previous summits have affected India's trade with each of the BRICS nations. This will involve an analysis of

trade flows, trade patterns, and trade intensity between India and each of the other BRICS member countries. By examining these trade data findings, this chapter provides a comprehensive evaluation of the effectiveness of the initiatives proposed in the successive summits in promoting economic integration among BRICS member countries, with a particular focus on India's trade openness and deepening effects.

As a whole, this chapter will provide valuable insights into the extent to which economic integration efforts have successfully promoted greater trade openness and deepening among India and each member country of BRICS and will contribute to a deeper understanding of the economic dynamics within the BRICS group.

5.2 Learning from the EU: The Significance of Institutional Integration

The EU¹ is widely regarded as a successful example of regional integration in both economic and political dimensions. The integration process of the EU began in 1958 and has undergone various stages since then. According to Mongelli (2002), institutional integration can be defined as the policy decisions made by multiple governments of countries within the same region to promote economic cooperation by strengthening or expanding the scope of collaboration under jointly agreed-upon regulations. These regulations may range from intergovernmental agreements on sectoral cooperation to economic and monetary unions. From an economic perspective, institutional integration can be characterised by the degree of interdependence of economic activity between two or more countries located in the same geographical area at a specific time. Economic activity encompasses tangible aspects of an economy, such as trade and labour mobility, and intangible aspects, such as financial flows and exchange rate fluctuations.

¹ European Union

By Dorrucii et al. (2002; 2005), various indicators of institutional integration (index) were presented. According to Balassa's (1961) contribution, the indicators were categorised into the following five primary phases of regional integration:

- Stage 1: FTA² – An area where tariffs and quotas are abolished for imports from the members, but imposing tariffs and quotas against third countries. European Economic Community since 1957 is considered an example of FTA.
- Stage 2: CU³–A FTA levying standard tariffs and quotas for trade on non-members. European Economic Community since 1968 is an example.
- Stage 3: CM⁴ – It is a CU abolishing non-tariff trade barriers and restrictions on factor movement. An example is the European Community since 1993 (with the establishment of the European Single Market).
- Stage 4: EUN⁵ – It is CM with a significant degree of harmonisation of national economic policies.
- Stage 5: TEI⁶ – It is a EUN where all relevant economic policies are instituted at the supranational level. Moreover, it is identified by a common currency. An example is the euro which is a common currency for European Union.

Concerning above mentioned institutional integration stages, it is necessary to check the stages wherein India and BRICS members cross subsequently, which is analysed below.

² Free Trade Area

³ Custom Union

⁴ Common Market

⁵ Economic Union

⁶ Total Economic Integration

5.3 India-Brazil

The first institutional score between India and Brazil is given here under:

Table 5.3.1: India-Brazil Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2003	5		5	India-Brazil agreement on RTA
2004	5		10	A full-fledged bilateral trade agreement signed
2005	5		15	Important annexure signed
2006	2		17	The first informal meeting
2007			17	
2008	2		19	Foreign Ministers 'Meeting among BRICS
2009	10		29	RTA become operational
2010	5		34	Expansion of agreements & BRICS meeting
2011	2		36	Expansion of Economic activities among BRICS
2012	2		38	Agreement on enhancing trade
2013	1		39	Annual meeting trade
2014				
2015	2		41	Agreement on customs among members
2016	3		44	Agreement on Reducing Non-Tariff Measures
2017	2		46	Agreements on many areas of Trade
2018				
2019	1	1	46	Regular Meetings but Pressure of USA on BRICS
2020	2	3	45	Regular Meetings & Impact of COVID
2021	0		45	Reports on the meeting awaited

Source: Scholar's own construction based on the allocation pattern of Institutional Score used by Mongelli et al.

- A Framework Agreement was signed between India and MERCOSUR⁷ on 17 June 2003 (Score 5) at Asuncion, Paraguay, to create conditions and mechanisms for negotiations by granting reciprocal tariff preferences in the first stage and, in the second stage, to negotiate a free trade area between the two parties.
- As a follow-up to the Framework Agreement, a PTA⁸ between India and MERCOSUR was signed in New Delhi on 25 January 2004 (score 5).
- Five annexes of the agreement were signed and incorporated on 19 March 2005. The first two annexes of the PTA were related to the list of products on which the two sides agreed

⁷ Mercado Común del Sur(MERCOSUR) is a Spanish abbreviation which stands for the South American trade bloc established by the Treaty of Asunción in 1991.

⁸ Preferential trade arrangements.

to give each other fixed tariff preferences. The remaining three Annexes relate to the Rules of Origin, Preferential Safeguard Measures and Dispute Settlement Procedures (score 5).

- Score 2 has been given when the first informal meeting was held between India and Brazil in 2006.
- Score 2 has been given when the first informal meeting was held among BRICS in 2008.
- The first meeting of the JAC⁹ on India-MERCOSUR PTA was held in November 2009 in Uruguay to discuss the various aspects of the implementation and expansion of the agreement (score 10).
- The 2nd meeting of JAC on India-MERCOSUR PTA was held in June 2010, in which both sides exchanged their respective wishlist of additional items for expansion of the PTA and discussed the other modalities of expansion of the PTA, including the exchange of their initial offers lists in the matter (score 5).
- A meeting was on expanding Economic activities among BRICS (score 2). In that meeting, proposals for surveying possible economic sectors were made to foster economic activities.
- There were agreements on enhancing trade among BRICS (score 2). After identifying sectors for cooperation, trade was put forward to increase the present bilateral relations.
- An annual meeting was held on trade in 2013 with regular discussion and monitoring of the ongoing agreement (score 1).
- Agreement on customs among members in 2015 (score 2). The meeting was vital since it proposed preferential trade on a broader range for both India and other members. The meeting also proposed further dialogue on commonly agreed tariff rates in future.
- Agreement on reducing Non-Tariff Measures took place in 2016 (score 3). The meeting discussed the present non-tariff measures in different forms that hampered bilateral trade.
- Regular meetings occurred among BRICS (score 1) in 2019, but the USA's pressure on

⁹ Joint Administrative Committee

BRICS depreciated score 1.

The regular meeting was held in 2020 (score 2). However, the Impact of COVID reduced bilateral trade flows among members, which caused depreciation (score 3).

5.4 India-Russia

Table 5.4.1: India-Russia Institutional Score

Year	Scores	Depreciation	Cumulative	Details of agreements
2000	5		5	Signing strategic partnership
2001			5	
2002			5	
2003			5	
2004			5	
2005			5	
2006	2		7	The first informal meeting
2007	5		12	Indo-Russian Forum on Trade and Investment
2008	2		14	Foreign Ministers 'Meeting among BRICS
2009	2		16	Agreement on enhancing trade
2010	5		21	Expansion of agreements & BRICS meeting
2011	2		23	Expansion of economic activities among BRICS
2012	2		25	Indo- Russian Forum on Trade and Investment
2013	1		26	Annual meeting trade
2014				
2015	2		28	Agreement on customs among members
2016	3		31	Agreement on Reducing Non-Tariff Measures
2017	2		33	Agreements on many areas of trade
2018				
2019	1	1	33	Regular Meetings but Pressure of USA on India
2020	2	3	32	Regular Meetings & Impact of COVID
2021				Reports unavailable

Source: Scholar's own construction based on the allocation pattern of Institutional Score used by Mongelli et al.

- In 2000 India and Russia signed a strategic partnership in defense, science & technology, trade, and many sectors (Score5) assigned.
- In 2006, an informal meeting was held in many areas where both countries should agree (score 2).

- Indo-Russian Forum on Trade and Investment was established in 2007 to promote direct bilateral business-to-business contacts (Score5).
- In 2008 Foreign Ministers of BRICS met to identify areas of trade and mechanisms to foster it (score 2).
- In 2009 India and Russia signed deals which would enhance bilateral trade as agreed in the previous years (score 2).
- In 2010, the ministers of BRICS held a meeting. Alongside it, India and Russia signed treaties on enhancing trade in many more areas (score 5).
- In 2011, 2012 and 2013, India and Russia discussed many areas of bilateral trade and pursued the expansion of trade among BRICS.
- In 2015, both countries signed an agreement on customs levied on wide-ranging trade items per BRICS agreements (score2).
- In 2016, both countries signed agreements on reducing Non-Tariff Measures, which had been obstacles to bilateral trade (score 3).
- In 2017, a discussion on different trade areas took place (score 2).
- In 2019, both countries had regular meetings (score 1). However, the pressure of the USA on India depreciated a score of 1.

In 2020, along with ministers of BRICS, India and Russia had an elaborate meeting on strengthening bilateral trade (score2). The outbreak of COVID-19 reduced trade which led to depreciation (score 3).

5.5 India-China

Table 5.5.1: India-China Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2003	7		7	Setting up Joint Study Group for preferential tariff
2004	2		9	Implementation stage
2005	2		11	Implementation stage
2006	2		13	Implementation stage
2007	5		18	Signing Regional Trade Agreement
2008	2		20	India-China trade and investments summit kicks off, and the BRICS meeting
2009	2		22	Agreement on enhancing trade
2010	2		24	Expansion of trade-related issues among BRICS
2011			24	
2012			24	
2013			24	
2014	5		29	Formation of AIIB
2015	2		31	Agreement on Customs Union among BRICS
2016	3		34	Agreement on Non-Tariff Measures
2017	2		36	Many areas of trade signed among BRICS
2018			36	
2019	1	2	35	Regular meetings but USA pressure on bilateral trade
2020	2	3	34	Agreement of better investment but the impact of COVID
2021				No Concrete agreement

Source: Scholar's own construction based on the allocation pattern of Institutional Score used by Mongelli et al.

The two economic heavyweights of Asia are currently moving forward in their interaction with there to the globe at a fantastic pace. In contrast, the relationship was at its lowest point early in the 1960s, and later both countries experienced their fair share of ups and downs in the following years. Below are descriptions of the accords and stages of institutional integration (primarily trade-oriented). Identification of the shared trade interests was made possible by the dialogue process that the governments of the two nations had started at that time. Efforts were made to fully utilise the economic advantages of both China and India to enhance their economic ties.

- A joint Study Group was established by China and India in 2003 to look into more advantageous trade deals. The Bangkok agreement was later inked to provide trade

preferences on bilateral commerce. Two hundred and seventeenth items exported from India received tariff favours from India. Both nations agreed in 2003 that allowed open border trade along the Silk Road (scoring 7).

- From 2004 till 2006, there has been an implementation framework for preferential treatment; hence, a score of 2 has been allotted yearly.
- The Joint Task Force's final report on the potential for an RTA¹⁰ between China and India was completed in October 2007. The report states that both countries will benefit equally from the RTA. Both parties welcomed the successful conclusion of the RTA analysis. They strengthened the process of starting regular discussions on an RTA that meets both countries' expectations (scoring 5).
- 2008 saw the beginning of the China-India Economic, Trade, and Investment Co-op Summit.
- From 2008 to 2010, both nations discovered potential markets for trade and mutually cut tariff rates (each year, a score of 2 was given).
- The AIIB¹¹ and BRICS Bank were established in 2014, and the leading members included South Africa, Brazil, Russia, India, and China (scoring 5).
- In 2015 there was agreement on the customs union among BRICS members (score 2).
- In 2016, members signed agreements on reducing Non-Tariff Barriers (score 3).
- In 2017 many areas on bilateral trade were signed among members (score 2).
- Regular meetings took place in 2019 (score 1). However, the USA put pressure on India for trading partners with Russia, which was economically sanctioned by the former (depreciated score 2).

¹⁰ Regional Trading Agreement

¹¹ Asian Infrastructure Investment Bank

In 2020, there was agreement on more extensive investments in many areas (score 2). However, COVID-19 reduced bilateral trade tremendously (depreciated score 3).

5.6 India-South Africa

Table 5.6.1: India-South Africa Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2003	2		2	Joint Ministerial Dialogue
2004	2		4	Joint Ministerial Dialogue
2005	2		6	Joint Ministerial Dialogue
2006	2		8	The first informal meeting
2007	5		13	India-South Africa agreement on RTA
2008	2		15	Foreign Ministers' Meeting among BRICS
2009			15	
2010	5		20	Expansion of agreements & BRICS meeting
2011	2		22	Expansion of economic activities among BRICS
2012	2		24	Agreement on enhancing trade
2013	1		25	Annual meeting trade
2014				
2015	2		27	Agreement on customs among members
2016	3		30	Agreement on Reducing Non-Tariff Measures
2017	2		32	Agreements on many areas of Trade
2018				
2019	1		33	Regular Meeting on BRICS
2020	2	3	32	Regular Meetings & Impact of COVID
2021				Reports awaiting

Source: Scholar's own construction based on the allocation pattern of Institutional Score used by Mongelli et al.

- South Africa has been actively involved in forming BRICS since the beginning. In 2003, 2004, 2005 and 2006, both countries participated in the joint ministerial dialogues at BRICS summits (score 2 given each mentioned year).
- In 2007, the India-South Africa Agreement on RTA¹² was signed to intensify bilateral trade (score 5).
- In 2008 Foreign Ministers' Meeting among BRICS members was held (score 2).

¹² Regional Trade Agreement

- In 2011, 2012 and 2013, there were meetings on the expansion and enhancing trade.
- In 2015, both countries signed an agreement on customs as per BRICS agreements (score2).
- In 2016 both countries signed agreements on reducing Non-Tariff Measures, which had been obstacles to bilateral trade (score 3).
 - In 2017, a discussion on further areas of trade took place (score 2).
- In 2019, both countries had regular meetings (score 1).
- In 2020, along with ministers of BRICS, India and South Africa had an elaborate meeting on strengthening bilateral trade (score 2). The outbreak of COVID-19 reduced trade which led to depreciation (score 3).

The above-given institutional scores of India's bilateral trade with members of BRICS should be incorporating Trade Openness and Deepening values. The mathematical measurement of Trade Openness and Trade Deepening is as follows:

$$\text{Trade Openness(TO)} = \{(X_{\text{Ind-A}} + M_{\text{Ind-A}}) / (GDP_{\text{Ind}})\}$$

$$\text{Trade Deepening(TD)} = \{(X_{\text{Ind-A}} + M_{\text{Ind-A}}) / (X_{\text{Ind-World}} + M_{\text{Ind-World}})\}$$

Where,

$X_{\text{Ind-A}}$ = India's export to country A

$M_{\text{Ind-A}}$ = India's import from country A

$X_{\text{Ind-World}}$ = India's export to the world

$M_{\text{Ind-World}}$ = India's import from the world

GDP_{Ind} = India's GDP

Table 5.6.2: India's Trade with BRICS Countries and the Rest of the World

Year	India's export to Brazil In 1000US\$	India's import from Brazil In 1000US\$	India's export to China In 1000US\$	India's import from China In 1000US\$	India's export to Russia In 1000US\$	India's import from Russia In 1000US\$	India's export to South Africa In 1000US\$	India's import from South Africa In 1000US\$	India's Total Trade In US\$	India's GDP In US\$
2003	388209.2	307112.4	2567161.9	3611899.2	696329.5	784894.6	467434.3	363760.6	1,31,79,11,83,470	544485550467
2004	541043.6	651229.8	4098514.3	6048020.2	631196.4	1215045.5	891641.1	520089.0	1,74,88,53,29,839	589559010700
2005	969811.7	883162.5	7183792.3	1016419.2	705685.2	2036893.4	1404100.8	845185.7	2,41,21,43,03,421	644499568183
2006	149812.0	948533.7	7829167.5	1563902.8	845710.9	1900849.8	2094445.7	907406.3	2,99,41,30,46,529	704256486830
2007	189978.9	877711.1	9491978.1	2454913.7	924103.2	2684488.4	2129593.2	1530700.7	3,64,54,33,47,395	773393372039
2008	325004.9	115982.5	1009392.6	3157976.0	1090744.3	4451326.4	2480947.7	3021182.4	4,97,57,30,03,914	811540036225
2009	178193.1	289727.0	1037005.2	3060809.3	964356.8	3437687.4	1959652.7	2489556.4	4,43,16,65,89,247	885430184577
2010	366955.8	322098.3	1743999.8	4118495.5	1393223.9	3561425.1	3650058.4	2713767.7	5,70,43,78,82,918	778410000000
2011	539131.0	373515.6	1671778.6	5434844.3	1893900.4	4319584.9	4319584.9	3221743.1	7,63,88,60,40,939	873600000000
2012	616271.6	536856.0	1472931.8	5309050.7	2144765.4	4601639.9	4973299.4	3459012.5	7,78,54,11,47,943	994400000000
2013	611183.5	382553.9	1641682.5	5157434.9	2418963.7	3814120.1	5742466.8	3678275.2	8,02,65,69,56,107	1123350000000
2014	714052.8	528179.8	1343425.0	5819835.6	2217472.2	4203499.7	5722395.5	4376314.0	7,76,91,41,05,860	1246790000000
2015	309914.8	386739.6	9576578.7	6159043.3	1611893.6	4491803.8	3814364.8	4543242.8	6,55,12,57,35,036	1377180000000
2016	230019.4	351343.7	8916072.9	6044853.4	1813884.8	4762093.8	3243164.6	3903511.6	617,031,704,442	1536230000000
2017	286698.6	488698.4	1248917.3	7182362.9	2138971.8	7954639.4	4071955.6	5013781.6	738,416,843,998	1709500000000
2018	357695.5	509061.2	1636581.4	9035984.7	2332619.8	8502812.6	4016932.4	6964986.8	830,107,832,924	1901010000000
2019	411398.8	266704.4	1727883.2	6840209.2	2871228.1	6226189.5	3964100.8	5030196.9	802,134,455,535	2.8705E+12
2020	367578.1	295523.9	1900826.9	5879882.7	2559257.9	5838312.1	3498285.0	5260009.9	6.213E+11	2.62298E+12
2021	6,262,205.	4,928,496.5	2303659.7	8753513.5	3,334,263	8,695,038	5989463	6966855	909408055	3176300000000

Source: UNCTAD; WITS, WDB

The above table is crude and needs to be transformed to find trade openness and deepening so we can employ the Granger Causality test to check causal relations.

Table 5.6.3: Trade Openness and Deepening along with institutional integration score

year	India-Brazil			India-China			India-Russia			India-South Africa		
	TO	TD	Score	TO	TD	Score	TO	TD	Score	TO	TD	Score
2003	0.001	0.005	5	1.14	4.35	7	0.002	0.010	5.000	0.001	0.006	2
2004	0.002	0.006	10	1.72	5.2	9	0.003	0.009	5.000	0.002	0.007	4
2005	0.002	0.007	15	2.69	6.88	11	0.003	0.011	5.000	0.003	0.009	6
2006	0.003	0.008	17	3.33	7.52	13	0.003	0.009	7.000	0.003	0.010	8
2007	0.002	0.007	17	4.4	8.22	18	0.003	0.009	12.000	0.003	0.009	13
2008	0.004	0.009	19	1.24	2.1	20	0.005	0.012	14.000	0.005	0.011	15
2009	0.003	0.012	29	4.63	10.91	22	0.003	0.012	16.000	0.003	0.012	15
2010	0.004	0.012	34	7.54	10.29	24	0.003	0.009	21.000	0.004	0.011	20
2011	0.005	0.012	36	8.26	9.45	24	0.003	0.008	23.000	0.004	0.010	22
2012	0.006	0.012	38	6.93	7.19	24	0.004	0.007	25.000	0.005	0.009	24
2013	0.005	0.009	39	6.06	5.91	24	0.003	0.005	26.000	0.005	0.008	25
2014	0.006	0.009	39	5.75	5.33	29	0.003	0.005	26.000	0.005	0.008	25
2015	0.003	0.005	41	5.17	4.63	31	0.003	0.004	28.000	0.004	0.005	27
2016	0.003	0.003	44	4.52	4.01	34	0.003	0.004	31.000	0.003	0.004	30
2017	0.003	0.004	46	4.94	4.39	36	0.004	0.005	33.000	0.003	0.005	32
2018	0.003	0.004	46	4.73	4.25	36	0.004	0.005	33.000	0.004	0.005	32
2019	0.002	0.009	46	4.86	4.32	35	0.003	0.012	33.000	0.003	0.012	33
2020	0.003	0.011	45	3.98	3.37	34	0.003	0.014	32.000	0.003	0.014	32
2021	0.003	1.230	45	4.01	3.46	34	0.004	0.025	32.000	0.003	0.019	32

Source: Calculations made by the scholar using the table in 5.6.2.

The above table shows that except for China, bilateral trades between India-Brazil, India-Russia, and India-South Africa have very low TO¹³ and TD¹⁴ despite the improvements in institutional scores of India's bilateral with these countries. However, for India-China bilateral trade, the table shows that India's economy has been open to the Chinese economy in the study period. In 2010 and 2011 India-China bilateral trade had the highest trade openness and was found to be decreasing in later years.

Similarly, the table shows synchronous relations in the case of TD. The reason behind the decline in TO and TD in India-China trade is India's restriction on importing Chinese goods in past years. It is necessary to find causal relations between institutional integration and TO & TD.

The Granger Causality tests have been employed to check causality tests between institutional scores and trade openness and deepening. Dorrucci & Agur (2005), in the case

¹³ Trade Openness

¹⁴ Trade Deepening

EU and Singh (2015), in the case of India-ASEAN economic integrations, use the Granger causality test to find the causality of institutional integration (agreements signed) on economic integration (bilateral trade). The present study also tries to find the causality between institutional and economic integration in the case of Intra-BRICS trade. The Granger Causality test is employed to check whether there is causality between institutional score and TO as well as TD. Causality tests have been carried out for four bilateral trade scenarios: India-Brazil, India-China, India-Russia and India-South Africa.

In order to employ the Granger causality test, we need to set the following null and alternative hypotheses.

H₀: *Successive summits of BRICS do not cause trade openness and deepening*

H₁: *Successive summits of BRICS cause trade openness and deepening*

With the above given null and alternative hypotheses granger causality test has been employed for four bilateral trade relations of India with remaining BRICS members. Table 5.6.4 has shown the results of the test.

Table 5.6.4: Granger Causality test

Dependent Variable	Independent Variable	India-Brazil Prob.Value(Lagterm)	India-Russia Prob.Value(Lagterm)	India-China Prob.Value(Lagterm)	India-South Africa Prob. Value (Lagterm)
TO	Score	0.00(3)	0.00(2)	5%(3)	0.08% (3)
TD	Score	1.5%(3)	98% (2)	0.08%(3)	0.00(3)
Score	TO&TD	1%(3)	1%(2)	2%(3)	0.0(3)

Source: Scholar's own calculation using data in Table 5.6.3

Results in Table 5.6.4 show that in the case of India-Brazil, the bilateral trade institutional score due to the summit causes trade openness since the probability value is 0 with 3 lag (rejection of null hypothesis). In the case of trade deepening, institutional score causes trade deepening since the probability value is 1.5, which is less than 5 per cent, hence

the rejection of the null hypothesis. Similarly, there are also bidirectional relations where trade openness and deepening also cause further improvement in score since the probability value is less than 5 per cent. Similarly, in the case of India-China bilateral trade, successive summits cause trade openness and deepening since we reject the null hypothesis due to findings of probability values less than 5 per cent. In India-Russia bilateral trade, we found that summits cause trade openness. In contrast, summits do not cause trade deepening since the probability value (98) is much higher than 5 per cent; hence, we must accept the null hypothesis. In the case of India-South Africa bilateral trade, successive summits among BRICS caused both trade openness and deepening. In all four bilateral trades with India, trade openness and deepening are empirically found to cause further improvement in summits since their probability values are less than 5 per cent. Hence, we have to reject the null hypothesis.

5.7 Conclusion

The above studies have shown that there have been five subsequent institutional integrations in the case of the EU. Similarly, before the BRICS summits, India and members of the BRICS had separate bilateral economic agreements. In the case of India-Brazil bilateral trade, India signed RTA¹⁵ with Brazil in 2003, which kicked off India's economic integration with this Latin American country. However, with the formation of BRICS, India has galvanised its institutional integration with Brazil in various multilateral economic activities. India-China bilateral trade gained momentum in 2003 when both countries mutually signed a preferential trade agreement. Later on, India signed a regional trade agreement in 2008. Successive BRICS summits intensify their agreement further. However, the outbreak of Covid-19 depreciates cumulative institutional scores. In 2010 and 2011 India-China bilateral trade had the highest trade openness and was found to be decreasing in later years. Similarly,

¹⁵ Regional Trade Agreement

the table shows synchronous relations in the case of TD¹⁶. The reason behind the decline in TO and TD in India-China trade is India's restriction on importing Chinese goods in past years. In the case of India-Russia bilateral agreements, India signed a strategic agreement which an agreement pushed by BRICS followed. TO & TD indicators show that bilateral trade between the two members is not impressive, but in the 2020s, these indicators are improving. India-South Africa signed regional trade agreements and multilateral trade agreements among members. Granger causality tests show that bilateral and multilateral agreements (institutional integration) cause Trade Openness (Economic Integration) for all four bilateral trades. Moreover, institutional integration causes trade deepening except for bilateral trade with Brazil and South Africa. Further, we must introspect whether trade creation and diversion will occur in each bilateral trade relation with India.

¹⁶ Trade Deepening

Analysis of Trade Creation and Trade Diversion

6.1 Introduction

In the previous chapter, it is found that institutional integration, which is characterised by subsequent agreements on trade, causes economic integration, which is characterised by trade openness and deepening between India and each member of BRICS. Elaborately, trade openness implies that India's trade is open to the economies of BRICS. Similarly, trade deepening also means that India's bilateral trade with each member of BRICS is deep with reduced tariff and non-tariff barriers.

The underlying proposition of the present chapter is deeply motivated by the work done by Peter Murrell, who finds that much of the variation in bilateral trade for a country over time can be attributed to the level of institutions that the country shares. According to Murrell (2005), "We know that the level of institutional quality is highly correlated with the level of economic development." (p. 677).

Veeramani et al. (2011), in their work on the impact of the India-ASEAN preferential trade agreement on the plantation sector, employ trade creation and diversion indices for deeper analysis.

Singh (2014a), in his study on trade relations between India and ASEAN, makes it abundantly evident that building supportive institutions is necessary for economic development and growth. Various institutional frameworks that are in place in various nations affect how their economies develop and grow. These assertions imply that the development of institutions in many nations over time has a linear relationship with economic growth across all nations. Determining whether signing a free trade agreement will increase trade creation and diversion on behalf of both India and the ASEAN groupings is crucial. Free trade agreements are also a significant improvement in institutions associated with trade.

Singh et al. (2021), in their work on India-Russia bilateral trade, shows that the sanction of the EU on Russia leads to more significant institutional ties between the two countries and brings greater trade creation between them and greater diversion from other countries.

The above studies find that each country in institutional integration, i.e., signing regional trade agreements and preferential tariff rates, generates more bilateral trade between countries in negotiation. This leads to trade creation among countries in institutional integration. Moreover, such countries divert imported commodities from countries not in negotiation, towards countries in negotiation. The present chapter deals with India's trade creation and diversion with members of BRICS. Elaborately, this chapter finds how much trade creation and diversion will be generated by Indian goods in the markets of BRICS countries and vice versa.

6.2 Analytical Framework

The model applied in this study is based on the work on the simulation model of trade by Yeats et al. (1986). The main issues embodied in free trade are trade creation, trade

diversion, welfare gain or loss of consumers, and revenue loss. In this study, only trade creation and diversion are picked up; welfare gain or loss and revenue loss due to free trade are dropped since the present study is based on many manufactured sectors but not particular commodities.

Trade Creation

The trade creation effect is the increased demand in country "j" for commodity "i" from the exporting country "k" resulting from the price decrease associated with the assumed complete transmission of price change when tariff or non-tariff distortions are reduced or eliminated.

$$TC_{ijk} = M_{ijk} \cdot E_m \cdot dt_{ijk}$$

Where, TC_{ijk} = Trade creation

M_{ijk} = Import

dt_{ijk} = Reduction in tariff

E_m = Elasticity of import demand concerning domestic price

Trade Diversion

Following standard practice, the term trade diversion accounts for the tendency of importers to substitute goods from one source to another in response to a change in the import price of supplies from one source but not from the alternative source. Thus, if prices fall in one of the overseas countries, there will be a tendency to purchase more goods from that country and less from countries with unchanged exports. Trade diversion can also occur not because of the change in the export price but because of the introduction or elimination of preferential treatment for goods from one (or more sources) while treatment for goods from other sources remains unchanged.

$$TD_{ijk} = TC_{ijk} \cdot (M_{nij} / V_{ij})$$

Where, V_{ij} = Production of i goods in j country (here supply from domestic firms)

M_{nij} = Import of i goods from non-member country "n."

Within the given context, Laird and Yeats¹ (1986) said that "the changed level of domestic demand for imports from a particular trading partner caused by the changed price of the imported good after the tariff change results in trade creation" (Laird and Yeats 1986: 22). According to above-given methodology, this proposition implies that when tariff levied on goods are found to be subsequently reduced, it leads to a fall in the price of the imported goods, and hence the demand for those goods would be increased in the importing country. Again they pointed out, "There is positive trade diversion in favour of the preference-receiving countries and negative trade diversion for the other set of countries" (Laird and Yeats: 22).

Let us suppose a country "j" (say) has V_1 production of goods "i" (say supply from the domestic firm) in its country at time1 (pre FTA period). M_{n1} and M_{m1} amount of imports from non-members and the potential FTA member respectively to the importing country "j" with assumption $M_{n1} > M_{m1}$ since the higher cost of production in "m" member country. Trade diversion in the importing country in this period is given below.

$$TD_{ij} = TC_{ij} \cdot (M_{n1} + M_{m1}) / V_1$$

At time 2 (FTA period), the potential "m" country forms FTA with the importing country. Since, as an FTA member, the then tariff rate applied to the goods of FTA members will be reduced, and hence the price of goods from "m" member countries will be reduced. Imports from non-members will be reduced; imports from the member countries increase in time2 compared to time1 and ΔV_2 changes in supply from a domestic firm in time2.

$$\Delta TD_{ij} = TC_{ij} \cdot \{(M_{n2} - M_{n1}) + (M_{m2} - M_{m1})\} / \Delta V_2$$

¹Sam Laird and Alexander Yeats: They are authors of Economic Affairs Officers, in UNCTAD, Geneva

$$\Delta TD_{ij} = TC_{ij} \cdot \{-\Delta M_n + \Delta M_m\} / \Delta V$$

$$\Delta TD_{ij} = -TC_{ij} \cdot (\Delta M_n / \Delta V) + TC_{ij} \cdot (\Delta M_m / \Delta V)$$

There are three limitations:

(a) When $TC_{ij} \cdot (\Delta M_n / \Delta V) = TC_{ij} \cdot (\Delta M_m / \Delta V)$ which Implies $\Delta TD_{ij} = 0$

This condition indicates the substitution of goods from non-members with the same goods from members in the market of FTA partner in exact volume. Then there would be no changes in the absolute value of trade diversion in pre- and post-FTA periods.

(b) When $TC_{ij} \cdot (\Delta M_n / \Delta V) > TC_{ij} \cdot (\Delta M_m / \Delta V)$ which Implies $\Delta TD_{ij} < 0$

There will be a reduction in the absolute value of trade diversion compared to the pre-FTA period. However, the impact of FTA on FTA members is still better off, and non-member country is still found to be worse off.

(c) When $TC_{ij} \cdot (\Delta M_n / \Delta V) < TC_{ij} \cdot (\Delta M_m / \Delta V)$ which Implies $\Delta TD_{ij} > 0$

Then FTA yields positive trade diversion in favour of FTA members and negative trade diversion for non-member countries. The overall value of trade diversion also increases, showing that negative trade diversion occurs for non-members and positive trade diversion for member countries. Again Laird and Yeats noted that "The trade creation and trade diversion effects are summed to provide the net effect in each market for each partner country" (Laird and Yeats 1986: 24). According to the methodology given, net trade effect in country "j" is the sum of trade creation and diversion in their absolute numbers.

Trade effect = Trade Creation and Trade Diversion

$$= TC_{ijk} + TD_{ijk}$$

$$\rightarrow M_{ijk} \cdot \text{Em} \cdot dt_{ijk} + M_{ijk} \cdot \text{Em} \cdot dt_{ijk} (M_{ij} / V_{ij})$$

Where, M_{ij} = Import from non-member country

Moreover, the present study does not deal with commodity-specific studies (higher S1); instead, it picks up commodities under SITC² Revision 1. A group of commodities under single-digit classification is selected; however, one digit covers many commodities. Hence, commodities in SITC Rev. 1, such as Food and live animals (code 0); beverages and tobacco (code 1); crude materials, inedible, except fuels (code 2); mineral fuels, lubricants and related materials (code 3); animal and vegetable oils and fats (code 4) under agriculture and allied goods. Moreover, manufactured goods are classified chiefly into Crude Chemicals (code 5); Manufactured goods classified chiefly by materials (code 6); machinery and transport equipment (code 7); and miscellaneous manufactured articles (code 8) categories are selected. Studies on cross-sectional years 2010, 2015, 2019 and 2021 are performed for each commodity.

6.3 Data Sources and Methodologies

The present study deals with commodities in normal and sensitive tracks. *Ex ante* partial equilibrium model, called the SMART model, developed jointly by the UNCTAD and World Bank, has been used to analyse tariff reduction's impact. The advantage of the partial equilibrium approach in simple computation and finite application level makes sense in this study. However, a precondition of using partial equilibrium states that the sector under consideration has no major linkage with other sectors of the economy. WITS³ is World Bank's software which provides various databases on trade flows and trade policy instruments. The SMART model is an analytical tool in the WITS for simulation purposes⁴. The underlying model deals with both importing market (India) and India's exporting market

²SITC = Standard International Trade Classification which is given either to group or particular commodity in UN Comtrade

³ World Integrated Trade Solution

⁴The underlying theory and other details of the WITS/SMART model can be seen in Laird and Yeats (1986).

(BRICS countries). It simulates the impact of a tariff reduction on trade creation and diversion for both India and other members of BRICS.

By default, the assumption in using the SMART model is infinite export supply elasticity, implying that the export supply curves are flat and that the prices in the world for each variety are exogenously given. Elaborately, it can be reinterpreted that the increased import demand by the importing country (say India) does not affect the prices in the exporting countries (say BRICS countries). As a result, it is assumed that the exporting country would supply a higher quantity of the commodity at the same price that prevailed earlier. As a proposition, it can be set generally that tariff reduction generally yields a positive quantity effect while keeping the price effect always zero. However, the SMART model allows using finite export supply elasticity values. Finite elasticity implies that higher demands from the importing country will increase the price of the exporting countries. Therefore, the exporting country would have a higher quantity of the commodity but at a higher price. That is, tariff reduction generally involves a positive quantity effect and a positive price effect. The SMART model relies on Armington's assumption that similar products from different countries are imperfect substitutes but not for exact products. In other words, it implies no preference in the motives for consumption of similar products produced in India and imported from BRICS countries.

Before conducting these analyses, compositions of Indian export and import (agriculture, allied and manufactured goods) in trend have been observed. Years 2010, 2015, 2019 and 2021 have been taken for analysis. In 2010 there was the first negotiation among trade ministers to enhance trade. In 2015, Trade Ministers agreed on strengthening favourable conditions for enhancing intra-BRICS trade. In 2019, member countries concluded negotiations for a Memorandum of Understanding on Trade and Investment Promotion among BRICS countries.

Moreover, in 2021 BRICS countries agreed to improve coordination and cooperation for resilient and sustainable development after the COVID-19 pandemic. Annual simulation data cannot be presented in the analysis since there has been a reduction in tariff rates annually. However, in the years mentioned above, changes in applied tariff rates have caused significant trade creation and diversions for study. In order to look into compositions of export and import, SITC⁵ Revision 1 has been used since it covers a wide range of commodities into limited codes of mainly agriculture & allied; and manufactured goods in a nutshell. According to UN Comtrade Data, SITC revision 1 comprises Food and live animals (code 0); beverages and tobacco (code 1); crude materials, inedible, except fuels (code 2); mineral fuels, lubricants and related materials (code 3); animal and vegetable oils and fats (code 4) under agriculture and allied goods. Moreover, manufactured goods are classified chiefly into crude Chemicals (code 5); Manufactured goods are classified chiefly by materials (code 6), machinery and transport equipment (code 7), and miscellaneous manufactured articles (code 8) categories.

Now, in the following sections, we deal with the bilateral trade of India with other member countries of BRICS for Agriculture and Allied goods (code 0-4) and Manufactured goods (code 5-8) for the years 2010, 2015, 2019 and 2021.

6.4 India-Brazil

6.4.1 The year 2010

In this section, trade creation and diversions of India-Brazil bilateral trade for 2010 have been dealt with preferential tariff reductions from bilateral agreements.

⁵ Standard International Trade Classification

Table 6.4.1.1: Trade Creation and Diversion of India – Brazil Bilateral Trade (Agri and Allied)

Year	India's imports from Brazil					India's export to Brazil			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	237260.6	30085.74	25.95	8.93	684.616	307.745	10.59	6.26
	1	15188.92	378.8	74.4	11.33	11171.31	1183.736	15.3	7.76
	2	2443.341	-201.147	4.17	2.81	2971.88	562.424	6.51	4.28
	3	2903.671	4076.386	4.12	3.13	996.132	821.676	6.35	3.7
	4	81.77	12.288	6	3.74	2418.648	47.576	7.6	4.92

Source: Scholar's own calculation using data from WITS

In 2010, India slashed the tariff rate from earlier 25.95 per cent to 8.93 per cent on imported Food and live animals (code 0) from Brazil, which led to trade creation worth US\$ 2372606000 in the Indian market (Table 6.4.1.1). These goods from Brazil diverted US\$ 30085740 from other countries to Brazil (trade diversion) in the Indian market. Similarly, Brazil slashed the tariff rate from 10.59 to 6.26 per cent on exported items from India, leading to a trade creation of US\$ 684616 and a trade diversion of US\$ 307745 in the Brazilian market. Hence, both countries are benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 74.4 per cent to 11.34 per cent on beverage and tobacco products (code 1), trade creation is worth US\$15188.92 thousand, and trade diversion is worth US\$ 378.8 thousand in the Indian market. Similarly, when Brazil reduces the tariff rate from 15.3 per cent to 7.76 per cent on these products, trade creation worth US\$ 11171.31 thousand and trade diversion worth US\$ 1183.736 thousand are made by Indian goods in the Brazilian market. Trade Creation worth US\$ 2443.341 thousand is made by Brazilian crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 4.17 to 2.81 per cent. Similarly, the same Indian products make trade creation worth US\$ 2971.8 thousand and trade diversion worth US\$ 562.4 thousand when Brazil reduces the tariff rate from 6.52 to 4.28 per cent. Trade Creation worth US\$ 2903.67 thousand is made by

Brazilian mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 4.12 to 3.13 per cent. Similarly, the same Indian products make trade creation worth US\$ 996.13 thousand and trade diversion worth US\$ 821.67 thousand when Brazil reduces the tariff rate from 6.35 to 3.7 per cent. Trade Creation worth US\$ 81.77 thousand and trade diversion worth US\$ 12.288 thousand is made by Brazilian animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 6 to 3.74 per cent. Similarly, the same Indian products make trade creation worth US\$ 2418.648 thousand and trade diversion worth US\$ 47.56 thousand when Brazil reduces the tariff rate from 7.6 to 4.92 per cent.

Table 6.4.1.2: Trade Creation and Diversion of India – Brazil Bilateral Trade (Manufactured goods)

Year	India's imports from Brazil					India's export to Brazil			
	S1	Trade creation in 1000 US\$	Trade Diversion 1000 US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000 US\$	Old rate In %	New Rate In %
2010	5	1703.215	223.961	3.94	3.06	22355.68	26578.07	7.5	4.69
	6	3387.191	-566.134	3.79	3	210782.1	43964.58	17.38	7.94
	7	5729.817	311.47	2.96	2.39	52222.5	35045.55	13.54	7.06
	8	1044.611	36.731	4.21	3.22	56924.46	20441.28	23.47	9.02

Source: WITS Database

Table 6.4.1.2 shows that a trade creation worth US\$ 1703.215 thousand and a trade diversion worth US\$ 223.96 thousand were made by Brazilian Crude Chemicals (code 5) in the Indian market when India reduced the tariff rate from 3.94 to 3.06 per cent. Similarly, the same Indian products make trade creation worth US\$ 22355.68 thousand and trade diversion worth US\$ 26578.07 thousand when Brazil reduces tariff rate from 7.5 to 4.69 per cent.

Trade Creation worth US\$ 3387.19 thousand is made by Brazilian manufactured material (code 6) goods in the Indian market when India reduces the tariff rate from 3.79 to 3 per cent. Similarly, the same Indian products make trade creation worth US\$ 210782.1 thousand and trade diversion worth US\$ 43964.58 thousand when Brazil reduces tariff rate from 17.38 to 7.94 per cent. A Trade Creation worth US\$ 5729.8 thousand and a trade

diversion worth US\$ 311.47 thousand are made by Brazilian machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 2.96 to 2.39 per cent. Similarly, the same Indian products make trade creation worth US\$ 52222.5 thousand and trade diversion worth US\$ 35045.5 thousand when Brazil reduces tariff rate from 13.54 to 7.06 per cent. A Trade Creation worth US\$ 1044.6 thousand and a trade diversion worth US\$ 36.7 thousand are made by Brazilian miscellaneous manufactured goods (code 8) in the Indian market when India reduces the tariff rate from 4.21 to 3.22 per cent. Similarly, the same Indian products make trade creation worth US\$ 56924.4 thousand and trade diversion worth US\$ 20441.3 thousand when Brazil reduces tariff rate from 23.47 to 9.02 per cent.

6.4.2 The year 2015

Table 6.4.2.1: Trade Creation & Diversion of India–Brazil Bilateral Trade (Agri & allied)

Year	India's imports from Brazil					India's export to Brazil			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2015	0	140569.7	6068.498	40.68	10.3	1407.395	418.478	10.75	6.29
	1	26382.25	5624.45	35.3	13.6	1898.891	154.701	17	8.18
	2	49667.39	4122.414	8.05	4.69	2558.961	645.374	6.49	4.19
	3	104.178	53.753	5.24	3.75	5596.736	4044.642	5.97	3.74
	4	762.808	14523.69	15.21	7.06	4280.636	431.627	14.44	7.24

Source: Scholar's own findings from SMART using WITS

In 2015, India slashed the tariff rate from 40.68 per cent to 10.3 per cent on imported Food and live animals (code 0) from Brazil, leading to trade creation worth US\$ 140569700 in the Indian market (Table 6.4.2.1). These goods from Brazil diverted US\$ 6068498 from other countries to Brazil (trade diversion) in the Indian market. Similarly, Brazil slashed the tariff rate from 10.75 to 6.29 per cent on exported items from India, leading to a trade creation of US\$ 1407395 and a trade diversion of US\$ 418478 in the Brazilian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 35.3 per cent to 13.6 per cent on beverage and tobacco products

(code 1), trade creation is worth US\$ 26382.25 thousand, and trade diversion is worth US\$ 5624.45 thousand in the Indian market.

Similarly, when Brazil reduces the tariff rate from 17 per cent to 8.18 per cent on these products, trade creation worth US\$ 1898.891 thousand and trade diversion worth US\$ 154.701 thousand are made by Indian goods in the Brazilian market. Trade Creation worth US\$ 49667.39 thousand is made by Brazilian crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 8.05 to 4.69 per cent. Similarly, the same Indian products make trade creation worth US\$ 2558.961 thousand and trade diversion worth US\$ 645.374 thousand when Brazil reduces the tariff rate from 6.49 to 4.19 per cent. Trade Creation worth US\$ 104.178 thousand and trade diversion worth US\$ 53.753 is made by Brazilian mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 5.24 to 3.75 per cent. Similarly, the same Indian products make trade creation worth US\$ 5596.736 thousand and trade diversion worth US\$ 4044.642 thousand when Brazil reduces the tariff rate from 5.97 to 3.74 per cent. Trade Creation worth US\$ 762.808 thousand and trade diversion worth US\$ 14523.69 thousand is made by Brazilian animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 15.21 to 7.06 per cent. Similarly, the same Indian products make trade creation worth US\$ 4280.636 thousand and trade diversion worth US\$ 431.627 thousand when Brazil reduces the tariff rate from 14.44 to 7.24 per cent.

Table 6.4.2.2: Trade Creation and Diversion of India – Brazil Bilateral Trade (Manufactured goods)

Year	India's imports from Brazil					India's export to Brazil			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2015	5	26269.03	7683.353	9.17	5.66	Data not Available			
	6	63733.14	6774.28	9.11	5.73				
	7	11041.36	3114.504	7.08	4.61				
	8	1062.039	584.517	8.74	5.51				

Source: Scholar's own findings from SMART using WITS

In 2015, India slashed the tariff rate from 9.17 per cent to 5.66 per cent on imported Crude Chemicals (code 5) from Brazil, leading to trade creation worth US\$ 26269030 in the Indian market. These goods from Brazil diverted US\$ 7683353 from other countries to Brazilian trade (trade diversion) in the Indian market. When India reduces the tariff rate from 9.11 per cent to 5.73 per cent on manufactured materials (code 6), trade creation is worth US\$ 63733.14 thousand, and trade diversion is worth US\$ 6774.28 thousand in the Indian market. Trade Creation worth US\$ 11041.36 thousand and trade diversion worth US\$ 3114.504 thousand is made by Brazillian machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 7.08 to 4.61 per cent. Trade Creation worth US\$ 1062.039 thousand and trade diversion worth US\$ 584.517 thousand is made by Brazillian miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 8.74 to 5.51 per cent.

There is no availability of data for Indian manufactured goods in the Brazilian market for 2015.

6.4.3 The year 2019

Table 6.4.3.1: Trade Creation and Diversion of India – Brazil Bilateral Trade (Agricultural goods)

Year	India's imports from Brazil					India's export to Brazil			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	0	123730.3	23990.73	47.37	11.36	2664.153	1501.105	11.12	6.4
	1	6337.158	382.371	30	10.43	82.792	45.173	13.6	7.35
	2	51072.2	4473.663	10.13	5.14	1636.961	925.674	6	3.84
	3	357.904	705.637	7	4.5	44.64	6.46	6.6	4.05
	4	1433.093	50075.33	52	11	2095.105	196.426	9.71	6.04

Source: Scholar's own findings from SMART using WITS

In 2019, India slashed the tariff rate from earlier 47.37 per cent to 11.36 per cent on imported Food and live animals (code 0) from Brazil, leading to trade creation worth US\$

123730300 in the Indian market (Table 6.4.3.1). These goods from Brazil diverted US\$23990730 from other countries to Brazil (trade diversion) in the Indian market. Similarly, Brazil also slashed the tariff rate from 11.12 to 6.4 per cent on exported items from India which led to trade creation of US\$ 2664153 and a trade diversion of US\$ 1501105 in the Brazilian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 30 per cent to 10.43 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 6337.158 thousand, and trade diversion is worth US\$ 382.371 thousand in the Indian market.

Similarly, when Brazil reduces the tariff rate from 13.6 per cent to 7.35 per cent on these products, trade creation worth US\$ 82.792 thousand and trade diversion worth US\$ 45.173 thousand are made by Indian goods in the Brazilian market. Trade Creation worth US\$ 51072.2 thousand and trade diversion worth US\$ 4473.663 is made by Brazilian crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 10.13 to 5.14 per cent. Similarly, the same Indian products make trade creation worth US\$ 1636.961 thousand and trade diversion worth US\$ 925.674 thousand when Brazil reduces the tariff rate from 6 to 3.84 per cent. Trade Creation worth US\$ 357.904 thousand and trade diversion worth US\$ 705.637 is made by Brazilian mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 7 to 4.5 per cent. Similarly, the same Indian products make trade creation worth US\$ 44.64 thousand and trade diversion worth US\$ 6.46 thousand when Brazil reduces the tariff rate from 6.6 to 4.05 per cent. Trade Creation worth US\$ 1433.093 thousand and trade diversion worth US\$ 50075.33 thousand is made by Brazilian animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 52 to 11 per cent. Similarly, the same Indian products make trade creation worth US\$ 2095.105 thousand and trade diversion worth US\$ 196.426 thousand when Brazil reduces the tariff rate from 9.71 to 6.04 per cent.

Table 6.4.3.2: Trade Creation and Diversion of India – Brazil Bilateral Trade (Manufactured goods)

Year	India's imports from Brazil					India's export to Brazil				
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %	
2019	5	34595.63	8274.505	9.13	5.61	41474.21	61579.45	7.74	4.78	
	6	22608.33	5717.968	10.38	6.06	257118	48390.12	17.03	7.88	
	7	31001.07	6740.898	8.63	5.06	31183.51	35625.38	12.75	6.82	
	8	3569.171	908.406	12.86	6.78	38070.27	24921.28	23	8.92	

Source: Scholar's own findings from SMART using WITS

In 2019, India slashed the tariff rate from 9.13 per cent to 5.61 per cent on imported Crude Chemicals (code 5) from Brazil, leading to trade creation worth US\$ 34595630 in the Indian market (Table 6.4.3.2). These goods from Brazil diverted US\$8274505 from other countries to Brazil (trade diversion) in the Indian market. Similarly, Brazil also slashed the tariff rate from 7.74 to 4.78 per cent on exported items from India which led to a trade creation of US\$ 41474210 and a trade diversion of US\$ 61579450 in the Brazilian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 10.38 per cent to 6.06 per cent on manufactured materials (code 6), trade creation is worth US\$ 22608.33 thousand, and trade diversion is worth US\$ 5717.968 thousand in the Indian market.

Similarly, when Brazil reduces the tariff rate from 17.03 per cent to 7.88 per cent on these products, trade creation worth US\$ 257118 thousand and trade diversion worth US\$ 48390.12 thousand are made by Indian goods in the Brazilian market. Trade Creation worth US\$ 31001.07 thousand and trade diversion worth US\$ 6740.898 is made by machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 8.63 to 5.06 per cent. Similarly, the same Indian products make trade creation worth US\$ 31183.51 thousand and trade diversion worth US\$ 35625.38 thousand when Brazil reduces

the tariff rate from 12.75 to 6.82 per cent. Trade Creation worth US\$ 3569.171 thousand and trade diversion worth US\$ 908.406 is made by Brazilian miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 12.86 to 6.78 per cent. Similarly, the same Indian products make trade creation worth US\$ 38070.27 thousand and trade diversion worth US\$ 24921.28 thousand when Brazil reduces the tariff rate from 23 to 8.92 per cent.

6.4.4 The year 2021

Table 6.4.4.1: Trade Creation and Diversion of India – Brazil Bilateral Trade (Agricultural goods)

Year	India's imports from Brazil					India's export to Brazil			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	0	94272.89	15707.115	37.95	9.69	4447.968	3143.594	11.85	6.44
	1	13249.162	365.657	30	10.43	108.451	31.836	14	7.47
	2	68168.731	7591.968	8.4	4.69	1618.731	1350.221	5.56	3.73
	3	269.384	564.094	7.86	5.22	206.741	63.477	6.7	3.97
	4	1501.04	54392.167	30.99	9.61	4589.578	294.22	8.92	5.68

Source: Scholar's own findings from SMART using WITS

Table 6.4.4.1 shows that in 2021, India slashed the tariff rate from 37.95 per cent to 9.69 per cent on imported Food and live animals (code 0) from Brazil, leading to trade creation worth US\$ 94272890 in the Indian market. These goods from Brazil diverted US\$ 15707115 from other countries to Brazil (trade diversion) in the Indian market. Similarly, Brazil also slashed the tariff rate from 11.85 to 6.44 per cent on exported items from India which led to trade creation of US\$ 4447968 and a trade diversion of US\$ 3143594 in the Brazilian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 30 per cent to 10.43 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 13249.162 thousand, and trade diversion is worth US\$ 365.657 thousand in the Indian market.

Similarly, when Brazil reduces the tariff rate from 14 per cent to 7.47 per cent on these products, trade creation worth US\$ 108.451 thousand and trade diversion worth US\$ 31.836 thousand are made by Indian goods in the Brazilian market. Trade Creation worth US\$ 68168.731 thousand and trade diversion worth US\$ 7591.968 is made by Brazilian crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 8.4 to 4.69 per cent. Similarly, the same Indian products make trade creation worth US\$ 1618.731 thousand and trade diversion worth US\$ 1350.221 thousand when Brazil reduces the tariff rate from 6.7 to 3.97 per cent. Trade Creation worth US\$ 269.384 thousand and trade diversion worth US\$ 564.094 is made by Brazilian mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 7.86 to 5.22 per cent. Similarly, the same Indian products make trade creation worth US\$ 206.741 thousand and trade diversion worth US\$ 63.477 thousand when Brazil reduces the tariff rate from 6.7 to 3.97 per cent. Trade Creation worth US\$ 1501.04 thousand and trade diversion worth US\$ 54392.167 thousand is made by Brazilian animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 30.99 to 9.61 per cent. Similarly, the same Indian products make trade creation worth US\$ 4589.578 thousand and trade diversion worth US\$ 294.22 thousand when Brazil reduces the tariff rate from 8.92 to 5.68 per cent.

Table 6.4.4.2: Trade Creation and Diversion of India – Brazil Bilateral Trade (Manufactured goods)

	India's imports from Brazil					India's export to Brazil			
Year	S1	Trade creation in 1000US\$	Trade Diversion 1000 US\$	Old rate In %	New Rate In %	Trade creation In 1000 US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	5	38653.226	16709.489	9.13	5.58	58583.558	83702.941	7.4	4.59
	6	13535.613	4928.809	10.23	6.03	443279.716	79808.667	16.82	7.83
	7	28854.18	8516.644	9.28	5.22	66270.467	71471.019	13.03	6.9
	8	4616.566	1094.131	14.19	7.04	43121.94	26421.213	22.69	8.86

Source: Scholar's own findings from SMART using WITS

In 2021, India slashed the tariff rate from 9.13 per cent to 5.58 per cent on imported Crude Chemicals (code 5) from Brazil, leading to trade creation worth US\$ 38653226 in the Indian market (Table 6.4.4.2). These goods from Brazil diverted US\$ 16709489 from other countries to Brazil (trade diversion) in the Indian market. Similarly, Brazil slashed the tariff rate from 7.4 to 4.59 per cent on exported items from India, leading to a trade creation of US\$ 58583558 and a trade diversion of US\$ 83702941 in the Brazilian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 10.23 per cent to 6.03 per cent on manufactured materials (code 6), trade creation is worth US\$ 13535.613 thousand, and trade diversion is worth US\$ 4928.809 thousand in the Indian market.

Similarly, when Brazil reduces the tariff rate from 16.82 per cent to 7.83 per cent on these products, trade creation worth US\$ 443279.716 thousand and trade diversion worth US\$ 79808.667 thousand are made by Indian goods in the Brazilian market. Trade Creation worth US\$ 28854.18 thousand and trade diversion worth US\$ 8516.644 is made by machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 9.28 to 5.22 per cent. Similarly, the same Indian products make trade creation worth US\$ 66270.467 thousand and trade diversion worth US\$ 71471.019 thousand when Brazil reduces the tariff rate from 13.03 to 6.9 per cent. Trade Creation worth US\$ 4616.566 thousand and trade diversion worth US\$ 1094.131 is made by Brazilian miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 14.19 to 7.04 per cent. Similarly, the same Indian products make trade creation worth US\$ 43121.94 thousand and trade diversion worth US\$ 26421.213 thousand when Brazil reduces the tariff rate from 22.69 to 8.86 per cent.

6.5 India-Russia

6.5.1 The year 2010

Table 6.5.1.1: Trade Creation and Diversion of India – Russia Bilateral Trade (Agricultural goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000 US\$	Trade Diversion 1000 US\$	Old rate In %	New Rate In %	Trade creation In 1000 US\$	Trade Diversion In 1000 US\$	Old rate In %	New Rate In %
2010	0	0	-18.404	33.05	33.05	8442.99	8706.691	8.84	5.25
	1	0	-18.236	124.38	124.38	896.27	930.444	12	5.12
	2	0	-47.647	10.34	10.34	326.071	222.346	4.61	3.32
	3	0	-145.644	7.66	7.66	625.932	76.077	5	3.81
	4	0	-0.623	52.92	52.92	931.863	212.601	11.73	6.38

Source: Scholar's own findings from SMART using WITS

In 2010, India kept the tariff rates unchanged for the bilateral trade between India and Russia for and allied goods (i.e. for commodities with SITC Codes 0-4) with SITC Codes 0-4) which resulted in zero trade creations and negative trade diversions for these commodities from Russia in the Indian market (Table 6.5.1.1).

But, in the same year, Russia slashed the tariff rate for food and live animals (code 0) which were imported from India from 8.84 per cent to 5.25 per cent, which resulted in trade creations worth US\$ 8442.99 thousand and trade diversions worth US\$ 8706.691 thousand of these Indian commodities in the Russian market from other countries. Moreover, when Russia reduced the tariff rate for the imports of beverages and tobacco (code 1) from India from 12 per cent to 5.12 per cent, it resulted in trade creations worth US\$ 896.27 thousand and trade diversions worth US\$ 930.444 thousand. Likewise, when Russia reduced the tariff rate for the imports of crude materials, inedible, except fuels (code 2) from 4.61 per cent to 3.32 per cent, there was trade creation worth US\$ 326.071 thousand and trade diversions worth US\$ 222.346 thousand of these Indian commodities in the Russian market from other countries. Also, when Russia reduced the tariff rate for the imports of mineral fuels, lubricants and related materials (code 3) from 5 per cent to 3.81 per cent, there was trade creation worth US\$ 625.932thousand and trade diversions worth US\$ 76.077 thousand

of these Indian commodities in the Russian market from other countries. Similarly, when Russia reduced the tariff rate for the imports of animal and vegetable oils and fats (code 4) from 11.73 per cent to 6.38 per cent, there was trade creation worth US\$ 931.863thousand and trade diversions worth US\$ 212.601thousand of these Indian commodities in the Russian market from other countries.

Table 6.5.1.2: Trade Creation and Diversion of India – Russia Bilateral Trade (Manufactured goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	5	63051.02	17126.98	7.89	5.19	0	0	6.18	6.18
	6	29518.59	13054.81	7.76	5.07	0	0	10.87	10.87
	7	6440.385	2554.71	6.78	4.54	0	0	4.38	4.38
	8	1572.846	670.826	8.6	5.44	0	0	10.76	10.76

Source: Scholar's own findings from SMART using WITS

In 2010, India slashed the tariff rate from 7.89 per cent earlier to 5.19 per cent on imported Crude Chemicals (code 5) from Russia, leading to trade creation worth US\$ 63051020 in the Indian market (Table 6.5.1.2). These goods from Russia diverted US\$ 17126980 from other countries to Russian trade (trade diversion) in the Indian market. When India reduces the tariff rate from 7.76 per cent to 5.07 per cent on manufactured materials (code 6), trade creation is worth US\$ 29518.59 thousand, and trade diversion is worth US\$ 13054.81 thousand in the Indian market. Trade Creation worth US\$ 6440.385 thousand and trade diversion worth US\$ 2554.71 thousand is made by Russian machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 6.78 to 4.54 per cent. Trade Creation worth US\$ 1572.846 thousand and trade diversion worth US\$ 670.826 thousand is made by Russian miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 8.6 to 5.44 per cent.

However, there were no trade creations or diversions for Indian commodities grouped under SITC Revision 1 with codes 5-8, as Russia kept the tariff rate unchanged in 2010 for these goods.

6.5.2 The year 2015

Table 6.5.2.1: Trade Creation and Diversion of India – Russia Bilateral Trade (Agricultural goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2015	0	26521.05	35984.39	33.75	8.78	26521.03	35991.2	38.41	10.43
	1					0	0	121.67	121.67
	2	9727.558	5044.018	6.94	4.56	0	0	6.94	6.94
	3	2098.668	1699.603	4.67	3.38	0	0	4.67	4.67
	4	7238.628	4262.2	41.25	9.94	0	0	41.25	41.25

Source: Scholar's own findings from SMART using WITS

Table 6.5.2.1 shows that in 2015, India slashed the tariff rate from earlier 33.75 per cent to 8.78 per cent on imported Food and live animals (code 0) from Russia, leading to trade creation worth US\$ 26521050 in the Indian market. These goods from Russia diverted US\$35984390 from other countries to Russia (trade diversion) in the Indian market. Similarly, Russia also slashed the tariff rate from 38.41 to 10.43 per cent on exported items from India which led to a trade creation of US\$ 26521030 and a trade diversion of US\$ 35991200 in the Russian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. In the same year, Russia kept the tariff rates unchanged for other commodities (i.e., commodities with SITC Revision 1 code of 1-4), and there were no trade creations or trade diversions for these commodities in the Russian market. When India slashed the tariff rate from earlier 6.94 per cent to 4.56 per cent on imported crude materials, inedible, except fuels (code 2) from Russia, it led to trade creation worth US\$ 9727558 in the Indian market. These goods from Russia diverted US\$ 5044018 from other countries to

Russia (trade diversion) in the Indian market. And, when India reduced the tariff rate for the imports of mineral fuels, lubricants and related materials (code 3) from 4.67 per cent to 3.38 per cent, there were trade creations worth US\$ 2098.668thousand and trade diversions worth US\$ 1699.603 thousand in favour of Russian goods in the Indian market. Similarly, when India reduced the tariff rate for the imports of animal and vegetable oils and fats (code 4) from 41.25 per cent to 9.94 per cent, there were trade creations worth US\$ 7238.628thousand and trade diversions worth US\$ 4262.2thousand in favour of Russian goods in the Indian market.

Table 6.5.2.2: Trade Creation and Diversion of India – Russia Bilateral Trade (Manufactured goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2015	5	62484.57	19194.88	8.09	5.3	62484.7	22363.03	8.53	8.09
	6	151013	79629.26	8.62	5.5	151012.23	87040.8	8.62	5.5
	7	161263.5	8429.428	7.1	4.5	161263.5	9321.5	7.1	4.5
	8	1885.257	660.387	8.43	5.31	0	0	8.0	8.0

Source: Scholar's own findings from SMART using WITS

In 2015, India slashed the tariff rate from earlier 8.09 per cent to 5.3 per cent on imported Crude Chemicals (code 5) from Russia, leading to trade creation worth US\$ 62484570 in the Indian market. These goods from Russia diverted US\$ 19194880 from other countries to Russia (trade diversion) in the Indian market. Similarly, Russia also slashed the tariff rate from 8.53 to 8.09 per cent on exported items from India which led to a trade creation of US\$ 62484700 and a trade diversion of US\$ 22363030 in the Russian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 8.62 per cent to 5.5 per cent on manufactured materials (code 6), there is trade creation worth US\$ 151013 thousand and trade diversion worth US\$ 79629.26

thousand in the Indian market. Similarly, when Russia reduces the tariff rate from 8.62 per cent to 5.5 per cent on these products, trade creation worth US\$ 151012.23 thousand and trade diversion worth US\$ 87040.8 thousand are made by Indian goods in the Russian market. Trade Creation worth US\$ 161263.5 thousand and trade diversion worth US\$ 8429.428 is made by machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 7.1 to 4.5 per cent. Similarly, the same Indian products make trade creation worth US\$ 161263.5 thousand and trade diversion worth US\$ 9321.5 thousand when Russia reduces the tariff rate from 7.1 to 4.5 per cent. Trade Creation worth US\$ 1885.257 thousand and trade diversion worth US\$ 660.387 is made by Russian miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 8.43 to 5.31 per cent. However, the same Indian products (code 8) did not make any trade creations or trade diversions as Russia kept the tariff rate unchanged.

6.5.3 The year 2019

Table 6.5.3.1: Trade Creation and Diversion of India – Russia Bilateral Trade (Agricultural goods)

Year	S1	India's import from Russia				India's export to Russia			
		Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	0	16342.15	21884.22	38.41	10.43	16342.1	21942.8	38.42	10.3
	1	1012.334	313.309	121.67	13.68	0	0	121.67	121.67
	2	18529.7	5117.177	8.78	4.83	0	0	8.78	8.78
	3	9855.54	5846.051	5.96	4.06	0	0	5.96	5.96
	4	100430.4	122306.5	100	13.79	0	0	100	100

Source: Scholar's own findings from SMART using WITS

In 2019, India slashed the tariff rate from earlier 38.41 per cent to 10.43 per cent on imported Food and live animals (code 0) from Russia, which led to trade creation worth US\$ 16342150 in the Indian market (Table 6.5.3.1). These goods from Russia diverted US\$ 21884220 from other countries to Russia (trade diversion) in the Indian market. Similarly, Russia also slashed the tariff rate from 38.42 to 10.3 per cent on exported items from India

which led to a trade creation of US\$ 16342100 and a trade diversion of US\$ 21942800 in the Russian market. Hence, both countries benefitted due to the reduction of tariff rates mutually. In the same year, Russia kept the tariff rates unchanged for other commodities (i.e., commodities with SITC code 1-4), and there were no trade creations or trade diversions for these commodities in the Russian market. When India slashed the tariff rate from earlier 121.67 per cent to 13.68 per cent on imported beverages and tobacco (code 1), there was trade creation worth US\$ 1012334 in the Indian market and trade diversions worth US\$ 313309 from other countries. When India slashed the tariff rate from earlier 8.78 per cent to 4.83 per cent on imported crude materials, inedible, except fuels (code 2) from Russia, it led to trade creation worth US\$ 18529700 in the Indian market. These goods from Russia diverted US\$ 5117177 from other countries to Russia (trade diversion) in the Indian market. And, when India reduced the tariff rate for the imports of mineral fuels, lubricants and related materials (code 3) from 5.96 per cent to 4.06 per cent, there were trade creations worth US\$ 9855.54 thousand and trade diversions worth US\$ 5846.051 thousand in favour of India-Russia bilateral trade in the Indian market. Similarly, when India reduced the tariff rate for the imports of animal and vegetable oils and fats (code 4) from 100 per cent to 13.79 per cent, there were trade creations worth US\$ 100430.4 thousand and trade diversions worth US\$ 122306.5 thousand in favour of Russian trade in the Indian market.

Table 6.5.3.2: Trade Creation and Diversion of India – Russia Bilateral Trade (Manufactured goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	5	50140	16574.97	8.53	5.42	0	0	8.53	8.53
	6	94470.6	49363.1	9.86	5.94	0	0	9.86	9.86
	7	9523.952	3244.724	7.53	4.75	0	0	7.53	7.53
	8	9056.592	2277.617	11.98	6.5	0	0	11.98	11.98

Source: Scholar's own findings from SMART using WITS

Table 6.5.3.2 shows that in 2019, India slashed the tariff rate from earlier 8.53 per cent to 5.42 per cent on imported Crude Chemicals (code 5) from Russia, which led to trade creation worth US\$ 50140 in the Indian market. These goods from Russia diverted US\$ 16574970 from other countries to Russian trade (trade diversion) in the Indian market. When India reduces the tariff rate from 9.86 per cent to 5.94 per cent on manufactured materials (code 6), trade creation is worth US\$ 94470.6 thousand, and trade diversion is worth US\$ 49363.1 thousand in the Indian market. Trade Creation worth US\$ 9523.952 thousand and trade diversion worth US\$ 3244.724 thousand is made by Russian machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 7.53 to 4.75 per cent. Trade Creation worth US\$ 9056.592 thousand and trade diversion worth US\$ 2277.617 thousand is made by Russian miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 11.98 to 6.5 per cent.

However, there were no trade creations or trade diversions for Indian commodities grouped under SITC Revision 1 with code 5-8, as Russia kept the tariff rate unchanged in the year 2019 for these goods.

6.5.4 The year 2021

Table 6.5.4.1: Trade Creation and Diversion of India – Russia Bilateral Trade (Agricultural goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	0	0	-1.909	43.94	43.94	7868.994	6603.83	5.68	3.93
	1	0	0	93.33	93.33	520.751	542.875	9.61	5.43
	2	0	-1926.685	8.19	8.19	1216.383	530.684	3.64	2.78
	3	0	-4.213	4.77	4.77	14.936	17.288	5	3.81
	4	0	-0.158	20.92	20.92	1158.415	170.838	6.74	4.38

Source: Scholar's own findings from SMART using WITS

Table 6.5.4.1 shows that in 2021, India kept the tariff rates unchanged for the bilateral trade between India and Russia for Agriculture and allied goods (i.e., for

commodities with SITC Code 0-4) which resulted in zero trade creations and negative or zero trade diversions for these commodities from Russia in the Indian market.

However, Russia slashed the tariff rate from earlier 5.68 per cent to 3.93 per cent on imported Food and live animals (code 0) from India, which led to trade creation worth US\$ 7868994 in the Russian market. This resulted in a trade diversion worth US\$ 6603830 from other countries favouring Indian trade (trade diversion) in the Russian market. Russia reduced the tariff rate from 9.61 per cent earlier to 5.43 per cent on imported beverages and tobacco (code 1) from India, resulting in trade creation worth US\$ 520751 and trade diversion worth US\$ 542875. Also, Russia's reduction of tariff rate from earlier 3.64 per cent to 2.78 per cent on imported crude materials, inedible, except fuels (code 2) from India resulted in trade creation worth US\$ 1216383 and trade diversion worth US\$ 530684 from other countries in favour of Indian trade in the Russian market. When Russia reduced the tariff rate for the imports of mineral fuels, lubricants and related materials (code 3) from 5 per cent to 3.81 per cent, there were trade creations worth US\$ 14.936thousand and trade diversions worth US\$ 17.288thousand in favour of India-Russia bilateral trade in Russian market. Similarly, when Russia slashed the tariff rate for imports of animal and vegetable oils and fats (code 4) from 6.74 per cent to 4.38 per cent, there were trade creations worth US\$ 1158.415thousand and trade diversions worth US\$ 170.838 thousand in favour of Indian trade in Russian market.

Table 6.5.4.2: Trade Creation and Diversion of India – Russia Bilateral Trade (Manufactured goods)

Year	India's import from Russia					India's export to Russia			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	5	0	-63.542	8.53	8.53	7897.949	9889.539	4.27	3.25
	6	0	-65.23	9.7	9.7	27872.944	11781.148	7.63	4.94
	7	0	-5.399	8.02	8.02	8119.694	9078.302	2.87	1.97
	8	0	-0.979	13.85	13.85	6267.761	6264.839	8.12	4.91

Source: Scholar's own findings from SMART using WITS

In 2021, India kept the tariff rates unchanged for the bilateral trade between India and Russia for Manufactured goods (i.e., for commodities with SITC Revision 1 Code of 5-8), which resulted in zero trade creations and negative trade diversions for these commodities from Russia in the Indian market (Table 6.5.4.2).

However, Russia slashed the tariff rate from 4.27 per cent to 3.25 per cent on imported Crude Chemicals (code 5) from India, which led to trade creation worth US\$ 7897949 in the Russian market. These goods from India diverted US\$ 9889539 from other countries to Indian trade (trade diversion) in the Russian market. When Russia reduces the tariff rate from 7.63 per cent to 4.94 per cent on manufactured materials (code 6), trade creation is worth US\$ 27872.944 thousand, and trade diversion is worth US\$ 11781.148 thousand in the Russian market. Trade Creation worth US\$ 8119.694 thousand and trade diversion worth US\$ 9078.302 thousand is made by Indian machinery and transport equipment (code 7) in the Russian market when Russia reduces the tariff rate from 2.87 to 1.97 per cent. Trade Creation worth US\$ 6267.761 thousand and trade diversion worth US\$ 6264.839 thousand is made by Indian miscellaneous manufactured articles (code 8) in the Russian market when Russia reduces the tariff rate from 8.12 to 4.91 per cent.

6.6 India-China

6.6.1 The year 2010

Table 6.6.1.1: Trade Creation and Diversion of India – China Bilateral Trade (agricultural goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	135424.3	32181.71	33.23	10.23	15394.6	5269.334	14.01	6.64
	1	16472.42	3731.082	99.5	12.82	26.625	14.601	15.94	6.76
	2	77531.65	7637.126	9.42	4.89	181128.7	25146.46	5.34	3.25
	3	19761.53	13292.51	8.08	5.27	69043.01	6687.869	5.87	3.95
	4	722.204	1119.589	20.24	6.55	50088.62	910.159	12.47	6.7

Source: Scholar's own findings from SMART using WITS

In 2010, India slashed the tariff rate from earlier 33.23 per cent to 10.23 per cent on imported Food and live animals (code 0) from China, leading to trade creation worth US\$ 135424300 in the Indian market (Table 6.6.1.1). These goods from China diverted US\$ 32181710 from other countries to Chinese trade (trade diversion) in the Indian market. Similarly, China also slashed the tariff rate from 14.01 to 6.64 per cent on exported items from India which led to a trade creation of US\$ 15394600 and a trade diversion of US\$ 5269334 in the Chinese market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 99.5 per cent to 12.82 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 16472.42 thousand, and trade diversion is worth US\$ 3731.082 thousand in the Indian market. Similarly, when China reduces the tariff rate from 15.94 per cent to 6.76 per cent on these products, trade creation worth US\$ 26.625 thousand and trade diversion worth US\$ 14.601 thousand are made by Indian goods in the Chinese market. Trade Creation worth US\$ 77531.65 thousand and trade diversion worth US\$ 7637.126 is made by Chinese crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 9.42 to 4.89 per cent. Similarly, the same Indian products make trade creation worth US\$ 181128.7 thousand and trade diversion worth US\$ 25146.46 thousand when China reduces the tariff rate from 5.34 to 3.25 per cent. Trade Creation worth US\$ 19761.53 thousand and trade diversion worth US\$ 13292.51 is made by Chinese mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 8.08 to 5.27 per cent. Similarly, the same Indian products make trade creation worth US\$ 69043.01 thousand and trade diversion worth US\$ 6687.869 thousand when China reduces the tariff rate from 5.87 to 3.95 per cent. Trade Creation worth US\$ 722.204 thousand and trade diversion worth US\$ 1119.589 thousand is made by Chinese animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 20.24 to 6.55 per cent. Similarly, the same Indian products make trade creation worth US\$ 50088.62 thousand and

trade diversion worth US\$ 910.159 thousand when China reduces the tariff rate from 12.47 to 6.7 per cent.

Table 6.6.1.2: Trade Creation and Diversion of India – China Bilateral Trade (Manufactured goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000 US\$	Trade Diversion 1000 US\$	Old rate In %	New Rate In %	Trade creation In 1000 US\$	Trade Diversion In 1000 US\$	Old rate In %	New Rate In %
2010	5	264109.5	97075.48	8.33	5.27	20803.37	24367.42	6.35	4.41
	6	920946.5	115506.5	8.18	5.24	89092.95	18824.29	8.91	5.44
	7	1150047	202661.1	7.86	4.85	13572.88	13491.88	6.9	4.26
	8	276952.7	60759.66	9.18	5.74	72564.16	11883.46	12.31	6.24

Source: Scholar's own findings from SMART using WITS

Table 6.6.1.2 shows that in 2010, India slashed the tariff rate from 8.33 per cent to 5.27 per cent on imported Crude Chemicals (code 5) from China, leading to trade creation worth US\$ 264109500 in the Indian market. These goods from China diverted US\$ 97075480 from other countries to China (trade diversion) in the Indian market. Similarly, China slashed the tariff rate from 6.35 to 4.41 per cent on exported items from India, leading to a trade creation of US\$ 20803370 and a trade diversion of US\$ 24367420 in the Chinese market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 8.18 per cent to 5.24 per cent on manufactured materials (code 6), trade creation is worth US\$ 920946.5 thousand, and trade diversion is worth US\$ 115506.5 thousand in the Indian market. Similarly, when China reduces the tariff rate from 8.91 per cent to 5.44 per cent on these products, trade creation worth US\$ 89092.95 thousand and trade diversion worth US\$ 18824.29 thousand are made by Indian goods in the Chinese market. Trade Creation worth US\$ 1150047 thousand and trade diversion worth US\$ 202661100 is made by machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 7.86 to 4.85 per cent. Similarly, the same Indian products make trade creation worth US\$ 13572.88 thousand and trade diversion worth US\$

13491.88 thousand when China reduces the tariff rate from 6.9 to 4.26 per cent. Trade Creation worth US\$ 276952.7 thousand and trade diversion worth US\$ 60759.66 is made by Chinese miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 9.18 to 5.74 per cent. Similarly, the same Indian products make trade creation worth US\$ 72564.16 thousand and trade diversion worth US\$ 11883.46 thousand when China reduces the tariff rate from 12.31 to 6.24 per cent.

6.6.2 The year 2015

Table 6.6.2.1: Trade Creation and Diversion of India – China Bilateral Trade (Agricultural goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000 US\$	Trade Diversion 1000 US\$	Old rate In %	New Rate In %	Trade creation In 1000 US\$	Trade Diversion In 1000 US\$	Old rate In %	New Rate In %
2015	0	465017.9	29535	34.82	10.31	17459.17	5004.114	13.25	6.59
	1					1529.124	322.04	17.24	7.18
	2	106166.2	10268.44	9.6	5.15	44421.64	33388.9	5.42	3.35
	3	21729.57	7158.945	5.47	3.89	2789.937	5475.259	5.94	4.15
	4	633.878	527.773	35.55	10.05	57161.98	2363.611	12.5	6.71

Source: Scholar's own findings from SMART using WITS

In 2015, India slashed the tariff rate from earlier 34.82 per cent to 10.31 per cent on imported Food and live animals (code 0) from China, leading to trade creation worth US\$ 465017900 in the Indian market (Table 6.6.2.1). These goods from China diverted US\$ 29535 from other countries to Chinese trade (trade diversion) in the Indian market. Similarly, China also slashed the tariff rate from 13.25 to 6.59 per cent on exported items from India which led to trade creation of US\$ 17459170 and a trade diversion of US\$ 5004114 in the Chinese market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When China reduces the tariff rate from 17.24 per cent to 7.18 per cent on beverage and tobacco products (code 1), trade creation worth US\$ 1529.124 thousand and trade diversion worth US\$ 322.04 thousand are made by Indian goods in the Chinese market. Trade Creation worth US\$ 106166.2 thousand and trade diversion worth US\$ 10268.44 thousand is made by Chinese crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 9.6 to 5.15 per cent. Similarly, the same Indian products make trade creation worth US\$ 44421.64 thousand and trade diversion worth US\$ 33388.9 thousand when China reduces the

tariff rate from 5.42 to 3.35 per cent. Trade Creation worth US\$ 21729.57 thousand and trade diversion worth US\$ 7158.945 is made by Chinese mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 5.47 to 3.89 per cent. Similarly, the same Indian products make trade creation worth US\$ 2789.937 thousand and trade diversion worth US\$ 5475.259thousand when China reduces the tariff rate from 5.94 to 4.15 per cent. Trade Creation worth US\$ 633.878 thousand and trade diversion worth US\$ 527.773 thousand is made by Chinese animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 35.55 to 10.05 per cent. Similarly, the same Indian products make trade creation worth US\$ 57161.98 thousand and trade diversion worth US\$ 2363.611 thousand when China reduces the tariff rate from 12.5 to 6.71 per cent.

Table 6.6.2.2: Trade Creation and Diversion of India – China Bilateral Trade (Manufactured goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2015	5	470374.1	175827.3	8.18	5.28	27081.89	24841.89	6.29	4.36
	6	1485159	179407.9	9.2	5.77	145196.2	30130.56	8.89	5.45
	7	1549788	288598.5	8.14	4.91	21258.41	22703.76	6.85	4.3
	8	587662.7	89061.69	9.37	5.81	103820.9	22364.13	11.46	6.16

Source: Scholar's own findings from SMART using WITS

In 2015, India slashed the tariff rate from earlier 8.18 per cent to 5.28 per cent on imported Crude Chemicals (code 5) from China, leading to trade creation worth US\$ 470374100 in the Indian market (Table 6.6.2.2). These goods from China diverted US\$ 175827300 from other countries to China (trade diversion) in the Indian market. Similarly, China slashed the tariff rate from 6.29 to 4.36 per cent on exported items from India, leading to a trade creation of US\$ 27081890 and a trade diversion of US\$ 24841890 in the Chinese market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 9.2 per cent to 5.77 per cent on manufactured materials (code 6), trade creation is worth US\$ 1485159 thousand, and trade diversion is worth US\$ 179407.9 thousand in the Indian market.

Similarly, when China reduces the tariff rate from 8.89 per cent to 5.45 per cent on these products, trade creation worth US\$ 145196.2 thousand and trade diversion worth US\$ 30130.56 thousand are made by Indian goods in the Chinese market. Trade Creation worth US\$ 1549788 thousand and trade diversion worth US\$ 288598500 is made by machinery and

transport equipment (code 7) in the Indian market when India reduces the tariff rate from 8.14 to 4.91 per cent. Similarly, the same Indian products make trade creation worth US\$ 21258.41 thousand and trade diversion worth US\$ 22703.76 thousand when China reduces the tariff rate from 6.85 to 4.3 per cent. Trade Creation worth US\$ 587662.7 thousand and trade diversion worth US\$ 89061690 is made by Chinese miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 9.37 to 5.81 per cent. Similarly, the same Indian products make trade creation worth US\$ 103820.9 thousand and trade diversion worth US\$ 22364.13 thousand when China reduces the tariff rate from 11.46 to 6.16 per cent.

6.6.3 The year 2019

Table 6.6.3.1: Trade Creation and Diversion of India – China Bilateral Trade (Agricultural goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	0	116175.6	31296.98	32.91	9.73	23262.39	8630.348	9.79	5.56
	1	19723.73	501.527	98.75	12.87	5871.168	333.575	17.84	6.73
	2	45008.13	17924.18	9.91	4.98	32926.25	30062.18	5.02	3.19
	3	7321.842	11190.7	6.41	4.27	639.883	1100.591	6.39	4.4
	4	2668.774	2282.51	42.31	10.2	82011.8	2839.522	12.93	6.82

Source: Scholar's own findings from SMART using WITS

In 2019, India slashed the tariff rate from earlier 32.91 per cent to 9.73 per cent on imported Food and live animals (code 0) from China, leading to trade creation worth US\$ 116175600 in the Indian market (Table 6.6.3.1). These goods from China diverted US\$31296980 from other countries to Chinese trade (trade diversion) in the Indian market. Similarly, China slashed the tariff rate from 9.79 to 5.56 per cent on exported items from India, leading to a trade creation of US\$ 23262390 and a trade diversion of US\$ 8630348 in the Chinese market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 98.75 per cent to 12.87 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 19723.73 thousand, and trade diversion is worth US\$ 501.527 thousand in the Indian market. Similarly, when China

reduces the tariff rate from 17.84 per cent to 6.73 per cent on these products, trade creation worth US\$ 5871.168 thousand and trade diversion worth US\$ 333.575 thousand are made by Indian goods in the Chinese market. Trade Creation worth US\$ 45008.13 thousand and trade diversion worth US\$ 17924.18 thousand is made by Chinese crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 9.91 to 4.98 per cent. Similarly, the same Indian products make trade creation worth US\$ 32926.25 thousand and trade diversion worth US\$ 30062.18 thousand when China reduces the tariff rate from 5.02 to 3.19 per cent. Trade Creation worth US\$ 7321.842 thousand and trade diversion worth US\$ 11190.7 thousand is made by Chinese mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 6.41 to 4.27 per cent. Similarly, the same Indian products make trade creation worth US\$ 639.883 thousand and trade diversion worth US\$ 1100.591 thousand when China reduces the tariff rate from 6.39 to 4.4 per cent. Trade Creation worth US\$ 2668.774 thousand and trade diversion worth US\$ 2282.51 thousand is made by Chinese animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 42.31 to 10.2 per cent. Similarly, the same Indian products make trade creation worth US\$ 82011.8 thousand and trade diversion worth US\$ 2839.522 thousand when China reduces the tariff rate from 12.93 to 6.82 per cent.

Table 6.6.3.2: Trade Creation and Diversion of India – China Bilateral Trade (Manufactured goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	5	668509.4	209497.6	7.87	5.09		-512.885	6.22	6.22
	6	3133481	260092.3	11.06	6.19		-1175.45	7.05	7.05
	7	3273857	629120.6	9.35	5.13		-1183.39	6.4	6.4
	8	1596757	215483.8	14.34	7.19		-1063	6.95	6.95

Source: Scholar's own findings from SMART using WITS

In 2019, India slashed the tariff rate from earlier 7.87 per cent to 5.09 per cent on imported Crude Chemicals (code 5) from China, leading to trade creation worth US\$ 668509400 in the Indian market. These goods from China diverted US\$ 209497600 from other countries to Chinese trade (trade diversion) in the Indian market. When India reduces the tariff rate from 11.06 per cent to 6.19 per cent on manufactured materials (code 6), trade creation is worth US\$ 3133481 thousand and trade diversion worth US\$ 260092.3 thousand in the Indian market. Trade Creation worth US\$ 3273857 thousand and trade diversion worth US\$ 629120.6 thousand is made by Chinese machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 9.35 to 5.13 per cent. Trade Creation worth US\$ 1596757 thousand and trade diversion worth US\$ 215483.8 thousand is made by Chinese miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 14.34 to 7.19 per cent.

However, there were no trade creations or trade diversions for Indian commodities grouped under SITC Revision 1 with codes 5-8, as China kept the tariff rate unchanged in the year 2019 for these goods.

6.6.4 The year 2021

Table 6.6.4.1: Trade Creation and Diversion of India – China Bilateral Trade (Agricultural goods)

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	0	0	-123.911	32.84	32.84	142016.546	27142.015	10.17	5.58
	1	0	-153.883	91.11	91.11	229.249	163.766	17	6
	2	0	-173.379	8.37	8.37	132398.378	141574.783	4.98	3.17
	3	0	-17.963	4.73	4.73	444.475	541.499	6.54	4.49
	4	0	-0.637	27.44	27.44	113040.306	8182.662	12.97	6.89

Source: Scholar's own findings from SMART using WITS

In 2021, India kept the tariff rates unchanged for the bilateral trade between India and China for all the Agriculture and allied goods (i.e., for commodities with SITC Code 0-4), which resulted in zero trade creations and negative trade diversions for these commodities from China in the Indian market (Table 6.6.4.1).

However, China slashed the tariff rate from earlier 10.17 per cent to 5.58 per cent on imported Food and live animals (code 0) from India, leading to trade creation worth US\$ 142016546 in the Chinese market. This resulted in trade diversion worth US\$ 27142015 from other countries favouring Indian trade (trade diversion) in the Chinese market. China reduced the tariff rate from earlier 17 per cent to 6 per cent on imported beverages and tobacco (code 1) from India, resulting in trade creation worth US\$ 229249 and trade diversion worth US\$ 163766. Also, China's reduction of tariff rate from earlier 4.98 per cent to 3.17 per cent on imported crude materials, inedible, except fuels (code 2) from India resulted in trade creation worth US\$ 132398378 and trade diversion worth US\$ 141574783 from other countries in favour of Indian trade in the Chinese market. When China reduced the tariff rate for the imports of mineral fuels, lubricants and related materials (code 3) from 6.54 per cent to 4.49 per cent, there were trade creations worth US\$ 444.475 thousand and trade diversions worth US\$ 541.499thousand in favour of India-China bilateral trade in the Chinese market. Similarly, when China slashed the tariff rate for imports of animal and vegetable oils and fats (code 4) from 12.97 per cent to 6.89 per cent, there were trade creations worth US\$ 113040.306 thousand and trade diversions worth US\$ 8182.662 thousand in favour of Indian trade in the Chinese market.

**Table 6.6.4.2: Trade Creation and Diversion of India – China Bilateral Trade
(Manufactured goods)**

Year	India's import from China					India's export to China			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	5	0	-1677.228	7.85	7.85	71725.05	48542.534	5.93	4.15
	6	0	-878.886	9.42	9.42	101703.819	47092.327	6.57	4.51
	7	0	-2445.271	9.65	9.65	65192.852	30515.358	5.12	3.47
	8	0	-392.928	14.26	14.26	45121.906	12622.121	5.55	3.83

Source: Scholar's own findings from SMART using WITS

In 2021, India kept the tariff rates unchanged for the bilateral trade between India and China for Manufactured goods (i.e. for commodities with SITC Revision 1 Code of 5-8), which resulted in zero trade creations and negative trade diversions for these commodities from China in the Indian market (Table 6.6.4.2).

However, China slashed the tariff rate from 5.93 per cent to 4.15 per cent on imported Crude Chemicals (code 5) from India, leading to trade creation worth US\$ 71725050 in the Chinese market. These goods from India diverted US\$ 48542534 from other countries to Indian trade (trade diversion) in the Chinese market. When China reduces the tariff rate from 6.57 per cent to 4.51 per cent on manufactured materials (code 6), trade creation is worth US\$ 101703.819 thousand, and trade diversion is worth US\$ 47092.327 thousand in the Chinese market. Trade Creation worth US\$ 65192.852 thousand and trade diversion worth US\$ 30515.358 thousand is made by Indian machinery and transport equipment (code 7) in the Chinese market when China reduces the tariff rate from 5.12 to 3.47 per cent. Trade Creation worth US\$ 45121.906 thousand and trade diversion worth US\$ 12622.121 thousand is made by Indian miscellaneous manufactured articles (code 8) in the Chinese market when China reduces the tariff rate from 5.55 to 3.83 per cent.

6.7 India-South Africa

6.7.1 The year 2010

Table 6.7.1.1: Trade Creation and Diversion of India – South Africa Bilateral Trade (Agricultural goods)

Year	India's import from South Africa					India's export to South Africa			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	14091.17	2033.105	38.36	10.88	3698.782	1993.143	7.86	3.78
	1	2909.443	428.793	135	13.95	12649.07	5615.975	16.68	5.76
	2	6452.73	2466.225	6.52	3.79	926.942	207.968	5.87	1.45
	3	8900.079	10732.85	7.06	4.77	183645.1	9287.201	2.85	1.58
	4	937.122	1882.165	57.5	10.77	838.616	77.63	6.67	4.17

Source: Scholar's own findings from SMART using WITS

As seen in Table 6.7.1.1, in 2010, India slashed the tariff rate from 38.36 per cent to 10.88 per cent on imported Food and live animals (code 0) from South Africa, leading to trade creation worth US\$ 14091170 in the Indian market. These goods from South Africa diverted US\$ 2033105 from other countries to South African trade (trade diversion) in the Indian market. Similarly, South Africa slashed the tariff rate from 7.86 to 3.78 per cent on exported items from India, leading to the trade creation of US\$ 3698782 and a trade diversion of US\$ 1993143 in the South African market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 135 per cent to 13.95 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 2909.443 thousand, and trade diversion is worth US\$ 428.793 thousand in the Indian market.

Similarly, when South Africa reduces the tariff rate from 16.68 per cent to 5.76 per cent on these products, trade creation worth US\$ 12649.07 thousand and trade diversion worth US\$ 5615.975 thousand are made by Indian goods in the South African market. Trade Creation worth US\$ 6452.73 thousand and trade diversion worth US\$ 2466.225 thousand is made by South African crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 6.52 to 3.79 per cent. Similarly, the same Indian products make trade creation worth US\$ 926.942 thousand and trade diversion worth US\$ 207.968 thousand when South

Africa reduces the tariff rate from 5.87 to 1.45 per cent. Trade Creation worth US\$ 8900.079 thousand and trade diversion worth US\$ 10732.85 thousand is made by South African mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 7.06 to 4.77 per cent. Similarly, the same Indian products make trade creation worth US\$ 183645.1 thousand and trade diversion worth US\$ 9287.201 thousand when South Africa reduces the tariff rate from 2.85 to 1.58 per cent. Trade Creation worth US\$ 937.122 thousand and trade diversion worth US\$ 1882.165 thousand is made by South African animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 57.5 to 10.77 per cent. Similarly, the same Indian products make trade creation worth US\$ 838.616 thousand and trade diversion worth US\$ 77.63 thousand when South Africa reduces the tariff rate from 6.67 to 4.17 per cent.

Table 6.7.1.2: Trade Creation and Diversion of India – South Africa Bilateral Trade (Manufactured goods)

Year	India's imports from South Africa					India's export to South Africa			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	5	7012.884	7728.403	9.3	5.48	Data not Available			
	6	10936.719	4646.903	8.01	5.19				
	7	6986.607	4483.008	7.37	4.72				
	8	212.611	134.505	8.94	5.6				

Source: Scholar's own findings from SMART using WITS

In 2010, India slashed the tariff rate from earlier 9.3 per cent to 5.48 per cent on imported Crude Chemicals (code 5) from South Africa, leading to trade creation worth US\$ 7012884 in the Indian market (Table 6.7.1.2). These goods from South Africa diverted US\$ 7728403 from other countries to South African trade (trade diversion) in the Indian market. When India reduces the tariff rate from 8.01 per cent to 5.19 per cent on manufactured materials (code 6), trade creation is worth US\$ 10936.719 thousand, and trade diversion is

worth US\$ 4646.903 thousand in the Indian market. Trade Creation worth US\$ 6986.607 thousand and trade diversion worth US\$ 4483.008 thousand is made by South African machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 7.37 to 4.72 per cent. Trade Creation worth US\$ 212.611 thousand and trade diversion worth US\$ 134.505 thousand is made by South African miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 8.94 to 5.6 per cent.

However, data was not available for Indian Manufactured goods with SITC Revision 1 code of 5-8 in the South African market for the year 2010.

6.7.2 The year 2015

Table 6.7.2.1: Trade Creation and Diversion of India – South Africa Bilateral Trade (Agricultural goods)

Year	S1	India's import from South Africa				India's export to South Africa			
		Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2015	0	40589.34	2631.078	35.37	10.56	2800.055	1720.329	8.37	3.96
	1	86729.14	5421.237	8.64	4.48	12815.68	256.184	25.2	8.32
	2	32225.23	12283.5	4.93	3.63	367.937	153.631	2.78	1.62
	3	3.861	1.452	38.06	10.31	8379.08	14396.16	3.17	1.95
	4					423.644	46.011	6.88	4.32

Source: Scholar's own findings from SMART using WITS

In 2015, India slashed the tariff rate from 35.37 per cent to 10.56 per cent on imported Food and live animals (code 0) from South Africa, leading to trade creation worth US\$ 40589340 in the Indian market (Table 6.7.2.1). These goods from South Africa diverted US\$ 2631078 from other countries to South African trade (trade diversion) in the Indian market. Similarly, South Africa also slashed the tariff rate from 8.37 to 3.96 per cent on exported items from India which led to trade creation of US\$ 2800055 and a trade diversion of US\$ 1720329 in the South African market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 8.64 per cent to

4.48 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 86729.14 thousand, and trade diversion is worth US\$ 5421.237 thousand in the Indian market. Similarly, when South Africa reduces the tariff rate from 25.2 per cent to 8.32 per cent on these products, trade creation worth US\$ 12815.68 thousand and trade diversion worth US\$ 256.184 thousand are made by Indian goods in the South African market. Trade Creation worth US\$ 32225.23 thousand and trade diversion worth US\$ 12283.5 thousand is made by South African crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 4.93 to 3.63 per cent. Similarly, the same Indian products make trade creation worth US\$ 367.937 thousand and trade diversion worth US\$ 153.631 thousand when South Africa reduces the tariff rate from 2.78 to 1.62 per cent. Trade Creation worth US\$ 3.861 thousand and trade diversion worth US\$ 1.452 thousand is made by South African mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 38.06 to 10.31 per cent. Similarly, the same Indian products make trade creation worth US\$ 8379.08 thousand and trade diversion worth US\$ 14396.16 thousand when South Africa reduces the tariff rate from 3.17 to 1.95 per cent. Trade Creation worth US\$ 423.644 thousand and trade diversion worth US\$ 46.011 thousand is made by Indian animal and vegetable oil (code 4) in the South African market when South Africa reduces the tariff rate from 6.88 to 4.32 per cent.

Table 6.7.2.2: Trade Creation and Diversion of India – South Africa Bilateral Trade (Manufactured goods)

Year	India's import from South Africa					India's export to South Africa			
	S1	Trade creation in 1000 US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000 US\$	Trade Diversion In 1000 US\$	Old rate In %	New Rate In %
2015	5					1669.831	2512.554	2.26	1.29
	6	DATA	NOT	A V A I L A B L E		52055.42	14266.02	11.2	5.25
	7					185610.6	65638.36	3.16	1.76
	8					33431.38	32585.21	20.55	6.69

Source: Scholar's own findings from SMART using WITS

In 2015, there was a data constraint on the imports of goods under the SITC Revision 1 Code 5-8 from South Africa to the Indian market.

However, South Africa slashed the tariff rate from 2.26 per cent to 1.29 per cent on imported Crude Chemicals (code 5) from India, leading to trade creation worth US\$ 1669831 in the South African market (Table 6.7.2.2). These goods from India diverted US\$ 2512554 from other countries to Indian trade (trade diversion) in the South African market. When South Africa reduces the tariff rate from 11.2 per cent to 5.25 per cent on manufactured materials (code 6), trade creation is worth US\$ 52055.42 thousand, and trade diversion is worth US\$ 14266.02 thousand in the South African market. Trade Creation worth US\$ 185610.6 thousand and trade diversion worth US\$ 65638.36 thousand is made by Indian machinery and transport equipment (code 7) in the South African market when South Africa reduces the tariff rate from 3.16 to 1.76 per cent. Trade Creation worth US\$ 33431.38 thousand and trade diversion worth US\$ 32585.21 thousand is made by Indian miscellaneous manufactured articles (code 8) in the South African market when South Africa reduces the tariff rate from 20.55 to 6.69 per cent.

6.7.3 The year 2019

Table 6.7.3.1: Trade Creation and Diversion of India – South Africa Bilateral Trade (Agricultural goods)

Year	S1	India's import from South Africa				India's export to South Africa			
		Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	0	85344.6	9638.494	41.57	11.08	2408.12	2132.896	9.04	4.25
	1	1581.202	336.497	102	12.85	8586.903	199.299	17	5.32
	2	51701.72	7312.849	10.07	4.88	483.529	277.007	2.39	1.44
	3	34197.05	11363.85	6.14	4.2	7.434	2.572	3.67	2.18
	4	0.01	0.014	53.75	9.45	680.23	82.444	7.08	4.42

Source: Scholar's own findings from SMART using WITS

In 2019, India slashed the tariff rate from earlier 41.57 per cent to 11.08 per cent on imported Food and live animals (code 0) from South Africa, leading to trade creation worth US\$ 85344600 in the Indian market (Table 6.7.3.1). These goods from South Africa diverted US\$ 9638494 from other countries to South African trade (trade diversion) in the Indian market. Similarly, South Africa also slashed the tariff rate from 9.04 to 4.25 per cent on exported items from India which led to trade creation of US\$ 2408120 and a trade diversion of US\$ 2132896 in the South African market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 102 per cent to 12.85 per cent on beverage and tobacco products (code 1), trade creation is worth US\$ 1581.202 thousand, and trade diversion is worth US\$ 336.497 thousand in the Indian market.

Similarly, when South Africa reduces the tariff rate from 17 per cent to 5.32 per cent on these products, trade creation worth US\$ 8586.903 thousand and trade diversion worth US\$ 199.299 thousand are made by Indian goods in the South African market. Trade Creation worth US\$ 51701.72 thousand and trade diversion worth US\$ 7312.849 thousand is made by South African crude oil, etc. (code 2) in the Indian market when India reduces the tariff rate from 10.07 to 4.88 per cent. Similarly, the same Indian products make trade creation worth US\$ 483.529 thousand and trade diversion worth US\$ 277.007 thousand when South Africa reduces the tariff rate from 2.39 to 1.44 per cent. Trade Creation worth US\$ 34197.05 thousand and trade diversion worth US\$ 11363.85 thousand is made by South African mineral fuels (code 3) in the Indian market when India reduces the tariff rate from 6.14 to 4.2 per cent. Similarly, the same Indian products make trade creation worth US\$ 7.434 thousand and trade diversion worth US\$ 2.572 thousand when South Africa reduces the tariff rate from 3.67 to 2.18 per cent. Trade Creation worth US\$ 0.01 thousand and trade diversion worth US\$ 0.014 thousand is made by South African animal and vegetable oil (code 4) in the Indian market when India reduces the tariff rate from 53.75 to 9.45 per cent.

Similarly, the same Indian products make trade creation worth US\$ 680.23 thousand and trade diversion worth US\$ 82.444 thousand when South Africa reduces the tariff rate from 7.08 to 4.42 per cent.

Table 6.7.3.2: Trade Creation and Diversion of India – South Africa Bilateral Trade (Manufactured goods)

Year	India's import from South Africa					India's export to South Africa			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2019	5	4589.754	4186.305	9.46	5.73	2988.309	4026.71	2.09	1.19
	6	111964.6	31485.54	10.3	6.1	51399.47	16647.78	11.13	5.25
	7	505763.9	11714.1	8.79	5.22	113855.9	80565.18	2.97	1.63
	8	630.453	247.899	13.38	6.92	38838.47	43422.73	20.17	6.59

Source: Scholar's own findings from SMART using WITS

Table 6.7.3.2 shows that in 2019, India slashed the tariff rate from 9.46 per cent to 5.73 per cent on imported Crude Chemicals (code 5) from South Africa, leading to trade creation worth US\$ 4589754 in the Indian market. These goods from South Africa diverted US\$ 4186305 from other countries in favour of South Africa (trade diversion) in the Indian market. Similarly, South Africa slashed the tariff rate from 2.09 to 1.19 per cent on exported items from India, leading to trade creation of US\$ 2988309 and a trade diversion of US\$ 4026710 in the South African market. Hence, both countries benefitted due to the reduction of tariff rates mutually. When India reduces the tariff rate from 10.3 per cent to 6.1 per cent on manufactured materials (code 6), trade creation is worth US\$ 111964.6 thousand, and trade diversion is worth US\$ 31485.54 thousand in the Indian market.

Similarly, when South Africa reduces the tariff rate from 11.13 per cent to 5.25 per cent on these products, trade creation worth US\$ 51399.47 thousand and trade diversion worth US\$ 16647.78 thousand are made by Indian goods in the South African market. Trade Creation worth US\$ 505763.9 thousand and trade diversion worth US\$ 11714.1 thousand is

made by machinery and transport equipment (code 7) in the Indian market when India reduces the tariff rate from 8.79 to 5.22 per cent. Similarly, the same Indian products make trade creation worth US\$ 113855.9 thousand and trade diversion worth US\$ 80565.18 thousand when South Africa reduces the tariff rate from 2.97 to 1.63 per cent. Trade Creation worth US\$ 630.453 thousand and trade diversion worth US\$ 247.899 thousand is made by South African miscellaneous manufactured articles (code 8) in the Indian market when India reduces the tariff rate from 13.38 to 6.92 per cent. Similarly, the same Indian products make trade creation worth US\$ 38838.47 thousand and trade diversion worth US\$ 43422.73 thousand when South Africa reduces the tariff rate from 20.17 to 6.59 per cent.

6.7.4 The year 2021

Table 6.7.4.1: Trade Creation and Diversion of India – South Africa Bilateral Trade (Agricultural goods)

	India's import from South Africa					India's export to South Africa			
Year	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	0	0	-217.797	34.29	34.29	2594.956	2405.207	8.74	4.13
	1	0	-11.634	115.83	115.83	5004.334	108.926	29.72	7.85
	2	0	-394.745	8.33	8.33	456.603	304.555	2.29	1.41
	3	0	-0.057	4.83	4.83	32.659	11.811	2.92	1.67
	4	0	0	39.58	39.58	480.48	76.859	7.19	4.49

Source: Scholar's own findings from SMART using WITS

In 2021, India kept the tariff rates unchanged for the bilateral trade between India and South Africa for all the Agriculture and allied goods (i.e., for commodities with SITC Code 0-4), which resulted in zero trade creations and negative trade diversions for these commodities from South Africa in the Indian market (Table 6.7.4.1).

However, South Africa slashed the tariff rate from earlier 8.74 per cent to 4.13 per cent on imported Food and live animals (code 0) from India, leading to trade creation worth US\$ 2594956 in the South African market. This resulted in a trade diversion worth US\$ 2405207 from other countries favouring Indian trade (trade diversion) in the South African

market. South Africa reduced the tariff rate from 29.72 per cent earlier to 7.85 per cent on imported beverages and tobacco (code 1) from India, resulting in trade creation worth US\$ 5004334 and trade diversion worth US\$ 108926. Also, South Africa's reduction of tariff rate from earlier 2.29 per cent to 1.41 per cent on imported crude materials, inedible, except fuels (code 2) from India resulted in trade creation worth US\$ 456603 and trade diversion worth US\$ 304555 from other countries in favour of Indian trade in the South African market. When South Africa reduced the tariff rate for the imports of mineral fuels, lubricants and related materials (code 3) from 2.92 per cent to 1.67 per cent, there were trade creations worth US\$ 32.659thousand and trade diversions worth US\$ 11.811thousand in favour of India-South Africa bilateral trade in South African market. Similarly, when South Africa slashed the tariff rate for imports of animal and vegetable oils and fats (code 4) from 7.19 per cent to 4.49 per cent, there were trade creations worth US\$ 480.48thousand and trade diversions worth US\$ 76.859 thousand in favour of Indian trade in the South African market.

Table 6.7.4.2: Trade Creation and Diversion of India – South Africa Bilateral Trade (Manufactured goods)

Year	India's import from South Africa					India's export to South Africa			
	S1	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2021	5	0	-53.575	8.94	8.94	2720.986	3447.248	1.99	1.13
	6	0	-30.285	10.06	10.06	35101.212	14139.204	11.36	5.39
	7	0	-16.784	8.72	8.72	80172.884	47796.445	3.02	1.67
	8	0	-0.431	13.65	13.65	26567.315	28668.815	20.09	6.53

Source: Scholar's own findings from SMART using WITS

In 2021, India kept the tariff rates unchanged for the bilateral trade between India and South Africa for Manufactured goods (i.e., for commodities with SITC Revision 1 Code of 5-8), which resulted in zero trade creations and negative trade diversions for these commodities from South Africa in the Indian market (Table 6.7.4.2).

However, South Africa slashed the tariff rate from 1.99 per cent to 1.13 per cent on imported Crude Chemicals (code 5) from India, leading to trade creation worth US\$ 2720986 in the South African market. These goods from India diverted US\$ 3447248 from other countries to Indian trade (trade diversion) in the South African market. When South Africa reduces the tariff rate from 11.36 per cent to 5.39 per cent on manufactured materials (code 6), trade creation is worth US\$ 35101.212 thousand, and trade diversion is worth US\$ 14139.204 thousand in the South African market. Trade Creation worth US\$ 80172.884 thousand and trade diversion worth US\$ 47796.445 thousand is made by Indian machinery and transport equipment (code 7) in the South African market when South Africa reduces the tariff rate from 3.02 to 1.67 per cent. Trade Creation worth US\$ 26567.315 thousand and trade diversion worth US\$ 28668.815 thousand is made by Indian miscellaneous manufactured articles (code 8) in the South African market when South Africa reduces the tariff rate from 20.09 to 6.53 per cent.

6.8 Conclusion

In this chapter, the above findings from India-Brazil bilateral trade have shown that Brazilian agriculture and allied goods generate respectable trade creation and diversion in the Indian market since both countries sign trade agreements in the platform of BRICS. However, the value of India's trade creation and diversion in agriculture and allied (primary) goods in the Brazilian market are less than in the previous scenario. In the case of manufactured goods, India's export has a greater value of trade creation and diversion in the Brazilian market than India's import of such goods in the Indian market. In India-China bilateral trade, China has a greater value of trade creation and trade diversion both in primary and manufactured goods, implying that the country has a double benefit in forming BRICS. It is also found that there

are negative trade diversions of India's manufactured goods in the Chinese market which means that India's manufactured goods which were imported earlier, are replaced by imports from other third countries in the world. India-Russia study shows that all imported primary goods from Russia had negative trade diversions in 2010, meaning imports from other countries have substituted these imports. However, this year, manufactured goods from Russia have created trade and diverted into the Indian market. In the same year, India's exports for primary goods had substantial trade creations and diversion in the Russian market. However, there are no reports of trade creation and diversion in the case of manufactured goods. In 2015 imports from Russia (primary and manufactured goods) had impressive trade creation and diversion in the Indian market, except for code 1. However, a few primary and manufactured goods of India's export generate trade creation and diversion in the Russian market. In 2019, substantial trade creation and diversion of imports (both primary and manufactured goods) were from Russia. However, there is no report of trade creation and diversion of India's export to the Russian market.

India-South Africa study shows that India's imports of agriculture and allied goods have greater trade creation and diversion values than India's export to South Africa. This hints that South Africa benefits more than India when such BRICS summits happen. However, relevant trade creation and diversion data for manufactured goods are unavailable.

Similarly, in 2015, South Africa benefited from the greater value of trade creation and diversion with live animals, foods, beverages, tobacco and crude materials except for mineral fuels, lubricants and related materials. Indian manufactured goods have respectable trade creation and diversion in the South African market, whereas data on imported manufactured goods from South Africa are unavailable.

In 2019, South Africa had greater trade creation and diversion in live animals, foods, beverages, tobacco and crude materials, mineral fuels, lubricants and related materials, crude

chemicals and other manufactured goods, whereas India has a greater value of trade creation and diversion in animal and vegetable oils; machinery and transport equipment; miscellaneous manufactured goods since the subsequent BRICS summits. Hence, there are mutual trade creations and diversions of both India's import and export of primary and manufactured goods in the respective markets of India and members of BRICS.

In 2021, Brazil had more trade creation and diversions in the Indian market in agriculture and allied activities compared to Indian goods in the Brazilian markets. However, in the same year, India creates more value of trade creation and diversions in the Brazilian market in the SITC revision 1 good with code 5-8, i.e., manufactured goods.

In 2021, India kept the tariff rate unchanged for all the goods imported from Russia, China and South Africa with SITC code 0-8, which led to zero trade creations and negative (or zero) trade diversions. However, these countries, i.e. Russia, China and South Africa, reduced tariff rates for these goods exported from India, leading to many trade creations and diversions in favour of these Indian goods in their market.

7.1 Summary and Conclusion

The introductory chapter of this thesis has outlined the research's motivation, objectives, and methodology. The chapter illustrated the process of institutional evolution and the consequent changes that occur over a while. This study has examined that the summits held among nations within a particular region can be considered a type of institutional integration. The impacts of negotiation are evident across various sectors of national economies. As powerful developing nations in the southern hemisphere, Western-established institutions frequently ignore BRICS countries. The summits held by these nations across various domains have the potential to influence the integration of their respective economies. Therefore, the current thesis aims was to investigate whether the summits of these entities maintain any influence on their economic endeavours.

Furthermore, the thesis relied on secondary data sources and utilised advanced economic methodologies to evaluate the study's significance.

Chapter Two presented the literature review, which was divided into five primary sections. The initial literature review focused on the global governance of BRICS. Literary works have demonstrated the significance of the establishment of BRICS. BRICS countries are emerging economies located in the global south. International institutions such as the UNO, IMF, and WDB exhibit a Western bias and function to maintain Western dominance in finance, governance, trade, and social institutions. Western institutions have shown apathy

towards the rise of BRICS nations. The establishment of BRICS has led to the creation of novel global institutions that run alongside established ones supported by Western countries.

The subsequent section of the literature review pertained to scholarly works concerning trade within the BRICS nations. The primary obstacle to increased trade among BRICS member nations is the geographical distance between them, as evidenced by research findings. The escalation of transport expenses constitutes an additional burden to trade flows, resulting in a non-productive expenditure. A further finding is that the level of integration among the BRICS nations is comparatively nascent concerning other regional trade agreements worldwide. The primary focus of regional trade agreements is centred on the provision of preferential trade agreements, particularly in the context of tariff rate reduction.

Notwithstanding, the BRICS member states have yet to effectively execute the reduction of tariff rates on exported and imported commodities within the group. The results indicate that organising a sequence of summits could be a viable approach to enhancing bilateral trade within the BRICS nations. Several studies have suggested that China and Russia possess export competitive advantages globally compared to other members of the BRICS group. Therefore, they can significantly contribute to the export of diverse commodities to intra- and external-BRICS nations.

Nations like India, Brazil, and South Africa can export agro-based and semi-finished commodities globally. Other sections of the study focus on the expansion and infrastructure advancements implemented by the BRICS nations worldwide. Studies indicate that Russia and China are endeavouring to expand infrastructure development. As a constituent of the BRICS consortium, China invests substantially in various sectors to develop infrastructure. One notable illustration is the Silk Road initiative, which establishes durable transport infrastructure connecting numerous urban centres globally, primarily focusing on regions in

Asia and Africa. These projects result in growth across multiple sectors in all interconnected nations.

Furthermore, the operational framework of the BRICS bank functions in a manner that is similar to that of the WDB, with a focus on investing in infrastructure development in developing nations. It is in contrast to the WDB, which might neglect such sectors. These activities allow China to show off its infrastructure contributions to the global community, positioning it as a rising global player in this field. The literature about the environment and energy crisis highlights that BRICS nations have encountered numerous environmental challenges, including drought, flooding, heat waves, and various forms of pollution. Maintaining sustainable development among member countries necessitates a collaborative endeavour, which entails sharing ideas, technology, and available resources. For Russia to achieve a significant advancement in environmental sustainability, the nation must share its abundant natural gas reserves with other member countries. This would enable industries within these member nations to substitute traditional coal with natural gas, known for its eco-friendliness. Much literature on political economy highlights the significance of the BRICS as a crucial participant in global affairs. In contemporary times, it represents the perspective of the global south, a region that has historically been neglected for numerous years. Even so, each member's trade creation and diversion still need to be addressed, and the present thesis concentrates its attention on this specific issue.

Chapter three of the thesis has described the economic characteristics of the BRICS nations. The economic analysis of nations comprises three distinct categories: economic pre-globalisation, post globalisation and present economic profile. The economic analysis of Brazil indicates that historically, the nation's economy was primarily agrarian, with a focus on the exportation of agricultural products. The country's globalisation phenomenon was triggered by financial indebtedness during the 1980s, which prompted the integration and

opening up of the economy to the global economic system. The manufacturing and service industries experienced significant growth due to the potential export of diverse commodities. At present, the nation holds the position of being the most significant economy in the South American region.

As per a scholarly study, Russia is the largest country in terms of geographical area and boasts a formidable military prowess. Additionally, it is a significant exporter of natural gas and possesses a vast market, among other notable attributes. Between 1922 and 1989, the nation embraced a socialist ideology that vested exclusive authority in the state over production and distribution processes. The region's economy was significantly affected by inefficiencies in its economic structure, resulting in substantial debt accumulation. Following globalisation in the 20th century, the nation implemented various economic measures that facilitated the emergence of private enterprises as crucial players in the production sector. The country emerged as an attractive investment hub for numerous stakeholders owing to its broad domestic market. As a result of this reformation, the nation has emerged as the primary source of natural gas, a significant provider of military equipment, numerous manufacturing centres, and a special high rate of economic expansion.

In the case of India, the country had a mixed economic strategy, but since the reformation in the 1990s, it has allowed many sectors to work under private sectors for production. With a cheap labour force, the country became a destination for FDIs with an endowment of vast natural resources. The country has performed very well in pharmaceutical drugs, vehicles and software industries. India has a vast domestic market with a large population that attracts many foreign investors.

The present study has found China as the second-largest global economy with a significant market and prominent manufacturing facilities. China is also investing in a vast

infrastructural development programme, the BRI¹. Like the previously mentioned constituents of BRICS, the economy was centralised from 1948 to 1978. Economic reforms in 1978 significantly advanced the country's manufacturing sector, attracting numerous foreign companies. This development facilitated a substantial increase in the growth rate of the manufacturing industries, reaching double digits. The nation has emerged as a global superpower in economic and military spheres.

According to the study, South Africa is a significant economic force in Africa and possesses abundant mineral resources. A small group of affluent individuals exercised control over the nation for decades due to the apartheid system. Following globalisation in the 1990s, the nation implemented economic policies aimed at globalising and privatising its economy to attract foreign investments. In the past, state-controlled production units have been shifted towards private enterprises, leading to a significant increase in economic growth.

Chapter four has presented an account of the establishment of BRICS and its periodic summits concerning regional trade agreements. Since its inception in 2003, the membership group has regularly convened meetings, beginning in 2010, to establish a framework for attaining shared objectives. In 2010, a productive summit occurred in Rio de Janeiro, where trade ministers from member countries convened to discuss economic matters. In 2011, a summit was held in Geneva, where approval was granted for forming a contact group. This group proposed an institutional framework and specific measures to enhance economic cooperation among the BRICS nations. At the New Delhi Summit of 2012, the ministers concurred with the deliberations of the CGETI². The BRICS Trade and Investment Cooperation Framework was signed during the 2013 summit to facilitate trade, investment, and economic cooperation among the member countries of BRICS. At the 2015 summit held in Moscow, the Trade Ministers reached a consensus that the facilitation of trade and

¹ Belt and Road Initiative

² Contact Group on Economic and Trade Issues

investment and the reinforcement of cooperation in standards, technical regulation, and conformity assessment procedures would generate advantageous circumstances for promoting intra-BRICS trade. In 2016, a summit was convened in which the CGETI collaborated to devise a functional document on the BRICS Mechanism for NTM Resolution. The Ministers have tentatively agreed to the fundamental principles outlined in the Mechanism and have encouraged the CGETI to progress in this area, particularly regarding the scope. The Shanghai Summit of 2017 provided a platform for enhancing economic and technical collaboration among the BRICS nations. The 2019 summit in Brazil reached a consensus on the outcome of negotiations about a Memorandum of Understanding on Trade and Investment Promotion among the member countries of BRICS. A summit was convened in 2020 focusing on the BRICS partnership to promote Global Stability, Shared Security, and innovative growth. The 2022 summit was convened under the overarching theme of "Fostering High-Quality BRICS Partnership".

The fifth chapter of the study has demonstrated that there have been five successive institutional integrations within the context of the European Union. Likewise, India and constituent nations of BRICS have distinct bilateral economic accords. The bilateral trade between India and Brazil was initiated by signing an RTA³ in 2003, which marked the beginning of India's economic integration with this Latin American nation. The establishment of BRICS has facilitated India's institutional integration with Brazil in diverse multilateral economic endeavours. The bilateral trade between India and China experienced a boom in 2003, following the signing of mutually agreed preferential trade agreements by both nations. Subsequently, India entered into a regional trade agreement in the year 2008. The BRICS summits have progressively strengthened their mutual agreement. The outbreak of the Covid-19 pandemic has resulted in a decline in overall institutional scores. The bilateral trade

³ Regional Trade Agreement

between India and China exhibited high trade openness during 2010 and 2011 but decreased in subsequent years. The table illustrates synchronous relationships about trade deepening (TD). The decline in TO and TD, between India and China can be attributed to India's imposing restrictions on importing Chinese goods in recent years. India and Russia have entered into bilateral agreements, including a strategic agreement initiated by BRICS. The TO and TD indicators suggest that the level of bilateral trade between the two member states could be more optimal.

Nevertheless, there has been an improvement in these metrics during the decade of 2020. India and South Africa have entered into regional and multilateral trade agreements with each other and other member countries. The results of the Granger causality test reveal that institutional integration, specifically bilateral and multilateral agreements, have a causal effect on economic integration, specifically trade openness, across all four bilateral trades. Furthermore, integrating institutions intensifies trade, except between Brazil and South Africa. Moreover, it is essential to engage in introspection regarding the potential for trade creation and diversion in every bilateral trade relationship involving India.

Chapter six of this thesis has examined the Trade Creation and Diversion of India's primary and manufacturing goods in the markets of BRICS members and vice versa. The present study employs a model that draws upon the simulation model on trade developed by Yeats et al. (1986).

This study illustrated that Brazil's agricultural and related products generate significant trade creation and diversion in the Indian market following the signing of trade agreements between the two countries under the auspices of BRICS. Nevertheless, the extent to which India's trade creation and diversion in the Brazilian market's agricultural and allied (primary) goods sector has decreased compared to the preceding scenario is noteworthy. India's export of manufactured goods has a higher trade creation and diversion value in the

Brazilian market compared to its import of such goods in the Indian market. The bilateral trade between India and China shows a higher degree of trade creation and diversion in primary and manufactured goods, implying a dual benefit for China in participating in the BRICS alliance. It has been seen that India's manufactured goods experience negative trade diversions in the Chinese market. This signifies that the manufactured goods of India, which were earlier imported, have been substituted with imports from other third-party countries. According to a study conducted by India and Russia, it was found that all primary goods imported from Russia in 2010 had negative trade diversions. It suggests that imports from other countries have replaced these imports. This year, Russian manufactured goods have had both trade creation and diversion effects in the Indian market. The same year, India's primary goods exports experienced substantial trade creations and diversions in the Russian market. There need to be more records regarding trade creation and the recreation concerning manufactured goods. In 2015, the Indian market experienced notable trade creation and diversion about imports from Russia, including primary and manufactured goods, except code 1. Several primary and manufactured goods exported by India have been found to generate both trade creation and diversion within the Russian market. In 2019, a substantial amount of trade creation and diversion of imports, covering both primary and manufactured goods, was noted with Russia. A report regarding the phenomenon of trade creation and export diversion in the Indian market for the Russian market is required to be presented.

A study conducted on India-South Africa trade relations has revealed that India's imports of agriculture and allied goods have a higher trade creation and diversion value compared to its exports to South Africa. This suggests South Africa acquires more benefits than India during the convening of BRICS summits. Unfortunately, there is a lack of available data regarding trade creation and diversion specific to manufactured goods. In 2015, South Africa witnessed an impressive rise in trade creation and diversion in live animals,

foods, beverages, tobacco, and crude materials, excluding mineral fuels, lubricants, and related materials, resulting in significant benefits for the country. Indian-manufactured goods have demonstrated noteworthy trade creation and diversion within the South African market. However, there is a lack of available data on imported manufactured goods from South Africa.

In 2019, South Africa had greater trade creation and diversion in live animals, foods, beverages, tobacco and crude materials, mineral fuels, lubricants and related materials, crude chemicals and other manufactured goods, whereas India has a greater value of trade creation and diversion in animal and vegetable oils; machinery and transport equipment; miscellaneous manufactured goods since the subsequent BRICS summits. Hence, there are mutual trade creations and diversions of both India's import and export of primary and manufactured goods in the respective markets of India and members of BRICS.

Comparing Brazilian commodities sold in Indian markets to Indian goods sold in Brazilian markets in 2021, Brazil has more trade creation and diversification in the Indian market for agriculture and related activities. However, in the same year, India generated greater trade creation and diversion in Brazil for manufactured goods.

India maintained the same tariff rate in 2021 for all imports of agriculture and manufactured goods from South Africa, China, and Russia resulting in no new trade creation and (or negative) trade diversions. However, these nations—namely, Russia, China, and South Africa—reduced the tariff rates for these exports from India, resulting in significant trade creations and diversions in favour of these Indian products in their markets.

7.2 Limitations of the Study and Future Scope

The present thesis suffers from some limitations. The most important is the data constraints. Availability of primary data for thousands of tradable goods is not possible, and

hence the study is based on secondary data. Data analysis is mainly based on agriculture and allied goods (Primary) and manufacturing (secondary) goods. Hence, an in-depth study of a particular commodity is not possible in this thesis. Other limitations are the exclusion of welfare gain of consumers and revenue loss of government.

Therefore, further intensive study on specific commodities or goods is necessary, and it can highlight welfare gain and revenue loss due to India's bilateral trade with other members of BRICS.

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Role of Institutional Integration in Economic Integration: An Examination for India in the Framework of BRICS

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ABSTRACT

Regionalism has been popular in the twentieth century since the post-war period. Article XXIV of GATT provides opportunities for many countries across the world to form regional economic integration. It has been witnessed that such integration yields greater trade openness and deepening of the relationships among the countries in the agreement. The present paper deals with the impact of successive summits on bilateral trade openness and the deepening of India with the members of BRICS. This paper employs sophisticated econometric tools such as Granger Causality tests to check whether institutional integration causes the economic integration of India with the other members of BRICS. Further, the paper also examines trade creation and diversion of intra BRICS trade using a partial equilibrium tool called SMART.

Keywords: *GATT; BRICS; AIIB; Granger Causality Test; SMART.*

1.0 Introduction

The present geo-economics has been focussing on the formation of regional economic integration since the mid-twentieth century. A distinguishing example is the European Union (EU) which was formed in the late 1950s. Similar regional economic integrations mushroomed across intra and inter-countries in the world. Other most successful regional economic integrations are NAFTA¹, MERCOSUR², ASEAN³, etc.

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Such regional integrations may be customs unions, free trade areas, common markets or economic unions. The General Agreement on Trade and Tariff (GATT) Article XXIV mentions the formation of such regional economic forums. Ever since the BRICS was coined in 2003, it was considered a geopolitical bloc that challenged the nepotism led by the West. Despite the perception, the strategy of BRICS shifted from geopolitical toward an economic bloc. Member countries put forward agreements on non-discrimination in trade and reduction of tariff rates. A few years ago, BRICS set up the BRICS bank and Asian Infrastructure Investment Bank (AIIB) which galvanises their cooperation not only on infrastructure but also in the financial sector among member countries. Hence, the present paper deals with how institutional integration⁴ leads to economic integration⁵ among BRICS using the Granger Causality and SMART⁶ simulation tests. The paper has been categorised into six sections where section one is the introduction; section two is the review of literature; section three is the BRICS summits; section four is methodologies; section five is data analysis, and section six is the conclusion of this paper.

2.0 Review of Literature

Available studies on regional trade integrations and Intra BRICS trade have been reviewed to gain knowledge and identify gaps for the present paper.

Balassa (1961) studies the economic analysis of the creation of regional trading agreements during the 1980s in the paper. He finds that the formation of regional trading agreements increases bilateral trade flows among the countries using the Gravity model. Frankel & Rose (1997) study trade openness using institutional integration stages. The study shows signing common economic agreements increases the reciprocal volume of trade among EU members over time.

Mongelli (2002) studies theories incorporated with the Optimum Currency Area (OCA) which is one of the stages of economic integration in his paper. The study employs the Granger Causality test to test the impact of the stages of institutional integration on economic integration in the case of the EU. The study finds that successive stages of economic integration cause greater trade volume among EU members.

Castro (2013) study the trade patterns of BRICS's exports which transform global trade. The paper analyses regional trade orientation among BRICS and between BRICS and the triad. The results are further tested on the uniformity of the countries' trade obstacles to bilateral trade flows. The paper finds that resolving trade barriers between participating countries increases trade volume.

Singh (2014) studies the economic impact of the India-ASEAN Preferential Trade Agreement. The analysis shows that signing subsequent preferential trade agreements reduces import tariffs mutually which induces greater trade creation between both partners. It is also found that goods from former non-trade partners (countries that did not sign preferential trade agreements) are substituted by the goods from trade partners, which is witnessed in India – ASEAN Preferential Trade Agreement.

The above literature has shown that signing trade agreements (institutional integration) increases bilateral trade (economic integration) and hence, a greater volume of trade among signing member countries (trade creation) diverts from non-member countries (trade diversion). However, there has not yet been an intensive analysis of causality between trade agreements and the volume of bilateral trade of India with each member of BRICS. Despite the greater trade creation and diversion in the case of India-ASEAN, studies of intra-BRICS trade on the above issues are not available. Hence, the present paper focuses on testing causality tests of agreements on bilateral trade as well as trade creation and diversion of India with members of BRICS which is brought by signing agreements.

3.0 BRICS Summit

BRICS was coined by O' Neill in 2003 and since then, there have been regular meetings among member countries to form a platform where common economic goals can be achieved. It became fruitful in 2010 when an economic summit among the trade ministers of these countries took place in Rio de Janeiro. In 2011, a summit took place in Geneva which agreed to the establishment of a contact group entrusted with the task of proposing an institutional framework and concrete measures to expand economic cooperation among BRICS countries. During the New Delhi Summit in 2012, ministers took note of the discussions in the Contact Group on Economic and Trade Issues (CGETI). BRICS Trade and Investment Cooperation Framework on Promoting trade, investment and economic cooperation among the BRICS Members took place in 2013. During the Moscow summit in 2015, TradeMinisters noted that trade and investment facilitation as well as strengthening cooperation in the areas of standards; technical regulation and conformity assessment procedures would create favourable conditions for enhancing intra-BRICS trade. Summit held in 2016 agreed with the CGETI for developing a working document on the BRICS Mechanism for NTM Resolution. The ministers agreed in principle to the concepts in the mechanism and urged the CGETI to

advance this work including on the issue of scope. The Shanghai summit in 2017 constituted a framework for strengthening the economic and technical cooperation of BRICS countries. Summit in Brazil in 2019 agreed with the conclusion of negotiations of a Memorandum of Understanding on Trade and Investment Promotion among BRICS countries.

4.0 Methodologies

The methodology of scale is based on the work of Dorrucii *et al.* (2002). The following are the scores assigned in the present paper.

- Score 1: This score is assigned when the member countries are in negotiation.
- Score 2: This score is assigned to countries in the implementation stage of policies signed.
- Score 3: This score is assigned when countries agree on tariff reduction.
- Score 5: This score is assigned when the countries sign either an FTA or a common financial platform among them.
- Score 10: It is assigned when the tariff reduction process takes place.

The score of 1, 2 and 3 are depreciated when the countries in negotiation face pressure against economic integration such as sanctions and pandemics taking place.

Trade Openness and Trade Deepening have been measured mathematically as follows:

$$\text{Trade Openness (TO)} = \{(X_{\text{Ind-A}} + M_{\text{Ind-A}}) / (\text{GDP}_{\text{Ind}})\}$$

$$\text{Trade Deepening (TD)} = \{(X_{\text{Ind-A}} + M_{\text{Ind-A}}) / (X_{\text{Ind-World}} + M_{\text{Ind-World}})\}$$

where,

$X_{\text{Ind-A}}$ = India's export to country A

$M_{\text{Ind-A}}$ = India's imports from country A

$X_{\text{Ind-World}}$ = India's export to the world

$M_{\text{Ind-World}}$ = India's import from the world

GDP_{Ind} = India's GDP

Granger Causality tests have been employed to check causality between institutional scores, trade openness, and deepening.

For further simulation models, the paper borrows the method propounded by Laird & Yeats (1986). A partial equilibrium model called SMART, developed jointly by the UNCTAD and World Bank has been used to analyse the impact of tariff reduction which is induced by mutual trade agreements among participating countries. A SMART model is an analytical tool available in the WITS (World Integrated Trade

Solution, World Bank's software) for simulation purposes. The two issues embodied in this model are trade creation and diversion.

4.1 Trade creation

The trade creation effect is the increased demand in country "j" for commodity "i" from exporting country "k" resulting from the price decrease associated with the assumed full transmission of price change when tariff or non-tariff distortions are reduced or eliminated.

$$TC_{ijk} = M_{ijk} \cdot E_m \cdot dt_{ijk}$$

where, TC_{ijk} = Trade creation

M_{ijk} = Import

dt_{ijk} = Reduction in tariff

E_m = Elasticity of import demand concerning domestic price

4.2 Trade diversion

Following standard practice, the term trade diversion is used to account for the tendency of importers to substitute goods from one source to another in response to a change in the import price of supplies from one source but not from the alternative source. Thus, if prices fall in one of the overseas countries, then there will be a tendency to purchase more goods from that country and less from countries whose exports are unchanged in price. Trade diversion can also occur not because of the change in the export price as such but because of the introduction or elimination of preferential treatment for goods from one (or more sources) while treatment for goods from other sources remains unchanged.

$$TD_{ijk} = TC_{ijk} \cdot (M_{nij}/V_{ij})$$

where, V_{ij} = Production of i goods in j country (here supply from domestic firms)

M_{nij} = Import of i goods from non-member country "n"

5.0 Data Analysis

Section 3 of the present paper discusses consecutive BRICS summits (termed institutional integration) which led to greater bilateral trade (economic integration) among member countries. The present section deals with data analysis which consists of two parts where the first is an estimation of the Granger Causality test and the second part is a simulation (SMART).

Dorrucii *et al.*, (2005) in the case of the EU and Singh (2015) in the case of

India-ASEAN economic integrations use the Granger Causality test to find the causality of institutional integration (agreements signed) on economic integration (bilateral trade). The present paper also tries to find the causality between institutional and economic integration in the case of intra-BRICS trade. The Granger Causality test is employed to check whether there is causality between institutional score and TO as well as TD. Causality tests have been carried out for four bilateral trade scenarios namely India-Brazil, India-China, India-Russia and India-South Africa. All four tests have a period of eighteen years which begins from 2003 when the BRICS has been coined till 2020. The year 2021 cannot be included since data has not yet been made available in UN Comtrade. The relevant data for estimation has been provided in the Table 1.

Table 1: Trade Openness and Deepening along with Institutional Integration Score

Year	India – Brazil			India - China			India – Russia			India – South Africa		
	TO	TD	Score	TO	TD	Score	TO	TD	Score	TO	TD	Score
2003	0.001	0.005	5	1.14	4.35	7	0.002	0.010	5.000	0.001	0.006	2
2004	0.002	0.006	10	1.72	5.2	9	0.003	0.009	5.000	0.002	0.007	4
2005	0.002	0.007	15	2.69	6.88	11	0.003	0.011	5.000	0.003	0.009	6
2006	0.003	0.008	17	3.33	7.52	13	0.003	0.009	7.000	0.003	0.010	8
2007	0.002	0.007	17	4.4	8.22	18	0.003	0.009	12.000	0.003	0.009	13
2008	0.004	0.009	19	1.24	2.1	20	0.005	0.012	14.000	0.005	0.011	15
2009	0.003	0.012	29	4.63	10.91	22	0.003	0.012	16.000	0.003	0.012	15
2010	0.004	0.012	34	7.54	10.29	24	0.003	0.009	21.000	0.004	0.011	20
2011	0.005	0.012	36	8.26	9.45	24	0.003	0.008	23.000	0.004	0.010	22
2012	0.006	0.012	38	6.93	7.19	24	0.004	0.007	25.000	0.005	0.009	24
2013	0.005	0.009	39	6.06	5.91	24	0.003	0.005	26.000	0.005	0.008	25
2014	0.006	0.009	39	5.75	5.33	29	0.003	0.005	26.000	0.005	0.008	25
2015	0.003	0.005	41	5.17	4.63	31	0.003	0.004	28.000	0.004	0.005	27
2016	0.003	0.003	44	4.52	4.01	34	0.003	0.004	31.000	0.003	0.004	30
2017	0.003	0.004	46	4.94	4.39	36	0.004	0.005	33.000	0.003	0.005	32
2018	0.003	0.004	46	4.73	4.25	36	0.004	0.005	33.000	0.004	0.005	32
2019	0.002	0.009	46	4.86	4.32	35	0.003	0.012	33.000	0.003	0.012	33
2020	0.003	0.011	45	3.98	3.37	34	0.003	0.014	32.000	0.003	0.014	32

Source: Author's calculation from the tables given in the appendixes

To employ the Granger causality test we need to set the following null and alternative hypotheses:

H_0 : Successive summits of BRICS do not cause trade openness and deepening

H_1 : Successive summits of BRICS cause trade openness and deepening

With the above given null and alternative hypotheses, the Granger Causality

test has been employed for four bilateral trade relations of India with remaining BRICS members. Table 2 has shown the results of the test.

Table 2: Granger Causality Test

Dependent Variable	Independent Variable	India-Brazil Prob. Value (Lag term)	India-China Prob. Value (Lag term)	India-Russia Prob. Value (Lag term)	India-South Africa Prob. Value (Lag term)
TO	Score	0.00 (3)	5% (3)	0.00 (2)	0.08% (3)
TD	Score	1.5% (3)	0.08% (3)	98% (2)	0.00 (3)
Score	TO & TD	1% (3)	2% (3)	1% (2)	0.0 (3)

Source: Author's calculation using data in table 1

Results in Table 2 show that in the case of India-Brazil bilateral trade, institutional score due to summit causes trade openness since the probability value is 0 with 3 lag (rejection of null hypothesis). In the case of trade deepening, institutional score causes trade deepening since the probability value of 1.5 is less than 5 per cent and hence, the rejection of the null hypothesis. Similarly, there are also bidirectional relations where trade openness and deepening also cause further improvement in score since the probability value is less than 5 per cent. Similarly, in the case of India-China bilateral trade, successive summits cause trade openness and deepening since we reject the null hypothesis due to the findings of probability values as less than 5 per cent. In India-Russia bilateral trade, we found that summits cause trade openness whereas summits do not cause trade deepening since the probability value (98) is much higher than 5 per cent and hence, we have to accept the null hypothesis. In the case of India-South Africa bilateral trade, successive summits among BRICS caused both trade openness and deepening. In all four bilateral trades with India, it is empirically found that trade openness and deepening also cause further improvement in summits since their probability values are less than 5 per cent and hence, we have to reject the null hypothesis. Further, we have to introspect whether there will be trade creation and diversion in each bilateral trade relation with India.

Before conducting these analyses, compositions of Indian export and import (agriculture, allied and manufactured goods) trends have been observed. The years 2010, 2015 and 2019 have been taken for analysis. In 2010, there was the first negotiation among trade ministers regarding enhancing trade. In 2015, TradeMinisters agreed on strengthening favourable conditions for enhancing intra-BRICS trade. Moreover, in 2019, member countries concluded negotiations of the Memorandum of

Understanding on Trade and Investment Promotion among BRICS countries. Annual simulation data can't be presented in the analysis since there has been a reduction in tariff rates annually. However, in the above-mentioned years, there have been changes in applied tariff rates which cause significant trade creation and diversions for study. To look into compositions of export and import, Standard International Trade Classification (SITC) Revision 1 has been used since it covers a wide range of commodities into limited codes of mainly agriculture & allied; and manufactured goods in a nutshell. According to UN Comtrade Data, SITC revision comprises Food and live animals (code 0); beverages and tobacco (code 1); crude materials, inedible, except fuels (code 2); mineral fuels, lubricants and related materials (code 3); animal and vegetable oils and fats (code 4); Crude Chemicals (code 5) under agriculture and allied goods. Moreover, manufactured goods are classified chiefly by material (code 6); machinery and transport equipment (code 7); and miscellaneous manufactured articles (code 8) categorised into manufactured goods.

Table 3 shows data on trade creation and diversion for India – Brazil bilateral trade. Imports of primary goods from Brazil (indicated by codes 1 to 4) have substantial trade creation in the Indian market as the latter slashes import tariff. Similar data has been found in the case of trade diversion too. Impressively, food and live animals bearing code 0 have been found with greater trade creation and diversion as compared to other goods bearing codes 1, 2, 3 and 4. All manufactured goods have shown trade creation and diversion among which machinery items show greater value as compared to remaining manufactured goods. India's export to Brazil has shown impressive trade creation and diversion data when the latter slashes tariff rates on India's export. However, as compared to India, Brazil slashes tariff rates much earlier than India.

Similarly, in 2015 and 2019, imports from Brazil (both primary and manufactured goods) have been found to have increased steadily with the slashing of import tariff rates. India's export to Brazil also experiences increased trade creation and diversion over time. However, data on trade creation and diversion of Indian manufactured goods in 2015 are not available in WITS. Hence, there is increased trade creation and diversion data for both India's export to and import from Brazil mutually as the BRICS summit gains momentum.

Table 4 shows the trade creation and diversion of India – China's Bilateral Trade. In 2010, trade creation and diversion of Chinese goods in the Indian market are manyfold as compared to India's exported items in the Chinese market in all corresponding primary and manufactured goods. A similar scenario took place in 2015 too, where the trade creation and diversion of Chinese goods are far greater than the

trade creation and diversion of India's exported items in the Chinese market with subsequent business summits.

Table 3: Trade Creation and Diversion of India – Brazil Bilateral Trade

Year	India's imports from Brazil					India's export to Brazil			
	HS	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	237260.6	30085.74	25.95	8.93	684.616	307.745	10.59	6.26
	1	15188.92	378.8	74.4	11.33	11171.31	1183.736	15.3	7.76
	2	2443.341	-201.147	4.17	2.81	2971.88	562.424	6.51	4.28
	3	2903.671	4076.386	4.12	3.13	996.132	821.676	6.35	3.7
	4	81.77	12.288	6	3.74	2418.648	47.576	7.6	4.92
	5	1703.215	223.961	3.94	3.06	22355.68	26578.07	7.5	4.69
	6	3387.191	-566.134	3.79	3	210782.1	43964.58	17.38	7.94
	7	5729.817	311.47	2.96	2.39	52222.5	35045.55	13.54	7.06
2015	8	1044.611	36.731	4.21	3.22	56924.46	20441.28	23.47	9.02
	0	140569.7	6068.498	40.68	10.3	1407.395	418.478	10.75	6.29
	1	26382.25	5624.45	35.3	13.6	1898.891	154.701	17	8.18
	2	49667.39	4122.414	8.05	4.69	2558.961	645.374	6.49	4.19
	3	104.178	53.753	5.24	3.75	5596.736	4044.642	5.97	3.74
	4	762.808	14523.69	15.21	7.06	4280.636	431.627	14.44	7.24
	5	26269.03	7683.353	9.17	5.66				
	6	63733.14	6774.28	9.11	5.73		Data not Available		
2019	7	11041.36	3114.504	7.08	4.61				
	8	1062.039	584.517	8.74	5.51				
	0	123730.3	23990.73	47.37	11.36	2664.153	1501.105	11.12	6.4
	1	6337.158	382.371	30	10.43	82.792	45.173	13.6	7.35
	2	51072.2	4473.663	10.13	5.14	1636.961	925.674	6	3.84
	3	357.904	705.637	7	4.5	44.64	6.46	6.6	4.05
	4	1433.093	50075.33	52	11	2095.105	196.426	9.71	6.04
	5	34595.63	8274.505	9.13	5.61	41474.21	61579.45	7.74	4.78
	6	22608.33	5717.968	10.38	6.06	257118	48390.12	17.03	7.88
	7	31001.07	6740.898	8.63	5.06	31183.51	35625.38	12.75	6.82
	8	3569.171	908.406	12.86	6.78	38070.27	24921.28	23	8.92

Source: Author's findings from SMART using WITS

Interestingly, there are no data on trade creations of India's manufactured goods in the Chinese market. However, there are negative trade diversions of India's manufactured goods in the Chinese market which mean that India's manufactured goods which were imported earlier are replaced by imports from other third countries in the world.

Table 4: Trade Creation and Diversion of India – China Bilateral Trade

Year	HS	Indi's import from China				India's export to China			
		Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	135424.3	32181.71	33.23	10.23	15394.6	5269.334	14.01	6.64
	1	16472.42	3731.082	99.5	12.82	26.625	14.601	15.94	6.76
	2	77531.65	7637.126	9.42	4.89	181128.7	25146.46	5.34	3.25
	3	19761.53	13292.51	8.08	5.27	69043.01	6687.869	5.87	3.95
	4	722.204	1119.589	20.24	6.55	50088.62	910.159	12.47	6.7
	5	264109.5	97075.48	8.33	5.27	20803.37	24367.42	6.35	4.41
	6	920946.5	115506.5	8.18	5.24	89092.95	18824.29	8.91	5.44
	7	1150047	202661.1	7.86	4.85	13572.88	13491.88	6.9	4.26
	8	276952.7	60759.66	9.18	5.74	72564.16	11883.46	12.31	6.24
2015	0	465017.9	29535	34.82	10.31	17459.17	5004.114	13.25	6.59
	1					1529.124	322.04	17.24	7.18
	2	106166.2	10268.44	9.6	5.15	44421.64	33388.9	5.42	3.35
	3	21729.57	7158.945	5.47	3.89	2789.937	5475.259	5.94	4.15
	4	633.878	527.773	35.55	10.05	57161.98	2363.611	12.5	6.71
	5	470374.1	175827.3	8.18	5.28	27081.89	24841.89	6.29	4.36
	6	1485159	179407.9	9.2	5.77	145196.2	30130.56	8.89	5.45
	7	1549788	288598.5	8.14	4.91	21258.41	22703.76	6.85	4.3
	8	587662.7	89061.69	9.37	5.81	103820.9	22364.13	11.46	6.16
2019	0	116175.6	31296.98	32.91	9.73	23262.39	8630.348	9.79	5.56
	1	19723.73	501.527	98.75	12.87	5871.168	333.575	17.84	6.73
	2	45008.13	17924.18	9.91	4.98	32926.25	30062.18	5.02	3.19
	3	7321.842	11190.7	6.41	4.27	639.883	1100.591	6.39	4.4
	4	2668.774	2282.51	42.31	10.2	82011.8	2839.522	12.93	6.82
	5	668509.4	209497.6	7.87	5.09		-512.885	6.22	6.22
	6	3133481	260092.3	11.06	6.19		-1175.45	7.05	7.05
	7	3273857	629120.6	9.35	5.13		-1183.39	6.4	6.4
	8	1596757	215483.8	14.34	7.19		-1063	6.95	6.95

Source: Author's findings from SMART using WITS

Table 5 indicates that all imported primary goods from Russia had negative trade diversions in 2010 which means that these imports have been substituted by imports from other countries. However, this year, manufactured goods from Russia have both trade creation and diversion in the Indian market. In the same year, India's exports for primary goods had substantial trade creations and diversion in the Russian market. However, in the case of manufactured goods, there is no report of trade creation and diversion. In 2015, imports from Russia (both primary and manufactured

goods) had impressive trade creation and diversion in the Indian market except for code 1. However, a few primary and manufactured goods of India's export generate trade creation and diversion in the Russian market.

In 2019, there are substantial trade creation and diversion of imports (both primary and manufactured goods) from Russia. However, there is no report on trade creation and diversion of India's export to the Russian market.

Table 5: Trade Creation and Diversion of India – Russia Bilateral Trade

Year	India's imports from Russia					India's export to Russia			
	HS	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	0	-18.404	33.05	33.05	8442.99	8706.691	8.84	5.25
	1	0	-18.236	124.38	124.38	896.27	930.444	12	5.12
	2	0	-47.647	10.34	10.34	326.071	222.346	4.61	3.32
	3	0	-145.644	7.66	7.66	625.932	76.077	5	3.81
	4	0	-0.623	52.92	52.92	931.863	212.601	11.73	6.38
	5	63051.02	17126.98	7.89	5.19	0	0	6.18	6.18
	6	29518.59	13054.81	7.76	5.07	0	0	10.87	10.87
	7	6440.385	2554.71	6.78	4.54	0	0	4.38	4.38
2015	8	1572.846	670.826	8.6	5.44	0	0	10.76	10.76
	0	26521.05	35984.39	33.75	8.78	26521.03	35991.2	38.41	10.43
	1					0	0	121.67	121.67
	2	9727.558	5044.018	6.94	4.56	0	0	6.94	6.94
	3	2098.668	1699.603	4.67	3.38	0	0	4.67	4.67
	4	7238.628	4262.2	41.25	9.94	0	0	41.25	41.25
	5	62484.57	19194.88	8.09	5.3	62484.7	22363.03	8.53	8.09
	6	151013	79629.26	8.62	5.5	151012.23	87040.8	8.62	5.5
2019	7	161263.5	8429.428	7.1	4.5	161263.5	9321.5	7.1	4.5
	8	1885.257	660.387	8.43	5.31	0	0	8.0	8.0
	0	16342.15	21884.22	38.41	10.43	16342.1	21942.8	38.42	10.3
	1	1012.334	313.309	121.67	13.68	0	0	121.67	121.67
	2	18529.7	5117.177	8.78	4.83	0	0	8.78	8.78
	3	9855.54	5846.051	5.96	4.06	0	0	5.96	5.96
	4	100430.4	122306.5	100	13.79	0	0	100	100
	5	50140	16574.97	8.53	5.42	0	0	8.53	8.53
2019	6	94470.6	49363.1	9.86	5.94	0	0	9.86	9.86
	7	9523.952	3244.724	7.53	4.75	0	0	7.53	7.53
	8	9056.592	2277.617	11.98	6.5	0	0	11.98	11.98

Source: Author's findings from SMART using WITS

Table 6 shows that India's imports of agriculture and allied goods have greater trade creation and diversion values as compared to India's export to South Africa. This hints that South Africa benefits more than India when such BRICS summits take place. However, relevant data on trade creation and diversion of manufactured goods are not available.

Similarly, in 2015, South Africa benefited from the greater value of trade creation and diversion with commodity codes 0, 1, and 2, except for code 3. Indian manufactured goods have respectable trade creation and diversion in the South African market whereas data on imported manufactured goods from South Africa are not available.

Table 6: Trade Creation and Diversion of India – South Africa Bilateral Trade

Year	India's imports from South Africa					India's export to South Africa			
	HS	Trade creation in 1000US\$	Trade Diversion 1000US\$	Old rate In %	New Rate In %	Trade creation In 1000US\$	Trade Diversion In 1000US\$	Old rate In %	New Rate In %
2010	0	14091.17	2033.105	38.36	10.88	3698.782	1993.143	7.86	3.78
	1	2909.443	428.793	135	13.95	12649.07	5615.975	16.68	5.76
	2	6452.73	2466.225	6.52	3.79	926.942	207.968	5.87	1.45
	3	8900.079	10732.85	7.06	4.77	183645.1	9287.201	2.85	1.58
	4	937.122	1882.165	57.5	10.77	838.616	77.63	6.67	4.17
	5								
	6								
	7								
2015	0	40589.34	2631.078	35.37	10.56	2800.055	1720.329	8.37	3.96
	1	86729.14	5421.237	8.64	4.48	12815.68	256.184	25.2	8.32
	2	32225.23	12283.5	4.93	3.63	367.937	153.631	2.78	1.62
	3	3.861	1.452	38.06	10.31	8379.08	14396.16	3.17	1.95
	4					423.644	46.011	6.88	4.32
	5					1669.831	2512.554	2.26	1.29
	6					52055.42	14266.02	11.2	5.25
	7					185610.6	65638.36	3.16	1.76
2019	0	85344.6	9638.494	41.57	11.08	2408.12	2132.896	9.04	4.25
	1	1581.202	336.497	102	12.85	8586.903	199.299	17	5.32
	2	51701.72	7312.849	10.07	4.88	483.529	277.007	2.39	1.44
	3	34197.05	11363.85	6.14	4.2	7.434	2.572	3.67	2.18
	4	0.01	0.014	53.75	9.45	680.23	82.444	7.08	4.42
	5	4589.754	4186.305	9.46	5.73	2988.309	4026.71	2.09	1.19
	6	111964.6	31485.54	10.3	6.1	51399.47	16647.78	11.13	5.25
	7	505763.9	11714.1	8.79	5.22	113855.9	80565.18	2.97	1.63
	8	630.453	247.899	13.38	6.92	38838.47	43422.73	20.17	6.59

Source: Author's findings from SMART using WITS

In 2019, South Africa has greater trade creation and diversion in commodity codes 0, 1, 2, 3, 5 and 6 whereas India has a greater value of trade creation and diversion in commodity codes 4, 7 and 8 since the subsequent BRICS summits.

Hence, there are mutual trade creations and diversions of both India's import and export of primary and manufactured goods in the respective markets of India and members of BRICS.

6.0 Conclusion

The present paper finds that successive summits of BRICS enhance trade openness and deepening of India's bilateral trade with other members of BRICS which is shown by the Granger Causality test. It also shows that greater values of trade openness and deepening generate greater emphasis on summits among members. This improvement in bilateral trade induces further simulation analysis which studies trade creation and diversion of certain goods. The analysis shows that India's export of both primary and manufactured goods generates both trade creation and diversion in the markets of the respective members of BRICS.

Similarly, India's imports from members have both trade creation and diversions in the Indian market mutually. In the case of India-Brazil, India has an advantage in the export of manufactured goods in the market of Brazil; whereas the latter has an advantage in agricultural products (primary goods) in the Indian market. In India-China bilateral trade, it is found that China has advantages over India in both agricultural and manufactured goods. Findings show that India exports substantial agricultural products to Russia; in return, India imports mainly manufactured items from Russia. In India-South Africa bilateral trade, India is beneficial in the export of manufactured goods whereas South Africa is beneficial in its agricultural items. The above findings show that India needs to improve the export of manufactured goods in the markets of China and Russia so that it can gain more in intra-BRICS trade. For this purpose, Indian industries need to be highly competitive in technology. Finally, it can be concluded that the formation of BRICS is beneficial mutually to all members.

Endnotes

1. NAFTA: North Atlantic Free Trade Agreement
2. MERCOSUR: South American Free Trade group
3. ASEAN: Association of South East Asian Nations

4. Institutional Integration: It denotes signing social and economic agreements and was coined by Gunnar Myrdal, an economist
5. Economic Integration: Trade creation among participating countries of Regional Trade Agreements (RTA) and Diversion of the trade from non-RTA members towards RTA member countries.
6. SMART: Single Market Partial Equilibrium Tool

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Appendix

Table A1: India's Bilateral Trade with BRICS countries

Year	India's export to Brazil In 1000US\$	India's imports from Brazil In 1000US\$	India's export to China In 1000US\$	India's imports from China In 1000US\$	India's export to Russia In 1000US\$	India's imports from Russia In 1000US\$	India's export to South Africa In 1000US\$	India's imports from South Africa In 1000US\$	India's Total Trade In US\$	India's GDP In US\$
2003	388209.2	307112.4	2567161.9	3611899.2	696329.5	784894.6	467434.3	363760.6	1,31,79,11,83,470	544485550467
2004	541043.6	651229.8	4098514.3	6048020.2	631196.4	1215045.5	891641.1	520089.0	1,74,88,53,29,839	589559010700
2005	969811.7	883162.5	7183792.3	10164191.2	705685.2	2036893.4	1404100.8	845185.7	2,41,21,43,03,421	644499568183
2006	1498120.9	948533.7	7829167.5	15639028.1	845710.9	1900849.8	2094445.7	907406.3	2,99,41,30,46,529	704256486830
2007	1899789.9	877711.1	9491978.1	24549137.1	924103.2	2684488.4	2129593.2	1530700.7	3,64,54,33,47,395	773393372039
2008	3250049.8	1159829.5	10093926.3	31579760.9	1090744.3	4451326.4	2480947.	3021182.	4,97,57,30,03,914	811540036225
2009	1781931.1	2897270.	10370052.4	30608093.1	964356.8	3437687.4	1959652.7	2489556.4	4,43,16,65,89,247	885430184577
2010	3669558.1	3220988.3	17439991.8	41184954.5	1393223.9	3561425.1	3650058.4	2713767.7	5,70,43,78,82,918	778410000000
2011	5391310.1	3735150.6	16717786.6	54348443.3	1893900.4	4003753.	4319584.9	3221743.1	7,63,88,60,40,939	873600000000
2012	6162711.6	5368560.7	14729316.8	53090506.7	2144765.4	4601639.9	4973299.4	3459012.5	7,78,54,11,47,943	994400000000
2013	6111835.6	3825534.9	16416825.	51574349.6	2418963.7	3814120.1	5742466.8	3678275.2	8,02,65,69,56,107	1123350000000
2014	7140521.8	5281798.8	13434250.2	58198356.8	2217472.2	4203499.7	5722395.5	4376314.0	7,76,91,41,05,860	1246790000000
2015	3099148.	3867396.8	9576578.7	61590433.	1611893.6	4491803.8	3814364.	4543242.8	6,55,12,57,35,036	1377180000000
2016	2300194.9	3513437.6	8916072.91	60448534.3	1813884.4	4762093.8	3243164.6	3903511.6	617,031,704,442	1536230000000
2017	2866988.6	4886984.	12489173.1	71823629.9	2138971.8	7954639.4	4071955.6	5013781.6	738,416,843,998	1709500000000
2018	3576959.5	5090616.2	16365814.6	90359843.7	2332619.8	8502812.6	4016932.4	6964986.8	830,107,832,924	1901010000000
2019	4113988.	2667044.	17278832.0	68402092.2	2871228.1	6226189.5	3964100.8	5030196.9	802,134,455,535	2.8705E+12
2020	3675781	2955238.9	19008266.9	58798824.7	2559257.9	5838312.1	3498285.0	5260009.9	6.213E+11	2.62298E+12

Source: UNCTAD; WITS, WDB

Table A2: India-Brazil Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2003	5		5	India-Brazil agreement on RTA
2004	5		10	Fully fledged bilateral trade agreement signed
2005	5		15	Important annexure signed
2006	2		17	The first informal meeting
2007			17	
2008	2		19	Foreign Ministers' meeting among BRICS
2009	10		29	RTA become operational
2010	5		34	Expansion of agreements & BRICS meeting
2011	2		36	Expansion of Economic activities among BRICS
2012	2		38	Agreement on enhancing trade
2013	1		39	Annual meeting trade
2014				
2015	2		41	Agreement on customs among members
2016	3		44	Agreement on reducing Non-Tariff Measures
2017	2		46	Agreements in many areas of Trade
2018				
2019	1	1	46	Regular Meeting but Pressure of USA on BRICS
2020	2	3	45	Regular meetings& Impact of COVID

Source: Author's calculation using BRICS information centre

Table A3: India-China Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2003	5		7	Setting up Joint Study Group for preferential tariff
2004	2		9	Implementation stage
2005	2		11	Implementation stage
2006	2		13	Implementation stage
2007	5		18	Signing Regional Trade Agreement
2008	2		20	India-China trade and investment summit kicks off and the BRICS meeting
2009	2		22	Agreement on enhancing trade
2010	2		24	Expansion of trade-related issues among BRICS
2011	A		24	
2012	A		24	
2013	A		24	
2014	5		29	Formation of AIIB
2015	2		31	Agreement on Customs Union among BRICS
2016	3		34	Agreement on Non-Tariff Measures
2017	2		36	Many areas of trade signed among BRICS
2018			36	A
2019	1	2	35	Regular meetings but USA pressure on bilateral trade
2020	2	3	34	Agreement on better investment but impact of COVID

Source: Author's calculation using BRICS information centre

Table A4: India-Russia Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2000	5		5	Signing strategic partnership
2001			5	
2002			5	
2003			5	
2004			5	
2005			5	
2006	2		7	The first informal meeting
2007	5		12	Indo-Russian Forum on Trade and Investment
2008	2		14	Foreign Ministers' meeting among BRICS
2009	2		16	Agreement on enhancing trade
2010	5		21	Expansion of agreements & BRICS meeting
2011	2		23	Expansion of Economic activities among BRICS
2012	2		25	Indo – Russian Forum on Trade and Investment
2013	1		26	Annual meeting trade
2014				
2015	2		28	Agreement on customs among members
2016	3		31	Agreement on reducing Non-Tariff Measures
2017	2		33	Agreements in many areas of Trade
2018				
2019	1	1	33	Regular Meeting but Pressure of the USA on India
2020	2	3	32	Regular meetings& Impact of COVID

Source: Author's calculation using BRICS information centre

Table A5: India-South Africa Institutional Score

Year	Scores	Depreciation	Cumulative	Details of Agreements
2003	2		2	Joint Ministerial Dialogue
2004	2		4	Joint Ministerial Dialogue
2005	2		6	Joint Ministerial Dialogue
2006	2		8	The first informal meeting
2007	5		13	India-South Africa agreement on RTA
2008	2		15	Foreign Ministers' meeting among BRICS
2009			15	
2010	5		20	Expansion of agreements & BRICS meeting
2011	2		22	Expansion of Economic activities among BRICS
2012	2		24	Agreement on enhancing trade
2013	1		25	Annual meeting trade
2014				
2015	2		27	Agreement on customs among members
2016	3		30	Agreement on reducing Non-Tariff Measures
2017	2		32	Agreements in many areas of Trade
2018				
2019	1		33	Regular Meeting on BRICS
2020	2	3	32	Regular meetings& Impact of COVID

Source: Author's calculation using BRICS information centre



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