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Pakistan's Bilateral Trade under MFN and SAFTA: Do Institutional and Non-Institutional Arrangements Matter?

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The purpose of this study is two fold. First, to estimate the impact of institutional and non-institutional arrangements on bilateral trade, and second to analyse the impact of SAFTA on bilateral trade in the short as well as in the long run. The empirical analysis which is based on the panel of eight South Asian countries, comprising data over the period i.e. 1975–2013 is conducted using fixed effects model along with Pooled Mean-Group (PMG) estimator for estimating the short and long-run relationships. The analysis has shown that trade agreements including South Asian Free Trade Area (SAFTA) and the Most Favoured Nation (MFN) are not effective in promoting trade, due to low institutional quality and stringent non-institutional arrangements, including high tariff along with low physical infrastructure. Further empirical analysis has shown that both SAFTA and MFN can only contribute to bilateral trade significantly, if complemented by institutional framework. As a policy lesson, to improve the trade ties between India and Pakistan, improvement in physical as well as soft infrastructure is required. Any trade agreements between the two, including MFN can only be effective, when it is supported by a well-defined and enforced institutional framework that ensure the implementation of policy reforms needed to reduce tariff rate and remove non-tariff barriers.

1. INTRODUCTION

Bilateral trade between Pakistan and India, the two largest economies in South Asia, has always remained low and has faced a series of tariff and non-tariff barriers. The volume of bilateral trade ranges between 2 to 3 percent of each country's total trade, and is concentrated in a few commodities. Neither Pakistan nor India is generally considered as an open economy. Both countries have among the most restrictive trade regimes in the world. The Trade Tariff Restrictiveness Index (TTRI) shows that the average tariff rates are higher in Pakistan and India in comparison to other regions [Looi Kee, Nicita, and Olarreaga (2012)]. There has also been no significant improvement in either country's

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logistics performance index over the last eight years [Arvis, *et al.* (2014)]. Bilateral trade is constrained by soft and physical poor infrastructure.

Over the last two decades, both countries have made various moves towards improving economic relations with a vision to enhance peace and stability in the region [De, Raihan, and Ghani (2013)]. In 1995, India granted the MFN status to Pakistan, but the latter did not reciprocate. Moreover in 2011, Pakistan decided to extend the MFN status to India, with an aim to be effective from January 1, 2013. In response, India brought down its SAFTA's "sensitive list" to 100 tariff lines at six-digit level by April 2013. By December 2012, this target was missed and Pakistan failed to grant the MFN status to India. The process has been delayed due to concerns expressed by different trade lobbies, and also an incident across the Line of Control (LoC) further hampered the process. The SAFTA has likewise failed to live up to the expectations. In 2004, the two countries signed the agreement, along with six other South Asian nations, but there has been no substantial improvement in the trading environment and no increase occurred in bilateral trade either.

On the other hand, literature has shown that there is a huge potential to expand bilateral trade between India and Pakistan [Husain (2013); Nabi and Nasim (2001); Pasha and Imran (2012)]. It is evident that Pakistan and India's economies are highly complementary, and are becoming more so over time. The two countries also share a common border, history and cultural similarities. Khan (2009) stated that trade between Pakistan and India is unnaturally small, but the scope for gains from increased trade is correspondingly large. He also argued that "improving economic ties may help to resolve the larger political issues that have bedevilled India-Pakistan overall relations". Yet despite all this, trade ties between the two largest economies in South Asia remain weak.

It is to be argued as to what are the underlying factors that are restricting trade between the two countries? And why have attempts to increase trade, including SAFTA, been ineffective? In this paper, it is also argued that institutional and non-institutional arrangements are crucial in explaining the ineffectiveness of trade reforms, including SAFTA, in boosting bilateral trade. Institutional arrangements such as documentation process and governance structure are poorly defined that create rent-seeking opportunities which hamper trade between the two countries. It is also noted that the procedural requirements are very high in both Pakistan and India as compared to other regions. For example, nine documents are required to complete the export process and eight for imports in Pakistan. While, only four documents are required for import or exports in the Organisation for Economic Co-operation and Development (OECD), the North American Free Trade Agreement (NAFTA) and the European Union (EU) regions. Similar situation exists for India. On the other hand, 22 days are required to complete the export process in Pakistan, while the same is completed in 10 days in the EU and OECD countries [WB (2015)]. The quality of institutions is also very poor in these countries as compared to others regions of the world. Non-institutional factors such as trade facilitation measures and physical infrastructure act as binding constraints in promoting trade. Trade facilitation measures are very stringent and poorly managed in both countries than other regions in the world. Pakistan and India have been placed in the group of partial performer countries, which include countries with logistics constraints—most often seen in low and middle income countries. According to the World Bank, Pakistan is ranked 72 among 166 countries in the Logistic Performance Index (LPI) 2014, which evaluates

logistics performance on the six dimensions of logistic performance. Pakistan's rank is much below than Malaysia (25), China (28), Thailand (35) and Indonesia (53). Germany holds top position in the logistic performance [Arvis, *et al.* (2014)]. It is also argued that trade reform policies, especially SAFTA and MFN may not be effective in the short run as it is a long term phenomenon that requires extensive reforms.

The overall objective of this paper is to investigate the impact of institutional and non-institutional arrangements on bilateral trade. For this purpose, the study incorporates the role of democratic institutions and non-tariff barriers in standard gravity model and investigates the impact of SAFTA on bilateral trade in the short as well as in the long run. The study contributes to literature on two counts: first, it extends the standard gravity model by incorporating the role of democratic institutions and non-tariff barriers in explaining bilateral trade; and second it estimates the impact of SAFTA in the short and long run. The analysis provides policy framework for improving trade ties between Pakistan and India to reap the potential trade benefits.

The rest of the paper is structured as follows: literature review is presented in Section 2; Section 3 discusses the stylised facts regarding bilateral trade; Section 4 elaborates the data and methodology; empirical results and discussion are presented in Section 5 and the last section concludes the discussion with policy recommendations.

2. BILATERAL TRADE: STYLISED FACTS

This section depicts some stylised facts regarding Pakistan's trade with India in contrast with other regions and countries. Trade remains very low in the South Asian Association for Regional Cooperation (SAARC) region even after signing the SAFTA in 2004. The SAARC region remains one of the least integrated regions in the world. The overall trade share remains between 3 to 5 percent of the total trade. The largest trade share observed with the Middle Eastern countries (30.5 percent of total trade) followed by Europe (18 percent of total trade) and NAFTA (9 percent of total trade). Table 1 indicates that trade with the SAARC countries remains substantially low over the last decade. More importantly, major trading partner in the SAARC region are Bangladesh and India.

Table 1

Regional Trade Comparison (Share in Total Trade [Imports + Exports])

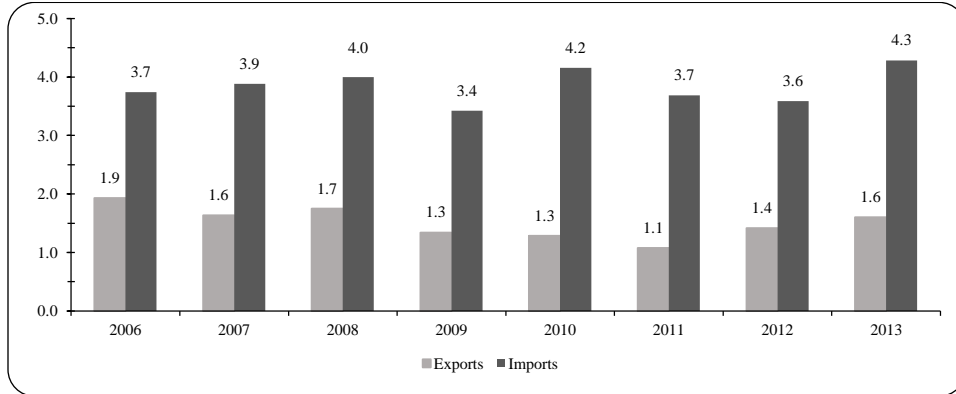
Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
NAFTA	16.0	16.9	14.6	14.8	14.2	10.5	11.7	10.4	9.6	8.6	8.6
Europe	24.6	24.2	24.9	23.4	21.8	20.7	21.6	17.8	17.3	16.1	17.7
Middle East	25.9	24.6	24.4	26.6	27.1	31.5	28.4	29.5	30.4	32.3	30.5
SAARC	2.6	3.3	3.5	4.3	4.3	4.5	4.1	4.9	4.8	4.5	5.0
Bangladesh	0.8	0.8	0.7	0.7	0.7	0.8	0.9	1.2	1.5	1.1	1.1
India	1.2	2.0	2.2	3.1	3.1	3.3	2.7	3.1	2.7	2.8	3.3
Sri Lanka	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6

Source: UN (2015).

Pakistan's trade with India ranges between 2 to 3 percent of the total trade. There is no substantial increase in trade between Pakistan and India even after SAFTA arrangement. Pakistan, the sixth most populous country, and India the second most populous are the two largest economies in South Asia. However, trade volume between

the two countries remains very low, even with a huge potential. Figure 1 shows that bilateral trade, despite various trade agreements, remains low. Imports from India range from 3.7 percent in 2006 to 4.3 percent in 2013 of the total imports. On the other hand, exports range from 1.9 percent to 1.6 percent of the total exports during the same period.

Fig. 1. Pakistan's Trade with India as Percent of Total Trade

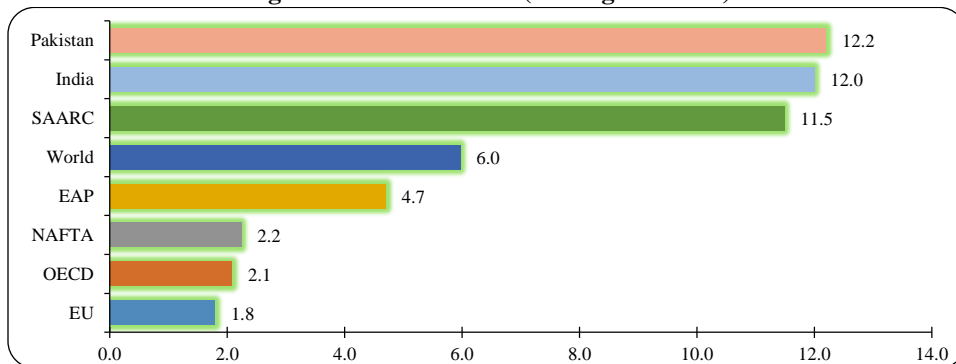


Source: UN (2015).

The composition of imports from India to Pakistan has been primarily limited to only 15 commodities, which accounted for around 90 percent of the total imports from India to Pakistan in 2013. The composition of exports from Pakistan to India has been limited to a few products. Top 15 commodities constitute 93 percent of the total exports to India [UN (2015)].

Why do both countries fail to reap possible trade benefits? Various factors held responsible including tariff regime, trade facilitation measures, non-tariff barriers, and institutional, and political bottlenecks. It is evident that the closed trade regime restricts trade between the two economies. Pakistan and India have ranked among the most restrictive trade regime countries. TTRI shows that the average tariff rates are higher in Pakistan and India as compared to other regions such as NAFTA, EU, and OECD [Looi Kee, *et al.* (2012)].

Fig. 2. TTRI—All Good (Average 2006-09)



Source: Looi Kee, *et al.* (2012).

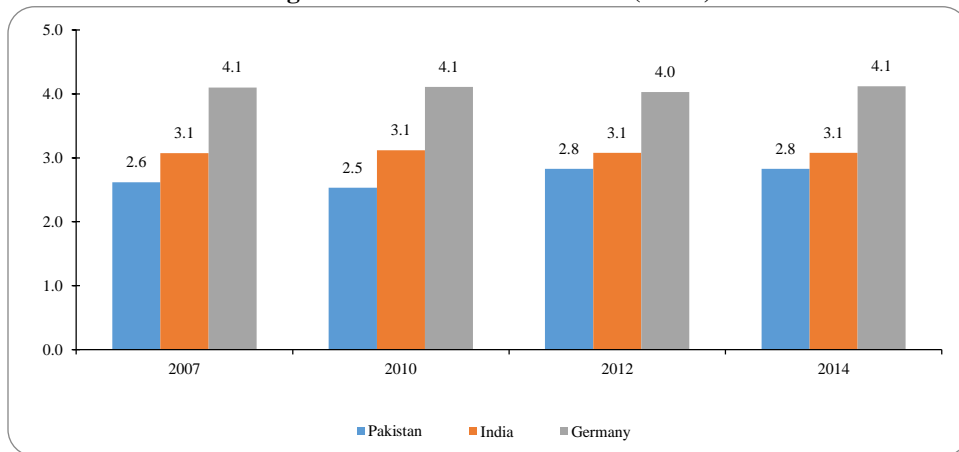
Despite some decline in tariff for various commodity groups, non-tariff barriers significantly hamper trade between the two countries. These measures include physical infrastructure, technology, procedural requirements and institutional framework. Non-tariff measures or trade facilitation measures act as binding constraints in promoting trade. Trade facilitation measures are very stringent and poorly managed in both countries in contrast to other regions in the world. Statistics at the disaggregate level depict that Pakistan shows poor logistic performance on competence and quality of logistic services, such as transport operators and custom brokers (ranked 75), ability to track and trace consignments (ranked 86), and timeliness of shipments in reaching destination within the scheduled or expected delivery time (ranked 123) in 2014. India is ranked 54 among 166 countries in the LPI of 2014. Disaggregated analysis reveals that border agencies of India show poor logistic performance on efficiency of the clearance process, including custom such as speed, simplicity, and predictability of formalities (ranked 65), and quality of trade and transport related infrastructure (ranked 58) [Arvis, *et al.* (2014)].

Table 2
LPI 2014 (Ranking)

Countries	LPI	Custom	Infrastructure	Logistics			Timeliness
				International Shipments	Quality and Competence	Tracking and Tracing	
Germany	1	2	1	4	3	1	4
UK	4	5	6	12	5	5	7
Singapore	5	3	2	6	8	11	9
USA	9	16	5	26	7	2	14
Malaysia	25	27	26	10	32	23	31
China	28	38	23	22	35	29	36
Thailand	35	36	30	39	38	33	29
Indonesia	53	55	56	74	41	58	50
India	54	65	58	44	52	57	51
Pakistan	72	58	69	56	75	86	123
Maldives	82	49	82	72	74	92	148
Sri Lanka	89	84	126	115	66	85	85
Bangladesh	108	138	138	80	93	122	75

Source: Arvis, *et al.* (2014).

There is no significant improvement in the LPI over the last eight years for Pakistan and India. Figure 3 shows the trend of logistic performance score over the period i.e. 2007–2014 for Pakistan and India. Pakistan's LPI score ranges from 2.6 in 2007 to 2.8 in 2014. Similarly, India's score remains stagnant at 3.1 over the last eight years. In crux, bilateral trade is constrained due to poor conditions of soft and physical infrastructure.

Fig. 3. Trend in LPI 2007–2014 (Score)

Source: Arvis, et al. (2014).

Table 3 provides a comparison of the procedural requirements of Pakistan and India with other regions in the world. The table also shows that the procedural requirements are very high in both Pakistan and India, as compared to other regions. For example, nine documents are required to complete the export process and eight are needed for imports in Pakistan. While, only four documents are required for import or exports in the OECD, NAFTA and EU regions. Similar situation exists for India. On the other hand, 22 days are required to complete export process in Pakistan, while the same process is completed in 10 days in the EU and OECD countries.

Table 3

Documents/Days Required to Complete Imports/Exports Process

Indicators	Pakistan	India	EAP	OECD	NAFTA	EU	World
No. of documents for export	9	8	7	4	4	4	7
Days for export	22	17	25	10	9	10	24
Cost to export (US\$ per container)	611	945	969	1089	1377	1032	1386
No. of documents for import	8	9	7	5	5	4	7
Days for import	18	20	27	11	11	10	27
Cost to import (US\$ per container)	680	960	1020	1145	1675	1095	1602

Source: WB (2015).

This section clearly indicates that various institutional and non-institutional factors restrict bilateral trade between India and Pakistan. High tariff rates coupled with low quality of trade facilitation measures significantly hamper the bilateral trade. Low quality of trade facilitation measures, poor physical infrastructure, and weak institutional framework held responsible for low trade between the two countries. Improvement in the physical as well as soft infrastructure is required for better trade ties between India and Pakistan. Any trade agreements between the two countries, including MFN that substantially reduce the tariff and non-tariff barriers can substantially increase the volume of trade. In the next section, the methodological framework is developed to empirically quantify the impact of these measures on trade.

3. LITERATURE REVIEW

This section provides an overview of the existing literature on implications of free trade agreements with special focus on SAFTA and MFN. Various attempts have been made to quantify welfare gains and trade creations under these arrangements. Initial studies by Govindan (1994) and Pigato (1997) highlight that intra-regional trade can benefit more to small countries than India in the region. Qamar (2005) further extends this by saying that Pakistan not only can get benefit by accessing a big market for its exports, but also can save significantly, while substituting its expensive imports from the rest of the world to imports from India under the MFN status. Shaikh and Rahpoto (2009) show that under the SAFTA arrangement, Pakistan can enjoy consumer surplus in exports of the products like food items, cotton made garments, dates and leather. Using Computable General Equilibrium (CGE), Shaikh, Syed, Shah, and Shah (2012) also found similar results. Raihan (2012) too found a positive welfare gain under the MFN status given to India, and this gain multiplied under the scenario of SAFTA. Additionally, it also affects the overall volume of regional and bilateral trade between India and Pakistan, but the increase in imports from India is greater than the volume of exports from Pakistan [Raihan and De (2013)]. Nabi and Nasim (2001) argued that trading volume will increase threefold, if both countries give the MFN status to each other.

Despite these predictions, why is the actual trade very low?¹ Literature shows that bilateral trade is affected adversely due to non-tariff barriers. Bouët (2008) and Bouët, Mevel, and Thomas (2010) have shown that SAFTA members will experience a gain with the inclusion of sensitive products, and their exemption will limit the trade gain for the middle income countries. Taneja and Kalita (2011) exhibit that even after trade liberalisation, Pakistan does not enjoy any competitive advantage, as most of the commodities in export baskets are included in the sensitive list, and the government of India has prohibited these under the SAFTA regime. Based on Revealed Comparative Advantage (RCA) index, this study shows that Indian economy does not face any threat from Pakistan's imports. Gopalan, Malik, and Reinert (2013) have analysed the effect of imports of sensitive items on output, consumer surplus, revenue generated from tariff, and net welfare under an imperfect substitute framework between Pakistan and India. Using General Algebraic Modeling System (GAMS), this study estimates a welfare gain of few millions \$US on each sector, but the impact of reduced output due to increased imports from India will negatively affect the domestic industries of Pakistan. This concludes that imports from India would specifically affect the output of cloth sector, the footwear sector, leather, pharmaceuticals and tobacco on a large scale.²

Some studies have also found that trade under the SAFTA/MFN are not attractive in the region. Baysan, Panagariya, and Pitigala (2006) identify that the trade under the SAFTA agreement is unattractive, as the countries member of SAFTA are relatively small as compared to the world economies. Further, the high levels of restriction among the SAFTA members would result in trade diversion and countries which would be worst off, as the member countries, currently trading outside the SAFTA region earn more. Even after providing the MFN status to India, welfare gain will be negative. It is due to the items on the Indian's imports negative list, as 90 percent of these items belong to

¹See Section 2 for more detail on trading trend between Pakistan and India.

²Various other studies have also found similar results [Nabi and Nasim (2001); Taneja (2007)].

manufacturing sector [Raihan and De (2013)]. De, *et al.* (2013) also conclude that the welfare gains due to the MFN are small, and extended economic cooperation between both countries is needed to receive maximum benefits. In short, the MFN scenario includes the imports at reduced prices, and serves as a source of cheap imports from India in addition to the assumed peace in the region.

Despite the fact that the world welfare is increasing continuously due to bilateral trade, transfer of technology, and improved production, the distribution of these welfare gains is asymmetric. However, the revenue gain from tariff may turn into a loss due to the SAFTA agreement that requires free trade regime. It shows the cost efficient exporter benefits more than the less cost efficient exporter, and ultimately the less efficient importer stand to lose in the end. Additionally, the reason behind less increase in the exports to India is the unavailability of diversified items available for exports within the Pakistani exports basket. Despite the indications of potential gains from bilateral trade, India-Pakistan economies face constrain due to a continuous political rivalry between them. Thus, Pakistan and India can gain from SAFTA, if their bilateral political differences are solved, and that would help to achieve integration in the market for the rest of the members too. [Kugelman (2013)]. Further, improving the economic reforms of the county and placing them in line with the conditions of SAFTA, Pakistan can gain from the trade liberalisation [Naqvi and Schuler (2007)]. This overview indicates that there is a possibility of “trade creation” under the SAFTA/MFN, especially for those items that are not imported due to high customer duty, or are imported illegally. This study, thus, enhances the understating by focusing on the institutional and non-institutional arrangements.

4. MODELING FRAMEWORK, DATA AND ESTIMATION METHODOLOGY

4.1. Modeling Framework

The gravity model is a widely used tool to estimate the bilateral flows between member countries. It relates the bilateral trade flows to the Gross Domestic Product (GDP), distance, border and other socio-political factors that affect the trade patterns. The standard gravity model suggests that trade among member countries is positively related to the national income and negatively related to the distance—a proxy for transportation and information costs. Tinbergen (1962) in his first empirical attempt made international trade flow, a function of the trading countries gross national products, and three potential resistance variables; distance between the trading partners, a dummy variable for adjacent countries, and dummy variable for common membership in a preferential trade agreement (these all are proxies for transportation cost). These are used to reflect the hypothesis that transportation cost increases with distance, which are lower for the adjacent countries and higher for the landlocked countries/islands. A number of controls are included in the gravity model such as country size, common border, common language, and infrastructure etc.³ The proposed study also incorporates democratic institutions to

³Theoretical foundations for the gravity model are provided by Bergstrand (1990), Frankel (1999), Anderson and van Wincoop (2003) and Helpman, Melitz, and Rubinstein (2008).

quantify the impact of institutional arrangement in boosting trade. The following basic gravity model is used to measure the impact of transport costs on trade:

$$\ln(X_{ijt}) = \beta_0 + \beta_1 D_{ij} + \beta_2 Y_{it} + \beta_3 Y_{jt} + e_{ijt} \dots \dots \dots \dots \quad (1)$$

Where X_{ijt} denotes the value of real bilateral trade between i and j at time t , D_{ij} is distance between i and j , Y is the real GDP of a country. While following Anderson and van Wincoop (2003) authors augment this model to incorporate the impact of multilateral resistance⁴, and other institutional variables on the trade. Given the data limitations and objectives of the study, following variables in gravity model were used.

$$\begin{aligned} X_{ijt} = & \beta_0 + \beta_1 D_{ij} + \beta_2 Y_{it} + \beta_3 Y_{jt} + \beta_4 (PCY_{it} - PCY_{jt}) + \beta_5 TB + \beta_6 NTB \\ & + \beta_7 SAFTA + \beta_8 MFN + \beta_9 SAFTA * DEMOC + \beta_{10} MFN * DEMOC + \beta_1 CB \\ & + b_1 CB + b_2 CL + b_3 LL + e_{ijt} \dots \dots \dots \dots \dots \dots \dots \quad (2) \end{aligned}$$

Where X_{ijt} = Total bilateral trade of Pakistan; Y_{it} = GDP of Pakistan; Y_{jt} = GDP of each partner country; $PCY_{it} - PCY_{jt}$ = the difference between per capita income of Pakistan and each respective partner country; TB = Tariff barrier; NTB = Non-tariff barrier; $SAFTA$ = Dummy for SAFTA; MFN = Dummy for MFN; $DEMOC$ = Democratic Institutions; CB = Dummy for common boarder; CL = Dummy for common language and LL = Dummy for landlocked.

4.2. Data and Estimation Strategy

To measure the impact of institutional and non-institutional arrangements on bilateral trade, a panel of eight South Asian countries was used over a period of thirty eight years, 1975–2013.⁵ The panel data estimation method is considered an efficient tool for analysis, as it allows inclusion of data for different cross sections, increased sample size that leads to better estimates, controlling for variables that are not directly observable, and accounts for individual heterogeneity [Iqbal and Daly (2014); Nawaz (2015); Nawaz, Iqbal, and Khan (2015)]. The choice of eight countries in South Asian region is mainly based on the availability of data. The data on bilateral trade in US\$ is taken from Direction of Trade Statistics (DOTS) by International Monetary Fund (IMF) and COMTRADE by the United Nation (UN). The econometric problem arising from zero trade is catered by replacing with one.

The size of the country is measured by its respective GDP. According to the gravity model, the amount of trade is positively associated with the GDPs of both importing and exporting countries. Increasing GDP in exporting country implies greater availability of products for exports, while increasing GDP in importing country implies higher demand for imports. Thus, the coefficients of both importing and exporting countries' GDPs are expected to be positive [Gul and Yasin (2011); Kien (2009); Narayan and Nguyen (2016); Saini (2012)]. The expected sign of the coefficient in the

⁴Multilateral trade resistances are the unobserved barriers to trade that each country faces with all its trading partners.

⁵The countries include Pakistan, Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka.

GDP per capita is positive according to the Heckscher-Ohlin (HO) hypothesis implying the greater this difference, the greater the relative importance of inter industry trade will be [Caporale, Sova, and Sova (2015)]. The data on the GDP in US\$ is drawn from the *World Development Indicators* (WDI)—published by the World Bank.

The second important factor affecting trade flows is transportation and information costs, measured distance between the trading partners, common borders, and whether the country(s) is(are) landlocked or not [Gul and Yasin (2011)]. The distance is measured as the air distance between Islamabad and the capital territory of each selected country. For distance, data is taken from Mayer and Zignago (2011). Geographical distance, a proxy for transportation cost, has a negative impact on bilateral trade [Caporale, *et al.* (2015)]. For common borders, a dummy variable have been used with a value of one for India, Afghanistan, and zero for the other South Asian countries. In this study, there are three landlocked countries including, Afghanistan, Bhutan and Nepal.

As mentioned earlier, trade is mostly affected by the institutional and non-institutional arrangements of trading countries apart from tariffs and quotas. To measure the institutional quality, the important variables in extended gravity model, data is taken from the Polity IV dataset, published by Marshall, Gurr, and Jaggers (2014), which is a widely accepted set to measure the world democratic institutions [Yu (2010)]. This dataset measures institutionalised democracy, and index ranges from +0 (no democracy) to 10 (full democracy). In this study, it is argued that the democratic institutions may have direct as well as indirect impact. Following existing literature, it is hypothesized that democratic institutions may have a direct positive impact on bilateral trade [Yu (2010)]. Well defined and enforced democratic institutions can promote trade by ensuring the implementation of free trade agreements like SAFTA and MFN. To quantify the impact of non-institutional arrangements, two measures including tariff cost and non-tariff cost are used. Arvis, Duval, Shepherd, and Utoktham (2013) defined bilateral trade cost as:

Trade costs in its wider sense, including not only international transport costs and tariffs but also other trade cost components, such as direct and indirect costs associated with differences in languages, currencies as well as cumbersome import or export procedures.

Trade cost is measured using the following formula:

$$\tau_{ijkt} \equiv \left(\frac{t_{ijkt} t_{jikt}}{t_{iikt} t_{jjkt}} \right)^{\frac{1}{2}} - 1 = \left(\frac{x_{iikt} x_{jjkt}}{x_{ijkt} x_{jikt}} \right)^{\frac{1}{2(\sigma_k - 1)}} - 1; \text{ at sector } k, \text{ time } t \quad \dots \quad (3)$$

Where: τ_{ij} denotes geometric average trade costs between country i and country j ; t_{ij} denotes international trade costs from country i and country j ; t_{ji} denotes international trade costs from country j and country i ; t_{ii} denotes international trade costs for country i ; t_{jj} denotes international trade costs for country j ; x_{ij} denotes international trade flows from country i and country j ; x_{ji} denotes international trade flows from country j and country i ; x_{ii} denotes; international trade of country i ; x_{jj} denotes international trade of country j and σ_k denotes sector specific elasticity of substitution between goods in the sector. This bilateral trade cost is a measure of costs associated with both importing and exporting goods between two countries i and j . Value of τ_{ij} can be used a trade cost indicator. The value of t_{ij} is provided in ad valorem equivalent form. Since trade cost is bi-directional in nature, the bilateral trade costs indicators is also bi-directional, and is a measure

(geometric average) of the tariff imposed by the two partners countries on each other's imports. The bilateral tariff cost indicators is defined as follows:

$$geometric_avg_tariff = \sqrt{(1+t_{ij})(1+t_{ji})} \dots \dots \dots (4)$$

Where $geometric_avg_tariff$ denotes geometric average of t_{ij} (simple average effective import tariff imposed by country i on country j) and t_{ji} (simple average effective import tariff imposed by country j on country i).

Non-tariff trade costs are also measured by excluding tariff from the total trade costs defined above. The non-tariff trade costs encompasses all additional costs other than tariff cost involved in trading goods bilaterally rather than domestically, are also calculated as:

$$nontariff_tij = \frac{\left(\frac{1+t_{ij}/100}{geometric_avg_tariff} \right) - 1}{100} \dots \dots \dots (5)$$

Data is obtained from the Economic and Social Commission for Asia and the Pacific (ESCAP) World Bank: International Trade Costs published by the World Bank [WB and ESCAP (2016)].

To estimate the model, fixed effects model is used with time and cross section fixed effects to estimate the models. The fixed effects model is the most common technique for estimation of linear panel regression. In this method, the constant term remains as cross section specific and varies for each country, but still it is assumed that the slope coefficients are constant across countries. This takes into account the individuality of each cross-sectional unit [Nawaz (2015); Nawaz, *et al.* (2015); Nawaz and Khawaja (2016)]. Time invariant heterogeneity across members of the panel is eliminated by employing fixed effects [Islam (1995)]. The time effect is important because various factors such as technological changes, changes in government regulatory and/or tax policies, and external effects such as war, change over time. This approach captures the role of unobserved multilateral resistance [Shepherd (2013)]. Following Pesaran, Shin, and Smith (1999) the PMG estimator is employed for estimating short-run and long-run relationships in dynamic heterogeneous panels.

5. RESULTS AND DISCUSSION

5.1. Basic Gravity Model

The standard gravity model is estimated in terms of the GDP of respective countries, trade costs as measured by distance, and incidence of common border and landlocked status. The results of basic gravity model for total trade are presented in Table 4. The basic model has been estimated using the Ordinary Least Squares (OLS), and the fixed effect with time and country specific fixed effects models. Various specifications are used to ensure the robustness of results.

The results show that for most of the estimation the coefficient of Pakistan's GDP is positive and significant. This indicates that domestic development plays a significant role in expanding trade volume in the country. Estimates reveal that Pakistan's bilateral

Table 4
The Basic Gravity Model

Variables	(1) OLS	(2) FE	(3) FE	(4) FE
LN(GDPI)	0.780 (0.20)***	0.592 (0.39)	1.003 (0.23)***	0.933 (0.27)***
LN(GDPJ)	0.279 (0.11)**	0.250 (0.12)**	-0.076 (0.26)	-0.165 (0.25)
D(GDPPC)	0.000 (0.00)***	0.001 (0.00)***	-0.000 (0.00)	-0.000 (0.00)
LN(Dist)	-2.792 (0.85)***	-2.579 (0.92)***	-2.589 (0.37)***	-2.754 (0.35)***
CB	-2.011 (0.84)**	-1.812 (0.94)*		
LL	-3.743 (0.64)***	-3.838 (0.68)***		
Constant	13.758 (7.01)*	17.951 (11.70)	11.775 (3.36)***	16.478 (6.76)**
R-squared	0.679	0.702	0.920	0.931
No of Countries	8	8	8	8
No of Obs.	234	234	234	234
Year FE	NO	YES	No	YES
Country FE	NO	NO	YES	YES

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

trade with South Asian countries will increase by 0.78 percent, as the domestic GDP increases by 1 percent (Table 4; model 1). The results further show that for most of the estimations, the coefficient of our trading partners GDPs is positive and significant, implying that development of partner country in the region is important for trade expansion. One percent increase in the GDP of partner countries will increase 0.28 percent of Pakistan's bilateral trade. Earlier studies support these findings for Pakistan [Gul and Yasin (2011)]. The coefficient of the distance variable implies that when distance—as a proxy for transportation cost—between Pakistan and its trading partner increases by 1 percent on average, bilateral trade decreases by 2.7 percent. Therefore, findings of the basic gravity model are consistent with the theory implying that Pakistan's trade is directly related to the economic size of the partner countries, and inversely related to the distance between them. The study used per capita income difference variable in the model to test for the relative strength of the Linder hypothesis *vis-à-vis* the Heckscher-Ohlin (HO) hypothesis. The impact of per capita income difference is positive and significant in the most cases. The estimated coefficient is 0.001, which implies that bilateral trade increase as the difference between the per capita GDP of Pakistan, and its trading partner increases, but less than proportionately. Thus, the available results support the HO hypothesis (differences in factor endowments) in the case of Pakistan. Earlier Gul and Yasin (2011) found similar results for Pakistan. Further, the results show that the common border dummy has a negative and significant impact on Pakistan's bilateral trade in the region. As the model is specified in the log form, the coefficient was

interpreted by taking the exponential. The projected results $[\exp(-2.011)-1 = -0.87]$ imply that Pakistan's trade with its neighbouring countries (those that share a common border) is 87 percent lower than expected. Apparently, the result seems contradictory to the theory. However, the reasons are understandable: only two countries, India and Afghanistan have a common border with Pakistan (included in the sample). Trade with these countries and India in particular, is restricted due to non-tariff barriers including political conflicts, institutional hurdles, and procedural requirements. Further, much of the border trade between Pakistan and Afghanistan, and Pakistan, and India is underground and unrecorded. Gul and Yasin (2011) also found similar results. The dummy for landlock is statistically significant and has the expected negative sign. The coefficient value $-0.98 [\exp(-3.743)-1 = -0.98]$ indicates that trade between Pakistan and landlocked countries will be lowered by 98 percent.

5.2. Role of SAFTA and MFN

To quantify the impact of trade agreement between Pakistan and its trading partners, the basic gravity model was augmented by incorporating two variables for trade agreements i.e. SAFTA and MFN. The results of augmented gravity models are presented in Table 5. The results for basic variables remain similar in most of the cases reported in Table 4. The estimation results show that the SAFTA and MFN variable have an insignificant impact on Pakistan's bilateral trade. This indicates that the regional or even bilateral trade agreements are not conducive for enhancing Pakistan's bilateral trade. Pakistan fails to fully harvest the benefits of regional and/or bilateral integration.

Table 5

The Augmented Gravity Model: The Role of SAFTA and MFN

Variables	(1) OLS	(2) FE	(3) FE	(4) FE	(5) FE
LN(GDPI)	0.576 (0.24)**	0.677 (0.44)	1.058 (0.25)***	1.152 (0.27)***	1.003 (0.23)***
LN(GDPJ)	0.268 (0.11)**	0.250 (0.12)**	-0.061 (0.25)	-0.165 (0.25)	-0.076 (0.26)
D(GDPPC)	0.001 (0.00)***	0.001 (0.00)***	-0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)
LN(Dist)	-2.704 (0.85)***	-2.579 (0.92)***	-2.595 (0.37)***	-2.754 (0.35)***	-2.589 (0.37)***
CB	-1.909 (0.85)**	-1.812 (0.94)*			
LL	-3.744 (0.64)***	-3.838 (0.68)***			
SAFTA	0.548 (0.38)	-0.255 (1.11)	-0.175 (0.19)	-0.172 (0.32)	
MFN					1.375 (1.31)
Constant	18.277 (7.27)**	15.992 (12.24)	10.189 (3.42)***	11.428 (7.19)	11.775 (3.36)***
R-squared	0.682	0.702	0.921	0.931	0.920
No of Countries	8	8	8	8	8
No of Obs.	234	234	234	234	234
Year FE	NO	YES	No	YES	No
Country FE	NO	NO	YES	YES	YES

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Now question arises: why does Pakistan fail to achieve the benefits of trade agreement in the region? Are SAFTA and/or MFN relevant? To answer these questions, analysis was extended to find the reasons behind the ineffectiveness of SAFTA and/or MFN in promoting Pakistan's bilateral trade. There are three possible reasons, apart from others, for malfunctioning of SAFTA and/or MFN. These include:

- (i) Role of Tariff and Non-Tariff Barriers.
- (ii) Role of Institutional Framework.
- (iii) Short run vs. long run impacts.

5.2.1. Role of Tariff and Non-Tariff Barriers

It is generally believed that tariff and non-tariff barriers act as a binding constraint in promoting bilateral and/or regional trade. To quantify the impact of tariff and non-tariff barriers, the basic gravity model was augmented. The results are presented in the Table 6 below. It was found that tariff has a negative and statistically significant impact on Pakistan's bilateral trade. The estimated coefficient is -11.660 which is statistically

Table 6

The Augmented Gravity Model: The Role of Tariff and Non-Tariff Barriers

Variables	(1) OLS	(2) FE	(3) FE	(4) FE
LN(GDPI)	-0.203 (0.30)		0.516 (0.56)	
LN(GDPJ)	0.580 (0.30)*	0.557 (0.26)**	-0.054 (0.57)	1.604 (1.18)
D(GDPPC)	-0.001 (0.00)***	-0.001 (0.00)***	-0.001 (0.00)***	-0.001 (0.00)***
LN(Dist)	-3.258 (0.97)***	-3.765 (1.04)***	-0.795 (0.21)***	-1.837 (0.65)**
CB	-3.682 (0.74)***	-4.178 (0.81)***		
LL	-0.975 (1.56)	-1.109 (1.46)		
LN(Tariff)	-11.660 (2.75)***	-10.995 (3.07)***	-11.270 (2.61)***	-11.093 (3.10)***
LN(Non-Tariff)	-4.141 (0.66)***	-4.107 (0.55)***	-4.387 (0.60)***	-3.880 (0.61)***
Constant	56.372 (11.82)***	55.185 (11.80)***	34.460 (6.70)***	12.925 (25.02)
R-squared	0.992	0.994	0.992	0.994
No. of Countries	8	8	8	8
No. of Obs.	36	36	36	36
Year FE	NO	YES	No	YES
Country FE	NO	NO	YES	YES

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

significant at 1 percent. The coefficient of the tariff variable implies that when tariff increases by 1 percent, Pakistan's bilateral trade decreases by 11.7 percent. Similarly, non-tariff has also a negative and statistically significant effect on Pakistan's bilateral trade. The estimated coefficient is -4.141 which is statistically significant at 1 percent. The coefficient of the non-tariff variable implies that when non-tariff increases by 1 percent, Pakistan's bilateral trade decreases by 4.1 percent. These findings indicate that a reduction in the tariff and non-tariff barriers can enhance the bilateral trade. Hence, the regional and/or bilateral trade agreements are helpful in promoting trade among regional countries. But, region as a whole fails to reduce tariff rate and eliminate non-tariff barriers as reported in Section 2. Only signing an agreement has no impact on trade. Concrete measures are required to boost trade. Why Pakistan and other regional countries fail to remove non-tariff barriers? The possible answer of this question is that institutional framework is not good enough to control non-tariff barriers. For example, documentation process is time consuming along with the existence of bribery and high underground trades are some of the notable reasons of non-tariff barriers.

5.2.2. Role of Institutional Framework

To quantify the impact of institutional framework in making trade agreement effective, interactive term of SAFTA and democratic institutions and MFN and democratic institutions were used. The results are presented in Table 7. The results show that interactive terms of SAFTA and democratic institutions have a positive impact on

Table 7

The Augmented Gravity Model: The Role of Democratic Institutions

Variables	(1) OLS	(2) FE	(3) OLS	(4) FE
LN(GDPI)	1.532 (0.19)***	1.444 (0.41)***	1.200 (0.30)***	1.393 (0.35)***
LN(GDPJ)	-0.901 (0.12)***	-0.847 (0.14)***	-0.491 (0.35)	-0.947 (0.38)**
D(GDPPC)	0.001 (0.00)**	0.001 (0.00)***	0.000 (0.00)	0.000 (0.00)
LN(Dist)	-4.338 (0.72)***	-3.720 (0.79)***	-4.868 (0.71)***	-5.687 (0.76)***
CB	-1.740 (0.81)**	-1.177 (0.88)		
LL	-8.381 (0.57)***	-8.030 (0.66)***		
SAFTA*DEMOC	0.081 (0.04)**	0.086 (0.04)**		
MFN*DEMOC			1.454 (0.21)***	1.595 (0.20)***
Constant	35.859 (6.64)***	32.687 (11.31)***	29.567 (5.09)***	40.258 (7.54)***
R-squared	0.768	0.785	0.936	0.947
No of Countries	8	8	8	8
No of Obs.	200	200	200	200
Year FE	NO	YES	NO	YES
Country FE	NO	NO	YES	YES

Robust standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

bilateral trade. The estimated coefficient is 0.081 which is statistically significant at 5 percent. The results further show that interactive term of the MFN and democratic institutions have a positive impact on bilateral trade. The estimated coefficient is 1.4 which is statistically significant at 1 percent. These findings highlight the role of democratic institutions in promoting trade. Regional and/or bilateral trade agreements have a significant role, only when these agreements are supported by a well-developed and enforced institutional framework. What well developed and enforced institutional framework ensure? The well-defined institutional framework ensures the implementation of agreements. For example, the reduction of tariff rate and removal of non-tariff barriers can only be achieved, if institutional frameworks are well developed and enforced.

5.2.3. Long Run vs. Short Run Impacts

The third possibility of insignificant impact of SAFTA and/or MFN might be due to differences in the impact of these agreements in the short and the long run. It is difficult to fully harvest the benefits of regional and/or bilateral integration in the short run. The impact of SAFAT on bilateral trade for short run as well for long run was measured. The results are presented in the Table 8 below. The results based on PMG estimation show that variable representing regional integration is not significant in the short run. The estimated coefficient of SAFTA has an insignificant impact on bilateral trade in the short run. On the other hand, the estimation results show that the variable representing regional integration is significant in the long run. The estimated coefficient of SAFTA has a significant impact on bilateral trade in the long run. This implies that in the short run, the regional integration may not be effective. It is because, regional and/or bilateral is a long term concept. Various institutional reforms are required to reap the potential benefits of regional and/or bilateral integration. However, in the short run, it is difficult to remove non-tariff barriers.

Table 8

The Augmented Gravity Model: ARDL Estimates Based on PMG

Variables	(1) Ecm	(2) SR
Short run Coefficient		
Ecm		-0.566 (0.14)***
D.LN(GDPI)		1.482 (0.33)***
D.LN(GDPJ)		4.113 (1.05)***
D.SAFTA		-0.076 (0.12)
Constant		3.816 (5.39)
Long run Coefficient		
LN(GDPI)	-0.325 (0.28)	
LN(GDPJ)	-6.577 (1.06)***	
SAFTA	0.302 (0.14)**	

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

6. CONCLUDING REMARKS AND POLICY RECOMMENDATIONS

This study has investigated the impact of institutional and non-institutional arrangements on bilateral trade, using extended gravity model which incorporates the role of democratic institutions and non-tariff barriers. This paper also investigated the impact of SAFTA on bilateral trade in the short as well as in the long run. The empirical analysis, based on a panel of eight South Asian countries comprising data over 1975–2013. For empirical analysis, fixed effects model was employed with time and cross section fixed to estimate models. The PMG estimator was also employed for estimating the short run and the long-run relationships in a dynamic heterogeneous panels.

The empirical analysis has shown that regional and/or bilateral agreements are not effective in promoting bilateral trade between Pakistan and its regional trading partners. The impact of SAFTA and MFN on bilateral trade is insignificant. Further empirical analysis has shown that SAFTA and MFN become effective and contribute to bilateral trade significantly, if complemented by a well-developed and enforced democratic institutional framework. This implies that a strong political will is required to channel the impact of SAFTA and MFN on bilateral trade. Empirical analysis has also shown that tariff and non-tariff barriers act as a binding constraint in expanding bilateral trade in the region. Both tariff and non-tariff barriers have a significant negative impact on Pakistan's bilateral trade in the region. Empirical analysis also depicts that the SAFTA may not be effective in the short run, as it has an insignificant impact on trade in the short run, but is effective in the long run, as it has a significant impact on trade in the long run. This finding also supports the role of institutional framework. Regional and/or bilateral trade agreement requires various policy reforms to reduce tariff barrier as well as removal of non-tariff barriers. These reforms can only be implemented if these agreements are supported by well-defined institutions.

Policy Implications

Based on key findings of the study, suggested policy framework is divided into two parts: (i) Economic Framework, and (ii) Institutional Framework.

- (i) *Economic Framework*: the basic gravity model reveals a positive association between economic growth and trade, indicating necessary role of economic growth for trade. The government should promote sustained and high economic growth by reforming the industrial sector which is a backbone of the economy. Economic growth has both demand as well as supply side implications for trade. On demand side, it creates more demand for foreign goods and on the supply side, it helps to produce more goods for exports. Sustained growth will reduce the cost of production, which ultimately, improves competitiveness that is required for trade. The government should also invest on physical infrastructure to reduce distance cost which negatively affects bilateral trade. Long run vs. short run analysis suggests that long run policy reforms are required to promote trade—as trade reform is a long term phenomenon, and its benefits could be measured in the long run, rather than in the short run. In the short run there is a possibility that some sectors may face loss, but in the long run there will be a win-win situation for all countries.

- (ii) *Institutional Framework*: given the weak institutional framework of the regional economies, the regional and/or bilateral agreements may not yield effective strategy to promote bilateral trade. The regional and/or bilateral agreements can only be effective, when these are supported by a well-defined and enforced institutional framework. Analysis has shown that democratic institutions play significant role in realising the benefits of the regional and/or bilateral agreements. This implies that the outcome of these trade reforms crucially depends upon the institutional framework of the country. Institutional arrangements are a pre-requisite for achieving the fruits of the MFN and SAFTA. Trade cost is the most binding constraint. To improve the trade ties between trading countries, like Pakistan and India, requires extensive reform in reducing trade cost. Trade facilitation measures need to be improved and tariff rates should be reduced for boosting trade, and making free trade agreement effective. In summation, to improve the trade ties between the two countries, improvement in physical as well as soft infrastructure is required. Any trade agreements between the two countries, including the MFN can only be effective in expanding bilateral trade, when it is supported by a well-defined and enforced institutional framework that ensure the implementation of policy reforms needed to reduce tariff rates and remove non-tariff barriers.

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