Perspectives on Pakistan's Trade and Development

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Dedicated to …

My wife (Sajida).

Our Son (Omar) and Daughters (Ayeshah & Fatimah).

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Preface

This book brings together my writings on international trade and development and some in collaboration with my students at National University of Sciences and Technology (NUST) since I joined NUST in 2013.

All the paper are aimed at developing concepts and ideas concerning the topics of trade and development in Pakistan. The volume thus addresses a number of issues and challenges that are fairly novel to the Pakistan economy in general and the trade sector in particular, and that also bear on policy questions, in many cases fairly directly and sometimes indirectly.

This book will be most suitable for applied courses on international trade and development for graduate and undergraduate students and for policy and decision makers in the government.

I had the good fortune to benefit from personal association with Dr. Ashfaque Hasan Khan and Dr. Ather Maqsood Ahmed at NUST. Their influence on my work will, it is hoped, not have escaped detection. I benefited a lot from our faculty at many presentations in the Economics Department.

Ms. Rubab Rizvi and Mr. Muhammad Afzal helped ably with the finalizing of the manuscript.

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Zafar Mahmood

1. Introduction

Zafar Mahmood*

1.1 Background

Given the current slow pace of the export sector and the economy, Pakistan needs to get ready for a major policy commitment to embark on a growth path that would reinvigorate its economy and exports. By making strategic trade policy choices, the country can ensure sustainable development, increase opportunities for citizens, and systematically secure a larger proportion of the growing global wealth.

Current state of the export sector cannot be changed unless fundamental bottlenecks faced by it are not immediately addressed. The bottlenecks being faced by the sector, as also identified in the proceeding chapters, include: (1) lack of high quality human resources to manage activities in the fast changing global market; (2) lack of innovating activities that hinder absorption capacity of export firms to introduce technological improvements in production and services processes; (3) insufficient credit availability for export firms; (4) lack of efficient and cost effective infrastructures, particularly for global connectivity; (5) regulatory environment does not ensure that policies enacted are fair, implementable and enforceable; (6) lack of a *positive* mindset that facilitate export firms; (7) high trade costs especially with the neighbouring countries; and (8) inadequate institutional support for export products and markets development.

Key issues and challenges impacting Pakistan's export performance are: (1) anti-export bias in government policies remains strong—it is a major constraint, which hinders resource reallocation towards export sector from import-competing sector; (2) excessive protection in domestic market, even to export-oriented industries, generates inefficiencies, waste and decline in product & service quality; consequently, most of the burden of protection is borne by domestic consumers; (3) cu-

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lture of concessions and exemptions for non-traded production has diverted the attention of domestic producers away from quality production and export market; (4) motivation for capital flight and to draw higher export-related subsidy and evade import taxes have encouraged trade misinvoicing that circumvent the very objective of trade policy; (5) a supportive credit policy to help industry restructure in response to trade and other economic reforms was never introduced that resulted into a virtual de-industrialization and shifting of some industries overseas; (6) Pakistan is under-represented as a trading nation. Its export earnings have been fluctuating dramatically due to production shortfall in major exportable items and extremely narrow production and export base. Export concentration has been raising the risk of instability in export earnings. Concomitantly, Pakistan's major export products face high trade restrictions in foreign markets, which adversely affect export capacity. Not only is the export base relatively undiversified but it is also concentrated in relatively low value added products. No policy change can make any significant impact in promoting exports unless export base is not changed drastically; (7) Pakistan's exports are concentrated in such markets where import growth is sluggish creating little export expansion opportunities; (8) trade costs are very high due to lack of international connectivity and trade facilitation; (9) export strategy has always focused on merchandised exports while disregarding the exports of services that can play a major role in boosting export earnings; and (10) Pakistani export firms are not part of global supply chain, they apply traditional supply chain methods that are not very effective nowadays, *and* as a result they are not taking advantage of global *sourcing* opportunities.

This collection of papers provides Pakistan with a number of policy directions and choices to position itself to gain entry in global markets and to establish itself as a credible and preferred trading partner at the global level.

Papers included in this volume assess the trading platform both at national, international and regional levels for initiating a consistent and sustainable set of policies to promote exports. These studies broadly emphasize that along-side macroeconomic stability, governance, private sector development, technological progress, socio-economic balance,

trade liberalization and reinvigoration of exports can play an effective role in wealth creation for Pakistan.

These papers address issues related with Pakistan's international trade and their impacts on the economy. The analysis is conducted using state-of-the-art models and estimation techniques.

The primary objective of this introductory chapter is to synthesize the results of all the studies included in this volume. Needless to mention, the papers are concise, vigorous, and profound. Rest of the volume is divided into eight chapters, spanning important areas of Pakistan's international trade and development.

1.2 The Perspectivek

The paper included in **Chapter 2**: Capital flight has remained one of the main concerns for planners and policymakers. Their worries come from the "paradoxical" nature of private capital outflows; that is, private citizens holds a large amount of foreign assets, while the country faces a crisis like situation due to ever growing burden of the foreign debt. Given the unstable level of foreign exchange reserves, capital flight over and above the normal levels of capital outflow raises serious concerns for national welfare loss. Available evidence on capital flight has sometimes induced foreign donors, in return for their support, to impose conditions to repatriate private capital held abroad.

The impetus for capital flight from a country represents a demand for foreign exchange that arise due to portfolio reasons, excessive taxation, expectation of a major exchange rate realignment, macro-economic (large fiscal deficit and current account deficit) and political instability, and of course various pull factors abroad also drives it. Illegal outflow of capital is often fed through remittances channeled through the Hundi/Hawala (correspondence) system, export under-invoicing, import over-invoicing, and transfer of capital through smuggling of precious metals, antiques, etc.

Interestingly, illegal (unrecorded) capital flow is a two way phenomenon. The capital held abroad by private citizens is brought into the country at an opportune time. Policymakers have only recently recognized to reverse capital flight that might be taking place through workers' remittances. Reverse capital flight also takes place when

imports are under-invoiced and exports are over-invoiced. Why does reverse capital flight take place? The answer is in four folds. First, it helps whitening the black money, the so-called money laundering that earlier illegally flew from the country. Second, it facilitates evasion of taxes on imports, and realizes superfluous rebates and refunds on exports. Third, it assists in the circumvention of non-tariff measures (NTMs) on imports. Fourth, it allows to hide investment in the underground part of the economy.

Given the nature of trade misinvoicing in Pakistan, both way movement of illegal capital is taking place simultaneously. Under this situation an adjustment of unrecorded private capital flows (arising from short-term capital movements or on payment flows that do not show up directly in the recorded statistics) with illegal capital flows arising from trade misinvoicing, it thus becomes essential to have a complete account of illegal capital flows in Pakistan.

Previous studies focused only on the problem of capital flight from Pakistan, but this study presents evidence of net reverse capital flight to Pakistan. The evidence shows that private citizens' motives to evade trade taxes and circumvent trade controls appear to be out-weighing the motives to build up foreign assets. Thus, net reverse capital flight, indeed, is taking place instead of a net capital flight from the country.

Reverse capital flight takes place mainly because most of the reverse capital ends up in the informal (underground) part of the economy, where the owners of illegal capital easily avoid domestic taxes. Owners of capital under-invoice import of goods with high customs duties to bring back their illegal capital. For this purpose, they use their illegal capital hidden outside the country or foreign exchange bought from the Hundi/Hawala companies. To further hide illegal capital from the radar of domestic tax authorities, they invest the capital, brought home in the guise of imported plant and machinery, in the informal sector. Interestingly, this happens despite the fact that owners of illegal capital can easily bring back capital by remitting through the formal banking channels. The reason is that while bringing back illegal capital through under-invoiced imports they not only evade import taxes but also keep illegal capital hidden from tax and other authorities as their

intention is to invest it in the informal sector, so that they evade domestic taxes and charges for ever. Of course, all of this happens with the connivance of tax and other officials.

The paper refutes the general assertion that providing external funds to countries like Pakistan could be futile if they lead to capital flight. Contrary to this claim it shows that reverse capital flight takes place on net basis all the time. These illicit inflows, though indirectly yet significantly, complement the resources received by the country in the form of foreign loans, foreign investment and country's own foreign exchange earnings. Of course, illicit capital is largely invested in the underground part of the economy. The underground part of the economy is out of the tax net. Industries in Pakistan prefer to under report their true installed capacity by under-invoicing their plant and machinery and hence under-report the actual size of the establishment. This practice ultimately helps industries to also evade taxes on their sales, purchase of domestic inputs and income.

An important finding is that the reverse capital flight increased during the period of trade and exchange liberalization. This indicates that in the absence of strong regulatory bodies, liberalized trade and exchange regimes allowed private citizens to manipulate trade and foreign exchange laws.

Following specific measures are suggested to restrict the cross-border movement of capital through illegal channels: (i) improve tax administration and effective enforcement of trade laws to control movements of illicit capital; (ii) introduce governance reforms to control rampant corruption in the country, which undercut lawful activities in the country; (iii) improve customs administration, simplify tariff structure and appoint pre-shipment inspection companies to inspect invoices; (iv) control Hundi/Hawala (correspondent) related individuals or entities be traced through banking authorities, who are holding large sums of funds to settle laundered money; (v) allow higher depreciation allowances to offset under-invoicing of imports of capital goods; (vi) make arrangements with other countries to share information concerning private citizens' bank accounts and trade-related transactions to and from Pakistan; (vii) create a culture of tax compliance; and (viii) create sound macroeconomic environment.

Chapter 3: This paper identifies welfare as a potent issue created by free-trade areas and related preferential tariff reductions. This is because countries are growingly engaging themselves in the regional and bilateral free-trade agreements besides being part of multilateral trade agreements. Within this perspective, this paper examines the impact of regional and bilateral free-trade agreements on Pakistan's imports. The analysis separates out the effects of tariff changes due to free-trade agreements from the general equilibrium effects of the agreements due to unobserved factors (historical ties, common language & culture, landlocked, etc.) that affects imports of the country. In this way, it addresses the question whether preferential reduction of tariffs in favor of partner countries would be welfare-improving or it could worsen member countries. Findings of the paper show that the effect of trade creation is significantly higher in magnitude as compared to trade diversion for the cases of Regional Trade Agreements (RTAs), South Asian Free Trade Agreement (SAFTA) and Bilateral Free Trade Agreements (BFTAs) of Pakistan. Interestingly, creation of trade caused by general equilibrium effects is more pronounced than trade creation realized through tariff preferences accorded to the member countries. It may thus be concluded that Pakistan's FTAs are not harmful but in fact they are welfare-improving. Potential in SAFTA for trade creation is well recognized in the study. Of course, SAFTA requires members' strong willingness for regional integration and further liberalization through simplified and improved tariff structure and procedures, trade facilitation system, and simplification of the banking services.

All in all, the findings are important as at WTO countries are often warry of RTA or BFTAs as trade diverting practices that are seen as welfare-worsening. But trade diversion is not necessarily harmful, this is because consumption gain from trade more than offset the terms of trade losses from the trade diversion implied by shifting imports to the higher cost partner country. Consumption gain in trade accrue because the consumers are able to consume at a lower price of importables, which is now closer to its true (distortion free) world price as defined by the least cost non-member country.

Chapter 4: This chapter highlights the significance of regional economic integration for the global economy. It is well understood that

developments at the regional level now exceedingly define the global trading environment. This is mainly due to fast-tracked movement towards regional economic integration in the past few decades. Regional integration agreements aim to reduce trade barriers more rapidly than can be achieved through multilateral agreements under the auspices of the World Trade Organization (WTO). Regional blocs nonetheless restrict entry for non-members especially small countries by imposing higher trade barriers, which is a worrisome outcome for countries like Pakistan. Proponents of regionalism feel that the trading blocs speed up the progress towards global free trade as negotiations are better carried out among a few bloc members than among a large number of WTO members. The critiques, however, fear that trading blocs might turn inward and erect high discriminatory trade barriers against non-members.

In light of this debate, this paper addresses a few key questions: Is regionalism a threat to multilateral trade liberalization? Whether regional blocs can be used as a substitute for multilateral trade liberalization? Does regional integration enable smaller developing nations to alleviate possible harmful long-term effects on them by undertaking necessary economic reforms? In this context, a supplementary question is, does the WTO sufficiently protect smaller countries? And if not, what measures should be taken to strengthen the WTO so that the interests of the smaller nations are protected? Also given the current deadlocks in multilateral trade negotiations, isn't regionalism accelerating the transition towards global free trade? Why countries are now more attracted to regional economic integration than ever before?

While assessing various arguments, on the balance, the paper concludes that regionalism is not a negative thing in the context of multilateral trade liberalization, and that in some ways it indeed proved very helpful for the sustention of the global trading system. For Pakistan to benefit from regionalism, it should prepare itself to join regional blocs having economic dynamism and worldwide recognition. In trading blocs where Pakistan has membership it should make efforts for the removal of non-tariff measures, creation of efficient transport links, promotion of trade facilitation, removal of visa & business movement restrictions, etc.

Chapter 5: examines the central issue: whether in the current fast changing global and regional trading environment export supply

decisions are made on the basis of factors identified by the traditional trade models, including productive capacity, relative prices of exports and variable cost of production, or they are influenced by the emerging trading realities, such as trade liberalization that is being introduced to facilitate exports process, import compression of imports of intermediate and capital goods, deteriorating law & order situation, corruption and bad governance, energy crisis and technological innovation.

The paper comes to the conclusion: all the factors included in the traditional export supply models including productive capacity, variable cost and relative prices significantly affect the export supply performance in the South Asian countries. Moreover, non-traditional variables such as trade reforms show significantly positive impact on export supply clearly indicating that trade reform process is facilitating export growth, import compression and technological innovation show significant effect, deteriorating situation of the energy sector and increased corruption levels have proven to be acting as the significantly deterring factors to export supply decisions.

The paper calls upon the South Asian governments to pay special attention to capacity building to stimulate the export supply growth, removing anti-export bias in policies to promote exports, FDI inflows will not only impact the exporting industries by improving production process but will also help in bridging the technology gap throughout their economies; consequently, increasing productivity of the economy as a whole. Thus, policies aimed at simplifying tax structures, flexible labor markets, improved infrastructure, lowering corruption and improving security conditions should help attract FDI for technological innovation and knowledge transfer. That will subsequently improve the performance of exports, to ensure exporters' confidence in reform policies regarding corruption through creating conducive macroeconomic environment, simplification of the trade procedures and processes and reduction in discretionary powers and their blatant use by public officials and lack of transparency in the decision-making process, and improve energy situation by improving power supply and distribution infrastructure.

Chapter 6: identifies that developing nations have been experienceing export product concentration due mainly to production and

export of raw materials and semi-manufactured products. Whereas, such products, in general, do not face market access problem, yet they have inelastic demand in foreign markets and their close substitutes are easily available. Finished manufactured products exported by developing countries face high trade barriers in developed markets. Consequently, exports of these countries are highly concentrated on raw materials and semi-manufactured products.

Global experience reveals that countries, who have failed to diversify exports, have grown slower than those who have executed right policies for export diversification. Moreover, countries facing export concentration are more vulnerable to external shocks. Mindful of the negative repercussions, developing countries have been targeting export product diversification as a mean to achieve the goals of export expansion and higher per capita income. Besides, to globalize their economies, developing countries have been striving hard to introduce structural transformation by moving away from exporting primary and intermediate products to export finished products. Consequently, they realize high economic growth as sustained foreign exchange earnings were available.

Empirical findings of the paper show that all factors including competitiveness, industrial sector growth rate, institutional strength, domestic investment growth rate, financial development, and macro-economic efficiency are positively and significantly associated with export diversification; of course, with the sole exception of the fuel-intensity variable, which shows that dependence on export of natural resources reduces incentives for diversifying exports; the so called natural resource *curse* phenomenon. An important finding of the analysis is that institutional strength enables countries to swiftly diversify their exports. That is, a country is in a better position to diversify its exports if it has well-developed soft and hard infrastructures and viable institutions. Inflow of foreign direct investment, which contributes to economic efficiency by transferring knowledge and technical know-how, also facilitates export diversification. Likewise, growth in domestic investment, which provides required domestic resources to diversify production base, in turn, helps economies to diversify export. At the same time, financial sector development, which channelize required

credit to private firms, becomes a facilitation source to diversify exports. Finally, the empirical findings also suggest that the real depreciation of national currencies is profitable in the sense that it strengthens competitiveness of industries required for export diversification.

On the basis of above findings the paper draws the following implications for policy making: (i) reform institutions and strengthen their mechanisms to facilitate export diversification; (ii) attract FDI by providing appropriate incentives and adopting policies aimed at simplifying tax structure, flexible labor markets, and improved infrastructure; (iii) develop financial markets to satisfy the credit and financial needs of export diversifying firms; (iv) policy makers in natural resource rich countries need to be cautiously managing and using resources for their inevitable use to restructure production and exports base; and (v) stabilize domestic currencies as well as control inflation to strengthen competitiveness for attaining the objective of export diversification.

Chapter 7: emphasizes that trade in cultural goods has become an emerging and transformative force behind socio-economic cultural development. It has turned out to be an important source of inclusive economic growth. Despite its importance, only a handful of countries are the main players in global trade of cultural goods. This is mainly because production and trade potential of cultural goods had remained largely unexplored. Now with market openings world-wide, cultural goods trade has been rising at a faster pace. Therefore, liberalization of cultural goods' trade need to be considered as an important policy issue.

Pakistan has a pleasant blend of diverse cultures representing distinctive music, arts, antiques and sculptures. Despite the cultural richness, Pakistan has so far been unsuccessful in realizing the export potential of cultural goods. Nevertheless, lately the trend appears to be changing as Pakistani electronic media and private industry has started showcasing its soft image and culture world-wide. Consequently, Pakistan's export of cultural goods has started showing an upward trend.

Empirical findings of the paper show that exports of cultural goods are strongly influenced by the domestic output growth of Pakistan. Cost of transportation and trade barriers negatively affect exports of cultural goods. Land area of importing countries boosts exports of cultural goods as it creates greater acceptability of diverse foreign

cultures and cultural goods. Exports of cultural goods sharply increase with those trading partner countries that have colonial ties and share a common language. Under the present circumstances, common border with importing countries is a weak factor to promote exports of cultural goods. Landlocked countries generally isolated from participating in global trade, import relatively less from Pakistan than its other trading partner countries.

The policies suggested by the paper to promote the exports of cultural goods from Pakistan are: (i) increase domestic production of cultural goods by enhancing productivity and efficiency of domestic industries producing them; (ii) ensure quality of cultural goods comm-ensurating with the income levels of trading partners; (iii) reduce trade barriers by using modern electronic and social media technology, advertisement and promotional activities world-wide; (iv) lower border restrictions and facilitate exports especially to neighboring countries; (v) focus on countries with large land areas to tap their higher and wider acceptability for diverse foreign cultures and products; (vi) target countries having common language and colonial ties with Pakistan; and (vii) develop cost effective air links and cargo services especially to landlocked countries.

Chapter 8: is more emphatic in arguing that international trade is adversely affected by the trade costs incurred locally and across the borders. This is because trade costs form a potentially important barrier to trade. Higher trade costs are an obstacle to trade and impede the realization of gains from trade liberalization; therefore, special attention needs to be given in policies to minimize trade costs. Owing to the importance of trade costs in explaining the volume and direction of trade, international trade economists are now increasingly focusing on trade costs and this has become an area of key interest within the modern stream of international trade research.

With trade liberalization, world-wide trade barriers (tariffs and NTBs) have been reduced but continuing poor institutional and infrastructure quality keep on hampering trade performance.

Trade costs act as a determinant of the pattern of bilateral trade and investment. They also determine a country's ability to take part in regional and global production networks. In this context, the sources of

trade costs, and in particular the types of policies that can reduce them, are the subject matter of this study.

Main conclusion of the study are: Despite integration of the global economy, large unexploited gains can be reaped by further reducing the wedge between the cost of producing a good and price paid by ultimate consumer, i.e., by cutting down the trade costs. Although, there is a considerable reduction in trade costs, yet substantial room remains to lower them. High bilateral trade costs with some of the major trading partners of Pakistan calls for policies that can effectively reduce them. This should improve country's absolute and relative position in the global trade.

The study shows that agricultural trade costs are relatively larger than that of the non-agricultural sector. Therefore, focusing on trade facilitation for agricultural products would be particularly productive.

The study also investigates the determinants of trade costs. It shows that two areas are highly amenable to policy intervention for reduction in trade costs; these are trade infrastructure and free trade areas with trading partners. In this regard, better shipment connectivity with the trading partners efficiently improves transportation routes thus reducing time and other costs. Similarly, free trade agreements play a significant role in reducing the costs of trade, as they work to reduce non-tariff and behind the border regulatory measures.

On the basis of the above conclusion the study draws the following implications for policy: (i) effectively implement WTO's agreement on trade facilitation and reduce the red tape at border crossings; (ii) expedite and release shipment of perishable agricultural goods without any delay; (iii) improve port connectivity, cargo handling and means of transportation, i.e., roads, railways and air links; (iv) streamline and harmonize non-tariff barriers (NTBs); (v) develop soft infrastructures by applying modern technological methods: internet, publicity campaigns and electronic media; and (vi) initiation of mega regional connectivity projects like CPEC.

Chapter 9: Historically, exporters struggled to use the dictate of comparative advantage theories to enhance their global market share and earnings. Nonetheless, since the 1950s, they have been adopting a new paradigm to take benefit of the economies-of-scale and broadening of

production base. Later on, when competition increased, it became difficult for companies to handle the management structure. To overcome this problem, many large companies began to consider the 'outsourcing' option. While shifting attention to their central process, companies passed non-critical (non-core) procedures, to be managed by third parties. However, in the early 1990s, outsourcing was not widely practiced. But in the late 1990s, as cost saving became part of the business strategy for companies, they began to focus on outsourcing option. They started to outsource such functions, which were necessary to run a business but not related to central business activities.

While many low skilled jobs in manufacturing industries were transferred from developed countries to developing countries, the services sector in developed countries was considered less vulnerable to this replacement. It was thought that their better skilled and educated workers would protect local service industry from foreign competition. This perception was based on the high investment in human capital in developed countries. But this notion was challenged by China and other Asian nations who emerged as most preferred outsourcing locations.

This paradigm shift in production and trade pattern has been made possible by changes in business environment including the revolution in information and communication technologies. Such changes have enabled countries to transmit goods and services exports cheaply and fast.

In the context of outsourcing, this paper examined the impact of human capital investment on the exports of goods and services for emerging Asia vs. developed countries. It thus attempts to investigate the role of human capital investment in enhancing the location attractiveness for outsourcing location. In addition, it also examines the role of information and communication technology (ICT) and other factors (business environment, wages) in determining the attractiveness of a country for outsourcing of goods and services. Good soft infrastructure has become an essential instrument for countries to compete in the international market. Similarly, sound business environment is crucial for attracting outsourcing activities. As far as wages are concerned, foreign countries look at the wage cost in the host country while making the outsourcing decision.

Empirical findings of the paper show that: (i) as stock of human capital rises, it enhances the country's attractiveness as an outsourcing location, which in turn increases the exports of goods and services; (ii) developed countries decide about outsourcing while looking at the ICT infrastructure of the host country; (iii) sound business environment attracts foreign companies to outsource in emerging Asia, which in turn influences exports of goods and services; (iv) low labor and office occupancy costs lure companies from developed countries; and (v) wages have accelerated dramatically in countries who pioneered out-sourcing in Asia, consequently other countries got opportunities to offer out-sourcing services.

To attract outsourcing from developed countries, Asian developing countries need to pay special attention to make their industries (manufacturing and services) more cost effective. In addition, special attention needs to be paid to further enhance quality of their human capital stock, improve efficiency of soft and hard infrastructures, and improve business environment by curtailing cost of doing business.

In particular, the paper suggests Asian countries the following steps to attract and benefit from outsourcing originating from developed countries: (i) expand human capital stock; (ii) reduce border restrictions; (iii) provide sound business friendly environment; and (iv) improve efficiency of soft and hard infrastructures and provide cost effective support services.

1.3 Concluding Remarks

This volume offers a rich and variegated collection of papers to those who wish to seriously design policy to reinvigorate exports from Pakistan, academicians, researchers and students. Needless to mention, that the volume contains analyses based on recent developments in the theory of international trade.

What is required to tackle the issues and challenges raised earlier? In a nutshell, Pakistan needs to create competitive strength in industries and a consequent diversification of its export base, and upgrading of the production capacity of export industries based on their inherent capabilities. Effective implementation of trade policy reforms

will then be able to facilitate an export expansion drive based on sound fundamentals.

As suggested by papers in this volume, what is needed in the immediate run is incentives for restoring exports to traditional markets where exporters are already present and established; medium-term measures to improve competitiveness and explore new vibrant markets, and in the longer term completing mega connectivity projects, harmonization of trade policy and domestic reform measures with international standards, to penetrate in regional and international markets by becoming part of the global value chains. Introduce governance reforms to control rampant corruption in the country, which is hugely undercutting lawful trade activities.

2. Reverse Capital Flight to Pakistan: Analyses of Evidence

Zafar Mahmood†

2.1 Introduction

Capital flight from Pakistan has remained one of the main concerns for planners and policymakers. Their worries come from the "paradoxical" nature of private capital outflows; that is, private citizens holds a large amount of foreign assets, while the country faces a crisis like situation due to ever growing burden of the foreign debt. Given unstable level of foreign exchange reserves, capital flight over and above the normal levels of capital outflow raises serious concerns for national welfare loss.[1] Available evidence on capital flight has sometimes induced foreign donors, in return for their support, to impose conditions to repatriate private capital held abroad.

The impetus for capital flight from a country represents a demand for foreign exchange that arise due to portfolio reasons, excessive taxation, expectation of a major exchange rate realignment, macroeconomic (large fiscal deficit and current account deficit) and political instability, and of course various pull factors abroad also drives it. Illegal outflow of capital is often fed through remittances channeled through the Hundi/Hawala (correspondence) system, export under-invoicing, import over-invoicing, and transfer of capital through smuggling of precious metals, antiques, etc.

Interestingly, illegal (unrecorded) capital flow is a two way phenomenon. The capital held abroad by private citizens is brought into the country at opportune time. Policy makers have only recently recognized to reverse capital flight that might be taking place through workers' remittances.[2] Reverse capital flight takes place when imports

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are underinvoiced and exports are over-invoiced. Why reverse capital flight takes place? The answer is three fold. First, it helps whitening the black money that earlier flew from the country. Second, it facilitates evasion of taxes on imports, and realizes superfluous rebates and refunds on exports. Third, it assists in the circumvention of non-tariff measures (NTMs) on imports.

Given the nature of trade misinvoicing in Pakistan, both way movement of illegal capital is taking place. Under this situation an adjustment of unrecorded private capital flows (arising from short-term capital movements or on payments flows that do not show up directly in the recorded statistics) with capital flows arising from trade misinvoicing becomes essential to have a complete account of illegal capital flows in Pakistan.

Previous studies (Khan, 1993 and Sarmad and Mahmood, 1993) focus only on the problem of capital flight from Pakistan, while Mahmood and Nazli (1999), covering the period 1972 to 1994, finds evidence of reverse capital flight to Pakistan but stops short of analyzing the trends in view of changes in trade and exchange control regimes.[3] The present paper shows that private citizens' motives to evade trade taxes and circumvent trade controls appear to be outweighing the motives to build up foreign assets in Pakistan. Thus, reverse capital flight, indeed, is taking place instead of a net capital flight from the country.

The paper covers the period 1972 to 2009. During this period Pakistan passed through different exchange rate regimes including fixed exchange rate, managed floating exchange rate, multiple exchange rate, dirty float and flexible exchange rate. On the trade policy front, during this period Pakistan implemented various trade policy reform programs, in particular drastic cut in tariff rates and NTMs, and incentives for export promotion. Moreover, Pakistan allowed full convertibility on the current account along with a partial convertibility on the capital account.[4] It would be useful to analyze the illicit capital flows by using the latest available data, the link between capital flight and shifts in exchange rate and trade policy regimes.

The rest of the paper is divided into seven sections. Section 2 provides an overview of exchange rate and trade regimes in Pakistan.

Section 3 discusses the methodology to identify and measure the size of trade misinvoicing. The approaches to estimate capital flight are discussed in section 4. Section 5 provides the adjustment mechanism of illegal capital flows with trade misinvoicing. Section 6 reports data and data sources. Estimates of illicit capital flows and discussion on the findings are reported in section 7. Finally, section 8 concludes the paper and offers some recommendations for policy making.

2.2 Exchange Rate and Trade Regimes

To explain trends in illicit capital flows, it would be useful to demarcate in an analytically meaningful manner the evolution of Pakistan's exchange and trade control regimes. In this context, we delineate four phases:

2.2.1 Phase I (1972-1981): Fixed exchange rate regime and partial lifting of trade controls

During this phase, Pakistan maintained the fixed exchange rate policy. On 11th May 1972, the Pakistani currency was devalued by 56 percent, which was appreciated by 11 percent in February 1973 soon after US dollar was devalued by 10 percent. The exchange rate fixed in 1973 was maintained till 7th January 1982. While the currency was devalued, the trade control system was overhauled mainly on the recommendations of the International Monetary Fund (IMF). The export bonus scheme that introduced a multiple exchange rate system throughout the 1960s was abolished, tariffs were reduced on intermediate and capital goods, and the degree of *cascading* in the tariff structure was lowered. With the exception of tax rebates and export financing, all export subsidies were withdrawn. Instead, export duties were introduced on a number of intermediate inputs to promote high value added industries, but these were eliminated subsequently. In addition to these policy measures the import licensing system was simplified; all the permissible imports were placed either on the "Free List" or the "Tied List". During this phase both current and capital accounts remained substantially restricted.

The impact of the above reported liberalization measures on the economy was short lived mainly because of rising domestic inflation. The rupee once again became overvalued especially after the appreciation of the US dollar to which the currency was pegged. Instead of devaluation of the rupee, the government preferred to use export subsidies and quantitative restrictions on imports to manage the trade balance. Licensing procedures were tightened again. Differential import duty rates were imposed for commercial and industrial users. All of these measures further raised anti-export bias in government policies.

2.2.2 Phase II (1982-1998): Managed floating exchange rate and liberalization initiatives

The government fine-tuned the overvaluation of the currency by adopting the managed floating exchange rate on 8th January 1982 and linking the currency to a basket of 16 currencies of its major trading partners. The value of the currency started declining after the adoption of the new exchange rate regime. Since 1991, some new measures to reform the exchange and payments system were introduced that include: (i) resident Pakistanis were allowed to maintain foreign currency accounts like non-residents to attract funds held abroad by private citizens, legally or illegally; (ii) restrictions on holding of foreign currency and on foreign exchange allowances for travel were removed; and (iii) rules governing private sector's foreign borrowing were liberalized, especially where no government guarantee was required. In addition, host of other restrictions on foreign payments were removed (e.g., for the purpose of education, royalty payment, foreign advertisement, and professional institutions' membership).

During this phase import tariff structure was significantly rationalized: maximum tariff rate declined from 350 percent in 1982 to 45 percent in 1998. Import licensing was eliminated with the exception of a small number of items remaining on negative and restricted lists, these were further reduced gradually. Non-tariff barriers were reduced except for security, health, religious and reciprocity reasons. Some new export promotion measures were also introduced: (i) streamlining of schemes of the duty-drawbacks, bonded warehousing and export credit;

(ii) garment units in export processing zones were allowed to buy textile export quotas from the Pakistani market; (iii) foreign companies were allowed to export goods; and (iv) improvements were made in the institutional arrangements for quality control, marketing and training of skilled manpower.

In 1994, full convertibility of Pak-Rupee was introduced for current account transactions as part of the trade liberalization program, while for the capital account convertibility a cautious approach was adopted. The central bank implemented partial convertibility of the capital account by allowing foreign exchange companies to operate in Pakistan and the corporate sector to obtain foreign equity. Pak-Rupee was also made fully convertible for some capital account transactions, e.g., foreign portfolio investment in the country. Aside from allowing 100 percent foreign equity participation, no restrictions were in place on the repatriation of capital, profits, royalty, etc.

2.2.3 Phase III (July 1998-July 2000): Multiple exchange rate and dirty float regimes

This phase was marked with political instability in the country and economic sanctions by western countries as a result of the nuclear test by Pakistan. The government froze the foreign currency accounts in order to preserve its official foreign exchange reserves. These circumstances eroded the confidence of the private sector. Whatever liberalization achieved on current and capital accounts in the earlier periods was virtually reversed. To counter the crisis, government adopted the system of multiple exchange rates consisting of an official rate (pegged to US dollar), a floating inter-bank rate (FIBR), and a composite rate (combining official and FIBR rates). On May 1999, Pakistan adopted the system of dirty floating exchange rate and the currency was pegged to the US dollar by removing the multiple exchange rate system. The exchange rate was then defended within narrow bands (margins) till July 2000.

Despite economic and political difficulties, Pakistan resisted protectionist pressure from domestic interest groups and continued with market-based reforms, including a more liberal policy for imports and

foreign investment. Besides, maximum tariff rate came down to 30 percent from 45 percent in 1998. Besides, the scope of export prohibitions was reduced and export subsidies were linked with export-performance.

2.2.4 Phase IV (July 2000-2009): Flexible exchange rate regime and trade liberalization

Since 20th July 2000, Pakistan is following a flexible exchange rate regime. Nevertheless, the *de jure* exchange rate arrangement is managed float without fixing pre-determined paths for the exchange rate. The central bank's interventions are limited to moderating and preventing excessive fluctuations in the exchange rate. The central bank intervenes in the market using the U.S. dollar. Foreign exchange controls and restrictions are now minimal. Current account transactions are now unrestricted except for occasionally imposed limits on advance payments for some imports. Foreign investors can now freely bring in and take out their capital, profits, dividends, royalties, etc. IMF (2010) classifies Pakistan's exchange rate regime as a *de facto* conventional peg to the U.S. dollar within a narrow band.

Pakistan has reduced tariff rates across the board. Between 2003 and 2007 the maximum tariff rate was 25 percent. However, due to rising trade deficit, the maximum tariff was raised to 35 percent since 2008. Quantitative restrictions and other direct state interventions into trade have been drastically reduced. Ordinary customs duties are now the primary trade policy instrument along with some NTMs that range from price controls to exchange and finance controls, quantity controls, and monopolistic and technical measures. Many of the statutory regulatory orders, (SROs) providing discretionary exemptions to firms and industries, have been eliminated, thus making the trade regime fairly simple.

The government introduced Rapid Export Growth Strategy (REGS) in July 2005. It aimed to reduce the cost of doing business in Pakistan, upgrade skills and technology, comply with social and environmental concerns, encourage foreign direct investment in export-oriented industries, strengthen trade promotion bodies, and modernize

soft and hard infrastructures, promote higher-value-added exports, and change export-product composition and export market diversification.

2.3 Trade Misinvoicing

An importer is tempted to under-invoice imports if import duties and rents on quantitatively restricted imports are higher than the premium on the exchange rate in the open (or black) market that he has to purchase to pay foreign sellers in full. When there exist no foreign exchange controls but trade barriers do exist, then clearly there is an incentive to under-invoice imports (Mahmood, 1997). There is, however, some risk attached both to under-invoicing of imports and engaging in illegal foreign exchange transactions. Thus, under-invoicing will not occur unless the difference between import tariff equivalent and premium on foreign exchange in the open market is greater than the evaluated risk factor of being caught by law enforcing agencies (see also Bhagwati, 1964). With under-invoicing of imports the person involved in such transactions brings capital to the country (the reverse capital flight) and draws benefit from this transaction. It is quite likely that if this perceived benefit is added to the saving of import duties due to import under-invoicing then the above differential further rises. Through under-invoicing of imports capital is brought into the country but it by-passes official foreign exchange reserves.

One can also explain over-invoicing of imports that takes place simultaneously. This is used to take capital outside the country. In this case, the importer is willing to pay higher customs duties to take out its capital, normally the ‘black money’, outside the country to safe havens, to whiten it at a later date. With the resultant higher average import tax earning rate it transmits false signals about the trade policy regime as more protectionist or restrictive but in fact it is not.

Likewise, under-invoicing of exports is practiced to take black money outside the country. By under-invoicing, the exporter is willing to withdraw from the benefit of export subsidy if it is available or to avoid export tax if there is any. This practice deprives the government of foreign exchange earnings.

Some exporters also indulge into export over-invoicing activities. Their intention is to illegitimately benefit from export subsidies and to make reverse capital flight possible to whiten the black money taken out of the country at some earlier date. If the exporters do not have black money outside the country then they buy it from the Hundi/Hawala ("correspondent") exchange companies based in foreign countries. In this case exporters compare the differential between the subsidy rate and the perceived benefit from reverse capital with the premium on foreign exchange paid on capital purchased from the Hundi/Hawala traders in the open market; if the differential is greater than the evaluated risk factor of being caught then the exporter will over-invoice. In this case government receives additional foreign exchange earnings but loses on account of extra export subsidies it pays for over-invoiced exports.

2.4 Illicit Capital Movements

Two approaches to measure illicit capital movements are available in the literature: direct and indirect. The direct approach uses information obtained from the balance of payments accounts. This approach identifies capital flight as short-term capital outflows, and considers it as a response of private citizens to investment risks in the country. Usually, these funds promptly respond to political or financial crisis and expectations about more restrictions on capital account or devaluation of the home currency.

Cuddington (1986), a direct approach, defines capital flight as a short-term (speculative) reaction of private investors to macroeconomic instabilities or other policy-induced investment risks.[5] This is why the Cuddington approach focuses only on the acquisition of short-term foreign assets by the private non-bank investors, and errors and omissions instead of the private sector's total acquisition of external claims.[6] Cuddington chooses only the short-term foreign assets because they presumably respond quickly to changes in expected profitability or shift in risks. The Cuddington thus define capital flight (KF_{CUD}) as:

$$KF_{CUD} = -NEO - NAC \qquad \ldots (1)$$

where, *NEO* = Net errors and omissions and
NAC = Net acquisition of non-bank private short-term capital.

The direct measure of capital flight is not free from criticism. Critiques suggest to also consider other than short-term capital flows, because long-term foreign financial assets are close substitutes to short-term assets because of the existence of very active secondary markets in long-term financial assets. On the other hand, errors and omissions include unrecorded flows or statistical discrepancy. In view of this criticism, indirect approaches to capital flight are also suggested.

Indirect approaches include the World Bank (1985) and the Morgan (1986). In these approaches, capital flight is considered as a residual of increase in external debt, net foreign direct investment, foreign exchange reserves and the current account deficit. Here, the idea is that the first two inflows finance the latter two outflows. If the first two *sources of funds* cannot finance the latter two *uses of funds* then the difference would indicate of capital flight.

The World Bank approach considers increases in external debt and net foreign direct investment as capital inflows to the country, and takes out from these inflows the sum of current account deficit and increase in official reserves. This difference is taken as a claim on foreign assets by private individuals. In other words, this approach assumes that if the capital inflows do not finance the current account deficit or official reserve accumulation (i.e., the recorded use of foreign funds), it leaves the country in the form of capital flight. The World Bank definition of capital flight (KF_{WB}) can be expressed as follows:

$$KF_{\mathrm{WB}} = CED + NFDI + CAB + COR \qquad \ldots (2)$$

where,
CAB = Current account balance,
COR = Changes in official reserves,
CED = Changes in external debt, and
NFDI = Net foreign direct investment.

The Morgan definition[7] works out foreign capital inflows like the World Bank definition. In this approach inflows are used to finance the current account deficit, increase in official reserves and increase in the net foreign assets held by commercial banks. Thus, the Morgan definition of capital flight (KF_{MOR}) can be written as:

$$KF_{MOR} = CED + NFDI + CAB + COR + NAFA \qquad \ldots (3)$$

where, *NAFA* = Net acquisition of foreign assets by commercial banks.

2.5 Adjustment of Capital Flight with Trade Misinvoicing

Trade and foreign exchange restrictions and lax in enforcement of controls create incentives for trade misinvoicing in such a way that it can result in both way movement of private capital, i.e., capital flight from the country and/or reverse capital flight to the country. Interestingly, the difference in trade statistics of the reporting country and its trading partners often help to identify this problem. Using the partner country data technique,[8] we adjust the capital flight estimates derived from three approaches with estimates of trade misinvoicing in the following way:

$$KFM_{\mathrm{WB}} = KF_{\mathrm{WB}} + MI$$

$$KFM_{MOR} = KF_{MOR} + MI$$

$$KFM_{CUD} = KF_{CUD} + MI$$

where,
KFM_{WB} = Capital flight estimates adjusted for trade misinvoicing using the World Bank approach.
KFM_{MOR} = Capital flight estimates adjusted for trade misinvoicing using the Morgan approach.
KFM_{CUD} = Capital flight estimates adjusted for trade misinvoicing using the Cuddington approach.
$MI = MI_x + MI_m$ = Misinvoicing in total trade.

$MI_x = M_{icp} - X_{pic} * Ad$ = Misinvoicing of exports.
If $MI_x < 0$ then exports over-invoicing is taking place from the country.
If $MI_x > 0$ then exports under-invoicing is taking place from the country.
$MI_m = M_{pic} - X_{icp} * Ad$ = Misinvoicing of imports.
If $MI_m > 0$ then imports over-invoicing is taking place in the country.
If $MI_m < 0$ then imports under-invoicing is taking place in the country.
M_{icp} = Imports of industrial countries from Pakistan (*cif*).
X_{pic} = Exports of Pakistan to industrial countries (*fob*).
M_{pic} = Imports of Pakistan from industrial countries (*cif*).
X_{icp} = Exports of industrial countries to Pakistan (*fob*).
Ad = Adjustment factor defined as *cif–fob* ratio.

2.6 Data

We adopt here the sign convention used in the balance of payments accounts. The data used here are for the period 1972-2009. The data definitions and sources used are as the following:

1. Changes in external debt. World Bank: *World Debt Tables*.
2. Net foreign direct investment. IMF: Balance of Payments. Line 3..XA.
3. Current account surplus. IMF: Balance of Payments. Line A..C4.
4. Changes in official reserves. IMF: Balance of Payments. Line 2..X4.
5. Errors and omissions. IMF: Balance of Payments. Line A..X4.
6. Non-bank private short-term capital. IMF: Balance of Payments. Line 8..2X4.
7. Net acquisition of foreign assets by banks. Figures are multiplied by -1 for consistency with the balance of payments sign convention. IMF: *International Financial Statistics*. Line 7ad.
8. Trade data for Pakistan and industrial countries IMF: *Direction of Trade*.
9. cif-fob factor. IMF: *International Financial Statistics*.
10. Before 1982, values in items 1-6 were reported in terms of Special Drawing Rights (SDRs). These values are converted into

US dollars by using the average SDR/dollar exchange rate reported in IMF: *International Financial Statistics*, Line sb.

2.7 Estimates of Capital Flight

How large is the size of illicit capital flows in Pakistan? Between 1972 and 2009, Pakistan received (net) illicit capital inflow (or reverse capital flight) of over $30 billion.[9] Accumulated reverse capital flight represents 74 percent of total outstanding external debt and 18 percent of the GDP in 2009. Such a large size of reverse capital flight negates the wide-spread and exaggerated impression about the net capital flight from the country.

In illicit capital flow activities individuals with varied behaviors and interests are involved. Their motive essentially is to circumvent economic policies to draw maximum benefit for themselves. As economic policies change from time to time to meet developmental objectives of the economy, so do change in intensity and direction of illicit capital movement. The proceeding analysis shows that illicit capital flow is an area where successive governments in Pakistan have failed to contain it.

Table 2.1 reveals that in the first phase (1972-1981) exports were under-invoiced by an average of $28.68 million per annum. It shows a clear motive to take capital out of the country. This is the period when capital account restrictions were the maximum. Exports of intermediate inputs were restricted by using export duties. Thus, exporters not only circumvented capital controls but also export restrictions with connivance of the customs staff. In the same phase, however, imports were under-invoiced by $247.51 million per annum. In this case, the clear motive was to bring illicit capital back to the country and evade high import duties. On the net basis, during the first phase there was a reverse capital flight of $218.83 million per annum through trade misinvoicing.

In all the remaining three phases, Table 2.1 shows that there was over-invoicing of exports and under-invoicing of imports. Consequently, in the period when managed floating exchange rate or flexible exchange rate policies were implemented, the country received a net inflow of

illicit capital through the trade account. The highest average per annum export over-invoicing was recorded during the third phase (1998-2000). This period was marked with depletion of foreign exchange reserves, economic sanctions imposed by Western countries, freezing of foreign currency accounts, use of multiple exchange rates and later adoption of the dirty floating exchange rate, and use of export-performance linked export subsidies. At the time when government was looking for financial resources exporters deprived it by obtaining extra subsidy on account of over-invoiced exports. Nonetheless, government was satisfied as the over-invoiced earnings on exports raised its foreign exchange reserves.[10]

The highest under-invoicing of imports was recorded during the second phase (1982-1998), when by and large tariffs and NTBs were very high, so there was an incentive for importers to circumvent trade policy restrictions and indulge into import under-invoicing activities and bringing home illicit capital (Table 2.1). The fourth phase (2000-2009) also recorded very high levels of average per annum import under-invoicing. During this period tariff rates were not very high but still high enough to entice importers to remain engaged in such activities. Although, NTBs declined during this period but NTMs increased owing to corruption and bad governance. On the net basis, the overall illicit capital inflow was the highest during the fourth phase. All this shows that relatively lower trade restrictions and liberalization of current and capital accounts, in the fourth phase, could not stop illicit capital movement. This implies that implicit trade and capital accounts restrictions remained wide-spread which enticed people to defy them to draw benefits. The pertinent question is how this large illicit capital inflow was financed. The answer is through Hundi/Hawala, a channel that is used to finance trade misinvoicing. In addition, illicit capital that was taken out of the country at some earlier date became a major source of reverse capital flight at a later date.

Table 2.2 reports estimates of capital flight that are un-adjusted for trade misinvoicing using the three approaches discussed earlier: the World Bank, Morgan and Cuddington. Estimates using these approaches are not very consistent with each other; thus, it is difficult to arrive at any consensual conclusion. Whereas, the Morgan and Cuddington estimates are consistent with each other in the first three phases, they are

inconsistent with each other in the fourth phase. Both of these approaches are distinct from the World Bank approach.

Table 2.1. Trade misinvoicing
(average per annum, US dollar in million)

Period/Phase	Exports	Imports	Total Trade
I: 1972-1981	28.68	-247.51	-218.83
II: 1982-1998	-161.52	-769.62	-931.14
III: 1998-2000	-506.6	-209.22	-715.83
IV: 2000-2009	-238.14	-732.15	-970.29

The World Bank estimates show that there was a net capital flight from Pakistan in the first two phases, while both Morgan and Cuddington approaches show net inflow of illicit capital (Table 2.2). For the third phase, all approaches are unanimous about the net illicit capital inflow to the country. In the fourth phase, estimates based on the World Bank and Cuddington approaches show reverse capital flight while the Morgan approach shows a net capital flight from the country, this is mainly because of large acquisition of foreign assets by commercial banks, a component this approach includes in addition to the components of the World Bank approach (see Equs. 2 and 3). Arguably, acquisition of foreign assets by commercial banks is not a capital flight so one should use Morgan estimates with some care.

Table 2.2. Un-adjusted capital flight
(average per annum, US dollar in million)

Period/Phase	World Bank	Morgan	Cuddington
I: 1972-1981	19.1	-2.8	-26
II: 1982-1998	39.71	-357.71	-121.53
III: 1998-2000	-256.5	-326.5	-346
IV: 2000-2009	-440	1216.1	-79.7

Although, we could not arrive at some consensus using estimates of capital flight that are un-adjusted for trade misinvoicing, yet the adjusted estimates of capital flight are congruous in all approaches in all phases except for Morgan in the fourth phase (Table 2.3). The World Bank approach shows that with the change in exchange rate regime and trade liberalization the size of reverse capital flight has increased. Similar

result can be noticed for the Cuddington approach. This pattern has emerged due to a fall in cost of illicit capital flow transactions owing to both trade and capital accounts liberalization, especially when the regulatory bodies are weak in implementing the rules and regulations. All in all, the fourth phase (2000 +) recorded the highest reverse capital flight.

Table 2.3. Adjusted capital flight
(average per annum, US dollars in million)

Period/Phase	World Bank	Morgan	Cuddington
I: 1972-1981	-232.15	-255.35	-278.05
II: 1982-1998	-891.44	-288.85	-1052.67
III: 1998-2000	-972.33	-1042.325	-1061.83
IV: 2000-2009	-1410.29	245.81	-1049.99

So far we have discussed the trends in illicit capital movement across borders. We can gain more insights if we use the estimates to find out the importance of illicit capital flows in terms of GDP, foreign exchange earnings, current account deficit and external debt. The ratio of reverse capital flight to GDP, for example, can be considered as the investment going into the underground economy. The ratio of reverse capital flight to foreign exchange earnings indicates the significance of illicit capital inflow vis a vis official capital inflows. The ratio of reverse capital flight to the current account deficit indicates the extent to which the current account deficit will increase in the absence of net reverse capital flight. Finally, the ratio of reverse capital flight to the external debt shows the scale of reverse capital flight as compared with the external debt in the country.

In Table 2.3, we find that the highest average per annum reverse capital flight to Pakistan in dollar terms is recorded in the fourth phase (2000-2009). However, using the World Bank approach, the estimates of reverse capital flight to GDP show the highest ratio in the second phase (1982-1998), followed by the first phase, the fourth phase and the third phase (Table 2.4). What these estimates signify? They are about 2 percent of the GDP or about one-tenth of the total legal investment in the country. If we recap the happenings in the second phase, it may be noticed that during this period Pakistan launched a program of economic

Table 2.4. Significance of illicit capital flows for Pakistan (percent)

Period/Phase	GDP			Foreign Exchange Earnings			Current Account Deficit			External Debt		
	World Bank	Morgan	Cuddington	World Bank	Morgan	Cuddington	World Bank	Morgan	Cuddington	World Bank	Morgan	Cuddington
I: 1972-1981	-1.259	-1.460	-1.721	-12.395	-13.971	-12.666	-32.4	-35.6	-38.8	-27.3	-30.1	-32.7
II: 1982-1998	-1.932	-2.650	-2.395	-9.531	-13.115	-11.969	-54.0	-17.5	-63.7	-44.0	-14.3	-52.0
III: 1998-2000	-0.666	-1.228	-1.685	-4.811	-7.279	-9.023	-47.4	-76.7	-98.2	-22.9	-37.0	-47.4
IV: 2000-2009	-1.110	0.251	-1.129	-5.435	1.288	-5.798	-47.8	8.3	-35.6	-56.4	9.8	-42.0

liberalization, privatization and denationalization, structural adjustment program with donors' support, a shift in the exchange rate regime from fixed to a managed float, policy of whitening of domestic black capital and the illegal capital residing abroad and permission of opening of foreign currency accounts to residents. With these major policy changes, when the cost of transaction of capital flows declined, it became easy for private citizens to bring back their capital held abroad. To avoid any legal actions at a later date by the government, most of this capital was brought into the country through illegal channels instead of legal channels.

The ratio of reverse capital flight to foreign exchange earnings was the highest in the first phase (Table 2.4). This was the time period when the country was mainly following the import substitution policy, fixed exchange regime, policy of nationalization till 1977, extremely high restrictions on capital account activities, and the size of remittances was modest, though rising. Thus, with such restrictive policies in vogue it was very attractive for individuals to indulge into illicit activities and thus bringing about 12 percent equivalent of foreign earnings in the form of reverse capital flight to the country. This ratio subsequently went down as the foreign exchange earnings improved.

The ratio of reverse capital flight to the current account deficit was the highest in the second phase followed by the fourth phase, the third phase and the first phase. What this ratio means? It may be noted that the current account deficit indicates the resource gap in the economy. This however does not show the total resource gap for the total economy (formal plus under-ground economy. Note that the under-ground economy is not covered in official statistics). Since the reverse capital flight is over 50 percent of the current account deficit in the second phase, therefore, it may be concluded that the reverse capital flight has fed a colossal amount to the total economy. This is evident from the growing number of vehicles and thriving retail and real estate business in the country whereas otherwise the health of formal segment of the economy is dismal.

The ratio of reverse capital flight to the external debt accumulation is the highest in the fourth phase when the reverse capital flight was about 56 percent of the average annual debt accumulated

during the period. This means that individuals involved in illicit capital inflows managed to bring home a hefty sum that in no way is smaller than the external debt acquired during the period.

2.8. Conclusion and Policy Recommendations

Findings of this paper refute the general assertion that providing external funds to countries like Pakistan could be futile if they lead to capital flight. Contrary to this claim this paper shows that reverse capital flight takes place on net basis all the times. These illicit inflows complement the resources received by the country in the form of foreign loans, foreign investment and country's own foreign exchange earnings. Of course, illicit capital is largely invested in the underground part of the economy. The underground part of the economy, including real estate sector, is out of the tax net. Moreover, due to 'selective' tax holidays[11] afforded to industries they prefer to under report their true installed capacity by under-invoicing their plant and machinery and hence under-report the actual size of the establishment. This practice ultimately helps industries to also evade taxes on their sales, purchase of domestic inputs and income.

Capital flight substantiates problems in the domestic economy including unfavorable investment climate. By implication, a healthy state and conducive economic environment should be found in the event of reverse capital flight. The paper finds large volume of the reverse capital flight to Pakistan. Does this means that everything on the economic front is very well in the country? May be! As noted earlier that the way business in commercial markets and real estate sector is flourishing and expanding, one is tempted to conclude that situation is perhaps favorable for a reverse capital flight. Besides, official statistics indicate a puzzling situation, for instance, that total investment has been falling in recent years but the economic growth remains positive and in fact has started increasing despite the problem of law and order, war on terrorism, etc. Since the reverse capital flight is not recorded in official statistics therefore their implications for socio-economic developments in the country cannot be directly derived.

An important finding is also that the reverse capital increased during the period of trade and exchange liberalization when both current

and capital accounts were also liberalized. This indicates that in the absence of strong regulatory bodies, liberalized trade and exchange regimes allowed private citizens to manipulate trade and exchange laws.

Tax evasion and avoidance have been the key sources of illicit movement of capital across borders in Pakistan. Improving tax administration and effective enforcement of trade laws can control to and fro movements of illicit capital. Following specific measures are suggested to restrict the cross-border movement of capital through illegal channels:[12]

1. Money obtained through corruption is one of the main sources of illicit funds that are illegally transferred across borders. There is therefore a dire need to introduce governance reforms to control rampant corruption in the country, which undercut lawful activities in the country.

   Illicit capital movements are largely due to lax enforcement of capital and trade controls by regulatory bodies. This provides high premium to private citizens if they circumvent trade and foreign exchange controls and misuse trade incentives. An effective implementation of trade and exchange controls is, therefore, expected to discourage illicit movement of capital. In this context, it would be very rewarding if customs administration is improved, tariff structure is simplified by making it more uniformed, and pre-shipment inspection companies with good reputation are appointed. Besides, to control Hundi/Hawala (correspondent) related individuals or entities be traced by banking authorities who are holding large sums of funds to settle laundered money in Pakistan. Government's Remittance Initiative has made a little dent on this system but this menace is still going on at large scale.
2. A policy support that discourages undervaluation of capital in the country would make under-invoicing of imports of plants and machinery less attractive. For example, a policy of accelerated depreciation allowance to attract investment might offset under-invoicing of imports of capital goods and raw material.

3. For domestic capital that is residing illegally abroad, make arrangements with other countries about prompt sharing of information concerning private citizens' bank accounts and trade-related transactions to and from Pakistan.
4. As most of the reverse capital flight ends up in the underground part of the economy, there is an urgent need to bring this part of the economy under the tax net to resolve the problem of illicit capital movement.[13]
5. Use of trade misinvoicing (i.e., the trade account) to move capital in and out of the country indicates that the capital account *de facto* is not fully convertible although the current account is. This dichotomy needs to be eliminated by taking appropriate and effective measures so that *de facto* and *de jure* measures bring about the same outcome.
6. International community must be reminded of its responsibilities of not allowing their jurisdictions for movement of illicit capital to and from Pakistan by using international forums.
7. Last but not the least, sound macroeconomic environment and policies in the country should prevent cross border movement of illicit capital.

Notes:

1. Interestingly, whereas capital flight activates idle capital, it also deteriorates income distribution in the country. Moreover, it deprives the government of tax revenues and foreign exchange earnings via workers' remittances that are leaked to fund both way movement of illegal capital.

2. So far no study has established that the remittances are in fact misused to reverse the capital flight.

3. It is important to note that with trade liberalization, in the absence of effective regulatory institutions, opportunities to misinvoice trade increases, which accommodate two ways illegal capital flows. It may be noticed that the arrest of some owners of the foreign exchange companies in 2008 corroborate the view that the central bank's policy on capital account liberalization is not implemented in letters and spirit, and thus other means, including trade account, are being utilized to illegally transfer capital across borders.

4. The very fact that trade misinvoicing takes place in Pakistan, to move capital in and out of the country, explains that the capital account *de facto* is not fully convertible. Thus, those who wish to take their money out or bring in get indulged into trade misinvoicing activities because of certain controls that are still in place on the movement of capital.

5. Also see, Eggerstedt, Hall and Wijnbergen (1993).
6. It may be noted that 'errors and omissions' usually consist of both unrecorded short-term and long-term capital; therefore, estimates based on Cuddington's definition are not purely short-term. Moreover, capital flight cannot be restricted to short-term assets only, because the long-term foreign bonds are now considered as close substitute to short-term assets as there is very little loss of liquidity associated with acquisition of long-term assets in the secondary capital market.
7. The definitions of capital flight by the World Bank and Morgan consider total accumulation of foreign assets short-term and long-term (both reported and unreported).
8. In this technique, cif import values of the country are compared with cif-fob adjusted export values of the partner country to find 'perverse' discrepancies in trade statistics (see, Bhagwati, 1964, Bhagwati, Krueger and Wibukswasdi, 1974, Gulati, 1987, Mahmood and Mahmood, 1993, Mahmood, 1997, and Mahmood and Azhar, 2001).
9. Since workers' remittances through official channels are also partly used to reverse the capital flight, the above figure is, somewhat, an understatement of the true size of the reverse capital flight.
10. It may be noted that in the absence of export over-invoicing, remittances that were to be used to over-invoice exports may come through legal channels thus raising the official foreign exchange reserves.
11. In Pakistan, tax holidays are given to certain sectors (for instance, IT sector), export processing zone in the city of Gawader, and special economic zones.
12. Note, illegal capital outflow can be repatriated to the country through legal channels by introducing tax amnesty schemes.
13. It may be noted that most of capital flight also originate from the underground economy.

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3. Trade Creation vs. Trade Diversion and General Equilibrium Effects in Regional and Bilateral Free Trade Agreements of Pakistan

Hina Ishaque Khan[§] and Zafar Mahmood[†]

3.1 Introduction

In recent years Regional Trading Agreements (RTAs)[1] and Bilateral Free Trade Agreements (BFTAs)[2] have grown unprecedentedly. With the resultant trade liberalization, it is pertinent to know whether preferential reduction of tariffs in favour of partner countries of RTAs and BFTAs would be welfare-improving or welfare-worsening. Pakistan experienced a sharp rise in trade with some trading partners while with some others was sub-satisfactory. With SAFTA members exports grew by 6.4% during 2007 and 2015, and with Malaysia exports grew by 13.8%, China 18.04% and Sri Lanka 3.61% during the same period. On the other, with SAFTA members imports grew by 3.7% during 2007 and 2015, and with Malaysia imports grew by 0.07%, China 14.44% and Sri Lanka -1.03% during the same period. These growth rates do vary for members before and after the signing of FTAs. Whereas consumers appears to be happy with cheaper and better quality products available to them after implementation of FTAs, exporters are also happy with sharp export growth with FTA partner countries, however, import-competing industries in Pakistan are feeling hurt with surge in duty free imports with FTA.

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Within the perspective of above experience, this study assesses the impact of SAFTA and BFTAs on Pakistan's imports. Following Magee (2016), Clausing (2001) and Romalis (2007), we use industry level trade flows to estimate the effects of BFTAs and RTA.[3] This enable us to use most-favoured-nation (MFN) tariff and tariff preferences in order to examine in what way Pakistan imports are being affected by its FTAs. A relevant question is why we use industry-level trade data. The answer is it allows us to capture variation in MFN tariff rates and tariff preferences accorded to members of FTAs *viz a viz* non-member countries.

Earlier literature studying the impact of RTAs, using the fixed effects method, desisted to separate out increase in intra-regional trade that has displaced higher cost domestic production (trade creation), from increase in intra-regional trade, which has displaced imports earlier coming from lower cost extra-regions (trade diversion).[4] This limitation in earlier studies is now incapacitated by Magee (2016) and Cheong, Kwak, and Tang (2015), by controlling for exporter, exporter-year and exporter-industry fixed effects to appraise trade creation and trade diversion.

Following Magee (2016), we also separate the effects of tariff changes due to FTAs from the general equilibrium impacts of FTAs on trading ecosystem. It needs to be underscored here that traditional gravity model based studies used aggregate trade flows and a dummy variable for RTA to capture the joint effects of reduction in trade barriers and general impacts[5] of RTA (also called general equilibrium impacts of RTAs (Wylie (1995)) on the trading environment and as such failed to separate out these two effects. USITC (1997) states that the investment guarantees and other provisions made in the North American Free Trade Area (NAFTA) agreement are more important than tariff reductions introduced by the agreement.

Welfare effects of RTA rely on trade creation and trade diversion [Viner (1950)]. Viner argued that trade diversion due to an RTA worsens and trade creation improves world efficiency (welfare). Bhagwati, Panagariya and Srinivasan (1998), however, concluded that home country can improve welfare despite trade diversion occurs. They argue

that despite a loss from the terms of trade deterioration, implied by shifting imports to the higher cost RTA member, the consumers end up consuming at a lower relative price of the importable, which is closer to its "true" world price. Hence, the secondary consumption gain may more than offset the primary terms of trade loss from the trade diversion.[6]

There is no proper statistical measurement to comprehend the phenomenon of trade creation and trade diversion. In this study following Magee (2016), the gravity model is adopted to formulate empirical model. Keeping in view the historical perspective, the gravity model of international trade is subject to some criticisms. In most of the earlier gravity model specifications, increases in intra-regional trade and decline in trade with extra-regional countries are linked with regional trade agreements, but without any direct association with a policy change that occurs due to the bilateral and regional agreement and a change in imports. The gravity model used in this study attempts to establish a direct link between a policy change (tariff preferences) due to bilateral and regional agreements and resulting change in imports, in term of trade creation and trade diversion. It also provides estimates of general equilibrium effects of RTA and BFTAs.

The importance of this study should be noted especially for policy making. This is because at times unobserved factors, historical relations, common language, landlocked, etc., that affects imports of a country tend to overwhelm the direct impacts of bilateral and regional trade agreements in policy debates. This is only possible if we are able to separate out effects that are other than the effects of MFN tariff and tariff preferences of the bilateral and regional trade agreements. This is exactly what we perform in this study.

Within above perspective, the main objective of this study is to assess the impact of regional and bilateral free trade agreements on Pakistan's imports. More specific objectives of this study are to:

i) Measure trade creation and trade diversion effects of SAFTA and BFTAs on imports.
ii) Estimate the general equilibrium effects of SAFTA and BFTAs.

iii) Estimate trade creation and diversion effects of tariff concessions due to SAFTA and BFTAs.

Rest of the paper is divided into four sections. Section 2 provides overview of Pakistan's trade structures and patterns. Section 3 presents empirical and theoretical models. Section 4 entails the discussion of results achieved from the empirical model estimation. Finally, section 5 concludes and draws implications for policy making.

3.2. Pakistan's Economy

3.2.1. Trade Structure

Overall trade balance of Pakistan remains in deficit for the period 2000-15. Over the years an increase in trade deficit is evident from Table 3.1. Trade deficit increased from $1.5 billion in 2000-01 to be U$22 billion in 2014-15. It may be noted that although exports are increasing but imports are increasing more than exports. For the last few years, exports of Pakistan have been stagnant and hovering around $24-25 billion. This is mainly because Pakistan's export products are concentrated on low value-added cotton products, which accounts for 57% of total exports (Table 3.2).

Three other items are; leather, synthetic made ups and rice accounting for only 14% of total exports. All these four items are also relatively low value added products. The slow growth in exports can also be attributed to the decrease in international prices of cotton and rice, overall security challenges and continued energy shortfall in the country. Almost all export items witnessed negative growth in terms of value earning (Table 3.2). Growth in petroleum group showed an increase from $6.2 million in 2012-13 to $601.3 million in 2013-14, which fell to $538 million in subsequent year. Overall exports are reported to fell from $20 billion in 2012-14 to $19 billion in 2014-15.

One third of the Pakistan import's bill constituted of petroleum products (Table 3.3). During 2014-15, international crude prices dropped by around 44% similarly international prices of other commodities also fell, e.g., palm oil and tea prices. The imports for 2014-15 were $44.2 billion. Major chunk is saved from the import of petroleum products

which stands at $2 billion but it is paid off due to the increase in the import bill of machinery group, food group, transport group followed by agriculture, chemical and textile group.

Table 3.1. Pakistan's Exports, Imports and Trade Balance

(US $ Million)

Year	Exports	Imports	Trade Balance
2000-01	9,202	10,729	-1,527
2001-02	9,135	10,340	-1,205
2002-03	11,160	12,220	-1,060
2003-04	12,313	15,592	-3,279
2004-05	14,391	20,598	-6,207
2005-06	16,451	28,581	-12,130
2006-07	16,976	30,540	-13,564
2007-08	19,052	39,966	-20,914
2008-09	17,688	34,822	-17,134
2009-10	19,290	34,710	-15,420
2010-11	24,810	40,414	-15,604
2011-12	23,624	44,912	-21,288
2012-13	24,460	44,950	-20,490
2013-14	25,110	45,073	-19,963
2014-15	23,667	45,826	-22,159

Source: GOP (various issues).

Table 3.2. Structure of Exports

(US $ Million)

Industrial Group	2012-13	2013-14	2014-15
Food Group	3918	3,942.50	3,862.10
Textile Manufactures	3918	11,420.10	11,281.60
Petroleum Group	6.2	601.3	538.6
Other Manufactures	4227.6	3,867.30	3,213.10
All other items	1251.6	1,147.90	1,026.10
Total	20143.2	20,979.10	19,921.50

Source: GOP (various issues).

All the items in the import group depict a positive growth. Petroleum group shows a decline from 2012-13 in both subsequent years. A decrease in growth of telecom sector is witnessed in year 2013-14 but introduction of 3G/4G lead to increase in this sector afterwards. Overall an increase in imports from $36 billion in 2012-13 to $37 billion in 2013-15 is reported.

3.2.2. Trade Pattern in General

After the signing of BFTAs and RTAs, a prominent change can be witness in the direction of Pakistan's exports and imports.

Table 3.3. Structure of Imports

(US $ Million)

Import Group	2012-13	2013-14	2014-15
Food Groups	3632.4	3,454.00	4,205.40
Machinery Group	4712.4	4,035.10	4,626.50
Petroleum Group	12362.5	12,221.10	9,855.00
Consumer Durables	1873	1,951.10	2,239.30
Raw Material	5079.1	5,146.80	5,923.30
Telecom	1284.9	1,026.90	1,179.50
All other items	7720.7	9,249.80	9,734.00
Total	36665	37,084.80	37,763.00

Source: GOP (various issues).

Although, Pakistan trade with numerous countries but its exports are concentrated in few countries, which include, USA, China, UAE, Afghanistan and UK being the top five and Bangladesh being the eighth trading partner. Almost 43% of Pakistan's imports were coming from USA, UK, Germany, Hong Kong and U.A.E few years back, which is 36.3 percent currently (Table 3.4). The share of Pakistan's exports to U.S.A, U.A.E and U.K are gradually declining. After signing of FTA with China and SAFTA, three countries China, Afghanistan and Bangladesh make it to the top of Pakistan's exports list (Table 3.4).

Table 3.4. Major Export Markets of Pakistan

(% share)

Year	U.S.A	China	U.A.E	Afghanistan	U.K	Bangladesh
2002-03	23.5	-	-	-	7.1	-
2003-04	23.9	-	-	-	7.6	-
2004-05	23.9	-	-	-	6.2	-
2005-06	25.5	-	8	-	5.4	-
2006-07	24.6	-	8.2	-	5.6	-
2007-08	19.5	-	10.9	-	5.4	-
2008-09	19	4	8	8	5	2
2009-10	17	6	9	8	5	3
2010-11	16	7	7	9	5	4
2011-12	15	9	10	10	5	3
2012-13	14	11	9	8	5	3
2013-14	15	10	7	7	6	3
2014-15	15	9	4	8	-	3

Source: GOP (various issues)

Table 3.5. Major Import Markets of Pakistan

(% share)

Year	U.A.E	China	Kuwait	Saudi Arabia	Malaysia	India
2001-02	13.1		7.1	11.6	4.4	-
2002-03	12.4	-	6.6	10.7	4.6	-
2003-04	11	-	6.4	11.4	3.9	-
2004-05	8.3	-	4.6	12	2.6	-
2005-06	11.9	-	6.2	11.2	3	-
2006-07	9.1	-	5.7	11.4	3.1	-
2007-08	8.5	-	7.5	13.4	3.9	-
2008-09	9.1	12	6.6	12.3	4.6	3
2009-10	14.5	13	7	10	5	4
2010-11	14.7	14	8	11	6	4
2011-12	17	17	9	11	5	3
2012-13	19	15	9	8	5	4
2013-14	16	17	7	10	4	5
2014-15	15	23	5	8	2	-

Source: GOP (various issues)

Pakistan's import sources are changing since 2007-08. The share of import markets of Pakistan, including Saudi Arabia, Kuwait, Japan, U.S.A., Germany and U.K. has declined to 28.6 percent in 2014-15 from the 36.7 percent in 2007-08 (Table 3.5). Thereby, showing 8.1% fall during this period. At present, Pakistan's imports are highly concentrated in few countries and a major chunk originates from countries like China, Kuwait, Saudi Arabia, UAE, India, and Indonesia. The share of imports from China increased from 12% in 2008-09 to 23% during 2014-15, this has created a sharp imbalance of trade in favor of China and FTAs signed seem to be one of the factors resulting in this imbalance. The share of imports from Malaysia witnessed a 2% decline from 5-6% in previous years.

3.2.3. Pakistan's Regional and Bilateral Trade Agreements

Table 3.6 presents trade volume with member countries of bilateral and regional free trade agreements with home Pakistan signed agreements.

Trade with SAFTA countries

On December 1985, South Asian Association for Regional Cooperation (SAARC) was established and the SAARC charter was adopted by the Governments of Bangladesh, Bhutan, India, Maldives, Nepal, Sri Lanka and Pakistan and the aim was to improve and accelerate the economic development and growth in the member states. South Asian Free Trade Area (SAFTA) agreement was signed during the 12th SAARC summit and is considered as a major achievement of the SAARC mandate. A notification was issued by a SAARC secretariat on 22 March 2006, formally announcing the entry into SAFTA agreement which would be completed by 1st January 2016.

Under the Article 7 of the agreement, trade liberalization program is the tariff reduction modality and according to the agreement in the first phase India, Pakistan and Sri Lanka will bring down their customs tariff to 20% by 1st January 2008 and the LDC Member would

reduce their customs tariff to 30 percent including Bangladesh, Bhutan, Nepal and Maldives. First tariff reduction would be effected on 1st July 2006 by all Member States with the exception of Nepal as it was expected to do so on 1st August 2006.

SAFTA allows member countries to maintain their Sensitive List where no concessions are accorded. Tariff concession from 0-5 % can be offered by contracting members on the items not included in the Sensitive list. Under SAFTA, there are 936 tariff lines at 6-digit HS code in the sensitive List of Pakistan.

Pakistan-SAARC volume of trade showing an increase of 11.7% that was Rs.131 billion in the year 2006-07 reached to Rs.319 billion in 2014-15. Pakistan's exports registered 13.4% increase in 2014-15 as compared to 2006-07. Whereas, Pakistan's import also increased by 10.5% during this period [GOP (various issues)].

Pak- Malaysia FTA

The Free Trade Agreement (FTA) for Closer Economic Partnership between Pakistan and Malaysia was signed on 8th November 2007 at Kuala Lumpur Malaysia. It became operational from 1st January 2008.

Malaysia accorded tariff preferences on 10,593 tariff lines at 9-digit H.S. Code to items of Pakistan's export interest. Pakistan-Malaysia volume of trade showing a decrease of 2.3% that was Rs.135 billion in the year 2008-09 reached to Rs.117 billion in 2014-15. Pakistan's exports registered 13% increase in 2014-15 as compared to 2008-09. Whereas, Pakistan's import also decreased by 4.3% during this period. Pakistan's exports of rice, raw cotton, crude vegetables materials, chemical material and product, leather, made up articles of textile material, hosiery, and sports goods have sustained increase from the year 2008-09 to 2014-15 [GOP (various issues)].

Table 3.6. Trade with Countries of Regional and Bilateral Trade Agreements

(Rs. Million)

Year		SAARC						FTA	
		Bangladesh	India	Maldives	Nepal	Sri Lanka	Total	Malaysia	China
2001-02	Export	6,193	3,027	92	147	4,420	13,879	3,173	14,070
	Import	1,689	11,471	10	51	1,751	14,972	27,997	35,316
2002-03	Export	6,676	4,122	194	179	4,447	15,618	4,583	14,307
	Import	1,908	9,737	4	80	2,236	13,965	33,145	49,047
2003-04	Export	11,226	5,398	109	266	5,633	22,632	4,804	16,588
	Import	2,644	22,004	10	197	2,786	27,641	34,697	66,423
2004-05	Export	12,226	17,126	152	163	9,260	38,927	3,891	21,027
	Import	3,635	32,488	205	223	2,663	39,214	40,266	109,391
2005-06	Export	16,075	17,557	153	187	9,531	43,503	3,830	27,773
	Import	3,864	48,072	9	197	4,269	56,411	42,405	161,991
2006-07	Export	15,884	20,805	221	99	12,166	49,175	4,406	34,927
	Import	3,540	74,938	2	192	3,843	82,515	57,319	214,275
2007-08	Export	21,501	15,905	283	49	13,413	51,151	5,967	43,164
	Import	4,352	106,872	-	75	3,852	115,151	96,935	294,684

2008-09	Export	30,073	24,350	436	56	14,872	69,787	9,668	54,888
	Import	6,233	93,471	-	88	5,111	104,903	125,582	319,640
2009-10	Export	40,593	22,489	358	59	23,781	87,280	16,330	96,669
	Import	6,774	102,872	15	85	4,580	114,326	146,345	370,231
2010-11	Export	86,783	22,602	384	52	28,369	138,190	14,146	139,735
	Import	6,813	149,047	-	163	4,900	160,923	210,250	494,910
2011-12	Export	56,645	30,297	478	124	27,270	114,814	20,138	195,927
	Import	5,796	134,738	3	168	6,159	146,864	216,853	599,503
2012-13	Export	68,673	31,700	650	106	31,718	132,847	22,887	252,522
	Import	5,882	175,529	9	83	7,397	188,900	202,928	642,371
2013-14	Export	71,835	42,016	868	67	26,748	141,534	22,123	249,014
	Import	5,739	210,541	2	76	6,373	222,731	174,360	792,957
2014-15	Export	70,663	36,295	868	220	27,041	135,087	20,779	219,866
	Import	6,302	172,171	299	77	5,858	184,707	96,272	1,053,038

Source: GOP (2015).

Pak-China FTA

China-Pakistan Free Trade Agreement (CPFTA) was signed on 24th November, 2006 and implemented from 1st July 2007. China accorded tariff preferences on 7550 tariff lines at 8-digit H.S. Code to items of Pakistan's export interest. Pakistan-China volume of trade, showing an increase of 20.8%, which was Rs.337 billion in the year 2007-08 reached to Rs.1272 billion 2014-15. Market access granted by China enabled Pakistan to maintain an overall growth trend in export performance in the first five years of implementation of FTA.

While Pakistan's exports to China increased by 26% from 2007-8 to 2014-15. Whereas, Pakistan's imports have increased by 19.9% from around Rs.294 billion in 2007-08 to Rs.1053 billion in 2014-15. Pakistan's exports of rice, raw cotton, all crude mineral, petroleum, chemical elements, chemical material and product, leather, cotton yarn, cotton fabric, article of apparel and medical and surgical instruments increased substantially from the year 2007-08 to 2014-15 [GOP (various issues)].

Pak-Sri Lanka FTA

Pakistan concluded a Free Trade Agreement with Sri Lanka on August 2002 and became operational from June, 2005. Under the bilateral FTA Sri Lanka offered 102 Tariff Lines at 6- digit HS code to Pakistan at zero percent tariff. The bilateral volume of trade between the two countries increased by 10% from Rs.14 billion in 2005-06 to Rs.32 billion 2014-15. Pakistan's exports have increased by almost 12%; whereas, increase in imports is around 3.6% during this period. The export items of Pakistan maintained a healthy growth trend since implementation of bilateral FTA include rice, fish and fish preparations, cotton yarn, cotton fabrics, pharmaceuticals, knitted or crocheted fabrics and iron and steel [GOP (various issues)].

3.3. Methodology

Methodology for this study is based on Magee (2016) for the determination of trade creation, trade diversion and the general equilibrium impacts.

3.3.1. Theoretical Framework

The gravity model is the most commonly used baseline method of determining bilateral trade flows. Its origin goes back to 1962, when Tinbergen introduced this method to the world of international trade literature. This model is inspired from the Newton's gravitational law in physics.

$$F_{ij} = G\ \frac{m_i m_j}{d_{ij}^2} \qquad \ldots (1)$$

This law states that gravitational force is proportional to the product of two masses and inversely proportional to the square of distance. By converting into an economic context, this can be expressed as;

$$IMP_{ij} = A\ \frac{y_i y_j}{d_{ij}^2} \qquad \ldots (2)$$

where, IMP_{ij} is a trade flow[7] between two countries, $y_i y_j$ are the sizes (GDP) of two countries and d_{ij}^2 is a geographical distance between these two countries. Tinbergen specified this relationship in this following form:

$$IMP_{ij} = A\ \frac{y_i^{\alpha}\ y_j^{\beta}}{d_{ij}^{\gamma}} \qquad \ldots (3)$$

where, $\boldsymbol{\alpha}$ and $\boldsymbol{\beta}$ are the elasticity of two country's GDP and $\boldsymbol{\gamma}$ is the elasticity of distance. By taking natural logarithm and adding an error term, yields log-linear behavioral relationship.

$$\log(IMP_{ij}) = logA + \alpha \log(y_i) + \beta \log(y_j) - \gamma \log(d_{ij}) + \varepsilon_{ij} \qquad \ldots (4)$$

3.3.2. Empirical Framework

Success of the traditional gravity model, in international trade literature, cannot be denied. Even with its success, the traditional gravity model is subject to criticism. Firstly, theoretical foundation of early gravity model has always been unsatisfactory [Starck (2012)]. Secondly, early gravity model was mis-specified and suffers from omitted variable bias [Theie (2015), Hayakawa (2011)]. Anderson and Van Wincoop (2003) with the inclusion of 'Multilateral Resistance Term' (MRT) proposed the solution to this problem. Thereby, suggesting its theoretical

foundation, leading to structural gravity model by rewriting the gravity equation in simple yet symmetrical form and linked the bilateral trade with size of economy, multilateral resistance term and trade barriers.

MRT is basically trade barrier between two countries that each of them face in their trade and with all other trading partners. One way of incorporating MRT in the gravity equation is by introducing exporter-year and importer-year fixed effects [Feenstra (2002)].

Advantages of working with fixed effects are numerous as this allows the capturing of the effects of business cycle within each year, change in domestic consumer's preferences in foreign goods, change in exchange rate, and other unobservable factors that are specific to a country in a given year. Inclusion of fixed effects in studies before 2000 was not very common but recent studies have started working with fixed effects.

A disadvantage of including MRT by using standard dummy variable approach will not allow the separate measure of trade creation and trade diversion. Therefore, incorporating trade flow, tariff rate and tariff preference at industry-level will allow determining trade creation and trade diversion. If not included, bilateral tariff rate being integral part of international trade can cause omitted variable bias [Hayakawa (2011)].

Elimination of RTA dummy variable may lead even more serious omitted variable bias [Hayakawa (2011)]. Hence, inclusion of RTA dummy variable will allow estimating general equilibrium effects of RTA on imports.

Model-I:

The fundamental equation after the inclusion of all the variables mentioned above while controlling for *imp*orter-year and exporter-year fixed effects is as followed.

$$imp_{jkt} = e^{(\alpha_{oj}+\alpha_{ot}+\alpha_1 TR_{jkt}+\alpha_2 TP_{jkt}+\alpha_3 RTA_{jt}+\alpha_4 \ln(GDP_{jt}))} + \varepsilon_{jkt} \quad \dots (5)$$

where, imp_{jkt} stands for imports into Pakistan from country *j* at time *t* in industry *k*. α_{oj} is a fixed effect for each exporter, this term controls

for all the time constant factors that can have an impact on trade between importing country Pakistan and exporting country *j*. These time constant factors include distance between two countries, use of same language and contiguity. α_{ot} is time fixed effect, this term controls for factors including the economy's size of importing country (Pakistan) that can have an impact on its trade with all its exporting countries at time *t*. Variable $\ln(GDP_{jt})$ is natural log of exporters GDP, this variable captures the effect of macroeconomic condition in exporting country *j* at time *t*.

The variable TR_{jkt} stands for actual tariff rate negotiated under RTA that exporter of country *j* faces in order to export goods belonging to industry *k* in the importing country at time *t*. Coefficient of TR_{jkt} indicates the impact of changing the tariff rate on a good paid by regional members while controlling for the tariff preferences accorded to regional partners compared with extra regional exporters. Negative coefficient of this variable will show the evidence of trade creation. Whereas, TP_{jkt} is tariff preference that is given to the exporting country *j* in industry *k* at time *t* in contrast to the most favored nation (MFN) tariff that extra-regional countries pay. It is formulated as: $TP_{jkt} = TR_{MFNkt} - TR_{jkt}$. A positive coefficient for this variable will show the trade diversion from low-cost extra-regional countries. Positive coefficient of TP_{jkt} indicates a larger difference between intra-regional tariff and MFN tariff paid by extra-regional countries help to increase intra-regional trade.

RTA variable is a dummy variable, which is equal to 1 if Pakistan has a bilateral FTA and regional trade agreement with exporting country *j* in time *t*, and 0 otherwise. A positive coefficient of this variable will captures the general equilibrium effects due to the signing of BFTAs and RTA. It shows that trade flows between RTA members are higher even when tariff levels and tariff preferences are controlled that are due to BFTAs and RTA. In sum, by simultaneously using the variable tariff, tariff preference and BFTA /RTA dummy, the estimated equation would allow us to separate out the effects of RTA's tariff cuts from the general equilibrium effects of the bilateral and regional trade agreements.

Model-II:

It is argued by Wonnacott and Lutz (1989) and Krugman (1991) that countries having strong historical ties are more likely to sign BFTA and RTA. In this way, there is a possibility that higher level of trade between two countries are not due to the signing of BFTA and RTA, instead, BFTA and RTA are the outcomes of higher *level* of trade between these countries. Hence, the gravity model estimation is prone to the inclusion of *unobserved* historical relationships. One way to deal with this problem is to estimate the gravity equation in the first difference, thereby, eliminating any unobserved but time constant factors between two countries [Bayoumi and Eichengreen (1995)]. Other studies that have included so-called *dyad* fixed effects to control for unobserved factors specific to a pair of countries include Magee (2008, 2016) and Head, Mayer and Ries (2010).

It is noteworthy that in a conventional gravity model, all the variables are either specific to an exporter and year or importer and year (such as GDP, GDP per capita and real exchange rate) or dyad-specific (such as distance, contiguity, common language and colonial ties). Therefore, the above stated dyad-specific, exporter-year and importer-year fixed effects controls for all the determinants of trade flows in the gravity model plus unobserved factors specific to each dyad, exporter or importer without a concern of which variable to include or drop [Ghost and Yamarikb (2004)]. As there is only one importer, that is Pakistan, our model will only include exporter-year fixed effects, which will thus control for any factor specific to the dyad and importer-year.

$$imp_{jkt} = e^{(\alpha_{ojt}+\alpha_1 TR_{jkt}+\alpha_2 TP_{jkt})} + \varepsilon_{jkt} \quad \ldots (6)$$

Here, the constant term α_{ojt} is different for each *j*th exporter for each year *t* and captures the effect of any specific variables to the Pak-exporter dyad in year *t.* One limitation surfaced due to the inclusion of the exporter-year fixed effects is that it restricts the inclusion of RTA dummy variable. Consequently, this model ignores the general equilibrium effects in this model.

Model-III:

Above prompt us to use another model where general equilibrium effects can also be determined with the inclusion of exporter-industry fixed effects but by replacing now exporter-year fixed effects.

$$imp_{jkt} = e^{(\alpha_{ojk}+\alpha_1 TR_{jkt}+\alpha_2 TP_{jkt}+\alpha_3 RTA_{jt}+\alpha_4 \ln(GDP_{jt}))} + \varepsilon_{jkt} \quad \ldots (7)$$

where, α_{ojk} is different for each exporter and industry and captures any unobserved factors (such as distance) that is constant over time but that affect the exports from the *j*th country to Pakistan in the *k*th industry.

There exist two major problems in the estimation of the gravity equation with simple OLS technique. First, the gravity equation is usually in log linear form and bilateral trade flow, which is a dependent variable, can be zero for bilateral trade especially at 6-digit HS industry level. It is known that log of zero is undefined and this can cause a problem in the estimation. Second, error term in the gravity equation is usually heteroskedastic, which creates biased estimates.

Poisson pseudo maximum likelihood estimation can be conducted for the gravity equation using trade data [Silva and Tenreyro (2006)]. This estimation technique allows the inclusion of observations with zero trade flow. Along with it, even in the presence of heteroskedasticity, its estimates are consistent. Therefore, all three Equs. (4) to (6) are estimated by using fixed effects poison pseudo maximum likelihood estimator. Robust estimator is used to estimate the standard error which, in the presence of heteroskedasticity, provides consistent estimates of standard errors [Huber (1969) and White (1989)].

3.4. Data

Data set comprises of 12 years from 2003-2014 and 10 countries including all members of the regional trade agreement, SAFTA, and three bilateral free trade agreements with China, Sri Lanka and Malaysia. Data of gross domestic product (GDP) for all these 10 countries are retrieved from the World Bank. This study uses trade flows for Pakistan at the 6-digit Harmonized System codes taken from UN COMTRADE.

World Trade Organization (WTO) provides tariff data for which, average *ad valorem* customs duties within each 6-digit Harmonized System industry level are given for the countries receiving MFN tariff rate and countries receiving tariff preferences under special tariff regimes, i.e., bilateral trade agreement and regional trade agreement.

3.5. Results

Results of the three models discussed in the preceding section are reported in Table 10.7. Coefficients from fixed effects Poison estimation of Equs. (5) to (7) are reported.

Model-I:

Model I is obtained by estimating Equ. (4) and it includes fixed effects for all the exporting countries. Exporter-fixed effects controls for all the characteristics of importer-exporter fixed effects as there is only one importer in the analysis, i.e., Pakistan. All time constant factors controlled by importer-exporter fixed effects (such as distance, common border, historical ties and common language) are being taken care of with the inclusion of exporter fixed effects as these factors do not change over time. Log of exporter's GPD is included to capture the effects of the changes in the size of exporter's economy on imports of Pakistan. Inclusion of the year dummy variables in the estimation yields the effects of importer's (Pakistan) macroeconomy, therefore we exclude natural log of importing country's GDP.

(a) Results of the Full Panel

Estimates of Model-I show the evidence of both trade creation and trade diversion. Tariff rate's coefficient implies that one percentage point cut in tariff will increase country's imports in the industry by 2.8%[8] (Table 3.7). Tariff preferences given to all FTAs (including bilateral and regional) after controlling for the industry-level tariff bear positive sign for its coefficient depicting the presence of trade diversion. One percentage point larger gap between MFN tariff rate charged to the imports of non-members of countries and the preferential tariff rate charged on all BFTAs and SAFTA will raise Pakistan's imports by 0.7%.

Coefficient on exporter's log GDP is significant at 5% and close to unity, which indicates that one percent increase in an exporting country's GDP increases Pakistan's imports by one percent. Coefficient on all FTAs dummy variable is significant at 1%, showing the evidence of general equilibrium effects of signing BFTAs and RTA. This means that an increase in Pakistan's imports due to signing of all free trade agreements (including bilateral and regional combined) is 19.12%.

Model-II:

Model-II shows the estimates of Equ. (6) with the inclusion of exporter-year fixed effects. It captures the effects of exporter's macro-economic variable log of GDP, general equilibrium effects of signing RTA, distance, common border and common language. Model-II estimates for TR and TP remain almost the same as we report for Model-I. With one percent reduction in tariff rate accorded to BFTAs and RTA members, given that MFN tariff rates remain constant, increases import of Pakistan by 2.7% indicating trade creation (Table 3.7). If tariff preferences given to all FTAs (including BFTAs and SAFTA) increases by one percent, imports to Pakistan from all FTAs countries will increase by 0.7% thus indicating a trade diversion from extra-regional countries.

Looking at the results of Models-I and –II, trade creation effect of all FTAs (including all BFTAs and SAFTA) is four times higher than trade diversion. At one percent significance level, a chi-square test rejects the hypothesis that the magnitude of these two effects ($\alpha_2 = -\alpha_1$) is same. Hence, trade creation is statistically significantly greater than trade diversion.

Model-III:

In Model-II coefficients are obtained by estimating Equ. (7) and by including exporter-industry fixed effects. Inclusion of these fixed effects lead to the dropping of observations from 617,574 in Models I and II to 569,894 in Model-III. This was due to the fact that exporter-industry fixed effects for poison regression requires some variation in imports within each exporter-industry pairing. As there was no import

within certain industries from a given country during 2003-2014, it led to dropping of observations.

Table 3.7. Determinants of Pakistan's Imports: Full Panel Covering all FTAs

Independent Variable	Model-I	Model-II	Model-III
	Coefficient	Coefficient	Coefficient
TR	-0.028***	-0.027*	-0.022***
TP	0.007***	0.007**	0.010***
ln(GDP)	0.914**		0.377*
All FTAs	0.175***		0.541**
Year 2004	0.182**		0.422
Year 2005	-0.174		0.344
Year 2006	0.497**		-0.195
Year 2007	0.336*		-0.093*
Year 2008	0.641***		0.237
Year 2009	0.192***		-0.081
Year 2010	-		-
Year 2011	-0.287		0.832
Year 2012	-0.288**		-0.393***
Year 2013	-0.356*		-0.260**
Year 2014	-0.117**		-0.198*
Observations	617574	617574	569894
Fixed effects	Exporter	Exporter-year	Exporter-industry

Note: Coefficients are statistically significant at 10%, 5% and 1% levels as shown by *. **, ***, respectively. All FTA variable includes all the bilateral free trade agreements and regional trade agreement (SAFTA) of Pakistan.

The magnitude of the estimated coefficient on tariff rate drops from 2.8% to 2.2% and remains statistically significant at 1% (Table 3.7). Therefore, a one percent cut in tariff rate given to all FTAs while keeping MFN tariff constant yields 2.2% increase in Pakistan's imports from these countries indicating trade creation. Tariff preference coefficient increased in magnitude and remains statistically significant at 1%. It shows that with one percent increase in tariff preference given to all FTAs member countries leads to 1% increase in Pakistan's import, showing trade diversion from extra-regional countries. A chi-square test performed rejects the hypothesis at 5%, which shows that both these

effects are not same in magnitude. Therefore, trade creation effect is still more pronounced than trade diversion effect and it is greater by 1.2 times.

Exporter country's log GDP's coefficient is statically insignificant (significant only at 10% level) and shows that with one percent increase in the size of exporter's economy will increase Pakistan's imports by 0.38%. Coefficient of RTA is positive and statistically significant at 5%, this means that the presence of general equilibrium effects exist and 72%[9] of trade creation can be attributed to factors that emerge with the signing of RTA and that are other than the resulting tariff reduction.

(b) Regional trade agreements (SAFTA)

Results are presented in Table 3.8. Equs. (5), (6) and (7) are estimated to obtain the coefficients of Models I, II and III, respectively. Coefficients of TR_{jkt} shows strong evidence of trade creation, i.e., 13% and 13.1% in Models I and II, respectively. It is only 0.3% in Model-III for SAFTA because Model-III includes trade creation affect though general equilibrium effects of signing of SAFTA as well. Coefficient on SAFTA shows that 43.3% of trade creation in SAFTA is due to the general equilibrium effects of signing the FTA with SAARC countries. Coefficients of GDP for Models I and III are both positive and statistically significant at 1%. This shows that one percent increase in the size of exporter's economy increases imports of Pakistan by 0.88% and 1.7% in Models I and III, respectively.

(c) Bilateral free trade agreements (BFTAs)

Results of BFTAs are shown in Table 3.9. Coefficients of Models I, II and III are obtained by the estimation of Equs. (5), (6) and (7), respectively. All three models provide the evidence of trade creation with 16%, 15% and 1.7% for Models I, II and III, respectively. Whereas, negative sign of TP_{jkt} for Models I and II show no evidence of trade diversion[10] and almost zero, i.e., 0.1% for Model-III. Coefficient of log exporter's GDP for Model-II is 0.50% and for Model-III is close to unity while being statistically significant. Coefficient of BFTAs for Model-III

is positive and statically significant at 5%, meaning 65% of trade creation is owing to the general equilibrium effects of signing of bilateral free trade agreements with China, Malaysia and Sri Lanka.

It is noteworthy that coefficients of trade creation are greater than trade diversion for all three models. Effects of trade creation are always welfare-enhancing in the absence of market failure; thereby, concluding that the welfare effects are positive for all three cases of full panel FTAs, SAFTA and BFTAs. Effects of trade diversion are not only less than trade creation in this case but also unclear in general. Hence, it can be concluded that the domestic consumers of Pakistan (due to consumption gain) became better off after signing all FTAs, SAFTA and BFTAs.

Table 3.8. Determinants of Pakistan's Import: SAFTA

Independent Variable	Model-I	Model-II	Model-III
	Coefficient	Coefficient	Coefficient
TR	-0.122***	-0.123***	-0.003**
TP	0.054***	0.059***	0.005*
ln(GDP)	0.879***		1.701***
SAFTA	0.368***		0.360*
Year 2004	0.404**		0.297
Year 2005	0.671***		0.500***
Year 2006	0.225*		0.286
Year 2007	0.165		0.091*
Year 2008	0.423**		0.353
Year 2009	0.959***		-0.208
Year 2010	0.084		-0.275***
Year 2011	0.414		-0.411
Year 2012	0.413**		-0.451*
Year 2013	0.559***		-0.309***
Year 2014	0.616*		-0.309**
Observations	432303	432303	332,161
Fixed effects	Exporter	Exporter-year	Exporter-industry

Note:*, **, *** shows the statistical significance at 10%, 5% and 1% level, respectively.

3.6. Magnitudes of Trade Creation and Trade Diversion

To determine the magnitude of trade creation and trade diversion, actual level of imports of Pakistan from all FTAs (including BFTAs and SAFTA) can be retrieved while all FTAs are in force and predicted level of imports can be obtained from the model by eliminating trade agreements effect. In this situation tariff rates under all FTAs will return to the MFN tariff rate.

Table 3.9. Determinants of Pakistan's Import: BFTAs

Independent Variable	Model-I	Model-II	Model-III
	Coefficient	Coefficient	Coefficient
TR	-0.148***	-0.137***	-0.017*
TP	-0.012**	-0.015**	0.001***
ln(GDP)	0.501***		0.844*
All FTAs	-0.333*		0.505**
Year 2004	0.226		0.174
Year 2005	0.542**		0.411**
Year 2006	0.877		0.076
Year 2007	0.193***		0.115
Year 2008	0.292*		0.137*
Year 2009	0.084**		-0.079**
Year 2010	0.288***		0.061
Year 2011	1.984**		0.160
Year 2012	0.871*		0.013
Year 2013	1.791**		-0.096*
Year 2014	0.981		0.075**
Observations	185,271	185,271	167,637
Fixed effects	Exporter	Exporter-year	Exporter-industry

Note:*, **, *** shows the statistical significance at 10%, 5% and 1% level, respectively.

$$\frac{\widehat{imp}_{no\ FTAs,jkt} - imp_{jkt}}{imp_{jkt}} = e^{\hat{\alpha}_1(TP_{jkt})} * e^{-\hat{\alpha}_2(TP_{jkt})} - 1 \qquad \ldots(7)$$

where, $\widehat{imp}_{no\ RTA,jkt}$ is predicted level of imports when there is no FTA (either bilateral or regional) is in force and imp_{jkt} is actual level of imports. TP_{jkt}[11] is the difference between MFN tariffs and tariff

concessions accorded to all FTAs and in the absence of trade agreements,[12] it provides a predicted level of trade for Pakistan.

From Equ. (7), it is possible to estimate the dollar value of RTA's trade effect in each industry *k* and in time *t*.

$$imp_{jkt} - \widehat{imp}_{no\ FTAs,jkt} = imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})} * e^{-\hat{\alpha}_2(TP_{jkt})}\right) \quad \ldots (8)$$

Two effects are noticeable in Equ. (8), $\hat{\alpha}_1$ shows the effects of trade creation while $-\hat{\alpha}_2$ shows the effects of trade diversion on the trade flow. These effects can be separated into two individual equations:

$$imp_{jkt} - \widehat{imp}_{no\ TC,jkt} = imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})}\right) \quad \ldots (9)$$

$$imp_{jkt} - \widehat{imp}_{no\ TD,jkt} = imp_{jkt}\left(1 - e^{-\hat{\alpha}_2(TP_{jkt})}\right) \quad \ldots (10)$$

Equ. (9) shows the effects of trade creation, whereas Equ. (10) shows the effects of trade diversion. These two equations do not add up the total effect of RTA in Equ. (8). In order to retrieve the missing value, sum of Equs. (9) and (10) after multiplying by factor X can be placed at the right-hand-side equals to Equ. (8) at the left-hand-side:

$$\left(imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})}\right)\right)X + (imp_{jkt}\left(1 - e^{-\hat{\alpha}_2(TP_{jkt})}\right))X = imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})} * e^{-\hat{\alpha}_2(TP_{jkt})}\right) \quad \ldots (Ai)$$

$$X(imp_{jkt}(1 - e^{\hat{\alpha}_1(TP_{jkt})} + 1 - e^{-\hat{\alpha}_2(TP_{jkt})}) = imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})} * e^{-\hat{\alpha}_2(TP_{jkt})}\right) \quad \ldots (Aii)$$

$$X = \frac{imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})} * e^{-\hat{\alpha}_2(TP_{jkt})}\right)}{imp_{jkt}(1 - e^{\hat{\alpha}_1(TP_{jkt})} + 1 - e^{-\hat{\alpha}_2(TP_{jkt})})} \quad \ldots (Aiii)$$

$$X = \frac{\left(1 - e^{\hat{\alpha}_1(TP_{jkt})} * e^{-\hat{\alpha}_2(TP_{jkt})}\right)}{(1 - e^{\hat{\alpha}_1(TP_{jkt})} + 1 - e^{-\hat{\alpha}_2(TP_{jkt})})} \quad \ldots (Aiv)$$

$$X = \frac{\left(1 - e^{(\hat{\alpha}_1 - \hat{\alpha}_2)(TP_{jkt})}\right)}{(1 - e^{\hat{\alpha}_1(TP_{jkt})} + 1 - e^{-\hat{\alpha}_2(TP_{jkt})})} \quad \ldots (Av)$$

Now by adding the value of *X* in Equs. (9) and (10) yields Equs. (11) and (12).

$$TC = \left(imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt})}\right)\right) * X \quad \ldots(11)$$

$$TD = \left(imp_{jkt}\left(1 - e^{-\hat{\alpha}_2(TP_{jkt})}\right)\right) * X \quad \ldots(12)$$

(a) Full Panel

By estimating Equs. (11) and (12), we can retrieve the dollar value of trade creation and trade diversion reported in Table 3.10. It also provides the estimation of trade creation and trade diversion as a percentage of total imports of Pakistan for each year from 2003-2014. Estimated dollar value of sum of all the industries for each year from 2003-2014 is show in Table 3.10. First column shows the estimated dollar value of trade creation whereas second column` presents the trade creation on as a percentage of total imports of Pakistan on average. Over the duration of 2003-2014, all FTAs of Pakistan are estimated to raise the Pakistan's imports, on average for all periods, by $1.85 billion[13] through trade creation and $0.6 billion on average through trade diversion. During the year 2014 all FTAs estimated to have raised Pakistan's import by $6 billion through trade creation and $1.9 billion through trade diversion. A record increase in dollar value of trade effects as well as impacts of all FTAs as a percentage of Pakistan's can be seen since 2011.[14]

(b) Regional Trade Agreement (SAFTA)

Coefficients of TR_{jkt} and TP_{jkt} from Model-II reported in Table 3.8 are used to estimate Equs. (11) and (12) to obtain the dollar value of trade creation and trade diversion. These dollar values for the years 2003-2014 also allow us to obtain trade creation and trade diversion as a percentage of total imports of Pakistan, on average. Overall trade creation for

SAFTA on average is $0.14 billion, which is 0.7% of Pakistan's total imports, on average. Trade creation peaked in year 2008 right after signing of the SAFTA, which is 1.33% of Pakistan's total imports. Over all, the trade diversion for the case of SAFTA is estimated to be $0.09 billion, which is 0.49% of Pakistan's total imports from 2003-14, an average. Trade diversion peaked to be 0.4% in 2013.

Table 3.10. Estimated Values of Trade Creation and Trade Diversion (all FTAs): Model-II

Year	Trade creation	Trade creation (%)	Trade Diversion	Trade Diversion (%)
2003	148	0.16	48.1	0.05
2004	198	0.21	65.6	0.07
2005	171	0.18	56.3	0.06
2006	436	0.47	145	0.16
2007	429	0.46	142	0.15
2008	597	0.64	197	0.21
2009	416	0.45	137	0.15
2010	412	0.44	137	0.15
2011	4150	4.46	1360	1.46
2012	4630	4.98	1500	1.61
2013	4600	4.95	1500	1.61
2014	6010	6.46	1960	2.11
2003-2014	1849.75	1.99	604	0.65

Note: Trade creation and trade diversion columns are in millions of dollars. Trade creation % and trade diversion % columns are trade creation and trade diversion as a % of Pakistan's total import.

(c) Bilateral free trade agreements (BFTAs)

Table 3.12 presents the overall trade creation for bilateral free trade agreements for Pakistan on average is $0.95 billion. Trade creation on average is 1.31% of Pakistan's total import. In the preceding case SAPTA was in force prior to the signing of SAFTA and other bilateral trade agreements. Missing values for 2003-2010 are because of the non-existence of any agreements between these countries to show the effect

of trade creation. As discussed earlier the effect of trade diversion is not evident for this case.

Table 3.11. Estimated Values of Trade Creation and Trade Diversion (SAFTA): Model-II

Year	Trade creation	Trade creation (%)	Trade Diversion	Trade Diversion (%)
2003	55.5	0.27%	37.9	0.19%
2004	92.6	0.46%	64.7	0.32%
2005	75.1	0.37%	52.3	0.26%
2006	218	1.08%	149	0.74%
2007	199	0.99%	136	0.67%
2008	268	1.33%	181	0.90%
2009	197	0.98%	133	0.66%
2010	203	1.00%	137	0.68%
2011	101	0.50%	62.1	0.31%
2012	117	0.58%	68.8	0.34%
2013	137	0.68%	80.6	0.40%
2014	129	0.64%	78.3	0.39%
2003-2014	149.35	0.74%	98.39	0.49%

Table 3.12. Estimated Values of Trade Creation and Trade Diversion (BFTA): Model-II

Year	Trade creation	Trade creation (%)
2003	-	-
2004	-	-
2005	-	-
2006	-	-
2007	-	-
2008	-	-
2009	-	-
2010	-	-
2011	941	1.29
2012	831	1.14
2013	826	1.13
2014	1230	1.69
2003-2014	957	1.31

Note: Trade creation and trade diversion columns are on average value in millions of dollars.

In Model-III, the effect of trade creation comes from two sources. The first one, as described before, comes from the tariff cut received by exporters after signing FTAs. Second one is due to the general equilibrium effects captured by the RTA dummy variable. Trade creation equation after adding these effects is as followed:

$$imp_{jkt} - \widehat{imp}_{no\,TC,jkt} = imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt}) - \hat{\alpha}_3 FTAs_{jt}}\right) \quad \ldots (13)$$

Equation for trade diversion will remain same as before

$$imp_{jkt} - \widehat{imp}_{no\,TD,jkt} = imp_{jkt}\left(1 - e^{-\hat{\alpha}_2(TP_{jkt})}\right) \quad \ldots (14)$$

Now the total effect of FTAs will be given as

$$imp_{jkt} - \widehat{imp}_{no\,FTAs,jkt} = imp_{jkt}\left(1 - e^{\hat{\alpha}_1 - \hat{\alpha}_2(TP_{jkt})} * e^{-\hat{\alpha}_3(RTA_{jt})}\right) \ldots (15)$$

Here, again trade creation and trade diversion do not add up to the total effect of FTAs in equation. Thereby, similar process can be adopted by multiplying Equs. (13) and (15) with factor X.

$$TC = \left(imp_{jkt}\left(1 - e^{\hat{\alpha}_1(TP_{jkt}) - \hat{\alpha}_3 FTAs_{jt}}\right)\right) * X \quad \ldots (16)$$

$$TD = \left(\, imp_{jkt}\left(1 - e^{-\hat{\alpha}_2(TP_{jkt})}\right)\right) * X \quad \ldots (17)$$

$$RTA = \left(imp_{jkt}\left(1 - e^{(\hat{\alpha}_1 - \hat{\alpha}_2)(TP_{jkt}) - \hat{\alpha}_3 FTAs_{jt}}\right)\right) * X \quad \ldots (18)$$

This estimation process not only allows estimating the magnitude of trade creation and trading diversion, but also permits the breaking of trade creation that comes from two different sources. One source being the tariff cut and the other being the general equilibrium effects due to the signing of FTAs.

(a) Full Panel (All FTAs)

In Table 3.13, first two columns present the dollar value of trade creation and trade creation as a percentage of total imports, respectively. Next two columns presents the dollar value of trade diversion and trade diversion as a percentage of Pakistan's total imports, respectively. Column 5 reports the dollar values of the general equilibrium effects while its percentage of total imports is reported in column 6. Dollar value of trade creation due to tariff concessions are presented in column 7th and this as a percentage of Pakistan's total imports is given in column 8. In Model-III estimated effects of all FTAs via trade creation have increased as compared to Models I and II. During the years 2003-2014 trade of Pakistan on average has increased by $9 billion on account of trade creation (as compared to $1.85 billion reported in Table 3.10) whereas, it is increased by $0.9 billion on average through trade diversion (as compared to $0.6 million reported in Table 3.10).

It is evident from column 2 that overall trade creation as a percentage of Pakistan's total imports is not very prominent during SAPTA tenure and before signing of BFTAs (with China, Malaysia and Sri Lanka). A sudden increase in trade creation of $1 billion in 2006 is evident after signing of FTA with Sri Lanka in 2005. The signing of FTAs with China in 2006 and Malaysia in 2007 lead to further increase in trade creation in proceeding years till 2008. Dollar value for trade creation dropped to $1.7 billion in 2008-09 and then a promising increase of $21 billion in 2011 is reported. Thereafter, the ratification of SAFTA in 2011, lead to a gradual increase in imports due to trade creation, this can be seen till 2014 and captures the record increase in imports of $30 billion due to trade creation.

In column 3, the effect of trade diversion is nominal until the ratification of SAFTA in 2011. Increase in imports of Pakistan through trade diversion was $2 billion in 2011. Imports of Pakistan via trade diversion are reported to increase gradually but remained under $3 billion till 2014.

Column 5 presents the estimates of trade creation due to the signing of FTAs. Trade creation due to the general equilibrium effects recorded an increase in imports by $1.4 billion, on average, for the period

2003-2014. As shown these effects were small till the ratification of SAFTA, then a sudden increase in imports of Pakistan of $3 billion can be noted in 2011. The general equilibrium effects of signing FTAs are reported to be the highest in 2014, i.e., $4.6 billion.

In column 4 trade creation effects are due to a tariff cuts that are reported to be of $7.7 billion, on average, for the period 2003-2014. It is again small during the SAPTA tenure, but an increase of $1.7 billion is shown in 2006 right after the year of Pakistan signing its first FTA with Sri Lanka in 2005. It remained virtually same in 2007 then again an increase in imports of $2.3 billion indicates of trade creation effect due to tariff concessions in year 2008. A sudden increase of $18 billion is reported in 2011, which is the year of SAFTA ratification. Increase in imports due to tariff concessions showing trade creation is reported to be the highest in year 2014, i.e., $25.8 billion.

Table 3.13. Estimated Values of Trade Creation and Trade Diversion (All FTAs): Model-III

Year	Trade creation	TC (%)	Trade Diversion	TD (%)	TC , FTAs	TC, FTAs (%)	TC, Tariff	TC, Tariff (%)
2003	163	0.18%	70.6	0.08%	255	0.27%	92	0.10%
2004	244	0.26%	105	0.11%	384	0.41%	140	0.15%
2005	205	0.22%	88.1	0.09%	323	0.35%	118	0.13%
2006	1840	1.98%	232	0.25%	92.4	0.10%	1747.6	1.88%
2007	1870	2.01%	221	0.24%	148	0.16%	1722	1.85%
2008	2590	2.78%	300	0.32%	230	0.25%	2360	2.54%
2009	1760	1.89%	212	0.23%	127	0.14%	1633	1.76%
2010	1730	1.86%	215	0.23%	99.6	0.11%	1630.4	1.75%
2011	21200	22.80%	2100	2.26%	3030	3.26%	18170	19.54%
2012	24000	25.81%	2190	2.35%	4170	4.48%	19830	21.32%
2013	23100	24.84%	2200	2.37%	3670	3.95%	19430	20.89%
2014	30500	32.80%	2940	3.16%	4680	5.03%	25820	27.76%
2003-2014	9100	9.79%	906.1	0.97%	1434.0	1.54%	7724.4	8.31%

Note: Trade creation, trade diversion, TC(RTA) and TC(tariff) columns are million in dollars. Trade creation, trade diversion, TC(RTA) and TC(tariff) percentages are worked out from Pakistan's total import.

Overall trade creation for all FTAs is estimated to be 9.79% on average of Pakistan's total import, whereas, overall trade diversion on

average is reported to be 0.97% of Pakistan's total imports. General equilibrium effects of signing all FTAs showing trade creation for the time period 2003-14 is shown to be 1.54% on average of Pakistan total imports, whereas, trade creation because of tariff concession given to bilateral free trade partners and regional partners on average is reported to be 8.31% for the years 2003-14. It is evident from the results that trade creation reported from two sources[15] is significantly higher than trade diversion.

(b) Regional trade agreements (SAFTA)

Results are given in Table 3.14. Format of table's columns are same as of Table 3.13. Coefficients reported in Model III are introduced in Equs. (16), (17) and (18) to retrieve the dollar value of trade creation, trade diversion and general equilibrium effect for the case of SAFTA. Overall trade creation is $2.4 billion on average which is 2.61% of Pakistan's total imports on average. Overall trade diversion is $0.2 billion on average, which is 0.22% of total imports on aver- age. Trade creation and trade diversion both are highest in year 2014, i.e., 6.27% and 0.37% of total imports, respectively. On average $1.6 billion of trade creation for this case is due to the general equilibrium effect of signing SAFTA, whereas, on average $0.7 billion of trade creation is due to tariff concessions given to the partner countries.

(c) Bilateral free trade agreements (BFTAs)

From Table 3.15, it is possible to retrieve dollar value of trade creation and trade diversion by the estimation of Equs. (16), (17) and (18) for the case of bilateral trade agreements of Pakistan. Overall trade creation for this case is reported on average to be $6.6 billion, which on average is 7.15% of Pakistan's total import. Overall trade diversion is $0.01 billion on average, which is 0.14% of Pakistan's total import on average. It is reported here that trade creation of $5.5 billion on average is due the general equilibrium effects of signing of BFTAs as compared to $1 billion on average due to tariff concession given to the member countries.

Table 3.14. Estimated Values of Trade Creation and Trade Diversion (SAFTA): Model-III

Year	Trade creation	TC %	Trade Diversion	TD %	TC , RTA	TC, RTA %	TC, Tariff	TC, Tariff %
2003	46.4	0.05%	69.8	0.08%	11.4	0.01%	35	0.04%
2004	62.9	0.07%	94.6	0.10%	15.5	0.02%	47.4	0.05%
2005	54	0.06%	81.3	0.09%	13.3	0.01%	40.7	0.04%
2006	1950	2.10%	209	0.22%	1260	1.35%	690	0.74%
2007	2020	2.17%	205	0.22%	1320	1.42%	700	0.75%
2008	2810	3.02%	284	0.31%	1840	1.98%	970	1.04%
2009	1870	2.01%	199	0.21%	1210	1.30%	660	0.71%
2010	1840	1.98%	197	0.21%	1180	1.27%	660	0.71%
2011	3970	4.27%	229	0.25%	2950	3.17%	1020	1.10%
2012	4170	4.48%	274	0.29%	3030	3.26%	1140	1.23%
2013	4490	4.83%	310	0.33%	3230	3.47%	1260	1.35%
2014	5830	6.27%	343	0.37%	4320	4.65%	1510	1.62%
2003-2014	2426.1	2.61%	207.97	0.22%	1698.3	1.83%	727.75	0.78%

Note: Trade creation and trade diversion columns are in millions of dollars. TC, RTA and TC, Tariff is trade creation due to general equilibrium effect and trade creation due to tariff concession respectively. 10.7.

Table 3.15. Estimated Values of Trade Creation and Trade Diversion (BFTA): Model-III

Year	Trade creation	TC %	Trade Diversion	TD %	TC , RTA	TC, RTA %	TC, Tariff	TC, Tariff %
2003	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-
2011	5830	6.27%	119	0.13%	4880	5.25%	950	1.02%
2012	6280	6.75%	125	0.13%	5300	5.70%	980	1.05%
2013	6320	6.80%	126	0.14%	5330	5.73%	990	1.06%
2014	8150	8.76%	168	0.18%	6770	7.28%	1380	1.48%
2003-2014	6645	7.15%	134.5	0.14%	5570	5.99%	1075	1.16%

Note: Trade creation and trade diversion columns are in millions of dollars. TC, RTA and TC, Tariff is trade creation due to general equilibrium effect and trade creation due to tariff concession, respectively.

3.7 Conclusion

Results lead us to conclude that trade creation for all FTAs of Pakistan is almost 4 times higher than the trade diversion in Models I and II and almost 1.2 times higher in Model III. Model II suggests that the dollar value for trade creation on average is estimated to be $1.8 billion and 1.99% of Pakistan's total imports, whereas, trade diversion is reported to be $0.6 billion and 0.65% of total import. Model III reports on average $9 billion of trade creation which is 9.79% of Pakistan's total imports. Higher trade creation in Model III as compared to Model II is because of the inclusion of general equilibrium effects of signing FTAs, which on average is $1.4 billion and 1.54% of Pakistan's total import, whereas, rest of the trade creation is due to tariff concessions accorded to all the FTAs. Trade diversion reported to be $0.9 billion is 0.97% of Pakistan's total imports.

For the case of SAFTA trade creation is evidently greater than trade diversion for Models II and III. Unlike all FTAs cases, the general equilibrium effects of signing SAFTA causes more trade creation in comparison to trade creation caused by tariff concession given to its member countries. Similar results are found for the case of BFTAs where trade creation is significantly higher than trade diversion for both Models II and III. Similarly, the trade creation caused by the general equilibrium effects of signing BFTAs is more pronounced than trade creation due to the tariff preferences accorded to the member countries.

Previous literature on Pakistan did not include the general equilibrium effects of RTA, thereby neglecting a prominent component that contributes toward trade creation effects. Another reason for higher trade creation effect is that present study uses import data at industry level and the fact that some trade with regional and bilateral trade partners do exist at industry level, if not prominent at aggregate level. Consequently, large amounts of trade figures for small industries get dropped (owing to small trade round off to be zero) due to not meeting the benchmark criteria to be included at aggregate level. Working at the industrial level data allows the inclusion of those dropped values of trade which ultimately contribute towards trade creation.

It is noteworthy that an increase in trade volume is evident between Pakistan and member countries of BFTAs and SAFTA after signing the agreements. Statistics provide evidence of increase in imports from SAFTA, China and Malaysia as compared to exports leading to trade deficit. However, exports to Sri Lanka are higher as compared to imports thus leading to a trade surplus. Although, in the policy circles in Pakistan people tends to perceive the adverse effect of signing of these agreements but these statistics too often ignore the overall welfare effects of consumption gains and productions gains as highlighted by our estimates of TC and TD [see also, Bhagwati, Panagariya and Srinivasan (1998)]. Our findings have important implications for policy making, which suggest that FTAs, whether on bilateral or regional levels, are not necessarily harmful but in fact they are welfare promoting.

In sum, the effects of trade creation are very promising as they were perceived during the formation of all FTAs. Potential in SAFTA for trade creation cannot be denied and ignored as suggested by the findings. It is possible for the SAARC countries to increase their trade for overall welfare of the region. To draw maximum benefits from the SAFTA, the SAARC countries need strong *political will* to further integrate their economies and liberalize their trade regimes through simplified and improved tariff structures and procedures, provision of transit facilities for the countries sharing same border and simplification of banking facilities for the availability of easy trade financing. Whereas, a deeper integration with BFTA countries is required, much more than merely removing bilateral trade barriers. Welfare effects of existing regional FTAs and BFTAs are positive and large. Firstly, because the trade creation effects of signing the agreements have been prominently greater than trade diverting effects. Secondly, trade creation is welfare-enhancing, in the absence of market failure, whereas welfare effects of trade diversion are ambiguous. Thirdly, the general equilibrium effects are also positive and large. All of these effects need to be preserved in existing and new FTAs to be signed by Pakistan in the future. This is because FTAs whether regional or bilateral enhance welfare.

Notes:

1. South Asian Free Trade Area (SAFTA) agreement came into force on 1st January 2006. SAFTA is signed by the members of the South Asian Association for Regional Cooperation (SAARC), established in 1985. So far Pakistan has signed two regional trade agreements (RTAs): SAARC and ECO (Economic Cooperation Organization). SAARC members include Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAFTA requires the developing countries in South Asia (India, Pakistan and Sri Lanka) to bring their duties down to 20 percent in the first phase of the two-year period ending in 2007. In the final five-year phase ending 2012, the 20 percent duty will be reduced to zero in a series of annual cuts. The least developed countries in South Asia (Nepal, Bhutan, Bangladesh, Afghanistan and Maldives) have an additional three years to reduce tariffs to zero. India and Pakistan ratified the treaty in 2009, whereas Afghanistan ratified the SAFTA protocol on 4 May 2011.
2. Bilateral Free Trade Agreements (BFTs) are between Pakistan - Sir Lanka, Pakistan - China and Pakistan – Malaysia, concluded in 2005, 2006 and 2007 respectively.
3. Earlier studies [e.g., Akhter and Ghani (2010) and Rehman, Shadat and Das (2006)] on Pakistan use aggregate trade data instead of industry-level trade data. These studies ignore the general equilibrium effects that our study estimates.
4. The concept of trade creation and trade diversion is due to Viner (1950).
5. RTAs besides traditional gains from tariff reductions also have non-traditional gains [Fernandez and Portes 1998]. One of such gains is that RTA reduces the possibility that government reverses its trade liberalization commitments. Another gain is it signals to traders and investors that the government is pro reforms and not protectionist. Both of these gains implies reduced uncertainty about future trade policies and thus encourages traders to make the sunk-cost investments to promote trade.
6. Meade (1955) argued that it is not necessary that trade flows are entirely either trade creating or trade diverting, it could be a mixture of both. Within this perspective, it would not be wrong to conclude that world's welfare will not be completely compromised, as total world trade is not declining but only shifting as a result of trade diversion [Balassa (1967)].
7. It could be either imports or exports; imports are used for this study.
8. $(=e^{0.028} - 1) = 2.8\%$.
9. $(exp^{0.541} - 1) = 72\%$.
10. We are extremely indebted to the helpful insights obtained through communications with Dr. Christopher Magee of Bucknell University, USA. This interpretation is due to Dr. Magee's communiqué in which he interpreted a negative sign for TP_{jkt} variable as an indication of no trade diversion regardless of its statistical significance.
11. $TP_{jkt} = T_{MFNkt} - TR_{jkt}$
12. $TP_{jkt} = T_{MFNkt} - 0$
13. Calculated by using short scale.
14. Year of SAFTA ratification.
15. That is, (1) general equilibrium effects of signing FTAs; and (2) tariff concessions given to BFTA and SAFTA members.

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4. Significance of Regional Economic Integration for the Global Developing Economy

Zafar Mahmood[§]

4.1 Introduction

Regional integration is a process by which two or more countries agree to cooperate and work closely for the promotion of peace, stability and wealth creation. Developments at the regional level now exceedingly define the fast changing global trading environment. This is mainly due to accelerated movement toward regional economic integration since the 1950s. Trade agreements between regional economies are used to reduce tariff and nontariff barriers (NTBs) for freer flow of goods, services, factors of production and technology among members of the regional bloc. These agreements intend to reduce trade barriers at a faster pace than can be achieved at the multilateral level under the World Trade Organization (WTO). Regional blocs nonetheless restrict entry for non-members by imposing discriminating trade barriers, which is a worrisome outcome.[1]

The underpinning of the world trading system steered by the WTO is the most favored nation (MFN) treatment clause (Article 1, GATT) that underlies all its bargained tariff reductions. Through the MFN clause, non-discrimination among WTO members creates a global trading order and discipline, out of a fundamentally mercantilist system. From the perspective of developing countries with little or weak bargaining power, purely bilateral bargains negotiated under the auspices of the WTO become available to all through the applications of MFN and the reciprocity clauses, which eventually hurt them.

Post World War II era of progressive trade liberalization witnessed two major episodes: (i) the formation of European Economic Community in

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1957 following the Treaty of Rome and (ii) the establishment of USA-Israel bilateral Free Trade Area (FTA) and the North American Free Trade Agreement (NAFTA) with Canada and Mexico in the 1980s.

Since the early 1990s, most of the countries have embraced trade agreements at both bilateral and regional levels. Major non-European and South American agreements that have been notified to the WTO include, MERCOSUR, SAARC, ASEAN, APEC, etc.[2] As of 8th January 2015, some 604 notifications of regional trade agreements (counting goods and services separately) had been notified to the WTO. Of these, 398 were actively pursued.[3]

A necessary condition for regional agreements to be multilaterally acceptable is that *ex-post* the size of imports by members from non-member countries should not decrease on a product- by-product basis. Import volumes from non-members are a function of the extent of trade diversion, the trade–policy stance taken by the regional grouping vis-à-vis the rest of the world, and the impact of regional liberalization on the growth of member economies. The latter, in turn, depends on how comprehensive the regional agreement is with respect to sectoral coverage and the elimination of intra-regional trade barriers.

Lack of progress in multilateral trade negotiations due to stalled Doha round, developing countries' disillusioning experience with trade liberalization and emergence of BRICS (Brazil, Russia, India, China, and South Africa) as one of the major global trading players have revived interest in regional integration. With this revival countries that were late starters now seek to enhance their market access by forming bilateral and regional FTAs.

Proponents of regionalism believe that the trading blocs accelerate the progress towards global free trade. They argue that trade negotiations would be better carried out among a few bloc members than among a large number of WTO members. The critiques on the other hand fear that trading blocs might turn inward and create discriminatory trade barriers against non-members. Furthermore, small countries are normally left out of major trading blocs.

Within the above perspective, this paper addresses a few key questions: why countries are now more attracted to regional economic

integration than ever before? Whether regionalism acts as a "stepping stone" or a "stumbling block" to multilateral trade liberalization? Does regional integration enable small developing economies to alleviate possible harmful long-term effects on them by undertaking necessary economic reforms? Does the WTO sufficiently protect smaller countries? And if not, what measures should be taken to strengthen the WTO so that the interests of the smaller nations are protected? Whether regionalism a complement or substitute to multilateralism? What are policy responses of members and non-member countries to regional trade agreement? Given the current deadlocks in multilateral trade negotiations, isn't regionalism accelerating the transition towards global free trade?

4.2 Structure of Regional Economic Integration Agreements

Regional economic integration agreements (REIAs) may take one of the following forms, depending on the degree and depth of integration:

1. *Preferential trade agreement* (PTA), where trade restrictions among members are partially removed while MFN tariff structure is maintained against non-member countries.
2. *Free-trade area* (FTA), where trade barriers among member countries are eliminated, while each country maintains its own tariff structure against non-members.
3. A *customs union* (CU) is a free-trade area having common external trade policies against non-members.
4. A *common market* (CM) is a customs union, which further allows for the free mobility of factors of production, as there are no movement restrictions between members.
5. An *economic union* (EU) is a common market, which allows certain level of harmonization of domestic economic policies of members.
6. A *monetary union* (MU) is an economic union with a common currency.

The formation of REIAs may vary vastly, but they have two things in common, i.e., the purpose of reducing trade barriers and facilitation of trade among members. At their basic level they partially remove tariffs on intra-regional trade. Some of them go beyond that to include NTBs and liberalize to investment. At the deepest level REIAs establish economic union, which involves the establishment of shared executive, judicial and legislative institutions.

The structure of REIAs is founded on geographic proximity, similarity in factors of production, and harmony in political and trade policies. Sound and shared institutional infrastructure accompanied by immediacy factors create deeper and open integration.

4.3 Rationale for Regional Economic Integration

The justification behind regional free trade arrangement is that it permits members to specialize in the production of goods and services that they can produce most efficiently. This in turn stimulates economic growth and creates dynamic gains from international trade. Both growth and trade gains often creates incentive for political cooperation among member countries, which boost their political influence in the world. World experience shows that at times non-economic considerations overshadow economic considerations.

Establishment of REIAs induces the like-minded countries to liberalize trade within the group rather than on MFN basis. This enables them to enhance their market power and/or circumvent the GATT's non-discrimination requirement. Since, the first possibility does not dismiss the second that is why WTO has rules on regional integration in all its agreements.

In principle, REIAs are considered to be beneficial for the promotion of world trade. This is because they have the ability to fully integrate two or more economies. A caveat to this notion is that the grouping in the process integration must not increase trade barriers against non-members. That is, REIAs should be trade creating and not for trade diverting.[4]

In the domestic market, a trade-off between economies-of-scale and competition can be found. But, regional integration allows the existence of: (i) larger firms with more productive efficiency and economies-of-scale and –scope and (ii) increased regional competition inducing firms to lower prices, expanding sales and reducing their internal inefficiencies. With high level of production fragmentation in less open economies, it is expected that regional integration would prompt export firms to benefit from large integrated markets especially through economies-of-scale.

Regional competition allows for the rationalization of the production structure and deletion of inefficient replication of production among members. However, competitive effect will be much superior if lower external-tariff permits for higher import competition from non-members. On the other hand, existing technology may be outdated in member countries as compared to current and future needs of the region. Firms may then decide to re-deploy new technology and relocate old technology in other countries depending on factors cost advantage. In this case, countries owning the most cost effective factors of production would be the ultimate beneficiaries.

Preferential trade within a region induces consumers to shift demand toward goods produced by members, at the cost of both domestic production and imports from non-members. Governments lose tariff revenue, and the overall effect on economic growth may be positive or negative, subject to the costs of alternative sources of supply and trade policy toward non-members. Changes in trade flows induce changes in the location of production between members. Such relocations are determined by the comparative advantage of members, and by clustering effects and technology transfer among members. In certain circumstances, relocation of production can be a force behind the convergence of income levels among members. In this case, labor-intensive production activities may move toward lower-wage countries, causing a rise in wages there. In other circumstances, relocations can be a force behind divergence. For instance, industry may move to a country with a lead or with some natural advantage, raising its income ahead of other countries.

Market enlargement with regional integration attracts FDI, especially where market size is important for efficiency. Removal of border restrictions also induces firms to be efficient through regional competition. Although these are major sources of benefit, yet in practice their effects are not always realized. This could be due to weak design of agreement framework and its implementation. Integration may attract FDI both from within and outside the region as a result of: (i) market expansion and (ii) production rationalization. Enlarged regional market will attract beneficial FDI provided foreign investors are not engaged in 'tariff-jumping' activities.

Another economic motivation behind REIAs is that it provides a mechanism for liberalization or regulatory reform to promote trade and investment. Moreover, REIAs guarantee access to markets, which is not that evident under the WTO liberalization.

Trade liberalization is a sure outcome of the formation of REIAs. This is because with harmonization in regulatory regimes in the region, the concerns regarding the free-riding of competitors in regional grouping become smaller. Smaller the changes are required in regulatory regimes and greater the certainty that regulations will be enforced by all members; the more definite is competition among members *ex post.*

REIAs allow more reliable commitments to monitor implementation of the agreement. Limited numbers, similarity, and proximity of member countries imply that industries are better informed about actions of other governments. Some large REIAs, such as EU, have supranational enforcement mechanisms. Such mechanisms reduce uncertainty regarding implementation and enforcement of the agreements.

REIAs provide effective mechanisms to experiment with issues that have not yet been addressed at WTO. Thus, if at WTO consensus is not build on a set of issues, then a subset of countries seeking agreement on those issues may pursue a regional arrangement. It is partially with a view to convincing other countries to agree with their position at WTO in the future.

Finally, more competition within the trading bloc may induce outside firms to cut prices to maintain their export share in the region. It

will create a positive terms of trade effect for members. However, a move towards free trade between partners when they maintain significant tariffs vis-à-vis rest of the world may well result in trade diversion and welfare loss. The risk of trade diversion could be alleviated if regional countries apply very low external tariffs, the so-called "open regionalism"[5]

4.4 The Rules of the GATT for Regional Economic Integration

Article-24 of the GATT/WTO[6] allows FTAs and customs unions to exist provided:

1. trade restrictions after regional integration do not rise on average against non-members,
2. regional integration abolish all tariffs and other trade barriers on 'substantially all' intra-regional exchanges of goods within a 'reasonable' length of time; and
3. REIAS are notified to the WTO, which may decide to determine whether above two conditions are satisfied.

The rationale behind the first condition is obvious. That is, if restrictions on imports from non-members are no higher than before then the extent of possible reduction in imports from non-members is limited. This problem is usually confronted with the formation of a customs union, which involves changes in the external tariffs of members while they adopt a common external tariff for non-members. The rule that applies to customs union is that, tariffs and NTBs on imports from non-members may not be on the whole higher or more restraining than those preceding the formation of the customs union. In practice, trade barriers are however kept on higher side for non-members, although common.

The second condition is somewhat counter-intuitive as maximum preferential liberalization is likely to be more harmful to non-members than partial preferential liberalization. This condition, however, guarantees that countries are restricted in their ability to violate the MFN obligation selectively. The rationale behind this condition is to confirm

that participants in regional liberalization efforts 'go all the way' *not half way*. It is fairly probable that due to the political dynamics of trade negotiations, negotiators are able to maintain partial preference and cut tariffs on items previously imported from non-members. These are the items for which the risk of trade diversion is the greatest.[7]

Article-24 does not recognize the impact of trade flows on non-members. Imports of particular products from non-members may fall *ex post,* harming producers of these countries, albeit no decline of total imports. No compensation can be claimed *ex post* under the GATT rules neither *ex ante* compensation was granted in the rules. GATT-1994 endorses that 'to the greatest possible extent avoid creating adverse effects on the trade of non-Members.'

Developing countries may, if they desire, invoke provisions of the GATT permitting them to establish FTAs that do not satisfy the conditions of Article-24. The 1979 decision on 'Differential and Special' treatment of developing countries (the so-called *Enabling Clause)* allows for regional arrangement between developing countries to apply lower tariffs to each other's trade than are applied to imports originating in non-members.

If developing countries so desire, agreements that do not meet the requirements of Article-24—e.g., they pertain to a limited set of products, or involve reduction in tariffs rather than elimination—can be justified under the Enabling Clause.

4.5 Regionalism and Trade Policy Response from Members

The impact of REIAs on both member and non-member countries depends on the type of REIA as well as the level to which intra-regional trade is liberalized. The more pervasive intra-regional trade liberalization is, the greater the resulting increase in competition within domestic markets. Impact of regional trade agreements enacted world-wide varies on case-to-case basis. Some less sophisticated regional trade agreements involve a reduction in tariff and NTBs, so as to liberalize trade between countries. The more sophisticated agreements transcend traditional trade policy procedures, to embrace rules and regulations on flows of

investment, intellectual property rights protection, and movement of labor. Thus, while the broad strategic objectives of FTAs are often similar, they differ significantly in terms of their impact on national laws and regulatory frameworks.

FTAs have essentially been established as a contract between the negotiating parties. Generally, FTAs do not necessitate revisions to domestic legislation. Members usually introduce strategic adjustments to the trading arrangements, mostly through adjustments in their tariff schedules. Some countries require international agreements and treaties to be ratified from Parliament before they are implemented. Regions that keep domestic legislative changes to a minimum easily adapt an agreement. Otherwise, legislative amendments create political opposition when interests of domestic industry and ability of government revenue generation are compromised.

As REIAs become more sophisticated, members take additional steps to restructure and harmonize the use of domestic legislative and regulatory functions, including: (i) the setting of common external tariffs; (ii) the mobility of assets; and (iii) harmonized economic and monetary policies.

The political economy of a country determines the equilibrium level of market-access restrictions. If unilateral trade liberalization is not an option, then interest-groups, particularly export firms, will have a choice between pursuing regional or multilateral trade agreements. Export firms may be indifferent between the *status quo* and an REIA as long as trade restrictions are not raised. They may enthusiastically support it if they feel that the negotiating power of the REIA enhances the probability of obtaining greater access in non-members' markets.

REIAs constrain national import-competing groups and thus foster a more liberal external trade policy. Regional integration implies a larger regional political community. Each of the politically vital regional interest-group will have less impact on the design of common regional policies. As preferences on specific issues are likely to differ across members, as a result the need for compromises may improve national and regional efficiency.

REIAs may disrupt the creation of rent-seeking lobbies, as they have to regroup at the regional level, launching an institutional framework that allows them to agree on a shared position. At the same time, REIAs may facilitate the adoption of moderate policies. Consumer interests may be harder to defend in an REIA than at the national level, though producer interests are more likely to be strengthened than weakened. Every national producer group may face less opposition when seeking price-increasing policies, and may certainly find assistance from other producer groups in member countries that pursue their own interests.

Execution of common external trade policy can give rise to external protection, especially if import-competing industries practice instruments of contingent protection; for instance, anti-dumping, countervailing measures, etc. There may be no net increase in external trade barriers after the formation of a customs union. But subsequently, it can increase if contingent protection is introduced. In contrast, FTAs have a different dynamics, as members in some sense compete in their external trade policies.

FTAs differ greatly due to specific economic conditions of the specific country. For developed countries FTAs are broadly considered as positive developments as they create greater prosperity. These countries though publicly support the benefits of FTAs, yet they maintain the success of multilateral trade negotiations as their trade policy priority.

Developing countries debate on the overall costs and benefits of regional trade agreements. This is mainly because they have a narrow industrial base, which is insulated from foreign competition through high protection.

Members of REIAs sometimes negotiate separate FTAs with non-members. To the extent that the countries involved do not have FTAs with each other, a '*hub-and-spoke*' system may emerge. A hub-and-spoke system fundamentally consists of a set of bilateral FTAs. Since there is discrimination between the members of such a system, consequently less liberalization is likely to take place than under a regional FTA. Because a hub-and-spoke system involves separate

agreements between the *hub* country and the *spoke* countries, there is greater possibility to exclude sensitive sectors from the coverage of each bilateral agreement. The scope under a hub-and-spoke system for sustaining liberalization policies will be less. For example, if each country maintains contingent protection[8] option *vis-à-vis* member countries, influential import-competing industries in the hub country will have an interest in including safeguard clauses and relatively stringent rules-of-origin in the agreement.

4.6 Regionalism and Trade Policy Response of Non-Members

Jacob Viner (1950) through his model of customs union questioned whether REIAs are detrimental to non-members. He argued that 'trade-diverting customs unions would worsen and only trade creating unions would improve world welfare (efficiency)'.[9]

Global integration does not seem to have been negatively affected by regional integration endeavors. However, this cannot be concluded with certainty, as no one knows what would have happened in the absence of regional agreements. Whatever experience shows regarding the effect of REIAs on non-members, there clearly are causes for concern about the proliferation of regional agreements.

The systemic impact of REIAs depends on internal political dynamics of members and on what non-members do in response to them. The most evident trade policy response of non-members is to persuade the members of REIA to reduce their barriers to external trade, possibly to obtain some compensation for any trade diversion.

In practice, regional integration has been a repeated reason for non-members to engage in MTNs under the auspices of WTO. This should not imply that regionalism is good because it entice countries to pursue concurrent MTN-based trade liberalization. For without regionalism, much more headway might have been accomplished towards multilateral trade liberalization.

A different trade-policy for non-members induces them to join existing trading blocs. Accession is essentially motivated by market-access assurance motives. Obtaining duty-free access to the regional

market is one reason but more important is the elimination of the threat of contingent protection.

Other forms of association with established REIA are possible for non-members. For instance, the EU has negotiated about two dozen preferential trade agreements with non-members, especially with Mediterranean countries. Regional integration efforts are driven partly by a wish to strengthen their bargaining position *vis-à-vis* major trading partners. It assures the participating countries that such efforts would let them to protect themselves against discriminatory policies of other regional blocs.

Harmonization is another possible trade-policy response for non-member countries to avoid allegations of social or environmental dumping. In general, the larger the region is greater the incentive for a country to adopt the regulatory standards of the trading agreement. As a result non-members have an interest in adopting identical standards, and perhaps even similar competition and environmental rules.

Despite the fact regional integration is welfare-enhancing; it comes under adjustment pressure from inefficient industries located in member countries. Members may try to shift some of the adjustment burden in the region on non-members by raising trade barriers. Therefore, while assessing net impacts on non-members the magnitude of implicit discrimination and possible additional explicit discrimination needs to be accounted for.

Regional integration *per se* can also be detrimental to non-members if trade diversion takes place. Non-members may also be injured through investment diversion. This involves firms (domestic and foreign) deciding to invest inside REIAs and produce locally, rather than produce in the least-cost location, which could be non-members, and ship products to the REIA. Thus, the possibility of investment diversion adversely affects non-members' potential growth, exports and employment opportunities. Such impacts are often seen to induce non-members to join the trading blocs.

4.7 Effects of Regionalism on the World Trading System

Is regionalism a threat to multilateral trade liberalization? We can address this question in two parts: (i) regionalism as a "building block" or "stepping stone" to global free trade and (ii) regionalism as a "stumbling block" to progress in multilateral trade liberalization. No evidence is available that suggests that regionalism has caused tariffs to be higher on non-members than in its absence. Some facts do indicate of strengthening of the operation of WTO processes. That is, REIAs are actually trade liberalizing and for increased access to developed markets for developing countries. Let us first assess the arguments whether regionalism is a stepping stone to multilateral trade liberalization.

One of the major advantages of the course of regional integration is the sensitization of groups favoring trade liberalization. Baldwin (1993) argued that "both in Europe and North America, governments tend to espouse the views of pro-integrationist business leaders (and labor leaders as well in most of Europe), while the populace tends to be more wary."[10]

People are apprehensive of unilateral trade liberalization due to a number of reasons: (i) the possibility of unsolicited competition in domestic market and (ii) the loss of government control over the market. In this context, it is possible that inter-region arrangements could be considered to be the next step along the path to multilateral trade liberalization.[11] The experience that EU and MERCOSUR have and the gains from regional trade liberalization may dissipate fear and lend support for further region-to-region trade liberalization.

Another argument is the suggestion that REIAs lessen resistance towards multilateral trade liberalization, thus reducing their discriminatory influence over time [Best and Christiansen (2008)]. The transfer of national allegiances owing to increased regional integration should lead to greater allegiance to a regional market. The pertinent question then is, whether this allegiance could be reconstructed at a multilateral level? This is possible as larger firms and those familiar with regional markets are more likely to survive in a multilateral free trade situation, and thus are more likely to support it. In the longer run, they

are more likely to drive out or change those industries that would oppose it. Krueger (1993) discussed a possible limitation that exporters' desire for multilateral trade liberalization may be restricted by regionalism due to vested interests benefiting increasingly from trade diversion.[12]

Some experts proceed with the view point that REIAs, in general, are not about trade within a region, but are used for other reasons. As generally being small in size REIAs cannot be used to substitute for multilateral trade liberalization.[13] There are indeed some geopolitical reasons. This reinforces bonds between states and builds trust. Wherever these kinds of agreements are not beneficial to trade liberalization, they normally do not hurt it either. REIAs are also used to strengthen established trading links between countries.[14] To this extent, REIAs create trade rather than divert.

Potentially, with time such relationships may become trade diverting as industries within the region struggle to protect their interests. This is a possible weakness of regional trading blocs. Regional agreements are also used to attract foreign capital, whether through commitment to reform, reduction of tariffs, or other methods, so that they have a better chance of success in the multilateral trading system at a later date.[15] Thus, REIAs encourage desire for the multilateral trading system, and the development and stabilization of the economy. These means will facilitate their further participation in multilateral trade liberalization.

Some argue that the WTO is "outmoded and too cumbersome to deal with the complexities of contemporary trade issues."[16] That is REIAs can promote trade liberalization in manners that the WTO cannot. They argue that "fewer participants presumably mean fewer conflicts of interest and fewer areas of disagreement"[17] and thus easier to advance trade liberalization. However, examining REIAs in a different manner, one may consider them to be a mechanism for larger and more powerful countries to hold on to their control. As EU and USA too often threaten at MTNs and try to impose their will. Mansfield and Reinhardt (2003) noted that as WTO membership enlarges, it reduces the ability of individual countries to influence the substance and speed of MFN

liberalization, and thus makes it more problematic to formulate coordinated positions.[18]

In sum, there are convincing arguments that REIAs have less to do with trade than with development, efficiency and politics. It must be accepted, however, that there are legitimate concerns arising from some of regional agreements, especially in the areas of non-reciprocal trade agreements, large countries using REIAs to protect their interests, and trade diversion too unfortunately at the cost of poor countries.

Next, we examine arguments suggesting that regionalism is a "stumbling block" to global efforts for free trade. One of the main arguments against trading blocs is that they are trade diverting. Lamy (2002) stated that 'in theory, MFN trade liberalization is the best because it avoids the risks of trade diversion', but further argues that 'if one removes the assumption of perfect competition, a different picture emerges regarding the benefits of competition and scale effects of REIAs on members.[19] If other effects of REIAs are considered such as investment, growth, and the removal of NTBs; arguably, the strength of these factors in trade creation outweighs any possible trade diversion.' On the other hand, Ethier (1998) stated that 'there is a big difference between what he calls "new regionalism" and "old regionalism", and blames the preoccupation with the trade diversion/trade creation argument in this area on a hangover from the discussion of old regionalism.'[20]

There are other kinds of diversions in the context of regionalism and its effect on multilateral trade liberalization: "proliferating regional agreements absorb scarce negotiating resources (especially in poorer WTO members) and crowd out policymakers' attention".[21] Attention diversion is considered as a major concern. Panagariya (2000) described how options made available through regional agreements might distract countries from multilateral trade liberalization processes.[22] But this concern is challenged by others, because they point out of current trend in the spread of new regionalism, which suggests that we have little to worry about, given the steadily rising membership of the WTO as well as signing of the Bali Package.[23]

Another potential 'stumbling block' is the risk that competing REIAs may create dissenting regulatory structures. Although, the 'stumbling block' does exist, yet it is possible to overcome it, and weakens the argument that it is a major threat to global trade liberalization. Likewise, there is 'a concern that different legal frameworks and dispute settlement mechanisms may weaken discipline among countries'.[24]

REIAs may also lead to the beginning of a trade bloc mindset: "As [a] country accedes to the bloc, the potential economic benefits of entry for the next country on the outside margin rise and may offset the higher noneconomic costs of entry it faces".[25] This claim suggests a snowball effect, and the ultimate emergence of major competing trading blocs. This of course is a legitimate concern. The threat of regionalism can be countered by continuing the drive in the area of multilateral trade liberalization.

4.8 Current Wave of Regionalism

The reasons as to why REIAs have become more attractive than they used to be in the past include:

1. The growing appreciation that effective integration needs more than reducing tariffs and NTBs. Numerous other trade barriers create market segmentation and impede the free flow of goods, services, capital, labor and technology. Thus, far reaching unconventional trade policy measures are essential to remove these barriers. Such a deep integration was originally pro-actively practiced by the EU. Other regional blocs are now debating to adapt EU policies.
2. The departure from "closed regionalism" to a more "open regionalism". Most of the trading blocs that were founded in the 1960s and 1970s by developing countries were based on the model of import-substituting industrialization (ISI). They used regional agreements—with high trade barriers—to implement this model. The new wave of regional agreements, including resurgence of some old agreements, have generally been more

progressive, and more dedicated to boosting, rather than controlling, trade.[26]

3. The beginning of trade blocs in which both developed and developing countries are equal partners in agreements devised to strengthen the economies of all members.

All the above considerations demand for a new analysis of regional agreements, one that considers political as well as economic effects. It should also assess the opportunities for deep integration, and bags the new potentials created by developed and developing countries' agreements.

The current wave of regionalism is gaining momentum as the multilateral trade negotiations under the auspices of the WTO have virtually become stalled. With increased engagement of developing countries in regional trade agreements, the present wave of regionalism is likely to prevail in the foreseeable future. This is mainly because regional groupings allow greater market access in multidimensional ways, which the WTO has so far failed to provide. At the same time, recent South-South regional cooperation developments further give impetus to the current wave of regionalism at the expense of multilateralism. Proliferation of regional integration agreements is being questioned on the ground of political maneuvering and non-transparency, which is particularly hurting non-members or those countries who are excluded from the agreements. So the challenge is to ensure transparency in regional integration agreements and to make them apolitical.

4.9 Significance of REIAs for Pakistan

Traditionally, Pakistan has been an advocate of the multilateralism, however given the slow pace of multilateral negotiations; it too has joined the REIA bandwagon.

Pakistan has so far signed two regional and 5 bilateral trade agreements. With SAARC countries Pakistan has signed SAFTA on a shallow basis in 2007. With Economic Cooperation Organization (ECO)

countries it has signed a preferential trading agreement. Ironically, not all of ECO members have ratified so far, thus up to now it is virtually a non-binding agreement on members.

With SAARC members Pakistan has travelled 30 years but failed to make a significant headway. Intra-SAARC trade shares remain virtually same over the past three decades. All indicators fall much short of the potential for SAARC trade. This owes to the lack of trust, cooperation and interaction among members. Failure of SAARC in creating sustained growth in its trade relations have led some SAARC countries to create a sub-regional trading group called BIMSTEC (the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation), it include Bangladesh, India, Myanmar, Sri Lanka, Thailand, Bhutan and Nepal. Pakistan is excluded from this group.

Despite lack of progress in trade relations, the SAARC region however is successful in developing many regional institutions and apex bodies to set a stage for a major development in their relations at some future date. Also by signing the SAFTA agreement the members have committed to follow a path towards facilitating the cross-border movement of goods.

Outside the SAARC and ECO regions, Pakistan's interest in trade liberalization with the ASEANs has grown. Pakistan is part of ASEAN Regional Forum consisting of 27 countries tackling security issues. It is trying to become a Full Dialogue Partner of ASEANs. In this region, Pakistan has signed an FTA with Malaysia in 2007, whereas with Indonesia it has signed PTA in 2005.

Pakistan's growing interest in REIAs comes despite its concerns over their impact on its economy. Certain stakeholders express apprehension about the trade diverting effects of REIAs on Pakistan's trade. They claim that though FTAs benefit Pakistan's exports, in some cases the benefits of the partner countries are much greater, e.g., large trade imbalance in favor of China after the implementation of FTA, with net additional gains of exports from Pakistan being small or even negative. However, Pakistan remains beneficiary of FTA with Sri Lanka.

Domestic industry in Pakistan is suffering from falling trade barriers in the aftermath of formation of regional/bilateral FTAs, which

has made local products less competitive as compared with foreign products. Since import tariffs are higher in Pakistan, its partners are gaining more from FTAs that are aimed at leveling or removal of tariffs. Thus the burden of adjustment for local producers appears to be higher.

The question of whether Pakistan should follow the regional or the multilateral path is dictated by its trade position in the global economy. Currently, Pakistan is a minor player in the world trade. Its share in world exports is only 0.13 percent. Pakistan is not a part of any regional bloc with substantial influence on world trade, such as NAFTA or EU. It is therefore possible that Pakistan is likely to lose from the trade diverting effects of REIAs and new trade arrangements where it is not involved. Pakistan thus needs to create a balance between regionalism and multilateralism by not only striving to join say a couple of major trading blocs but also by joining hands with others at WTO to protect its interests, especially with those developing countries that are excluded from established Northern and Southern trading blocs.

4.10 Conclusion

WTO rules allow its members to participate in regional economic integration agreement. Although, rules are subject to certain conditions yet they are considered as relatively weak. For example, lack of any discipline with respect to preferential rules-of-origin. Another is the lack of a requirement that regional agreement be open to new members that are willing to satisfy their obligations. This also implies that regional agreements are the outcome of political harmony among members and acceptance of hegemony of global and regional players.

WTO's surveillance of regional agreements is limited—its Secretariat has no mandate to monitor the trade effects of regional blocs. Consistency with WTO rules is not sufficient to ensure that REIAs are a complement to the multilateral trading system. Perhaps more needs to be done in WTO rules.

Developing countries can opt out of WTO normal disciplines on REIAs entirely by invoking the so-called *Enabling Clause*, and negotiate a PTA for a limited number of products. But it is argued that such

agreements can significantly distort trade flows in the world, resulting into significant welfare-reduction from trade diversion.

Notwithstanding these caveats, REIAs are embedded with many helpful aspects and some go far beyond the WTO rules on trade liberalization. For instance, there are no tariffs and no safeguard mechanisms in the EU. However, with regard to EU's external trade policies for non-member countries, this is certainly not the case. The challenge then is to pursue multilaterally what some of the major trading blocs are implementing internally.

REIAs have stimulated parallel developments at multilateral level. They thus represent both a challenge and an opportunity for the multilateral trading system. They provide an opportunity to experiment co-operation on issues that have not, hitherto, been tackled multilaterally. The challenge is to control them by invoking dispute-settlement mechanisms and ensuring that they are open and transparent.

On the balance, regionalism is not an undesirable thing in the context of multilateral trade liberalization. In some ways it has demonstrated very helpful for the endurance of the global trading system. Most of the weaknesses identified can be alleviated by "trustworthy regionalism". Ideas about "open regionalism" and "multilateralism first", though not without their faults, do have practical values. One of the reasons, we arrived at this this conclusion is the wider context of regionalism being crucial in a new globalized world. In the global trading environment, production, consumption and trade are escaping the domestic regulations owing to the new multinational nature of business and trade in services. In this context, regionalism is assuming a central role for the design of rules for intra-regional movement of capital, services, technology, and labor. Difficulties are definitely arising but they should not become reasons to rebuke REIAs.

Notes

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(b) World Bank (2005) *Global Economic Prospects: Trade, Regionalism, and Development*. The World Bank: Washington D.C.

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4. Trade creation occurs when high cost domestic producers are replaced by low-cost external suppliers within the free trade area. On the other hand, trade diversion occurs when low-cost external suppliers are replaced by higher-cost suppliers within the free trade area.
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26. Mansfield, E. and H. Milner (1999) The New Wave of Regionalism. *International Organization*, 53(3): 589-627.

5. An Investigation into the Export Supply Determinants of Selected South Asian Economies

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5.1 Introduction

The importance of exports can be well understood from the writings of classical and modern economists. Marshall (1890) clearly stated that, "a nation's economic growth and development depends on the international trade," while Nurkse (1961) declared international trade as the engine of economic growth. Export growth and economic growth of a country has been found to have a very close relationship. If exports grow at a faster rate as compared to imports, it will lead to increased economic growth, improvement in balance of payments (BoP), increased foreign exchange reserves, resulting into increased purchasing power of the country.

The decisions of what to export are made on the basis of comparative advantage, i.e., a country or its firms exports the products which they can produce competitively and cheaper. Thus, a natural-resource abundant country will produce the products that use these resources and export them to the world at competitive prices. Rapid export growth can be achieved in developing economies not only by focusing on abundantly available resources but also by introducing suitable economic policies that incentivize in transforming scarce resources used in domestic consumption to export production [Azam (2010)]. It is also important that economies should aim for exporting high valued added finished goods rather than raw materials to earn more export revenue.

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Although, exports continue to be the one of the most important economic indicators globally but its importance for South Asian economies cannot be stressed more vehemently as they continue to face severe BoP deficit and economic growth issues. The selected South Asian economies have shown slowdown in economic growth with Bangladesh showed annual growth rate of 6.23 percent, India 3.23 percent, Pakistan 4 percent and Sri Lanka 6.40 in 2011-12 [World Bank (2013)]. While in the same year, exports showed growth rate of 18.55 percent in Bangladesh, 9.15 percent in India, -6.44 percent in Pakistan and 5.58 percent in Sri Lanka [World Bank (2013)]. It is evident that higher export growth rate is associated with high GDP growth in Bangladesh and low export growth rate of Pakistan and India result in lower GDP growth.

To ensure a sustainable growth of exports, factors determining the export performance of a country need to be identified and then policies need to be framed and implemented accordingly. According to Goldstein and Khan (1985) export supply was found to be determined by productive capacity, relative prices of exports and variable cost of production.

The traditional factors discussed above were suitable in explaining the export performance initially but with changing economic scenarios globally, factors determining the export decisions have evolved too in the last two decades. After the 1980s, the South Asian economies started opening up their economies and this liberalization process caught pace in the 1990s. The lowering of trade barriers and increased openness was meant to facilitate trade and subsequently the export performance of the economies. Also, countries require raw materials imports and technological innovation to produce better finished goods and expand exports, the liberalization process was meant specifically to reduce the restriction on such imports which in turn would facilitate the exports.

Although, trade reform policies were meant to support the export growth process but the South Asian economies continued to show fluctuating export performance over the years, which had resulted in being a hindrance in growth stability of these developing economies. The fluctuations in exports supply of these South Asian economies can also

be attributed to the domestic factors such as deteriorating law and order, increased energy crisis and corruption.

According to the latest reports, Pakistan faces a shortfall of 4000-5000 MW of electricity generation and faces the additional pressure of diminishing fuel reserves and almost exhausted gas reserves [GOP (2013)]. In India power shortages peaked in December with the country facing a shortfall of 5,547 MW in December 2013, which was attributed to decreased hydel and wind generation and increased load (GOI, 2014); while Bangladesh was facing a power shortfall of 0.0253 Quadrillion BTU in 2011 as the gas consumption skyrockets and rural energy crisis worsens [EIA (2012)]. Sri Lanka is the only South Asian nation that is at par with the other developed economies at least in the context of population's access to electricity but it faced pressure due to increased oil prices and lower hydel generation and thus encountered an energy shortfall of 0.0157 Quadrillion BTU in 2011[EIA, (2012)].

Besides, the energy crisis, another hindrance to the effective implementation of export facilitating policies was higher level of corruption prevailing in the South Asian region. According to the WDAR (2011) out of 180 countries, in terms of corruption levels prevailing; Sri Lanka was ranked 66, India 75, Bangladesh 93 and Pakistan 106. While, Corruption Perception Index (CPI) score (ranging from 0 (highly corrupt) -10 (very clean)) for these countries in 2010 was; India 3.3, Sri Lanka 3.2, Bangladesh 2.4 and Pakistan 2.3. These alarming corruption levels arose because of lack of clear rules, opportunity for public officials to abuse power, low income levels in these economies [Bhargava (2005)].

Various studies have been carried out in order to determine the factors impacting the export decisions using traditional variables [see for instance Goldstein and Khan (1985); Faini (1994); Prasad (2000); and Utkulu, *et al.* (2004)]. In contrast, recent research had not only focused on the traditional factors of export supply functions but also considers the trade reform, import compression and technological innovation (see for instance Utkulu, *et al.* 2004; Khan and Knight, 1988), and Lapp, *et al.*, (1995)) as factors determining the export supply decisions.

Similarly, Prasad (2000) showed that exports in case of Fiji depend on relative prices of exports, trading partners' income and agriculture supply shocks while Ahmed and Said (2012) that corruption and unfriendly business environment can have a significantly negative impact on export growth of firms that have access to external finance in South Asian economies. Our study extends the model of Utkulu, *et al.* (2004) and adds to the already existing literature by examining corruption and energy crisis as the new factors determining the export supply decisions of the selected South Asian economies of Bangladesh, India, Sri Lanka and Pakistan for the period of 1984-2016.

5.2 Overview of South Asian Economies

South Asia refers to the existing political entities of the Indian Subcontinent and connected islands, including states of India, Pakistan, Bangladesh, Nepal, Bhutan, and Sri Lanka. South Asia has shown good GDP growth pattern in recent years and has grown at 5.6 per cent in the decade of the 1990s and was last recorded at 6.59 per cent in 2010 [World Bank (2013)]. This growth rate of South Asian economies is better than low income countries but slower than the East Asian economies [Hussain (2004)].

Trade policy environment has changed dramatically in South Asian economies after the 1970s. Before that time, like rest of the developing economies, South Asian economies had virtually closed economic policies with focus on import substitution and industrialization which was meant to ensure the development of domestic industries but unfortunately resulted in economic inefficiencies in the country [Bhagwati and Srinivasan (1975)]. This led to a movement towards export-oriented industrialization and economic liberalization throughout the world in the late 1970s and resulted in making the economies efficient with increased competition. South Asian economies also started opening up their markets in the early 1980s and witnessed an increase in investment inflows as the efficiency improved and development process continued due to increased growth rates in the region [Palit (2006)].

Following section explains the trends and policies regarding trade especially exports of selected South Asian economies of India,

Pakistan, Sri Lanka and Bangladesh and their impact on their economies.

5.2.1 Bangladesh

Trade and export in Bangladesh fell in the post-independence scenario (1971) as the economy suffered severe losses and export-GDP ratio deteriorated to very low levels till the later part of 1980s. Bangladesh had a closed economy till the mid-1980s but it announced major policy reforms and measures to liberalize its economy under the auspices of IMF and the World Bank in the late eighties [Sahoo (2006)]. In the 1990s, Bangladesh liberalized industrial and trade policy, removed performance standards and allowed foreign-owned joint ventures in the country that improved the investment policy to a greater extent. This led to the improvement in export growth rates and export-GDP ratio had shown a rising trend. The export performance of Bangladesh in the 1990s was so good that it overshadowed the economic growth in the same period.

Bangladesh had emerged as a major exporter of non-agricultural goods especially readymade garments which account for 77 percent of Bangladesh exports of merchandise in 2002 [BoB (2003)]. Export growth rates increased to 13.99 percent in 2005 and 21.45 percent in 2006. Bangladesh's top target markets include EU and U.S., which had resulted in its vulnerability to global financial crisis and also reduced its exports' growth rate to 6.2 percent in 2012 in contrast to 39.2 percent of 2011. This fall in growth was due to the decreased garment demand from U.S. and EU to 6.6 percent while it was 43 percent in 2011.

5.2.2 India

At the time of independence India had a mix economy with combined features of both socialism and capitalism which caused the dominance of inward-looking policies with focus on import substitution which continued till 1980s when India ended up being the most closed economy of the world. Such trade policies of India resulted in exports playing very little role in international market.

The balance of payments crisis of 1991 led India to open up its economy for the first time with a comprehensive effort towards stabilizing economy, controlling monetary policy and improving the rupee convertibility was launched [Chadha, *et al*. (1997)]. The Share of exports in GDP of India increased from 7.13 percent in the 1990s to 23.48 percent in 2008 [Ramdasi (2010)].

India's exports showed negative growth rate of 2.33 percent in 1997 due to the East Asian crisis. Second impediment in its export performance was faced in 2001-02 due to US's semi-recession episode as it is one of the major trading partners of India. The next setback was faced in 2008 due to the global financial crisis in that year with the negative growth in exports of 2.9 percent in 2008-09 [GOI (2013)].

Despite the popular perception of growing contribution of service sectors in exports, exports of manufacture sector continue to dominate India's exports. Indian agricultural exports were the major contributor in the initial years of independence but the industrialization process in the same years resulted in a shift towards the manufactured exports. Manufacturing exports are the largest share contributor to Indian exports as its share had increased from 50 percent in 1985 to above 64 percent in 2009.

5.2.3 Pakistan

In Pakistan, trade policy had always been guided by the economic and political setting of the country. Besides focusing on industrial development in the 1950s and 1960s, policies in that era also focused on import substitution while various incentives like tax rebates and exemptions, etc., were offered on exports which resulted in large export volumes with exports showing a growth rate of 16.19 percent in the 1960s. With the nationalization policies and dismal performance of the newly nationalized industries Pakistan's exports fell to 10.31 per cent in the 1970s.

Due to increased economic pressures and globalization forces at work, Pakistan initiated its trade reform process in the late 1980s and its intensity increased in the first half of the 1990s. Thorough liberalization programs started in 1996-97 and wide ranging reforms started in

agricultural sector and Government reduced average tariffs in all sectors to 20.4 percent 2001-02 as compared to 56 percent in 1993/94. But the export performance of Pakistan remained dismal in those years with an average growth of 3 percent annually because of imposition of sanctions on Pakistan economy.

Although Pakistan's trade had remained resilient to global crisis of 2002 and 2008 but the growth of exports had been fluctuating erratically for the past two decades because of socio-economic and political problems in the domestic market. The issues of politics, lack of infrastructure and a limited export base that had resulted in heavy reliance of export growth on fewer products had resulted in worsening conditions of exports [Alam (2011)]. Also, Pakistani exports were also faced with the issue of compliance with international production laws like labor conditions maintenance, lack of product and market diversification, etc.

5.2.4 Sri Lanka

Ever since its liberalization reforms, Sri Lanka was the first economy of South Asia to open up its trade and move away from inward-looking policies that had been the trademark of this economy since its creation. Such trade liberalization policies which included opening up of trade, elimination of administrative controls on domestic prices, lowering of food subsidies and opening up of closed off sectors to private investors [Pursell and Ahsan (2011)].

Exports responded very well to these liberalization policies especially the manufactured goods export supply showed increased growth instantaneously of around 20 percent during 1976-1984. This growth rate slowed immediately in next five years and then increased after 1989 to around 16 percent. During this time period (1989-2000) industrial exports showed growth from 10 percent to almost a third of total exports with garments exports accounting for 65 percent of total manufactured exports in 2000. During this period tariff rates continued to fall in the economy which supported the export growth process.

The increasing trend in export growth was hindered after 2000 as the 40 percent surcharge was imposed on custom duties as the Govern-

ment succumbed to the opposition to the liberal policies. Also, the economic conditions deteriorated with the worsening law and order situations domestically and because of these economic and opposition pressures, import policies continued to become more restrictive between 2001-04 as the liberal stance of government reverted to import substitutive policies especially in case of manufacturing and agricultural sectors. These protectionist policies strengthened and continued during 2007-09 and are still continuing and this had resulted in decline in exports as a share of GDP in the economy over this period as well as in global exports [Kelegama (2013)].

Analysis of the export policies implemented by the South Asian economies shows clearly that although much attention is paid to the trade related policies in the form of trade liberalization and export promotion policies but exports growth rate had shown a decline over the last three decades. These unfavorable fluctuations in exports growth rate need to be examined and the factors that are the reason behind this decreasing trend need to be determined. Thus, the effect of not only the basic factors like productive capacity, export prices are needed to be examined but the effect of new factors like exchange rate fluctuations, trade reforms, technological innovation, increasing energy crisis in the region and rampant corrupt activities need to be considered too in determining the export performance.

5.3 Theoretical Framework

Measurement of export performance studies had always paid special attention to the model specification and as a result of this general consensus had been achieved on empirical form of demand and supply function for exports. The customary approach to measure the supply side determinants of exports is the “imperfect substitute model” assuming that neither the imports nor exports are perfect substitutes of domestic goods in a country [Goldstein and Khan (1985)]. Based on this assumption, imperfect substitute model shows that in the long run, supply of exports from a country depends on the productive capacity, input prices and relative price of the exports, i.e., export price relative to

domestic market prices. Thus, long-run general form export supply function is:

$$X^s = f\left(\frac{P_x}{P_d}, VC, K\right) \quad \ldots (1)$$

where, X^s shows the exports supply volume that depends positively on relative export price (Px/Pd), production capacity (K) and negatively on input prices (VC) [Goldstein and Khan (1985)]. The model in Equ. (1) is the standard export supply function used in many empirical researches carried out so far.

Several researchers have extended the standard export supply model in different dimensions like Utkulu, *et al.* (2004) extended the traditional export model to estimate the impact of trade reform *(TR)*, i.e., measures to reduce anti-export bias on the export supply in case of Turkey along with the traditional variables used in Equ. (1). This extended model of export supply also included import compression factor *(IC)* and technological innovation *(TI)*.

$$X_s = f\left(\frac{P_x}{P_d}, VC, K, TR, IC, TI\right) \quad \ldots (2)$$

Trade reform is described in the sense of more openness and a movement towards trade liberalization and a reduction in anti-export bias in policies and tariff levels in the country that results in increased export supply. Trade reform variable proxied by trade reform dummy as well as trade openness (which is calculated by taking ratio of sum of imports and exports with the GDP of the economy) is expected to show a positive impact on export supply.

With the increased trade liberalization it is expected that Government will decrease the tariff and non-tariff barriers, i.e., quotas, licensing, etc., avoid engaging in activities like deflation and currency depreciation that discourage imports and result in import compression. Thus, import compression decreases as the tariff and non-tariff barriers (that result in import compression) fall as a result of trade liberalization. Import compression can adversely affect export performance of a country as the export supply depends on the availability of imported inputs [Khan and Knight (1988) and Zia and Mahmood (2013)]. Thus,

decreased import compression will result in strong export supply response and expected to increase the export supply.

Technological innovation is the ability of a country to use new ideas to develop new products through better and improved processes and transfer of knowledge this thus plays a key role in trade. Increased technological innovation fosters international trade among all countries and results in increased export supply [Márquez-Ramos and Martínez-Zarzoso (2010)].

5.4 Empirical Model

With the continuously changing environment in the domestic and international trade the factors effecting trade keep on evolving. In the present scenario of the South Asian economies, besides trade reform economy, these economies also face the domestic pressures like depreciated exchange rates, worsening energy crisis *(EN)* and corruption situation (*Cor*). Thus, in our opinion, the extended model in Equ. (2) needs to be further augmented for the case of South Asia for the following variables:

$$X^s = f\left(\frac{P_x}{P_d}, VC, K, TR, IC, TI, ER, Cor, EN\right) \quad \ldots (3)$$

Since a country's trade depends on the international markets and because of this exchange rate of a country plays a crucial role in determining the exports as well imports it has. This dependence has increased manifold as the world moved towards free trade and the goods flow has become more influenced by the shifting world demand and currency fluxes. To address this currency fluctuations factor, exchange rate (*ER*) was incorporated and it is measured by the yearly average of official exchange rate. Export performance of a country is hindered by the corrupt activities and the level of corruption prevalent in the country as the country specific frictions like corruption in the customs valuation and finance sector, etc., act as a discouraging factor for exporters resulting in decreased export supply from the country [Ahmed and Said (2012)]. Besides the corrupt practices at Government level, exporters themselves indulge in corrupt activities like exports misinvoicing with

the connivance of government officials in order to extract high duty drawbacks and to take illegal money abroad [Mahmood and Nazli, (1999) and Mahmood and Azhar (2001)]. Corruption variable is very complex and difficult to measure. Our study used the Corruption indicator (*Cor*), which specifies the average value of corruption in the country between the ranges of 0-6 with lower score indicating the higher levels of corruption. Corruption is expected to be negatively affecting the exports of the country.

Same is the case with the energy crisis, with prevalent energy crisis as industries shutdown with energy supply diverted from this to meet the needs of domestic sector. Energy or power is one of the major factors of production in any industry and with the increased GDP and population growth the demand for energy is increasing both at consumer and producer levels. To cater this demand, supply of energy needs to increase with the same pace, which unfortunately failed to happen in case of the South Asian economies. The available sources of energy are very expensive resulting in the cost-ineffectiveness of the products produced and reduced competitiveness of exports due to these shortcomings in domestic facilities which results in adverse effect on export supply. This inadequate supply of energy to the industries had resulted in a failure to generate sufficient exportable surpluses. Thus, energy shortage measured as the difference between potential and actual energy consumption will negatively impact the supply from the exporting industries.

So the augmented-exports supply model introduced by us, including all the above variables is specified by:

$$X^s = \beta_o + \beta_1\left(\frac{P_x}{P_d}\right) + \beta_2 VC + \beta_3 K + \beta_4 TR + \beta_5 IC + \beta_6 TI + \beta_7 ER + \beta_8 Cor + \beta_9 EN + \varepsilon_t \quad \ldots (4)$$

In our opinion, estimating this augmented model in Equ. (4) will help us determine the impact of these variables on the export supply of the South Asian economies in light of the prevailing domestic conditions in these economies. It will thus have important implications for the policy as it will help policy makers to assess that the extensive trade reforms that had been carried out since the 1980s had delivered the desired impact on trade and exports or not. Also, the impact of current

conditions of the domestic market (like corruption and energy crisis) on exports supply will be determined and policies can be made to deal with them accordingly. Data sources and variable explanation are available in Appendix A.

5.5 Results Discussion

The data being used in our research of export supply determinants of South Asian economies included the data for selected four South Asian countries (India, Bangladesh, Pakistan and Sri Lanka) from the year 1984-2016. Hence, the total pooled observations in our balanced panel were 132. This section includes the discussion the empirical findings of the study.

Identification of a long-run relationship between export supply and explanatory variables requires that time series properties of these variables be analyzed first. As the cointegration tests can be performed only when the panels are non-stationary and to test the stationarity of the series, panel unit root test (Levin, *et al.*, 2002) were run based on the null hypothesis of unit root. Results reported in Table 5.1 show that all variables were found to be accepting the null of common unit process at level but rejected the null hypothesis at first difference and thus we concluded that all variables were found to be stationary at first difference, i.e., *I(1).*

Table 5.1. Levin, Lin & Chu Test for Stationarity

Variable	Level		First Difference		Order of Integration
	Stat.	Prob.	Stat.	Prob.[1]	
EXP	4.965	1.0000	-3.836	0.0001***	*I(1)*
K	3.150	0.9949	-9.634	0.0000***	*I(1)*
P_x/P_d	-0.109	0.5437	-4.449	0.0000***	*I(1)*
VC	0.459	0.6772	-5.996	0.0000***	*I(1)*
TI	-0.773	0.2198	-2.518	0.0059***	*I(1)*
IC	0.064	0.5258	-6.310	0.0000***	*I(1)*
ER	0.8035	0.7892	-4.238	0.0000***	*I(1)*
COR	-0.769	0.2208	-6.244	0.0000***	*I(1)*
EN	-0.059	0.4764	-6.912	0.0000***	*I(1)*

[1] *** shows statistical significance at 1%.

To identify whether the *I(1)* variables give spurious regression or a long run relationship exists, Kao (1999) panel cointegration test was run based on the null hypothesis of no cointegration. Table 5.2 shows that the null hypothesis of no cointegration is rejected and there exists a long run relationship between the variables. ADF-Fisher unit root test results are presented in Appendix B and Im, Pesaran and shin unit root test in Appendix C.

Based on the Kao cointegration test, we had established that there exists a linear combination that results in a long-run relationship between the included explanatory variables and independent variable. In view of

Table 5.2. Kao Residual Cointegration Test Estimation

Included Observation: 132				
Null Hypothesis: No Cointegration				
Variable	t-statistic		Prob.	
ADF	-3.81429		0.0001***	
Augmented Dickey-Fuller Test Equation (Dep. Variable: D(RESID)				
Variable	Co-efficient	Std. Error	t-statistic	Prob.
RESID (-1)	-0.2835	0.058816	-4.8205	0.0000***

this, OLS estimators will be biased and inconsistent if applied to a co-integrated panel and thus an alternative method needs to be adopted (Pedroni cointegration test in Appendix D). For this reason, we run panel Fully Modified Ordinary Least Square (FMOLS) developed by [Pedroni (2000)]. FMOLS developed by Pedroni (1996) can be used, which uses a correction approach to deal with the nuisance parameters and thus gives the long-run coefficients for the estimated model free of endogeneity and serial correlation. The major advantage of FMOLS is that it allows for estimation of common cointegration vectors while allowing for hetero-geneity both across time and cross-sections. Thus, to obtain long-run impact of the variables free of serial correlation, we use FMOLS estima-tions.

$$\hat{\beta}_{FM} = [\sum_{i=1}^{N}\sum_{t=1}^{T}(x_{it} - \overline{x_i})']^{-1}[\sum_{i=1}^{N}(\sum_{t=1}^{T}(x_{it} - \overline{x_i})\hat{y}_{it}^{+} + T\hat{\Delta}_{\varepsilon\mu}^{+})]$$

where, $\hat{\Delta}^{+}_{\xi\mu}$ is correction term for serial correction and $\hat{y}^{+}_{it}$ is the variable that is transformed to account for endogenity. These estimations not only generate the consistent estimates of the parameters even in small samples but it also helps to control for likely endogeneity and serial correlation.

The estimations for Classical export supply model of Goldstein and Khan (1985) in Equ. (1) is given in Appendix F and it shows that all variables are significantly affecting the export supply in case of the selected South Asian economies while same was observed for the variables of model of Utkulu, *et al.* (2004) in Equ. (2) in Appendix G.

Adjusted R-squared value obtained clearly showed that high explanatory power of the independent variables, i.e., they can explain 99.001 percent[1] of export supply of the selective South Asian economies (Table 5.3). Also low Sum square residuals and Standard deviation values indicated that our model is the best fit and helped explain the maximum variation in export supply from the South Asian region. Model is also adjusted for serial correlation and possible endogeneity problem because of FMOLS estimations. Cross-sectional dependence test for the FMOLS is presented in Appendix E.

Table 5.3. Overall Model Fitness Statistics

R-squared	0.990018	Mean dependent var.	23.46395
Adjusted R-squared	0.988976	S.D. dependent var.	1.487287
S.E. of regression	0.156157	Sum squared resid.	2.804288
Durbin-Watson stat	0.513416	Long-run var.	0.003319

Our estimations were carried out while accounting for heterogeneous long-run coefficients and results clearly show that export supply function in case of the selective South Asian economies is significantly dependent on the variables included in the model. Productive capacity, defined as the potential output that the economy can produce and measured by quadratic detrending of the simple log of actual output (GDP), is found to be positively impacting the export supply in the South Asian economies as the one percent increase in productive capacity of a nation will result in 2.64 percent increase in the export supply of the nation (Table 5.4). These results corroborate with the findings of the

Dunlevy (1980) in the case of the United States and the United Kingdom, and Faini (1994) in case of Turkey. The significance and impact also support the findings of Goldstein and Khan (1985) and Utkulu, *et al.* (2004).

Relative prices, measured as the ratio of export prices to the GDP deflator, also reveals a positive relationship, which show that as the relative export prices increase by 1 percent, the export supply of the South Asian economies also increases by 0.62 percent. This change in export supply as a result of change in relative export prices can be interpreted as the price elasticity of exports and as can be seen that 1 percent change in the relative prices had brought on less than one percent change in export supply which shows that export supply in the selected South Asia economies is inelastic. The results in the case of relative prices *(RP)* are consistent with the studies done by Goldstein and Khan (1985), Faini (1994), and Zada, *et al.* (2011).

Table 5.4. FMOLS Estimations Results

Dependent variable: LOG(EXP)
Method: Panel Fully Modified Ordinary Least Square
Sample (adjusted): 1984-2016 Periods Included: 28 Cross-sections: 4
Total observations: 128

Variable	Co-efficient	Elasticity[2]	Std. Error	t-statistic	Prob.[3]
K	0.103556	2.64288	0.014472	116.3226	0.0000***
P_x/P_d	0.004316	0.624231	0.0000656	65.7904	0.0000***
VC	-0.002015	-0.165143	0.000149	-13.55034	0.0000***
TR	0.017868	1.460476	0.000158	113.1654	0.0000***
TI	0.000726	0.060244	0.0000297	24.49124	0.0000***
IC	0.001635	0.1812234	6.92E-05	-23.62011	0.0000**
ER	0.008331	0.461912	0.000145	57.5586	0.0000***
EN	-0.266041	0.303286	0.005834	-45.60554	0.0000***
COR	0.107569	0.247591	0.003947	27.25256	0.0000***
	Cross-section Dummy:				
PAK-C	-18.56742				
IND-C	-20.85049				
BANG-C	-18.32525				
SRI-C	-17.75825				

A decrease of one unit in the variable cost will increase the export supply by 0.00201 units, alternatively one percent decrease in variable cost will increase export supply by 0.165 percent. As the variable cost increase will result in increase in the cost of production of the exportable commodities, so its competitiveness will fall decreased export supply. Exchange rate of the South Asian nations was found to be affecting positively the exports supply, i.e., one unit increase in exchange rate had resulted in 0.008 units increase in export supply which supports the theory that exchange rate depreciations results in increase in export competitiveness as the exports become cheaper and thus their demand increases.

Trade reform is described in the sense of more openness, a movement towards trade liberalization, i.e., a reduction in anti-export bias and tariff levels in policies which will ultimately lead to an increased export supply. Trade reform variable was measured by trade openness (which is calculated by taking ratio of sum of imports and exports with the GDP of the economy) is found to be showing a positive impact on export supply. The trade reform of these South Asian economies was found to be significantly impacting export supply as one percent of increased trade reforms will increase the export supply by 1.46 percent. Trade reform process not only includes decreased tariff but also radical cuts in import licensing schemes, abolishing state enterprise control over import of key goods, reduction in quantitative restrictions, simplifying the tariff structures, and removal of export taxes. All these measures will ultimately lead to facilitating exports and export-related industries which will positively impact the export performance [Pursell and Ahsan (2011)]. These results support the findings of Thirwall (2000) and especially Utkulu, *et al.* (2004).

Exports from a country are also dependent on the imports coming into it as the production of exportable goods may be dependent on the imported raw materials. Increased trade reforms and openness of the economy will result in the fall of import quotas and tariffs thus decreasing the import compression effects and thus will result in increased supply of raw materials and thus increased export supply. This effect is evident in Table 5.4 as the import compression variable showed

significant positive impact which shows that a unit decrease in import compression will result in increased imports and which in turn will increase the export supply by 0.016 percent. Thus the impact of import compression reduction is significant and same was observed in the case of Turkey by Utkulu, *et al.*, (2004). These results support the findings of Khan and Knight (1988), Khan, *et al.*, (1995) and Utkulu, *et al.* (2004). Thus, exports from the South Asian economies are dependent on their own natural resources and the contribution of the imports is small thus the size of coefficient was found to be significant but small in determining the export supply.

Similarly, technological innovation in a country will result in increased capability of the country to produce innovative products that are demanded vastly and thus increases export supply. FDI inflows into the economy are not only a source of technology transfer but also result in knowledge transfer through knowledge about "production methods, product designs, etc." That will improve the exports production and thus increase the supply of exports. This effect is shown by the significantly positive sign of technological innovation variable *(TI)* and one percent increase in technological innovation will increase export supply by 0.06 percent from South Asia. These findings support the research results of Barrell and Pomerantz (2007), Utkulu *et al.* (2004) and Márquez-Ramos and Martínez-Zarzoso (2010).

Export performance of a country is hindered by the corrupt activities and the level of corruption prevalent in the country as the country specific frictions like corruption in the customs valuation and finance sector, etc., act as a discouraging factor for exporters resulting in decreased export supply from the country. The coefficient of the corruption variable shows a significantly positive sign which in the case of corruption index developed by ICRG means that the lower the value of corruption index variable, the higher the corruption level in the country which will result in the lower export supply. Thus the positive sign in the case of corruption variable here shows the inverse relation between the export supply and corruption. Thus, one percent fall in corruption will increase export supply by 0.24 percent. These results

support the findings of the research conducted by Tanzi (1998) and Ahmed and Said (2012).

Similarly, the energy crisis prevailing in the selected South Asian economies is expected to inversely affect the export supply in the region as industries shutdown due to energy supply diverted to meet the needs of domestic sector. The available sources of energy are very expensive resulting in the increased cost of production and reduced competitiveness of exports. Due to these shortcomings in domestic facilities, adverse effect on export supply is seen. Energy crisis, measured by the difference in energy demanded and supplied, thus showed a negative impact on export supply as an increase by one percent in the energy crisis resulted in a fall of export supply by 0.303 units. These results support the survey-based findings of Amjad, *et al.* (2012).

5.6 Conclusion and Policy Implications

Based on the empirical model and by employing panel data techniques we have clear empirical evidence that the imperfect substitute model variables of productive capacity, variable cost and relative prices have significant effects on the export supply performance of the South Asian nations selected for this research. Export supply is found to be positively affected by the increased productive capacity, relative export prices and exchange rate while the variable cost increase will reduce the export supply from these economies.

The extended model including trade reform variables proxied as trade openness show significantly positive impact on export supply clearly indicating that trade reform process works in the case of South Asian economies. Also, the variables of import compression and technological innovation show significant effect, on export supply in South Asia.

Our extended model also had the variables of corruption and energy supply which are found to be significant and thus influence the export supply performance of these economies. The deteriorating situation of the energy sector and increased corruption levels have proven to be acting as the significantly deterring variables when it came to export supply decisions.

The results discussed above show that South Asian governments need to pay attention to the capacity building that will help facilitate the export supply growth. Also as the increased trade reforms and technological innovation had resulted in the increased export supply so the South Asian economies need to continue the trade reform process. Although with the onset of trade liberalization process in the late 1980s, a marked shift had been seen from import substitution to export promotion that had resulted in removal of protective duties which promotes competition. However, in the existing trade policies of these selected South Asian; trade regimes still have anti-export biases. Thus there is a need to devise such policies that aims at removing anti-export bias in policies to promote exports. Also, reduction of tariff and quantitative restrictions on all imports had resulted in imports outstripping the exports had not only resulted in BoP crisis but also inhibited manufacturing sectors' performance in these countries which had affected the export performance. Thus, for a successful exporter-friendly atmosphere, these countries need to adopt a more controlled liberalization of imports by ensuring freer imports to exporting industries through special export processing zones.

Similarly, technological innovation and knowledge transfer, through FDI inflows, will not only impact the exporting industries by improving production process but will also help in bridging the technology gap in the whole economy increasing productivity of the economy as a whole. Thus policies aimed at simplifying tax structures, flexible labor markets, improved infrastructure, lowering corruption and security conditions in these economies will help attract the FDI investors and will subsequently improve the performance of the economy especially exports.

Corruption variables are found to be negatively impacting the export supply performance and in order to ensure exporters' confidence and safety; these economies need to reform their policies regarding corruption besides having encouraging macroeconomic environment. Their foremost need is to improve the governance mechanism that will help ensure corruption control. Exports valuation process determining the duty drawback rates, also provide for a lot of corruption opport-

unities that increase the export transaction cost further. Simplification of the trade procedures and processes will not only reduce the corruption opportunities but also reduce the transaction costs resulting in increased competitiveness of exports.

Corrective measures on the part of government and development of proper ethical and business standards for public and private sectors will result in reducing discretionary powers and their blatant use by public officials and lack of transparency in the decision-making process of the government which will ensure reduced opportunities for corruption and will restore the exporters' confidence ensuring less restrictions and more exports.

Similarly, energy crisis that is affecting the production process needs to be dealt with by either importing electricity from regional surplus countries or by exploring and developing energy resources domestically that will help reduce the load shedding for the industries and thus ensure a smooth production process. This will not only help facilitate the export supply but also reinforce the exporters' confidence in the government abilities to address their problems and will help attract new investors in the region too.

Appendix

A. Summary of Data Variables and Sources

Variable	Abbreviated as	Proxied as	Data Source
Export Supply	X^s	Exports of Goods and Services	WDI, World Bank.
Productive Capacity	K	Potential output calculated by quadratic de-trending of the GDP	WDI, World Bank.
Relative Prices	P_x/P_d	Ratio of Unit value of exports to domestic price (GDP deflator)	IFS, IMF.
Variable Cost	VC	Average of monthly wage rate per worker in each year	WDI, World Bank.
Exchange Rate	ER	Yearly average of official exchange rate	WDI, World Bank.
Trade Reform	TR	1) Trade openness: ratio of sum of exports and imports with GDP	WDI. World Bank.
		2) Trade reform Dummy with score 1 for significant reform.	Review of Trade policies of respective Countries.

Import Compression	*IC*	Import of Raw Materials and Capital Goods.	ComTrade Data. United Economies.
Technological Innovation	*TI*	FDI inflows into the economy	WDI, World Bank.
Corruption	*Cor*	Corruption Index (0-6)	ICRG.
Energy Crisis	*EN*	Measured by quadratic de-trending of Net Primary Consumption of energy and then taking the gap between potential and actual consumption of energy	U.S. Energy Information Agency.

B. ADF-Fisher Unit Root Test

Variable	Level		First Difference		Order of Integration
	Stat.	Prob.	Stat.	Prob.[4]	
EXP	10.288	0.2454	28.918	0.0003***	*I(1)*
K	12.943	0.1138	20.322	0.0092***	*I(1)*
P_x/P_d	8.9111	0.3498	71.066	0.0000***	*I(1)*
VC	4.5769	0.8017	84.546	0.0000***	*I(1)*
ER	0.6703	0.9996	50.137	0.0000***	*I(1)*
TR	3.4538	0.9027	43.563	0.0000***	*I(1)*
TI	6.8939	0.5481	86.251	0.0000***	*I(1)*
IC	7.6531	0.4681	45.689	0.0000***	*I(1)*
COR	10.866	0.2094	22.0016	0.0049***	*I(1)*
EN	7.2403	0.5109	20.6638	0.0081***	*I(1)*

C. Im, Pesaran and Shin Unit Root Test

Variable	Level		First Difference		Order of Integration
	Stat.	Prob.	Stat.	Prob.[5]	
EXP	0.7132	0.2378	2.73261	0.0031***	*I(1)*
K	0.4054	0.6574	-1.5756	0.0576**	*I(1)*
P_x/P_d	0.3763	0.6467	-9.0683	0.0000***	*I(1)*
VC	0.9436	0.8273	-10.4378	0.0000***	*I(1)*
ER	3.2250	0.9994	-6.14118	0.0000***	*I(1)*
TR	1.2535	0.8950	-5.45880	0.0000***	*I(1)*
TI	-1.0585	0.1449	-7.2547	0.0000***	*I(1)*
IC	0.0726	0.5289	-5.5965	0.0000***	*I(1)*
COR	-0.9009	0.1838	-2.8554	0.0021***	*I(1)*
EN	-0.0844	0.4663	-2.7711	0.0028***	*I(1)*

D. Pedroni Cointegration Test

Sample (adjusted): 1984-2016	Periods Included: 32	Cross-sections: 4
Total observations: 132		
Null Hypothesis: no cointegration		
	Statistic	Prob,
Panel v-statistic	1.861140	0.0314***
Panel PP-statistic	-1.685853	0.0459**
Panel-ADF statistic	-1.85146	0.0321**

E. Cross-sectional Dependence Test for FMOLS Residuals

Sample (adjusted): 1984-2016	Periods Included: 32	Cross-sections: 4
Total observations: 128		
Null Hypothesis: no cross-section dependence (correlation)		
	Statistic	Prob,
Breusch-Pagan LM	12.52191	0.0513*
Pesaran scaled LM	1.882714	0.0597*
Bias-corrected scaled LM	1.818198	0.0690*
Pesaran CD	1.918780	0.0550*

F. FMOLS Estimation (Classical Export Supply Model)

Dependent variable: LOG(EXP)				
Method: Panel Fully Modified Ordinary Least Square				
Sample (adjusted): 1984-2016	Periods Included: 32	Cross-sections: 4		
Total observations: 112				
Variable	Co-efficient	Std. Error	t-stat	Prob.
K	1.911911	0.027585	69.30907	0.0000***
RP	0.130530	0.015093	8.648260	0.0000***
VC	-0.000624	0.000365	-1.70767	0.0907*
Cross-section Dummy:				
PAK-C	-25.17456			
IND-C	-27.01750			
BANG-C	-24.54473			
SRI-C	-23.02506			
R-squared	0.981040	Mean Dep var	23.18015	
Adjusted R-squared	0.979957	S.D. Dep var	1.266011	
S.E. of regression	0.179233	Sum sq. resid	3.373068	
Durbin-Watson stat	0.266671	Long-run var	0.015269	

G. FMOLS Estimations (Extended Model from Utkulu, *et al.)*

Dependent variable: LOG(EXP)					
Method: Panel Fully Modified Ordinary Least Square					
Sample (adjusted): 1984-2016		Periods Included: 28		Cross-sections: 4	
Total observations: 112					
Variable	Co-efficient	Std. Error	t-stat	Prob.	
K	0.913319	0.001267	720.9147		0.0000***
RP	0.063194	0.007395	8.545798		0.0000***
VC	0.002367	0.000307	7.720391		0.0000***
TR	0.051640	0.014314	3.607730		0.0005***
IC	-0.002331	0.000118	-19.718		0.0000***
TI	0.007828	0.000298	26.25261		0.0000***
Cross-section Dummy:					
PAK-C	-22.652				
IND-C	-24.397				
BANG-C	-22.064				
SRI-C	-20.635				
R-squared	0.981040	Mean Dep var		23.18015	
Adjusted R-squared	0.979957	S.D. Dep var		1.266011	
S.E. of regression	0.179233	Sum sq. resid		3.373068	
Durbin-Watson stat	0.266671	Long-run var		0.015269	

Notes:

1. Although such high R^2 seems unrealistic for panel data analysis but high values were also witnessed in Venables and
Redding (2002), and Fugazza (2004).
2. Conversion to elasticity using formula given by Gujrati (2004) "Basic Econometrics", 4th edition, pp.190. All further percentage conversions are based on this formula.
3. *, ** and *** show statistical significance at 10%, 5% and 1% respectively.
4. *** shows statistical significance at 1%.
5. *** shows statistical significance at 1%,** at 5% and * at 10%

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6. Explaining Trends and Factors Affecting Export Diversification in ASEAN and SAARC Regions

Shabana Noureen[§] and Zafar Mahmood[†]

6.1 Introduction

Developing countries have been experiencing export product concentration. This is mainly because they produce and export raw materials and semi-manufactured products. Whereas, such products, in general, do not face market access problem, they have inelastic demand in foreign markets and their close substitutes are easily available. Finished manufactured products exported by developing countries face high trade barriers in foreign markets. Consequently, exports of these countries have highest concentration upon raw materials and semi-manufactured products. Global experience reveals that countries who have failed to diversify exports have grown slower than those who have executed right policies for export diversification. Moreover, countries facing export concentration are more vulnerable to external shocks [see, De Ferranti, *et al.* (2002), Hausmann, *et al.* (2007), Herzer and Nowak-Lehmann (2006), Lederman and Maloney (2003), and Matthee and Naude (2007)].

Mindful of the negative repercussions, developing countries have been targeting export product diversification as a means to achieve the goals of export expansion and higher per capita income. Besides globalizing their economies, these countries have been striving hard to introduce structural transformation by moving away from exporting primary and intermediate products to export finished products. Consequ-

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ently, they realized higher economic growth as sustained foreign exchange earnings were available. Paradoxically, a non-linear relationship between income and export diversification exists. This is because (at low levels of income) countries tend to export a narrow range of products and are thus exposed to increased volatility in export earnings and terms of trade. This volatility exposure is mitigated through export diversification, which in turn potentially helps them achieve stability in their economic performance. Once countries achieve a certain higher level of income through export diversification, they then start producing differentiated products by internalizing economies of scale. With such transformation, these countries tend to move towards re-concentration in export products. Such products usually have relatively higher elastic demand in international market, which enables countries to expand their economies and achieve higher growth on sustainable basis [see, Carrere, *et al*. (2007), Hesse (2008), Klinger and Lederman (2004), Koren and Tenreyro (2007)].

Export product diversification can be achieved by changing the mix in export products (adding new products or product variety in the existing export basket) or by adding value (quality) to existing export products. In this regard, developing countries have been vigorously introducing reforms. Whereas some of them have been successful, many are meeting with limited success. This is mainly because of lack of clear understanding about the main drivers and patterns of export diversification. Paying attention to the underlying pattern and determinants of export diversification should provide valuable research and policy inputs for active government intervention. Lack of studies at the regional level in the South Asian Association for Regional Cooperation (SAARC) and Association of Southeast Asian Nations (ASEAN) countries motivated us to conduct an in-depth analysis of the pattern and determinants of export product diversification.

Rest of this paper is planned as follows: Section 2 provides a brief overview of SAARC and ASEAN regions; Section 3 presents the theoretical framework; Section 4 presents the empirical model and data sources; in Section 5, empirical results are discussed; and Section 6 concludes the paper with some implications for policy.

6.2 Overview of the SAARC and ASEAN Regions

In terms of population, SAARC is one of the biggest economic blocs in the world. It accommodates 23 percent of the world population. However, it accounts for merely 6 percent of the world GDP and 4 percent of the world trade. Intra-regional trade is hovering around 6 percent. All in all, the region is not very successful in terms of achieving its objectives.

Growth record of the SAARC countries has remained satisfactory despite weak performance in regional and international trade. The SAARC countries grew at an average annual rate of 6.22 percent between 1985 and 2013, whereas the GDP per capita grew at 4.17 percent during the same period. Bhutan experienced the highest growth rate of 7.89 percent during 1985-2013, followed by India 6.56 percent, Bangladesh 5.30 percent, Sri Lanka 5.29 percent, Nepal 4.59 percent and Pakistan 4.49 percent (Table 6.1).

Table 6.1. Economic Indicators of SAARC Countries: 1985-2013

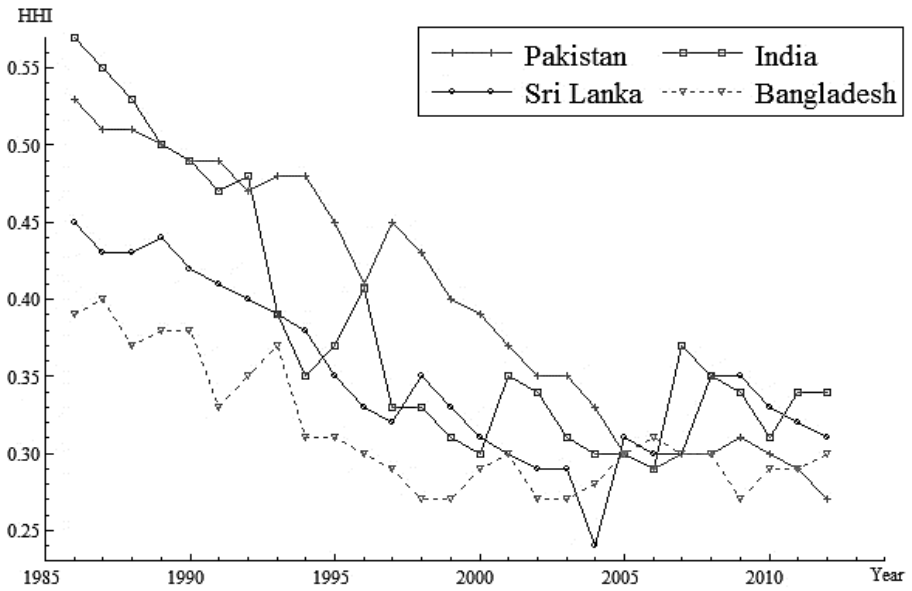
Country	GDP Growth between 1985 and 2013	Exports to GDP Ratio (%)		Imports to GDP Ratio (%)		GDP per Capita Growth between 1985 and 2013
		1985	2013	1985	2013	
Bangladesh	5.30	5.55	19.54	13.23	26.76	3.34
Bhutan	7.89	15.0	40.08	51.1	62.9	6.01
Nepal	4.59	11.53	10.70	19.99	37.51	2.50
India	6.56	5.16	24.81	7.51	28.41	4.72
Pakistan	4.49	10.42	13.23	22.81	19.93	1.98
Sri Lanka	5.29	26.01	22.47	37.97	32.00	4.29
Total SAARC	6.22	6.22	23.16	10.27	27.67	4.17

Source: World Bank (2014).
Note: Afghanistan is a new SAARC member who joined the SAARC in 2007. Due to non-availability of data we have excluded Afghanistan from this analysis.

At the time of the SAARC establishment in 1985, the degree of openness (imports and exports as a percentage of the GDP) of its members was quite low (16.5 percent). This was mainly because the SAARC countries used import substitution industrialization strategy and virtually ignored export promotion. These economies were then branded as non-trading economies. Since the late 1980s, however, almost all the

SAARC countries reformed their industrialization strategies by using not only export promotion and trade liberalization policies but also focused on policies to diversify exports. These policies resulted in a significant rise in the degree of openness from 16.5 percent in 1985 to 50.8 percent in 2013 (Table 6.1). Concomitantly, a significant rise in export product diversification occurred. This can be noted from Table 6.2 and Figure 6.1. Both openness and export diversification have enabled the SAARC countries to stabilize their foreign exchange earnings.

Figure 6.1. Export Diversification Trend for the Selected SAARC Countries: 1986-2012



Source: Based on author's calculation using UNO (2014).

Policies that facilitate export product diversification include tariff protection, subsidies, concessional export credit, technical assistance, and skill and product development. In addition, the SAARC countries introduced more flexible labour laws to assist export firms working in non-traditional industries. They also provided incentives to enhance participation of local firms in global markets. All of them also sought technical assistance from international institutions to diversify trade.

With the implementation of these policy measures, almost all the SAARC countries witnessed a structural transformation in their exports from primary commodities towards manufactured goods. For instance, the share of primary commodities in total exports of Pakistan declined from 45 percent in 1972 to 15 percent in 2013. During the same period, the share of manufactured goods increased from 28 percent to 71 percent (GOP, 2013). Similar trends can be noted for other SAARC countries.

Table 6.2. Export Diversification in Selected SAARC Countries: 1986-2012

Country	1986-1990	1991-2000	2001-2006	2007-2012
Bangladesh	0.384	0.310	0.277	0.267
India	0.528	0.375	0.322	0.338
Pakistan	0.508	0.457	0.332	0.307
Sri-Lanka	0.434	0.353	0.310	0.320
SAARC (Average)	0.464	0.374	0.310	0.308

Source: Based on authors' calculations using United Nations (2014) data set.
Note: Herfindahl index (HHI) is used here to estimate export diversification in selected SAARC countries. HHI values approaching one show complete specialization and zero show complete diversification in exports. For the estimation of HHI, we used annual exports of SAARC countries on the 4-digit level SITC-codes.

Table 6.2 and Figure 6.1 show that export diversification in the SAARC countries has been increasing since the mid-1980s. During 1986-1990, the Herfindahl index (HHI) value for the SAARC countries was 0.464, it fell to 0.374 during 1991-2000 and further down to 0.310 during 2007-2012 (see, Appendix for a detailed discussion on the measurement of export diversification). Fall in HHI shows that there is an increasing trend in export product diversification in the SAARC countries. The table further shows that Bangladesh experienced relatively more diversification than any other SAARC country. Bangladesh recorded a decline in HHI from 0.434 during 1986-1990 to 0.267 during 2007-2012. Whereas, in India HHI declined from 0.528 to 0.340 for the same time period; while Pakistan and Sri Lanka experienced a decline from 0.508 to 0.307 and 0.434 to 0.320, respectively.

The ASEAN countries have a collective population of about 600 million people accounting for 8.8 percent of the global population. In

2012, this region had a combined GDP of US$2.3 trillion. The ASEAN countries are considered a single entity and ranked as the seventh largest economy of the world after China, US, Japan, France, Germany and UK.

Table 6.3 shows that GDP in the ASEAN countries grew at an average annual rate of 5.41 percent between 1980 and 2013, whereas the GDP per capita grew at an annual average rate of 6.93 percent over the same period. The table also reveals acceleration in the GDP growth rates for Singapore and Malaysia at an average annual rate of 6.84 and 6.01 percent, respectively. The two countries are higher growth economies compared with the rest of ASEAN countries. On the other hand, major achievers in the ASEAN region, in terms of the GDP per capita are Thailand and Singapore who recorded growth rates of 4.34 and 4.18 percent, respectively.

All of the ASEAN countries are very open economies by international standards. Most of them experienced a sharp rise in their shares of exports and imports to GDP. This was achieved through the adoption of export orientation, trade liberalization and export diversification policies.

Table 6.3. Economic Indicators of Selected ASEAN Countries: 1980-2013

Country	GDP Growth Rate between 1980 and 2013	Exports to GDP Ratio (%)		Imports to GDP Ratio (%)		GDP Per Capita Growth between 1980 and 2013
		1980	2013	1980	2013	
Indonesia	5.53	34.18	23.74	20.21	25.74	3.76
Malaysia	6.01	56.69	81.68	54.27	72.40	3.51
Philippines	3.45	23.57	27.91	28.47	31.98	1.12
Singapore	6.84	202.05	190.22	208.98	167.51	4.18
Thailand	5.48	24.11	73.57	30.37	70.28	4.34
Total ASEAN	5.41	44.85	65.10	40.93	61.18	3.93

Source: World Bank (2014) and ASEAN (2013).

In the 1970s, the ASEAN countries experienced rapid growth when they shifted their development strategy to export-oriented industrialization. All of them used trade liberalization measures to

diversify their economies. These measures included tax incentives and subsidies to export firms, incentives to attract foreign direct investment, increased public and private investment in export sectors, improved trade facilitation and reduced bureaucratic inefficiencies, bringing down of the domestic costs, and increased infrastructure investment. In addition, they provided manufacturing, financial and communications facilities for multinational firms to promote exports. They also developed labour skills by providing technical education and promoted labour-intensive activities.

With the adoption of above mentioned policies, the share of industrial sector in GDP accelerated in the ASEAN countries between 1970 and 2013: from 19 to 46 percent in Indonesia, from 23 to 43 percent in Thailand and from 27 to 41 percent in Malaysia. As a result of export diversification policies, the export share of machinery and industrial products in the ASEAN countries increased from 20 percent in 1995 to 50 percent in 2010 [Sabhasri, *et al.* (2013)].

Table 6.4 and Figure 6.2 show that export diversification in the ASEAN countries increased since the 1980s. During 1986-1996, export diversification was 0.186; it fell to 0.176 during 1990-2000 and further down to 0.152 during 2007-2012. Fall in HHI shows an increasing trend in export diversification. The table further reveals that Malaysia experienced relatively more diversification in exports than every other ASEAN country. Malaysia recorded a decline from 0.150 during 1986-1990 to 0.128 during 2007-2012. Whereas, in Thailand HHI declined from 0.185 to 0.175 for the same time period; while, Philippines, Singapore and Indonesia recorded a decline from 0.172 to 0.160, 0.192 to 0.156 and 0.230 to 0.14, respectively. Interestingly, Malaysia and Philippines experienced a reversal in export diversification trend after the financial crisis, which lasted till 2000. However, afterwards the reversal in the trend was stemmed.

On the basis of discussion above, it can be concluded that policies of export diversification have enabled the SAARC and ASEAN countries to increase their exports and economic growth. Despite progress achieved by the two regions on account of export diversification, there is still room for improvement in the on-going policies. To understand the exact areas for future policy intervention, a

comprehensive analysis of export diversification is needed. In this regard, this paper examines the determinants of export diversification in both regions so that future policy formulation is guided by the analysis.

Table 6.4. Export Diversification in Selected ASEAN Countries: 1986-2012

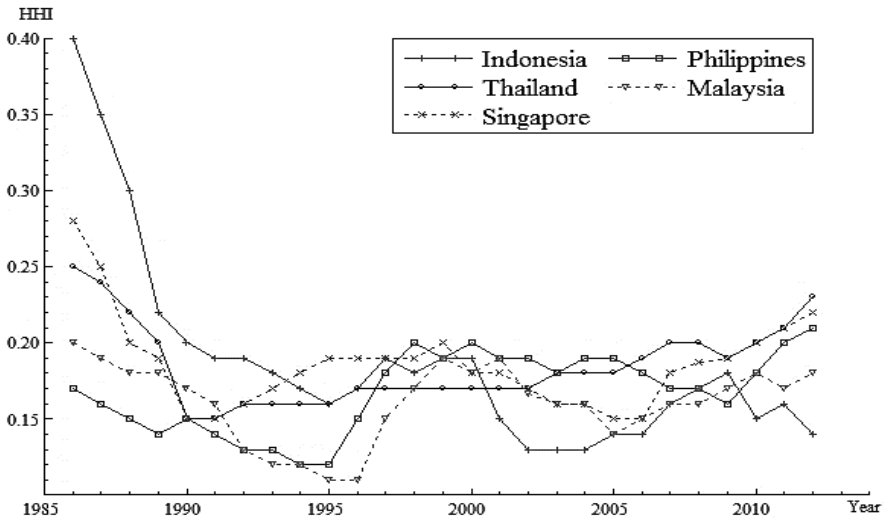
Country	1986-1996	1997-2000	2001-2006	2007-2012
Indonesia	0.230	0.155	0.145	0.140
Malaysia	0.150	0.168	0.159	0.128
Philippines	0.172	0.200	0.187	0.160
Singapore	0.192	0.190	0.174	0.156
Thailand	0.185	0.170	0.176	0.175
ASEAN (Average)	0.186	0.176	0.168	0.152

Source: Based on author's calculation using United Nations (2014) data set.
Note: HHI is used here to estimate export diversification, HHI values approaching one show complete specialization and zero show complete diversification in exports. We considered 5 out of 10 ASEAN countries due to non-availability of complete data.

6.3 Theoretical Framework

Export diversification is one of the oldest concepts in the theory of economic development. Traditional international trade models of Smith (1776), Ricardo (1817), and Heckscher-Ohlin-Samuelson (HOS) argued that countries specialize and export according to their comparative advantage. This idea was challenged by Prebisch (1950) and Singer (1950). Both argued that the specialization in exporting products raises the dependence of developing countries on export of raw materials and agricultural products and import of consumer and manufactured products from developed countries. They argued that income elasticity of demand for primary products is lower as compared to manufactured goods. Consequently, developing countries have been missing the opportunity to grow faster. Thus, they need to diversify their export products to ensure stability and growth in their foreign exchange earnings, as diversification minimizes the risk of price volatility and decline in terms of trade.

Figure 6.2. Export Diversification Trend for Selected ASEAN Countries: 1986-2012



Source: Based on author's calculation using United Nations (2014).

The Prebisch-Singer hypothesis was supported by Carrere, *et al.* (2007) who stated that diversification from primary products is desirable for developing countries. Hesse (2008) also argued in the favor of Prebisch-Singer hypothesis by giving illustration from the OECD resource rich countries such as Canada, Australia and the Scandinavian countries. These economies are now more developed as a result of export diversification.

Bonaglia and Fukasaku (2003) studied the idea of Prebisch-Singer hypothesis by analyzing that real exchange rate appreciate due to specialization in the exports of natural resources. In such countries if industrialization takes place then instead of specializing in knowledge products they generally specialize in physical capital-intensive products. Consequently, human capital growth and wage equality are adversely influenced.

Matthee and Naude (2008) identified countries specializing in goods experience export uncertainty due to negative demand shocks in global markets. In such situations, export diversification makes the country less vulnerable to shocks and as a result exports become stable.

6.3.1 Determinants of Export Diversification

Determining the true factors of export diversification is difficult as there is no available extensive theoretical or empirical structure to cover all potential factors. There are many reasons to believe that export diversification and overall economic development level is to be positively connected. One of the most important variables for measuring the impact of export diversification is the country's GDP per capita that captures the institutional strength. As GDP per capita of a country grow, preference to consume more rises in the country, as suggested by both demand side and supply side growth theories [Aghion and Howitt (1992)].

Hausman, *et al.* (2007) found that foreign direct investment is an indicator of macroeconomic efficiency by enhancing the growth rate of the firms in the country. Theoretically, FDI through direct and indirect way has a positive impact on export diversification. Direct way is when foreign firms use advanced techniques of production to export advanced products in the host country. Indirect way is when Multi-national Corporations (MNCs) transfer advanced techniques of production to local firms. By accumulation of these advanced techniques of production and improved skills, they will be able to produce a variety of products for exports.

Devaluation in the real exchange rate of a country increases the external demand of a country's tradable goods. This increases the opportunities of producing and exporting new goods and expanding the production of existing exports. Real exchange rate and its volatility affect the production of exportable goods. Real devaluations in the exchange rate have become an important factor in the diversification of the export supply [Rodrik (1998) and Krugman (1987)].

Theoretically, gross fixed capital formation affects the export growth in two ways either by increasing the physical capital stock in domestic economy or by promoting the technology. Recently many empirical studies estimate the positive role of gross fixed capital formation in diversifying the export [Khan and Kumar (1997)].

Lederman and Maloney (2003) estimate that the best way of improving economic efficiency for developing countries through export

diversification is to focus more on industrial sector by improving its structure. They determined a positive relationship between export diversification and the share of manufacturing sector for developing countries.

Acemoglu and Zilibotti (1997) found that the private sector can also play an important role in diversification by driving innovation and economic activity in non-developed sectors. It can invest in research and development for new activities as private companies frequently stand at the frontier of new sectors and bring innovation to the economy.

6.4 Empirical Model and Data

Determining the real factors of export diversification is difficult as none of the available theoretical or empirical models try to capture them in totality. Nevertheless, following de Benedictis, *et al.* (2009) and Parteka (2010), we argue that the low levels of GDP per capita are associated with a low degree of relative economic structures' heterogeneity (i.e., high overall concentration and specialization). Therefore, the basic model has the following general form:

$$HHI = f(GDPP) \quad \ldots (1)$$

where, *HHI* is the export diversification rate (Herfindahl index) and *GDPP* is the GDP per capita.

Following Parteka and Tamberi (2011) and Bebczuk and Berrettoni (2006), we further argue that the country-specific effects are relevant and important in the export diversification process. The additional variables can also determine the process of export diversification. Thus, the model (1) can be modified as:

$$HHI = f(GDPP, FDI, GFCF, CPS, REER, MANU, H\text{-}CAPITAL, EXP, R\text{-}DUMMY, FUEL) \quad \ldots (2)$$

where, *FDI* is foreign direct investment to *GDP* ratio, *GFCF* is the gross fixed capital formation to *GDP* ratio, *Manu* is manufactures exports to total exports ratio, *H-Capital* is human capital, *EXP* is export to GDP ratio, *REER* is the real effective exchange rate, *R-Dummy* is the regional

dummy, *CPS* is the credit to the private sector, and *FUEL* is the fuel exports to total exports ratio.

Equ. (2) provides us with the general specification, which is transformed into a behavioural equation for the purpose of estimation.

$$HHI_{it} = \alpha_0+\beta_1 FUEL_{it}+\beta_2 GDPP_{it}+\beta_3 CPS_{it}+\beta_4 MANU_{it}+\beta_5 GFCF_{it}+\beta_6 REER_{it+} \beta_7 FDI_{it}+ \beta_8 H.\ Capital +\beta_9 EXP + \beta_{10} R.DUMMY + \mu_{it} \quad \ldots (3)$$

where, μ_{it} is the error term, *t* represents the time period and *i* indicates countries under study.

In addition to the standard variables explaining export diversification covered in the available literature, we are also interested in analyzing the effect of several reforms, such as financial and trade liberalization, macroeconomic policies on export diversification. For that purpose, variables used in this study are: export to GDP ratio a proxy for competitiveness, manufacturing exports to total exports ratio a proxy for the industrial sector's growth, *REER* a proxy for depreciation, per capita GDP a proxy for institutional strength, gross fixed capital formation to GDP ratio a proxy for growth in domestic investment, credit to the private sector to GDP ratio a proxy for financial sector development, net foreign direct investment to GDP ratio a proxy for macroeconomic efficiency, and fuel export to total exports ratio a proxy for *natural resource curse*. Natural resource curse negatively affects the export diversification, then potential long-term benefits of export diversification will downplay otherwise it has a positive impact on export diversification.

These variables not only indicate macro-economic efficiency and strength; they also enhance growth prospects of firms, which in turn have implications for export diversification. Several studies like Benedictis, *et al.* (2009), Parteka (2010), Ferdous (2011), Agosin, *et al*. (2012), Arawomo (2014), Elhiraika and Mbate (2014) had also used these variables. Table 5 provides expected theoretical signs for each of the explanatory variable in their relationship with the dependent variable.

6.4.1 Data Sources

Main data source for all aforementioned variables is World Development Indicators (World Bank). Time period of the study is 1986-2012.The dataset is a balanced panel. The data used to estimate HHI are at 4-digit level SITC-codes obtained from the United Nations Commodity Trade Statistics Database [United Nations (2014)].

Due to the non-availability of data for all the years and for all the required variables, the regression analysis is limited for the SAARC region countries to Bangladesh, India, Pakistan and Sri Lanka, and for the ASEAN region the selected countries are Indonesia, Malaysia, Philippines, Singapore and Thailand.

6.5 Results and Discussion

To identify the long-run relationship between export diversification and each of the explanatory variables, we are required to check the order of integration for all variables in the panel dataset. A balanced panel dataset is used, which includes five ASEAN and four SAARC countries, for a period of twenty seven years (1986-2012).

6.5.1 Empirical Result of Panel Unit Root Test

As time units are sufficiently large and also greater than cross sections, it is imperative to examine the unit root properties of data. The selection of the test for examining unit root properties of data depends on the presence (or absence) of cross-sectional dependence among selected countries. For this purpose, Pesaran (2003) test is applied. This test suggests an easy way of getting rid of cross-sectional dependence than estimating the factor loading. This method with the lagged cross-sectional mean and its first difference is based on the ADF regression to capture the cross-sectional dependence which arises from a single factor model. The result of Pesaran (2003) test is reported in Table 6.6.

H_0: No cross-sectional dependence

H_1: Cross-sectional dependence

Given the acceptance of null hypothesis, we proceed towards the examination of unit root properties of data. When cross sections are independent then certain widely unit root tests options are available. For instance, see Levin, Lin and Chu (2002) and Im, Pesaran and Shin (2003). We have applied Im, Pesaran and Shin (2003) here as it avoids the limitations of LLC test such as LLC is restrictive in the sense that they do not allow for the heterogeneity within the panel as far as unit root properties are concerned.

Table 6.5. Theoretical Expected Signs of Explanatory Variables with Export Diversification

Explanatory Variable	Abbreviated as	Proxy as	Expected sign +/-	Data Source
Fuel Exports to Total Exports Ratio	FUEL	Resource Curse	+, -	WDI, World Bank
Manufactured Exports to Total Exports Ratio	MANU	Industrial Sector's Growth	+	WDI, World Bank
Per Capita GDP	GDPP	Level of Development, or Institutional Strength	+,-	WDI, World Bank
Gross Fixed Capital Formation to GDP Ratio	GFCF	Growth in Domestic Investment	+	WDI, World Bank
Credit to the Private Sector to GDP Ratio	CPS	Financial Sector Development	+	WDI, World Bank
Net Foreign Direct Investment to GDP Ratio	FDI	Macroeconomic Efficiency	+	WDI, World Bank
Real Effective Exchange Rate	REER	Real Depreciation	+	WDI, World Bank
Human Capital	H-CAPITAL	Human Capital	+	WDI, World Bank
Export to GDP Ratio	EXP	Competitiveness	+	WDI, World Bank
Regional Dummy	R-DUMMY	Region's Differentiation	+, -	

Table 6.6. Test for Cross Sectional Dependence

	Test -statistics	Probability
Pesaran test of cross sectional dependence	1.189	0.2345

The null hypothesis of LLC is that each individual time series contains a unit root against the alternative that each time series is stationary. IPS (2003) test shares this limitation by allowing for a heterogeneous coefficient and proposes an alternative testing procedure based on averaging individual unit root test statistics. The null hypothesis of IPS is that each series in the panel contains a unit root and the alternative hypothesis allows for some (but not all) of the individual series to have unit roots. The results of IPS test are reported in Table 6.7.

Panel Unit Root Test: Summary

H_0: Presence of unit root.
H_1: Absence of unit root.

Kao and Pedroni tests are the most advanced form of Engle Granger. Pedroni tests investigate whether there is co-integration or not but do not provide an estimate for the long run. We have applied Kao test, as it follows the same basic approach as the Pedroni tests and also estimates a long run relationship between variables [Baltagi (2008)].

Table 6.7. Im, Pesaran and Shin Test

Variable	Level		First Difference		Order of Integration
	Intercept and Trend	P-Values	Intercept and Trend	P-Values	
CPS	-2.5103	0.5417	-11.5310	0.0000***	I(1)
REER	-0.0591	0.4764	-4.449	0.0013***	I(1)
Manu	-3.5103	0.534	-9.6341	0.0001***	I(1)
FDI	-1.2573	0.1042	-4.3571	0.0023***	I(1)
GDPP	-3.7505	0.9991	-7.3124	0.0000***	I(1)
EXP	-3.723	0.2147	-9.6431	0.0000***	I(1)
GFCF	-1.30371	0.3021	-2.5543	0.0011***	I(1)
FUEL	-2.0173	0.4593	-7.3114	0.0000***	I(1)
H. capital	-1.5371	0.4371	-3.5121	0.0021***	I(1)
HHI	-3.1036	0.0016	-5.3672	0.0001***	I(1)

*** shows statistical significance at 1%.

Table 6.8. Kao Residual Co-integration Test Estimation

Kao Residual Co-integration Test Included Observation: 107 Null Hypothesis: No co-integration				
Variable		t-statistic		P-value
ADF		-3.0113		0.0031***
Augmented Dickey-Fuller Test Equation (Dep. Variable: D(RESID)				
Variable	Coefficient	Std. Error	t-statistic	P-value
RESID(-1)	-0.257	0.07137	-3.711	0.0001***

*** shows statistical significance at 1%.

Kao ADF-t test shows that there is a long-run relationship between the variables at the 1% level of significance (Table 6.8). Thus, the possibility of spurious regression is ruled out.

Based on the Kao (1999) co-integration test, we established that there exists a linear combination. In view of this, OLS estimators will be biased and inconsistent if applied to a co-integrated panel and thus an alternative method needs to be adopted. For this reason, we run the panel by using the Fully Modified OLS (FMOLS) developed by Pedroni (2000).

FMOLS can be used which uses a correction approach to deal with the nuisance parameters and thus gives the long-run coefficients for the estimated model free of endogeneity and serial correlation. The major advantage of FMOLS is that it allows for estimation of common co-integration vectors while allowing for heterogeneity both across time and cross-sections.

Thus, to obtain long-run impact of the variables free of serial correlation we use FMOLS estimations. These estimations not only generate the consistent estimates of the parameters with small samples but help controlling for the serial correlation and accommodate considerable heterogeneity across individual members.

6.5.2 Empirical Results of Fully Modified Least Squares

Explanatory variables are one-year lag values under the sensible presumption of a delayed impact on diversification. Results of fully modified ordinary least square model show that export diversification is significantly and positively dependent on explanatory variables included in the model for the selected economies of SAARC and

ASEAN regions (Table 6.9).

Negative sign of export to GDP ratio indicates a positive relationship between export diversification and competitiveness of the economy for both regions in the global market (Table 6.9). Results support the hypothesis that increases in competitive strength of the SAARC and ASEAN countries in global markets enable them to diversify their exports. This statistically significant and positive relationship between competitiveness and export diversification is also supported by the findings of Lewis (2004), Bolivian (2009) and Lim (2012).

Table 6.9. Fully Modified Ordinary Least Square (FMOLS) Results

Dependent Variable: HHI
Method: Fully Modified Least Squares (FMOLS)
Sample (adjusted): 1986-2012Period included: 26 Cross- sections: 9
Included observations: 234

Variable	Coefficient	Std. Error	t-Statistics	p-values
CPS	-0.000545	0.000273	-2.9937	0.0047*
REER	-0.000961	0.000317	-3.0319	0.0002*
FUEL	0.002275	0.001127	2.0178	0.0588**
FDI	-0.004826	0.005319	-3.1020	0.0071*
GDPP	-0.001847	0.001934	-5.9548	0.0000*
GFCF	-0.001722	0.000122	-2.9121	0.0051*
R-DUMMY	-0.077288	0.019536	-3.9562	0.0001*
H-CAPITAL	-0.005226	0.005577	-4.0541	0.0018*
MANU	-0.000146	0.000371	-3.9562	0.0001*
EXP	-0.000112	0.000151	-3.0421	0.0009*
C	0.259022	0.038861	6.6654	0.0000*
R-squared	0.835107	Mean dependent variable		-0.169692
Adjusted R-squared	0.815077	S.D. dependent variable		0.052147
S.E. of regression	0.05052	Sum squared residual		0.007585
Durbin-Watson stat	1.87574	Long-run variance		0.000979

*, ** significant at 1% level and 5% level, respectively.
Note: Here, 'export diversification' increases as we move from 1 towards 0, hence a negative sign of a coefficient indicates an increase in export diversification say because of increase in credit to the private sector.

Negative sign of credit to private sector to GDP ratio supports the hypothesis that financial development in the two regions reduces export product concentration (Table 6.9). In other words, financial develop-

ments assist regional countries to diversify their exports. The estimated relationship supports the findings of Acemoglu and Zilibotti (1997).

Foreign direct investment and export diversification are positively associated in both the regions (Table 6.9). The relationship shows that as FDI bring in macroeconomic efficiency and production diversification. Consequently, countries experience export diversification. In this regard, Moran (2010) argued that since FDI brings new ideas and best knowledge and practices for starting new activities; therefore, it is expected that with FDI inflows export diversification will take place. Besides, FDI can easily build up networks and promote forward and backward linkages with firms in their home countries. Moreover, by providing technological spillover, it can enable host countries to diversify production and exports base. Studies by Ekholm, *et al*. (2007), Hausmann, *et al.* (2007) and Gourdon (2010) support the findings of our study.

In almost all regions of the world, the pattern of trade has changed from primary exports to manufactured exports and hence increases export diversification. As export diversification becomes essential for effective participation in the global trading system and development, ASEAN economies also diversify their manufactured sector by taking structural reforms aimed to improve economic performance [Ferdous (2011), Arip, *et al.* (2010), Matthee and Naudé (2007)]. ASEAN economies are more developed than SAARC economies by giving high priority to export diversification in their development strategy [Shepherd (2009), Voon (1998) and Wu (1991)]. Results of our study are also consistent with these findings. Regional dummy is included in the estimated model reported in Table 6.9, which represents an arbitrary benchmark to the ASEAN region. A positive and significant impact shows higher and relatively better process of export diversification in ASEAN region than SAARC region.

Growth in domestic investment result shows positive and significant relationship with export diversification (Table 6.9). Khan and Kumar (1997) support our findings.

Human capital and export diversification shows a positive and significant relationship for both regions (Table 6.9). Agosin, *et al.* (2012) support our findings.

GDP per capita captures the institutional strength of countries. Results show that GDP per capita is positively and significantly linked with export diversification in SAARC and ASEAN economies (Table 6.9). Results of our study are consistent with the findings of Acemoglu and Zilibotti (1997) and Aghion and Howitt (1992).

The results suggest that manufacturing export to total export ratio is favorably and significantly related to export diversification (Table 6.9). These results are supported by the studies of Agosin (2007), Lederman and Maloney (2003), Lim (2012) and Carrere, *et al.* (2007).

Positive sign of the real effective exchange rate coefficient indicates that real depreciation of domestic currencies motivates SAARC and ASEAN countries for export product diversification (Table 6.9). This is because depreciation by improving competitive strength promotes exports and induces even non-exporting firms to export, and thus reduces specialization. Results of this study support the findings of Rodrik (1998) and Krugman (1987).

The sign of coefficient for *FUEL* is positive and the relationship is significant, which indicates a negative outcome of natural resource exports on export diversification. This basically confirms the presence of 'resource curse' paradox, where natural resources create lethargy or goofing-off effect in countries; as a result, they do not make efforts to improve export diversification. Similar results are found by Lederman and Maloney (2003), and Qaiser and Mahmood (2016).

6.6 Conclusion and Policy Implications

This paper has analyzed the role played by country-specific factors in the determination of export diversification process. We were particularly motivated by the fact that earlier studies presented single country analysis. They did not use a panel of countries (SAARC and ASEAN) to identify country-specific factors driving changes in export diversification. Specifically, we analyzed the effect of institutional strength, competitiveness, growth in domestic investment, financial sector development, natural resource curse and macroeconomic efficiency on export diversification.

Empirical findings of fully modified OLS co-integration model show that all factors are positively and significantly associated with

export diversification in both the regions, with the sole exception of the fuel-intensity variable, which shows that as the ratio of fuel exports to total exports increases the diversification of exports decline. In other words, dependence on export of natural resources reduces intensives for diversifying exports. Thus, for the ASEAN countries we found the presence of natural resource curse.

An important finding of the analysis is that the institutional strength enables countries to fast diversify their exports. In other words, a country is in a better position to diversify its exports if it has a well-developed soft and hard infrastructure and viable institutions.

Inflow of foreign direct investment, which creates macroeconomic stability and contributes to economic efficiency by transferring knowledge and know-how, also facilitates export diversification. Likewise, growth in domestic investment, which provides required domestic resources to diversify production base in turn helps economies to diversify export. At the same time, financial sector development, which provides required credit to private establishments, becomes a facilitation source to diversify exports.

Real effective exchange rates have also played an important role in the export diversification. The empirical findings suggest that the real depreciation of national currencies is profitable as it strengthens competitiveness required for export diversification.

Based on the above conclusion, we can draw implications for policymaking in the SAARC and ASEAN regions, these are as follows:

- Reform institutions and strengthen their mechanisms to facilitate export diversification. This should include strengthening of institutional capacity to develop right policies and create conducive business environment.
- Attract FDI by providing appropriate incentives and policies aimed at simplifying tax structure, flexible labour markets, and improved infrastructure.
- Further develop financial markets to fulfill the credit and financial products needs of private industries especially diversifying exports.

- Policy makers in natural resource rich countries need to be cautious in efficiently managing resources for their inevitable use to restructure economies and exports instead of misusing them. They must ensure macroeconomic stability and strengthen all the sectors of the economy to diversify exports.
- Stabilize domestic currencies as well as inflation to gain competitive strength in international markets for attaining the objective of export diversification.

APPENDIX

Measurement of Export Diversification

There are different ways to measure the degree of export diversification. The choice of a measure usually depends on different definitions, dimensions, forms, and levels of diversification. Measures of diversification or specialization can be obtained through determining different variety of specialization/concentration indices. The most typical in this respect are Herfindahl, normalized-Hirschmann and overall difference measures [Petersson (2005) and Pineres and Ferrantino (1997)]. The export diversity of different regions is measured through these three types of indices. The first diversity index is the Herfindahl index, which defines the changes in export revenue or concentration of the regions. Following Petersson (2005), it can be calculated as:

$$SPEC_{jt} = \sum_i \left(\frac{E_{jit}}{\sum_j E_{jit}} \right)^2 \quad \ldots \text{(A-1)}$$

where, E_{jit} is the exports of the *j*th country in the *i*th product (sector) in a given period *t*. Index value ranges between zero and one. Where index value one shows full degree of export concentration (or specialization), while zero value indicates complete degree of export diversification.

Following Al-Marhubi (2000), the normalized-Hirschmann index can be calculated as:

$$H_{jt} = \frac{\sqrt{\sum_{i=1}^{n}\left(\frac{x_{it}}{X_{jt}}\right)^{2}} - \sqrt{\frac{1}{n}}}{1-\sqrt{\frac{1}{n}}} \quad \ldots \text{(A-2)}$$

where, x_{it} is the value of exports of industry *i* located in country *j* and X_{jt} is the total exports of country *j* in a given period *t*. The number of industries is shows by *n*. An index value of one shows complete concentration whereas the values nearer to 0 indicate high diverse mixture of exports [Al-Marhubi (2000) and Naqvi and Morimune (2005)].

A third technique to calculate the export diversification is the total deviation of the country's share of the world's overall exports [e.g., Al-Marhubi (2000)]. This can be measured as follows:

$$S_{jt} = \frac{\sum_i |h_{ijt}| - |h_{it}}{2} \quad \ldots \text{(A-3)}$$

where, h_{ijt} is the share of industry *i* in total exports of country *j* and h_{it} is the share of industry *i* in world exports in a given period *t*. The calculated value of the index ranges from 0 to 1. Where, 1 indicates complete concentration and 0 designates complete diversification [Al-Marhubi (2000)].

Following Matthee and Naude (2007), Bebczuk and Berrettoni (2006), we use Herfindahl index to examine the degree of export diversification in SAARC and ASEAN regions. This is because this index is useful when export diversification is apparent due to changes in export composition within sectors. Besides this index allows catching both the intensive[1] and the extensive[2] edges of diversification.

Notes:

1. Different quantities of the same products, i.e., the intensive margin.
2. Different quantities of different products, i.e., the extensive margin.

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7. Factors Shaping Exports of Cultural Goods from Pakistan

Saba Salim[§] and Zafar Mahmood[†]

7.1 Introduction

Trade in cultural goods[1] has become an emerging and transformative force behind sociocultural-economic development. It has turned out to be an important source of inclusive economic growth. At present, about 7% of the world GDP constitutes of creative and cultural goods. Nevertheless, only a handful of countries are the main players in global trade of cultural goods. Production and trade potential of cultural goods, however, had remained largely unexplored and unlocked. Now with market openings world-wide, cultural goods trade has been rising at a faster pace.[2] Therefore, liberalization of cultural goods trade needs to be considered as an important contemporary policy issue in the multilateral trade negotiations.

Countries with common cultural and historical attributes and ties are often seen engaged in trade in cultural goods. If trade is built around comparative advantage, then cultural diversity between countries enhances trade at faster pace [Cyrus (2011)].

Countries utilize modern media technology for building their image and get acceptance and adaptation of their culture and cultural goods in the world. Factors like common language, history, religious beliefs, and colonial affiliation played an important role in creating world-wide demand for their cultural goods.

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As trade in cultural goods is increasing, governments have started paying attention for its development and promotion. This interest has motivated many academicians to work specifically on this issue. For instance, Disdier, *et al.* (2010) examined the determinants of trade in cultural goods. Their study suggested that trade in cultural goods reveals some specific characteristics. That is, common language fosters exchange of cultural goods and past colonial relationships influence consumers' preferences for cultural heritage goods. The study also found that cultural goods are traded over smaller distance as compared with conventional goods.

Marvasti and Canterbery (2005) investigated the determinants of US motion pictures exports to 33 countries. The study revealed a positive impact of language, education and religion on exports of motion pictures. The study also found that trade barriers applied by importing countries are raised with the growth of US exports of motion pictures.

Lili (2011) found that China's trading partners' economic size, GDP per capita, land area and level of technological application have a positive impact on its exports of cultural goods. The study further found that China's FTAs have little impact on its exports of cultural goods. Pakistan has a strong and rich cultural heritage, which has roots to ancient times. Its culture has the influence of many foreign cultures dating back to the colonial eras; each of them brought several cultural influences. Thus, Pakistan has a pleasant blend of diverse cultures representing distinctive music, arts, antiques and sculptures. Despite the cultural richness, Pakistan has so far been unsuccessful in realizing the export potential of cultural goods unlike other countries. Nevertheless, lately trend appears to be changing as Pakistani electronic media and private industry has started showcasing its soft image and culture world-wide. Consequently, Pakistan's export of cultural goods that were $277.75 million in 2003 has increased by more than six-folds to $1,764.75 million in 2012 (For details see Appendix Table 1).

Nevertheless, trade has not received due attention in academic or policymaking circles in Pakistan because of lack of recognition and understanding of the available potential of cultural goods export. In this paper, therefore, we make a beginning by investigating the determinants of Pakistan's exports of cultural goods to its 157 trading partners. Our

estimation is based on the Gravity model of international trade. The data used for estimation are drawn from UN-COM-Trade database using the six-digit level HS classification proposed by the UNESCO (2000).

Rest of the paper is divided into four sections. Section 2 presents the theoretical framework used in the paper. Variable construction and data used along with data sources are reported in section 3. Empirical results are discussed in section 4. Finally, section 5 concludes the paper and draws policy implications from the empirical findings.

7.2 Theoretical Framework

Given the nature and pattern of trade in cultural goods the Gravity model of international trade is most suitable for such a study. This model is motivated by the Newton's law of gravity, whereby the gravitational force between two bodies is determined by their distance and mass. The Gravity framework in economics was introduced by Tinbergen (1962) and its theoretical foundation was provided by Anderson (1979). The Gravity model embodies an appropriate framework to test the marginal effect on bilateral trade flows of the determining variables [Lewer and Berg (2008)].

The basic Gravity equation is as the following:

$$T_{ij} = G\left(\frac{Y_i Y_j}{D_{ij}}\right) \quad \ldots (1)$$

where, *Tij* is bilateral trade volume, *Yi* is country *i*'s GDP, *Yj* is country *j*'s GDP, *Dij* is the distance between countries *i* and *j*, and *G* is a constant. Eq. (1) can be re-written in log natural form as:

$$ln\, T_{ij} = ln\, G + \alpha_1 \ln GDP_i + \alpha_2 \ln GDP_j + \alpha_3 \ln D_{ij} + \varepsilon_{ij} \quad \ldots (2)$$

Equ. (2) describes the value of bilateral trade as a function of the market size of the importer and exporter countries as well as the distance between them. Both market sizes create push and pull effects on the value of bilateral trade, and are characterized by the GDP. Distance, representing trade barriers, is generally measured by geographic distance between two countries. It is anticipated that large distance between

trading partners leads to a decrease in trade, as trade becomes more complicated to handle and as such enhances transaction costs.

Based on Equ. (2), we use the following empirical-specification (Equ. (3)) to link exports (*Exppj*) from Pakistan to its *j*th trading partner with core and additional variables: Y_p is the GDP of Pakistan, $AREA_j$ is area of the *j*th trading partner, $CONTIG_{pj}$ is contiguity between Pakistan and the *j*th trading partner, $COMMLANG_{pj}$ is common language between Pakistan and the *j*th trading partner, LL_j is whether the *j*th trading partner is landlocked or not, and COL_{pj} is whether Pakistan and the *j*th trading partner have colonial ties:[3]

$$\ln Exp_{pjt} = ln\alpha_{0+}\, \alpha_1 lnY_{pt} + \alpha_2 lnY_{jt} + \alpha_3 lnD_{pj} + \alpha_4 lnAREA_j + \alpha_5 lnCONTIG_{pj} + \alpha_6 COMMLANG_{pj} + \alpha_7 LL_j + \alpha_8 COL_{pj} + \varepsilon_t \ldots (3)$$

7.3 Variable Construction and Data

In the following, we describe the construction of the variables and their theoretical relationship with the dependent variable as well as the data sources used:

Country Economic Sizes (*Y*): Economic scale or size is measured by the national incomes of trading countries. The greater the economic size of a country, the larger is its potential ability to supply and demand. Thus, larger countries tend to trade more with each other and countries that are of similar sizes also trade more [Feenstra (2004)]. GDP data for Pakistan and its trading partners are obtained from World Development Indicators published by the World Bank.

Distance (D_{pj}): Distance proxies for transportation costs and trade barriers. Trade costs are likely to increase with the distance between trading partners. Leamer and Levinsohn (1995) found a robust negative relationship between distance and trade volume. Other studies including Teresa (2011), Lionteii and Patuelli (2010), and Disdier, *et al.* (2010) also found a negative relationship between distance and trade in cultural goods. Distance data between Pakistan and its trading partner countries

from capital to capital city are obtained from *Centre d'Etudes Prospectives et d'Informations Internationales*, France.

Common Language *(COMMLANG)*: This variable indicates whether the exporting country and its trading partner share the same language or not. Common language makes it easy to interact, communicate, collect material, build business relations, and helps in the process of signing contracts. Thus, reducing transaction costs, and eventually leading to a positive impact on bilateral trade. Besides, when language is common then cultural goods are easily accepted by the residents of the destination country. Following Zigano and Mayer (2006), we use a dummy variable of common official language between Pakistan and its trading partner countries. Information on Common language is obtained from *Centre d'Etudes Prospectives et d'Informations Internationales*, France.

Common Border—Contiguity *(Contg):* Countries that share a common border are often well aware of each other's consumers' choices and trading prospects. Moreover, common borders imply relatively short distance. Because of these reasons, mutual trade is less costly. We have used a dummy variable to reflect a common border by using information obtained from *Centre d'Etudes Prospectives et d'Informations Internationales* France.

Common History (*COL*): Members of the same colonial empire upsurges the information about trading partner's organizations and business practices. Colonial relationship reduces cultural differences between countries and thus reduces transaction costs in trade. Lionetti and Patuelli (2010) and Cheptea (2007) found a positive relationship between bilateral trade and colonial links. Following these studies, we use a dummy variable on the basis of information obtained from *Centre d'Etudes Prospectives et d'Informations Internationales*, France.

Landlocked Countries (*LL*): When a country is landlocked and does not have a shipping port or direct access then the trade-related costs are high. This is because they may have to rely on other countries to transport their goods. We use a dummy variable on the basis of information obtained from *Centre d'Etudes Prospectives et d'Informations Internationales*, France.

Land Area ($AREA_j$): People of countries with large land area normally have greater acceptability and tolerance for cultural diversity. Therefore,

it is likely that the relationship between land area and trade is positive. Information on land area is obtained from *Centre d'Etudes Prospectives et d'Informations Internationales*, France.

Data for the dependent variable *Exppj* are obtained from UN COMTRADE database.

7.4 Results and Discussion

Empirical findings reported in this section are based on Pakistan's cultural goods exports listed in Appendix-2 with 157 trading partners listed in Appendix-3, for the period 2003 to 2012. The analysis is further extended to the six-digit HS codes level, for six sub-categories: books, jewelry, crafts and paintings, newspapers and other printed matter, musical instruments and visual arts (Appendix-1).

To describe the main features of the data used in this study, summary statistics are reported in Table 7.1. The table elaborates Pakistan's exports in cultural goods with reference to mean, median, standard deviation and minimum and maximum values of variables. The mean exhibits that the value of jewelry is the highest amongst all export categories, which shows the highest level of exports. Crafts and paintings have the second highest mean value. Books have the lowest average export value.

The mean value of distance shows that the average radius of the reach of Pakistan's exports of cultural goods is 6432 km. The maximum average distance of Pakistan's exports is recorded as 16,694.83 km whereas minimum average distance recorded to 374.65 km. The average area of a country to whom Pakistan exported its cultural goods during 2003 and 2012 is 987,686.7 Sq km.

7.4.1 Unit Root Test

We begin with the evaluation of the time series data in terms of their being stationary or non-stationary so that a valid and reliable estimation approach is identified. The null and alternative hypotheses used to conduct unit root test are as follows:

H_0: All the variables exhibit unit root.
H_1 : All the variables exhibit unit root.

Table 7.1. Summary Statistics

Variable	Mean	Median	Max.	Min.	Std. Dev.
Total Exports	4784628	63605	1520000	10.00	51944447
Exports: books	40350	5014	690140	1.00	102456.8
Exports: jewelry	14395455	15288	1.52E+09	12.00	1.12E+08
Exports: musical instruments	51999	8641	879250	3.00	125297.2
Exports: visual arts	105710	16845	5231345	5.00	351742.8
Exports: crafts and paintings	2027119	97052	1.18E+08	17.00	8558559
Exports: newspaper & printed matter	13275	1497	336963	1.00	37241.69
D_{pj}	6433	5308	16694.83	374.65	3931.216
$AREA_j$	987687	238538	17075400	25.00	2393874

As $N>>T$ (where N is number of (1165) observations and T (10 years) is time period), therefore stationarity should not be a problem. Nonetheless, we use different tests to check for the stationarity of variables. Results of this test are reported in Table 7.2, which show that all variables are stationary. So we reject the null hypothesis that variables exhibit unit root. Distance and area variables fail to show any result because they are time independent. Rests of the variables included in the model are dummy variables.

We estimate the Gravity equation by using of the Common Constant method[4]. Panel Estimated Generalized Least Squares (EGLS) method is applied to estimate the equation with country weights and correction of standard errors for problems of autocorrelation and heteroscedasticity. This method is suitable for unbalanced panel data set as it can handle a vast range of data that are unequally spaced and have problem of hetroscadasticity [Baltagi and Wu (1999)]. OLS and GLS have same model equation but only difference is that residuals do not need to follow same assumptions as of OLS [Orlaith (2010)]. We also applied SUR (PCSE) to get rid of problem of autocorrelation.

Table 7.2. Unit Root Test

Test name	Trade value (TV)		GDPi		GDPj	
	coefficient	Prob	coefficient	prob	coefficient	Prob
Hadri Z-stat	20.7024	0.0000	24.5459	0.0000	25.0959	0.0000
Levin, Lin & Chu t*	-98.2744	0.0000	-29.1971	0.0000	-47.2511	0.0000
Im, Pesaran and Shin W-stat	-5.81882	0.0000	-2.00355	0.0226	-4.67089	0.0000
ADF - Fisher Chi-square	240.559	0.0129	268.888	0.0003	245.018	0.0000
PP - Fisher Chi-square	597.026	0.0000	604.218	0.0000	336.876	0.0000

7.4.2 Generalized Least Square

Table 7.3 shows regression results for overall exports[5] in cultural goods of Pakistan with its trading partners. Estimates are reported for relationships between dependent variable and independent variables including home and host country's GDP, distance, land area and a set of dummies. Most of the Gravity model variables are found to be statistically significant at 1% level of significance.

The result depicts that Pakistan's GDP is statistically significant at 1% level and has a positive sign. It shows a direct relation between GDP growth rate of Pakistan and its exports of cultural goods, implying that when the domestic economy grows it generates large exportable surpluses and thus export more. The coefficient for the home country GDP growth indicates that a 1% growth in Pakistan's GDP leads to a 0.10% growth in exports of cultural goods. This result is consistent with the findings of other studies including Disdier, *et al.* (2010) and Yu and Park (2011).

Estimated coefficient shows that a 1% increase in the growth of the trading partner country's GDP decreases Pakistan's exports by 0.06%. This result is contrary to the theoretical prediction about the relationship. The intuition behind this result is that richer countries themselves have more space for producing various kinds and varieties of goods. So when they produce more they decrease their imports of

cultural goods from countries like Pakistan who do not have much cultural influence abroad. In such a situation, the substitution effect appears stronger than the income effect.

Table 7.3. Regression Results for Overall Cultural Goods Exports

Dependent Variable: LOG(Grand Total Exports)

Methods: Panel EGLS (Cross-section weights)

Total panel (unbalanced) observations: 1164

Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	15.42654	0.619010	24.92133	0.0000***
LOG(GDP $_i$)	0.103590	0.029035	3.567735	0.0004***
LOG(GDP $_j$)	-0.069319	0.017915	-3.869371	0.0001***
LOG(DP$_j$)	-0.921862	0.058249	-15.82618	0.0000***
LOG(AREA)	0.302063	0.022882	13.20081	0.0000***
COMMLANG$_{pj}$	0.276463	0.099237	2.785881	0.0054***
CONTIG$_{pj}$	0.075339	0.116200	0.648360	0.5169
LL$_j$	-2.127878	0.146204	-14.55420	0.0000***
COL$_{pj}$	4.759326	0.096127	49.51085	0.0000***
R-squared	0.699445	Adjusted R-squared		0.697364
F-statistic	335.9869	Prob(F-statistic)		0.0000***

*** indicates that estimated coefficient is statistically significant at 1% level.

The estimated result reveals that the relationship between distance and cultural goods exports is negative and statistically significant at 1% level. This implies that economic distance is a hindrance in cultural goods exports. The estimated coefficient indicates that a 1% increase in distance leads to 0.92% decrease in cultural goods exports. Our result is consistent with studies of Frankel (1997) and Wall (1999).

The estimated coefficient of land area is positive and statistically significant at 1% level. This implies that when land area of the trading partner country increases by 1% then exports of cultural goods increases by 0.30%. This finding is consistent with the results found by Lili (2011).

Common language shows a direct and statistically significant link with exports of cultural goods. Its estimated coefficient is 0.28,

which shows that for those countries with whom Pakistan shares language, it exports 0.28 times more of cultural goods than with countries who do not have a common language with it.

Pakistan shares common border with India, Iran, Afghanistan, and China. According to the estimated coefficient the sign of the relationship is positive but the result is statistically insignificant. Nevertheless, the result shows that export of cultural goods with common border countries increases by 0.08 times as compared with the rest of the countries. These results are in line with theoretical predictions and those found by Disdier, *et al.* (2010).

The estimated coefficient of landlocked countries exhibits a negative relationship with exports of Pakistan's cultural goods trade and is highly significant. Thus, if the trading partner country is landlocked then exports of cultural goods from Pakistan decreases by 2.12 times as compared to countries that are not landlocked. Our results are consistent with studies of Dollar and Kraay (2003), and Francois and Manchin (2007).

Colonial link is statistically significant at 1% level and its coefficient is positive. Its coefficient indicates that for countries with whom Pakistan had a colonial link its export of cultural goods increases by 4.75 times as compared with rest of the trading partner countries. Our results are consistent with the study of Lionetti and Patuelli (2010).

7.5 Conclusion and Policy Implications

Empirical analysis based on the Gravity model led us to conclude that exports in cultural goods are strongly influenced by the GDP growth of Pakistan but negatively affected by the GDP growth in the trading partner countries. Distance which is a proxy for the cost of transportation and trade barriers negatively affects exports of cultural goods. Land area of importing countries boosts exports of cultural goods as it creates greater acceptability of diverse foreign cultures and cultural goods. Exports of cultural goods sharply increase with those trading partner countries that have colonial ties and share a common language with Pakistan. Under the present circumstances, common border with importing countries is a weak factor to promote exports of cultural

goods. Countries that are landlocked are generally isolated from participating in global trade import relatively less from Pakistan than its other trading partner countries.

It is evident from the preceding analysis that Pakistan has vast potential for export growth in cultural goods provided corrective policy measures are adopted. On the basis of the empirical findings, we draw the following policy implications for the promotion of exports of cultural goods:

- Increase domestic production of cultural goods by enhancing productivity and efficiency of domestic industries producing them.
- Ensure quality of cultural goods commensurating with the income levels of trading partners.
- Reduce trade barriers (e.g., the distance) by using modern electronic and social media technology, advertisement and promotional activities world-wide.
- Lower border restrictions and facilitate exports to increase exports of cultural goods to neighboring countries.
- Focus on countries with large land areas to tap their higher and wider acceptability for diverse foreign cultures and products.
- Target countries having common language with Pakistan for the promotion of cultural goods exports. This initiative would enhance competitiveness by reducing the cost of transaction.
- Develop cost effective air links and cargo services to boost exports of cultural goods to landlocked countries.

APPENDICES

Appendix Table 1. Exports of Pakistan's Cultural Goods by Categories (Million US dollars)

Year	Paintings	News Papers	Other Printed Matter	Crafts	Antiques	Jewelry	Books	Musical Instruments	Visual Arts	Total
2003	0.09	1.38	0.14	225.74	0.1	25.14	2.76	2.12	20.28	277.75
2004	0.18	0.71	0.32	258.23	0.23	29.04	2.76	2.71	12.68	306.86
2005	0.14	0.79	0.23	290.59	0.15	20.62	2.1	2.88	12.02	329.52
2006	0.28	0.21	0.1	247.61	0.29	24.06	2.73	4.42	8.13	287.83
2007	0.02	0.09	0.16	224.63	0.03	120.32	2.53	3.46	5.81	357.05
2008	0.14	0.07	0.26	189.08	31.25	239.83	2.3	4.19	7.3	474.42
2009	0.05	0.06	0.29	132.56	0.05	478.91	2.67	3.64	5.53	623.76
2010	0.12	0.03	0.11	132.5	0.12	590.24	2.47	3.58	5.2	734.37
2011	0.23	0.06	0.37	134.93	11.76	469.32	2	3.59	2.08	624.34
2012	0.09	0.17	0.3	121.24	0.09	1,634.07	2.75	3.18	2.86	1764.75

Source: UN COMTRADE, 2013.

Appendix Table 2. Cultural Goods Exports Share (%)

Country	Share
UK	15.43
USA	34.97
China	20.4
India	18.01
Germany	10.51
Pakistan	0.68

Source: UNCOMTRADE, 2012.

Appendix-1. Individual Category Results

Variable	Jewelry	Visual Arts	Books	Newspapers and Other Printed Matter	Crafts and Painting	
C	10.81988***	13.23392***	12.45317***	21.22402***	10.41851***	15.13304***
	(1.607423)	(2.829634)	(0.754473)	(1.321552)	(1.237455)	(0.559182)
GDPI	0.149002***	0.096057**	0.135496***	0.02596	0.241554***	0.151528***
	(0.032022)	(0.045737)	(0.047326)	(0.06345)	(0.033265)	(0.037085)
GDPJ	-0.112768***	-0.098893***	-0.037926***	-0.003586	0.008505	-0.071687***
	(0.018578)	(0.037761)	(0.013981)	(0.020767)	(0.018731)	(0.019511)
LOG	-0.468076**	-1.568454***	-0.677601***	-1.809288***	-0.755626***	-0.803194***
DISTANCE)	(0.183749)	(0.329757)	(0.085415)	(0.174928)	(0.143148)	(0.078981)
LOG	0.149689***	0.699936***	0.206697***	0.169348***	0.157957***	0.244917***
(AREA)	(0.02305)	(0.053404)	(0.020848)	(0.033903)	(0.034505)	(0.023573)
CONTIG	-	-3.266117***	0.621901***	-1.627817***	-	0.219701
		(0.688133)	(0.177068)	(0.469107)		(0.17575)
SMCTRY	-2.902227***	-6.593509***	-	-	0.034226	-1.359257***
	(0.403885)	(0.840408)			(0.322359)	(0.289381)
LAND	-2.214824***	-1.670197***	-1.952095***	-2.286794***	-0.97099***	-1.352253***
LOCKED	(0.294244)	(0.29152)	(0.144642)	(0.288439)	(0.185445)	(0.138445)
COL	3.598144***	2.90007***	3.115939***	3.955425***	3.524505***	4.122904***
	(0.140692)	(0.217915)	(0.194101)	(0.188582)	(0.262178)	(0.117747)

COMLANG	0.120811	3.737919***	-	1.594269***	0.392203**	-
_OFF	(0.115213)	(0.325239)		(0.198552)	(0.183838)	
R-squared	0.769949	0.704348	0.433499	0.232209	0.510356	0.577875
F-statistic	157.3028	60.61782	83.73731	23.13652	56.15384	163.5915
No of observations	385	239	774	621	440	965

Appendix-2. Commodities included in the study

Domain	HS Code	Description
Musical Instruments	830610	Bells, gongs and the like
	920590	Wind musical instruments (excl. brass-wind instruments)
	920890	Fairground organs, mechanical street organs, mechanical singing birds, musical saws and other musical instrument; decoy calls of all kinds; whistles, call horns
	920290	Guitars, harps and other string musical instruments (excl. with keyboard and those played with a bow)
	920510	Brass wind instruments (for example, clarinets, trumpets bagpipes)
	920600	Percussion musical instruments (for example drums, xylophones, cymbals, castanets, maracas)
	920810	Musical boxes
	920190	Harpsichords and other keyboard stringed instruments (excl. pianos)
	920110	Upright pianos
	920710	Keyboard instruments other than accordions
Paintings and Crafts	970190	Collages and similar decorative plaques
	491191	Pictures, designs and photographs
	970110	Paintings, drawings and pastels, executed entirely by hand, other than drawings of heading
	570110	Carpets of wool or fine animal hair, knotted

	581099	Embroidery in the piece, in strips or in motifs
	570190	Carpets of materials *n.e.s.* , knotted
	570210	Handmade rugs
	500720	Woven fabric >85% silk (except noil silk)
	581100	Quilted textile products in the piece
	580890	Other braids in the piece; ornamental trimmings in the piece, without embroidery; other than knitted or crocheted
	570232	Carpets of manmade yarn, woven pile, not made up, *n.e.s.*
	580640	Fabrics consisting of warp without weft assembled by means of and adhesive
	580631	Narrow woven fabrics: Other woven fabrics of cotton
	581010	Embroidery in the piece, in strips or in motifs without visible ground
	600293	Knit or crochet fabric of manmade fibres, *n.e.s.*
	580810	Braids in the piece; ornamental trimmings in the piece, without embroidery; other than knitted or crocheted
	581091	Embroidery in the piece, in strips or in motifs: Other embroidery of cotton
	581092	Embroidery in the piece, in strips or in motifs
	580610	Narrow woven fabrics: Woven pile fabrics (including terry toweling and similar terry fabrics) and chenille fabrics
	580620	Narrow woven fabrics: Other woven fabrics, containing by weight 5% or more of elastomeric yarn or rubber thread
	580639	Narrow woven fabrics: Other woven fabrics of other textile materials
	580632	Narrow woven fabrics: Other woven fabrics of man-made fibers
	580900	Woven fabrics of metal thread and woven fabrics of metallized yarn of heading
	580500	Hand-woven tapestries of the type Gobelins, Flanders, Aubusson, Beauvais, etc.
Jewelry	711320	Articles of jewelry and parts thereof of base metal clad with precious metal
	711620	Articles of precious or semi-precious stones (natural, synthetic or reconstructed)

	711319	Articles of jewelry and parts thereof of other precious metal, whether or not plated or clad with precious metal
	711411	Articles of goldsmiths' or silversmiths' wares and parts thereof of silver, whether or not plated or clad with other precious metal
Visual Arts	442090	Wood marquetry and inlaid wood; caskets and cases for jewelry or cutlery, and similar articles, of wood; wooden articles of furniture
	701890	Glassware articles including statuettes
	960110	Worked ivory and ivory articles
	960190	Bone, tortoiseshell, horn, antlers, coral, mother-of-pearl and other animal carving material, and articles of these materials (including articles obtained by molding)
	442010	Statuettes and other ornaments, of wood
	691310	Statuettes and other ornamental ceramic articles of porcelain or China
	392640	Statuettes and other ornamental articles in plastic
	830629	Statuettes and other ornaments, of base metal, not plated with precious metal
	970300	Original sculptures and statuary, in any material
Books	490110	Printed reading books, brochures, leaflets and similar printed matter
	490199	Printed books, brochures and similar printed matter
	490191	Dictionaries and encyclopedias and serial installments thereof
Newspapers and Other Printed Matter	490900	Postcards, printed or illustrated; printed greeting cards
	490300	Children's picture, drawing or coloring books
	491000	Calendars of any kind, printed, including calendar blocks
	490210	Newspapers, journals and periodicals, whether or not illustrated or containing advertising material appearing at least four times a week
	490290	Other newspapers, journals and periodicals

Appendix 3. List of Partner Countries Included in the Study

Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bolivia, Bosnia, Botswana, Brazil, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Chile, China, Colombia, Congo, Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Djibouti, Dominican, Ecuador, Egypt, El Salvador, Equatorial Guinea, Estonia, Ethiopia, Fiji, Finland, France, Gambia, Georgia, Germany, Ghana, Greece, Greenland, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong SAR China, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea Rep., Kuwait, Kyrgyz Republic, Latvia, Lebanon, Liberia, Libya, Lithuania, Luxembourg, Macao SAR China, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Niger, Nigeria, Norway, Oman, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Rwanda, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, Spain, ,Sri Lanka, St. Lucia, St. Vincent and Grenadines, Sudan, Suriname, Swaziland, Sweden, Switzerland, Syria, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, UAE, United Kingdom, United States, Uruguay, Uzbekistan, Venezuela Rep., Vietnam, Yemen Rep., Zambia, Zimbabwe.

Notes:

1. Cultural goods represent disperse thoughts, signs and standard of living, while providing facts and amusement to form a group, and recognize and influence cultural behaviour. Unlike the conventional goods, they carry information about production location, people preferences, social attributes and cultural values (Cheptea, 2007). Cultural goods include antiques, musical instrument, jewelry, crafts, paintings, newspaper, visual arts, etc. (UNESCO, 2000 and 2005).
2. For example, the world markets witnessed a surge in trade of cultural goods from US$47.8 billion in 1980 to US$213.7 billion in 1998 and to US$424.4 billion in 2006 (UNESCO, 2013). A large proportion (almost 40%) of trade in cultural goods originates from China, USA and UK (Drew, 2007). Other major countries include Hong Kong, France, India and Germany.
3. See, Lionetti and Patuelli (2010).
4. Yu and Park (2011), Chang, *et al.* (2008) and Hwang (2012) used pooled least squares method to estimate the Gravity equation. In our case, we tried both fixed and random effects models but results were not consistent as our data set is an unbalanced panel. Fixed effects model generated dummies equal to the cross sections. We have 157 cross-sections and the Gravity model also consists of dummies so inclusion of more

dummies created singularity problem. This is why fixed effects model is not suitable for our study. It may be noted that the Common Constant method works under the principal assumption that there are no differences among cross-sectional data sets. This method, also known as "pooled OLS" method, assumes common constant α for all the cross sections in the model. We cannot use Pesaran's CD test because of lower and missing number of observations in selected countries.

5. Results of individual categories according to UNESCO definition are shown in Appendix-1.

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8. Trade Costs of Pakistan with its Major Trading Partners: Measurement and its Determinants

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8.1. Introduction

International trade is significantly affected by the trade costs incurred locally and across the borders. Trade costs form a potentially important barrier to trade. Higher trade costs are an obstacle to trade and impede the realization of gains from trade liberalization,[1] therefore special attention is given to trade costs. Owing to the importance of trade costs in explaining the volume and direction of trade, international trade economists are increasingly focusing upon trade costs and this has become an area of key interest within the modern stream of international trade research. The steady decline in trade costs has undoubtedly been one of the main reasons for the increase in international trade to the extent that trade volume of almost every country has improved as compared to trade volumes in the past decades.

The pertinent question is what exactly are the trade costs? They include all the costs incurred in getting a good to the final user, excluding the marginal cost of producing the good itself. Hence, trade costs include transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, local distribu-

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tion costs (wholesale and retail) and legal and regulatory costs [Singh, *et al.* (2014)].

Sources of trade costs are mainly divided into two main categories. First category includes entirely bilateral factors of separation between the exporter and the importer, which are more dependent on exogenous factors such as geographical distance, common border or sharing a common language than particular policy choices. The second category is composed of endogenous trade costs, which are international connectivity such as air or maritime transport services, tariffs and non-tariff measures, and other factors that facilitate trade.

Evidence shows that with growing regionalism in the world, countries have considerably reduced the tariff rates, on average less than 5 percent for rich countries, and with a few exceptions are on average between 10 to 20 percent for developing countries [Anderson and Van Wincoop (2004)]. With a drastic fall in tariffs on the one hand, there are, on the other hand, some other barriers to trade that are hampering the trade performance. Most important among those are barriers relating to infrastructure quality besides the tariff and non-tariff barriers, collectively these are referred to as policy barriers. Poor institutions and poor infrastructure distort strategic trade policy focus, not only in terms of the traditional mechanisms of tariffs and quotas but also of infrastructure and logistics,[2] the so- called "behind the border issues". Thus, besides the differences in economic size and endowments, the differences in trade costs, which act as a friction to trade, is important reason as to why some countries trade more than others.

In an increasingly globalized and networked world, trade costs are of great importance from a policy perspective. This is because they act as a determinant of the pattern of bilateral trade and investment as well as of the geographical distribution of production. International trade costs are large and vary widely across countries and sectors. These costs are likely to be higher in developing countries as compared to the developed countries due to the existence of substantial tariffs and non-tariff measures accompanied by poor infrastructure, dysfunctional transport and logistics.

Pakistan is a country heavily enriched with natural resources. Pakistan's major trade partners are Asian, European Union and North

American countries. These include China, USA, UK, India, Bangladesh, Saudi Arabia, Malaysia, Japan, Germany and UAE. EU has now emerged as Pakistan's largest trading partner.[3] Total trade between the two amounts to about $10 billion with Pakistan's share in EU market of about 0.09% and the share of EU in Pakistani market is 11.39%. Pakistan also has very strong trade ties with Asian economies like China, UAE, Saudi Arabia, and Malaysia. The main reason behind massive trade of Pakistan with Asian countries is low transportation costs, similarities of consumer tastes and trading priorities. USA is also one of the strongest trade partners of Pakistan.

The size of Pakistan's current trade doesn't truly reflect its trade potential. This is mainly because the direction of Pakistan's foreign trade, which is trade cost dependent, has not changed virtually since its independence. Keeping in view the trade potential of Pakistan and to reap full benefits from international trade, it is thus imperative to have a detailed insight into the determinants of trade costs. Pakistan needs to pay serious attention to the trade costs because only then it will be in a position to improve its ability to position better in global networks of trade and production. A detailed study on the determinants and calculation of trade costs will help identify the areas which need to be given special attention to identify policies and measures that have a significant effect on trade costs, and to prioritize them thus affecting the overall trade flows and composition of trade consequently.

The research problem which is to be addressed and assessed in this paper is "What are the factors that affect trade costs incurred by Pakistan with its major trading partners"? The study uses a set of selected trading partners of Pakistan due to the paucity of available data. The main objective of the study is to measure the trade costs incurred by Pakistan in agricultural and non-agricultural sector with its major trading partners in three different regions of the world, i.e., Asia, Europe and North America including USA, Germany, UK, Japan, China, UAE, Saudi Arabia, Bangladesh, India and Malaysia and empirically investigate the determinants of trade costs.

This area is virtually untapped in case of Pakistan. Therefore, there is a need to have a research study that can show Pakistan's position in terms of trade costs and identify its determinants. Such a study can

provide insights that if properly targeted, trade costs can not only be reduced but also proper policies can be formulated to help boost the overall trade as well improving Pakistan's position in global trade network. This study would add to the literature by disaggregating trade into two macro-sectors; agricultural and non-agricultural. Harmonized System (HS)[4] based on two digit level with its major trading partners in three different regions of the world, i.e., European Union, Asia and North America. The countries include USA, Germany, UK, Japan, China, UAE, Saudi Arabia, Bangladesh, India and Malaysia.

8.2. Literature Review

Trade costs have become a key area of interest for researchers. In this regard, it is important to understand which factors trigger the trade costs of a particular economy. Existing literature draws attention to some of important determinants of trade costs. This section sheds light on the existing literature in this area.

Limao and Venables (1999) identified the determinants of transport costs and showed how they depend on geography and infrastructure. Tobit model was estimated for the year 1990 taking 93 countries. Distance, contiguity and landlocked-ness were taken as geographical determinants and quality of transport and communication infrastructure were studied as infrastructural determinants. They discussed that land distance is much more costly than sea distance. Landlocked countries have high transport costs which can be reduced by better infrastructure facilities. They further argued that trade volume can be increased by a factor of five if transport costs are halved. The study highlighted the cost of being landlocked as far as bilateral trade flows are concerned.

Arvis, *et al.* (2007) estimated the cost attached to landlocked-ness with regards to the international trade. Based on empirical analysis, the study found out that large proportion of least developed countries are landlocked and their market access depends upon the availability of trade corridor or a transit system. High degree of unpredictability associated with transportation time increases the trade costs of landlocked economies along with high freight charges. The study

highlighted the need for reliable logistic services which are hampered by flaws in implementation of transit system. They pointed that the business community should design and implement comprehensive trade facilitation strategies. In addition to the physical constraints, least developed countries are also faced with a problem of widespread rent seeking activities. Thus, they showed that high trade costs of LDCs are mainly due to high transportation costs which explain major proportion of high logistic costs and vulnerability of supply chains and these areas need to be targeted specifically.

Novy (2007) analysed the patterns of trade costs of UK and USA with 31 trading partners from a period of 1960-2002. His study found out that tariff equivalents of trade costs for USA have declined over the period of study with US showing lowest trade costs with Canada and Mexico while UK exhibited a remarkable increase in its bilateral trade costs over time. Novy used micro founded trade cost measure for the calculation of trade costs. The main determinants of trade costs were classified into geographical, historical and institutional factors. Distance, landlocked-ness, exchange rate volatility and tariffs showed a positive relationship with trade costs while common border, membership of free trade agreement negatively affected the trade costs.

Olper and Valentina (2007) examined the patterns of international trade costs in processed foods industry for a large cross section of developed and developing countries over the period of 1976-2000. Panel data estimation technique with country and time fixed effects was used in this study. Tariff equivalents of trade costs were taken as the dependent variable and the independent variables were divided into four categories as geographical factors, historical and cultural linkage, institutional factors and infrastructure development. Their study found out that geographical and historical factors dominate the infrastructural and institutional determinants of trade costs. Empirical results showed that tariff equivalents of trade costs for the Emerging countries declined by 13% over the period of study. However, developing countries showed a low reduction pattern thus highlighting a need for government to focus on the issue in order to achieve the goal of economic growth. They also highlighted the need for freer trade environment keeping in view the influential role played by trade policy in reduction of trade costs.

Duval and Utoktham (2011) examined the trade costs of Indian Mekong sub-region and also evaluated the policy related and other factors in order to facilitate trade and reduce trade costs. Novy's trade cost measure has been employed for calculating the trade costs. Various trade related factors which possibly effected the trade costs of the Indian Mekong sub-region were found to be bilateral distance between the trading partners, cultural distance, tariffs between the trading countries, linear shipping connectivity index, internet users per hundred people, ease of doing business and monetary costs of moving a container from factory to port and port to warehouse. Cross sectional data set of 64 countries has been estimated for the year 2006 using the Ordinary Least Square estimation.

The results show that trade costs between India and Mekong countries are high. However, China, India, Thailand and most of other Mekong countries are making progress in reducing trade costs among themselves as compared to other countries like Japan and USA which is mainly due to the enhanced regional connectivity. The study also investigated the contribution of explanatory variables. Results revealed that the natural barriers contribute about 22 percent to the total variations in trade costs followed by the differences in maritime logistics and then the trade related but non-trade specific measures such as credit information, extent of information disclosure accounting for about 16 percent and 7 percent variations respectively in trade costs. The study highlighted the importance of logistics and information technology services regulation as important issues to reduce the trade costs.

Several researches have been conducted in different countries of the world as far as measurement and determinants of trade costs are concerned, but there is hardly any research on measurement of trade costs of Pakistan and investigation of determinants of trade costs with its major trading partners. Thus, the study at hand becomes all more important to fill this research gap.

8.3. Overview of the Economy in the Context of Trade Costs

Economic journey of Pakistan has faced serious global and internal challenges since independence. Despite the critical circum-

stances the country, however, managed to gain a momentum. In this regard, the period of the 1960's was marked as the golden economic era of Pakistan. Trade policies in that era focused on industrial development and import substitution. Various incentives like tax rebates and exemptions as well as export bonuses were offered on exports, which resulted in a remarkable increase in export volume, with exports showing a growth rate of 16.19%. In the late 1980s, due to increased economic pressures and globalization forces, Pakistan initiated the process of trade reforms and its intensity increased in the first half of the 1990s. Wide ranging thorough liberalization programmes started in 1996-97 in the agricultural sector. Government reduced average tariffs to a level of 15 percent compared to a high tariff rate of 51 percent in 1994/95 [WTO (2007)]. Trade volumes of Pakistan increased sharply in the 2000s. Total trade volume increased from $23,380 million in 2003 to $69,410 million in 2013 [GOP (2014)].

Analysis of the trade costs of Pakistan for agricultural and non-agricultural sector with its trading partners shows that on average Pakistan is facing high levels of trade costs despite substantial fall in tariffs worldwide. Quality of institutions and infrastructure differs across countries thus causing a difference in their levels of trade and trade costs. Therefore, today's trade strategy goes beyond the traditional mechanisms of tariffs and quotas and includes "behind-the-border" issues, such as the role of infrastructure and governance in supporting a well-functioning trading economy. For instance, many studies show that liberalisation of international transport services foster international trade similar to tariff liberalization [Baier and Bergstrand (2001)].

Estimates of trade costs equivalents show that trade costs have declined over the period of study thus showing an increase in international trade volumes of the country (Table 8.1). It may be noted that the agricultural sectors trade costs are comparatively higher than the non-agricultural sector due to the existence of policy barriers including high tariffs and non-tariff barriers. In addition, arguably the processing and storage costs of agricultural commodities are higher than such costs on industrial consumer goods.

Table 8.1. Trend in Trade Costs of Pakistan for Agricultural & Non-Agricultural Sectors

Year	TC Agr	TC NAgr	LSCI	Pak Tariff	ΔER (Dep/App)	TV (US$ million)
2003	204.08	159.93	19.29	16.81	0.008759	23380
2004	202.70	156.51	20.18	16.17	0.021759	27905
2005	197.26	154.50	21.49	14.61	0.012992	34989
2006	196.02	150.13	21.82	14.79	0.00785	45032
2007	198.41	150.55	24.77	14.9	0.160433	47516
2008	192.14	150.01	24.61	14.08	0.186123	59018
2009	193.70	151.84	26.58	14.78	0.049439	52510
2010	189.23	148.15	29.48	14.51	0.014068	54000
2011	190.39	147.83	30.54	14.25	0.082774	65224
2012	187.70	144.94	31.97	13.99	0.09536	68540

Source: Authors' estimations, except for LSCI, average tariff based on World Bank (2013) and trade volume based on GOP (2013).
Note: Positive change in exchange rate represents depreciation and negative change in exchange rate represents appreciation. LSCI stands for linear shipping connectivity index represents Port infrastructure, TV represents the trade volume.

Trade costs (TC) of Pakistan in agricultural and non-agricultural sectors on average show a declining trend for the period 2003-2012 (Table 8.1). The reduction in trade costs (TC) is consistent with the lowering of tariff rates. Tariffs not only make imports costly but also discourage exports by raising the cost of imported inputs and act as an implicit tax on exports. Thus, a fall in simple average tariff from 16.8% in 2003 to 13.9% in 2012 has resulted into a rise in exports and imports, also consistent with trade costs (TC) reduction.

An analysis of changes in the nominal exchange rate (ER) shows depreciation of nominal exchange rate (ER) over the period of study. Depreciation of exchange rate (ER) has increased the bilateral trade flows relative to domestic trade thus causing a reduction in overall trade costs (TC). Hence, depreciation of nominal exchange rate (ER) is seen as a factor helping in trade costs reduction.

Reduction in trade costs can also be attributed to improvement in port infrastructure and shipment. Table 8.1 shows a significant improvement in linear shipping connectivity index (LSCI) from 19% in 2003 to 32 % in 2012. More than 95% of total freight trade of Pakistan

is sea borne; an improved and efficient port infrastructure facilitates trade and reduces trade costs. Keeping this in view, Ministry of Ports and Shipping of Pakistan is focused to achieve the objective of modernization and corporatization of ports introducing modern technology and data base in line with the present day trends, reviving ship-owning in the private sector by removing the impediments, and enhancing tonnage and profitability of Pakistan National Shipping Corporation. Fulfilment of these objectives will further enhance port efficiency, reduce the costs for port users and enhance port management accountability; consequently reducing trade costs.

8.3.1. Sectoral Trade Costs

In trade costs equivalent terms, Pakistan and UAE on average have the lowest levels of trade costs in their bilateral trade, i.e., 146.5% for agricultural sector and 104% for non-agricultural sectors. Table 8.2 and 8.3 provide trade costs of agricultural and non-agricultural sector. There are many factors behind these lower trade costs between two partners; these include geographical proximity, cultural linkage, no currency restrictions from UAE, abundant energy supplies, and no corporate taxation [Hamid and Hayat (2012)]. Trade costs between two countries are expected to decline further with the decrease in oil prices, which will reduce transportation costs.

Another interesting finding of trade costs analysis is that despite being neighbouring countries, tariff equivalents of trade costs between Pakistan and India are quite high, i.e., 218% for agricultural and 176% for non-agricultural sector (Tables 8.2 and 8.3). Trade costs are not low between these two countries owing to the economic, political and military tensions. There is discriminatory stringent application of non-tariff barriers by India, i.e., regulatory and safety requirements that dampens Pakistani exports to India. Political uncertainty, strict procedures for licensing permits and visa hassles also act as barriers to trade, thus increasing trade costs. India follows a restrictive trade regime especially in case of agricultural goods which is depicted by the high trade costs (TC) of agricultural sector. Similarly, for textile exports, India observes a large number of non-tariff barriers including para-tariffs,

sanitary and photo sanitary (SPS) measures and pre-shipment inspection. Some goods can only be imported through specified ports and road routes between the two countries are only open for exports of limited number of commodities. These bottlenecks on road and rail route and weak and inadequate transportation links between the two countries further increases the trade costs (TC). Also, Pakistan maintained a "Positive list" for the Indian imports until 2011 which only allowed the imports of these 1,946 items from India. Later on the approach of Negative list was adopted by Pakistan which prohibited the import of 1209 items to be imported from India. Positive list had also hindered the free flow of goods between the two partners thus aggravating the overall trade costs (TC) [Saleem *et al.* (2014)]. With the adoption of a negative list, almost 85% of goods can be imported from India compared to level of 25% previously.

Pakistan and China, the leading trading partners and neighbouring countries, sharing a common border. However, bilateral trade costs (TC) between two countries remain high. The government of China promotes domestic consumption through structural tax reduction policies and there is a strong domestic demand in China. Although, bilateral trade flows between two countries are very large, yet China's customs procedures still require harmonization. Besides, its tariff regimes have not changed substantially, which is a possible reason behind high trade costs (TC).

In addition, China maintains restrictions, licensing and prohibitions on grounds of state security and morality, all these factors add to the levels of trade costs. Bilateral costs of trade between two countries can be reduced by upgrading the Karakoram Highway which is the shortest overland route between the two countries. Also, the construction of an economic corridor is foreseen as a great opportunity to reduce the staggering amount of time and distance consequently reducing the trade costs. Long shipping routes between the two countries add to the costs of trade which can be lessened by the construction of a direct corridor from Kashgar to Gwadar, which is estimated to cut down the existing costs associated to long distance by one-third of the current levels [Kayani, *et al.* (2013)].

USA is also among the top ten major trading partners of Pakistan. Trade costs between the two countries are high owing to the long distance as well as many other contributing factors. USA's domestic trade relative to international trade with Pakistan is very high as compared to Pakistan. The reason behind high values of domestic trade is that there is an excellent working relationship between US manufacturers and other distributors that provides wholesale customers with access to barge product wherever and whenever they need it. Also, there is an ease of transport (ground versus air/sea) which makes domestic trade more feasible. Trade costs between two countries are high because of large distance, stressed relationship between the government, licensing and quality control requirements from USA government. Pakistan is a country that is included in the list of Restricted Entities by USA, imposition of non-tariff barriers makes textile and clothing products of Pakistan suffer the most.

Table 8.2. Estimates of Trade Costs Equivalents for Agricultural Sector

US Dollar (USD)

Year	IND	UAE	CHN	SA	UK	USA	MYS	JPN	GMY	BD
2003	241.26	148.28	222.76	217.26	190.21	205.22	200.31	239.38	224.92	151.18
2004	239.87	148.19	219.47	215.38	194.16	186.24	201.76	242.01	224.27	156.65
2005	217.54	142.31	207.87	210.65	191.83	201.09	199.33	240.87	220.86	150.09
2006	196.67	144.37	217.21	208.85	188.42	192.01	203.25	244.09	216.73	158.92
2007	222.88	148.86	196.07	208.87	190.65	193.84	199.07	233.54	218.59	151.07
2008	218.38	147.27	207.21	197.99	185.16	181.39	192.41	233.81	214.41	151.24
2009	221.74	146.92	206.35	199.52	184.25	190.03	180.85	229.68	212.57	150.12
2010	219.91	142.73	203.41	196.37	182.96	188.95	185.80	226.03	208.57	149.04
2011	213.50	149.18	199.91	206.34	181.23	192.93	179.77	219.32	209.42	149.82
2012	212.88	147.20	191.78	202.98	180.01	187.63	179.84	214.91	208.68	149.01
Avg.	218.66	146.53	206.62	204.42	192.68	191.93	192.24	232.57	209.76	151.71

Source: Authors' calculations.
Note: IND stands for India, CHN stands for China, BD stands for Bangladesh, SA stands for Saudi Arabia, MYS stands for Malaysia, JPN stands for Japan, GMY stands for Germany.

Pakistan and EU enjoy very strong and rapidly growing trade ties. We have chosen two countries from EU, United Kingdom and Germany for the purpose of trade costs analysis. Estimated trade costs show that despite the fact there is no cultural or geographical proximity between

Pakistan and selected EU member states, trade costs on average are not very large. A further decline in trade costs is expected to occur by the GSP plus status granted by EU to Pakistan in 2014. Before that, Pakistan was given a general GSP status, and Pakistani exports faced some sort of non-tariff barriers like standard intellectual property rights, rules of origin and competition policy.

Table 8.3. Estimates of Trade Costs Equivalents for Non-Agricultural Sector

US Dollar (USD)

Year	IND	UAE	CHN	SA	UK	USA	MYS	JPN	GMY	BD
2003	203.47	107.78	162.67	150.15	157.63	171.20	164.49	161.65	180.25	139.10
2004	185.64	109.32	160.49	147.19	160.33	165.90	160.30	160.76	176.01	139.18
2005	182.60	106.39	153.83	148.71	158.85	164.03	160.52	156.64	176.86	136.60
2006	162.07	105.77	148.30	144.82	152.83	165.49	161.97	151.43	175.02	133.68
2007	167.94	104.07	146.72	138.61	160.79	166.59	155.62	157.19	174.32	133.98
2008	164.32	103.23	153.62	137.68	157.70	165.90	151.17	156.63	175.14	134.78
2009	174.46	103.62	158.80	135.74	157.75	163.74	149.79	164.01	172.78	137.91
2010	171.49	103.06	152.93	130.70	147.88	163.32	145.96	159.42	171.89	133.82
2011	169.34	101.52	154.58	131.80	148.71	163.63	147.88	158.34	171.37	131.54
2012	172.11	100.48.	154.64	127.84	139.88	158.63	142.73	160.10	162.04	130.99
Avg.	176.12	103.72	154.66	139.33	154.20	164.01	154.04	158.61	173.57	134.24

Source: Authors' calculations.

Note: IND stands for India, CHN stands for China, BD stands for Bangladesh, SA stands for Saudi Arabia, MYS stands for Malaysia, JPN stands for Japan, GMY stands for Germany.

Pakistan and Bangladesh have not been able to bring about a significant reduction in their bilateral trade costs. Though trade between two countries is growing progressively and has crossed $1 billion mark but there is a need to develop trade facilitation strategies that can further reduce trade costs. At present there is no direct air link between two countries, especially between Lahore and Dhaka. Infrequent shipping arrangements between the two countries hamper flow of goods between Pakistan and Bangladesh.

Japan is an important trading partner of Pakistan. There is a huge potential for further increase in trade volume between the two countries. Trade costs estimates, however, do not present a very encouraging picture. Trade costs equivalents are very high. The import regulations, applicable standards and quarantine requirements make it all the more difficult to export Pakistani products specially food items. Pakistani exports also have the disadvantage of being more distant from the market than its competitors, such as China, Russia, Thailand, South Korea, etc. This not only increases transportation costs but also delays the delivery of goods, whereas Japanese importers prefer small size lots with short delivery schedules. Both the countries need to overcome these impediments to bilateral trade.

In the modern time, importance of trade costs as a determinant of national trade performance and competitiveness has been seriously recognized by the developed countries. Their governments have been critically analysing and performing research for making effective policies for reduction of trade costs. On the other hand, developing countries have been rather ignorant and little efforts have been made so far at policy level to address this issue. Pakistan is not different from other developing nations. By looking at trade costs estimates, we find that the country still faces high bilateral trade costs *viz a viz* its major trading partners. This shows government's lack of policy attention towards trade facilitation. Pakistan still exports large volume of agricultural products, while trade costs for agricultural sector are substantially higher than that of non-agricultural sector, which speaks of sectoral inefficiency and bias in policies. Thus, the key need is to identify the primary sources of trade costs and formulate what government should do to address them so that trade can be used to sustain high rate of economic growth over a longer period of time.

8.4. The Trade Costs Model

8.4.1 Theoretical Framework

Trade costs are cited as important determinant of international trade. Given the nature and pattern of trade costs, the Gravity model of

international trade is most suitable to determine factors that affect trade costs. This is because the model provides main link between trade flows and trade barriers. The Gravity model has become a major pillar in applied international economics [Evenett and Hutchinson (2002)]. It is basically motivated by the Newton's gravitational law in which the gravitational force utilized among two bodies is determined by their distance and mass. This model became popular in international economics with the pioneering work of Tinbergen (1962). It relates bilateral trade flows to the GDP, distance, and other factors including trade barriers. Anderson (1979), Deardoff (1998), Hummels (1999), Baier and Bergstrand (2001), Limao and Venables (2001) have applied it in a wider sense to infer trade flow effects of institutions such as customs unions, exchange-rate mechanisms, ethnic ties, linguistic identity and international borders.

This paper makes use of Novy's (2008) trade costs measure. This is a micro founded measure of trade cost that has been derived from Anderson and Van Wincoop (2003) model based on the Gravity equation. The Gravity equation has been most widely used instrument for modelling the bilateral trade flows. As a workhorse of international trade, it relates countries bilateral trade with their economic sizes and trade costs. This measure analytically solves the theoretical gravity equation for the trade cost parameters that capture the barriers to international trade.

Novy (2007) derived an explicit analytical solution for the multilateral trade resistance variables and with that solved the trade costs function. This approach relies on the argument that changes in trade barriers do not only affect international trade but domestic trade as well. In practice when a country phases out or reduces trade tariffs, some goods that are produced for domestic consumption are shipped to foreign countries, implying that trade barriers have an impact on domestic trade as well. Traditional theory based versions of the gravity model underestimates border barrier costs because it does not consider the non-tradable (domestic trade) sector. Trade barriers do not only affect international trade but domestic trade as well. The intuition behind this argument is straightforward. A change in trade barriers will lead to a shift in resources between the tradable sector and non-tradable sector (import

competing) and this will result in changes in trade flows (either bilaterally or multilaterally). This is especially the case for multilateral resistance of the trading countries because it does depend on domestic trade. This implies that there is a need to include domestic trade in the gravity equation to account for the home bias also.

The motivation behind Novy's approach was to overcome the drawbacks that were associated with the theory-based gravity framework by Anderson and Van Wincoop (2003), which imposed certain arbitrary trade cost functions. The theory-based gravity formulation was a refinement of the traditional gravity equation to include multilateral trade resistance variables.

Anderson and Van Wincoop [AvW (2003)] derived a micro founded trade cost measure based on a multi country general equilibrium model expressed as:

$$\boldsymbol{x_{ij}} = \frac{y_i y_j}{y_w}\left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma} \qquad \text{... (i)}$$

where, $\boldsymbol{x_{ij}}$ is the bilateral trade from *i* to *j*, $\boldsymbol{y_i}$ & $\boldsymbol{y_j}$ are nominal income of country *i* and *j*, $\boldsymbol{y_w}$ is the world income, $\boldsymbol{\Pi_i}$ is the outward multilateral resistance of country *i*, $\boldsymbol{P_j}$ is the outward multilateral resistance of country *j*, and $\boldsymbol{t_{ij}}$ is the bilateral trade cost measure, σ is the elasticity of substitution between goods. The main innovation in AvW's (2003) model is to incorporate exporter and importer price indices (Π and P) such that trade not only depends on bilateral trade costs between the two countries but also on the trade "resistance" they face with all of their trading partners in the rest of the world. That is, country *i* is more likely to trade with country *j* if π_i is higher, meaning the multilateral resistance of country *i* to all other partners is higher.

Using Equ. (i), consider the intra-national trade of country *i* as:

$$\boldsymbol{x_{ii}} = \frac{y_i y_j}{y_w}\left(\frac{t_{ii}}{\Pi_i P_i}\right)^{1-\sigma} \qquad \text{… (ii)}$$

and rewrite it as:

$$\Pi_i P_i = \left(\frac{x_{ii}/y_i}{y_i/y^w} \right)^{\frac{1}{\sigma-1}} t_{ii} \quad \ldots \text{(iii)}$$

which solves for country *i*'s multilateral resistance. Multiplying eq (i) with x_{ji}, we obtain:

$$x_{ij}x_{ji} = \left(\frac{y_i y_j}{y^w} \right)^2 \left(\frac{t_{ij}\, t_{ji}}{\Pi_i P_i \Pi_j P_j} \right)^{1-\sigma} \quad \ldots \text{(iv)}$$

substitute (iii) for country *i* and *j* into (ii), we can derive the bilateral trade costs relative to domestic trade costs expressed as tariff equivalent by subtracting 1:

$$\tau_{ij} = \left(\frac{t_{ij}t_{ji}}{t_{ii}\, t_{jj}} \right)^{\frac{1}{2}} - 1 = \left(\frac{x_{ii}\, x_{jj}}{x_{ij}\, x_{ji}} \right)^{\frac{1}{2(\sigma-1)}} - 1 \quad \ldots (5)$$

where,

τ_{ij} = tariff equivalent trade cost (i.e., measures domestic trade relative to bilateral trade).
t_{ij} = international trade costs from country *i* to country *j*.
t_{ji} = international trade costs from country *j* to country *i*.
t_{ii}= intra-national trade costs of country *i* *tjj* denotes intra-national trade costs of country *j*.
x_{ij} =international trade flows from country *i* to country *j*.
x_{ji} =international trade flows from country *j* to country *i*.
x_{ii} =intra-national trade of country *i*.
x_{jj} =intra-national trade of country *j*.
σ denotes elasticity of substitution between all goods.[5]

where, $\boldsymbol{\tau_{ij}}$ is defined as a ratio of trade cost across national border relative to trade cost within national border weighted by the elasticity of substitution. It must be noted that τ_{ij} is not directional, i.e., τ_{ij} measures the barrier between country *i* and *j* on average, so that it is a two-way trade cost measure. Intuitively, it measures the bilateral trade cost for both importing and exporting countries. Trade costs τ_{ij}, thus represent the

geometric average of international trade costs between countries *i* and *j* relative to domestic trade costs within each country. Intuitively, trade costs are higher when countries tend to trade more with themselves than they do with each other, i.e., as $X_{ii}X_{jj}/X_{ij}X_{ji}$ increases. As the ratio falls and countries trade more internationally than domestically, international trade costs must be falling relative to domestic trade costs.

An additional advantage of Novy's trade cost measure is that it allows time-varying measurement of bilateral trade barriers. With readily available trade and production data in tradable goods categories, we are able to measure and explain the determinants of bilateral border effects.

The gravity equation represents one of the greater successes in empirical economics, as it describes the value of bilateral trade, which is function of the market size of the importer as well as exporter, and distance among them [Lili (2011)]. Market sizes embody push and pull factors that affect value of trade flows, and are usually characterized by the *GDP*. Distance is generally measured by geographic distance among two regions (absolute distance). It is anticipated that large distance between trading partners leads to a decrease in trade, as trade will become complicated and bring transaction costs. The basic Gravity model is as the following:

$$T_{ij} = G\left(\frac{Y_i Y_j}{D_{ij}}\right) \qquad \ldots (6)$$

where, *Tij* is bilateral trade volume, for sum of exports and imports; *Yi* is country i's GDP; *Yj* is country j's GDP, *Dij* is the distance among country *i* and country *j*; and *G* is a constant; and is independent of any subscript as it links to a standard Gravity equation in the following form. The multiplicative nature of Equ. (6) suggests that by taking logs it can be made linear in parameters:

$$lnT_{ij} = lnG + a_1 lnGDP_i + a_2 lnGDP_j - a_3 lnD_{ij} + \varepsilon_{ij} \qquad \ldots(7)$$

Objectives of this paper are to test the following two hypotheses:

H_1: Connectivity constraints are more important trade deterrents than tariff barriers.
H_2: Determinants of trade costs have similar effect on agricultural and non-agricultural sectors.

The relationship between trade costs and its determinants is difficult to capture given the paucity of data on all the factors involved. However, in order to explore the determinants of trade costs, our empirical analysis has used several gravity-type variables including distance, infrastructure development, exchange rate, tariff, area and two dummy variables for contiguity and free trade agreement between the trading partners.

8.4.2. Empirical Model

Following Novy (2007), joint observation of non-bilateral variables for country *i* and *j* are constructed by multiplying the single country variables to lead to symmetric and constant interaction effects. All variables are taken in the log natural form.

$$\tau_{ij} = f\ (DIST,\ TARIFF,\ EXCH,\ LSCI,\ AREA,\ CONT,\ FTA) \quad \ldots (8)$$

where, τ_{ij} is the dependent variable representing tariff equivalent of trade costs, *DIST* is the distance among Pakistan and partner country, *TARIFF* is the product of tariffs imposed by Pakistan and other trading partner, *EXCH* is the official exchange rate with respect to Pakistan (taken in current US dollars), *LSCI* is the linear shipping connectivity index of Pakistan and partner country, *AREA* represents product of land area of two trading partners, *CONT* and *FTA* are dummies for contiguity and free trade area, which take the value one if two partner countries are contiguous and members of FTA and zero otherwise.

Distance appears in the Gravity model as proxy of remoteness or transportation costs implying that coefficient of distance is expected to have a positive impact on trade costs. This paper uses liner shipping connectivity index *(LSCI)* as a measure of infrastructure development of the trading countries. Our model includes a dummy variable to show common border with the trading partner. Those countries that share a

common border are reflected by a unitary value of dummy variable, known as contiguity. Common border again is a proxy for transportation and information costs, which tend to be lower for contagious trading partners as they are well aware of consumer's choices and trading prospects, thus making mutual trade less costly. Coefficient of contiguity is expected to be negative.

Ample land is an indicator of big economy and bigger population with high domestic demands. In order to fulfil that high demand foreign goods are also accepted and larger countries have cultural diversity, residents have greater acceptability for a variety of cultures, which calls for greater imports [Saleem and Mahmood (2014)]. Thus, trade increases and overall trade costs decrease. Coefficient of area of trading partners is expected to have a negative sign. Another dummy has also been included to evaluate the effect of FTAs on trade costs. Dummy for FTA is expected to have a negative impact on trade costs.

Tariffs and exchange rate are two policy related or institutional determinants of trade costs. Tariffs imposed by partner countries are used as a measure of restrictiveness to trade flows. Aggravation of tariffs imposed by the trading partners is expected to increase the bilateral trade costs, not only it affects imports but the level of exports also declines if tariffs are imposed on raw materials. Issues of duty draw back further add to the level of trade costs. Thus, overall international trade declines and intra national trade increases consequently increasing trade costs.

Exchange rate is used as a measure of competiveness in international trade flows. The study uses official exchange rate as a determinant of trade costs. Increase in nominal exchange rate leads to an increase in overall volume of trade is a well-established fact. An increase in trade flows with nominal depreciation therefore leads to decline in trade costs as trade flows and trade costs are inversely related. In view of this, coefficient of exchange rate is expected to have a negative sign.

8.4.3 Empirical Specification

The general empirical model reported in Equ. (8) is transformed as the following econometric equation, which links tariff equivalents of trade costs with its determinants and is given as:

$$\tau_{ij} = \beta_0 + B_1EXCH_{ijt} + B_2TR_{it} * TR_{jt} + B_3DIST_{ij} + B_4LSCI_{it} * LSCI_{jt} + B_5CONT_{ij} + B_6AREA_i * AREA_j + B_7FTA_{ijt} + \varepsilon_{ijt} \quad \ldots (9)$$

Table 8.4. Definition and Sources

Variable	Definition	Proxy of	Data Source
Export/ Import	Bilateral trade flows between country *i* and *j*	Direct Variable	UN Comtrade
GDP	Output of agricultural and non-agricultural sectors of country *i* and *j* in current US Dollars	Direct Variable	WDI, World Bank
TARIFF	Product of simple average tariffs imposed by Pakistan and partner country.	Measure of restrictiveness	WDI, World Bank
EXCH	Average official exchange rate of Pakistan (US Dollar)	Competitiveness	Pakistan Economic Survey, GOP
DIST	Distance between Pakistan and partner countries capital cities.	Transportation costs	CEPII
AREA	Product of country *i* and *j* land area.	Size of economy	CEPII
FTA	Dummy equal to unity if two countries are a member of free trade area.	Market access	WTO website
CONT	Dummy equal to unity if two countries share a common border.	Information costs	CEPII
LSCI	Product of country *i* and *j* scores on liner shipping connectivity index.	Trade infrastructure	WDI, World Bank

In our opinion, model in Equ. (9) will help us determine the impact of these variables on trade costs of Pakistan. The findings from this model will have important implications for the policy, as it will help the policy makers to figure out those areas that can bring about significant reductions in trade costs and prioritize policies accordingly. Table 8.4 variables, variables proxies and the data sources from where the data are obtained.

8.5. Results and Discussion

8.5.1 Summary Statistics

Summary statistics is a quantitative description of the main features of the data used in the study. Mean and median are used as measures of central tendency while standard deviation, maximum and

the minimum values represent measures of variability. Table 8.5 provides summary statistics of Pakistan's trade costs with reference to the variables included in the study. A fleeting look at the summary statistics shows that highest mean value of total trade costs for Pakistan is 138.50% with maximum value of 191.8% and minimum value of 98.4%.

Table 8.5. Summary of Discriptive Statistics

Variable	Mean	Median	Std. Dev	Minimum	Maximum	Observations
TC	138.50	135.74	22.702	98.4	191.8	140
TARIFF	0.924	0.633	0.737	0.205	4.59	140
DIST	4299.13	3916.82	2472.13	683.369	11091	140
AREA	1042615	625300.8	873038.8	464239	2907092	140
LSCI	36.0647	37.697	13.466	9.504	68.146	140
Dummy Variables						
CONT	0.214	0	0.410	0	1	140
FTA	0.285	0	0.451	0	1	140

Source: Authors' calculation.

To identify whether a long run relationship between trade cost and explanatory variables exists or not, the prerequisite is to analyse the time series properties of the variables first. As the co-integration tests can only be performed when the panels are non-stationary. For the purpose of checking the stationarity of the series, panel unit root test [Levin, Lin and Chu (2002)] is run on the basis of the following hypothesis:

H_0: Variables exhibit unit root.
H_1: Variables are stationary.

8.5.2 Empirical Results

8.5.2.1 Empirical Results of Pooled Unit Root Test

In order to check the presence of unit root in selected countries, pooled unit root test is conducted using the Eviews-8 Software. Table 8.6 reports the results of Levin, Lin and Chu (2002) stationarity test

showing that the variables *TC, TARIFF, EXCH* and *LSCI* are stationary at the first difference, i.e., *I(1)*. Distance between countries and country area fail to show any result because they are independent of time. Remaining two variables included in the model are dummy variables.

Table 8.6. Levin, Lin & Chu Test for Stationarity

Variable	Level		First Difference		Order of Integration
	Stat.	Prob.	Stat.	Prob.	
TC	-1.315	0.0946	-8.717	0.0000	I(1)
TARIFF	0.151	0.5603	-4.736	0.0000	I(1)
EXCH	-28.001	0.0000			I(1)
LSCI	0.370	0.6444	-5.273	0.0000	I(1)

8.5.2.2. Empirical Results of Kao (1999) Co-integration Test

To determine whether variables with first difference orders of integration, i.e., *I(1)* yield spurious regression or a long run relationship does exist, Kao (1999) panel co-integration test is run based on the null hypothesis of no co-integration. Table 8.7 shows that the null hypothesis of no co-integration is rejected thus confirming that a long run relationship does exist. In other words, the possibility of spurious results has been ruled out.

The results of Kao (1999) co-integration tests confirm the existence of a long run relationship between the dependent and explanatory variables. Therefore, the application of OLS technique will yield biased and inconsistent estimators. Fixed effects model cannot be applied to models involving time invariant variables such as distance as it leads to problem of endogeneity. We thus need to adopt an alternative method to estimate the co-integrated panel. In this regard, Panel Fully Modified Ordinary Least Square (FMOLS) method was developed by Pedroni (1996), which uses a correction approach to deal with the nuisance parameters and thus gives long run coefficients for the estimated model correcting for endogeneity and serial correlation. FMOLS has an advantage over other techniques as it allows for estimation of common co-integration vectors while allowing for heterogeneity both across time and cross sections [Pedroni (2004)].

Thus, the resultant estimates are more consistent, free of serial correlation and endogeneity.

8.5.2.3. Empirical Results of FMOLS: Total Merchandise Trade

Results of fully modified ordinary least square model show that trade costs equivalents for selected trading partners of Pakistan are significantly dependent on the explanatory variables included in the model.

Table 8.7. Kao (1999) Residual based Co-integration Test Estimation

Kao Co-integration Test	Dependant variable: D (RESID)		
Included Observation: 139 after adjustment			
Variable	Coefficient	t-statistic	P-value
RESID(-1)	-0.233	-3.749	0.0003

Null Hypothesis: No co-integration

Table 8.8 shows the estimated results of determinants of trade costs for overall merchandise trade with Pakistan's major trading partners. Dependent variable is the log of trade costs equivalents for total merchandise trade.

Table 8.8. Empirical Results of FMOLS: Total Merchandise Trade

Variable	Coefficient	Std. Error	t-Statistics	p-values
TARIFF(TR_i*TR_j)	0.019663	0.051249	0.383675	0.7020
EXCH	-0.028292	0.009666	-2.927088	0.0042*
LSCI($LSCI_i$*$LSCI_{j)}$	-0.179337	0.045527	-3.939140	0.0002 *
DIST	0.278061	0.071994	3.862296	0.0002 *
AREA($Area_i$*$Area_{j)}$	-0.047967	0.015814	-3.159048	0.0031 *
CONT	-0.131884	0.099674	-1.323153	0.1888
FTA	-0.166789	0.071971	-2.31745	0.0224**
C	2.644451	0.553275	4.779636	0.0000*

R-squared	0.678589	Mean dependent var	4.916574
Adjusted R-squared	0.656313	S.D. dependent var	0.181657
S.E. of regression	0.106496	Sum squared resid	1.145483
Durbin-Watson stat	0.592009	Long-run variance	0.028958

* Significant at 1%, ** significant at 5%.

The results depict that nominal exchange rate (*EXCH*) is statistically significant at 1% level and has a negative sign. There is an inverse relationship between depreciation of nominal exchange rate and trade costs. In other words, with depreciation of the exchange rate, total volume of trade rises. As trade goes up, intra-national trade goes down resulting into a decline in trade costs. The coefficient for exchange rate suggests that 1% depreciation of exchange rate reduces trade costs by 0.03% (Table 8.8). This result is consistent with the findings of Singh *et al.* (2012). Thus, an increase in international trade greater than the increase in intra-national trade as a result of currency depreciation implies that it has become easier for countries to have more trade internationally rather than trading internally, which is tantamount to a decline in trade costs. It is pertinent to note that with depreciation of nominal exchange rate it is realized that the growth in total bilateral trade with selected countries over the period of 2003-2012 is 50.4%, which is larger than the growth of intra-national trade which increased by 37.2%.

Tariffs always act as an obstacle to international trade thus increasing the trade costs. Imposition of tariffs not only decreases the level of imports as well as exports, because tariffs imposed on imported raw materials and inputs used in production of export tables, causing a switch towards intra-national trade leading to increase in trade costs. Thus, increase in tariffs adversely affects overall trade flow. Here, product of tariffs imposed by Pakistan and its trading partner is used, reflecting degree of market access in two countries, which leads to increase in trade costs. Estimated coefficient sign for this variable is positive but is statistically insignificant. Results show that 1 % increase in tariffs will increase the trade costs by 0.02% (Table 8.8). These results are in line with the findings of Novy (2013) and Wincoop, *et al. (*2004).

Distance, area and common border are geographic determinants of trade costs. Distance between the trading partners affects the physical transport cost. Geographic distance between the trading countries is a hindrance to bilateral trade flows. Estimated results show that geographic distance between Pakistan and its trading partners is positively related to the trade costs (Table 8.8). It indicates that 1% increase in distance increases the trade costs by 0.28%. Our result is consistent with the study of Duan and Jason (2012).

The regression coefficient of the variable land area of Pakistan and the trading partner is negative and statistically significant at 1% confidence level. It implies that when there is 1% increase in land area, trade costs decrease by 0.04% (Table 8.8). Intuition behind this result is that generally countries with large land areas have large economies and populations, and thus have high domestic demand. To fulfil domestic demand, foreign goods are also accepted by local population, which results into trade. Moreover, in large size countries, cultural diversity is a hallmark and the residents have greater acceptability for a variety of culture including foreign cultural goods, which also causes greater import of cultural goods [Salim and Mahmood (2014)]. Thus, international trade flow increases and trade costs decrease. The present study's empirical result is same as that of Lili (2011).

Linear shipping connectivity index (*LSCI*) is used as a proxy for infrastructure development. Estimates of regression show that LSCI has a negative and statistically significant impact on trade costs. Better maritime connectivity and port efficiency reduce the level of delays in shipment of goods and thus lower trade costs. Results show that 1% increase in LSCI decreases the trade costs by 0.17% (Table 8.8). These results corroborate with the findings of Duval and Chorthip (2010), Singh, *et al*. (2012) and Olper and Valentina (2007).

Dummy variable for free trade agreement (*FTA*) exhibits a negative and significant relationship with trade costs. According to the regression results, Pakistan's membership in a free trade area reduces trade costs by 0.16% (Table 8.8). Free trade area reduces barriers to exchange and increases international trade through specialization, division of labour and comparative advantage. Thus, an increase in

international trade in the aftermath of free trade agreement reduces trade costs. Our results are in line with the findings of Novy (2007).

R-square is used to measure the regression's success in determining the values of dependent variables. Overall, our model performs reasonably well and about more than half of the variation in dependent variable is being explained by independent variables. Adjusted R-square is 0.66, which shows that the above determinants are explaining 67% of variation in trade costs. Standard deviation of dependent variable is less than which indicates greater reliability of the results. Model is also adjusted for serial correlation and possible endogeneity problem because of FMOLS.

Estimation results for trade costs equivalents for agricultural and non-agricultural sectors along with the z-test results of cross model coefficients comparison are given in Appendix, the included explanatory variables yield same statistical relationship with the dependent variable as in the case of total merchandise trade.

8.6. Conclusion and Policy Implications

8.6.1 Conclusion

This study analysed the estimates of trade costs for overall trade, agricultural trade and non-agricultural trade of Pakistan with its major trading partners across Asia, Europe and North America over the period 2003-2012. Moreover, it examined the relationship between trade costs and its major determinants using the panel data estimation techniques. The study adds to the literature by disaggregating trade into two macro-sectors, agriculture and non-agriculture. Existing studies only used total trade, without attempting on sectoral trade details.

Despite the fact that international economy has considerably integrated, our analysis of tariff equivalents of trade costs emphasises that large unexploited gains can be reaped by further reducing the wedge between the cost of producing a good and price paid by ultimate consumer, i.e., by cutting down the trade costs.

Our estimates of trade costs reveal that Pakistan's trade costs are following a disproportionate pattern with its trading partners. Although, the estimates show a considerable reduction in trade costs, yet they

indicate that substantial room remains for lowering them further. High bilateral trade costs with some of its very largest trading partners in particular calls for policies that can effectively reduce trade costs between the trading partners. Policy makers need to address the dynamics of higher trade costs in order to improve country's absolute and relative position in the global trade.

At the sectoral level, costs of trade for agricultural sector tend to bypass the costs of trade for non-agricultural sector. The fact that agricultural trade costs in many developing countries are relatively larger than that of the non-agricultural sector suggests that focusing on trade facilitation efforts for agricultural sector would be particularly productive for Pakistan as WTO's agreement on trade facilitation also emphasis on the release of perishable goods at the earliest possible.

In addition to mapping out the level of trade costs of Pakistan in the recent decade, we used econometric method to investigate various determinants of trade costs. For this purpose, we decompose the trade cost components into various policy and non-policy features. A key finding is that distance, maritime transport and trade facilitation matter for trade costs. Two areas which are highly amenable to policy intervention for reduction of trade costs are the trade infrastructure and free trade areas with the trading partners. UNCTAD'S liner shipping connectivity index is a more important source of trade costs than tariffs.

This is because better shipment connectivity with the trading partners efficiently improves transportation routes thus reducing time and other costs. Similarly, we find that free trade agreements also play a significant role in reducing the costs of trade; this implies that the FTAs of modern era including a fall of non-tariff and behind the border regulatory measures will be helpful to achieve the target of trade costs reduction. Empirical analysis allowed to identify those trade facilitation measures and policies which are most effective determinants of trade costs. It suggests that an increase in geographical distance between trading partners, and tariffs are positively linked with the trade costs. However, land area and common border between trading partners, nominal depreciation of exchange rate, linear shipping connectivity index and membership of a free trade area all because a decline in trade costs.

8.6.2 Policy Implications

The benefits of trade as an engine of economic growth and sustainable development as well as means of poverty reduction can only be achieved if these high trade costs are controlled. Higher trade costs lower the competitiveness, thus limiting the potential benefits of trade. Pakistan is a developing country and trade can turn out to be a helpful instrument to achieve sustainability and economic welfare provided these large trade costs are taken care of.

The study evidently shows that there is ample room for reduction in trade costs if proper policy actions are taken. Findings of the study have the following implications for policy making:

- Pakistan should actively participate in WTO's agreement on trade facilitation and reduce the red tape at border crossings to cut down the trade costs.
- Shipment of perishable agricultural goods must be expedited and releasing these goods at the earliest could help reduce trade costs.
- Improve port connectivity, cargo handling and means of transportation. i.e., roads, railways and air links.
- In addition to tariff reduction, NTB's must be streamlined and harmonized to reduce trade costs.
- Effect of longer distance can be limited by the development of both hard and soft infrastructures by applying modern technological methods: internet, publicity campaigns and electronic media.
- Initiation of mega projects like CPEC can bring about the much needed trade costs reduction.

APPENDIX

A. Empirical Results of FMOLS: Agricultural Sector Trade

Variable	Coefficient	Std. Error	t-Statistics	p-values
TARIFF(TR_i*TR_j)	0.072242	0.052622	1.372851	0.1732
EXCH	-0.052983	0.011580	-4.575206	0.0000*
LSCI($LSCI_i$*$LSCI_j$)	-0.171619	0.054041	-3.175734	0.0020 *
DIST	0.149250	0.071237	2.095166	0.0389 **
AREA($Area_i$*$Area_j$)	-0.059225	0.012518	-4.731075	0.0000 *
CONT	-0.040529	0.030851	-1.313729	0.1922
FTA	-0.144177	0.067401	-2.139099	0.0351**
C	4.578977	0.260851	17.55403	0.0000*
R-squared	0.586571	Mean dependent var		5.257956
Adjusted R-squared	0.554769	S.D. dependent var		0.146936
S.E. of regression	0.098044	Sum squared resid		0.874743
Durbin-Watson stat	0.728349	Long-run variance		0.021633

*significant at 1%, ** significant at 5%.

B. Empirical Results of FMOLS: Non-Agricultural Sector Trade

Variable	Coefficient	Std. Error	t-Statistics	p-values
TARIFF(TR_i*TR_j)	0.004906	0.037630	0.130386	0.8965
EXCH	-0.027262	0.013489	-2.021037	0.0462**
LSCI($LSCI_i$*$LSCI_j$)	-0.186992	0.070409	-2.653159	0.0094 *
DIST	0.282673	0.069443	4.070551	0.0001*
AREA($Area_i$*$Area_j$)	-0.049181	0.012387	-3.970405	0.0001*
CONT	-0.009774	0.079129	-0.123524	0.9020
FTA	-0.292959	0.077992	-3.756287	0.0003*
C	6.164287	1.114648	5.530256	0.0000*
R-squared	0.524590	Mean dependent var		5.660031
Adjusted R-squared	0.488020	S.D. dependent var		0.149255
S.E. of regression	0.106796	Sum squared resid		1.037896
		Long-run variance		0.029268
Durbin-Watson stat	0.520878			

*significant at 1% ,** significant at 5% .

C. Z-scores for Cross Model Coefficients

Variable	Calculated Z- score
Tariff	1.041
EXCH	-1.44
LSCI	0.173
DIST	4.33
AREA	0.570
CONT	0.36
FTA	0.828

Notes:

1. A growing literature has documented the impact of trade costs on the volume of trade (see, for example, Anderson and Van Wincoop, 2004).
2. See, for example, Khan and Weiss (2006), who explain how and why infrastructure can assist the regional cooperation process.
3. EUROSTAT (2013).
4. It is a coding system known for coding Harmonized Commodity Description of tariff nomenclature. It is a system of International standard of names and codes in order to classify traded products maintained by the World Customs Organization (WCO).
5. See, Anderson and Van Wincoop (2003) for detailed discussion on elasticity of substitution between goods. This thesis follows Avw's and Novy (2008) $\sigma=8$, which is the middle point of available estimates. Smaller value of σ results in higher trade costs showing that consumers are irresponsive to prices and trade costs and consume larger amounts of foreign goods.

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9. The Impact of Investment in Human Capital on the Exports of Goods and Services

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9.1 Introduction

Companies have long strived with how they can use their relative advantage to enhance their global market share and incomes. Since the 1950s companies started to find new ways for taking the advantage of the economies-of-scale and broadening of production base to protect their export incomes. This made "diversification" a widely held industrialization approach. But with increased competition later, it became difficult for companies to handle the management structure due to the diversification strategy. To overcome this problem, many large companies began to consider the 'outsourcing' option to enhance their competitiveness. While shifting attention to their central process, companies passed non-core procedures, to be managed by third parties. Until the 1990s, outsourcing was not widely practiced. But in the late 1990s, as cost saving became part of business strategy for companies, they began to focus on outsourcing option. They started to outsource such functions which were necessary to run a business but not related to central business activities.

Coase (1937) was first who developed the economics of outsourcing. He raised the question that what established the boundaries for a firm? Through internal as well as external cost comparison a firm can decide whether to produce things internally or externally. Coase had

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laid the foundation of modern transaction cost economics by creating the transaction cost calculation.

In the 1990s, outsourcing became a buzzword and was considered as a useful addition to the business world. Since the firm production chain is broken into various sequence tasks, by focusing on each task firms can enhance its efficiency. Through outsourcing, significant proportion of management control is transferred to suppliers. That involves the risk of diminishing control over the supply chain. This risk can be reduced by establishing the coordination between buyers and sellers.

Due to outsourcing many low skilled jobs in the manufacturing industries are transferred from developed countries to developing countries. While the services sector in developed countries was considered less vulnerable to this replacement because it was thought that their better skilled and educated workers would protect local service industry from foreign competition. This perception was based on high investment in human capital in developed Countries. But this notion was challenged by China and other Asian countries in the 1990s when they emerged as most preferred outsourcing locations [Contractor and Mudambi (2008)].

This paradigm shift in production and trade pattern has been made possible by the changes in business environment including the revolution in information and communication technologies. Such changes have enabled countries to transmit goods and services exports cheaply and fast.

If the distance becomes less important because of low transmission cost then it is expected that exports will originate from a large numbers of countries. But the available evidence does not support this assertion. Exports tend to be concentrated in a few countries. What this suggests is that there are many other factors other than transmission and transaction costs, which explain the global export pattern and its intensity. In this context, availability and the quality of the factors of production, including skilled and educated labour force, the quality of infrastructure and business environment may play an important role to change the level of exports in a positive way.

From the above perspective, this paper attempts to answer the following questions; to what degree the differences in the human capital investment through countries shake the goods and services exports? In this regard, are there any differences between the developed and the developing countries? How is the infrastructure and business environment affecting the export of goods and services? Does human capital investment impact on export of services differ from export of goods?

Researchers have diverse opinions concerning the importance of difference between services and goods. Some of them highlighted the exclusive characteristics of services, inseparability[1] and intangibility, which make them different from goods. Such differences require a modification in the models of international trade that focus on goods instead of services. Nevertheless, some researchers claim that the variance between services and goods is not very obvious. They argue that services are intangible but some of them require close interaction between consumer and service provider. Such arguments for and against the distinctive natures of services are prevailing in literature. This motivates us to run tests separately for exports in goods and services. In the context of outsourcing, this study aims to examine the influence the of human capital investment on the goods exports and services for emerging Asia vs. developed countries.

In this paper, we attempt to investigate the role of the human capital investment in enhancing location attractiveness for outsourcing location. In addition, the study also examines the role of information and communication technology and other factors (business environment, wages) in determining the desirability of a country for subcontracting of services and goods. Good IT infrastructure has become an essential instrument for countries to compete in the international market. Similarly, sound business environment is crucial for attracting out-sourcing activities. As far as wages are concerned, foreign countries look at the wage cost in the host country while making the outsourcing decision. The output of this study is expected to benefit the countries that are competing with each other to obtain off shoring contracts and attracting foreign direct investment.

The rest of the paper is separated into five sections. Section 2 provides an overview of outsourcing activities in selected Asian countries. Theoretical framework is discussed in Section 3. Section 4 provides empirical models used in this paper. Results are discussed in Section 5. Finally, Section 6 accomplishes the paper and delivers the policy implications.

9.2 Outline of Outsourcing in Selected Asian Countries

The concept of outsourcing was developed in U.S. in the 1970s. At that time, many manufacturing firms sent their raw material to developing countries due to low labour cost. Initially, payroll outsourcing was done but in the late 1980s outsourcing was moved from payroll to HR function to manufacturing and eventually to IT outsourcing. Although literacy rate is 99 percent in USA, conducting a sourcing project in USA is very expensive as compared to other outsourcing countries, e.g., salary of a web developer in India is 70 percent less than that of an American counterpart. Same is true for Canada, which is one of the major outsourcing countries. Its prime area of outsourcing is IT as the country is taking the benefit of better infrastructure and educated labour force.

Nowadays software development is growing in Canada. Therefore, in order to hire senior software developers, government has to pay them higher wages. New Zealand is also considered as an important place for outsourcing. Despite large human capital stock, wages are high in the country so companies consider other destinations for outsourcing. UK is also considered as a hub of IT and BPO outsourcing. Although UK has a large pool of educated labour force and better IT infrastructure, yet wages are high in UK just like other developed countries.

Despite the above mentioned developments, outsourcing was not considered as a popular business strategy until 1989 but in the 1990s, cost saving became a crucial element for companies, so they started considering the outsourcing option. At that time, companies outsourced those activities that were not related to their core business activities. Kodak, for instance, was the first American company which outsourced

its IT system in 1989. After this revolutionary step, many companies decided to outsource their business activities on the basis of cost effectiveness rather than focusing on whether activity is core or not.

Because of competitive advantage, lower costs, access to technology, access to exports and availability of the resources for the core business activities, developed countries consider the option of outsourcing to developing countries. Asia is considered as a hub of outsourcing because of its cheap labour and large pool of educated labour force. Some of the major Asian countries are India, China, Malaysia, Thailand, Philippines and Pakistan [Kearney (2014)].

9.2.1 Determinants of Outsourcing in Asian Countries

At present companies consider the option of outsourcing to improve their current conditions. All over the world it is considered as the latest trend in a modern economy. All the major cooperation considers the option of outsourcing for maintaining their competitiveness because it enhances the efficiency, accountability and service quality. There are many factors which affect the outsourcing decision such as wages, IT infrastructure, business environment of a country and most importantly education and skill level of workers. A good combination of all these factors exists in Asia which makes it a desirable place for outsourcing.

Educated labour force with lower cost is a major factor that makes the Asian countries such as China and India a preferred place for outsourcing. In order to attract foreign companies for outsourcing, these countries heavily invested in human capital. World Bank (2013) reported an overall upward trend in the average years of schooling in the selected Asian countries for the period 2000 to 2012.

Besides human capital stock, a country's IT infrastructure is a major factor, which foreign companies take into their consideration when they are searching for outsourcing location.

In this context, Asian countries show a sharp growth in IT infrastructure. Sound and safe business environment is the top priority of foreign companies while deciding to outsource in foreign destinations. Country's business environment is important both for services and goods exports. In this study we used private credit access as a proxy of business environment and competitiveness of the country in international markets.

Estimates based on the World Bank (2013) shows an upward trend in access to private credit in selected Asian countries, which indicates improved competiveness and in turn outsourcing activities are increasing.

Wages plays an important role when outsourcing and exports are taken into account. Initially, lower wage location countries are attractive for potential outsourcers but this is only a short term phenomena. But in the long run, for a state to be an important exporter, wage gap is not a necessary condition. Wage trends indicate a rise in annual wages in all selected Asian countries but this rise is slow and gradual [ILO (2014)].

9.2.2 Outsourcing Scenario in Selected Asian Countries

China

Since China is the most populated country, its population would offer competitive advantage against other major players in outsourcing industry. China's five major cities provide a huge amount of sourcing services; Shanghai, Beijing and Chengdu are providing services such as testing and research, business analysis and development of product. Shenzhen is known for software application, development and maintenance, and Guangzhou specializes in engineering services. Finance, services, manufacturing and health care are included in China's primary specialization. China has advantages over other Asian countries in case of manufacturing because of its experience in manufacturing and its knowledge of delivering the products that follow to the demanding standards, which are required by western legislation and consumers. China has cheap labour as compared to its competitors especially India, where wage inflation makes it more difficult to strive on the base of prices. In order to get business from western companies, government has given priority to English language in schools and universities. Its literacy rate is 93.3 percent. Opening of the Chinese economy is the turning point that caused changes in the business world as well as the outsourcing industry.

India

In 1994, the Indian government announced a policy in which it liberalized its telecom sector. In 1999, more changes were introduced in this policy, such as ending of state monopoly on global calling facilities. First outsourced service was the medical transcription and Business Process Outsourcing (BPO) started at the end of the 1990s. Now India is the one of the leading outsourcing locations. America and Europe are the largest customers of Indian outsourcing industry which are of 60 and 31 percent of IT and BPO exports, respectively. BPO & IT services outsourcing first started during 1980s and this industry grew rapidly in the 1990s. According to NASSCOM[2] (2014) BPO and IT exports employed about 2.2 million people in 2009. BPO is the fastest growing fragment of Information Technology Enabled Services industry in India. The reasons for this growth are low cost, economies of scale, risk mitigation, etc. For BPO, India is considered as the most preferred place and the reasons for this boom in BPO industry are cheap labour and large pool of English speaking and skilled professionals.

Philippines

Although, India is the front runner in the BPO industry, it has a rival now. Philippines is considered as a leading nation in the BPO industry, both in call service and non-voice sector. On the other hand, in IT service market (web designing, maintenance, etc.), it is an emerging player. Outsourcing begun in the 1990s, but it witnessed growth during the 2000s. Initially, the attention was paid to the low value added BPO services and on call centers, but later it was shifted towards web designing, animation legal services and other shared services. Manila was considered as the best place for outsourcing earlier, but now other cities such as Pasig and Cebu are also considered for outsourcing purpose. For BPO services, Philippines is the destination of choice, mainly voice-based outsourcing services. According to BPAP (Business Processing Association of the Philippines), IT-BPO industry produced a revenue of $13 billion in 2012, whereas it was $11 billion in 2011. The reason for the increase in revenue is that Philippines remained a USA

colony; therefore its culture is similar to that of the USA. Adult literacy rate is 93% in Philippines and almost 55% of total population speaks English. So the literate and English speaking population is the major fascination for outsourcing companies.

Malaysia

Government support industry expertise and oil and gas logistics were the factors which helped in the development of the outsourcing industry of Malaysia. As Malaysia is multi-sectorial and multilingual country, many companies get attracted to doing outsourcing. Major developments have been made in the industry sector. It includes the inclusion of five Malaysian outsourcing companies in the Global Services 100 list, capability-driven valuation of IT/ IT enabled service providers all over the world. Because of good infrastructure and multilingual skills of the workers, Information Technology Outsourcing (ITO) is growing in Malaysia. Moreover, Malaysia is benefiting from its educated labour force, strategic location and global integration. Malaysia gives high priority to education and formal training. According to UNESCO Annual Report (2009), literacy rate is 91% in Malaysia. Educated labour force of Malaysia is a major attraction for outsourcers. To upgrade Malaysia into high income, information based economy by 2020; main focus is on the Shared Services and Outsourcing (SSO) industry. Many factors such as government incentives, good infrastructure, skilled labour force, ICT resources, sound business environment ensure companies receive support and help in thriving in this sector.

Thailand

Although, Thailand is known largely for tourism and automobile industries yet now it has been a dominant player in IT industry as well. The country has the potential in three major outsourcing activities such as BPO; Voice and ITO. But current outsourcing activities are concentrated in ITO. Thailand launched its first information technology policy in 1996; named as IT 2000. The purpose of this policy was

building good infrastructure and good governance, increasing the literate workplace and building knowledge based economy in 5 key areas: E-Commerce, E-Industry, E-Education, E-Society and E-Industry. Although, Thailand is performing well in outsourcing industry, but it has not reached its full potential level yet.

There are certain challenges which the Thai economy is facing such as provision of good infrastructure, especially ICT, augments the use of the English language which helps in attracting foreign companies, political instability, etc. According to *United Nations Educational, Scientific and Cultural Organization (*UNESCO) Annual Report (2009), only 10% of the total 506,000 graduates from universities can speak the English which is relatively low as compared to Philippines. Consequently, the government is now trying to improve its quality of education to attract foreign investors. For becoming the major outsourcing destination, Thai government is taking some steps such as improving infrastructure and level of education in the country, making long term plans and improving business environment.

Pakistan

Pakistan is working to become a dominant player in outsourcing industry by focusing on intellectual property rights enforcement, area expertise, etc. Due to its geographical location, expanding transportation and communication network and improving business environment, it is an attractive destination for many investors. Recently, many IT companies have invested billions of dollars here such as Etisalat UAE telecom Provider Company, Google, City bank, bank of America, etc. Microsoft, Cisco and IBM are also expanding their operations in the country. In order to attract foreign investment; Pakistan is also investing in human capital, e.g., education in order to strengthen its IT industry.

UNESCO Annual Report (2009) stated that currently only 2.6% of GDP is allocated to education sector, which is far low as compared to countries such as USA (where 8% of GDP is allocated to the education sector). The Pakistan Software Export Board has created IT parks. IT workforce with good command on English language is a real attraction for foreign companies. Besides this a good telecommunication

infrastructure, securing intellectual property rights and tax exemptions are other factors that help in attracting foreign investors.

All in all, the Asian economies have become the hub of outsourcing because of their cheap labour, raw material and large size market. As compared to American/European workers, living standard of Asian workers is low as companies pay lower wages to them than American or European workers get, so it is cost effective for the outsourcing companies. Apart from cost saving, foreign companies get access to experts and professionals through outsourcing. On the other hand, outsourcing is generating many job opportunities for Asian countries.

9.3 Theoretical Framework

In this section, the use of generalized version of Dixit and Woodland (1982) model for analysis of the association between the human capital and export is discussed. Basically this model established the link between factor endowment and international trade. There are certain assumptions of Dixit and Woodland's model such as; all countries use the same technology in production and there is constant return to scale, collective inclinations are homothetic and alike, there exist n inputs and m products, and there is a set of production possibilities in productive sector which can be symbolized by $Y(v)$, where v is the vector of inputs $v = (v_1, \ldots, v_n)$ and $Y(v)$ is the set of all possible production vectors.

Now domestic product is maximized by production sector and can be written as:

$$G\ (p, v) = max_y\{p.y \setminus y \in Y(v)\}, p \geq 0, v \geq 0 \qquad \ldots (1)$$

Since, $G\ (p, v)$ is the production function & G (p, v) ≥ 0, $p = (p_1, \ldots, p_n)$ is the price vector of m products to represent the small open and price taking economy. Where, the function $G\ (p, v)$ is homogenous, continuous and concave in v for fixed p. By assuming G is differentiable, we can obtain supply function:

$$y_j(p, v) = \partial G(P, v) / \partial p_j \quad \ldots (2)$$

or $y(p, v) = G_p(p, v)$ and equilibrium factor price such as:

$$w_i(p, v) = \partial G(p, v)/\partial v_i) \text{or } w(p, v) = G_p(p, v) \quad \ldots (3)$$

It is a very general model of production sector which pursues constant return to scale. Now on the demand side which can be explained as expenditure side, there is:

$$E(p, u) = min_c\{p, c \setminus U(c) \geq u\}, p \geq 0, u \geq 0 \quad \ldots (4)$$

$E(p, u)$ is representing the demand and $E_u \geq 0$. U is direct utility and c shows the aggregate consumption with $C = \sum_{i=1}^{m} C_i$. The expenditure function is homogenous, continuous and concave in p for fixed u. By assuming it is differentiable, then compensated demand function can be driven from its partial derivative.

$$C_j(p, u) = \partial E(p, u)/ \partial P_j (j = 1, \ldots, m) \quad \ldots (5)$$

or $c(p, u) = E_p(p, u)$, where U will increase as E. By assuming that all income will be spent then we get a solution,

$$S(p, v, u) \equiv G(p, v) - E(p, u) = 0 \quad \ldots (6)$$

Solution of Equ. (5) represents an indirect utility. Since, it generated maximum possible utility of a given country, with an endowment of factor v, considering a price level p (During optimal arrangements of its production system and pattern of trade). Thus, it increases the utility, which can be stated as:

$$u = u(p, v) \quad \ldots (7)$$

Now combing Equs. (2), (5) and (7), we can write net exports as production surplus after domestic production $(x = y\text{-}c)$. They can be explained by price (p) and factor of production vector (v). So, we have

$$X\ (p, v) = Sp[p, v, u\ (p, v) \quad \ldots (8)$$

Woodland (1980), Dixit and Norman (1980) and Chipman (1979) explain more detail about properties of these functions.

Consider 2 states where factor endowment varies to some magnitude. "Country A" has a factor endowment which is equal to v, and another country has factor endowment, which is equal to $v^* = k.v$, since, k is a positive scalar quantity. According to Hecksher-Ohlin-Samuelson (HOS) theorem, this difference allows the endowment impact on trade to be a relative function, relative to the amount of factors used in the production of goods. Variation in country A's exports can be captured as:

$$dx^s = x^v dv \text{ or } dx/dv = X \quad \ldots (9)$$

Above equation states that the link between factor endowment and trade of goods can be determined by the dependence of dx^s in relation to dv. Heavy export of any good j shows the intensive use of factor i, when $\partial xj/\partial vi$ is positive. This shows the Rybczynski theorem effect, since it was dedicated towards production.

In this study general model is used for examining factors that affect a country's trade flows. The model used physical capital (K), labour force (L) and human capital (H) which is measured through education level. Human capital is used in the addition to the factors that were used by Dixit and Woodland in their model. Now suppose, $v = (K, H, L)$ & the level of production can be maximized; Hence, Equ. (9) can be written as:

$$DX = x_v\ d(K, H, L) \quad \ldots (10)$$

where,

$$xv = \partial x/\partial v_i * v_i/x$$

According to Equ. (8) due to changes in factor endowment, value of exports changes. It can be written in linear equation form as:

$$dX = x_k dK + x_h dH + x_l dL \quad \ldots (11)$$

Equ. (10) can be rewritten to show the country's flow of exports as:

$$X_{it} = \alpha + \beta K_{it} + \varphi H_{it} + \phi L_{it} + \mu_{it} \quad \ldots (12)$$

$$\mu = \mu_i + \eta_{it}$$

where,

X_{it} = vector of exports from a certain country during time period t,
K = physical capital,
L = labour force,
H = human capital measured through education level of workers

α, β,ϕ, φ are parameters, μ_i is fixed unobservable affect and η_{it} are dynamic shocks.

The regression model can be written in general form:

$$Xit = \Sigma^{k}_{j=1} \beta Z^{j}_{it} + u_{it} \quad \ldots (13)$$

where,

Z^{j}_{it} = set of all explanatory variables[3]
X_{it} = export vector

This equation states that export of a country depends upon a set of explanatory variables (physical capital, labour force and human capital) and some other factors which cannot be observed easily. Some dynamic shocks also affect exports. Even though human capital plays a dynamic role in enhancing a country's attractiveness by way of outsourcing location and boosting exports of goods and services, there are some other factors that can play an important role. Country's IT infrastructure such as telephone lines, Internet users, prevalent business environment, ease of access to credit and wages are important factors that can influence a country's desirability as outsourcing location and export of services and goods.

9.4 Methodology and Sources of Data

The data being used in our research include Asian countries (India, China, Pakistan, Thailand, Philippines, and Malaysia) and developed countries (Canada, United States, *New Zealand* and United

Kingdom) for the period 2000-2012. By following Dixit and Woodland (1982), we argue that model in Equs. (14) and (15) will help to find out the effect of human capital on services and exports of goods.

$$X_{goods}=\beta_0+\beta_1 sch+\beta_2 tel+\beta_3 wg+\beta_4 pc+\varepsilon_t \quad \ldots (14)$$

$$X_{services}=\beta_0+\beta_1 sch+\beta_2 tel+\beta_3 wg+\beta_4 pc+\varepsilon_t \quad \ldots (15)$$

where, X_{goods} represents manufacturing exports, $X_{services}$ represents commercial services exports, *sch* shows average year schooling, *tel* shows total telephone lines (per 100 people), *pc* stands for the private credit as a percentage of the GDP, *wg* represents urban area wages and ε_t is the error term.

Different proxies are used in the literature for measuring human capital. In this study, public spending on education and average years of schooling are alternatively used in the estimation. In order to measure IT infrastructure total telephone lines (per 100 people) were used. Following Anagaw, *et al.* (2001), private credit as the percentage of GDP is used by way of a substitution for business environment. Since the data on urban area wages are not available, therefore, real annual wage (per hour) is used. Sources of data are International Labour Organization (ILO), World development indicators, the statistics prepared by Barro and Lee (for human capital) and United Nation Development Program.

In determining the impact human capital has on exports of goods and services, it is necessary to quantify the human capital. The human capital can be measured through health and education indicators [Wolf (2000) and Barro and Lee (2001)]. In this study, average year of schooling is used for measuring this indicator.

9.4.1 Control Variables

In addition to human capital investment, other country-specific control variables are also introduced in the analysis such as IT infrastructure, prevailing wage rate in a country and business environment of a country:

IT infrastructure: ICT is used for measuring country's IT infrastructure. Information and communication technology (ICT) is very

important to support trade and market creation for a nation. François and Manchin (2006) studied the impact of infrastructure on trade cost and flows. They concluded that in developing countries, infrastructure is the main determinant of trade cost. These countries are not able to produce and compete in international export market because of the lack of infrastructure.

Wages: Wages play an important role when outsourcing and exports are taken into account. Initially, lower wage location countries are attractive for potential outsourcers but this is only a short term phenomena. But in the long run, wage gap is not a necessary condition. Farrell, *et al.* (2005) showed that incursion of service off shoring in has accelerated wages in Indian cities dramatically. Secondly, across countries, higher productivity is generally associated with higher wages and on the other hand lower wages reflect low workers' productivity.

Private credit: Private credit is used as a proxy of business environment prevailing in a country. Country's business environment is important for both services and goods exports. In order to attract foreign companies for outsourcing purposes, sound business environment is one of the crucial requirements. When a foreigner company looks for an outsourcing location, it gives priority to such location where safe and sound business environment holds which in turn boosts the exports of host countries. Ghani and Clemes (2013) evaluated the impact of business environment on trade of goods and services and they found a significant impact.

9.5 Results and Discussion

This section includes the discussion of empirical findings of the study. Hence, the total pooled observations in our balanced panel were 72.

9.5.1 Empirical Findings

9.5.1.1 Unit Root Test

In order to check the stationarity of data, the cross- section independence assumption is analyzed first and then the test is carried on for error cross- sectional dependence (CD) according to Pesaran (2004). This examination is based on average pair-wise correlation coefficients of OLS residuals from individuals' regressions, i.e., for each cross-section [see, Pesaran (2004); Baltagi (2008)]. Since this test is robust with unbalanced panels and with one, multiple structural breaks in the slope coefficients and also in case of the error variances of individual regressions.

Table 9.1. Cross- section Correlation Test before estimation for Asian Countries

CD test	p- value	Average correlation coefficient	Absolute correlation coefficient
-2.70	0.011	-0.133	0.579

Null hypothesis : cross-sections are independent

Table 9.2. Cross-section Correlation Test before estimation for Developed Countries

CD test	p- value	Average correlation coefficient	Absolute correlation coefficient
-3.01	0.056	-0.219	0.701

Null hypothesis: cross-sections are independent

Table 9.3. Cross-sectional ADF test for Asian Countries

	Levels	
Variable	Z [t-bar]	p-value
Manufacturing exports	1.952	0.0000
Public Spending	-0.234	0.0000
Schooling	-1.708	0.0070
Private Credit Access (% of GDP)	-4.0071	0.0000
Wages	-3.0121	0.0000
Telephone lines	-2.1100	0.0033
Commercial services exports	-3.6791	0.0001

Null hypothesis: variables are non-stationary

This "CD test" procedure, is such that if the data set contains *N* units, then test estimates *N*(N- 1)* correlations between country *i=1* and all other *(N- 1)* countries. In our case in the first step we capture the residuals. Then CD test is applied on the residuals captured from the fixed effects regressions. Null hypothesis of this cross- section independence is sturdily prohibited in Tables 9.1 and 9.2 for both Asian and developed Countries.

Table 9.4. Cross-sectional Augmented Dickey-Fuller test for Developed Countries

	Levels	
Variable	Z [t-bar]	p-value
Manufacturing exports	-3.90371	0.0004
Public Spending	-3.20512	0.0011
Schooling	-2.9300	0.0000
Private Credit Access (% of GDP)	-2.11301	0.0051
Wages	-1.0012	0.0031
Telephone lines	-5.20021	0.0000
Commercial services exports	-2.7315	0.0031

Null hypothesis: variables are non-stationary

Now we know that there is cross- section dependence in our data and the "1st generation" panel unit root tests are invalid as they reject the null hypothesis of a unit root excessively. Therefore, we have applied Cross-sectional Augmented Dickey-fuller "CADF" test, suggested by Pesaran (2004). This test is created on the mean of individual ADF t-statistics of each cross-section unit. In this case, the need of cross-sectional is removed by augmenting the ADF regression by mean of lagged cross- sections of the individual series (thus called "CADF" statistics). The unit root test of Pesaran panel indicates that series are stationary at level (Table 9.3). The unit root test of Pesaran panel indicates that series are stationary at level (Table 9.4).

9.5.2 Generalized least square and Robustness Checks

We estimate the empirical equation by means of the Common Constant method. We tried various alternatives depending on variable combination, econometric methods and data sources. But Panel Estimated Generalized Least Square (EGLS) is applied to estimate

equation with country weights and correction of standard errors for the problem of autocorrelation and heteroscedasticity.

We also tried both fixed and random effects models but results were not consistent as our data set is small. Fixed effects model generates dummies equal to cross sections in the study. Here the order of co-integration is not same so we take the difference of the variables. In this way we lose observation and degree of freedom problem occurs. Since number of observations was less in this study so we cannot use random effect method. Pooled least square is the best method to apply if t-statistics, standard errors and probability are reliable enough to explain results according to theory. It should also satisfy BLUE (best linear unbiased estimates) properties. If it does not fully satisfy these properties then GLS (cross section) is used to tackle that problem. GLS is used for finding out the unknown parameters in linear regression model. As in our regression model we found some degree of correlation between error terms. Weighted least squares and ordinary least squares statistically give insufficient and misleading inferences.

9.5.3 Estimation results for the Asian countries

It is established in the literature that the human capital investment is extra significant for commercial services exports than manufactured goods exports. But overall results do not give any indication, such that the human capital investment is extra significant for services than goods exports. The Human Capital is used as proxy for average years of schooling and alternatively by community spending on education. This variable is sturdily important for Asian countries in case of exports of goods as well as services when average year of schooling is used as a proxy (also see Appendix Tables 1 and 2 for empirical results of public spending in case of developing and developed countries).

Coefficients of schooling in case of manufacturing and commercial services exports shows that one year increase in schooling, increases the exports of manufacturing by 51%[4] and exports of commercial services by 29%. An *increase* in education leads to attain more skilled labor force. As a result skill-intensive *exports rise*; making growth and exports. These results corroborate with the findings of Olney (2013), Banjeree (2001), Chaung (2000) and Black and Lynch (1996).

Control Variables

For measuring ICT in these countries total telephone lines (per 100 people) are used as a proxy. The results of telephone users reported in Tables 9.5 and 9.6 shows that one percent increase in ICT increases the exports of goods by 3% and export of services by 2%. These results are consistent with the study of Ghalandari (2013) and Ahmad, *et al*. (2011).

Table 9.5. Estimated Generalized Least Square: Manufacturing Exports

Dependent variable: LOG(Manufacturing Exports)				
Method: Panel EGLS (Cross-section SUR)				
Sample: 2000-2012 Periods Included: 13 Cross sections:6				
Total balanced panel observations: 72				
Variable	Co-efficient	Std. Error	t-statistic	P-Value
Sch	0.0516	0.0063	4.9869	0.0370*
Tp	0.0316	0.0028	2.6394	0.0482*
Wg	0.0179	0.0007	2.5074	0.0633**
D(Pc)	0.0571	0.0027	4.0720	0.0371*
C	3.9285	0.0413	4.2031	0.0813**
R-squared	0.6301	F-statistics	13.7447	

Note: *and** show statistical significance at 5% and 10% level.

For measuring country business environment we used private credit access as a proxy. This variable is significant both for exports of goods and services. The results reported in the Tables 9.5 and 9.6 show that one percent increase in private access, increases exports by 5% in case of goods and 3% in case of services. The study by Anagaw and Demissie (2001) also showed significance of private credit access. Study of Gani and Clemes (2013) also confirmed these findings. Empirical findings further show that one percent increase in wages increases exports goods by 17% and export of services by 13% (Tables 9.5 and 9.6). In order to cope with intense international competition, exporting firms need skilled workers so for hiring such workers firms have to pay high wages to them [Munch and Skaksen (2008)]. Muller and Nordman (2014) also confirmed these findings. Initially lower wage location countries are attractive for potential outsourcers but this is only a short term phenomena. But in the long run, for a nation-state to be an important exporter, wage gap is not a necessary condition. Farrell, *et al.* (2005)

showed that due to off shoring wages has accelerated in India's major cities. Secondly, across countries higher productivity is generally associated with higher wages while lower wages reflect low productivity by workers.

Table 9.6. Estimated Generalized Least Square: Commercial Services Exports

Dependent variable: LOG(Commercial Services Exports)				
Method: Panel EGLS (Cross-section SUR)				
Sample:2000-2012 Periods Included: 13 Cross sections: 6				
Total balanced panel observations: 72				
Variable	Co-efficient	Std. Error	t-statistic	P-Value
Sch	0.0291	0.0033	5.1159	0.0403*
Tp	0.0208	0.0038	3.1981	0.0239*
Wg	0.0139	6.58E-05	2.6244	0.0907**
D(pc)	0.0331	0.0027	4.4769	0.0102*
C	0.0217	0.0696	4.3604	0.0605**
R-squared	0.7064	F-statistics	37.0619	

Note: *and ** show statistical significance at 5% and 10% levels, respectively.

9.5.4 A Comparison of Human Capital in Developed and Asian Countries

Some scholars argue that the human capital investment produces desirable results in emerging countries because these countries use education for catching up with the developed countries. They improve their educational attainment level, which increases their productivity and in turn boost up their exports. While other argue that rich nations continue with investment in education, which enhances the workers' productivity and this will invalidate the wage gap between developed and developing nations. So there is no consensus among the experts on this issue. It is still an untested area that whether the human capital investment is more essential to goods export and services for developing countries than developed countries.

Table 9.7 provides the comparison of the effects of human capital for exports from developed and Asian nations. Results show that human

capital investment has a strong and significant impact in case of emerging Asia. But in case of developed countries it does not give a significant outcome. The reason is that increased human capital stock is positively related with exports to a certain level after which it exhibits "diminishing return" effect as developed countries keep on increasing human capital investment. That is, human capital increases exports but at a diminishing rate.

While comparing the Asian and developed countries, we can notice that human capital measure is significant and positive in all selected Asian nations for both services and goods. On the other hand, it is positive and significant in case of manufacturing exports but insignificant for the exports of services in developed countries. It is an ex post hypothesis which means that increasing the human capital is absolutely correlated with the export of goods as well as services but up to a certain limit. Beyond that point human capital measure is plateaued out. Since, in developed countries average years of schooling are high therefore, the impact of this variable on exports reached to the point of diminishing marginal return. Results show that a one year increase in schooling increases the exports of goods by 0.4%, while exports of services increase by 0.1%. Studies by Olayemi (2012) and Wolff (2000) confirm these findings. To reaffirm this notion that human capital investment is important for developing countries, pooled regression with regional dummy is estimated. Results from this implementation are reported in Appendix Table I, which does confirm this notion.

Control variables

ICT is positively associated with both the export of goods as well as services in both regions. In developed countries, one percent increase in telephone users increases the export of goods by 2.8% and export of services by 1.4%. In case of emerging Asia one percent increase in ICT increases the exports of goods by 0.6% and export of services by 0.5%. Studies of Ghalandri (2013) and Ahmad, *et al.* (2011) confirm these findings. Private credit access, which is used as a proxy of business environment, is positively related with the exports of goods and services in the full panel. This confirms the belief that export performance of a country is positively related with the business environment of a country.

Results reported in Table 5.7 reveal that 1 percent increase in private credit access increases the export of goods by 1.4% and export of services by 1.2% in developed countries. In emerging Asian countries 1 percent increase in private access, increases exports of goods by 0.8% in case of goods and 1.2% in case of services. Studies of Gani and Clemes (2013) and Angaw and Demissie (2001) corroborate these findings.

Wages have a positive relationship with the exports of goods as well as services. Low wages and salaries are an important component in attracting foreign countries for outsourcing purposes. But this is only a short-term portent. In the long-run, firms have to pay higher wages in order to hire more educated and skilled workers. Therefore, over a period of time, wage gap is an inadequate complaint for a nation to endure a significant player in outsourcing business, just as the marginal productivity theory also states that high wages are linked with high productivity, i.e., high wages encourage workers to enhance their productivity.

China also reports the shortage of skilled labour so their rates are increasing in many cities. Farrell, *et al.* (2005) also showed that due to outsourcing wages increase in many Indian cities dramatically. Mincer (1991), Gupta (2000) and Jones (2001) also argued that according to marginal productivity theory, lower wages are associated with low productivity across countries.

Akerlof's Gift Exchange Model (1984) also presented same argument that when firms pay high wages to the workers, they feel obliged with reimbursing in the form of gift of advanced effort level. So, conferring to this theory, loyalty of the workers is exchanged for high wages and this loyalty is resulted in high productivity. In developed countries 1 percent increase in wages caused 1.4% increase in export of goods and 1.3% increase in export of services. Empirical findings further show that a 1 percent increase in wages increases exports goods by 0.2% and export of services by 0.03% in emerging Asian countries. Farrell, *et al*. (2005), Muller and Nordman (2014) also confirmed these findings.

9.6 Conclusion and Policy Implications

9.6.1 Conclusion

Empirical analysis shows that human capital is positively related with the export of goods and services in Asian countries. The analysis further shows that as stock of human capital rises it enhances the country's attractiveness as a location for outsourcing, which in turn increases the export of goods and services.

While making decision about outsourcing the developed countries look at the ICT infrastructure of the host country. Empirical findings of this study show that the ICT is absolutely and significantly linked with the export of the goods and services. Lack of soft infrastructure is a major cause for increase in trade cost in many developing countries, which in turn affect their competitive strength. Foreign companies while making decisions to outsource, particularly take into consideration the avail-ability of modern ICT infrastructure in the outsourcing location.

Country's business environment is another important factor for export growth. We found that sound business environment attracts the foreign companies to outsource in emerging Asia. Low labour cost in Asian countries is a major attraction for countries/regions like US and EU for outsourcing. In addition, Asian countries provide low office cost occupancy, which is a real lure for companies from developed countries.

Low labour cost is a short term phenomena. However with increased demand for skilled labour, firms eventually have to pay high wages. Indian experience shows that because of off-shoring, wages in India's big cities have accelerated dramatically. This provides an opportunity to other countries in the region to offer outsourcing services to benefit from the rising wages in major Asian locations of outsourcing.

9.6.2 Policy Implications

In order to attract developed countries to developing countries' destinations, the study calls upon Asian developing countries to pay special attention to make their industries (manufacturing and services) more cost effective. In addition, special attention needs to be paid to further enhance the quality of their human capital stock, to improve

efficiency of soft and hard infrastructures and to improve business environment by curtailing cost of doing business.

In particular, we suggest the following:

Asian countries should expand their human capital stock to reap the benefits of outsourcing. They should further reduce their border restrictions to attract more outsourcing from developed countries.

1. Countries like Pakistan and Thailand should take steps to provide sound business environment to attract outsourcing from developed countries.
2. As wage inflation is on the rise in China and India; other promising destinations such as Thailand, Pakistan and Philippines need to take advantage of the rising wage cost in established destinations of outsourcing.
3. As export of goods and services are highly dependent on an efficient and cost effective system of movement of inputs, energy and communication network, therefore Asian countries need to further improve the efficiency of their soft and hard infrastructures.

Table 9.7. A Comparison of Human Capital between Developed and Asian Countries

Emerging Asia							Developed Countries						
Goods				Services			Goods				Services		
Variable	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Variable	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Sch	0.095508	14.99	0.0000	0.0510	15.16	0.0000	Sch	0.0350	3.53	0.0009	0.0104	1.03	0.3070
TP	0.06107	21.64	0.0000	0.0508	13.20	0.0000	Tp	0.0523	11.01	0.0000	0.0269	6.57	0.0000
D(Pc)	0.01137	4.07	0.0001	0.01753	6.48	0.0000	D(Pc)	0.0089	5.83	0.0000	0.0078	4.49	0.0000
Wg	0.000931	20.51	0.0000	0.00017	2.62	0.0107	D(Wg)	0.0814	6.25	0.0000	0.0743	5.00	0.0000

APPENDICES

Appendix Table 1. Developing Countries: Public Spending on Education

Dependent variable: LOG(Manufacturing Exports)				
Method: Panel EGLS (Cross-section SUR)				
Sample:2000-2012 Periods Included:13 Cross-sections:6				
Total (balanced) observation				
Variable	Co-efficient	Std. Error	t-statistic	Prob.
ns: 72				
C	5.046736	0.214746	23.50091	0.0000
Log(Spending)	0.559602	0.024255	23.07132	0.0000
Tp	0.038850	0.002755	14.10314	0.0000
Wg	0.000309	6.16E-05	5.019673	0.0000
D(pc)	0.003290	0.001187	2.772627	0.0072
R-squared	0.989062	F-statistics	1514.651	0.0000

Dependent variable: LOG(Commercial Services Exports)				
Method: Panel EGLS (Cross-section SUR)				
Sample:2000-2012 Periods Included:13 Cross-sections:6				
Total (balanced) observations: 72				
Variable	Co-efficient	Std. Error	t-statistic	Prob.
C	0.087542	0192695	0.454304	0.6511
Log(Spending)	1.009532	0.020197	49.98526	0.0000
Tp	0.001792	0.001136	1.577155	0.1195
Wg	0.000226	3.36E-05	6.736890	0.0000
D(pc)	0.001100	0.001045	1.052769	0.2962
R-squared	0.982839	F-statistics	959.2781	0.0000

Appendix Table 2. Developed Countries: Public Spending on Education

Dependent variable: LOG(Manufacturing Exports)				
Method: Panel EGLS (Cross-section SUR)				
Sample:2000-2012 Periods Included:13 Cross-sections:6				
Total (balanced) observations: 72				
Variable	Co-efficient	Std. Error	t-statistic	Prob.
C	-1.231602	0.344261	-3.57752	0.0008
Log(Spending)	0.901410	0.036459	24.7239	0.0000
Tp	0.030408	0.002262	13.44131	0.0000
D(Wg)	0.055111	0.007032	7.836681	0.0000
D(pc)	0.000590	0.000529	1.115196	0.2704
R-squared	0.971466	F-statistics	400.04	0.0000

Dependent variable: LOG(Commercial Services Exports)				
Method: Panel EGLS (Cross-section SUR)				
Sample:2000-2012 Periods Included:13 Cross-sections:6				
Total (balanced) observations: 72				
Variable	Co-efficient	Std. Error	t-statistic	Prob.
C	1.186708	0.156725	7.57192	0.0000
Log(Spending)	0.814374	0.016843	48.35138	0.0000
Tp	0.003800	0.000474	8.015498	0.0000
D(Wg)	0.030011	0.002112	14.21237	0.0000
D(pc)	0.000714	0.000151	4.735355	0.0000
R-squared	0.993842	F-statistics	1896.35	0.0000

Notes:

1. For certain types of services a close interaction between consumer and producer is required, that is, they have to be at the same location for the provision of the services. This gives rise to inseparability characteristics.
2. National Association of Software and Services Companies is a trade association of information technology business process outsourcing industry.

3. Z^{j}_{it} shows set of explanatory & control variables. It can also be witnessed in the studies of Fraqa and Bacha (2012), Fafchamps (2008) and Tandrayen (2004).
4. Conversion to elasticity is made by using the formula given in Gujrati (2004). All further percentage conversions are based on this formula.

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