Food and Agricultural Trade in the GCC: An Opportunity for South Asia?

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Abstract

The purpose of the present study is to assess the export potential of food and agricultural items from South Asian Association for Regional Cooperation (SAARC) countries to the Gulf Cooperation Council (GCC) countries. We investigated the pattern of trade between the two regions using trade data for HS 1-24 categories and also estimated a gravity equation to determine the factors affecting bi-lateral trade relationships. We extracted UN ComTrade data on exports from the Trademap and obtained data on gravity variables from the ARTNeT for 2012. WITS database was used to retrieve data in trade intensities. The results of the descriptive analysis show that meat & edible poultry meat offal, cereals, sugar cane and beet sugar and processed tobacco products are the major agricultural products imported by GCC countries from the world and Saudi Arabia and UAE account for about 80% of the total agricultural imports by GCC. Only India and Pakistan are among the top 5 exporters of any of the top 10 agricultural imports of GCC. At HS 2 digits level, SAARC supplied more than 30% of the import requirement of product groups categorized under the HS 3,9,14 and 10 in 2012. India accounts for 80% of the total SAARC exports to GCC. It occupies 62%, 55% and 27.94 of market shares of total rice, meat of bovine animals and sugar cane and beet sugar imports of GCC respectively whereas Pakistan occupies 24% of total rice imports of GCC. Cereals account for about 40% of the total agricultural exports to GCC by SAARC countries. GCC countries depend on few suppliers for their major food and agricultural imports while SAARC countries have a substantial concentration over top three product groups exported to GCC. Analysis of indicative trade potential and trade intensity index revealed that India is in an advantageous position to achieve more gains from increasing GCC-SAARC food and agricultural trade. The results of the estimation of the gravity equation indicate that the conventional trade cost variables have significant effects on total and food and agricultural trade. There is a tendency for more trade between SAARC-GCC countries. Among the major SAARC exporting countries, Sri Lanka and India have high potential for increasing food and agricultural exports to GCC countries.

Key words; Gravity model, Agricultural Trade, GCC and South Asia

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Introduction

Bilateral trade between the countries of Gulf Cooperation Council (GCC) and the countries of South Asian Association for Regional Cooperation (SAARC) has a long history dated back to the Silk Road. Although characterized by periodical leaps and bounds, trade between GCC and SAARC remains brisk. In the modern context the prominent trade relationship between these two regions arise due to the vital position of GCC as the leading oil-based energy exporter and due to the ever increasing demand for energy from SAARC region contributed by the emerging economies such as India. Apart from this trade linkage another potential avenue for inter regional trade between GCC and SAARC countries are available due to the dependence of GCC countries on food and agricultural imports. The inherent climatic conditions of the GCC countries restrain the agricultural production in the region leading to the reliance on food and agricultural imports.

The GCC is a political and economic union of Arab states namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the Unites Arab Emirates. The GCC was formed in 1981 in order to strengthen the members' economic, social and political ties by harmonizing regulations in various fields including economy, finance, trade and customs. This region accounts for 47 million population and extends through 2410.7 thousand square kilometers. SAARC consists of eight South Asian member states namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. South Asia, with the greatest number of poor rural people is one of the regions that are worst affected by poverty and hunger whereas 70% of the population live in rural areas. In South Asia, agriculture sector employs about 60% of the labor force while contributing to 22% of the regional GDP (WDR, 2008). With this background agriculture sector has an integral role in the development process of the region.

While the SAARC region has a substantial importance for the domestic agriculture, GCC has its interest lies on stabilized food supply. The gap between the agricultural production of GCC countries and the consumption has gone up substantially in recent years. The GCC nations are shifting their agricultural policies away from the nationalistic goal of food self-sufficiency towards more flexible and broad based efforts including the reliance on imports to ensure food security[1]. The relative positions of the two regions i.e. GCC as a net food importer and SAARC as an agricultural and food producer open an avenue for vibrant trade relationship. Furthermore, having a large portion of the population depends on agriculture-based livelihoods; SAARC region can achieve encouraging welfare gains through enhanced

[1] For example Saudi Arabia, which has become self-sufficent in wheat and a world exporter, decided in 2008 to gradually phase out its wheat production and rely totally on wheat imports by the end of 2016 in order to conserve its non-renewable water resources.

foreign exchange earnings while GCC can achieve benefits due to stabilization of food supplies. Given the above backdrop, the overall purpose of the current study is to investigate the potential export opportunities that exist for the countries in SAARC region to cater to growing demand for food and agricultural items in the GCC countries. The present study will specifically examine:

(i) The changing pattern of import sources of food and agricultural items of the GCC countries paying special attention on South Asian countries over the past decade using concentration ratios and trade intensity index
(ii) The changing pattern of export destinations of food and agricultural items of the South Asian countries paying special attention on GCC countries over the past decade using concentration ratios and trade intensity
(iii) The determinants of food and agricultural trade between the two regions using a gravity model
(iv) The existing trade potential across various country pairs in the two regions using a simulation exercise coupled with gravity estimates

The paper is organized as follows. The next section will present a brief review of previous studies on emerging inter regional trade between GCC and SAARC regions. Section 3 is devoted to the methodology in which concepts, measures, data and data sources are explained. Section 4 will present and discuss the results. Section 5 will conclude and provide some policy implications.

Emerging Inter Regional Trade between GCC and SAARC: Evidence from Previous Studies

Asia and GCC have emerged as important exporters in the world trade. Asia has successfully positioned itself as the centre for the manufacture of goods for export and the GCC remains the top region for energy exports. According to Al-Tamimi (2013), GCC-Asia trade relations have grown substantially over the past few years and Asia accounts for nearly 60 per cent of GCC's total foreign trade. GCC countries see Asia as one of the most important strategic market for its energy exports and Asia would account for up to 90 per cent of oil exports from the Middle East in the future. Further emerging economies of China and India have opened avenues for enhanced trade relations between GCC and Asia. In a tectonic shift, by 2030, Asia will have surpassed North America and Europe combined in terms of global power, based upon GDP, population size, military spending, and technological investment (National Intelligence Council, 2012). Prospectus of potential trade gains for SAARC is also quite scintillating as India the prospective third economic giant by 2030 and the other member countries have achieved a satisfactory economic growth and trade liberalization and as the region's role as a food and agricultural producer.

GCC-SAARC economic relations are characterized with new strategic geo-economic interactions involving energy and petro-dollar investment flowing east from the Gulf and

cheap consumer goods, knowledge driven technologies and migrant labor, flowing west from South Asia (Pradhan, 2010). Between 2004 and 2008 trade volumes between the GCC and SAARC have increased more than six-fold. Much of the incremental demand for GCC exports going forward - not just for oil and gas but also petrochemicals, base metals and services such as finance and tourism - are coming from SAARC and the Asia region as a whole Pradhan (2010). Pradhan (2006) noted an increasing trend of bilateral trade between India and GCC countries. While the overall trade relations between GCC and SAARC are prospering in recent time, researchers have also paid an insight on food and agricultural trade in recent studies.

The increasing dependence of GCC on food and agricultural exports is vastly shown in the literature (Pradhan 2010, Woertz, 2010 and Intini *et al*. 2012). The "food gap" in the GCC (in recent years has gone up substantially due to growing populations (Pradhan, 2010). According to Intini *et al.* (2012) food imports constitute 60-90% of food consumption in the GCC and demographic growth is expected to reach 53.4 million by 2020 making at least one fifth of the people in Bahrain, Oman, Qatar and Saudi Arabia food insecure. Another catalyst for enhanced GCC-SAARC trade relations in food and agriculture trade is that around 6.5 million South Asians live in the GCC, making them the single largest expatriate community (17% of the total resident population of GCC). According to Karayil (2007), those immigrants have a significant effect on the trade relations between India and GCC. The growth in food demand by the GCC countries, along with the structural changes in the food consumption patterns due to migrant population is a potential opportunity for the SAARC countries, which are rich in agricultural resources. Currently countries like India, Pakistan, Bangladesh, and Sri Lanka are the main suppliers of rice, wheat, sugar, and live animals to the GCC region (Pradhan 2010). While there are substantial evidences for emerging food and agricultural trade between GCC and SAARC in trade literature, the determinants of trade flows between these two regions are also subjected to researchers' scrutiny.

Various studies that found their theoretical base on the gravity model in international trade have paid an insight to the determinants of the trade flows between GCC countries and their trading partners (Pradhan, 2006 and Insel and Tekce, 2009). Insel and Tekce (2009) found that there were significant aberrations of the conventional signs of the coefficient of the trade determinants like distance. This is due to the characteristics of the main commodities of trade and the geographical situation of the GCC countries. Authors conclude that the composition of trade flows for each GCC countries between their partners have changed over time and they have developed new economic relations after 2001. Pradhan, (2006) found that the magnitude of India's export potential is highest with Oman, followed by Qatar, Bahrain, and Kuwait and the used model specifications consistently showed no export potential with UAE, and Saudi Arabia. Moreover, when the regional trading dummy (RTA) was replaced dummy with the value of one, i.e., presuming there is an RTA; the results showed sharp increase in the magnitude of India's export potential to Oman, Qatar, Bahrain and Kuwait implying the significant effects of bilateral trade agreements for enhanced trade gains.

In tune with the existing literature in the area of migration–trade link, Karayil (2007) also illustrates the strong immigrant preference effect for their home-country products in a gravity analysis within the context of India and GCC trade. Hence, the expatriate population of South Asia in GCC countries plays a vital role in the demand for food products by GCC. Boughanmi (2008) who assessed the trade potential of Gulf Arab countries using the same model concludes that the level of the GCC intra-trade has not changed significantly during 1993-2004 and had probably reached its full potential during the first decade of the GCC creation. Trade with the Mashreq countries were more than expected, while it is less than expected with the Maghreb countries despite the implementation of the GAFTA a decade ago. The GCC trade with the European Union and the US was found to be quite intensive although no formal trade arrangement existed between the GCC and both blocs for the time-period used in the analysis. He suggested that the newly signed trade arrangements are promising in enhancing new opportunities of trade in the GCC region.

Behind the rosy story of a prospective greater economic integration between GCC and SAARC some constraints also lie. The trade profile is not so diversified and also heavily concentrated on the consumption patterns and consequent imports of goods catering to the South Asian expatriates living in the GCC and GCC's energy exports (oil and gas) to the subcontinent (Pradhan,2010 and Karayil, 2007). Furthermore, the widely speculated trade relations between the regions can be hampered by structural barriers too. GCC countries face formidable barriers, in terms of higher duties on their exports to South Asia in general and India in particular while exports from South Asia face a nominal duty of 5 percent and in many cases a lower rate ranging from 1.5 percent to 2 percent in the GCC (Pradhan, 2010).

Methods of Analysis

The changing pattern of import sources of food and agricultural products of the GCC countries and the changing pattern of export destinations of food and agricultural products of the SAARC countries over the recent period (2008-2012) was analyzed using market share, concentration ratio and trade intensity index. In order to analyse the potential and the determinants of food and agricultural trade between GCC and SAARC Indicative Trade Potential (ITP) indicator and gravity model in international trade analysis were used respectively.

Concentration ratio

Export or import concentration ratios reflect the degree to which a country’s exports/imports are concentrated on a small number of products or a small number of trading partners. In the theoretical realm the imports/export concentration concept was evolved from the seminal contributions including the Prebisch-Singer hypothesis (Prebish, 1950, Singer, 1950) and the arguments advocated by Rosenstein-Rodan (1943) who viewed economic diversification rather than specialization as a determinant of economic development. The reason behind the

preference and the advocating for market diversification is the perceived benefits of the diversification for a country. Minimizing the risk of market instability is a major reason for the benefits from the diversification (Samen, 2010a). Market diversification could therefore help to stabilize export earnings in the longer run (Ghosh and Ostry, 1994; Bleaney and Greenaway, 2001). Though the export side is more focused in the trade literature, it is important to notice that in the import side also there is an importance to this concept. For an instance, in the current study the concept of market diversification in imports side can be used to test whether the trade pattern (imports) of GCC countries has changed recently in such a way that these countries are depending on few countries on food and agricultural imports. If the concentration on few importers is high then these countries are prone for market instabilities and such a threat will pose greater economic, social and political implications. The current study focuses on these dual aspects of market concentration in the context of GCC and SAARC trade relations.

In the empirical realm, market concentration can be analysed using indicators such as Herfindahl index and concentration ratios (Reis and Farole, 2012 and World Trade Organization, 2012). The current study used concentration ratios for the analysis of the trade patterns of GCC and SAARC i.e. imports of food and agricultural products of GCC from the world and SAARC region and the exports of food and agricultural products by SAARC to the GCC. The top 3, 5, and 10 products and markets as a percentage of total exports/imports can be presented to depict the concentration among products and markets respectively (Reis and Farole, 2012). The higher the magnitude of the ratio the higher the dependence of an exporting country/importing country on few trade partners is.

Trade Intensity Index

The trade intensity statistic is the ratio of two export shares. The numerator is the share of the destination of interest in the exports of the region under study. The denominator is the share of the destination of interest in the exports of the world as a whole. Trade intensity index takes a value between 0 and $+\infty$. Values greater than 1 indicate an 'intense' trade relationship. Trade intensity index provides the information on whether or not a region exports more to a given destination than the world does on average. It is interpreted in much the same way as an export share. It does not suffer from any 'size' bias, so we can compare the statistic across regions, and over time when exports are growing rapidly. The measure has been used since the 1940s in numerous analyses of the direction and level of international trade (Brown, 1947, Kojima, 1964, Drysdale and Garnaut, 1982 Anderson, 1983 and Yeats, 1998). In this study both of the trade intensity i.e. for overall trade and agricultural trade were used to investigate the prospect for the SAARC countries in increasing trade relations with GCC.

Indicative Trade Potential (ITP)

The purpose behind the indicator of Indicative Trade Potential is the identification of the products for which there is the highest trade complementarity between the exports of a country and the imports of the target country. The trade potential indicator assumes that the importing country could in principle absorb perfectly all imports from the exporter. With such a strong underlying substitution assumption, the resulting figures are only indicative but can nevertheless be used in order to rank the products (Helmers and Pasteels, 2006). In the current study, the ITP was used to identify the food and agricultural commodities with highest export potential for SAARC countries to GCC countries.

Gravity Model

The theoretical gravity model with exporter and importer fixed effects (Anderson and Van Wincoop, 2003) was used for the analysis of the determinants of food and agricultural trade between the two regions i.e. GCC and SAARC. Tinbergen (1962), who was the founding father of the Gravity Model of International Trade, proposed this particular econometric model and it was formulated along the lines of Newtonian universal gravitation, where trade flow is directly related to the economic size of the countries involved, and inversely related to the distance between them (De Benedictis and Taglioni, 2001). This intuitive gravity model was subjected to theoretical scrutiny and many revisions were done to get rid of the possible biases. The empirical model used in this study is based on the fixed effects model proposed by Anderson and Van Wincoop (2003)

In this study two models were estimated as for total trade and food and agricultural trade separately. The gravity model based on Anderson and van Wincoop (2003) is shown by the following equation:

$$lnexports_{ij} = \beta_0 + \beta_1 lndist_{ij} + \beta_2 comlang\_official_{ij} + \beta_3 colonylink_{ij} + \beta_4 sa\_intra_{ij} + \beta_5 eastasia\_intra_{ij} + \beta_6 gcc\_intra_{ij} + \beta_4 eu\_intra_{ij} + \beta_4 sa\_gcc\_pair_{ij} + F_i + F_j + \varepsilon_{ij}$$

In the above specified model, subscript *i* denotes the South Asian exporting country and *j* denotes the importing country. In the model $exports_{jt}$ is the value of exports from South Asian country *i* to its trading partner *j*. In model 1 value of total exports and in model 2 value of food and agricultural exports were used. $DIST_{ij}$, $comlang\_official_{ij}$ and $colonylink_{ij}$ are the trade cost variables indicating geographical distance, the common official language dummy, the dummy for colonial link in the past respectively. Fi and F_j represent exporter and importer fixed effects respectively. Intra regional dummies were also incorporated to capture the intra regional effect on trade. $\beta 0$ is a constant term that accounts for the effects of unmeasured trade distortions on exports and the error term ε_{ijt} takes care of all the possible measurement errors; the error term is assumed to be independently and identically distributed. In order to preserve degrees of freedom resulting from arithmetic errors the zero export values were converted to very small positive numbers prior to log transformation.

Using the coefficients estimated in the gravity model for food and agricultural trade, major SAARC countries' export potentials with GCC countries were estimated. The ratio of the export potential (P) as predicted by the model and actual exports (A) (P/A) was then used to analyze the export potential of South Asian countries with GCC countries in food and agricultural exports using the actual exports in the year 2012. If the value of P/A exceeds 1, then there is potential for expansion of exports with the respective country.

Data and Data Sources

The Harmonized Commodity Description and Coding System is a multipurpose international nomenclature for the classification of products developed by the World Customs Organization. It is generally referred to as Harmonized System (HS). The HS arranged in 99 chapters, in which first HS 1-24 are agriculture products including animal and animal products, vegetable products and foodstuffs. At the international level, the Harmonized System (HS) for classifying goods is disaggregated at different levels such as 2-digit, 4-digit and 6-digit levels. HS chapters 1-24 were obtained from the TradeMap of International Trade Centre from 2007 to 2012. For the gravity analysis data agricultural trade flows between country pairs were also retrieved from ITC TradeMap. Trade cost variables were obtained from CEPII database. TradeMap gives many trade indicators including ITP at HS 6-digits level. However, for the purpose of brevity ITP was calculated at HS 4-digits after retrieving data from TradeMap. World Integrated Trade Solution (WITS) provides information trade intensity. Wherever necessary, data for trade intensity index was retrieved from this source.

Results and Discussion

Trends and patterns of GCC-SAARC food and agricultural trade flow

Being the largest countries that have the highest population in GCC, Saudi Arabia and UAE are the major importers of agricultural products accounting for about 80 per cent of the total