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WHY 'LOOK AFRICA'? AN ANALYSIS OF ECONOMIC POTENTIAL FOR BANGLADESH

Abstract

One of the recent foreign policy priorities of the Government of Bangladesh is to consider Africa as a major region of huge economic potential. This paper examines the potential of Bangladesh's exports to African countries by adopting an augmented stochastic frontier gravity model. It reveals significant export potential in some selected African countries, which can be utilized by removing 'behind the border' constraints. The paper also explores the investment potential in the African countries to benefit backward linkage industries of Bangladesh as well as to create employment in agriculture, food processing and pharmaceutical industries. It reveals that Bangladesh can export considerable number of skilled professionals and semi-skilled workers in the mineral and service sectors in African countries by strengthening mutual cooperation.

1. Introduction

The cooperation between Africa and the developing countries of the South is not a new phenomenon. In 1955, African and Asian nations held a conference in Bandung, Indonesia, to promote economic and cultural cooperation. The Bandung Conference underscored the need for developing nations to reduce their dependence on industrialised countries by providing assistance to one another. In April 2005, leaders of Asian and African countries gathered in Jakarta to celebrate the fiftieth anniversary of the Bandung Conference and identify ways to boost cooperation between both regions. Recently, the increasing role of large developing countries in global trade, finance, investment and governance, coupled with their rapid economic growth has rekindled interest in Africa-South cooperation and has stimulated debate on its implications for Africa's

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development.[1] It has opened up a new window for economic cooperation between Africa and other developing countries. In such a situation, a number of developing countries are increasing economic cooperation with the African countries for mutual benefits. However, Bangladesh is lagging behind in reaping the benefits. A major issue that may be raised is why Bangladesh and the African countries are interested in establishing and strengthening relations between them. In general, it can be argued that the relationship might be based on the need and desire to pursue mutually beneficial cooperation for common development. Furthermore, Bangladesh's relationship with African countries can be based on complementary advantage. On one hand, the African countries need technology and skilled manpower and external capital to address its development needs and challenges. On the other hand, Bangladesh needs land, natural resources and markets, and Africa has a lot to offer in these areas.

There is a general perception among the policymakers, academia and the business communities in Bangladesh that there is a large scope to increase exports of goods and skilled manpower in Africa. It is also argued that there is an immense opportunity for investment cooperation in new mutually beneficial areas. As a result, the present Bangladesh government's policy for economic diplomacy focuses on Africa as a new destination for the country's manpower and exportable goods. The Bangladesh government has already sent a "fact-finding mission to Africa" aimed at exploring major areas in the second largest continent of the world which is rich in oil and mineral resources. The governments of several African countries have also expressed their interests to the Bangladeshi contingents that are deployed as UN peacekeepers for a long time, mentioning that Bangladesh-Africa cooperation would be attractive to African countries because it would increase and diversify the source of development activities available to the region. Against this background, a number of pertinent questions may be raised: What are the prospective areas of Africa-Bangladesh economic cooperation and why this cooperation is important for Bangladesh? Is there a prospective market for Bangladeshi goods and manpower? What are the potential areas of investment?

The main objective of this paper is to address these questions. Following the introduction, section 2 provides brief overview of the socio-economic conditions of African countries as well as Bangladesh. In section 3, Bangladesh's export potential to Africa is analysed using the gravity model of international trade. In this section, methodology and database, econometric issues and estimation results are presented and discussed. Section 4 analyses the investment opportunities for Bangladesh in African countries in the areas where both the

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1 UNCTAD, "South-South Cooperation: Africa and the New Forms of Development Partnership", *Economic Development in Africa Report 2010*, United Nations Conference on Trade and Development, p. 1.

parities have mutual interest. Employment opportunities in Africa are discussed in section 5, while concluding remarks have been made in section 6.

2. Socio-Economic Status of Africa and Bangladesh

2.1 *Socio-Economic State of Africa*[2]

Africa is the world's second largest continent comprising 30.3 million square kilometres of land areas which is 6 percent of the world's total surface area and 20.4 percent of total land area. Africa's population increased by 2.3 percent between 2008 and 2009, reaching about a billion which accounts for around 15 percent of the world population. The density of population is 33 people per square kilometre, which is not so high compared to Asia. The population distribution by age is different in Africa compared to the other continents. Seventy percent of the African population is aged 30 or younger. This population provides Africa with a large pool of labour force which it could draw for rapid economic growth. The rapid population increase, together with increased rural-urban migration, has created many problems in Africa, including inadequate provision of sanitation and social services, housing and employment. This has also increased the incidence of poverty in Africa. Although there is lack of accurate data on poverty situation in Africa, evidence shows that poverty is rising. Using the new US$ 1.25 per day poverty line, an estimate shows that 51 percent sub-Saharan African and 3 percent North African population were living in extreme poverty in 2005. The incidence and severity of poverty is relatively higher among women and children than in men. The global economic crisis is expected to increase the number of people living in extreme poverty in Africa.

Table 1: Basic Economic Indicators, 2009

	Population (thousands)	**Land area** (thousands of km^2)	**Population Density** (pop / km^2)	**GDP based on PPP valuation** (US $ Million)
Sub-Saharan Africa	745 238	19 530	38	1141 198
South Africa	50 110	1 221	41	487 107
North Africa	208 851	8 523	25	1163 873
Other Africa	4 155	1 049	4	10 111
Africa	1 008 354	30 323	33	2 825 691
Bangladesh	144 500	148	979	241 100

Sources: *African Economic Outlook 2010*; *Bangladesh Economic Review 2010*.

[2] The data and statistics in this section are mostly drawn from *Economic Report on Africa 2010: Promoting high-level sustainable growth to reduce unemployment in Africa*, Ethiopia, Economic Commission for Africa.

The continent-wide average growth rate in Africa was relatively higher in the first decade of the twenty-first century comprising 6.1 percent in 2007. Although there are variations among the countries, the growth rate of some African countries exceeded their population growth rate, leading to an increase in per capita income. This growth was achieved as a result of an increase in domestic investment,[3] Foreign Direct Investment (FDI), macroeconomic stability and better economic management. However, this relatively high growth rate did not have any positive impact on employment generation. A double-digit unemployment rate is a common scenario in large number of African countries. This unemployment scenario became worse in 2008 due to global financial and economic crises through their negative impact on growth, export earnings, government revenues and foreign capital inflows into Africa. GDP growth in Africa declined from 6.1 percent in 2007 to 4.9 percent in 2008. In 2009, it further declined to 1.6 percent, experiencing considerable variations among the countries. Growth was the highest in East Africa at 3.9 percent, followed by North Africa at 3.5 percent, West Africa at 2.4 percent and Central Africa at 0.9 percent, while Southern Africa posted a negative growth rate of 1.6 percent. Economic activity in Africa is expected to recover in 2010, with GDP projected to grow at an average rate of 4.3 percent.

Considering trade performance, it is observed that Africa's global trade share rose slightly from 2.8 percent in 2007 to 3.2 percent in 2008, associated with the high commodity prices which peaked before the financial crisis. The value of Africa's total export and import in 2008 was US$ 465 billion and US$ 558 billion respectively. The top 10 exporters in the continent are oil-rich countries. The merchandise trade in Africa remains undiversified both in terms of range of products and destination. Eighty percent of the African exports are constituted by agriculture, mining and fuel products, and main destinations of these exports are Europe and North America. Although there are discernible shift of Africa's export towards Asia, still the destination as well as the range of exportable products are very narrow. However, the composition of Africa's trade with Asia is considerably different with increasing share of manufactured goods and services. This type of trade relations between Africa and Asia has implications for the investment flows from Asia to Africa, which must go beyond extractive sectors to establishing joint ventures that add value to the raw commodities within Africa.

In recent years, there has been growing optimism among African countries and between Africa and major global economic players in terms of trade and economic cooperation. China has been strengthening ties with African countries since 2007. Chinese companies invested a total of US$1 billion in Africa. Brazil, India, USA, European Community (EC) and Turkey have strengthened trade and

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3 Domestic investment financed through the high commodity prices and resource extraction.

economic relations with Africa. It resulted in a number of Free Trade Areas (FTAs), Economic Integration Agreements (EIAs) and Customs Union (CU) as follows: (i) Common Market for Eastern and Southern Africa (COMESA), FTA (1994); (ii) East African Community (EAC), FTA (2000); (iii) Economic and Monetary Community of Central Africa (CEMAC), CU (1999); (iv) Economic Community of West African States (ECOWAS), CU (1993); (v) Southern African Customs Union (SACU) (2004); (vi) Southern African Development Community (SADC), FTA (2000) (vii) EC-Albania, FTA & EIA (2006); (viii) EC-Algeria, FTA (2005); (ix) EC-Cameroon, FTA (2009); (x) EC-Côte d'Ivoire, FTA (2009); (xi) EC-Egypt, FTA (2004); (xii) EC-Morocco, FTA (2000); (xiii) EC-South Africa, FTA (2000); (xiv) EC-Tunisia, FTA (1998); (xv) Turkey-Albania, FTA (2008); (xvi) Turkey-Morocco, FTA (2006); (xvii) Turkey-Tunisia, FTA (2005); (xviii) USA-Morocco, FTA & EIA (2006); and (xix) West African Economic and Monetary Union (WAEMU), CU (2000).[4]

2.2 *Socio-Economic State of Bangladesh*[5]

Bangladesh is one of the least developed countries in the world with around 144 million people in an area of 148 thousand square kilometres. Bangladesh is the eighth most populous country in the world and has the highest population density – about 979 people per square kilometre. The population is predominantly rural, with about 80 percent living in rural areas. Most of them directly or indirectly depend on agriculture. Bangladesh economy has experienced accelerated GDP growth rate during the 2000-09 compared to the previous years. Despite global recession, Bangladesh has achieved a moderate GDP growth rate in fiscal year 2009 which was 5.74 percent, compared to 6.19 percent in fiscal year 2008. GDP over the last five years achieved more than 6 percent growth consecutively. The highest growth in industry sector along with the continuous trend of growth of service sector propelled the GDP growth rate. In fiscal year 2009, the sectoral contribution of agriculture to GDP was 20.16 percent while contribution of manufacturing and service sector was 29.95 percent and 49.90 percent respectively. Despite considerable progress made in GDP growth over the last two decades, forty percent of Bangladesh's huge population is living below the poverty line.

During the time of contraction in global trade volume, the external sector performance of Bangladesh was quite satisfactory in the fiscal year 2009. The volume of exports, in fiscal year 2009 was US$ 15.6 million against imports of US$ 22.0 million. Although in 2009 the export growth declined, it was 10.3 percent compared to 15.8 percent in the previous fiscal year. Due to sharp decline

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4 Available at: http://www.wto.org/, accessed on 28 October 2010. These are only the agreements that have entered into force.

5 The data and statistics in this section are mostly drawn from *Bangladesh Economic Review 2010*, Ministry of Finance, Government of Bangladesh.

of food-grain imports and fall of oil price, import growth in fiscal year 2009 declined to 4.4 percent. Like Africa Bangladesh's export basket is highly concentrated on narrow range of products. More than two-third of export earnings are from garments sectors, while woven garments and knitwear contributed 38.02 percent and 41.31 percent of total export earnings in fiscal year 2009. Analysis of export destination shows that the USA and EU are the main export destination for Bangladesh comprising two-third of export earnings. USA is the single largest destination of Bangladesh's export comprising 26 percent of its export earnings. In such a backdrop, to avoid any international shock on Bangladesh's development, it is essential to diversify its export both in terms of exportable items and export destinations.

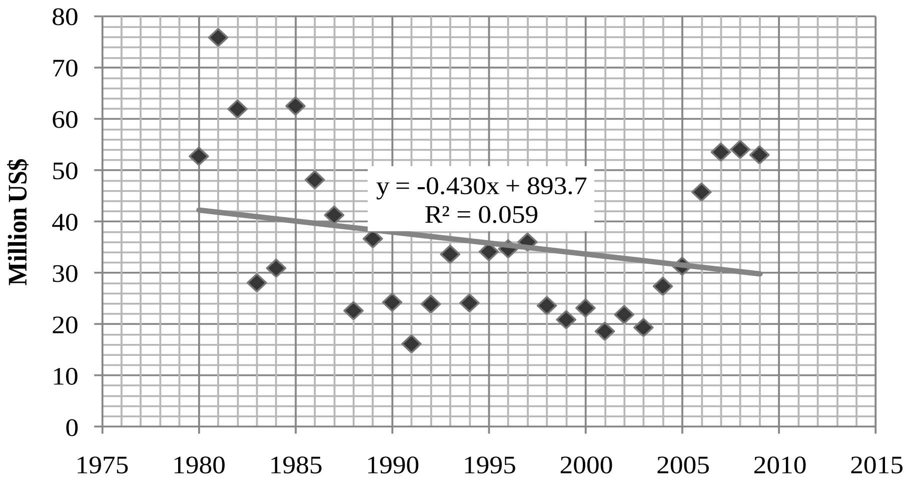
Bangladesh is a founding member of South Asian Association for Regional Cooperation (SAARC) and a contracting party of South Asian Free Trade Area (SAFTA). It is also a founding member of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Bangladesh is currently under negotiation of the BIMSTEC FTA.

3. Bangladesh's Export Potential to Africa

3.1 *Bangladesh's Exports to Africa*

Bangladesh's export to African countries registered a negative growth over the years. From an average of about US$ 65 million in the early 1980s, its exports to Sub-Saharan African countries declined to about US$ 22 million in early 2000s. It, however, increased during the second half of 2000s; still it remains lower than that of the early 1980s (Figure 1).

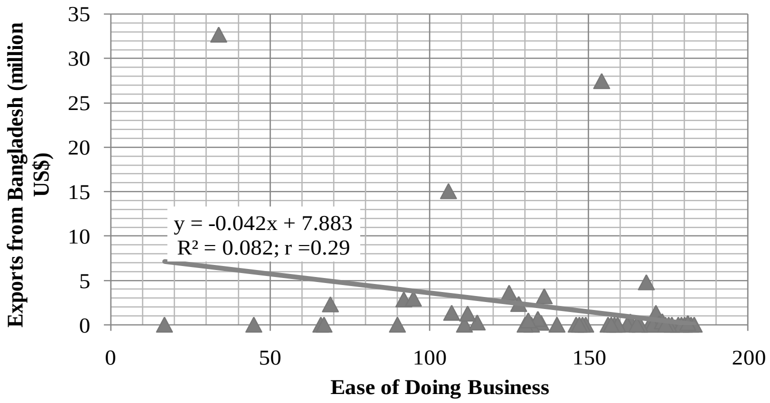
Figure 1: Bangladesh's exports to Sub-Saharan Africa, 1980-2009



Source: Authors' calculation.

Bangladesh's exports to African countries have been dependent on the quality of business environments in Africa. Taking into account the business environment represented by ease of doing business index (starting from 1, higher value of the index represent lower quality of business-friendly regulations), the evidence reveals that business-friendly regulations actually facilitated exports to African countries even though most of the countries have low quality regulations (Figure 2).

Figure 2: Business Environment vs. Bangladesh's Exports to African Countries, 2009



Source: Authors' calculation.

3.2 *Methodology and Data*

From a purely economic point of view, export potential to African countries is subjected to measurement by adopting economic model. Examining trade potential of a regional bloc can be carried out by either equilibrium or disequilibrium approach. In the equilibrium models, a home country's imports from and exports to all its partners can be exhaustive and represent a general equilibrium framework, and would be estimated to arrive at total trade values. In the disequilibrium framework proposed by Kalirajan[6], a home country's actual trade is assumed to differ from potential exports with respect to each trading partner. Following this framework, some further studies have been conducted

6 K. Kalirajan, "Stochastic Varying Coefficients Gravity Model: An Application in Trade Analysis", *Journal of Applied Statistics*, Vol. 26, No. 2, 1999, pp. 185-193.

recently to examine the trade performance by estimating trade potential in the context of either regional bloc or bilateral cases.[7]

The usual assumption in the standard gravity model is that the trading environment in the home country does not impose any restrictions on its exports. Despite admitting that the home country possesses 'behind the border' constraints, these constraints are assumed to be insignificant and are randomly distributed across observations in standard models. However, such an assumption would be strong and may not reflect the real world circumstances. Empirical gravity models often ignore the economic distance between the trading partners *i* (origin country) and *j* (destination country) relative to a trade weighted average of the economic distance between a partner *i* and all points in the linear expenditure system. This can lead to biased estimates since economic distance includes geographical distance as well as other country-specific factors, such as historical and cultural ties. Differences of some other country-specific factors such as state of governance, functioning of the institutions, political stability, etc. are also typically left out in the standard models mainly due to the unavailability of data, which may result in correlation between the residual term and some of the regressors.[8]

According to Drysdale and Garnaut[9], Baldwin and Taglioni[10], and Kalirajan and Singh[11], export flows can be affected by two factors. *First*, natural constraints, such as geographical distance or transport cost. *Second*, 'behind the border' constraints, which stem from socio-economic, institutional and political factors, and infrastructure rigidities prevailing in exporting countries. In the stochastic frontier analysis of export flows, higher variation in export

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7 For example, K. Kalirajan, "Regional Cooperation and Bilateral Trade Flows: An Empirical Measurement of Resistance", *International Trade Journal*, Vol. 21, No. 2, 2007, pp. 85-107; K. Kalirajan, "Gravity Model Specification and Estimation: Revisited", *Applied Economics Letters*, Vol. 15, No. 13, 2008, pp. 1037-1039; S. M. Hossain, "South Asian Free Trade Area: Examining Bangladesh's Trade Potential", *BIISS Journal*, Vol. 31, No. 2, 2010, pp. 145-166; S. Armstrong, "Measuring Trade and Trade Potential: A Survey", *Asia Pacific Economic Papers 368*, Canberra: Australian National University, 2007; M. Kabir, *Trade Response to Preferential Liberalization: Evidence from Some Emerging Asian Countries*, Lambert Academic Publishing, Germany, 2010 (forthcoming).

8 Kalirajan (2008), o*p. cit*.

9 P. Drysdale and R. Garnaut, "Trade Intensities and the Analysis of Bilateral Trade Flows in a Many-country World: A Survey", *Hitotsubashi Journal of Economics,* Vol. 22, No. 2, 1982, pp. 62-84.

10 R. E. Baldwin and P. Taglioni, "Gravity for Dummies and Dummies for Gravity Equations", *Working Paper 12516,* Massachusetts: National Bureau of Economic Research, 2006.

11 K. Kalirajan and K. Singh, "A Comparative Analysis of China's and India's Recent Export Performances", *Asian Economic Papers*, Vol. 7, No. 1, 2008, pp. 1-30.

performance explained by 'behind the border' constraints indicate greater distance from the trade frontier, given the core determinants of exports. The export frontier shifts outwards due to an improvement in export technology. Export potential can be measured in the context of achieving it at a 'frontier', which estimates a level of trade that might be attained in the case of the most open and frictionless export possible given current export, transport, and institutional efficiencies or practices.[12]

In order to measure the export potential of Bangladesh to African countries, the stochastic frontier specification of gravity model can be given below:

$$lnEXP_{ij} = \alpha + \beta_1 lnGDP_i + \beta_2 lnGDP_j + \beta_3 lnDIST_{ij} + \beta_4 lnRER_{ij} + \beta_5 SAARC_{ij} + \varepsilon_{ij} - v_{ij}$$

where *ln* stands for natural logarithm, EXP_{ij} indicates exports from Bangladesh (i) to destinations including African countries (j), GDP_i implies GDP of Bangladesh, and GDP_j is GDP of destination countries. Both GDP_i and GDP_j is expected to take positive sign as these are trade enhancing factors. $DIST_{ij}$ means bilateral distance, expressed in kilometers, which takes negative sign as it increases trade transportation costs. RER_{ij} is the real exchange rate between Bangladesh and its partners, which has been calculated as the product of the nominal exchange rate and relative price levels in each country. Following Carrère[13] and Serlenga and Shin[14], it is expressed as:

$$RER_{ij} = ER_{ij}(P_j / P_i)$$

where P_i and P_j are price levels of home and partner countries respectively. ER_{ij} is the bilateral nominal exchange rate between the currencies of foreign country j and the home country i.[15] Serlenga and Shin[16] argue that an increase in the bilateral real exchange rate reflects depreciation of the importer's currency against that of the exporters. Thus, the coefficient of *RER* is expected to be positive for exports. A SAARC dummy has been used, which is supposed to take negative sign as Bangladesh has a free trade agreement with SAARC countries.

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12 Kabir (2009), *op. cit.*

13 C. Carrère, "Revisiting the Effects of Regional Trade Agreements on Trade Flows with Proper Specification of the Gravity Model", *European Economic Review*, Vol. 50, No. 2, 2006, pp. 223-247.

14 L. Serlenga and Y. Shin, "Gravity Models of Intra-EU Trade: Application of the CCEP-HT Estimation in Heterogeneous Panels with Unobserved Common Time-Specific Factors", *Journal of Applied Econometrics* Vol. 22, No. 3, 2007, pp. 361-381.

15 The formula of calculating bilateral exchange rate is $ER_{ij} = LC_i/LC_j$ where *LC* is the local currency units per US$.

16 Serlenga and Shin (2007), *op. cit.*

v_{ij} is the idiosyncratic error term that represents random shocks to exports flow, and u_{ij} measures the performance of a country relative to best practice. In other words, the later represents the degree to which the actual exports fall short of the potential, due for example to unmeasured socio-economic and political infrastructure.

The data on aggregate exports are gathered from the International Monetary Fund's Direction of Trade Statistics (DOTS) for the year 2009. Data on GDP and per capita GDP are collected from the World Development Indicators (WDI). The data on distance comes from the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII). Bilateral exchange rate data are not available in the standard secondary sources. Therefore, it is calculated from official exchange rates of individual countries, which are collected from the WDI. We use the GDP deflator as the price indicator, which is an overall measure of price level of domestically produced items.

3.3 *Results and Interpretation*

Table 2 exhibits the results from estimated gravity model where the coefficients take expected sign even though SAARC dummy does not turn out to be statistically significant. The export potential has been calculated from the predicted values of fitted gravity model. It indicates that out of 51 African countries of the sample, Bangladesh has untapped export potential with 26 countries, and potential has been utilised for 25 countries. The summary results of export potential has been given in Table 3, where positive sign indicates untapped potential and negative sign stands for utilised potential.

Table 2: Maximum Likelihood Estimates of Stochastic Frontier Gravity Model

	Coefficient	Standard Error	*p*-value
$lnGDP_i$	..	..	..
$lnGDP_j$	0.773	0.049	0.000
$lnDIST_{ij}$	-0.384	0.228	0.093
$lnRER_{ij}$	0.089	0.034	0.010
$SAARC_{ij}$	0.635	0.634	0.317
Constant	-3.202	2.495	0.200
Number of obs = 125			
Wald $\chi^2(4)$	359.74		0.000
Log likelihood	-195.694		

Source: Authors' calculation.

Potential gain from 26 countries has been estimated to be US$ 57.66 million. However, gain from top seven countries — Algeria, Angola, Egypt, Ethiopia, Morocco, Nigeria and Tunisia — will be US$ 48.27 million. The potential gain from the other countries will be meagre.

Table 3: Summary Results of Export Potential

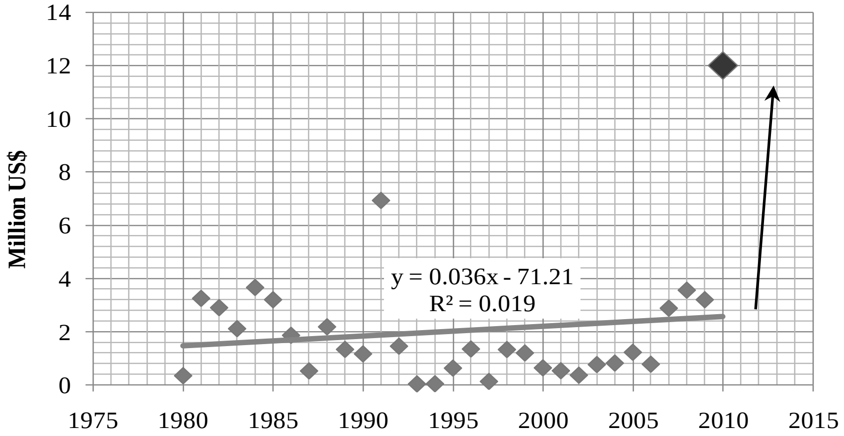
Country	Potential	Country	Potential
Algeria	+	Liberia	-
Angola	+	Madagascar	+
Benin	+	Malawi	-
Botswana	+	Mali	+
Burkina Faso	+	Mauritania	-
Burundi	-	Mauritius	+
Cameroon	+	Morocco	+
Cape Verde	-	Mozambique	+
Central African Rep.	-	Namibia	+
Chad	-	Niger	-
Comoros	-	Nigeria	+
Congo, Dem. Rep. of	+	Rwanda	-
Congo, Republic of	+	São Tomé & Príncipe	-
Côte d'Ivoire	-	Senegal	+
Djibouti	-	Seychelles	-
Egypt	+	Sierra Leone	-
Equatorial Guinea	+	South Africa	-
Eritrea	-	Sudan	-
Ethiopia	+	Swaziland	+
Gabon	+	Tanzania	+
Gambia, The	-	Togo	-
Ghana	+	Tunisia	+
Guinea	+	Uganda	+
Guinea-Bissau	-	Zambia	+
Kenya	+	Zimbabwe	-
Lesotho	-		

Source: Authors' calculation.

Algeria

Algeria is a member of the Arab League, United Nations, African Union, and Organization of Petroleum Exporting Countries (OPEC). It is also a founding member of the Arab Maghreb Union. The recent economic performance of Algeria is quite encouraging — its per capita GDP was US$ 4,029 in 2009, which was among the highest in Africa. It is, however, experiencing a moderate economic growth; average growth of GDP is 4.02 percent during 2000-09. Its trade openness with the rest of the world has also been moderate but higher than that of Bangladesh — trade-GDP ratio was 58.89 percent in 2009. Bangladesh has significant export potential unutilised in Algeria, which is about US$ 9 million as predicted by fitted gravity model.

Figure 3: Export Potential to Algeria

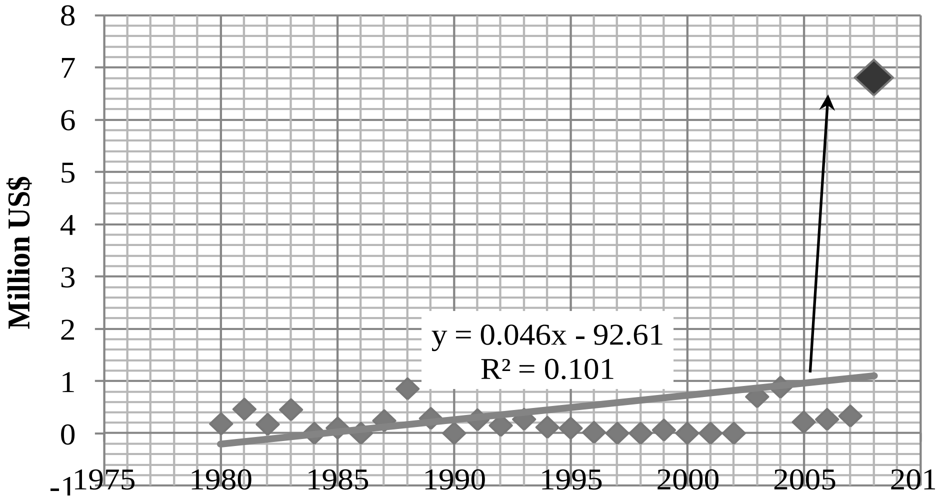


Source: Authors' calculation.

Angola

Angola is a country in south-central Africa. After independence in November 1975, it faced a devastating civil war, which lasted several decades and caused millions of deaths and refugees. However, the economy of Angola has witnessed a period of transformation in recent years moving from the disarray of a quarter century. It is now the fastest growing economy in Africa and one of the fastest growing economies in the world. Its economic growth is almost entirely driven

Figure 4: Export Potential to Angola



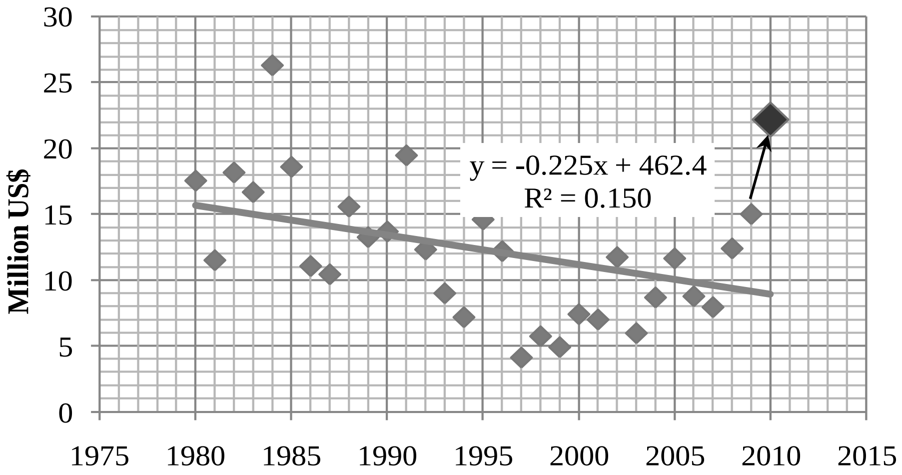
Source: Authors' calculation.

by rising oil production. As one of the top performing economy of the continent, its per capita GDP was US$ 3,734 in 2009, and average growth of GDP was 12 percent during 2000-09. It registered a high trade-GDP ratio during the last decade and it was 81.08 percent in 2009. According to the result of gravity model, Bangladesh has been continuously underutilising its export potential to Angola (Figure 4).

Egypt

Egypt is one of the most developed and diversified economies in Africa. Its tourism, agriculture, industry and service sectors are at almost equal level of production. Egyptian economy is rapidly developing mainly due to its internal and political stability and recent trade and market liberalization programmes undertaken by the government. The economy depends mainly on agriculture, media, petroleum exports, and tourism. Its per capita GDP was US$ 2,269 in 2009. The country registered moderate but a steady growth over the last decade; average growth of GDP was 5.42 percent during 2000-09. However, its trade-GDP ratio has been very low, a meagre of 35.09 percent in 2009, which indicates a low level of integration with the world economy. Bangladesh has a high untapped export potential to Egypt, which is US$ 7.16 million.

Figure 5: Export Potential to Egypt

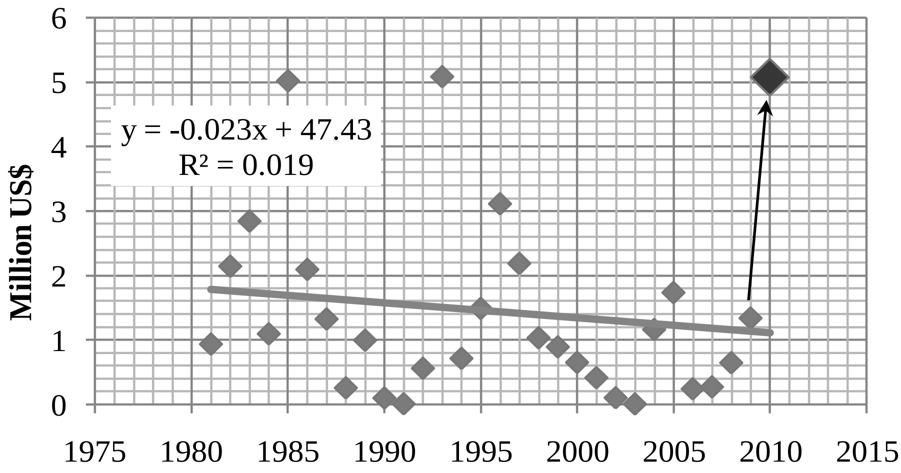


Source: Authors' calculation.

Ethiopia

Once known as the symbol of famine, Ethiopia is now a fast-growing economy of Africa. It was the fastest-growing non-oil-dependent African nation in 2007 and 2008. Agriculture accounts for almost 41 percent of the GDP and 80 percent of the country's exports. Many other economic activities are also dependent on agriculture, which include marketing, processing, and exports. Its per capita nominal GDP remains quite low, which was only US$ 345 in 2009. However, average growth of GDP was 8.99 percent during 2000-09. Trade-GDP ratio was 30.84 percent in 2009, which indicates a very low level of integration with the world economy. It also indicates that the high economic growth registered by the economy has been due to the performance of its domestic economy. Bangladesh can increase its exports to Ethiopia by US$ 3.74 million, thereby utilising benefits of high economic growth of this country.

Figure 6: Export Potential to Ethiopia

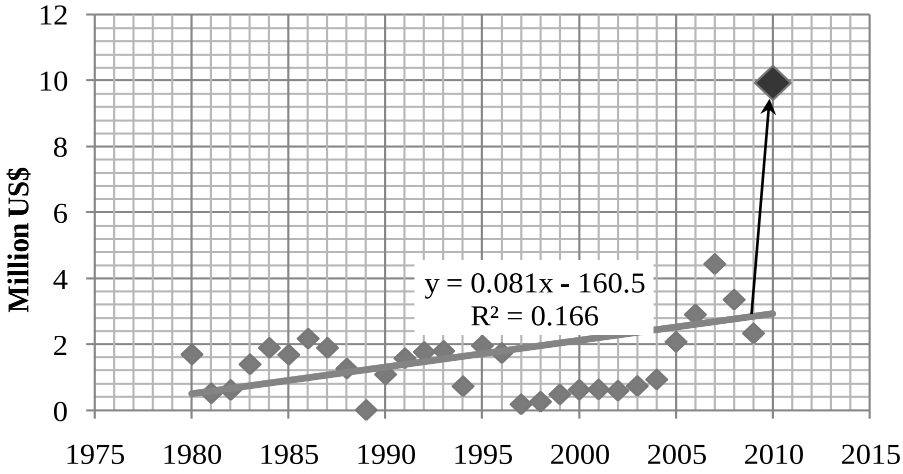


Source: Authors' calculation.

Morocco

The country is the world's biggest exporter and third producer of phosphorus. It is a relatively liberal economy in which service sector accounts for about half of the GDP. Its Industry, which consists of mining, construction and manufacturing, contributes around 25 percent to GDP. Its highly growing sectors are tourism, telecommunication, information technology, and textiles. Morocco is one of the competitors of Bangladesh's RMG sector in the world market. Its per capita GDP was US$ 2,795 in 2009. The country experienced a moderate but steady economic growth of 5.29 percent during 2000-09. Its trade-GDP ratio was 51.35 percent in 2009, indicating a moderate level of integration with the world economy. Bangladesh can, however, increase its exports substantially to Morocco, which is US$ 7.61 million as predicted by the gravity model.

Figure 7: Export Potential to Morocco

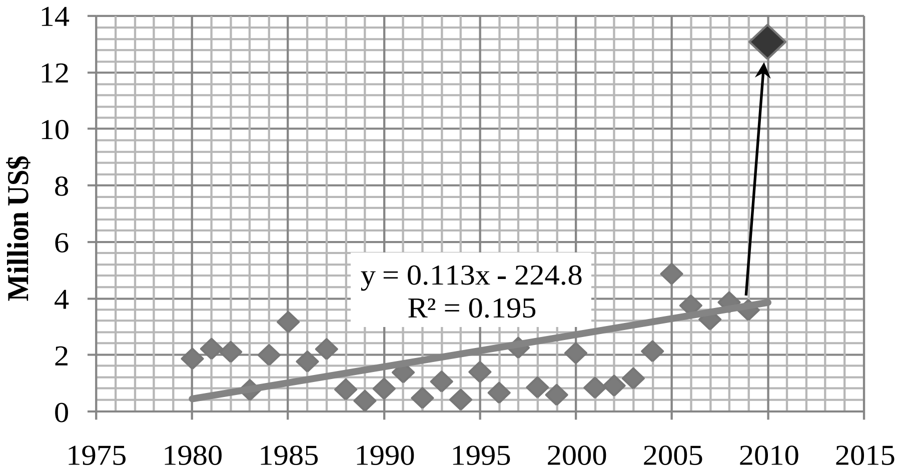


Source: Authors' calculation.

Nigeria

Over the years, Nigeria has turned out to be a mixed economy with emerging market. It has abundant supply of natural resources and is equipped with well-developed financial, legal, communications, and transport sectors to facilitate external trade. Nigerian Stock Exchange is the second largest in Africa. It is the 12th largest producer and has the 10th largest reserve of petroleum in the world.

Figure 8: Export Potential to Nigeria



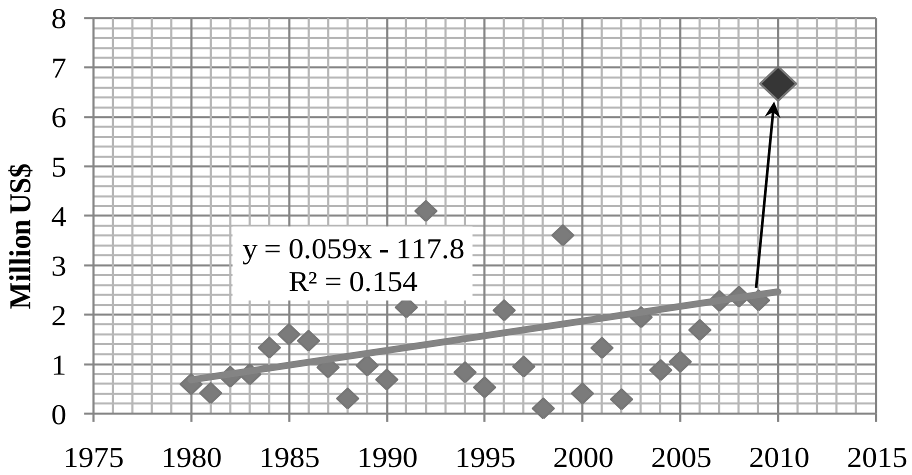
Source: Authors' calculation.

The Nigerian economy is performing well in terms of per capita GDP, which was US$1,092 in 2009. It also registered satisfactory economic growth over the last decade, which was 6.43 percent during 2000-09. Its trade-GDP ratio was 54.14 percent in 2009, implying moderate integration with the global economy. Bangladesh has the highest unutilised export potential with Nigeria amongst the African countries, which is US$ 9.49 million.

Tunisia

The economy of Tunisia is diverse, ranging from agriculture to mining, manufacturing, petroleum products and tourism. Agriculture contributes 11.6 percent to GDP, industry 25.7, and services 62.8 percent. Industry is mainly made up of clothing and footwear manufacturing, production of car parts, and electric machinery. The European Union (EU) remains Tunisia's first trading partner, accounting for 72.5 percent of Tunisian imports and three-quarters of Tunisian exports. It is the EU's one of the most established trading partners in the Mediterranean. Tunisia's per capita nominal GDP was US$ 3,792 in 2009. It achieved average growth of GDP of 5.18 percent during 2000-09. Its trade-GDP ratio was 84.8 in 2009, which indicates a high integration of the country with the world economy. The export potential to Tunisia is largely unutilised, which is around 66 percent. Bangladesh can, therefore, increase its export to this country by US$4.39 million.

Figure 9: Export Potential to Tunisia

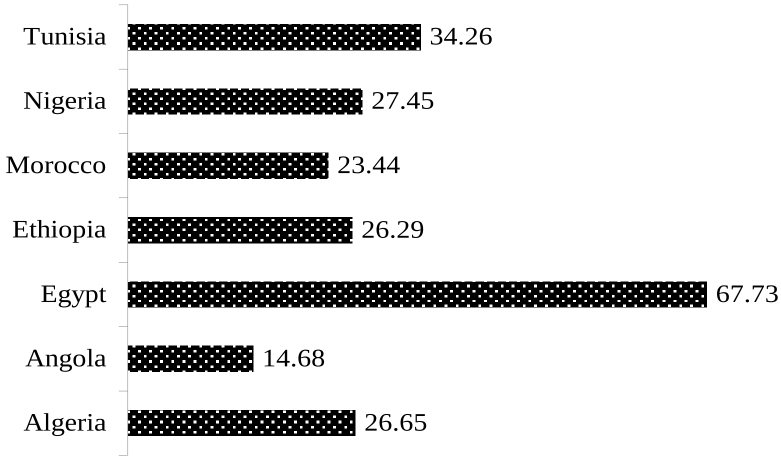


Source: Authors' calculation.

In general, Bangladesh's realization of export potential remains very low except for Egypt. For the top six promising market for Bangladesh's export, the realization of export potential ranges from a meagre 14.68 percent for Angola to

34.26 percent for Tunisia (Figure 10). This clearly indicates that there is a strong need for removing unobserved 'behind the border' constraints by relaxing rigidities at institutional, cultural, trade and policy levels.

Figure 10: Realization of Export Potential (%)



Source: Authors' calculation.

4. Investment Opportunities in Africa

Investment cooperation between Africa and the South is attractive to African countries because it increases and diversifies the sources of development finance available to the region. There is growing disappointment among the African countries with the existing aid mechanisms, characterized by the policy conditions that influence their development policy choice. Therefore, many African countries are increasingly seeking investment from developing countries because these are not associated with the conditions that happened in case of aid from traditional donors. Consequently, developing countries are becoming important sources of FDI to Africa. The share of developing countries in total FDI inflows to Africa increased from an average of 17.7 percent over the period 1995-96 to 20.8 percent for the period of 2000-2008.[17] FDI in Africa by developing Asian economies is also growing and has the potential to reach much higher levels. However, FDI flow between Bangladesh and Africa is negligible[18]; there is no official record of FDI from Bangladesh to African countries.[19]

[17] UNCTAD, "South-South Cooperation: Africa and the New Forms of Development Partnership", *op.cit,* p. 81.

[18] There are some Bangladeshi investors who invested in different African countries. However, the invested capital has not transferred from Bangladesh to Africa; rather they transferred it from third countries.

[19] See *http://www.cepii.fr/anglaisgraph/bdd/fdi.htm* for details.

Considering a capital scarce country, Bangladesh has severe limitation to invest in Africa in a capital intensive sector. Keeping this limitation in mind, there is raising interest in Bangladesh to look Africa as an investment location particularly in agriculture and other labour-intensive sectors.

Both Bangladesh and African countries can take advantages of the complementary nature of their economies. The availability of fertile lands and water resources to irrigate it for agricultural production is a common phenomenon for most of the western African countries.[20] The land-man ratio is highly favourable in Africa for Agricultural production. In Africa, by using a tractor a farmer can cultivate 6 times more lands than Bangladesh.[21] However, they are only producing rain-dependent crops. On the contrary, Bangladesh has scarcity both in lands and water for agricultural production and this scarcity influenced Bangladesh to invest in agricultural sectors in Africa. Bangladesh could take the lead in providing technical and financial support on rice and other food grain production where it has developed substantial skills. A bilateral investment agreement on agricultural sectors between two parties can allow Bangladesh to undertake contract farming in Africa. Under this agreement Bangladesh can invest in Africa and send experts and farmers to grow rice and other agricultural crops round the year. This contract farming can further create opportunities to invest in the agro-food processing industries in Africa. Bangladesh's private sectors might be interested to process the agricultural products, produced under contract farming, as well as local agricultural products[22] in Africa and export these to other countries. Another potential sector for agricultural investment in Africa is the cotton sector which is a backward linkage industry for readymade garments sector in Bangladesh. West African countries grow a lot of cotton and investors from Bangladesh can set up the cotton manufacturing industry in Africa using their available raw cotton.[23]

Besides agriculture, another potential investment sector is pharmaceutical sector. In Africa, there is a large demand for pharmaceutical products and most of them are imported from other countries. Bangladesh is now capable of producing high quality pharmaceutical products and has already transformed pharmaceutical sector from an import based to an export oriented sector. Now

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[20] In Liberia, one acre land is given lease at one US cent for rubber production. Not only in West Africa but also in East Africa, huge fertile lands are just laid idle, specially, in Ethiopia, Uganda, Tanzania, Malawi and Mozambique. Indian entrepreneurs have already taken hundreds of thousands of acres land lease in all those countries and doing well with agriculture.

[21] The size of cultivable land is very small in Bangladesh and a farmer has to move the tractor frequently. This type of shortfall is not present in Africa.

[22] There are huge surplus productions in fruits in African countries and they don't have the capacity to preserve these.

[23] "Bangladesh Eyes Trade, Farming in West Africa", *The Daily Star*, 16 September 2010.

approximately 97 percent of the domestic pharmaceuticals demand is met by the local companies.[24] Bangladesh is also exporting its pharmaceutical products to 72 countries including eight African countries.[25] According to the Trade Related Intellectual Property Rights (TRIPS), Bangladesh and other least developed countries (LDCs) are exempted from patent protection until 2016. Among all LDCs Bangladesh has the strongest pharmaceutical manufacturing base.[26] With about 40 years of experience in pharmaceutical production and marketing Bangladesh is now fully trained to invest in African LDCs. By investing and operating pharmaceutical plants in Africa, Bangladesh will be able to get access in the local market in Africa because Bangladesh is one of the cheapest sources of quality medicine in the world and continuously reducing the prices of its products.[27] Like agriculture and pharmaceutical sectors, there might be some other potential sectors in Africa for investment. The viable option for Bangladesh is to invest through pilot projects in the above mentioned sectors simultaneously exploring opportunities to invest other thrust areas for mutual benefits.

5. Opportunities of Manpower Export to Africa

Manpower export and overseas remittance flows are considered as the lifeline for the economy of Bangladesh. As an important development strategy, manpower export enhances country's import payments, improves balance of payments situations and also trims down the country's dependence on foreign aid.[28] Bangladesh has started manpower export in 1976 and since then manpower export increased considerably, numbering 67.5 millions until 2009.[29] However, in 2009, manpower export has declined dramatically, 47 percent from the previous year.[30] The cause of this decline mainly was the global recession. Global recession severely hit the countries which are the main destination for Bangladesh's manpower export. From Figure 11, it is observed that the labour market for Bangladeshi workers is not extensive and narrowed down to some countries in the Middle East. These Middle Eastern countries as well as

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24 B. Qaiser, "Pharma Sector Forcing of the Pace", *The Independent*, 24 November 2010.

25 N. Hassan, "Future Prospects of Pharmaceutical Industry of Bangladesh", available at: *http://www.csebd.com/cse/download/FutureProspects.ppt*, accessed on 30 October 2010.

26 *Ibid.*

27 *Ibid.*

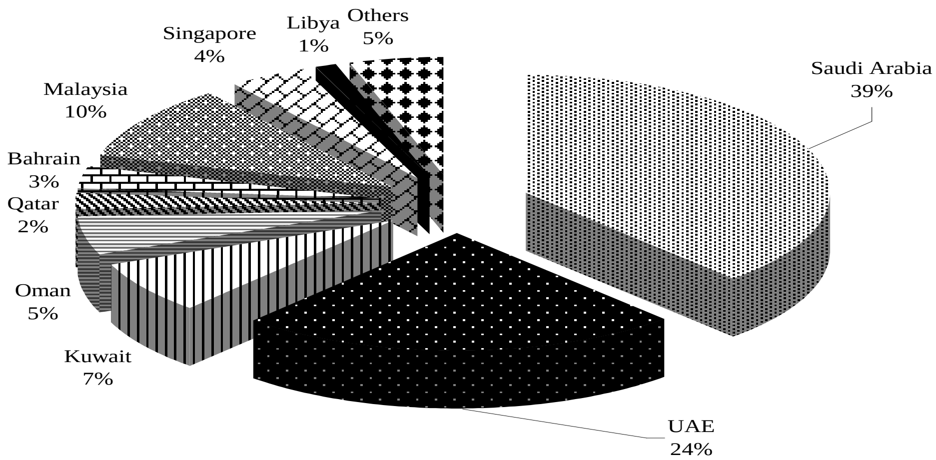
28 M. A. Hossain, "Manpower export from Bangladesh: Trends, Patterns and Development Impact", *Bangladesh Journal of Public Administration*, Vol. 16, No. 2, 2007, pp. 41-42.

29 A. T. S. Ahmed, S. Hossain and M. J. Uddin, "Migrant Labour, Remittances Inflow and Economic Development" in Golam. Mohammad (ed.), *National Security of Bangladesh 2009* (Forthcoming), BIISS and UPL, Dhaka.

30 Hossain, *op. cit.*

Malaysia, Korea and Singapore have downsized their development activities and scaled down their absorption of foreign workers.[31] As a result, looking for new potential labour market for Bangladesh has emerged as a crucial issue to offset the recent declines of manpower export. Keeping in mind the labour standard of Bangladesh and labour demand for destination countries, African countries might be the potential destination for Bangladesh's manpower. Bangladesh has an existing market of manpower export to Algeria, Angola, Nigeria, Botswana, South Africa and Libya but on a very limited scale.[32] It has been already argued that there is a scope for all categories of Bangladeshi workers to be employed in Africa.

Figure 11: Manpower Export by Bangladesh, 1976-2009 (%)



Source: Ahmed *et al., op. cit.*

Bangladeshi manpower can be employed in African countries in two ways. Firstly, investment-driven manpower exports where skilled, semi-skilled and unskilled labour might be employed in the agricultural and pharmaceutical sectors in Africa where Bangladesh has investment potential. As mentioned previously that Bangladesh has the potential to invest in the agriculture, agro-processing and pharmaceutical sectors in Africa. Agriculture sector is highly labour intensive and Bangladesh has skilled agricultural workers who can be employed there under proposed investment project. Pharmaceutical industry is a white-collar labour intensive employment sector and Bangladeshi workers have lot of experience to work and train others in this sector. This manpower export to

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31 Ahmed *et al., op. cit.*

32 "Govt. Looks to Expand Manpower Export Market to Africa", *The Financial Express*, 8 June 2009.

Africa would also increase the viability of Bangladesh's investment project considering relatively low labour cost associated with Bangladeshi workers. If Bangladesh successfully establishes the proposed investment projects with manpower export, this will create another scope for further employment generation. Since, Bangladeshi worker are innovative in nature, after being familiar with the African societies, some of them might establish small business like wholesale or retail imported goods from Bangladesh. This type of activities might have positive linkage effects in terms of manpower export.

Secondly, manpower export can be possible to existing African industries and service sectors. Most of the African countries are rich in oil and minerals which are receiving large amount of FDI from developed countries. These extractive industries are now expanding and need skilled and semi-skilled manpower. Government level initiative between Bangladesh and Africa can crate large scope to export workers in African mining industries. Besides, African countries are in need of technical manpower like doctors, engineers and healthcare experts in driving their economy. Emphasizing the importance of technical, vocational education and training to the development of the nation's economy Education Minister of Ghana noted: "as a developing country, we need the technical manpower to drive the nation's manufacturing industry".[33] This statement is more or less true for almost all the African countries. Some of the African countries have also expressed their interests to Bangladeshi counterpart to hire doctors, engineers, healthcare experts for their capacity building.[34] However, according to the manpower exporters, the government level initiative to facilitate manpower export to African countries is not sufficient.[35] Bangladesh should take diplomatic initiatives through adopting realistic policies and driving them hard to export manpower in African market.

6. Conclusion

This paper tries to examine the importance of strengthening Bangladesh-Africa economic cooperation. In doing so, it adopted an augmented stochastic frontier gravity model in order to examine Bangladesh's export potential to African countries. The results reveal that Bangladesh can utilise significant untapped export potential by removing its unobserved 'behind the border' constraints. The net potential export gain from top seven prospective export destination would be around fifty million US dollars. Most of these countries are performing well in terms of market orientation, per capita GDP and annual

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33 allAfrica.com, "We Need Technical Manpower Skills in Driving the Economy" available at: *http://allafrica.com/stories/201001111026.html*, accessed on 25 July 2010.

34 "Bangladesh Eyes Trade, Farming in West Africa", *The Daily Star, op. cit.*

35 E. R Bhuiyan, "Sliding Manpower Exports Warrant Attention from Policy Makers", *The Financial Express*, 15 October 2009.

average economic growth during the last decade. Bangladesh can realise benefits by undertaking export facilitation measures with these countries both in government to government and business levels. The country can also undertake measures to invest in agricultural farms through leasing with a view to enhance food security situation, and establish agro-processing, food, and pharmaceuticals industries, which would be important source of employment for Bangladeshi workers. Bangladesh should also strengthen bilateral ties for securing raw materials for its industries such as cotton, minerals and petroleum from Africa. Bangladesh can also explore markets for its skilled and semi-skilled human resources in services and mineral sectors. To facilitate these initiatives there is a need for undertaking detailed studies in all possible areas of cooperation and explore the magnitude of potential benefits of cooperation in economic arena.