EXPLAINING TRENDS AND FACTORS AFFECTING EXPORT DIVERSIFICATION IN ASEAN AND SAARC REGIONS: AN EMPIRICAL ANALYSIS

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September, 2014

NUST School of Social Sciences and Humanities
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Sector H-12, Islamabad, Pakistan
S'H Working Paper Series

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Abstract

The aim of this study is to assess the role played by the country-specific factors in the determination of exports diversification process. To meet this objective, we used the fully modified ordinary least squares co-integration model for panel data-set of selected ASEAN and SAARC member countries for the time period 1986 to 2012. The study found that the foreign direct investment, domestic investment, competitiveness, financial sector development and institutional strength are significantly and positively related to export diversification in both the regions. These findings have important policy implications for ASEAN and SAARC regions. They call upon the two selected regions to diversify their exports especially in their area of specialization which is vital for their economic development. The study also encourages the regional countries to improve their international competitive strength while upgrading environment to attract both domestic and foreign investment.

Keywords: Export Diversification, Economic development, ASEAN and SAARC Regions.
1. Introduction

Export diversification is a process of economic development through structural transformation from producing primary products to manufacturing products. This can be gain by elaborating the presented basket of exported products or by shifting them through innovation and technology. A requirement for this change is frequently the existence of an elastic demand for exports of the countries in global export markets so with that influence countries are able to become the part of global export markets without fearing negative terms of trade effects. Many countries with the commodity dependence or a narrow export basket frequently suffer from export instability that arise as a result of the inelastic and unstable demand from global markets and thus the export diversification phenomenon through changing export structure is one way to reduce this vulnerability of global economic shocks (Haussmann and Hwang, 2006).

After the 1980s, outward-oriented growth as a development strategy was adopted by the developing countries with the intention of gaining access to the foreign technology and high quality intermediate inputs. These will in turn enable the productivity upgrading with a comparative advantage and thus empowering these countries to allocate scarce economic resources more efficiently.

This strategy is however accompanied with a certain number of risks; one of the most important risks is volatility. By opening itself to the benefits of global trade a country also makes itself more sensitive to global economic shocks. It has been broadly recognized that the developing countries’ degree of openness to the global economy is vulnerable to external economic shocks due to dependence on few primary product exports and have a small number of export markets for the bulk of their export earnings. The impact of an external economic shock is in general through the losses in export earnings and the size of impact depends on countries degree of export specialization (Kalemli and Ozcanetal, 2013). However, economic openness shows the fact that a developing country may be vulnerable to exogenous economic shocks as reflected by the losses in export revenues and growth slowdown in these economies but the level of shock depends upon the degree of specialization of a country in their export sector. Higher degrees of export specialization are strongly associated with the larger volatility in export revenue and economic growth rates.

Moreover, in the global markets developing countries have to compete among other countries, most of which are also exporting the primary products. Soas their products will easily be substituted by products of their competitors, if the prices increase in one country they will not find buyers in the international market. This phenomenon is due to the small income elasticity of global demand for primary commodities whereas world demand of manufactured goods rises more rapidly than the demand of primary products and in that time the terms of trade of the exporters of primary products turn down in the world market. In this framework, as Cooper and Brainerd (1968) argued, diversification is now a major target for strategy makers for economic development in developing countries through the structural change of the economy from exporting primary products to intermediate products by opening their economies into the global market.

In developing world economists and politicians not only focus on trade liberalization but also give stress on the importance of export policy of diversification for the economic growth. Because exports diversification is considered as to increase economic development for developing countries through different ways:
1. Reducing the export volatility by decreasing the reliance on a small number of products which are subject matter of volumes and prices fluctuations 
2. Through knowledge and technological spillover effect 
3. Making countries less vulnerable to external shocks increasing productivity growth 
4. Increased markets for their exports by replacing their exported products with positive price trends products in the global market 
5. Enhancement of their technological capabilities (Do gruel and Tekce, 2011).

Through diversification of export dependency on primary products for developing countries can be reduced. However, export diversification can be in different dimension and forms then its analysis can be estimated at different levels. Export diversification is of two types, horizontal and vertical. Change in the composition of export from primary to manufactured goods in order to reduce the external economic (global price instability or decline) and political risks (Cramer, 1999) is vertical export diversification whereas, horizontal diversification takes place among products of same sector by adding different products in export basket.

There is a limited empirical support for the relationship between export diversification and economic development. Sachs and Warne (1995) and Maloney (2002) found that export diversification and economic growth are negatively related. According to World Bank(2002) even if the association of linking specialization, volatility and low growth could be well founded, it does not mean that a rising level of export diversification can by itself give assertion of high levels of growth. In the 1960s and the late 1990s, Latin American countries diversified their export structure but so far they were not capable to get large levels of GDP growth due to geographic and cultural impacts.

On the other hand, many researchers find out a positive link between export diversification and economic development (Al-Marhubi 2000, De Ferranti et al. 2002,Matthee and Naude 2007, Hausmannet al. 2007). Lederman & Maloney (2003) also found that high degree of specialization in exports is negatively associated with the growth rate. Lederman and Maloney (2003) empirically estimate that export specialization and GDP growth rate are negatively related for developing countries by using panel data regression.

Since the early 1980s, many Asian countries have experienced sustained economic growth by increasing the share in global GDP and raised their economic growth in the world. Some countries of Asia are now considered as the most dynamic economies of the current world. The economic strength of India and the People's Republic of China is already visible while the potential of other economies is also recognized like Brazil, Russia. Although many risks and challenges still persist, the Asian region now enjoys a strong economic position and is expected to have a more important and defining role in the global economy. Asia also remains a mainly export dependent region in the developing world and is also the region with the most extremely diversified exports. Asia with the highest export dependency has the lowest degree of export specialization as compared to Africa. So, the portfolio of exports from this region showed much more diversification as compared to other regions (Pattillo, 2004). Although this region was affected by the global crisis, facts show that it was less vulnerable to external shocks as compared to other regions because of extremely diversified exports.

Although in recent decades several developing countries have undertaken structural reforms that were aimed to improve economic performance through export diversification. Therefore, it is
important to analyze the effect of some reforms such as trade liberalization and economic integration on export diversification. In the recent times export diversification has been at the center of the debate about how developing countries can improve their economic performance and to achieve their higher level of development. At the same time there have been a number of researches that proved the positive effect of diversification on economic development. But the literature on a better understanding about the effect of particular reforms is not so abundant. There are a few papers exploring pattern and factors affecting export diversification in developing economies which is the research interest of this study in depth for Association of Southeast Asian Nations (ASEAN) and South Asian Association for Regional Cooperation (SAARC) region economies. Because no study has been carried out that presents a systematic empirical analysis of overall concentration (diversification) with respect to institutional strength along with the assessment of other macro variables affecting the process of diversification in the Asian region. This study attempts to fill this research gap.

2. Literature Review

In developing countries the role of export diversification had been one of the significant research issues in literature over the last 50 years. Many studies have been published on the performance of export diversification in developing countries and many studies had focused on the factors that are significantly affecting the export diversification of the countries. Most of the researchers have used Herfindahl index, concentration ratio (CR) and absolute deviation, commodity specific tradition index (CSTI) measures to estimate the export diversification. Researchers use these measures to estimate the share of manufacturing and primary goods export in the total export of the country and to describe how the different factors are inducing export diversification and help to develop policies for export diversification which will lead to economic growth in developing countries (Salomon, 2010).

Hausmann and Rodrik (2003) by developing a theoretical framework explored the relationship between the overall exports for economic growth and the advantages of export diversification. The author analyzed the effect by conducting a factor endowments model to predict the structure of comparative advantage for different Latin American and Asian member countries for the years of 1960 and 2000 for economic growth and share of twenty five item of manufacturing sector in the total export and then compared them with tabulation and graphically techniques using 6 digit HS code (UN.COMTRADE) data. The results showed that instead of comparative advantage as in the traditional works developing countries increase their economic growth through countries’ diversification of their investments innovative new activities.

Hausmann et al. (2007) developed a factor of the level of productivity which is associated with a country’s exports that explains the higher productivity levels than others (primary goods) through traded some goods (service products, manufactured goods). They used data for the period of 1975 to 2005 for fifty five developing countries. By using fixed effect technique including GDP per capita, human and physical capital, investment and share of manufacturing and agriculture sector to total export, he concluded that countries which are more diversified construct huge level of productivity goods, grow more as compared to countries those are lower in the level of productivity goods and more specialized. The share of manufacturing sector rise in total export of diversify country and investment GDP per capita also positively related with the export diversification for developing countries.
Bebczuk and Berrettoni (2006) carried out a detailed review of literature by explaining export diversification and its determinants including 56 cross section countries as a sample for the period of 1960 to 2002. Herfindhal index measure of export diversification was used in this study and it is used as a dependent variable. Export to GDP, manufacturing export to total exports, GDP per capita, domestic investment, financial development, net foreign direct investment and telephone lines (per 1,000 people) were used as an independent variables. Fixed effect model was applied in this study. Empirical results of the model show that export diversification is positively linked with economic growth for developing countries. The author concluded that diversification in developing countries increases largely as compared to developed countries whose macroeconomic performance is good and they have institutional stability, their total factor productivity is also high. In those countries exports concentration is more as compared to diversification.

Pineres and Ferrantino (1997) observed that export diversification from conventional to non-conventional exports is significant factor for economic development in Chile. Objective of this study was to check the impact of diversification on the structural changes in exports of the Chilean from the last 30 years. By using some measure of diversification, the author found that since the mid-1970s Chilean growth was high with the large degree of export diversification. Policy of diversification in recessionary period and in the periods of internal crisis and external shock was reliable for Chile as recessionary period is associated with the global collapse and real exchange rate depreciation. Although in the boom period of the Chile’s economy, this policy of export diversification was not reliable because in the boom period real exchange rate of Chile appreciated.

Bonaglia and Fukasaku (2003) discussed the impact of export diversification for low income countries. By using the secondary data from 1970 to 2002 and random effect model, they found a problem in the specialization in the exports of natural resources (fuel, oil) that an abundance of natural resource could turn away resources from the industrial sector for these countries and it is a significant sources in the appreciation of real exchange rate. That’s why, international markets competitiveness of traded goods would fail. They gave the argument that abundance of natural resources should not be predict as curse as this wealth delivers a chance for countries to shape new ways in different areas of competitive advantages for non-conventional products.

Damuri (2011) threw light on the integration and trade specialization in ASEAN5+3. The study showed that trade specialization had not been stable over the time in ASEAN5+3 economies and all the countries included in the study have concentrated trade in different manufacturing products. Empirical results showed that by using panel fixed effect model for the period 1990 to 2003, different factors support to produce different degree of concentration in trade. Results showed that depreciation of real exchange rates and tariff rates have significant negative effect on concentration, whereas greater economic integration in ASEAN economies leads to less concentration and GDP of the ASEAN positively associated with the trade specialization of that economy.

Yokoyama and Alemu (2009) gave a detailed analysis of export diversification in East Asia and Sub-Saharan Africa (SSA). This study empirically investigated the impact of export diversification on economic growth by using panel data of 41 countries over the period 1965 to 2000. For East Asia, empirical results showed that export diversification is an important factor to enhance economic growth. East Asia’s success was extremely qualified by their massive investment on human capital over education and the abundant rate of physical capital accretion determined by foreign direct investment (FDI). It is also positively related with the economic growth of SSA. Empirical result
showed that vertical export diversification is more important as compared to horizontal export diversification in East Asia. Vertical export diversification is high whereas SSA focused more on horizontal export diversification by exporting primary export products because SSA does not have enough physical and human capital for vertical export diversification. Good governance and political stability is required for vertical export diversification in SSA.

Husain (2007) studied the economic development in South Asia and the impact of globalization. By using fixed effect estimation of panel data, he found that economic development and decline in poverty need to increase economic resources which can only be produced by high economic growth. South Asian countries faced a large degree of poverty which will be reduced by globalization. It was also found that liberalization is positively related to economic growth by increasing investment and by producing different products for their export, more benefits for new investment in South Asia. By participating in the world economy South Asia through diversification has made extensive development in the last era but for large economic development there are more necessities of trade openness, more foreign direct investment, new technology, developing human skills and more contribution in regional and multilateral activities.

Kim (2012) evaluated the effect of export diversification in Korean economy. Developing a theoretical framework, he found that from the last five decades Korea has made a large economic growth due to trade openness and export diversification. He argued that policymakers in Korea believed that export diversification is an important factor for economic development in two ways. One way is by increasing the variety of exporting goods and expanding foreign markets in Korea. And the other way is export diversification which helps in lowering dependency and it leads to economic stability in Korea. He also argued that long run pattern of Korean export looks to be stable with the former preferences for the producing of exporting goods.

The literature review shows that a lot of research had been already done on the export diversification and economic growth. However, as it is presented in these studies that there is a great need for developing countries to raise their degree of integration with other countries and increase diversification in their exports of both traditional (primary products) and non-traditional (manufacturing products) for reducing the vulnerability of external shocks and more economic growth. From the literature it is also found that low income countries’ GDP per capita is positively related with the export diversification but more growth in income would be the cause of export specialization. Trend of export diversification and which factors affect this trend for ASEAN and SAARC countries needs an in-depth study. In our knowledge we have not found this in the literature which has motivated me to study this trend and factors affecting this gap in the two regions.

3. Overview of SAARC and ASEAN Economies

This section provides an overview of both SAARC and ASEAN economies concerning macroeconomic variables. Focus is especially given to export diversification indicators and the variables that affect export diversification.
3.1. Overview of the SAARC Economy

South Asian Association for Regional Cooperation (SAARC) was an inter-governmental organization which was recognized in 8th December, 1985. The SAARC is an organization of eight nations namely: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The main goals of the SAARC were to enhance the well-being and high quality of life, economic and trade growth, serenity, independence, social rights and social growth, to create the independence, common trust, and to make more powerful the cooperation with other developing and South Asian nations. Management office of SAARC is located in Kathmandu (Nepal). SAARC nations cover up an area of 4.1 million km² and with regards to residents they add up to a fifth of the population around the global world. Considering the market size with regards to inhabitants, SAARC is one of the biggest economic blocs in the global world. This region includes almost 67 percent of the low income population around the global economic system.

Recently SAARC region generally showed increasing trend of GDP per capita growth rate (Figure 3.1). Figure 3.2 show that Afghanistan and Bhutan have recently experienced significant increase in real GDP growth rate from 2.3% to 17.2% and 6.7% to 11.8% respectively during 2009 and 2010. India showed steady performance at 8.4% in the year 2009 and 2010. An increase has also been seen in Bangladesh (from 5.7% to 6.1%) and Pakistan (1.7% to 3.8%) in throughout the same period. In the SAARC region, only Nepal has showed a small decrease in GDP expansion rate from 4.6% to 3.5% in 2009 and 2010 respectively. Maldives and Sri Lanka have showed an increase from -4.7% to 5.7% and 3.5% to 8.0% respectively during 2009 and 2010 correspondingly.

Figure 3.1: SAARC'S countries GDP Per Capita annual Growth rate: 1986-2012 (percent)

Currently SAARC countries are using trade as a development strategy for improving living standards, increasing employment and for reducing the poverty by liberalizing their trade; achieving a more outward oriented trade system, attain better market access for exports and diversification of exports. They give emphasis to an effective rule based on multilateral trade system and also increasing the regional trade liberalization.

SAARC members are different in terms of economic size. Smaller economies such as Afghanistan, Bhutan, the Maldives, and Nepal account for less than 1% each whereas India holds more than 80% of total SAARC GDP (Figure 3.3). SAARC members’ economic construction has been characterized as low combined income, weak human resources development, and a low level of economic diversification.

Statistical data suggests that intra-regional trade between SAARC countries is going up but slowly and steadily. As indicated in the (Table, 3.1) share of the SAARC region in the world trade increase from 2.7% in 1990 to 4.3% in 2011. SAARC’s share is still very low with the positive trend as compare to other regions. As such, policymaker’s makes different policies like liberalization and export diversification for enhancing the trade share of the SAARC countries between themselves and with the world share (ADB, 2013).

As show in the Figure 3.4 after the 1990s in the SAARC region economy there is an increasing trend in their export diversification as shown in the figure the value of Herfindahl index decreasing which indicates the increasing trend of export diversification. The ongoing process of diversification in SAARC confirms that structural change is a time of growth because as the same time level of
economic development also rises (Table, 3.7) in SAARC region. Nolan et al. (2014) found that since the mid-1990s, export diversification increased by shifting agriculture to manufacturing production in many of South Asia countries. As Fiorillo (2001) and Imbs and Wacziarg (2003) empirically found that rise in export diversification for developing and low income countries not only minimized the external shocks it also increased the GDP per capita of these countries. Other studies (De Ferranti et al. 2002) estimated that export diversification is more important for developing world because specialization of resources in only some sectors may be uncertain in the case of sectoral shocks which can reduce the economic growth of developing countries.

**Figure 3.3: SAARC’s Individual Countries’ Share of GDP into Total GDP: (2011) (percent)**

![Figure 3.3: SAARC’s Individual Countries’ Share of GDP into Total GDP: (2011) (percent)](image)


**Table 3.1: Total Trade of SAARC Countries within the Region and with the World: 1990-2011**

<table>
<thead>
<tr>
<th>Period</th>
<th>Intra-SAARC total trade in billions US$</th>
<th>As percentage of SAARC’S total trade with rest of the world</th>
<th>Total trade growth rate of SAARC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1.8</td>
<td>2.7</td>
<td>N/A</td>
</tr>
<tr>
<td>1995</td>
<td>4.4</td>
<td>4.2</td>
<td>43.3</td>
</tr>
<tr>
<td>2000</td>
<td>6.2</td>
<td>4.3</td>
<td>21.7</td>
</tr>
<tr>
<td>2005</td>
<td>17.3</td>
<td>5.3</td>
<td>30.6</td>
</tr>
<tr>
<td>2010</td>
<td>33.2</td>
<td>4.6</td>
<td>45.9</td>
</tr>
<tr>
<td>2011</td>
<td>40.5</td>
<td>4.3</td>
<td>22.1</td>
</tr>
</tbody>
</table>

Source: ARIC (2014).
Figure 3.4: Export diversification trend for SAARC selected countries: 1986-2012

Based on author’s calculation using U.N.COMTRADE data.

There is a positive correlation among the economic development of SAARC region selected countries and export diversification as observed in the Table 3.2 when export diversification rise the growth rate of all macroeconomic variables of SAARC also increase. According to Asia Development Bank report 2009 the SAARC region with the more diversified export basket and less open to global economy were not more effected from the global crisis period as largely effected other regions growth rate of this region was actually rose in this period due to more diversified economy (Table 3.2). From the Table 3.2 it is also observed that some SAARC major countries are more specialized in textile sector but overall export diversification rise it means there is horizontal export diversification (different sectors diversification) in the SAARC region. Export diversification is measure through the Herfindahl index. Herfindahl index values approaching one show a complete specialization and zero show complete diversification.

Still after 28 years of its birth SAARC failed to integrate well to take benefit of the opportunities. Its intra-regional export due to more concentration within the same sector (textile) of member countries in the region was low as compare to other region of Asia it was 4.28 percent during 2000 which a bit increased to 5.35 percent during 2008 rising but slowly. Another most important reason for the low improvement of SAARC integration is the low level of trade between two largest partners namely India and Pakistan. The direct concern for the achievement of SAARC should be to take away the irritants between them. SAARC has been a late arrival in regional trading arrangements in the Asia region due to relative inward-orientation of its economies and political distrust. The region has lately been occupied in regional cooperation through signing PTAs, FTA,
and TIS first bilaterally and then multilaterally. Trade them through adopting liberalization trade policies and export policy of diversification intra region trade rise but slowly and steadily since the late 1990s. For large economic development there are more necessities of trade openness within the region which leads to economic corporation between member countries through more implementation of export policy of diversification for reducing the cost of external and internal sector specific shocks, for minimizing the transport cost for each other, for enhancing foreign direct investment, new technology, developing human skills and more contribution in regional and multilateral activities. So, by diversifying their export SAARC countries can increase their economic growth.

Table 3.2: Export Diversification and Macroeconomic Indicators in SAARC Selected Countries: 1986-2012

<table>
<thead>
<tr>
<th>Period</th>
<th>Export diversification index (HHI)</th>
<th>Diversification of textile sector</th>
<th>Export to GDP</th>
<th>Manu. Exp. to GDP</th>
<th>GDP per capita</th>
<th>GFC to GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986-1990</td>
<td>0.46</td>
<td>0.77</td>
<td>55.03</td>
<td>12.94</td>
<td>3.5</td>
<td>19.65</td>
</tr>
<tr>
<td>1991-2000</td>
<td>0.37</td>
<td>0.73</td>
<td>59.11</td>
<td>17.93</td>
<td>4.1</td>
<td>21.21</td>
</tr>
<tr>
<td>2001-2006</td>
<td>0.30</td>
<td>0.59</td>
<td>63.39</td>
<td>20.44</td>
<td>4.3</td>
<td>22.32</td>
</tr>
<tr>
<td>2007-2012</td>
<td>0.29</td>
<td>0.57</td>
<td>64.13</td>
<td>20.96</td>
<td>5.0</td>
<td>24.39</td>
</tr>
</tbody>
</table>

Source: Based on author’s calculation using World Bank (2014) data and U.N.COMTRADE data.
Note: HHI index has been explained in detailed in section 4.3

3.2. Overview of the ASEAN Economy

The Association of Southern East Asian Nations (ASEAN) with the five impressive Member Nations, specifically, Indonesia, Malaysia, Philippines, Singapore, and Thailand were identified in August 1967 in Bangkok. Whereas other members joined this bloc later; Cambodia joined in April 1999, Myanmar and Lao PDR in 1997, Vietnam in 1995 and Brunei Darussalam in January 1984.

The ASEAN as a region was established with the purpose to attain more economic growth, a cultural expansion in the area, social improvement, to set up local serenity and consistency through sustained respect for rights and the concept of law between the connections of states in the area. ASEAN as a regional economic force rapidly because free trade center of Asia with the estimated population of approximately 609 million and gross domestic product (GDP) of $2.1 trillion (World Bank, 2009). Today, ASEAN’s growth is determined as a growing middle class economy by increasing its global value with China and it is favored as production base for several multinational companies.

Over the last five decades between the ASEAN-6 economies the Philippines has shown the lowest rate of GDP growth as shown in Figure 3.5, Singapore’s grow faster for its four decades as
compared to other members, Malaysia and Thailand were the two greatest rising economies of the ASEAN-6 economies awaiting Vietnam start the high development direction. By growing at a rate more than the rest of the world ASEAN has inspired growth rates as shown in Figure 3.6.

In the early 1970s ASEAN was not given first priority to Economic and social cooperation. The examiner of intra-ASEAN trade of states was between 12 and 15 % in the complete trade of the world between 1967.

**Figure 3.5: Average Annual Real GDP Growth Rates of ASEAN-6: 1960-2012 (percent)**

![Average Annual Real GDP Growth Rates of ASEAN-6: 1960-2012 (percent)](image)


**Figure 3.6: Annual Growth Rate of ASEAN and World GDP: 2001-2009**

![Annual Growth Rate of ASEAN and World GDP: 2001-2009](image)

After the period 1980 many changes were taken in the trade policy of ASEAN countries. Firstly, production structure became more diversified for the export of manufacturing products of ASEAN countries. Since the 1960s, the European Union (EU) offered a policy of export diversification to ASEAN member countries for increasing their export volume because export diversification was considered as important for rising productivity and economic growth; this policy was firstly adopted by Indonesia, Malaysia and Thailand (ASEAN-3) in the late 1980s.

Secondly, since 1985 many efforts were given to the export of manufacturing products with the promotion of liberalization of foreign investment by diversifying the economy. Trade policy of ASEAN countries moved to promote more exports of manufacturing products from the exports of primary products. ASEAN economy was considered as a more diversified economy after the period of 1985. Thus with the more liberalization and diversification of its export of manufacturing products and abundant of natural resources ASEAN as a region become a more attractive place for the investment in the developing world by the 1980s.

The past several years’ reveals an increase pattern of ASEAN’s trade in the world from about 19% in 1993 to 25.1% in 2006 and 29% in 2011 through higher degree of openness into the global economy and minimizing the vulnerability of external shocks by diversifying the economy. The major contribute to total trade in the world was taken by ASEAN through more integrating in global world, liberalizing trade and diversifying their economy as compared to USA, EU and Japan.

ASEAN economies were affected directly through global economic crises of 2008 and 2009 by shrinking their exports demand in major global markets. The average GDP rate of growth in Southeast Asian nations was predictable 0.1% in 2009, while it was 4.1% in 2008 (ADB, 2009). Then ASEAN increased the domestic demand by increasing intra region trade and diversifying its industrial sector to stay away from the external shocks. According to Asian Development Bank, after the global economic crisis 2009 the intra-region trade between ASEAN member countries increased 70% in industrial products by diversification of this sector.

Figure 3.7 shows the increasing trend by diversifying the economy of ASEAN in the trade of machinery and industrial products. PRC and Japan play a fundamental role by diversifying and producing manufacturing products for exports. Singapore is also an important provider of machinery and industrial products to other members of ASEAN.

After the global economic crisis with the rise of intra-regional trade and trade diversification ASEAN economy became more efficient, competitive, productive and efficient with the capabilities to effectively integrate with the world economy (ASEAN, 2014).

Today, an export diversification phenomenon for ASEAN’s economic growth is considered as an engine for intra industrial trade. By diversifying its economy and increasing its global value with China ASEAN’s economy is considered as middle class economy and it is preferred as a production base for various multinational companies.
It is clear from the Figure 3.8 that after the 1980s ASEAN economic structure becomes more diverse till the period 1996 but in the financial crisis period of ASIA this trend goes to concentration till the period 2000 during the global economic crisis this trend again goes to concentration expected Indonesia. As Imbs and Wacziarg (2003) have approximated two levels of diversification in the improvement of economic development. First, inadequate nation’s results in broaden as their earnings increase then, the stage of diversification will achieve to a stage and later begin to become more specific. In this case, the diversification of an economic system could be related to its development stage which is calculated by GDP per household. Therefore a country ought to perform investment in such a way that this stage happens as a result of getting strong diversification. Because, it is only after the achievement of strong diversification that nations can move to the second stage that tends towards expertise.

Hence, almost all western world and some huge salary creating nations today are in the stage of re-concentration after they efficiently approved the diversification stage in the past.

It is good for economic development of the countries by first changing the structure of their economy by diversifying and then become specialized. Within the ASEAN countries there is a vertical export diversification (diversifying manufacturing sector). As Matthee and Naude (2007) found that manufacturing sector export diversification is an important concern for East Asia.
Table 3.3 shows the export diversification leads to institutional strength for ASEAN region as GDP per capita rise. When there is an increasing trend in the export diversification then there is also an increasing trend in macroeconomic variables and with the decreasing trend of diversification macroeconomic variables growth rates also decrease due to Asia financial crisis and global economic crisis export diversification were decreased at the same time growth rate of economic indicator of ASEAN also declined so, it show a positive correlation among export diversification and economic development of ASEAN.

As Bebczuk and Berrettoni (2006), empirically found that economic growth is positively related to export diversification for developing countries and low income countries. Due to more open economy in the global market ASEAN region growth rate was declining during the global economic crisis period. Empirically it was observed that East Asia as a most export dependent region but with the most diversified export portfolio lost the least amount of export revenue and economic growth as compare to other region, the growth rate of East Asia was declined by 1.4% between 2008 and 2009 whereas the growth rate of Africa and Middle East region was decline by 32 to 33 percent respectively during the same period.

ASEAN economies have now come out of both the Asian and global economic crises by adopting diversifying policies, international and regional negotiations, liberalization and different trade agreements and rising intra-regional trade mostly in the industrial sector. ASEAN increased the intra-regional trade because they can’t rely only on external tracks they also rely on themselves that’s
Table 3.3: Export Diversification and Macroeconomic Indicators in ASEAN Region: 1986-2012

<table>
<thead>
<tr>
<th>Period</th>
<th>HHI</th>
<th>Export to GDP</th>
<th>Manu.Exp.to GDP</th>
<th>GDP per capita</th>
<th>GFC to GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986-1996</td>
<td>0.25</td>
<td>88.27</td>
<td>72.20</td>
<td>5.7</td>
<td>30.35</td>
</tr>
<tr>
<td>1997-2000</td>
<td>0.41</td>
<td>59.13</td>
<td>58.19</td>
<td>1.35</td>
<td>27.07</td>
</tr>
<tr>
<td>2001-2006</td>
<td>0.35</td>
<td>77.99</td>
<td>66.01</td>
<td>3.37</td>
<td>29.03</td>
</tr>
<tr>
<td>2007-2012</td>
<td>0.40</td>
<td>80.07</td>
<td>67.03</td>
<td>4.37</td>
<td>29.07</td>
</tr>
</tbody>
</table>

Source: Based on author’s calculation using World Bank (2014) data and UN.COMTRADE data.

why they adopt export diversification policies for reducing external shocks and raised intra-industry trade in response to internal and external conditions. Export diversification helps them in lowering the dependence on global market (Kim, 2012). ASEAN required horizontal export diversification, infrastructure such as power, roads, and airport as well as obsolete information and communications technology infrastructure of economic growth for region. Appearance of India and China has formed new export markets for ASEAN, which leads to diversifying the ASEAN export market from concentration in the traditional markets. ASEAN needs to increase domestic investment, intra-regional trade for improving the economic structure of member countries through technological spill over and reducing the transition cost because some member of ASEAN has not strong economic structure. ASEAN also need to diversify their agriculture and service sectors for more economic development not only diversify the manufacturing sector. So, major investment not only in industrial sector across a wide range of sectors is required.

4. Theoretical Framework

Export diversification is one of oldest concept in the theory of economic development. Earlier theories of trade including the theories by Adam Smith (1776), D. Ricardo (1817), neoclassical economics and model of international trade Heckscher-Ohlin-Samuelson (HOS) argued that countries according to their comparative advantage should specialize in producing and exporting.

Following the Second World War this idea has been challenged by Prebisch (1950) and Singer (1950). Their argument was that specialization of exporting products raises the dependence of developing countries on the exporting of raw materials and agriculture products and importing consumer and manufacturing products from developed countries. They argued that developing countries should increase in the variety of their exporting products because for the primary products income elasticity of demand is low and through diversifying they can declining the risk of commodity shocks, price instabilities and term of trade.

In the recent theoretical and empirical literature the link of export diversification and economic growth has been mostly discussed about the developing countries. A large proportion of work which focused on the development of economics from export diversification in developing countries was during the 1970s and 1980s because by implementing trade restrictive protectionist policies, many
developing countries’ economic performance was poor in the 1960s. In the mid-1970s, many policy makers were seeking to expand their export. They recommend development policies based on outward orientation, opening the trade to foreign competition and main focus for policy makers were to diversify export.

Cooper and Brainard (1968) argued that in developing countries diversification has become a significant target for economic policy. Carrere et al. (2007) supported the Prebisch-Singer hypothesis by giving the argument that diversification in primary products is desirable for developing countries. Hesse (2008) argued in the favor of Prebisch-Singer hypothesis by giving the illustration of OECD rich countries in resources such as Canada, Australia and the Scandinavian countries. Their economy is more developed by diversifying exports.

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 which is used to finance imports of those countries with no producing manufacturing products. In those countries if industrialization takes place then instead of knowledge concerted products they generally specialized in physical capital intensive products which will have negative impact on human capital growth and wage inequality.

Matthee and Naude (2008) estimated another problem of specialization that is export uncertainty can take place in case when in the global market a negative demand shock occurs for those goods in which countries are specialized. Export diversification makes the country less vulnerable to these shocks and export rate become stable in these countries.

The aim of our research was to apply Prebisch-Singer hypothesis to check the export diversification for SAARC and ASEAN regions.

4.1 Measurement

There are different ways to calculate the degree of export diversification. In the literature the choice to calculate usually depends upon the different definitions, dimensions, forms, and levels of diversification. Better review 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 (e.g. Petersson, 2005, and Pineres and Ferrantino 1997). The export diversity of the 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. It can be calculated as follows (Petersson, 2005):

\[
SPEC_{jt} = \sum_i \left( \frac{E_{jit}}{\sum_j E_{jtt}} \right)^2
\]

Where, Ejit is the exports of the country in the it product (sector) in a given period t. An index value range is between one and zero where index value one shows a full degree of export concentration (or specialization) while zero value indicate a complete degree of export diversification (Petersson, 2005).
The normalized-Hirschmann index can be calculated as follows (Al-Marhubi, 2000, Naqvi and Morimune, 2005):

\[
H_{jt} = \frac{\sqrt{\sum_{i=1}^{n} \left( \frac{x_{jt}}{X_{jt}} \right)^2} - \frac{1}{\sqrt{n}}}{1 - \frac{1}{\sqrt{n}}}
\]  

(2)

Where, \(x_{jt}\) 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 shown by \(n\). An index value of one shows complete concentration whereas the values nearer to 0 indicate a 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:

\[
S_{jt} = \sum_{i} \left| \frac{h_{ijt}}{h_{jt}} - \frac{h_{ijt}}{h_{jt}} \right| \frac{1}{2}
\]  

(3)

where, \(h_{ijt}\) is the share of industry \(i\) in total exports of country and \(h_{jt}\) is the share of industry in world exports in a given period. Once more this calculated ranges from 0 to 1 where 1 indicates complete concentration and 0 complete diversification (Al-Marhubi, 2000).

Following Matthee and Naude (2007), Bebczuk and Berrettoni (2006), this study use Herfindahl index to explain the degree of export diversification in SAARC and ASEAN region. Because it is useful when export diversification is apparent by the changes in export composition within sectors. This index also allows catching both the intensive\(^1\) and the extensive\(^2\) edge of diversification.

4.2. The Theoretical Model

Determining the true factors of export diversification is difficult as there is no available extensive theoretical or empirical structure to catch all potential factors in the whole. The relationship between macroeconomic variables and export diversification is stated in the following extended equation, which is modified version of that used by Bebczuk and Berrettoni (2006). As in the previous section, it is indicated that the current literature tends to expose the importance of exports diversification for economic development through macroeconomic variables.

\[
HHI = f(GDP, FDI, EXP, GFC, CPS, EXCH, MANU)
\]  

\...(1)\]

\(^1\)Different quantities of the same products (intensive margin).

\(^2\)Different quantities of different products (extensive margin).
where, HHI is the export diversification rate, GDPP is the GDP per capita, FDI is foreign direct investment to GDP, Exp is the exports to GDP, GFC is the gross fixed capital formation to GDP, Manu is manufactures exports to total exports and CPS is the credit to private sector.

5. Empirical Model and Data

For the purpose to check hypothesis that how the macroeconomic variables are affecting export diversification in SAARC and ASEAN region by following (Bebczuk and Berrettoni, 2006) the econometric form of Equ. (1) is:

\[ HII_i = \alpha_0 + \beta_1 \text{exp}_{it} + \beta_2 \text{gdpp}_{it} + \beta_3 \text{cps}_{it} + \beta_4 \text{manuf}_{it} + \beta_5 \text{gfc}_{it} + \beta_6 \text{exch.rate}_{it} + \beta_7 \text{fdi}_{it} + \mu_i \ldots (2) \]

where, HHI is the export diversification rate as dependent variable represent the time period (1986-2012), i indicates countries under study and other explanatory variables are GDPP which is the GDP per capita, FDI which is foreign direct investment to GDP, Exp which is the exports to GDP, GFC which is the gross fixed capital formation to GDP, Manu which is manufactures exports to total exports and CPS which is credit to private sector, \( \mu_i \) is the error term.

5.1 Data Sources

The main source of data for all aforementioned variables was World Development Indicator and the time period under study is 1986-2012 and the dataset is a balanced panel dataset. The data for the HHI collected from the United Nation's Commodity Trade Statistics Database (Com Trade), to use annual exports on the 2-digit level of disaggregation into 10 sectors of HS-code (Harmonized System Codes).

Table 5.1: Theoretical expected sign of explanatory variables with export diversification

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abbreviated As</th>
<th>Proxies as</th>
<th>Expected sign +/-</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export to GDP</td>
<td>EXP</td>
<td>Competitiveness</td>
<td>+</td>
<td>WDI, World Bank.</td>
</tr>
<tr>
<td>Manufactures export to total exports</td>
<td>MANU</td>
<td>Industrial sector growth rate</td>
<td>+</td>
<td>WDI, World Bank.</td>
</tr>
<tr>
<td>Per Capita GDP</td>
<td>GDPP</td>
<td>Institutional strength</td>
<td>+, -</td>
<td>WDI, World Bank.</td>
</tr>
<tr>
<td>Gross Fixed Capital to GDP</td>
<td>GFC</td>
<td>Domestic investment growth rate</td>
<td>+</td>
<td>WDI, World Bank.</td>
</tr>
<tr>
<td>Credit to the Private Sector to GDP</td>
<td>CPS</td>
<td>Financial development</td>
<td>+</td>
<td>WDI, World Bank.</td>
</tr>
<tr>
<td>Net Foreign Direct Investment to GDP</td>
<td>FDI</td>
<td>FDI flow rate (macroeconomic efficiency)</td>
<td>+</td>
<td>WDI, World Bank.</td>
</tr>
</tbody>
</table>
These variables were chosen because they are macro variables. Access to credit, institutional strength, competitiveness, foreign direct investment, domestic investment these are all indicators of macro-economic efficiency and strength which applies that these variables enhance growth prospects of firms thus they have implications for diversification.

6. Results and Discussion

With the purpose of Identification of a relationship between export diversification and explanatory variables require checking the order of integration for all variables in the panel data. Where balanced panel dataset is used which includes selected ASEAN five and SAARC four member countries, over twenty seven years i.e., 1986-2012. To test the stationary of the series, panel unit root test (Levin, Lin and Chu (2002)) is run based on the null hypothesis of unit root.

6.1 Empirical Results of Pooled Unit Root Test

In order to check the presence of unit root in the ASEAN region pooled unit root test is conducted in E-Views 8 software.

Pool unit root test: summary of ASEAN region
H₀: Unit root
H₁: Not unit root

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>First Difference</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS</td>
<td>0.223</td>
<td>0.5886</td>
<td>-12.79</td>
</tr>
<tr>
<td>Exchange. Rate</td>
<td>-0.091</td>
<td>0.4633</td>
<td>-15.33</td>
</tr>
<tr>
<td>Export</td>
<td>-0.005</td>
<td>0.4980</td>
<td>-10.25</td>
</tr>
<tr>
<td>FDI</td>
<td>-4.250</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-8.58</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>GFC</td>
<td>-0.723</td>
<td>0.2347</td>
<td>-10.64</td>
</tr>
<tr>
<td>Manufacture</td>
<td>-1.314</td>
<td>0.0945</td>
<td>-15.95</td>
</tr>
<tr>
<td>HHI</td>
<td>-4.964</td>
<td>0.0000</td>
<td></td>
</tr>
</tbody>
</table>

Table 6.1 shows that p-values and t-statistic reject the null hypothesis and show stationarity of some variables at level and some at first difference for ASEAN region.

In order to check the presence of unit root in the SAARC region pooled unit root test is conducted in E-Views 8 software. Table 6.2 shows that p-values and t-statistic reject the null hypothesis of unit root and show stationarity of some variables at level and some at first difference for SAARC region.
Pool unit root test: summary of SAARC region

H₀: Unit root
H₁: Not unit root

Table 6.2: Levin, Lin & Chu Test for Stationarity for SAARC selected countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS</td>
<td>0.846</td>
<td>0.8013</td>
<td>-12.99</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Exchange. Rate</td>
<td>1.26</td>
<td>0.8959</td>
<td>-14.17</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Export</td>
<td>0.35</td>
<td>0.6369</td>
<td>-13.02</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>FDI</td>
<td>-1.84</td>
<td>0.0332</td>
<td></td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>GDP</td>
<td>-2.92</td>
<td>0.0018</td>
<td></td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>GFC</td>
<td>-0.42</td>
<td>0.3376</td>
<td>-13.63</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Manufacture</td>
<td>-0.21</td>
<td>0.4150</td>
<td>-12.65</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>HHI</td>
<td>-1.47</td>
<td>0.0702</td>
<td>-14.32</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

6.2. Empirical Results of Philips-Ouliaris Co-integration Test

To identify whether the some I(1) and some I(0) variables give spurious regression or co-integration exists separately the region, Philips and Ouliaris (1990) panel co-integration test was run based on then co-integration null hypothesis. Tables 6.3 and 6.4 show that the null hypothesis of no co-integration is rejected and there exists a long run relationship between the variables. Thus, the possibility of spurious regression is ruled out.

Based on the Philips-Ouliaris (1990) co-integration 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 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 panel Fully Modified OLS (FMOLS) developed by Pedroni (2000). These estimations not only generate the estimates the parameters as consistent still in little samples although it also helps to control for serial correlation and endogeneity.

Table 6.3: Philips-Ouliaris Residual based Co-integration Test Estimation for SAARC Countries

<table>
<thead>
<tr>
<th>Philips-Ouliaris Co-integration Test</th>
<th>Depended variable: D (RESID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Included Observation:</td>
<td></td>
</tr>
<tr>
<td>107 after adjustment</td>
<td></td>
</tr>
<tr>
<td>Null Hypothesis: No co-integration</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESID(-1)</td>
<td>-0.211</td>
<td>-4.096</td>
<td>0.001</td>
</tr>
</tbody>
</table>
Table 6.4: Philips-Ouliaris Residual based Co-integration Test Estimation for ASEAN Countries

<table>
<thead>
<tr>
<th>Philips-Ouliaris Co-integration Test</th>
<th>Depended variable: D (RESID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Included Observation: 134 after adjustment</td>
<td>Null Hypothesis: No co-integration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESID(-1)</td>
<td>-0.281</td>
<td>-6.39</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

6.3 Empirical Results of Fully Modified Ordinary Least Squares (FMOLS)

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 as in Tables 6.5 and 6.6 respectively.

Table 6.5: Fully Modified Ordinary Least Square (FMOLS) for ASEAN Countries

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistics</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS</td>
<td>-0.000379</td>
<td>0.000143</td>
<td>-2.647139</td>
<td>0.0092*</td>
</tr>
<tr>
<td>EXCHANGE</td>
<td>-0.000679</td>
<td>1.67E-06</td>
<td>-3.703476</td>
<td>0.0003*</td>
</tr>
<tr>
<td>EXPORT</td>
<td>-0.000112</td>
<td>0.000151</td>
<td>-3.042082</td>
<td>0.0094*</td>
</tr>
<tr>
<td>FDI</td>
<td>-0.000726</td>
<td>0.001425</td>
<td>-5.508996</td>
<td>0.0016*</td>
</tr>
<tr>
<td>GDP_PER_C</td>
<td>-0.000366</td>
<td>0.001126</td>
<td>-3.324865</td>
<td>0.0058*</td>
</tr>
<tr>
<td>GFC</td>
<td>-0.000683</td>
<td>0.000758</td>
<td>-2.101102</td>
<td>0.0093*</td>
</tr>
<tr>
<td>MANU</td>
<td>-0.000347</td>
<td>0.000293</td>
<td>-3.187110</td>
<td>0.0074*</td>
</tr>
<tr>
<td>C</td>
<td>0.207415</td>
<td>0.024905</td>
<td>8.328163</td>
<td>0.0000*</td>
</tr>
</tbody>
</table>

| R-squared    | 0.835996   | Mean dependent var | -0.171582 |
| Adjusted R-squared | 0.810218 | S.D. dependent var | 0.032307 |
| S.E. of regression | 0.035688 | Sum squared resid | 0.160474 |
| Durbin-Watson stat | 1.555184 | Long-run variance | 0.002120 |

*significant at 1%

A negative sign of export to GDP ratio show (Tables 6.5 and 6.6) a positive relationship between export diversification and competitiveness of the economy for both regions in the global market these result support the study hypotheses that more competitiveness of the economies of SAARC and ASEAN into global market leads to more diversification. According to result as one percent of export to GDP ratio increase it will bring about 0.002867 and 0.000112 unit change in the export diversification of selected economies for SAARC and ASEAN regions respectively. Export to GDP ratio is an indicator of showing the competitiveness of selected economies in the global market.
Results show that as selected economies become more integrated in the global world export diversification will be increase in these economies of SAARC and ASEAN region.

Table 6.6: Fully Modified Ordinary Least Square (FMOLS) for SAARC Countries

Included observations: 107 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistics</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS</td>
<td>-0.000789</td>
<td>0.000690</td>
<td>-2.144318</td>
<td>0.0347*</td>
</tr>
<tr>
<td>EXCHANGE</td>
<td>-0.000247</td>
<td>0.000211</td>
<td>-2.171211</td>
<td>0.0438*</td>
</tr>
<tr>
<td>EXPORT</td>
<td>-0.002867</td>
<td>0.000683</td>
<td>-4.200372</td>
<td>0.0001*</td>
</tr>
<tr>
<td>FDI</td>
<td>-0.005519</td>
<td>0.007068</td>
<td>-2.100880</td>
<td>0.0364*</td>
</tr>
<tr>
<td>GDP_PER_C</td>
<td>-0.002286</td>
<td>0.002379</td>
<td>-2.110843</td>
<td>0.0385*</td>
</tr>
<tr>
<td>MANU</td>
<td>-0.000489</td>
<td>0.000334</td>
<td>-2.466818</td>
<td>0.0430*</td>
</tr>
<tr>
<td>C</td>
<td>0.231973</td>
<td>0.036051</td>
<td>6.434609</td>
<td>0.0000*</td>
</tr>
</tbody>
</table>

|R-squared     | 0.893452    | Mean dependent var | 0.115573 |
| Adjusted R-squared | 0.870315 | S.D. dependent var | 0.043433 |
| S.E. of regression | 0.028470 | Sum squared resid | 0.099699 |
| Durbin-Watson stat | 1.580364 | Long-run variance | 0.001991 |

*significant at 1%

This significance and positive impact of result is supported by (Lewis, 2004), Bolivian (2009) and (Lim, 2012) findings these studies estimate that the hypothesis of integration of the economy in global market is also more vulnerable form external shocks, it enhance risk and uncertainty through unstable prices and markets for developing more specialized countries but the policy of export diversification is more supported for these economies to reduce these shocks and risks and stabilize their export earnings enhancing competitiveness which leads to economic growth through exporting different variety of products which are more demanded by global markets, exporting from traditional (primary) to non-tradition (manufacturing) products in the global market.

Arkolakis (2010) empirically estimated that enhancing competitiveness of the economy in global market may be vulnerable to external economic shocks but the scale of impact depends on the degree of specialization of a country’s in export.

Negative sign credits to private sector to GDP (Tables 6.5 and 6.6) also support the study hypotheses that financial development reduces the specialization for both the regions. Relationship between Financial developments which is measured by credit to private sector to GDP also shows positive and significance result for the export diversification in selected economies of SAARC and ASEAN region. As one percent increase in financial development will lead to 0.000789 and 0.000379 unit increases in export diversification of the selected economies of SAARC and ASEAN regions respectively.

This result consistent with the studies done by Acemoglu and Zilibotti (1997) in which they analyzed that country’s export diversification in different sectors will lead to the development of its financial sector (by distribution risk) through producing different varieties of product, shift of investment from traditional to non-traditional sectors, providing more credit to private sector for reducing the
cost and risk by raising the investment in different variety of products leads to the development of financial sector which will lead to encourage enhancing the growth rate of the economy. Sakubita (2011) found that 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 and as private companies frequently stand at the frontier of new sectors and bring innovation to the economy.

Ramacharan (2006) also analyzed that a one standard deviation increase in diversification will lead to a 0.81 standard deviation increase in the level of credit to the private sector (development of financial sector) for the developing countries. Rwanda (2012) estimated that by the expansion in credit to the private sector (financial sector) and rising export revenue through diversifying their economy many developing countries remain strong in their growth rate in the 2011 in spite of global economy. A more developed financial structure allows a better mobilization of savings and thus may support more investment in different sectors and within a more developed financial sector, available information on investment projects will be treated more efficiently and then boost investments in productive sectors for different variety of products for exports (Berthelemy and Chauvin, 2000).

In the result a negative sign of FDI and HHI show (Tables 6.5 and 6.6) a positive link with export diversification. Foreign direct investment is an indicator of macroeconomic efficiency by increasing the growth rate of the firm in the country have a positive impact on export diversification as show in results by one percent increase in FDI will lead to significantly increase in the export diversification of SAARC and ASEAN region selected economies by 0.005519 and 0.000726 unit respectively. This result supports the study hypothesis that a positive relationship of FDI and export diversification of SAARC and ASEAN regions’ selected economies.

Moran (2010) analyzed that FDI bring new ideas best knowledge and practice for starting new activities because it can more easily build up networks and promote forward and backward relations with firms by providing additional effective technological spillover and by the improvement of infrastructure of the developing country’s economy its lead to more diversification and economic growth. Other studies like Ekholm et al. (2007), Hausmann et al. (2007) and Gourdon (2010) also support this study results.

In the case of gross fixed capital formation (domestic investment growth rate) result shows (Tables 6.5 and 6.6) positive and significant relationship as one percent increase in GFC will lead to significantly increase 0.004481 and 0.000683 unit of export diversification in selected economies of SAARC and ASEAN regions respectively. Result supports the study hypothesis that is GFC and export diversification of selected economies of SAARC and ASEAN region are positively related. Recently many empirical studies estimate the role of gross fixed capital formation in diversifying the export that was by improving the technology gross fixed capital formation developing countries increases the export diversification in different sectors.

Khan and Kumar (1997) supported that the effects of investments in different exportable products on economic growth is positive. Knight (1993) confirmed that higher investments in exportable different products have a positive effect on economic growth.

GDP per capita which is capture the institutional strength of both regions in the global market. According to results (Tables 6.5 and 6.6) GDP per capita is positively and significant related to SAARC and ASEAN region selected economies. As one percent increase in the institutional strength of SAARC and ASEAN economies will lead to increase in export diversification by
0.002286 And 0.000366 unit’s respectively. Imbs and Wacziarg (2003) estimates GDP per capita is positively related export diversification for countries with low level of institutional strength economies. Result of this study supported by the finding of Acemoglu and Zilibotti (1997) and Aghion (1992).

The result (Tables 6.5 and 6.6) suggest that manufacturing export to total export for the selected economies of SAARC and ASEAN region is positively and significantly related to export diversification. According to results as one percent increase in the manufacturing export share to total export will lead to 0.000489 and 0.000347 unit increase of export diversification of selected SAARC and ASEAN regions respectively. Industrial sector is one who offering a large variety of different products as compare to other sectors especially for ASEAN region.

Lim (2012) estimate best way of improving economic efficiency for developing countries is industrial sector through export diversification more focusing on industrial sector by improves its structure increase investment in this sector produce different variety of products for exporting in global market leads to economic development for developing countries. Agosin (2007) argued that the manufacturing sector can leads to higher export diversification if it is better supported in developing countries for economic development. Results of this study are also supported by Lederman and Maloney (2003) and Carrere et al. (2007) studies.

The positive sign of real exchange rate (Tables 6.5 and 6.6) indicate that depreciation affects leads to more export diversification in both SAARC and ASEAN region selected economies. According to result one percent depreciation in real exchange rate will lead to significantly increase 0.000247 and 0.000679 unit in export diversification of SAARC and ASEAN regions selected economies respectively. A devaluation in the real exchange rate of a country increase the external demand for a country’s tradable goods which increase the opportunities of producing and exporting new goods and expanding the production of existing exports. From this model it can be said that depreciation tends to reduce specialization, because depreciation creates more incentives for other exporters to export in more various products which will not much depend on particular products. Result of this study support the findings of the research done by Rodrik (1998) and Krugman (1987).

Thus exogenous country-specific factors will affect the ASEAN region selected economies export diversification by 0.207415 unit whereas in SAARC region exogenous factors will affect by 0.231973 unit affect the export diversification of selected economies. According to the results of above table the value of R-squared is 0.89 for SAARC selected economies it indicates that an 89% amount of variation in dependent variable is being explained by the independent variables. For ASEAN selected economies R-squared is 0.83 which indicates that an 83% amount of variation in dependent variable is being explained by the independent variables. Standard deviation of dependent variable is less than its mean which indicating the greater reliability of the results.

7. Conclusion and Policy Implications

7.1. Conclusion

The aims of this research is to analyze the trend of export diversification in SAARC and ASEAN regions and to examine the relationship between export diversification and institutional strength and other factors affecting export diversification in selected ASEAN (Indonesia, Malaysia, Singapore, Thailand, Philips) five and SAARC (Pakistan, India, Bangladesh and Sri Lanka) four member
countries. In this study panel data is used which consist 243 pool observations for 27 years from 1986 to 2012. Econometric technique fixed effect model is used in this study.

For the purpose of this study to find out the trend of export diversification in the ASEAN and SAARC region Herfindahl Index is used as a measure of export specialization/diversification by following the (Bebczuk and Berrettoni, 2006). This study found an increasing trend in the export diversification for selected member countries of SAARC region after the 1990s. Where as in ASEAN region selected member countries this trend was increasing in the 1980s but after the financial crisis of ASIA this trend become decreasing until the period 2000s but after the global economic crisis this trend again become decreasing and ASEAN selected countries become more specialized by exporting industrial products in the global market expected Indonesia. In the literature it is also found that in the SAARC region selected member countries diversification is horizontal (structure shift from primary commodities to manufactured goods in different sectors) while in the ASEAN region selected member countries diversification is vertical (structure shift from primary commodities to manufactured goods within the same sector).

For the purpose of which factors affecting the export diversification for the both region selected member countries fixed effect model with the panel data is used empirically results shows that the foreign direct investment to GDP, gross fixed capital to GDP, competitiveness of selected economies in the global market, industrial sector, financial development and institutional strength are significantly and positively related to export diversification for the both SAARC and ASEAN regions.

7.2. Policy Implications

These findings have important policy implications for ASEAN and SAARC regions. They call upon the two selected regions to diversify their exports especially in their area of specialization which is vital for their economic growth and development. The study also encourages the regional countries to improve their international competitive strength while improving environment to attract both domestic and foreign direct investment.

The financial sector and diversification are positively related for SAARC and ASSEAN regions, this implies that the two regions need to diversify their financial sector by providing credit to industries that are responsible for diversification. At the same time the financial sector must be reformed to improve its efficiency by financing in their non-productive economic sectors.

Real Exchange rate depreciation is profitable for SAARC and ASEAN region because the results of our study show a positive relationship between diversification and real exchange rate depreciation. This means that regions can produce different variety of products to fulfill global demand by diversifying their exports. An economic policy favoring diversification in these regions will prove to be profitable if local currency of these regions is depreciated.

References


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