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Towards Measurement and Determinants of Export Diversification: An Empirical Analysis of Pakistan

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Abstract

The present study explores determinants and degree of export diversification over time. For this purpose Gini Hirschman Index (GHI) is used to estimate the degree of export diversification. Moreover, this study observes determinant of export diversification by taking time series data of 1980-2015. In case of Pakistan, one can find hardly any study which has discussed estimation and determinants all together. This study applies Auto Regressive Distributive Lag approach to observe long run relationship in underlying variables. The findings of this study indicate that geographic concentration of exports enhances product concentration in exports and reduces export diversification, while foreign direct investment, world income and real effective exchange rate can play significant role in enhancing export diversification. On the other hand trade openness benefits to export concentration. Study suggested to explore new markets for exports of Pakistan and need to get benefit from foreign direct investment, world income and fall in currency value, when government supporting policies complement them.

Keywords: Export diversification, Gini Hirschman index, geographic concentration, real effective exchange rate, trade openness.

1. Introduction

International trade has been contributing for the economic development of nations. Trade among nations is indispensable to fulfill the growing demand of goods and services in present age. Classical theory of absolute advantage and Ricardian theory of comparative advantage not only improved trade volume globally and but also beneficial for all nations. The evidence from literature depicts that distribution of trade has been uneven among different nations. Every nation wants to expand its gain at the cost of other nation. At different time, under different circumstances economists suggested various trade policies to achieve economic gains, to increase volume of trade and to correct balance of payment problems. Notion of specialization by Adam Smith initiated the discussion on export led growth versus import substitution policies (Frankel and Romer, 1999). Later, theories on comparative advantage also stressed on specialization, which also means concentration in a few products for exports. The comparative advantage means

concentrating on few products that ignores the notion of export diversification. Now a days, international trade focusing the idea of intra industry trade and monopolistic competition of (Krugman, 1989) which encourage exports and imports in similar products and love of variety. This debate creates ambiguity whether comparative advantage which is encouraging concentration on few products or love of variety i.e. (export diversification) to be followed in a country. Therefore, idea is to explore whether Pakistan is focusing on concentration policy or export diversification policy.

According to Kavoussi (1985) trade economists can be divided into two groups. These groups were termed as 'Trade Pessimists' and 'Trade Optimists'. The first group followed outward looking trade policies, free trade and export promotion. The second group followed protection and import substitution policies. In the present era trade optimistic ideas are dominating. Therefore, the role of international organizations towards trade liberalization has a great significance. At early stages countries used to specialize and exploit their resources endowment for the production and export. But at present several arguments favor export diversification (De-Specialization) that creates variety of products (Hesse, 2009). Export diversification is particularly important for low income countries as literature evidentially proved that developing countries focused on specialization or poor diversification because of economic structure and dependency on their natural resources (Cadot et al., 2011a; Minondo, 2011; Parteka & Tamberi, 2013b). Dixit and Stiglitz (1977) are of the view that diversification of exports enables countries to produce goods from diversified nature of imported goods or inputs. Present evidence suggested that many developed countries in the world are focusing on higher degree of diversification of exports. Though it is not certain to say that causal relationship exists between export diversification and per capita income, however this may be debated that developed degree of diversification certainly boost up the growth of the economy (Imbs and Wacziarg, 2003).

Study of export diversification based on resource endowment may have macroeconomic policy relevance exclusively related to sustainable economic growth. Usually countries specialize in production when they achieve a certain level of economic development but they keep on producing diversifying products along with their economic progress. Reliance on exports of a few products may cause fluctuation in economic growth and productivity through vulnerable terms of trade. Export diversification may also reduce the growth risks of external economic shocks for small open economies. While export concentration may cause economic instability in small open economies due to changes in external demand, prices and exchange rate (Parteka and Tamberi, 2013a).

Empirical research and new trade theories of monopolistic competition by (Krugman (1980), 1981)) and Helpman and Krugman (1989) focused on expansion and availability of product variety. Empirically product diversification can be judged by two ways.

a) By degree of economic activity concentration
b) By relative specialization of products by individual countries with respect to world benchmark.

Many developing countries made structural reforms during last two or three decades to improve their economic performance in general and focused on export diversification in particular.

Pakistan kept on changing trade policies in the context of domestic needs and global environment, since independence. During 1950, Pakistan embraced import substitution policy and to make it successful, exchange rate was overvalued to buy imported machinery equipment for domestic industry. In the late 1950s trade policies were formulated for producers to buy low price agricultural raw material than the world price, therefore this period is deemed as the extreme protection period (Khan and Ali, 1998). After 1950s export bonus scheme was introduced by government of Pakistan to increase the export, subsequently on average, Pakistan's export grew annually at the rate of 11.4% during 1960s.

Export diversifications, structure of exports and structural changes in Pakistan's export from empirical findings have shown mix results. Export diversification in Pakistan started increasing sharply from 1979 and continued its momentum till 1985 but after 1985 a significant reduction in export diversification was observed consequently Pakistan again reached to the stage of 1979.The reason is a strong association of producers with the production of primary goods (produced traditionally) instead of producing a variety of manufactured goods (produced nontraditionally). From the period of import substitution strategy, to the period of structural changes and trade liberalization the real comparative advantage of Pakistan was empirically observed. Consequently production of primary goods went up and manufactured goods exports declined (Akbar et al., 2000). In the last two decades growth in export earnings have been terrific. Growth in export earnings of Pakistan increased from US$6.3 billion to US$18.3 billion (State Bank of Pakistan, 2010). This is due to the volatile export performance of different sectors of Pakistan relative to the world exports. Facts related to the sectorial export performance of Pakistan had not been impressive as its share in the world exports started to decline since 1990s.During 1990,s Pakistan's export share in the world export was 0.18%, in 2008 it was 0.15%, and in 2013 this export share was 0.139603. On the basis of export growth history of Pakistan we cannot take any hard line regarding export projection. History depicted yearly variation in the export pattern of Pakistan (Ahmad et al.,2010). Yiğit and Tür (2012) examined association between organizational performance and diversification strategy applications by using Herfindal index. Haddad et al (2013) checked the growth volatility as a result of trade openness by using export diversification. Panel data of 77 developed and developing countries over the period of 1976 to 2005 was used. Empirical findings were shown that product diversification prevented growth volatility from global shocks.

The present paper aims to contribute in finding the determinants of export diversification in case of Pakistan. This study will also explore those hypotheses which are discussed in earlier studies as policy debate but have not been empirically tested in case of Pakistan. Rest of the structure of the paper follows as: Section (2) explores literature review; section (3) explains data and methodology while section (4) is consist of results and interpretation. Lastly, Section (5) concludes the study and provides appropriate suggestions in the light of variables incorporated.

2. Literature Review

Globally there is ample literature on this issue but we find lack of empirical literature in case of Pakistan, when we estimate export diversification and explore determinants all together. Study discusses a few literatures explored locally and globally on export diversification.

Derosa (1992) theoretically explained the increase in diversification of by using model of comparative and Heckscher Ohlin Samuelson (HOS), was used for explanation of export diversification. It was found that term of trade in low income countries was very low for exchange of services of human and physical capital with natural resources. On the basis of previous studies, Delios and Beamish (1999) examined product diversification and the geographic scope by using corporate performance of 399 Japanese manufacturing firms. Partial least square method was used to study the empirical analysis. Results were revealed that expansion in new geographic markets promoted the performance of Japanese firm and was considered as effective strategy thus prove that export diversification is advantageous.. Alesón and Escuer (2002) examined the impact of product diversification strategy on corporate performance of large Spanish firms. The study used Tobin's Q technique, on data from the year 1992 to 1995 of 103 large Spanish non -financial firms. Findings of this study revealed that firms with very low or very high diversification showed lower performance.

Melitz (2003) found that productivity may be increased by means of export diversification, provided exporters should be more efficient than non-exporters. This idea was practically and theoretically justified by Feenstra (2010). Nicet-Chenaf and Rougier (2008) studied the relationship among FDI, growth and export diversification for MENA Countries. Data for the year 1995 to 2004 was taken for empirical studies. GMM system method was used to conduct the empirical investigation. Results were shown that FDI positively and significantly affected the economic growth in MENA countries. FDI also positively accelerated growth in export diversification. By using firm level data Din et al (2009) examined the export performance on the basis of its determinants in case of Pakistan. Ahmad et al (2010) observed export performance of Pakistan for the last three decades. Study found that Pakistan has been poor in export performance as compared with other Asian countries. Pakistan continued export diversification which has been responsible of poor export performance of Pakistan. Cadot et al (2011b) examined, trade diversification and its drivers by using Panel data for 10 variables of 87 countries from year 1990 to 2004. Thiel index was used to conduct the empirical analysis. Trade liberalization, infrastructure, education and governance were taken as drivers of trade diversification. Parteka and Tamberi (2011) found the determinants of export diversification. Panel data of at two levels disaggregation of 60 countries from 1985 to 2004 was used. Theil index in relative and absolute terms was used for empirical study. Along with the growth of economy, distance from markets, human capital, technological capacity, institutional frameworks, were considered as determinants of promoting diversification of trade. Aditya and Acharyya (2011) estimated the proportion of economic growth and export diversification by taking 65 countries for the data period of 1965 to 2005. The study revealed that economic growth may enhance to a certain level due to export diversification afterwards concentration on exports increases economic growth.

Yiğit and Tür (2012) examined, association between organizational performance and diversification strategy by using Herfindal index. Data over the period of 2005 to 2009 of 359 companies that were listed on Istanbul stock exchange was used. Results of Herfindhal index depicted that relationships between diversification based strategy and organizational performance were different in well-established nations, but were alike in developing countries. In developing countries barriers in research and development,

economic crises were considered as hurdles in the way of diversification strategy. Agosin et al (2012) explained the determinants of export diversification across the world. Trade openness, real exchange rate and human capital association were examined in relation with export diversification. It was observed that trade openness induced specialization and not export diversification. Cimoli et al (2013) examined the effects of real exchange rate on diversification of exports and technological intensity of export structure. Using panel data for the year 1962 to 2008 of 111 countries, study concluded that higher real exchange rate allows a higher export diversification. Haddad et al (2013) checked the growth volatility as a result of trade openness by using export diversification. Panel data of 77 developed and developing countries over the period of 1976 to 2005 was used. GMM estimator technique was used to conduct the empirical analysis and study concluded that product diversification prevented growth volatility from global shocks. Results also stressed on promotion of trade openness to promote diversification of exports and economic growth. Persson and Wilhelmsson (2013) studied the impact of European Union's non-reciprocal trade policy preferences on export diversification for developing nations and results depicted that few preferences such as Generalized Scheme of Preferences increased export products. Ahmad and Kalim (2014) also suggested to seek new markets for enhancing exports of textile sector and discouraged geographic concentration. Chowdhury et al,. (2014) studied empirically the role of sectoral diversification in case of exchange rate regime. Study used two mechanisms, external shock absorption and rent seeking mechanism on panel data of 91 countries from1985 to 2006. Study summarized finding that countries with higher level of corruption and lower level of diversification under fixed regimes might protect from international competition. For direct effect of diversification under flexible regimes provides weak evidences. Form the empirical literature it is observed that different studies have used different variables and techniques, therefore their studies revealed contradictory results regarding exports diversification and real effective exchange rate. Thus, this study explored and estimated export diversification and its determinants in case of Pakistan by using relevant approach and different to those others. Study developed its own model in the context of Pakistan with constraints of data and variables. Wagner (2014) explored linkages between export diversification and profitability of exporting firms of Germany. Study found contradictory results that export diversification reduce profits of firms as compared to those firms using concentrated exports. Elhiraika and Mbate (2014) analyzed the nexus of export diversification and economic growth for African countries. The prime focus of this study was to explore the main drivers of export diversification in the long run. This study used GMM approach by taking data of 53 countries of Africa for the period of 1995-2011. This study determined that infrastructure, per capita income, human capital, public investment and institutional framework, significantly affect in the export diversification. The focus of the study of and Persson, M., & Wilhelmsson (2016) is to explore the impact of the EU's non-reciprocal trade preferences on export diversification for developing countries. The findings of this study favored that few types of trade preference such as the Generalized Scheme of Preferences (GSP), have increased export diversification. On contrary, preferences for Mediterranean countries have no significant effects, on export diversification. Moreover, preferences for Pacific countries (ACP) and for African, Caribbean have negative effects and these countries enhanced specialization in fewer products.

3. Data and Methodology

Study of export diversification and its trends or determinants requires a careful and suitable measurement. There are several measures and indices to quantify the concept of export diversification. Most of these indices and measures are developed to assess the degree of concentration and export diversification. Export diversification is considered as reciprocal of export concentration. There are so many indices that are used to measure the concentration or diversification. Some of these indices are used as relative measures and the other indices are used as absolute measures. These indices are different from one another because of their properties, strengths and weakness. These indices are used for specialization in relative and absolute terms and also used in order to check the presence of heterogeneity resulting from measurement of these indices. For absolute measure of specialization Shannon Entropy Index, Herfindal Hirschman Index, Diversification Index and Absolute Gini Hirchman Index are used. For measurement of relative specialization Relative Gini Index and Theil Index indices are often used. Krugman Specialization Index and Index of Inequality in Productive Structure are heterogeneity indices. More over Penetration Index, Concentration Index, Deviation index and Trade Concentration Ratio are also used as common measure of concentration.

But according to the requirement of available data, this study uses Gini Hirchman Index. This index is considered as most suitable and appropriate measure for empirical analysis. The present study is aimed at calculating export diversification of Pakistan on the basis of sectorial data. It is also aimed at finding the determinants of export diversification in case of Pakistan. Present study calculates export diversification index for the period from 1980 to 2015 using Gini Hirschman Index. After calculating GHI as measure of export diversification, this study also finds out the determinants of export diversification. Keeping in view the economic literature on international trade and export diversification, foreign direct investment, world gross domestic product per capita, real effective exchange rate, trade openness and geographic concentration of exports are chosen as possible determinants of export diversification.

$$EDIV_t = F(\ GCI_{t,}FDI_t, REER_t, TO_t, WGDPC_t\ )\ \text{t} = 1980,\ldots\ldots\ldots\ldots\ 2015$$

Where

EDIV= Export Diversification, GCI = Geographic Concentration of Exports, FDI= Foreign Direct Investment as a percentage of gross domestic product (GDP), REER= Real Effective Exchange rate, TO = Trade openness taken as total trade to GDP, WGDPC= World GDP per capita, 't' is a time subscript. (Granger and Newbold, 1974) the existence of time trend in series a time series data has to face the problem of non-stationarity. Application of regression on such data gives misleading results. According to Philips (1986) results obtained from such regression are false in the absence of existence of cointegration among underlying variables. When variable are stationary and cointegrated the regression results of Ordinary Least Square (OLS) for such regression are satisfactory. In order to check the problem of non-stationarty in a time series data Ng and Perron (2001) and Dickey and Fuller (1981) tests are among the widely used tests of unit root. This paper uses ADF test for checking the stationarity. The generally ADF can be written as follows:

$$\Delta Y_t = \propto + \beta_t + \delta Z_{t-1} + \sum_{i=1}^{p} \emptyset \Delta Zt - 1 + €_t \quad . \quad \ldots\ldots\ldots\ldots \quad 1$$

Ho: δ=0 means a unit root problem and time series data is non-stationary.

Ha=δ<0 Time series data is stationary

If critical Dickey-Fuller τvalue is less than calculated Dickey-Fuller statistics then we reject H0 and conclude that the stationary problem does not exist in the selected time series. The current study uses ARDL test which follows bound testing procedure to test co-integration. Apart from other existing tests of co-integration, ARDL bound testing test checks the presence of long run equilibrium relationship among the variables regardless the order of integration zero(I (0)), order of integration one(I (1)) or mix order of integration. As compared with Engle–Granger test of co-integration, ARDL test i.e. (unrestricted Vector based) has better statistical properties.

3.1 Data Sources

This study uses variables such as foreign direct investment, real effective exchange rate, geographic concentration index, trade openness and world domestic product per capita as drivers of export diversification. The data for the variables such as foreign direct investment, trade openness, world domestic product per capita, and real effective exchange rate, is taken from World Development Indicators database developed by World Bank. Export diversification index was calculated by using the Gini Hirschman Index as mentioned earlier in this study. The sectoral data for calculation of export diversification (reciprocal of export concentration) index was taken from WTO Statistical Database by World Trade Organization (2015). Export diversification data trends shows volatility in export diversification in Pakistan. Geographic concentration index was also estimated by taking averages of top ten importing countries from Pakistan. Data required for the calculation of geographic concentration index was taken from Handbook of Statistics on Pakistan Economy 2015, State Bank of Pakistan (2015) and Annual Report 2014- 2015 by State Bank of Pakistan (2015).

4. Result and Discussion

In this section we discuss export diversification index which we estimated through Gini Hirshman index. Export diversification is given in table 1. The results of stationarity test and long run results of ARDL to co-integration are given in separate tables. In table 2, table 3 ADF test of unit root is shown, at level and first difference respectively.

Table 1: Export Diversification

Years	EDIV	Years	EDIV	Year	EDIV
1980	51.69679	1993	44.38889	2004	47.3101
1981	52.01673	1994	43.27033	2005	48.73535
1982	50.59963	1995	44.93775	2006	49.11098
1983	49.44424	1996	44.37155	2007	50.62768
1984	48.78035	1997	44.13302	2008	52.89742
1985	49.06967	1998	45.63476	2009	50.90803
1986	48.52729	1999	45.78032	2010	52.07832
1987	47.1509	2000	45.85658	2011	53.08812
1988	48.48677	2001	45.8739	2012	49.79297
1989	47.63742	2000	45.85658	2013	49.778
1990	45.98878	2001	45.8739	2014	48.994
1991	45.70587	2002	45.53128	2015	50.126
1992	45.84162	2003	47.58451		

Note: Author's Calculation

Table 2: ADF Unit Root Test

At Level						
Variable Name	**Intercept**			**Intercept and time trend**		
	ADF test stat	**p-value**	**lags**	**ADF test stat**	**p-value**	**Lags**
EDIV	-1.626240	0.4588	0	-1.936497	0.6144	0
WGDPC	0.073523	0.9590	0	-2.512266	0.3205	0
TO	-3.13724	0.1138	0	-3.060241	0.0391	0
REER	-2.011402	0.2808	0	-0..873866	0.9479	0
GCI	-1.77888	0.3844	0	-2.47894	0.3353	5
FDI	-2.64590	0.094	1	-5.908466***	0.0002	6

*, ** and *** represent that we may reject the null hypothesis of unit root at 10%, 5% and 1% level of significance respectively.

Table 3: ADF Unit Root

At 1st Difference						
Variable Name	**Intercept**			**Intercept and time trend**		
	ADF test stat	**p-value**	**Lags**	**ADF test stat**	**p-value**	**Lags**
ΔEDIV	-6.42952***	0.0000	0	-3.392513*	0.072	5
ΔWGDPC	-4.78523***	0.0005	0	-4.69569***	0.0035	0
ΔTO	-8.22840***	0.0000	0	-8.110913***	0.0000	0
ΔREER	-5.83150***	0.0000	0	-7.66309***	0.0000	0
ΔGCI	-5.93563***	0.0000	0	-5.830773***	0.0000	5
ΔFDI	-3.83083***	0.0006	9	-4.0112299**	0.0218	8

*, ** and *** represent that we may reject the null hypothesis of unit root at 10%, 5% and 1% level of significance respectively

Table 4 represents the results of cointegration through Wald based F-statistic. Wald based F-statistics is used to test the null hypothesis of no cointegration among the variables. The wald statistics is 10.1304, which exceeds upper bound test value i.e. 3.79 at five percent level of significance thus confirms the existence of cointegration.

Table 4: Co-integration Wald -Test

F-Statistic (Wald-Test) = 10.1304		
Level of Significance	**The Critical Value Bounds***	
	Lower Bound	**Upper Bound**
5%	2.62	3.79
10%	2.26	3.35

* The critical value bounds are computed by stochastic simulations using 20000 replications through Microfit 5.0.

From table 4, provides clear evidence of the existence of cointegration in the model; thereby long run results of the study are also reliable. The long run results are reported in table 5.

Table 5: Long Run Relationships for the Selected ARDL (2, 2, 1, 1, 1, 1)

Dependent Variable: EDIV			
Variable	**Coefficient**	**t-Statistic**	**p-Value**
GCI	-0.543833***	-10.498083	0.0000
FDI	1.078065**	5.735638	0.000
REER	0.064207***	13.74275	0.0000
WDGPC	0.00098*	3.454929	0.0025
TO	-0.379610**	-6.106611	0.000
Constant	84.90503	12.04640	0.000

Source: Author's Calculations, * indicates 10% ** represents 5% and *** shows 1% level of significance

In table 5 geographical concentration index significantly and negatively affects the export diversification. It indicates that less geographic concentration will be helpful in improving export diversification and more geographic concentration may result in lower the degree of export diversification in Pakistan. This result supports the finding of Delios

and Beamish (1999) and Ahmad and Kalim (2014) that geographic concentration should be reduced. Foreign direct investment (FDI) has positive and statistically significant relationship with export diversification. It indicates that FDI is directly linked with export diversification as the study of Nicet-Chenaf and Rougier (2008) represented that there is positive association between FDI and export Diversification. Increase in FDI as a percentage of GDP may lead to enhance the degree of export diversification. This result is statistically significant at five and ten percent level of significance. Real effective exchange rate has positive and statistically significant relationship with export diversification. It indicates that real effective exchange rate is directly linked with export diversification. Depreciation of domestic currency may lead to increase in degree of export diversification. This result is statistically significant at five percent level of significance and similar to that of (Cimoli et al, 2013). While world GDP per capita has positive and significant relationship with export diversification. It indicates that increase in world gross domestic product per capita may increase export diversification. Similarly, the coefficient of trade openness has negative sign in the regression of export diversification. This result seems to be statistically significant at five percent level of significance. This indicates that in Pakistan trade openness, which is measured through ratio of trade volume to gross domestic product, has significant role in determining the degree of export diversification, thus our result supports the preposition proved by Agosin et al (2012) in their study. But it also highlights the finding that increase in the degree of trade openness may lead to export concentration instead of export diversification.

4.1 Diagnostic Tests

Diagnostic tests are applied to check the validity of the assumptions of serial correlation, normality, model specification and heteroskedasticity. The results of these tests are presented in table 6. These results indicate that the series of residuals obtained from ARDL model is normally distributed and there is no heteroskedasticity. The specification of the model has also been tested through Ramsey's RESET test.

Table 6: Diagnostic Tests

(EDIV, GCI FDI, REER TO, WGDPC)

Normality Test (Jarque-Bera Statistics)	Jarque-Bera Statistics = 1.9218	Probability = 0..492
Serial Correlation (Breush-Godfrey Serial Correlation LM Test)	F-Statistic = 2.6234	Probability = 0.102
Heteroskedasticity Test (Based on the regression of squared residuals on squared fitted values)	F-Statistic = 1.6319	Probability = 0.262
Model Specification Test (Ramsey RESET Test)	F-Statistic = 0.91214	Probability = 0.391

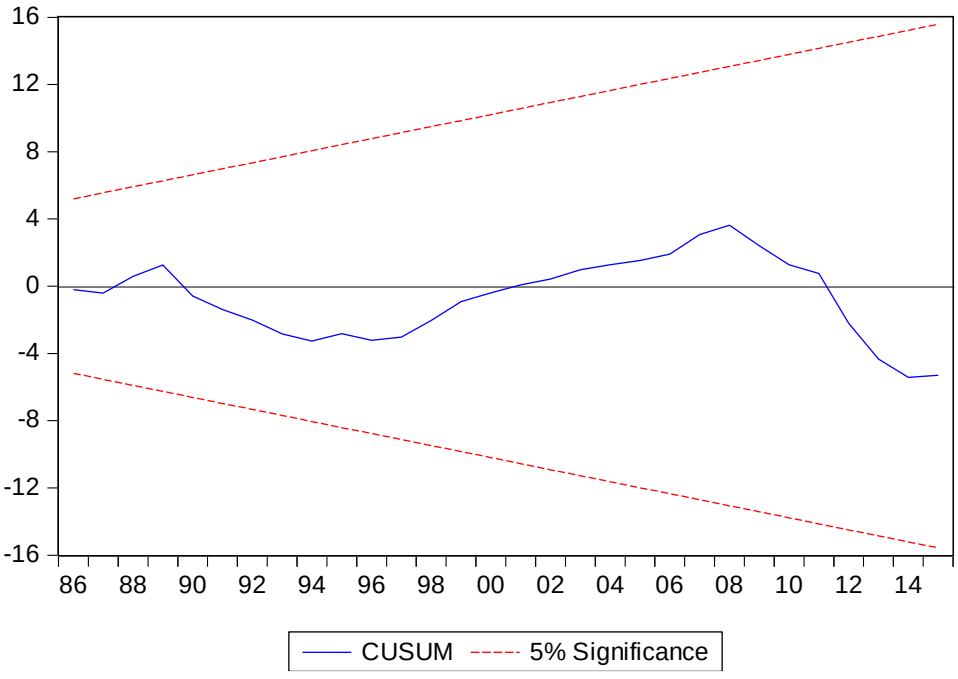

Figure 1: Cumulative Sum of Recursive Residuals (CUSUM)

To analyze the stability of the coefficients the cumulative sum of recursive residuals (CUSUM) is used. A graphical representation of CUSUM is shown in figure 1. The plot of this statistic remains within the critical boundaries of the 5% significance level. It also confirms that the model is correctly specified.

4.1 Short Run Estimates

After the confirmation of cointegration among the variables, next step is to check the short run dynamics by using ECM. Table 7 shows the short run dynamics of our long run equilibrium. According to the table geographic concentration of exports, foreign direct investment and real effective exchange rate have statistically significant effect on export diversification in short run while the impact of world gross domestic product per capita and trade openness seems to be statistically insignificant in short run.

Table 7: Short Run Estimates for the Selected ARDL (2,1,1,2,1,1)

Dependent Variable = ΔEDIV			
Variable	**Coefficient**	**t-Statistic**	**p-Value**
ΔDEDIV(-1)	-0.348228	-2.34285	0.0296
ΔFDI	0.039636	0.118760	0.9067
ΔREER	0.109857	4.011636	0.0007
ΔGCI	-0.447992	-5.023916	0.0001
ΔGCI(-1)	0.170100	2.001303	0.0591
ΔWDGPC	0.004083	2.662449	0.0150
ΔTO	-0.082383	-1.176616	0.2532
ecm(-1)	-1.239571	-6.845590	0.000
Constant	-	-	-
R2 = 0.75123, Adj-R2 = 0.66014, F-Statistic = 10.4549, Prob (F-statistic) = 0.000, Durbin-Watson = 2.2831			

Source: Author's Calculations

The lag of error correction term has a negative and statistically significant sign. It is further reinforcement of the stability of long run equilibrium relationship among the variables. The results, reported in table 7, show that the coefficient of the lag of error correction term (ecm(-1)) is -1.23957 which indicate that the variables will converge towards their long run equilibrium if any shock occurs in short run. The speed of convergence or error correction would be almost eighty-two percent per annum. In this way the full restoration of long run equilibrium will take almost nine and half months i.e. (1/1.23957*12=9.6807).

5. Conclusion and Policy Suggestions

This paper measured the degree of export diversification in Pakistan and estimated its determinants. For this purpose GHI is used to calculate the degree export diversification. To explore the drivers of export diversification time series data is used from 1980 to 2015. This study applied ARDL bound testing approach to confirm co-integration among export diversification and its various determinants such as foreign direct investment, world gross domestic product per capita, geographic concentration, real effective exchange rate and trade openness. Empirical results proved that there is a long run equilibrium relationship between export diversification, foreign direct investment, world gross domestic product per capita, geographic concentration, real effective exchange rate and trade openness. The estimates of error correction model indicate that lag of error correction term is statistically significant and carries right negative sign. The coefficient of the lag of error correction term indicates that the variables will converge towards their long run equilibrium if any shock occurs in short run.

5.1 Policy Implications

The consequences of current study have thoughtful policy implications. In accordance with empirical findings it is suggested that the exchange rate policies which directly affect the price of exports, will be helpful in diversifying exports in Pakistan. Devaluation of domestic currency may be very useful in accelerating volume of exports as a result Pakistani exporters may be able to enter into the new markets which are considered price sensitive. This may also involve the domestic exporters in price competition in international market which may result in improving productive efficiency and scale economies. The estimates reveal that foreign direct investment positively influence the degree of trade diversification. It implies that Pakistani policy makers should encourage and facilitate the foreign investors to invest in export oriented sectors in Pakistan. This may also be helpful in bridging the saving-investment gap in Pakistan and improving the productivity of domestic firms.

The findings of this study indicate that geographic concentration of exports enhances product concentration in exports. It means focus on a few markets discourage products diversification in exports and may lead to unstable trade balance which may be dependent on the economic stability or instability of a few countries. The policy makers in Pakistan should seriously consider the market diversification in order to ensure and enhance higher degree of product diversification in export market for stable and improved trade balance. In case of Pakistan, because of increase in trade openness, producers kept focusing on those products in which either Pakistan have comparative advantages, or in those products which have been revenue oriented for producers. This trend increased concentration and reduced diversification. The estimates reveal that world income,

measured by world gross domestic product per capita; positively influence the degree of trade diversification. It implies that Pakistani policy makers should design and adopt trade strategies which may facilitate and encourage the domestic exporters to get benefits from world income growth. This may also be helpful in enhancing the Pakistan's share in world trade and to improve the balance of trade.

6. Limitations

This study can be further enhanced by taking firm's level data, which will be a thorough and will provide in-depth analysis. But due to data constraint, study focused on time series sectoral level data. There are different measures available for export diversification which needs relevant data and has been constraint to this study. Moreover, disaggregated level data at 2 and 3 digit level may enhance the contribution in case of Pakistan. Overall comparison of specialization and diversification of exports can be observed for developing and developed nations by taking firms level data.

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