

# Exploring Product Diversification Opportunities in Pakistan for Export Growth

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## Abstract

*Diversification brings economic growth and forms a diversified production structure in any developing country. The purpose of this study is two-fold: attempting to decompose product exports of two key sectors (textile and sports) and measure the significance of intensive, extensive, and new products towards export growth. The study finds the long-run association between GDP per capita and the three indices of export product diversification i.e., intensive and extensive margins and product diversification (Theil index). By selecting the top five exporting countries, the decomposition was achieved by using the (Amiti and Freund, 2008) methodology while for the accomplishment of the second objective, the paper used the ARDL Bound testing procedure. Hence, the results showed positive export growth from 2009 to 2020. The intensive margin contribution to the export growth was significant in the case of 26 textile subdivision products. However, in the main subsector of textile (65 division), the contribution from the new products is large and more significant compared to other sub-sectors. By applying the ARDL testing method, the results of the quantitative analysis confirmed the positive and significant long-run relationship among GDP per capita, product export diversification, and intensive, and extensive margins. Both quantitative and qualitative analysis suggests that Pakistan's government should encourage the diversification in traditional as well as new product exports with investment and innovation. More attention to innovation in the textile and apparel sector is recommended as this sector has more potential. The sports industry, on the other hand, has potential and should be given a boost through timely investment and policy formulation.*

**Keywords:** Product diversification, Export growth, Export margins, ARDL, Intensive margin, Extensive margin.

**JEL Classification:** F13, F14, F19

## 1. Introduction

Referring to a change in a nation's export goods, product export diversification is important to achieve higher economic growth. Diversification is

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of two types: extensive margin and intensive margin. However, the contribution of these margins to economic growth is debatable.

It is important, especially for growing economies to keep diversifying their exports while developed countries must give heed toward specialization as evident from literature (Siddiqui, 2018) shows that the association between economic growth and product diversification is significant. Exports can rise as a result of new products being exported, new countries being targeted as export destinations, or a combination of the two, which is known as extensive margin. Similarly, Export growth will arise from increasing existing products', and markets' exports, known as the intensive margin. However, this study will focus on export growth due to new products being exported (extensive margin) and increasing existing goods (intensive margin). Policymakers seek export growth from an extensive margin to avoid possible challenges to the growth path from variations in export prices or the structure of world import demand.

This study has followed the decomposition methodology of (Amiti and Freund, 2010) for analysis. The data at Rev 4, SITC 5-digit from 2009 -2020 have been taken from UN COMTRADE, which tries to consider Pakistan's exporting sub-sector (textile, apparel, and sports) as a case study.

Moreover, this study has applied mixed methods and examined the quantitative relationship of export diversification, the intensive and extensive margins with the real GDP per capita for Pakistan through the ARDL estimation technique. This study has examined the relative significance of intensive and extensive margins toward Pakistan's export growth. The qualitative analysis was based on a few key interviews which provided useful insights for policymakers. The possible research questions are: Does Pakistan need a strategy for export product diversification? How successful have intensive and extensive margins been in influencing changes in Pakistan's exports? Which margin (intensive /extensive) is more significant to economic/export growth?

## **2. Review of Literature**

The concept of specialization and diversification are two different phenomena. In the case of the former, it was favored by traditional economists like (Adam Smith, 1776) and (David Ricardo, 1817). They have the notion that countries that have a comparative advantage in producing the commodities should specialize in these commodities, while Heckscher and Ohlin coined the concept of factor intensity, more factor intensity more specialization.

However, modern trade theories diverted attention from specialization towards diversification. For more economic growth, the country must diversify itself in terms of its exports. As Prebisch and Singer (1950) presented that the exports of developing countries consist mainly of primary goods, while they import mostly manufacturing goods, as a result, they are facing the problem of terms of trade deterioration. The instability in exports remained due to variations in the prices of primary products relative to those of manufactured products. To stabilize their terms of trade and prices in the international market for their exports, developing countries must go for export diversification. Diversification of exports will help them to come out by relying on primary goods. By exporting more diversified goods, they will get rid of deterioration in terms of trade and mitigate the uncertainty in exporting commodities. Moreover, the intensive and extensive margins of exports also received appreciation due to some work done on this side.

To avoid the risk of export price volatility, policymakers often prefer an extensive margin for export growth. Armington's (1969) model asserted that producing and exporting the existing export goods, i.e., intensive margin, causes the country's exports to rise. In contrast, the Krugman model (1981) assumes that an increase in exports occurred from the exports of the new variety, i.e., extensive margin. Moreover, the Melitz model (2003) goes one step further by introducing the concept of heterogeneous firms and asserting that exports should only be allowed for productive firms. Similarly, the concept of extensive margin is also depicted in the Melitz model. In the near past, there is a substantial amount of literature analyzing the significance of export margins and linking them to various economic factors. Like, Brenton and Newfarmer (2007) studied the export competitiveness of a few developing nations and observed that the influence of extensive margin on export growth is poor as compared to the influence of intensive margin in products. Similarly, Hummels and Klenow (2005) studied cross-country data and found that differences in exports between developed and developing nations are mostly attributable to the extensive margin. In this framework, if a country's proportion of global exports rises, the country's exports will rise by an extensive margin. On a country basis, the Chinese export growth was decomposed into margins by Amiti and Freund (2008) and Bingzhan (2011). We can observe that literature has been growing and developing in tandem with methodological debates. The analysis was carried out using various techniques for computing margins and various dimensions, which might explain why the results were altered. One approach is to explicitly decompose export growth into current, new, and disappearing products since the intensive margin is the increment in the existing goods while the others are the extensive margin as used by Amiti and

Freund (2008). This study has used Amiti and Freund's (2008) decomposition methodology.

An important study by Siddiqui (2018) used the ARDL model to observe the cointegration across selected variables. The study estimated the relationship between export diversification (both product and market) and the growth of Pakistan. It claims that there is a significant relationship between commodity diversification and GDP growth, while no relation between market diversification and growth. Similarly, Gozgor and Can (2016) examined the effects of product diversification on the real GDP per capita. They concluded that the intensive margin of product diversification of export was significant for increasing the real GDP per capita of low and middle-income countries.

In addition, Lyoboyi (2019) studied export diversification in Nigeria. They examine the association between economic diversification and macroeconomic factors. The results show that real GDP and diversification have a negative and significant relationship with each other as well for the intensive margin. Thus, GDP promotes diversification rather than concentration.

This left the readers indecisive that whether product diversification or product specialization is beneficial for the export growth as well as economic growth of developing countries. This paper tried to vanish the perplexity by considering time-series data for Pakistan and focused on the association between product diversification and economic growth. Further, the study also focused on the two main export sectors of Pakistan to decompose the export products into different product margins and explore the importance of new and existing products in the export basket.

### **3. Current Trade Scenario of Pakistan**

Pakistan's export sector is not performing well according to its potential. According to the World Bank report (2020), "Pakistan's export performance has been weak in comparison to its competitors". Between 2005 and 2017, Southern Asia's overall exports of products and services grew by 165 percent, while Thailand's grew by 136 percent and Vietnam's rose by 519 percent. Pakistan's exports, on the other hand, climbed by only half a percentage point, from \$ 19.1 billion to \$ 28.7 billion. More likely to Ahmed et al. (2015) that the country's share of world exports has remained weak over the past three decades. This reflects the country's inability to expand exports faster than world trade. The problems of the fluctuation in our export sector were numerous: energy shortage at a local level (Shakeel, 2021; Shakeel and Salam 2020), contraction of the world market, and

lesser demand (Malik and Majeed 2018), along with depreciation of the currency, and low prices of goods internationally (Ministry of Planning and Development 2020).

### 3.1. Performance of Pakistan's Export Compared to India and Bangladesh

The performance of Pakistan's export compared to India and Bangladesh (constant 2010 US \$billion) for the last 15 years can be depicted in Table.

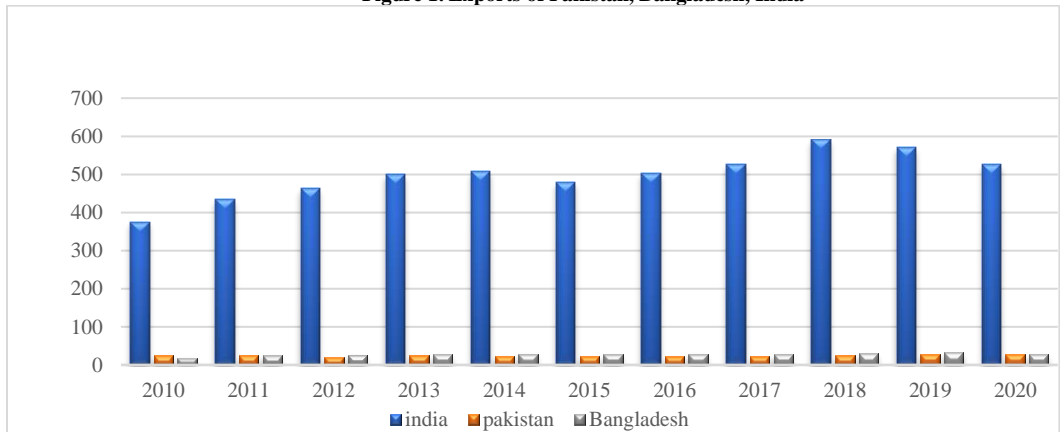
**Table 1. Comparison: Export performance of Pakistan India and Bangladesh**

| Year                           | Pakistan | India   | Bangladesh |
|--------------------------------|----------|---------|------------|
| Share in world export (%) 2005 | 0.192    | 2.148   | 0.115      |
| 2005                           | 20.113   | 225.657 | 12.052     |
| 2010                           | 23.946   | 375.353 | 18.472     |
| 2015                           | 21.837   | 479.275 | 27.623     |
| 2019                           | 27.543   | 571.552 | 33.057     |
| 2020                           | 27.979   | 525.353 | 27.693     |
| Share in world export (%)2020  | 0.159    | 2.988   | 0.157      |

Source: self-calculation based on WDI Data

In the above, Table 1., export data has been taken from the world bank database in US dollars (converted into \$Billion). Similarly, the world total export data is also taken from the WDI and the share of Pakistan, Bangladesh, and India in world total export has been calculated for the years 2005 and 2020.

**Figure 1. Exports of Pakistan, Bangladesh, India**



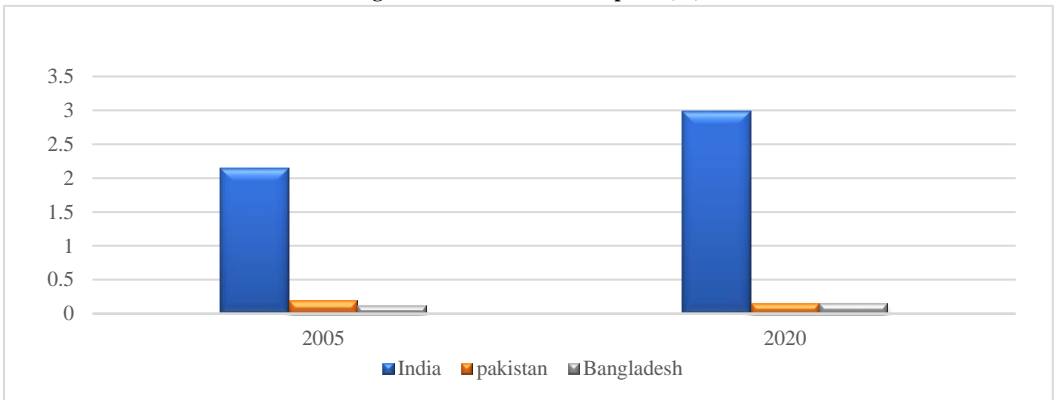
Looking into the export performance for the period from 2005 to 2020, India performed well, and its export increased (value term) from \$225.6572 billion in 2005 to \$525.35 billion in 2020, while Pakistan's export increased from \$20.113 billion in 2005 to \$27.979 billion in 2020 and Bangladesh from \$12.0524 billion in 2005 to \$27.693 billion in 2020 as shown in Table 1.. While in percentage terms the export of India increased 133% in a dampening manner from 2005 to

2020. Similarly, Bangladesh managed to increase export by s about 130%, but the case of Pakistan’s export is different, it increased at a slow pace of about 39% for the same period. The share of India’s exports in world total exports increased from 2.14% to 3% and Bangladesh's export share also increased from 0.114% to 0.16% in 2005 and 2020, respectively. While Pakistan exports share in world total exports decreased from 0.19% to 0.16% in the same years.

Notwithstanding, the effect of COVID-19 as depicted in Table 1., for the year 2020, reflects that the effects on the exports of Bangladesh and India are more than that of Pakistan. For the last two years, the exports of India dropped from \$ 571.55 billion to \$ 525.35 billion, while Bangladesh's exports dropped from \$ 33.057 billion to \$ 27.69 billion for the same period. In the case of Pakistan's export, it has slightly increased from 27.54 billion to 27.97 billion in the same years.

Furthermore, on competitiveness grounds Pakistan is behind India and Bangladesh. According to the Global Competitive Index (GCI) ranking report 2019, Pakistan ranked at 110<sup>th</sup> position out of 140 positions while Bangladesh at 105<sup>th</sup> and India at 68<sup>th</sup> ranking positions. Both India and Bangladesh performed better in terms of competitiveness as compared to Pakistan.

Figure 2. Global Share of Exports (%)



#### 4. Trade Policy Review

Trade among different countries can be managed as per the rules and regulations established by these countries. Trade policies are designed to promote and facilitate trade with the rest of the world in an organized manner, based on goals and objectives set by their partners.

##### 4.1. Pakistan’s Trade Policy

To cope with the problems related to export and import, Pakistan's commerce ministry releases trade policies, 3-year strategic trade policy frameworks, and other documents related to the regulation of trade. The purpose of trade policy is to boost our exports, mitigate the trade deficit resulting from export-import imbalances, and achieve sustainable economic growth.

The first phase of trade liberalization was initiated during the 1970s as Pakistan economic survey (1971-1972), clearly mentioned that the whole regime of trade was restructured, the duties were reduced, and free licenses were awarded on simple registration. While another phase of trade liberalization was initiated during the 2000s. The focus of traded policy during 2000-2001 was on market-oriented measures such as mitigation of the government intervention, and removal of structural impediments. Moreover, reduction in import duties, reduction of maximum tariff rate to 25 percent, improvement in the export infrastructure, diversification of export base which causes the export earning to increase and value addition in goods and services, liberalization of the import regime to increase competition in the economy.

Additional measures were taken as restrictions on almost all products were removed, and Minimum Export Prices were withdrawn. Moreover, withdrawal of export duties and registration (of exporters) requirements ("WTO report on the trade policies and practices of Pakistan").

#### **4.2. Strategic Trade Policy Framework (2012-2015)**

The objective of STPF (2012-2015) was to enhance the competitiveness of Pakistani firms to export more diverse and complex goods. Exploring new markets always remained a priority of the government. Strengthening of product development training institutes was also in focus to get skilled human resources. The fresh investment was encouraged in Leather, Engineering, Horticulture, Processed Food, Marble and Granite, Sports Goods, and Computer related services. To facilitate the running capital, a 1.5 percent mark-up rate support on the Export Finance Scheme (EFS) was provided Fish and fish preparation, processed foods, meat and meat preparations, sports goods, footwear, leather products, surgical goods, cutlery, onyx products, pharmaceuticals, electric fans, transport equipment, and electrical machinery all received a 1.5-point markup reduction from the existing rates at the time. Further, the establishment of an Export-Import Bank (EXIM Bank) to boost exports and compete with regional competitors such as India and Bangladesh, promotion of the service sector through institutional arrangements, and increase in regional trade, particularly trade with China, Iran,

and Afghanistan, and establishment of Special Economic Zones to attract new investment in export-oriented industries.

Furthermore, incentives, unfettered capital mobility, no investment restriction, duty-free imports of machinery, equipment, and materials, and zero percent sales tax on energy and gas bills were all viable government policies for the years 2012 to 2015.

### **4.3. Strategic Trade Policy Framework 2015-2018**

The aim of the STPF 2015-18 was to achieve the target of the annual export of up to US\$ 35 billion, to increase export competitiveness, and to transform the economy from a 'factor-driven to 'efficiency/ innovation-driven economy. Moreover, all tax refunds payment be made instantly, and the creation of the Pharmaceutical and Cosmetics Export Promotion Council and Rice Development and Export Promotion Council was also part of STPF 2015-18.

The main pillars identified were product diversification and sophistication, Market diversification, development of the institutions, and facilitation to trade. At that time high export potential sectors were Leather, pharmaceutical, fisheries, and surgical instruments. Some incentives were given to them, such as a subsidy of about 5.0 million for specified equipment and machinery or defined products to improve product design and foster innovation in the leather, pharmaceutical, and fisheries export industries. The development of a "Common Facility Centre" in the surgical industry was also announced.

From a market diversification perspective, the government adopted the strategy for Africa, the Commonwealth of Independent States (CIS), and Latin America. The new markets were to be explored through research, exhibitions and delegations, and linkages through the initiatives of the Export-Import Bank (EXIM Bank).

The strategy to expedite the export in the short term, the following product categories and countries were focused: Basmati rice, horticulture, meat, and meat products and jewelry while possible targeted destinations were Iran, Afghanistan, China, and European Union.

According to Pakistan's economic survey, the exports of Pakistan are concentrated and even stagnated in a few goods and markets, which is the main cause of the lowering in the export earnings. Efforts are needed to protect the economy against the dependency on a few markets and goods. To explore a new destination for export the government of Pakistan is taking measures from time to time, but at times the country failed to work according to its potential. In 2017,



efforts were made by the Ministry of Commerce to unveil the opportunities in the African and Asian regions and the “Look Africa policy” initiative. As rightly pointed out in the economic survey of Pakistan trade ties with the African countries will be fruitful in helping Pakistan to combat poverty, boost economic growth, and the creation of job opportunities for the young population.

#### **4.4. Recent Developments**

One of the aims of the STPF is to attain export diversification in goods other than traditional ones. The exports of new goods, especially the engineering and pharmaceutical sectors will be promoted. As the Ministry of Trade stated that Pakistan is speeding up its efforts to diversify its exports into high-quality and globally competitive engineering products. Recently STPF is in the stages of finalization.

According to the export policy order-2020, It is permissible, solely on a contract basis, the export and re-import domestically produced or imported machinery to carry out works granted to construction, engineering, and electrical firms. Moreover, the unit operating in Export Processing Zones may export products both outside and inside the tariff zone per the rules and regulations of the Customs Export Processing Zones Rules, 1981.

Furthermore, the duty drawback rates for electric fans have been revised from 4.39% to 1.7% after a decade to enhance the local production and exports of electric fans. Moreover, to promote export, the government has given a tax-free facility to Gwadar port. (Trade Development Authority of Pakistan, 2020).

According to Pakistan's yearly analytical report on external trade data (2019-20), the export-led growth strategy was the main focus of the government. The main steps taken were a market-determined exchange rate, a 3-year extension in the prime minister's export package, a refund to exporters and industrialists, and an export refinancing scheme.

In a nutshell, Pakistan's exports are highly reliant on a few goods and markets. Since independence, it has been deemed a persistent problem in Pakistan's economy, as evident from the different economic surveys of Pakistan. The goods for which Pakistan's exports are stagnated, at least for a decade, are cotton manufactures, leather, and rice. The contribution to total export from these three categories of goods ranges from 60% to 70%. Moreover, from the market diversification perspective, Pakistan's export is concentrated in almost ten countries, where more than 50% exports of are taking place to these countries. However, each successive government is striving for the diversification of exports

away from the traditional sectors to seek new sectors, but they have failed to achieve the desired results. It is obvious that the higher concentration (lesser diversification) of products and market-creating problems for the economy because lack of diversification causes lower export earnings which leads to low or stagnant export growth. Consequently, the country is unable to compete internationally as well as to create more jobs. If our exports remain stagnant at this level, then it will soar the trade deficit which will hinder economic growth and an export-growth-led strategy may not be achieved.

## **5. Data and Methodology**

Pakistan's product export data is divided into five groups: textile, sports, surgical, carpet, and leather. However, the study has considered (for decomposition) main products and those targeted by the current government such as Textile manufacturer goods and other manufactured goods including Sports goods. The data of all export products (1-digit SITC Rev4) have been used for estimating the time series model.

For the decomposition process, the data used in the analysis covers the period 2008 to 2020 while the time series estimation covered the years from 1980 to 2019 (as the data for intensive and extensive margins is available up to 2014) So, the study has interpolated the data for the remaining years and used annual frequency. The data on export diversification is available in the UN Comtrade and IMF database. Data on all other variables such as secondary school enrollment as a proxy for human capital, terms of trade, FDI inflow, and GDP per capita (at constant 2005 prices) are collected from WDI.

### **5.1. Decomposition Methodology**

The study has analyzed the role of extensive and intensive margins in the export growth of Pakistan. First, the study decomposed the export growth of Pakistan into margins i.e., extensive and intensive margins, following (Amiti and Freund, 2008)'s methodology (Equation 1). In this method, the extensive and intensive margins of a country rely on the worth of its own exports whereas the shares in the import market are not considered in this method. Hence the decomposition of Amiti and Freund (2008) helps evaluate a nation's export growth over time rather than a cross-country comparison. They decomposed the export growth of an economy from one year to the next year into three parts:

- i. "Increase in export growth due to the growth in products that were exported in both years (Intensive Margins)".

- ii. “The decrease in the export growth due to products exported in the base year but no longer exported in the final year (disappearing goods)”.
- iii. “The Increase in export growth due to the export of new products (New Goods)”.

Where the extensive margin is the export of the new product while the intensive margin is the increase in the export of existing product”.

Formally, extensive (EM) and intensive (IM) margins of a country can be formulated as.

$$\frac{\sum_j x_{t,j} - \sum_j x_{t-1,j}}{\sum_j x_{t-1,j}} = \frac{\sum_{j \in I_t} x_{t,j} - \sum_{j \in I_t} x_{t-1,j}}{\sum_j x_{t-1,j}} + \frac{\sum_{j \in I_t^N} x_{t,j}}{\sum_j x_{t-1,j}} - \frac{\sum_{j \in I_t^D} x_{t-1,j}}{\sum_j x_{t-1,j}} \quad (1)$$

(Export Growth) = (Intensive margin) +(Extensive margin)

Extensive margin is defined by Amiti and Freund (2008) as the difference between “the New Goods component and the Disappearing Goods component.”

Whereas  $I_t^N$  is the “goods exported by the country in the current year t but not exported in the previous year t-1 (new products)”;  $I_t^D$  is the “goods exported in the previous year t-1 but not exported in the current year t (disappearing products)”;  $I$  is the “products exported in both the years (current and previous)”;  $X_{t,j}$ ,  $X_{t-1,j}$  are “the values of the exports of “product j” in the current year t and the previous year t-1”, respectively.

## 5.2. Empirical Model and Estimation Procedure

Unlike previous studies, which employed cross-country and cross-firm analysis, this study used time series data for the analysis. Furthermore, this study focuses on the relationship between three product diversification indexes (the Theil index, the extensive margin, and the intense margin) with Pakistan's real GDP per capita. Following the method of Lyoboyi (2019), and Gozgor and Can (2016), Equations 2, 3, and 4 are reproduced and used here.

### 5.2.1. Econometric Models

$$NEXPDIVt = \alpha + \beta \lnGDPT + \theta \logSShoolt + \rho \lnTOTt + \gamma FDI t + \varepsilon t \quad (2)$$

$$NEMt = \alpha + \beta \lnGDPT + \theta \logSShoolt + \rho \lnTOTt + \gamma FDI t + \varepsilon t \quad (3)$$

$$NIMt = \alpha + \beta \lnGDPT + \theta \logSShoolt + \rho \lnTOTt + \gamma FDI t + \varepsilon t \quad (4)$$

Where,

lnGDP is log of GDP per capita.

NIM is the Inverse of intensive margin.

NEM is the Inverse of extensive margin.

lnTOT is a Natural log of Terms of Trade.

FDI is Foreign direct investment (net inflow).

EXPDIV is Export diversification (Theil index).

' $\epsilon_t$ ' is an error term while 't' is the time trend in the data series.

The study used the ARDL Bound testing procedure to find a long-run relationship between product diversification (intensive and extensive margins) and the economic growth of Pakistan.

### **5.3. Qualitative Methodology**

#### **5.3.1. Questionnaire Development, Pretesting and Sample Selection**

Based on the empirical work done on product diversification, a questionnaire is also designed to carry out some interviews to obtain the perceptions of the concerned authorities and the analysts about the product diversification approach. The questionnaire was tested through a pilot survey and was refined. The key respondents are mainly targeted from the Ministry of Commerce, Economists from the public and private sectors. The sample is carefully selected keeping in view that all respondents should be those who can give views on Product Diversification. Initially, respondents were contacted by phone and email. The questionnaire was sent to them followed by personal visits.

## **6. Results Interpretation**

This section decomposes the product groups and applies the empirical time series model after evaluating models through suitable tests to ensure that the assumptions of the suggested models are intact.

### **6.1. Technique of Decomposition**

This section uses (Amiti and Freund's, 2008) technique to find the decomposition of Pakistan's export growth and to know about the share of new, extensive, and intensive margins in the export growth along with the disappearing goods. The study selected five major trade partners countries of Pakistan (USA, United Kingdom, China, Germany, and Afghanistan) where Pakistan exported during 2019-20, and a few sectors such as the textile sector (divisions 26,65,84, and

85), and the sports goods sector (division 89). The year-wise results are given. This study has analyzed each division on a yearly basis.

### 6.1.1. Export Growth from Extensive and Intensive Margins (Amiti and Freund, 2008)

This methodology, to determine the extensive and intensive margins of export growth of a country, should not be mixed with other methods (Fenestra's, 1994). According to Amiti and Freund's 2008 methodology, the determining of a country's extensive and intensive margins of export growth is based on its exports rather than the import market share. The technique of decomposition followed here is effective to find the country's export growth over time rather than comparing different countries with each other.

Product-wise export growth of Pakistan is shown in the tables from 2009 to 2020 and the share of export growth is accredited to the intensive and extensive margins for the textile sector and sports goods. Each table depicts a year-by-year comparison, while the last row of the same table reveals the values for the selected variables for the overall period from 2009 to 2020.

**Table 2. Division26 Textile Products(5-digit)**

| Year      | Ex growth (%) | Int   | Share of export growth from |      |       |
|-----------|---------------|-------|-----------------------------|------|-------|
|           |               |       | Ext                         | New  | Disap |
| 2009      | 33.790        | 32.8  | 0.9                         | 03.0 | 02.1  |
| 2010      | -14.440       | -06.9 | -07.6                       | 0.7  | 08.3  |
| 2011      | 38.250        | 38.8  | -0.6                        | 01.3 | 01.9  |
| 2012      | 57.020        | 57.5  | -0.5                        | 0.1  | 0.6   |
| 2013      | -01.550       | -01.0 | -0.5                        | 0.3  | 0.9   |
| 2014      | 01.750        | 00.8  | 01.0                        | 01.0 | 0.0   |
| 2015      | -24.270       | -24.1 | -0.2                        | 0.0  | 0.2   |
| 2016      | -13.210       | -13.2 | 0.0                         | 0.1  | 0.2   |
| 2017      | -23.100       | -23.3 | 0.2                         | 0.3  | 0.1   |
| 2018      | 03.840        | 04.4  | -0.6                        | 0.1  | 0.7   |
| 2019      | 29.380        | 29.5  | -0.1                        | 0.0  | 0.1   |
| 2020      | 61.540        | 76.4  | -14.8                       | 0.5  | 15.3  |
| 2009-2020 | 104.1         | 110.7 | -06.6                       | 00.1 | 06.7  |

Source: self-calculated based on UN COMTRADE data.

Table demonstrates that Pakistan's export growth rate is 33.79% for the textile goods under division 26 (the data is divided into many divisions by the UN COMTRADE). Analyzing the intensive and extensive margins, the former contributed 32% while the share of the latter margin to the export growth, in this specific textile goods, is less than 1% during 2009. As shown in the table, an important contributor to export growth is the intensive margin. For the year 2010, the export growth shows a negative trend and decreased by 14%, then increased for the next years, 2011,2012 by 38% and 57% growth, respectively. The growth rate

decreases for the next three years and then increases. The years 2019 and 2020 show the highest growth rate of 29.38% and 61.54 %, respectively.

While the export growth rate for the overall period 2009-2020, is shown in Table , the export growth rate increased more than double, up to 104% for the year 2020. The contribution to the export growth was totally from the intensive margins, while the extensive margin contributed to the export growth negatively. The new goods accounted for 0.1% while disappearing goods accounted for 6.7%, which decreases the export growth. It is reflected from the last row of the table that a large proportion of export growth is from intensive margin for the whole period 2009-2020. Accordingly, it is concluded that the intensive margin is the main source for the export growth in the textile products under division 26.

**Table 3. Division 65 Textile Products(5-digit)**

| Year      | Ex growth (%) | Share of export growth from |      |      |       |
|-----------|---------------|-----------------------------|------|------|-------|
|           |               | Int                         | Ext  | New  | Disap |
| 2009      | 04.660        | 04.6                        | 0.1  | 0.2  | 0.1   |
| 2010      | 26.020        | 26.0                        | 0.0  | 0.0  | 0.0   |
| 2011      | 69.430        | 17.6                        | 51.8 | 51.9 | 0.1   |
| 2012      | 11.990        | 12.0                        | 0.0  | 0.0  | 0.0   |
| 2013      | 07.740        | 07.7                        | 0.0  | 0.1  | 0.0   |
| 2014      | -05.550       | -05.6                       | 0.0  | 0.0  | 0.0   |
| 2015      | -07.170       | -07.2                       | 0.0  | 0.0  | 0.0   |
| 2016      | -10.030       | -10.0                       | 0.0  | 0.0  | 0.0   |
| 2017      | 0.010         | 0.0                         | 0.0  | 0.0  | 0.0   |
| 2018      | 0.920         | 0.9                         | 0.0  | 0.0  | 0.0   |
| 2019      | -0.350        | -0.4                        | 0.1  | 0.1  | 0.0   |
| 2020      | -05.850       | -05.7                       | -0.1 | 0.0  | 0.2   |
| 2009-2020 | 92.4          | 0.20.0                      | 92.5 | 72.4 | 0.1   |

Source: self-calculated based on UN COMTRADE data.

Table shows Pakistan's export growth rate in the year 2009 is 4.66% for the textile goods under division 65(the data is divided into many divisions by the UN COMTRADE). Considering the extensive and intensive margins, the intensive margins contributed 26.03%, while the share of extensive margin to the export growth, in this particular textile goods, is less than 1% during 2009. As revealed in the table that intensive margin played a vital role in contributing towards the export growth. For the year 2011, the export growth shows the highest growth of 69.43% and then decreases for the next two years. While the growth rate of export shows a negative trend up to 2020, where its growth is -5.85%. This negative growth of export is attributed both to the extensive and intensive margins, which contributed negatively.

While discussing the growth rate for the period 2009-2020, it is evident from Table, that the growth rate increased up to 92.40% for the year 2020. The contribution to the export growth was mainly from extensive margins, in which

new goods contributed up to 72%, while the intensive margin contributed to the export growth of about 20%. While disappearing goods accounted for a very minute amount of 0.03%. It is reflected in the last row of the table that a large proportion of export growth is from the extensive margin or due to new goods, for the whole period 2009-2020. Hence, the extensive margin is the vital source for the export growth in the textile products under division 65. The results correspond with the study of Yasmin and Jalil (2017) for textiles and apparel.

**Table 4. Division 84, and 85 Textile Products(5-digit)**

| Year      | Ex growth (%) | Int   | Share of export growth from |      |       |
|-----------|---------------|-------|-----------------------------|------|-------|
|           |               |       | Ext                         | New  | Disap |
| 2009      | -13.280       | -13.3 | 00.0                        | 00.0 | 00.0  |
| 2010      | 20.790        | 20.8  | 00.0                        | 00.0 | 00.0  |
| 2011      | 11.660        | 11.7  | 00.0                        | 00.0 | 00.0  |
| 2012      | -11.060       | -11.1 | 00.0                        | 00.0 | 00.0  |
| 2013      | 03.770        | 03.8  | 00.0                        | 00.0 | 00.0  |
| 2014      | 13.630        | 13.6  | 00.0                        | 00.0 | 00.0  |
| 2015      | -7.220        | -07.2 | 00.0                        | 00.0 | 00.0  |
| 2016      | 11.140        | 11.1  | 00.1                        | 00.1 | 00.0  |
| 2017      | 17.040        | 17.0  | 00.0                        | 00.0 | 00.0  |
| 2018      | 07.990        | 08.0  | 00.0                        | 00.0 | 00.0  |
| 2019      | 03.300        | 03.3  | 00.0                        | 00.0 | 00.0  |
| 2020      | -24.240       | 05.5  | -29.7                       | 00.0 | 29.7  |
| 2009-2020 | 44.3          | 93.5  | -49.2                       | 00.2 | 49.4  |

Source: self-calculated based on UN COMTRADE data.

It is obvious from Table that the export growth rate of Pakistan is negative for the textile goods under divisions 84 and 85 combined for the year 2009 (the data is divided into many divisions by the UN COMTRADE). Considering the intensive and extensive margins, both show a negative share in the export growth, -13% and -0.009% respectively, in this particular textile goods during the year 2009. As shown in Table 4 above that approximately all negative growth of export was due to the intensive margin. For the year 2010, the export growth shows a positive trend and increased by 20.79%. The years 2012, 2015, and 2020 show negative growth in export, and the rest years show positive growth. The highest negative growth rate was seen for the year 2020 (-24.24%), this negative growth was attributed to the extensive margins or from the disappearing goods.

While offering the growth rate for the period 2009 to 2020, it is shown in Table that the growth rate increased by 44.25% for this particular period. The contribution to the export growth was totally from the intensive margins, while the extensive margin contributed negatively to the export growth. The new goods accounted for 0.20% while disappearing goods accounted for 49.4%, which decreased the export growth drastically for the whole period between 2009 to 2020. It is reflected in the last row of the table that the proportion of export growth is from

intensive margin for the period 2009-2020. Therefore, it is concluded that intensive margin is the vital source for the export growth in the textile products under divisions 84 and 85.

**Table 5. Division 89 Sports Products(5-digit)**

| Year      | Ex growth (%) | Share of export growth from |      |      |       |
|-----------|---------------|-----------------------------|------|------|-------|
|           |               | Int                         | Ext  | New  | Disap |
| 2009      | -14.280       | -14.3                       | 00.0 | 00.0 | 00.0  |
| 2010      | 22.880        | 22.9                        | 00.0 | 00.0 | 00.0  |
| 2011      | 4.950         | 05.0                        | 00.0 | 00.0 | 00.0  |
| 2012      | 1.640         | 01.6                        | 00.0 | 00.0 | 00.0  |
| 2013      | -1.090        | -01.1                       | 00.0 | 00.0 | 00.0  |
| 2014      | 14.650        | 14.6                        | 00.0 | 00.0 | 00.0  |
| 2015      | 6.710         | 06.7                        | 00.0 | 00.0 | 00.0  |
| 2016      | -10.830       | -10.8                       | 00.0 | 00.0 | 00.0  |
| 2017      | -2.660        | -02.7                       | 00.0 | 00.0 | 00.0  |
| 2018      | 15.490        | 15.5                        | 00.0 | 00.0 | 00.0  |
| 2019      | -8.410        | -08.4                       | 00.0 | 00.0 | 00.0  |
| 2020      | -25.630       | -25.6                       | 00.0 | 00.0 | 00.0  |
| 2009-2020 | 08.3          | 08.3                        | 00.0 | 00.0 | 00.0  |

Source: self-calculated based on UN COMTRADE data.

Table illustrates that Pakistan's export growth rate is negative (-14.28%) for the sports goods under division 89 for the year 2009 (the data is divided into many divisions by the UN COMTRADE). Considering the intensive and extensive margins, the former contributed negatively, which is depicted in the export growth, while the latter's share of the export growth, in these specific sports goods, is nil for the year 2009. The highest export growth was reported during the year 2010, while the year 2020 shows the highest negative growth of -25.63%. The negative growth was recorded due to the negative contribution from the intensive margin to the export growth.

While reporting the growth rate for the period 2009-2020, it is evident from Table that the growth rate has increased up to 8.3%. The contribution to the export growth was totally from the intensive margins while the extensive margin, new goods, and disappearing contributed nothing. As depicted from the last row of the table, the age proportion of export growth is from intensive margin for the whole period 2009-2020. So, it is concluded that intensive margin is the vital source for the export growth in the sports goods under division 89.

### **6.1.2. Boom and Bust Cycle of Pakistan's Exports (Textiles and Sports) From 2009-2020**

The financial meltdown of 2007–2009 had a huge impact on the world's export supply. According to Shabbir. T (2010) that Pakistan's economy was affected as its exports decreased and due to decreased demand in the global market,



in the year 2010 Pakistan's textile and household goods exports saw a negative trend.

Pakistan's export performance for the years 2005 to 2015 was not impressive due to the presence of a plethora of challenges including power shortage, exchange rate vulnerability, and terrorism. Along with this, the position of Pakistan in "ease of doing business" also deteriorated from 96 to 128 in 2011 and 2015, respectively (Government of Pakistan, Ministry of Commerce National Tariff Commission, 2015).

According to Mahmood. and Ahmed (2017) that about 169 goods from 2011 to 2015 disappeared from the basket of the total export goods of Pakistan. The basic reason behind the disappearance of goods is the power charges in Pakistan are considerably high relative to other regional nations, resulting in high manufacturing costs for Pakistan's exports and making these goods unsustainable in international markets (Government of Pakistan, Ministry of Commerce National Tariff Commission, 2015). On the other hand, several reasons contributed to the current trade recovery in 2017 and 2018. The primary factor was the increasing trend in commodity prices (oil prices recovered sharply in 2017 and the early months of 2018). The United States dollar was another element that resulted in the rise of the value of international trade. Throughout 2017, the US dollar index fell by almost 10% (United Nations Conference on Trade and Development, 2018).

According to the Economic Survey of Pakistan (2017-2018) that Pakistan's exports show a negative growth rate in recent years. The major cause for the drop in exports was a global slowdown in demand. In the year 2017, exports fell by just 1.76 percent, compared to a negative growth of 12.2 percent a year earlier. After decomposing the export product, now the paper applied the time series model for the overall performance of Pakistan's export sector on an export margin basis.

## **6.2. Timeseries Model**

For the selection of an appropriate technique, this paper has applied Augmented Dicky Fuller (ADF) test to check the stationarity level in each variable. The results obtained show that all variables are stationary at the first level [I(1)] except FDI, which is stationary at level [I(0)]. This is why the ARDL-bound testing approach has been considered suitable.

The results obtained from the bound test for Model 1 are explained as the F-statistic value of the bound test is 5.869. Comparing this value with the upper bound value I(1), which is 3.49 at a five percent level of significance and 4.37 at a one percent level of significance, clearly shows that the F-statistic value is greater

than the upper bound value at 5% as well at 1%. Subsequently, the null hypothesis of “no co-integration in Model 1” is rejected and the alternative is accepted. Hence, it is concluded that Model 1 possesses co-integration. Similarly, Model 2 and Model 3 reject the null hypothesis and accept the alternative, and hence Model 2 and Model 3 also show a co-integrating relationship. After the presence of co-integration in the models, this proceeds to estimate the results for the long-run relationship as in Table 6.

**Table 6. Cointegration Bound Test**

**Bound test of model 1**

| F-Bound test   |       | Null hypothesis: No levels of relationship |      |      |
|----------------|-------|--|------|------|
| Test statistic | value | Significance                               | I(0) | I(1) |
| F-statistic    | 5.869 | 1%   | 3.29 | 4.37 |
| K              | 4     | 5%   | 2.56 | 3.49 |

**Bound test of model 2**

| F-Bound test   |       | Null hypothesis: No levels of relationship |      |      |
|----------------|-------|--|------|------|
| Test statistic | value | Significance                               | I(0) | I(1) |
| F-statistic    | 4.169 | 10%  | 2.2  | 3.09 |
| K              | 4     | 5%   | 2.56 | 3.49 |

**Bound test of model 3**

| F-Bound test   |       | Null hypothesis: No levels of relationship |      |      |
|----------------|-------|--|------|------|
| Test statistic | value | Significance                               | I(0) | I(1) |
| F-statistic    | 7.716 | 1%   | 3.29 | 4.37 |
| K              | 4     | 5%   | 2.56 | 3.49 |

## 6.2.1. Long-Run Relationship for Model-M1

**Table 7. Long Run Relationship for Selected Model ARDL (1, 2, 0, 2, 1)**

| Dependent variable: D(NEXPDIV). |             |             |         |  |
|---------------------------------|-------------|-------------|---------|--|
| Variable                        | coefficient | t-statistic | p-value |  |
| LOGSSHOOL                       | -0.313327*  | -6.752447   | 0.0000  |  |
| LNTOT                           | 0.005723    | 0.424796    | 0.6744  |  |
| LNGDP                           | 0.078068*   | 4.623384    | 0.0001  |  |
| FDI                             | -0.003352   | -1.565418   | 0.1291  |  |

\*For 1% significance, \*\*for 5% significance, \*\*\*for 10% significance

## 6.2.2. Long-Run Relationship for Model-M2

**Table 8. Long Run Relationship for Selected Model ARDL (4, 4, 4, 2, 4)**

| Dependent variable: D(NEM). |              |             |         |  |
|-----------------------------|--------------|-------------|---------|--|
| Variable                    | coefficient  | t-statistic | p-value |  |
| LOGSSHOOL                   | -5.338231*** | -1.844184   | 0.0881  |  |
| LNTOT                       | 4.085980***  | 1.790652    | 0.0967  |  |
| LNGDP                       | 4.045607***  | 1.953269    | 0.0727  |  |
| FDI                         | 0.279510***  | 1.824094    | 0.0912  |  |

\*For 1% significance, \*\*for 5% significance, \*\*\*for 10% significance

### 6.2.3. Long-Run Relationship for Model-M3

**Table 9. Long Run Relationship for Selected Model ARDL (2, 2, 0, 2, 2)**

| Dependent variable: D(NIM). |             |             |         |
|-----------------------------|-------------|-------------|---------|
| Variable                    | coefficient | t-statistic | p-value |
| LOGSSH00L                   | -0.551017*  | -6.114554   | 0.0000  |
| LNTOT                       | -0.003801   | -0.160012   | 0.8742  |
| LNGDP                       | 0.096888*   | 3.259747    | 0.0032  |
| FDI                         | -0.002112   | -0.520747   | 0.6071  |

\*For 1% significance, \*\*for 5% significance, \*\*\*for 10% significance

The results of long-run equilibrium are reported in the tables. This study focuses on the relationship between three variables, the export diversification index, intensive and extensive margins (NEXPDIV, NIN, NEM), with the real GDP per capita level. The findings show that the log of real GDP per capita level has a significant and positive relationship with all three variables (NEXPDIV, NIN, NEM). The respective probability values are less than 0.05 or 5%, and hence these variables have a significant relation to the real GDP per capita.

It is worth noting that the lower value for all three variables (Theil index, Intensive and Extensive margins) the higher will be product diversification of export (IMF database). As the variables including NEXPDIV, NIN, and NEM are in inverse form and represent 'diversification' rather 'concentration'. The results show that the more the GDP per capita growth, the more will be export product diversification. This finding is compatible with (Noureen and Mahmood, 2014). The intensive margin (NIM) and extensive margin (NEM) have also positive and significant relation with GDP per capita. Comparing the coefficient values of the intensive and extensive margins, in the case of intensive margin (NIM) the one-unit change in GDP per capita will increase by 0.0968 units of intensive margin, while one unit change in GDP per capita will increase by 4.045607 units of extensive margin. Therefore, the relationship between the extensive margin and the GDP per capita of Pakistan is stronger as compared to the intensive margins in the long run.

### 6.3. Short-Run Estimates

The presence of co-integration is obtained through the long-run relationship model estimates across various suggested variables however it is relevant to evaluate the short-run dynamics as well. By using the ECM test this study also estimated the short-run dynamics for the long-run equilibrium.

### 6.3.1. Short Run Estimates for Model-M1

**Table 10. Short Run Estimates for The Selected Model ARDL (1, 2, 0, 2, 1)**

| Dependent Variable: D(NEXPDIV)  |             |             |         |
|---|-------------|-------------|---------|
| Variables   | Coefficient | t-statistic | P-value |
| D (LOGSSHOOL)   | -0.098173   | -2.317353   | 0.0283  |
| D (LgSSHOOL (-1))   | 0.157649    | 3.617692    | 0.0012  |
| D(LNGDP)  | 0.005903    | 0.487992    | 0.6295  |
| D (LNGDP (-1))  | -0.032431   | -2.179443   | 0.0382  |
| D(FDI)  | -0.006128   | -2.695744   | 0.0119  |
| CointEq (-1) *  | -0.788910   | -6.460175   | 0.0000  |
| R-squared 0.601    Durbin-Watson stat 1.974    Adjusted R-squared 0.538 |             |             |         |

### 6.3.2. Short Run Estimates for Model-M2

**Table 11. Short Run Estimates for The Selected Model ARDL (4, 4, 4, 2, 4)**

| Dependent Variable: D(NIM)  |             |             |         |
|---|-------------|-------------|---------|
| Variables   | Coefficient | t-statistic | P-value |
| D (NEM (-1))  | -0.151504   | -1.106383   | 0.2886  |
| D (NEM (-2))  | 0.079584    | 0.562634    | 0.5833  |
| D (NEM (-3))  | -0.196945   | -1.534836   | 0.1488  |
| D(LOGSSHOOL)  | -0.695106   | -1.376006   | 0.1921  |
| D (LOGSSHOOL (-1))  | 0.823242    | 1.503832    | 0.1565  |
| D (LOGSSHOOL (-2))  | 1.554251    | 2.919558    | 0.0120  |
| D (LOGSSHOOL (-3))  | 2.518620    | 4.052236    | 0.0014  |
| D(LNTOT)  | 1.061073    | 4.751972    | 0.0004  |
| D (LNTOT (-1))  | -0.721165   | -3.966412   | 0.0016  |
| D (LNTOT (-2))  | -1.105953   | -4.901123   | 0.0003  |
| D (LNTOT (-3))  | -1.161635   | -5.106269   | 0.0002  |
| D(LNGDP)  | 0.959989    | 4.031914    | 0.0014  |
| D (LNGDP (-1))  | 0.334568    | 1.901433    | 0.0796  |
| D(FDI)  | 0.070615    | 1.943784    | 0.0739  |
| D (FDI (-1))  | -0.084128   | -2.216851   | 0.0451  |
| D (FDI (-2))  | -0.184474   | -4.850468   | 0.0003  |
| D (FDI (-3))  | -0.097468   | -2.598109   | 0.0221  |
| CointEq (-1) *  | -0.444582   | -5.884845   | 0.0001  |
| R-squared 0.783    Durbin-Watson stat 2.129    Adjusted R-squared 0.578 |             |             |         |

### 6.3.3. Short Run Estimates for Model-M3

**Table 12. Short Run Estimates for The Selected Model ARDL (2, 2, 0, 2, 2)**

| Dependent Variable: D(NEM) |                          |                    |          |  |
|----------------------------|--------------------------|--------------------|----------|--|
| Variables                  | Coefficient              | t-statistic        | P-value  |  |
| D (NIM (-1))               | -0.222304                | -2.109713          | 0.0451   |  |
| D(LOGSSHOOL)               | -0.149742                | -2.642471          | 0.0140   |  |
| D (LOGSSHOOL (-1))         | 0.287981                 | 4.471647           | 0.0001   |  |
| D(LNGDP)                   | -0.003730                | -0.214455          | 0.8319   |  |
| D (LNGDP (-1))             | -0.028574                | -1.481121          | 0.1511   |  |
| D(FDI)                     | -0.005976                | -1.801572          | 0.0837   |  |
| D (FDI (-1))               | -0.004965                | -1.543260          | 0.1353   |  |
| CointEq (-1) *             | -0.637996                | -7.453540          | 0.0000   |  |
| R-squared 0.706262         | Durbin-Watson stat 2.133 | Adjusted R-squared | 0.637723 |  |

It is reflected in Tables 10, 11, and 12 that the value of the lag of the Error Correction term (CointEq (-1) \*) in all three models are both negative and significant as needed, which indicates the stability of the long-run equilibrium relationship among the variables. This shows that the due to long-run relationship it will converge the data series after a disruption occurred in the data. As given in the table above, the coefficient value of lag of Error Correction term in Model-1, 2, and Model-3 is -0.789, -0.445, and -0.638 respectively, which shows that any shock occurred during the short run then variables will converge to their long-run equilibrium. The convergence speed toward long-run equilibrium is about 78%, 44%, and 63% in M-1, M-2, and M-3, respectively.

### 6.4. Qualitative Results

A few targeted interviews were conducted to collect primary data to answer these main questions and concerns about policies, which are listed below.

#### **Barriers to export diversification highlighted in your regional export development strategy**

Respondents came up with different views about the identification of constraints. The majority of the respondents envisaged that; high input costs, high tariffs on imports, high cost of doing business, restricted service capacity, inadequate compliance with standards, low levels of skills and training, and poor global competitiveness are the possible constraints to export diversification as well as making them less competitive in the world market.

The analysis of the above part shows consistency with the quantitative part of this study. As the study identifies there are lesser product diversification

opportunities for new products hence the above problems show constraints in export diversification.

### **Provision of future support for export diversification**

The results motivated this study to explore the sector(s) where future support for export diversification is most required. About 90 percent of respondents believe that Agriculture and Industry are the two sectors that need future support for export diversification. While about 10 percent believe that forestry should be supported for future export diversification.

### **Government initiatives for product diversification (from a policy perspective)**

The government of Pakistan, from a policy perspective, is trying to facilitate exporters through tax incentives by reducing indirect taxation and moving towards ease of doing business. Furthermore, the government is also trying to strengthen the value chain network for product diversification. Moreover, reduced customs duty on some raw materials; devalued the local currency, and made some progress on export processing zones. Long-term financing facilities, regional competitive energy tariffs, easy finance, and seeking new markets are needed.

The responses show that the Government of Pakistan has tried to take possible initiatives but still, some strong policy is required. The government also completed the work on the most recent strategic policy framework which is expected to generate outcomes shortly.

### **The strategy required for product export diversification**

The respondents came up with the strategic options required for product export diversification. The options discussed are very important and included: tariff reforms; new FTAs and joining regional trade agreements, the need for more Business to Business (B2B) and Business to Corporate (B2C) integration (for product export diversification), identification of comparative advantage, uniqueness, innovative and indigenous design, address the constraints.

### **Products observing export diversification in Pakistan:**

Pakistan has not shown significant improvement in terms of diversification of its exports over the years. However, the minimal diversification, the country has attained is in low-end goods or primary products with less technological sophistication, these products are low VAD goods under the food as well as textile category.

Due to the government targets some products have shown diversification: Textiles, services, IT, agriculture products, cotton fabrics and sports items, Horticulture, and Tractors. This was a response of the majority, while one of the respondents said that we have moved from conventional product manufacturing to new ones e.g., during the Covid-19, the leather industry in Karachi moved from their conventional products to masks and personal protective equipment (PPEs) and added value to the system.

### **Recommendations for product expansion/diversification in Pakistan**

All recommendations were valuable and are listed as follows:

- i. Tariff rationalization; subsidies for new products; exploring new markets, reducing the cost of trading across borders.
- ii. For product expansion/diversification there is a need for more coordination between firms in the same industry. This is required besides easy regulations, relaxation in tax compliance, and incentivizing the industry.
- iii. Develop a corporate culture and international market exposure.
- iv. Address underlines constraints to export diversification.
- v. First, target a market then product differentiation would help.

### **7. Conclusion and Policy Recommendations**

This paper has two-fold aims of attempting to assess product export diversification in Pakistan. Firstly, a decomposition analysis is applied for specific products while evaluating the significance of intensive, extensive, and new products towards export growth. Secondly, the aim is to find the long-run relationship between GDP per capita and the three indices of export product diversification i.e., product diversification (Theil index), intensive margin, and extensive margin. The study has used data from 2009-2020 and applied the Amiti and Freund (2008) methodology to measure the intensive and extensive margins for the selected divisions of goods for a few selected sectors like the textile sector (divisions 26,65,84 and 85), and sports goods (division 89). Five major countries UK, USA, China, Afghanistan, and Germany were included in the analysis, based on the greater share of exports of Pakistan with these countries during 2019-20. Hence, all divisions showed positive export growth for the overall period of 2009-2020. The contribution made by the exports of the textile sector, on average, is due to the intensive margin. The intensive margin contributed about 101% to the export growth in the case of 26 division products, while in the case of divisions 84 and 85, the intensive margin contributed about 93 percent. However, in the main subsector

of textile (65 division), the contribution from the new products is 72%, which is more significant compared to other sub-sectors. For sports goods, the export growth was from the intensive margin. The findings of the study show that Pakistan is relying on the intensive margin for the exportation and little quantum of new goods is added to the export basket for the period 2009 to 2020 while trading with the above-mentioned countries.

The second purpose of the study is to check the long-run relationship of product export diversification (Thiel Index) along with the extensive and intensive margins with the GDP per capita and other macroeconomic variables; term of trade index, FDI, and secondary school enrolment as a proxy for the human capital of Pakistan using time series data for 1980-2019. The long-run relationship among the variables uses three separate models. The study used ARDL bound test to find the long-run relationship. The results confirmed the existence of a long-run relationship among product export diversification, extensive, intensive margins, and GDP per capita. The Error Correction Model (ECM) shows that the error correction term is significant and has the correct negative sign. The coefficient indicates any disturbance or shock that occurred in the short run will be automatically corrected/adjusted in the long run. The export diversification of products has a positive long-run relationship with the GDP per capita.

The findings of this study suggest that in the long run, Pakistan must go for diversification of its export products as it has a positive and significant relationship with economic growth. Policymakers must concentrate on export product diversification rather than export product concentration. Research is also a missing element in sectors other than textile. Further conclusions are categorized as below:

- i. The country is still relying on old products for exporting to specific countries. The country needs to opt for export promotion policies, need more investment in product diversification, and investment in new products to boost export growth. Currently, Pakistan is not successfully adding new products into the export product basket except in a few segments of the textile sector. So, exploring some new sectors and exploiting product diversification in those new sectors is recommended.
- ii. The sports industry is also neglected. It has been observed that in world sports events, the demand for sports goods increases, and the focus on the FIFA world cup 2022 is important to reap the opportunity (as during the FIFA world cup 2018, our export of sports goods increased). Pakistan's sports industry needs the attention of policymakers and innovation,



investment in the existing cluster is recommendable. New sports products should be included in the export basket.

- iii. Incorporating advanced technology, investment in human capital, and skill development in each particular product group is recommended. The role of Export processing zones needs to be enhanced and policy-oriented.

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