"The Impact of Industrial Policy on Export Performance in Pakistan"

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I **Amir Azam**, Student of M.Phil Economics solemnly declare and affirm on oath that I myself have authored this M.Phil Thesis with my own work and means, and I have not used any further means except those I have explicitly mentioned in this document. All items copied from internet or other written sources have been properly mentioned in the quotation marks and with a reference to the source of citation.

Amir Azam

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"A man who is unable to live in society and thinks he is self-sufficient for himself either beast or God". Aristotle.

The above quota best describes the nature of a man. Being human it was not possible for me as well as completes my Thesis without the help and support of my well-wisher.

First of all I would like to thanks almighty Allah who gave me time and strength to complete my report. And also it will be unfair to acknowledge the services and guidance provided by Dr. Karim Khan (H.o.D Economics, PIDE) during the period of my Thesis work. I really thank him from the core of my heart.

Last but not the least I want to thank my parents and sister. I have always enjoyed their support and love during the thick and thin of my life.

Let me conclude with a quote which states that "He didn't wish to be believed to be the best but to be it." Plato.

Amir Azam

ABSTRACT

Since the independence the economy of Pakistan has seen some golden and worsens periods in its economic sector. Once titled Asia Tiger economy is now exporting less than Bangladesh that was once part of Pakistan. Through the current study its being tried to check the impact of Industrial Policy on Export Performance by taking Export Sophistication, Export Diversification and Export Competitiveness as indicators of Export Performance while import tariff, Export Subsidy, Industrial Expenditures, R&D Expenditures, Export Rebate and Export Processing Zones as Industrial Policy Instruments, using Error Correction Model from 1980-2017, with the speed of Adjustment in the long run that are caused by the structural changes and shocks affected the relationship. The study confirmed there is inverse relationship between import tariff and export performance because it discourage the foreign competition and domestic industrial sector enjoy the protection while Export Rebates and Export Subsidies have no significant impact on Export Performance. Other instrument of Industrial Policy such as Industrial Expenditure, Export Processing Zones and R&D expenditures shows positive relationship with Export Performance. Democracy type of government is good for industrialization but military regime showed more sophistication in export sector. By utilizing the instruments of Industrial Policy the Export Competitiveness can be improved that will boost the diversification both good and market level. Therefore it needs to have long term visionary Industrial Policy.

Keywords: Industrial Policy Instruments, Export Sophistication, Export Diversification, Export Competitiveness.

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Chapter I

INTRODUCTION

1.1   Introduction

The 21st century is observing many challenges and emerging paradigms that have turned industrialization and industrial policy into one of the important debating and interesting issue all over the world. Industrial policy can make plausible contribution in the achievement of efficiency in both local and international market if the lessons from Past and the challenges of future are sufficiently undertaken into consideration (Naude & Szirmai, 2013). Industrialization itself is not an automatic process, history, policies, experiences, geographic location, internal and external stability, promotion of technologies, advancement in innovation and transition from traditional agricultural to manufacturing goods promote it and that can be handled by making a strong and long sighted policies (Ullah et.al , 2013). The Economy of Pakistan has shown many ups and down in its journey from independence 1947 to 2017. The economy has adopted different industrial policies either to response the crises or as part of the medium term development plan, among which some never have seen their actualization. Pakistan has experienced 5 different waves of significant industrial Policy i.e. the trade embargo after independence with India, than following the industrial policy of development package programs focused made on export promotion and Import Substitution Industrialization (ISI), with a third wave of industrial policy of nationalization by Bhutto government followed by the Structural Adjustment program of IMF and World Bank after 1988 and the last wave has seen in the era of Musharaf's Regime where the major focus has

been given to Trade Liberalization and Foreign Direct Investment Promotion (Hussain & Ahmad, 2012)

Pakistan's economy continues to grow strongly and emerging as one of the top Asian economy beneath the surface a number of warning signs are emerging (World Bank, 2017). The journey from 34 functional industrial units to become 26th largest economy in the world in term of Nominal GDP has good and worse experience in its industrial development. One of the major problems associated with Least Develop Countries (LDC's) and Developing countries is that they have weak Industrial Policies which failed to meet the requirement of advancing time (Pursell, et al. 2011). The history tells that the Industrial planning and Industrial Policy in Pakistan was either formulated arbitrarily in response to some crisis or shocks, or other the country faced with, was short to medium-term, and lacked a long-term vision. Ferraz, et al. (2010) argued that an industrial policy for economic transformation could be able discern and act upon various competitive issues and challenges in different sectors aiming for further progress as defined by any nation's competitive frontier, that incase of Pakistan has been limited only for rising or ongoing issues and challenges without having a long term visionary policy. Noman (2015) claimed that Pakistan does very poorly on the assorted indicator of industrial development i.e. sophistication of export, International Standard Organization certification, Availability of key high level skills, Patents, R&D development and so on in its entire journey. So the Industrial Policy followed by Government of Pakistan unable to meet the requirement of Long run initiative.

One of the basic aim of Industrial policy is to cope with the Export Performance of any economy, because the Industrial Policy is the involvement of Government to attempt the business sector or to alter the functioning and structure of economic activity towards different

sectors, technological advancements or tasks that are expected to offer good prospects for manufacturing and industrial growth that are key determinants of Export performance (Wade, 2010).

Being a developing economy, Pakistan has a lot of issues and challenges among which one is poor Export Performance due to low level of diversification of exports which has been recorded that out of total export on average 75% of the total export is contributed by only five different sectors i.e. textile, apparel products, leather and rice (Siddiquie, 2018). The export performance of the economy of Pakistan as compare to other countries in the region has been falling with a share of only 0.14% making it 68th country in world in terms of exports (Saeed, 2013). According to World Integrated Trade Solution (WITS, 2018), the economy of Pakistan is facing a market penetration in the globe on average 7.33 from 2003 to 2016 showing that Pakistan's market performance in world market is more struggling as compare to other part of South Asia. The Herfindal Index for the country from 2003 to 2016 shows that the goods and services Pakistan exports to International market have more qualities of Perfect competition coz the average Herfindal Index for the economy of Pakistan on average has been recorded 0.064. Schwab & Martin (2016) in Global Competitiveness report argued that the trends in Pakistan's Competitiveness ranking is slightly disappointed because most of the countries are getting better results while Pakistan's ranking is getting down. In the report of 2016, out of 140 countries Pakistan stands 122nd position with competitiveness score of 3.49/7, showing only 18 countries in the report have score less than Pakistan. Pakistan Business Council (PBC, 2018) Propped that currently Pakistan is facing deindustrializing and facing downward growth in its Industrial sector with very slow growth in Manufacturing sector, the Export performance of Pakistan is also facing decrease while the economy is also facing difficulty to

make competitive position in global market. As Industrial Policy is one of the major Instrument, that is use to promote export performance hence it's required to deeply analyze the Impact of Industrial Policy on Export Performance.

1.2   Problem Statement

Pakistan's export performance has remained unsatisfactory since last two decades ((Mahmood & Ahmad, 2017). From the latest report of (WITS, 2018), the share of Pakistan's export in global market declined from 0.18% to 0.14% from 2009-2017, while in the same period the neighboring competing economy's share in world export is increasing substantially, Bangladesh able to increase its export from 0.06% in 2000 to 0.18% in 2017 while the share of India has jumped from 0.61% to 1.66% in the same period. Abbas (2015) argued that the Economy of Pakistan is focusing to extend its exports but failed to get a good share in World Market due to many reasons i.e. low diversification, primary and semi manufactured goods, too narrow export base, outdated technology, currency devaluation, technical barriers and no long term visionary Industrial Policy. Mahmood & Ahmad (2017) concluded in their study that the export performance of Pakistan has exposed the vulnerability of our exports to global shocks and highlighted the resolutions of afore mentioned structural bottlenecks built over the era, therefore the removal of such structural shocks, changes and bottlenecks is not only important for consolidating the gains achieved from macroeconomic stability but also essential for the sustainability of country's balance of payments position and for its medium term growth trajectory and Industrial policy is a major tool that directly deals with export performance, hence it needs to deeply analyze the impact of Industrial policy on Export Performance. So in the current study, the following questions will be address to take

attention from Government of Pakistan that how to promote a long visionary Industrial Policy.

1. How the Instruments of Industrial Policy of Pakistan is different from that of neighboring competing Asian Economies?

2. How Industrial Policy instruments affect Export Performance in Pakistan?

3. How the instruments of Industrial Policy affected the export performance in military and democratic regimes?

1.3   Objective of the Study

The Pakistan's export performance has changed significantly over the years with the improvement in the share of primary and semi manufactured exports (Ghani & Din, 2006), because the shares of primary goods and semi manufactured goods with final manufactured goods in total export in 1972 were 45%, 27% and 27.8% that changed to 17%, 1% and 72% respectively in 2015-16. Undoubtedly the pattern of Export performance has changed substantially in response to export reforms and the transition from primary manufactured products to finished manufactured goods, but the overall performance is not so promising showing declining trend in the contrast of 1970 and 1980's when total exports growth was increasing around 15% on average annually that felt down to 13.7% in 90's, 13% in 2000's. The total growth in export has been only 0.42%, while the share in world market has gradually eroded from 0.18% in 90's felt down to 0.14% in 2016. This slowdown took place when other countries in the region was expanding their export market share like Bangladesh able to increase its share from 0.04% in 1991 to 0.19% in 2016 while the share of India increased from 0.61% to 1.66% in the same era and Anjum & Sgro (2017) have argued that in the same period Pakistan's economy was more liberal and open for international trade but

Pakistan failed to gain the place what it was expecting. Since Industrial Policy is consider as major instruments to facilitate Export Performance and the instruments of Industrial Policy were more relaxed, Open and Liberalized as compare to competing neighboring Asian economies but still Pakistan unable to meet the global needs and there least studies have been made to find the impact of Industrial policy on Export Performance. Therefore this study is being motivated to meet the following objective.

- To find the Impact of Industrial Policy of Pakistan on Export Performance

1.4 Hypothesis of the Study

Export Performance itself is not a variable but it has different indicators that denote that how the Export Performance is going on in the economy. For the ongoing study we will rely on three indicators of Export Performance i.e. Export Sophistication, Export Diversification and Export Competitiveness. So from the above discussion of problem statement and brief introduction the following hypothesis will be check to see the impact of Industrial policy on Export Sophistication, Export Diversification and Export Competitiveness in Pakistan's economy.

1: There is no significant relationship between Industrial Policy and Export Sophistication.

2: There is no significant relationship between Industrial Policy and Export Diversification.

3: There is no significant relationship between Industrial Policy and Export Competitiveness.

1.5 Conclusion

Being more liberalized and opened Economy in International Market still the Export Performance of Pakistan is facing decline. There are many internal and external factors that directly influence the Export Performance among which is Industrial Policy because Industrial Policy directly deals with Export Performance and expand or contract the Export Performance

through its instruments and tools. There has yet not been attempted to see the impact of Industrial Policy on Export Performance, so through this study it will be try to find out the impact by controlling the determinants of Export Performance indicators as control focusing only Export Sophistication, Export Diversification and Export Competitiveness through a time series data from 1980-2017 and the focused Industrial Policy Instruments are Import Tariff, Export Subsidy, Export Rebate, Export Processing Zones, Industrial Expenditures and Research and Development Expenditures. The rest of the study has been designed that chapter two will discuss the available literatures both theoretically and empirically, while in third section we will highlight Research Methodology focusing on theoretical framework, Econometric Modeling and constructions of focused variables. Section 4 will highlight the overview of Industrial Policy in Pakistan since Independence. Section 5 will deals the Analysis and in final section we will conclude our study with suggestion and policy recommendations basis on the findings of the study.

Chapter II

LITERATURE REVIEW

2.1   Introduction

There is vast field of literature on the importance of Industrial Policy and Export Performance specially in case of developing economies. So many of the authors propped that Industrial Policy is one of the key factor that can help the developing economy's to boost up their export performance, which is an indicator of economic development. The following section will highlight the contribution of different authors both theoretically and empirically analyzed studies in different region of the world. In the beginning of the chapter we will focus on the importance of Industrial Policy and Export Performance. In third section we will describe some relevant studies have been done on the related topic theoretically and in section four we will elaborate empirical studies on the topic while in final section we will draw literature conclusion and will show the research gap of the study.

2.2   Importance of Industrial Policy and Export Performance

John, (2015) focused on the importance of Industrial Policy explaining that the role of Industrial Policy is to facilitate structural change in favor of higher productivity growth where the focus should be on expansion or creation of activities with manufacturing sector with its application to be based on a consultative process between public and private parties. Gyroff (2014), elaborated that an industrial policy is the tool of existing government to achieve her certain objectives usually consisting of basic instruments like regulatory which is use to manage framework conditions through regulations necessary to put industrial manufacturing towards certain areas of considered of importance with balancing the game between industrial actors fostering envisaged developments. Ferraz, et al. (2010) provided the fact that is associated with the

importance of industrial policy in case of Brazil, arguing that Industrial Policy is gaining priority on the public policy agenda even if under such guises like green economy, innovation, local development with promotion of competitiveness of firm's at local and global market and the defense of jobs in domestic economies standing behind it with availability of necessary instruments to implement policy is also a key factor to demonstrate Industrial Policy at its peak.

Iftikhar & Chaudhry (2009) stated that Economic growth and Economic Development of developing economies mainly depends on political and economic system but international trade contributes significantly in the development because international trade may act as an engine of growth to drive rapid development and growth in developing economies where the perfection is how good you are in exporting to global market. Abbas (2015) argued that in the modern era of globalization every country is striving hard to grasp the export led phenomenal growth because being an engine of Economic Growth, accelerate the process of development and the real of exports, domestic firms can reap economies of scale and profitability by more internationalization and globalization and boosting its export performance. Expanded exporting economies produces more foreign capital and allow the country to import the raw materials and capital and advance technology to achieve development needs while countries whose exports are concentrated acquire more economic efficiencies because of low manufacturing, lack of advance technologies, concentrated goods and market and competition. Infect, export is the source of many other externalities like improving production, employment opportunities, creating innovation, goods diversification and competitiveness. Saleem & Sial (2015) elaborated that export performance stimulates the production of goods and services in a variety of different possible channels like efficient allocation of resources, technical knowledge, competitive atmosphere among firms, easy access to foreign exchange, economies of scale, capital goods and

import of higher raw materials that result in higher capital formation and stimulates domestic as well as export production with encouraging domestic manufacturing growth, diversification of Goods and Market and make it able to compete the economy at global level. Ghani & Din (2006) stated that Pakistan has adopted different tools and polices to expand its export but failed to get a large share in the world market because of many reasons i.e. less diversification of exports, semi manufactured goods narrow export base, out dated technology and machinery, devaluation in the sick industrial units, technical barriers, political instability, Low level of FDI, small amount of domestic savings, MPC on basic needs are high, the failure of adoption of new policies and specially the unavailability of coherent and long term visionary industrial policy.

2.3   Theoretical Literature

There is variety of measures and determinants employed in the export performance studies are reflection of the complexity of the export performance itself (Madson, 1989). Targeting export differs across countries, firms and as well as within the firms because most of stake holders in the firm aims for export success and they may have distinct perceptions of what constitute such success. Hence different factors have a critical role in securing successful outcome and some of recent studies have attempted to capture this complexity by introducing composite multi dimensional scales to measure export performance developed by Zou et al. (1998) who argued that this composite three dimensional scale comprising financial, satisfaction with venture and export performance divide between objective and subjective nature of a country's export performance (Zou et al.1998). Despite large numbers of variable employ as measures of Export Performance success several other measures appear to be use considerable more than other such as Export Intensity, Export Profitability, Export Sale Growth, Export Market Share, Perceived Export Success, Satisfaction with overall Performance, Diversification of Goods and Market at

global level and the enhancement of quality etc (Sousa & Lopez, 2008). Tookey (1946) argued that a superior export performance is a result of a firm/s successful strategic response to the external factors and these factors influences are defied as environmental specific and hence untroubled and generally categorized as industry specific and market specific where Industry specific factors refers to industrial technological intensity and its level of instability and the factors affecting export performance in local market differ from those in foreign market such as liability foreignness increase the cost of doing business abroad due to economic, legal and cultural differences where legal, political and cultural similarity are factors that are most cited as external determinants of export performance and the domestic market factors on the export performance are somewhat neglected in the export performance research and the studies which investigated the domestic market characteristics as potential determinants of export performance has identified two major determinants Export Assistance and environmental hostility and both are the true aims easily can be meet through strong Industrial Policy because through industrial policy we let the government to interfere the market according to its objectives. (Nazeer & Rasiah, 2016), argued that Pakistan is facing pre-mature deindustrialization because the country experienced wild swings during 50's and 60's with a fair growth in 2000-10 followed by contractions in other periods. Periods of manufacturing growth was associated with pro-manufacturing and import substitution policies while the slump were characterized by deregulation and relatively high exchange rate which shows that the relative stagnation of manufacturing sector, the diversification of good and market and competitive nature can be explained by the lack of a dynamic Industrial policy targeting technological catch-up and leapfrogging (Nazeer & Rasiah, 2016). The economy has adopted different industrial policies either to response the crises or as part of the medium term development plan, among which some

never have seen their actualization. Hence it's important to seek the facts that are associated with causal effects of Industrial Policy on Export Performance that could be measure in terms of Export Sophistication, Export Diversification and Competitiveness.

2.4   Empirical Literature

Jehle (2013) in his paper on international trade discussed the instruments of industrial policy that can be use to promote industrial sector in the economy that can be use as alternative of trade policy with promoting manufacturing sector and balancing international trade. He discussed both qualitative and quantitative instruments where he pointed out that in quantitative side any economy can use trade related measures of import tariff (nominal and Ad volarem), Custom Duty, Import and Export Quota, Free goods list, Export Subsidy, Investment Expenditure made by government to promote special economic zones and industrial promotion, the expenditure made by the government on Research and Development and some qualitative measure to promote industrial sector include clustering in the domestic economy, List of importable and exportable commodities, Import licensing, Guarantee to the importers and exporters, better infrastructure etc all matters to be use as industrial promoting instruments. Analyzing the Impact of Industrial Policy on Economic Development Kharel, (2014) conducted study on Nepal using simple Regression model taking Industrial registration as dependent variable and Economic Openness Index as Independent variable for post and pre liberalization period and also combined period of time from 1973 to 2010, concluded that before the liberalization the impact of independent variables have been observed showing positive results while in case of Post liberalization it has been observed inverse relationship between dependent and independent variables, so the further policies have to be designed to meet the rising issues and challenges. Khan & Saqib (1993) analyzed the export growth in Pakistan by using Simultaneous equation

Model and found a stronger correlation between Industrial Policy Instruments and Export Performance Indicator and empirical results confirmed the presence of co integration between exports and output growth, Export Growth performance and diversification and structural change in exports for Pakistan over the Period 1973-98. Argosin et al. (2011), conducted a study on the determinants of export diversification around the world by their conclusion they summed up that export concentration using Gini coefficient as dependent variable with trade openness, Human Capital, Remoteness, Terms of Trade, import of Technology, Domestic credit and Exchange rate volatility, among which Exchange Rate Volatility plays insignificant role while other variables positively influencing the dependent variable.. About the importance of competitiveness (Kankanen, et al. 2013) stated that Competitiveness in manufacturing sector and export diversification plays a key role. The history witnessed that those economies that were competitive in their goods and market passed through the chain of under develop nation to Newly Industrialized Countries because of their long term industrial policies and strategies.

2.5   Conclusion

By summing the literature it is cleared that there is significant impact of Industrial Policy and its Instruments on Export Performance. There are certain indicators that is use to describe the export Performance and there are many Industrial policy Instruments and there yet not been made any contribution in the studies to see the Impact of Industrial Policy Instruments on Export Performance Indicators i.e. Export Sophistication, Export Diversification and Export Competitiveness. The literature seeks that some of the instruments of Industrial policy have been used as independent variable and their impact shows that there   exists significant relationship between dependent and independent variables of our study and the desired hypothesis can be fulfilled by deeply and carefully analyzing the relevant data available on the

given variables. It can be expected that the Industrial policy instrument Import tariff rate has inverse relationship with Export Performance while other instruments Export subsidy, R&D Expenditures, Economic Processing Zone's, Industrial Expenditures and Rebate paid by the government on export will have significant and positive relationship with dependent variable Export Performance.

Chapter III

RESEARCH METHODOLOGY

3.1   Introduction

The given section will highlight the reasoning for considering the research methods which will be following to analyze the obtained data. As the undergoing study based on time series secondary data the time period plays most important role in analyzing the impact, therefore the study will highlight the structural break or industrial policy shifts from 1980-2017. In the beginning of section we will highlight how developed theoretical framework from literature review, and then we will show to identify the problem of Unit root and Econometric Model Specification with the associated data and estimation problems that can influence the results of our study and finally we will highlight the construction, measuring Unit and data sources of dependent and independent variables.

3.2   Theoretical Framework

A voluminous literature is available describing the importance of industrial policy and its impact on different indicators of economic growth using different approaches. Industrial Policy itself is not a variable but it's a comprehensive statements and policies that directly or indirectly influence the secotrial growth of different sectors. Gyroff (2014) elaborated that an industrial policy is the tool of existing government to achieve her certain objectives usually consisting of the basic instrument like regulatory which is use to manage framework conditions through regulations necessary to put industrial manufacturing towards certain areas of considered of importance with balancing the game between industrial actors fostering envisaged developments. So to make it simpler and comprehensive study we will quantify the instrument of industrial policy. Edward (1993) stated export is an important determinant of Growth in an economy, increasing export help to reduce the impact of external shocks and accelerate integration of the country to the rest of the world and improving export sector means the export performance is

getting better off. There are many determinants of Export Performance i.e. Real Exchange Rate, Unit of Value of the Goods, World Production Capability, Nominal Effective Exchange Rate, Net National Investment, GDP, Gross Capital Formation (Gul & Rahman, 2014). Spasova (2014) elaborated a brief discussion on the determinents and indicators of Export Performance where he stated that, Export Diversification and Competitiveness reveal the overall direction of Export Performance and Edward (1993) states that any economy before looking towards Diversification and competition looks towards Export Sophistication because it encourage the domestic economy to transform from low sophisticated goods to high sophisticated.

The Export Sophistication assumes that different goods that a country can produce and export have essential level of sophistication to it. Weldemicael (2012) stated that by measure of Export Sophistication we aim that to find from oberved trade pattern that which products or goods required more sophistication. (Edward, 1993), propped that Newly Industrilized Countries of East Asia able to make High Sophisticated Goods and make transition to Capital Intensive goods. About determinants of Export Sophistication (Hausmann, et al. 2007) said that Per Capita Income in Purchising Power Parity, FDI, Export to GDP Ratio, Trade Openness, Human Capital and share of Maanufactruing in total exports matter the most.

Argosin et al. (2011), conducted a study on the determinants of export diversification around the world by their conclusion they summed up that export concentration using Gini coefficient as dependent variable with trade openness, Human Capital, Remoteness, Terms of Trade, import of Technology, Domestic credit and Exchange rate volatility, among which Exchange Rate Volatility plays insignificant role while other variables positively influencing the dependent variable. Though export diversification is important at goods and market level, but there is another important   phenomenon that describe the importance of diversification role which is how much competitive any economy in world level in terms of goods and in terms of market. (Siudek & Zawojska, 2014), deeply analyzed the term of competitiveness in Economics perspective and stated that the phenomenon of competitiveness is a complex theory that deals with the comparability of a nation with the rest of the world or within the economy's industries

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about their productivity level which depends on division of labor and specialization, the market share, cost to price ratio and productivity that influenced by government through public expenditures, taxes, exchange rate, interest rate and regulatory activities. In its 2016-17 global competitiveness report, World Economic Forum used 3 main determining variables with 12 main different pillars where the main determinants were Factors Driven, Efficiency Driven and Innovation driven (Schwab, 2017)..

Brenton, et al. (2007) discussed in their conference paper presented in Growth Commission Conference on Development in Yale University that Sophistication and Diversification of export is positive trade objective and make a country less vulnerable to adverse terms of trade and through instruments of greater expenditure by the government on industrial and human capital development, the promotion and attraction of Foreign investors and financers to invest in the economy, effective export growth, competitiveness strategies need to be shaped in context of global economy will encourage to expand the economy both at domestic and international level. So through the export subsidy, rebate and minimizing duty drawbacks and encouraging the research and development expenditures the desired Sophisticated Economy, a competitive and diversified economy can be sustain and promote further. The example of Korean and Pakistan Economy is well known all over the world. Pakistan and Korea started its journey at same time where Pakistan in 1960's put Korea so back and was considering that Pakistan soon will stand in the line of industrialized nation but after three and four decades Korea let Pakistan so back with more than 11 times growth as compare to Pakistan coz Korean economy able to sustained a long term Industrial policy and diversified its Export sector where Pakistan focused on making its industrial policy to meet the rising and coming issues without any long term strategy and unable to diversify its economy both goods and market level (Ahmad & Hamid, 2014). From the all above discussion the undergoing study will be base on the following hypothetical perspective.

Figure 3.2   Theoretical Framework
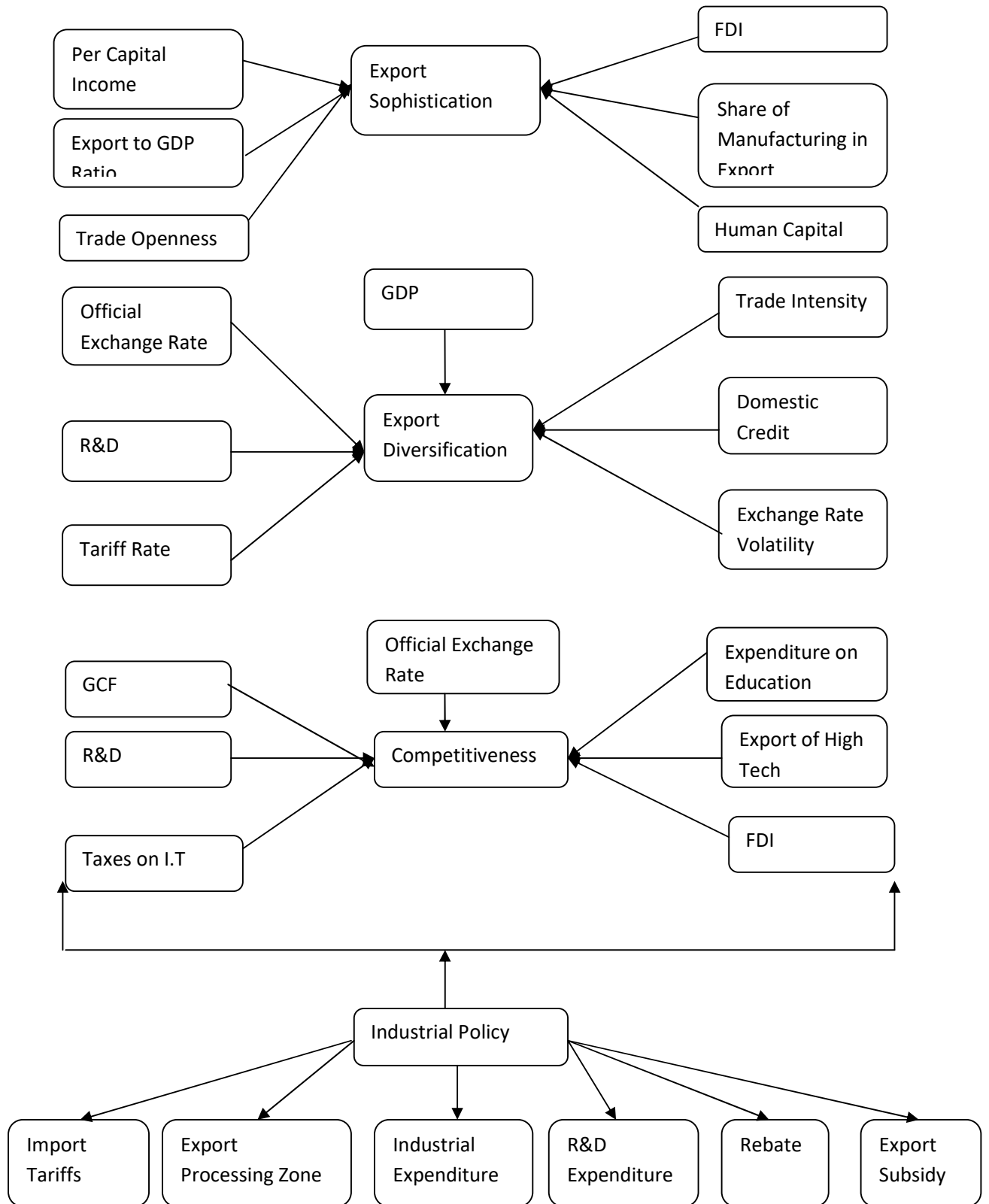
3.3 Specification of Econometric Model

Econometric model is considered as an analytical representation of the undergoing objective statements in economic behavior where the representation relies upon qualitative and quantitative implementation for the purposes of hypothesis testing, parameter estimation or use for prediction or simulations of the variables under consideration (Deaton, 1995). Hence an econometric model may be anything from a single linear equation to a complicated set of sophisticated simultaneous, non linear equations. Different authors have used different tools and techniques to measure the impact of different variables on our dependent variables. For our ongoing study we will have three sets of different model functions.

3.4 Speficiacation of Unit Root Analysis

Whenever we are analyzing any time series it is important to find out the degree of integration of under consideration to avoid spurious regression because there is problem of stationary and non stationary in time series data. Yule (1926) elaborated that most of the time series variables are non stationary at level, so before applying any regression or econometric modeling it's important to find out the stationary of variables. As our variables of interest are all in ratio series, therefore we will not include any intercept for the time series because the inclusion of intercept in the ratio series will make the equation more powerful and there will problem of over estimation and the inclusion or exclusion of Trend/ drift will depend on the nature of curve made by the variables. If the behavior of the curve of underlying variable is fluctuating around its mean point, than we will avoid using trend in the estimation of unit root. Otherwise if the behavior of the curve is not coming towards its mean point, than we will include the trend/ drift in the estimation of given variable. The econometric representation of unit root for the variable is given below.

$$\Delta Yt = \mathcal{f}Yt\text{-}1 + \pounds t \qquad\qquad (3.1)$$

Where Δ is the difference, "Ʃ" is coefficient that is null hypothesized to be equal to 1 for unit root, and t-1 is the lagged value and "£t" is the error term. Our focus will be on the integration degree of variables that at which integrating order they get stationary, if all the variables get stationary at level than simply we can rely on simple regression in case of two or more variables which get stationary at first difference than we will move to co integration analysis. After finding the stationary of variables the results will be proceed to co integration test which determine the actual form of the data used in all subsequent regression analysis, if the given variables are not co integrated then we will proceed and move to first difference form for all test variables, and alternatively the model can be revalued and the inclusion of addition time period test may be consider and there may be several co integrating vectors exists so that the importance and consideration of other econometric model also can't be ignored.

3.5   Estimation Technique

Unit root analysis of the time series data describes what method is most suitable to check the behavior with each other. Through the method of unit root analysis it is clear that most of our study variables are having unit root problem. So in the presence of unit root analysis the method of Ordinary Least Square (OLS) is spurious, means without any real relationship among the data set of variables the time series gives significant relationship. So to bring down or to avoid the problem of spurious regression Engle & Granger (1987) stated that trended time series data can create major problems in empirical estimation due to spurious regression. Hence the estimated values are insignificant in reality and the problem can be resolve by taking the difference of variables until the time series get stationary and than running the regression analysis. Asteriou (2007) argued that it's also not an ideal solution to the problem of spurious regression rather it not only difference the error term in the estimation but also gives no long run solution. So in the

presence of unit root we can represent the error term as combination of the disturbance term process. For general equation the following relationship can be obtain through simple regression model.

$$Yt = \beta1 + \beta2\,I.P + \beta3Xt + \varepsilon t \qquad\qquad (3.2)$$

where Y_t denotes dependent variable that in our study is Export Sophistication, Export Diversification and Export Competitiveness and X_t show determinants of dependent variable and I.P represents the Industrial Policy instruments which in case we are taking Import Tariff, Export Subsidy, Industrial Expenditures, Rebate, Export Processing Zones and Research and Development Expenditures, while $\in_t$ denotes the error term. So in the presence of unit root if we get the result that will take us to spurious regression. Therefore to resolve this problem the difference of the data to make them stationary such that Y_t and X_t both become stationary we will focus on

$$\Delta Yt = \beta o + \beta1\Delta Xt + \beta2\Delta I.P + \varepsilon t \qquad\qquad (3.3)$$

So from the above equation we will be able to draw significant conclusion from this equation because both variables now have been transferred into difference equation and making it stationary through which we can draw short run relationship. But we are not only interested in short run relationship; we are also interested in long run relationship through which we can forecast a long run visionary policy. Since we pointed out that Yt and Xt are both first order integrated and their combination gives $I(0)$, than it means our dependent and independent variables are co-integrated, thus in case of regression from equation 5.1 has now no more problem of spurious regression and now it provide us linear combination of dependent and independent variables.

$$\varepsilon t = Yt - \beta1 - \beta2Xt - \beta3I.P \qquad\qquad (3.4)$$

Here our error term connects dependent and independent variables in the long run.

Since Yt, Xt and I.P showed co-integration by definition εt is stationary at level, therefore we can introduce Error Correction Model between dependent and independent variables.

$$\Delta Yt = \ \beta 0 + \beta 1 \Delta I.P + \gamma \Delta Xt + \ \beta 3 \varepsilon t - 1 + \varepsilon t \tag{3.5}$$

The equation (5.4) has now the advantage of both short run and long run information. In the given equation β1 and β2 shows the relationship between dependent and independent variable in short run while the parameter of (εt-1), shows the adjustment among the dependent and independent variables in long run. So our general equation for all of our dependent and independent variable is given below:

$$E.S*= \ \beta 0*+\beta 1 I.P*+\beta 2 PCI*+\beta 3 EXP*+\beta 4 FDI*+ \ \beta 5 T.O*+\beta 6 M.E*+\beta 7 H.C*+\varepsilon t$$

$$E.D*= \ \alpha 0*+\alpha 1 I.P*+\alpha 2 O.E.R*+\alpha 3 R\&D*+\alpha 4 Tariff*+ \ \alpha 5 GDP**+\alpha 6\ D.C\varepsilon t$$

$$COM*= \ \gamma 0*+\gamma 1 I.P*+\gamma 2 GFC*+\gamma 3 R\&D*+\gamma 4 O.E.R*+ \ \gamma 5 E.H.T*+\gamma 6 To.T*+\varepsilon t$$

Where E.S shows Export Sophistication, PCI is Per Capita Income, EXP is Export over GDP Ratio, M.E is share of Manufacturing in Export, T.O is Trade Openness, FDI is Foreign Direct Investment, H.C is human Capital, O.E.R is Official Exchange Rate, , D.C domestic Credits, E.H.T Export of High Technology and R&D is Research and Development Expenditures made by government of Pakistan and the satiric (*) denotes the transformed form of the equations.

Since we are interested to see the impact of Industrial Policy on Export Performance, therefore we will use two different options to see the impact. First we will regress only the instruments of Industrial Policy keeping the determinants of dependent variables constant, while in second method we will make an index that will represent all of the instruments of Industrial Policy using Principal Component Analysis (PCA), which will compile all the variables to create a single index representing all the Instruments of Industrial Policy and then will regress this

Index as alternative of Industrial Policy with the control variable and see the impact on dependent variable.

So the long run elasticity between Export Sophistication, Export Diversification and Export Competitiveness and Industrial Policy instruments are captured by β^s, α^s and γ^s.

Iqbal & Din,(2013) in their study elaborated some of the features of ECM model, which are summarized as follows:

i. It's a convenient model of measuring the correction from disequilibrium of the previous year which have strong economic link with each other.

ii. In the presence of Co-integration, Error Correction Model are formulated in-terms of first difference that typically eliminates trends from the variables involved which resolves the problem of spurious regression.

iii. Error Correction Model is the ease through which it can be fit into the General to Specific approach to Econometric Modeling that is in-fact a search for Parsimonious Error Correction Model that best fits the given data set.

iv. One of the important features of ECM is the fact that the disequilibrium error term gets stationary variable, and lead to co-integration which denotes the adjustment in long run.

Hence on the basis of the above given advantages of Error Correction Model, the undergoing study will focus ECM model for the estimation of the parameters.

Since Error Correction Model and Co-integration process deals with Time Series data and Time Series data comprises many sorts of problems like Autocorrelation, Multi-co linearity, Structural breaks and policy shifting and Problem of Endogenity. The problem of Multi-co linearity is data associated problem and in the presence of high Multi-co linearity the results will be inconsistent while the problem of Autocorrelation is associated the relationship between error

terms that will cause to give high or greater values of power test. The major problem in policy shifting is the problem of Endogenity and Structural breaks that will discuss in section 3.8.

3.6   Constructions of Variables

The following study is basically highlighting the constructions of manufacturing growth, Diversification and Competitiveness and instruments of Industrial Policy. The given dependent variables are usually measured variables that have other determinants which specify the variables by their own. So it's important to highlight that the variable under consideration are how been constructed and in which measurable unit they will express. The following section will highlight the definition, Theoretical basis of dependent and Independent Variables with their data sources.

3.6.1   Dependent Variables

The undergoing study will have three dependent variables which are as follows:

a)   Export Sophistication

Export Sophistication is a measure that shows the average income associated with countries export bundles. Weldemicael (2012), says that Export Sophistication is also use as rough proxy to show the productivity of a country's exports. Hausmann, et al., (2007), elaborated how to measure export Sophistication. According to Hausmann, et al., (2007) assumed that X_i^k represents the exports of country "i" in product "k", than total Exports of country "i" will be $X_i = \Sigma k X_i^k$ associated with income (Productivity) level associated with each product k, $PRODY^K$ now can be calculated as

$$PRODK = \Sigma\{\frac{\frac{Xik}{Xi}}{\Sigma i\left(\frac{Xik}{Xi}\right)} * Yi\}$$

Where PRODK is weighted average measure of GDP per capita of the countries exporting product "k", Yi shows GDP Per Capita of country. From the above calculation now the export Sophistication is constructed as follows

$$EXPY = \Sigma k \left\{ \frac{Xik}{Xi} PRODK \right\}$$

It is an average of PRODK of country "i", weighted by the share of product k in country I's total exports. Hausmann, et.al (2007) call it export Sophistication Index, where higher the value of EXPY means more sophisticated otherwise vice versa. For our ongoing study we will compute EXPY using share of Manufacturing goods in total exports of Pakistan and neighboring Asian Economies and compare them to find the Sophistication of Pakistan's Exports.

b) Export Diversification

Export diversification is usually described in two ways: Market Diversification and Good Diversification. Mubeen & Ahmad (2016) elaborated different measures and indices to quantify the concept of export diversification. Some of the indices are absolute in nature like Shannon Entropy Index, Hirschman Herfindal Index, Diversification Index and Gini Hirschman Index. In terms of relative measures Relative Tehil Index and Relative Gini indices are more frequently used. For the ongoing study we will prefer Herfindal Index because for most of empirical analysis this measure is use as most suitable measure. The given equation shows how Herfindal Index can be calculated.

E.D= (sum[hij-xi])/2,

where hij is the share of commodity "i" in the total exports of country "j" and "hi" is the share of commodity in world exports.

c) Export Competitiveness

A Comparative Analysis of Turkey with Eleven Potential Revivals", (Arsalan & Tatlidil, 2012) argued that there are many measure and techniques used to measure a country's competitiveness, for example World Economic Forum. Institute of Management Development and International Finance Corporation use different indicators and measures to construct a country's competitiveness. So for our ongoing study we will focus on the measuring tool used by The Global Competitiveness Index Report publication of different countries based on Market Penetration that is constructed through following formula.

Market Penetration = (Number of Customers ÷ Targeted Market Size) × 100

3.6.2 Industrial Policy Instruments
There are six instruments of Industrial policy have been taken in under consideration. The constructions and definition of given Industrial Policy is given as follows:

1) Import Tariff Rate

Import Tariff is usually associated with goods and services imported from other countries to the domestic economy, the government levied a proportion of tax on the goods either to protect its domestic industry or either to discourage the heavy imports of goods and services which put burden on balance of trade. Miao, et.al, (2018) elaborated function of Import tariff stating that import tariff usually have three key objectives and functions to serve as source of revenue, to remedy the trade distortion and to protect domestic industries. Based on the empirical conclusion on the impact of tariff rate Miao, et.al, (2018), concluded that the reduction in tariff will cause import to increase and vice versa. Hence the manufacturing sector, market and good diversification adversely affect and due to which the competitiveness of the economy drops. For our ongoing study we will get the data import tariff rate on average imposed by the government of Pakistan on different goods and services imported from abroad. For our ongoing study we will use the Average Weighted Tariff Rate in Pakistan and then is obtained by:

$$\text{ATR= } (W_1*Tr_1 + W_2*Tr_2 + W_3*Tr_3.... / W_1 + W_2 + W_3....)$$

2) Export Subsidy

To promote export promotion in the economy, sometime the government supports the producers to encourage the production and to export them to international market through provision of financing and supporting them with easy access to finance at lower rate as compared to individual or domestic producers. The government of Pakistan adopted Export Finance Scheme to subsidize the financial assistance to exporters to promote the export expansion (Haq & Kemal, 2007). Since 1973 the government allocates a special amount of finance to exporters to provide them better and easy access to financial credits for example in1994 the lending rate difference between Export Finance Scheme and normal lending at local market was 0.5% that went to 7.8% in 1998. So the current study will aim to use the data of Export Subsidy as Percentage of GDP.

Export Subsidy Share= Export Subsidy /Total Government Expenditures*100

3) Industrial Expenditures

Every year government proposed its Annual Development Program in the form of Annual Budget, a documented Statement to shows its plan of her Revenue and Expenditures of upcoming years (Amir, 2017). In its expenditure section government allocate specific amount to promote different sectors of the economy, where a specific amount is allocated to promote and encourage industrial sector, government itself make an investment with a preplanned objective. In Pakistan since its independence the government allocates a specific amount on industrial sector through direct investment like promotion of infrastructure, advancement in technology, easy access to raw materials etc. For our ongoing study we will take the share of Industrial investment by the government as percentage of its total expenditures and will see its impact on our dependent variables.

Industrial Expenditure Share= Industrial Expenditures/ Total Government Expenditures

*100

4) **Export Processing Zones/ Clustering**

The phenomenon of Export Processing Zones also sometime interchange with clustering and Special Economic Zone is a phenomenon related to integration of some identical manufactured or semi manufactured goods that produced in a specific nearer or close areas. By giving the reference of the study of Ferol (2007), Khan and Anwar (2017) argued that the numbers of Special Economic Zones increased to 3500 in 2006 as compare to 176 in 1986. In the form of the share of clustering exports to total exports of the in the Pakistan in 1996 were $125 Million only in case of surgical Instruments prepared in Sialkot Cluster. Since Export Processing Zones are itself not a quantitative variable , so to meet and see its importance as Industrial Policy instruments and check its impact on dependent variable it requires to transfer the given variable in quantitative form. As Pakistan started focus on Export Processing Zones in 1980 when an ordinance passed to take care and promotion of EPZ's, the functional form started in late 90's, so the data is available after 2000 period, when the Musharaf's Regime focused more on the Promotion and establishment of EPZ's, therefore the current study will use the % share of Export Processing Zones in Total Export of the Economy as proxy variable which will be treated as the determinant and indicator of Export Processing Zones. Hence the data available on EPZ's will be treated and make for further analysis as following.

TEPZ's= Total Export from EPZ's/ Total Export of the Economy*100

5) **R&D Expenditures**

R&D stands for Research and Development, uses usually for the term that how the individual firms, corporation and government making expenditure to meet the requirements and ongoing

demand and challenges in different sectors. Hall, et.al, (2009) argued that R&D can increase the capacity and productivity by improving the quality and quantity or reducing the average cost of production of existing goods or simply by widening the spectrum of manufactured or semi manufactured goods available for final production resulting increase the profit, reduction in price and factor reallocations with easy to entry and exit of firms. For ongoing study we will focus on the average expenditures made by government on R&D as percentage of total expenditures made annually.

R&D Share= Expenditures made on R&D /Government Total Expenditures*100

6) Export Rebate

Rebate also know as Export Rebate or Export Exemption is a phenomenon associated with the Export Tax Rebate usually it's the refund of domestic production, export products and circulation of the actual production tax, consumption tax, value added Tax, Business taxes which are basic source of domestic revenue earnings. On the performance of Rebate and its impact on Economic Growth in case of China (Tan, et.al, 2015), stated that there is direct impact of export rebate on the reduction of production costs of the firm, that make it manifest in higher regional wages as a result of increased demand labor and output growth. Empirically analyzing the importance of Export Rebate (Tan et al. 2015) propped that increase one percent in Export Tax Rebate will cause to increase 0.4 percent in exports in case of Chinese economy. So due to this importance of Rebate, the export rebate of Pakistan is also being investigated to see its impact on Manufacturing growth, Diversification and Competitiveness. The focused variable will be used in following description in the study.

ETR= Export Rebate/ Total Expenditure*100

The below table gives highlight of the construction, measuring units, expected sign with the data source is given below:

3.6.3   Control Variables

To make the study more coherent and meaningful the study focuses the following variables which in real terms are determinants of our dependent variables will be consider as control variables.

Gross Capital Formation

Gross Capital Formation also known as Gross Domestic Investment, consists of outlay of addition of the fixed capital of the economy with changes in the level of inventories.

Per Capita Income

Per Capita Income shows the purchasing power of Individual in a country. Usually it is determined by dividing the GDP to whole population such that each and every individual has equal weightage. One of the main economic differences between developed and developing nation is, developed nations have higher per capita income while the developing economies have low per capita income. For the Ongoing study we will use the Real Per Capita Income of Pakistan from World Bank Data Source from 1980-2017.

Trade Openness

The term Trade Openness is associated with the economies International trade status, that how much it allows international trade to take place inside economies (Muhammad, 2012) how much the economy protect its own industrial sector.   A common measure use to show the trade openness is to add import and exports of goods and services a country produce and divide it to

total GDP (Lloyd & Maclaren, 2002), the larger the ratio the more country is exposed to International trade while lower value means the more protective economy.

Foreign Direct Investment

Foreign Direct Investment denotes an investment made by a firm or individual of one country in the business interest located in another country (Alfaro & Chauvin, 2017). Pakistan has enjoyed the Foreign Direct Investment in Musharaf's regime when on average $400 Million was flowing towards Pakistan from 200-2007 (Khan M. I., 2011). For the ongoing study the Foreign Direct Investment is also consider as determinant of Export Sophistication and Competitiveness. Hence we will use the Annual change in Foreign Direct Investment annually in the Economy.

$$\Delta FDI = FDI_C/FDI_P * 100$$

Where FDI_C denotes Current year FDI, while FDI_P shows previous years FDI.

Gross National Expenditures

Gross National Expenditure is the sum of the household's final consumptions expenditure, government expenditures and Gross Capital Formation (Muhammad & Karim, 2015), which have positive relationship with Export Diversification and Competitiveness (Muhammad & Karim, 2015; Amjad & Awais 2016; Hussain & Ahmad, 2012). For the ongoing study we will rely on the data available in International Financial Statistics (IFS) Gross National Expenditure in current U.S $.

Human Capital

Human Capital is considering the back bone of labor force and Industrial Growth. (Olyemi, 2012), we mean that the human capabilities and potentials that make it how productive a country's population is. There are many indicators and determinants of Human Capital but

Literacy Rate in the country is considered as backbone indicator of Human Capital. So for our ongoing study we will use the literacy Rate of Pakistan as an indicator to human capital.

Official Exchange Rate

(Ahmad, et.al, 2013) elaborated that exchange rate means that at what rate the local currency is exchangeable with foreign currencies usually associated with U.S Dollars and there is inverse relationship between Competitiveness but the Export Sophistication and Export Diversification has positive relation with Official exchange rate, decrease in the value of local currency means goods become cheaper at international market and the demands of goods and services increases. For the ongoing study we will focus on the exchange rate of Pakistan in terms of U.S $.

Domestic Credits

The term Domestic Credit refers to lending or credit that a country or territory's central bank makes available to borrowers within the same territory. A country's central bank, which has the authority to lend currency to the government involved, may also extend credit to commercial banks (Marshal & Onyekachi, 2015). The increase in Domestic Credits means higher money supply which means higher investments, if the investment is high means there is growing manufacturing goods demands. Therefore the current study will focus the domestic credit issued by local banks to private sector during specific period of time.

Export of High Technology

A key element of development is the transformation of Agricultural sector to Manufacturing sector, and manufacturing sector transformation from primary products to secondary and then capital intensive goods (Szarowská, 2016). By deeply and carefully analyzing the economy of Pakistan we can see that Pakistan's economy failed to meet the requirement of globalized economy and still relying on the exports of raw materials and that are concentrated only few

goods, and most of High technologies Pakistan import from other nations (Kemal & Khan, 1997). For the ongoing study we will use the Import of High technology as an indicator to Export of High Technology, because higher the Imports of High Technology means Pakistan is exporting lower High Technological Goods.

3.7   Data Range, Data Problems and Data Sources

For any study the time period matters the most. Since independence, Pakistan has seen five different waves of significant Industrial Policy i.e. Trade Embargo with India, Policy of Development Program Projects, Policy of Nationalization and denationalization, Policy of privatization and deletion and Policy of Trade Liberalization and Foreign Direct Investment encouragement (Hussain & Ahmad, 2012). One of the biggest shift in Pakistan's Economic Moment occurred after Bangladesh separation is the Soviet Union invasion to Afghanistan in 1978 (Hilali, 2002), where both the demands of Pakistani Goods and Services increase and huge flow of International Aid in Pakistan made the local currency stable (Anwar, 2007) and since the 80's and until rapid globalization drive part by unprecedented pace of changes in global market specially Information and technological adoption allowed many developing nation's i.e. China, Taiwan, Malaysia etc to stand in newly Industrialized Nations but unfortunately Pakistan that was among top ten fastest growing economies in world during 1960's and 70's has been one of them remained far behind, while Pakistan was more liberalized, Open and Globalized economy than China and India (Amjad & Awais, 2016). Therefore Pakistan's low and declining economic growth has been under the subject of considerable rumination and important factor responsible for this outcome i.e. Industrial Policy has not received the attention it deserves.

Structural breaks or Policy shift is also a key problem that changes the momentum and direction of Policy. When we carefully analyze the Economy of Pakistan, we can see there has

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been observed many structural breaks and policy shift because of both internal and external causes, Trade Embargo with India 1948, Wars with India (1965,1971,1999), Nixon Shocks of 1971, OPEC Oil Prices Shocks of early 1980's, Soviet Union invasion to Afghanistan 1978, Adoption of Structural Adjustment Program of 1988, Political instability in early 2000's, The Economic Sanction on Pakistan because of Atomic Explosion on 28th May 1998, the great tragedy of 9/11 and the Global Financial Crises of 2007-08 etc are few other reason that totally change the momentum and Industrial policy change in the economy. Since our time period of the study is from 1980-2017, therefore our focus will be on the shocks and structural breaks that occurred after 1980 and to make the study more easy and comprehensive the period of 1980-2017 will be divided into two sections i.e. through the inclusion of Dummy variable denoting the on power Government i.e. Military or Democracy will be analyzed carefully keeping all other structural breaks and policy shifts treating as controlled shocks or shifts.

The problem of Endogenity deals that some of our variables are correlated with error term and incase of presence of Endogenity problem the results become inefficient, insignificant and inconsistent because in the presence of Endogenity there will be some other econometrical tools and techniques that will use to find the relationship. For ongoing study it's expected that being a time series study there is chance of Endogenity problem and incase of presence of Endogenity, some instrumental variables are also in consideration. The below table gives the data definition, measuring units, expected sign and data sources of the variables.

Table 1: Variables with Their Unit Measures, Expected Sign and Data Source

S.No	Variables Name		Unit Measure	Expected Sign	Reference:	Data Sources
1.	**Dependent Variables:**					
a)	Export Sophistication		Export Sophistication Index		(Hausmann, et.al 2007)	International Financial Statistics 1980-2017
b)	Export Diversification		Herfindal Index		(Osawke & Kilolo, 2018)	WITS (1979-2015)
c)	Export Competitiveness		Market Penetration		(Ketels, 2016)	The Global Competitiveness Report (1979-2017)
2.	**Industrial Policy Instruments:**					
i)	Import Tariff Rate		ITR %, Average Tariff Rate	-ve	(Ellahi, et al. 2011)	Pakistan Economic Survey, (1980-2017)
ii)	Export Subsidy		E.S % of GDP	+ve	(Desai & Hines, 2003)	Annual Development Plan, (1980-2017)
iii)	Economic Processing Zone's		%Share in total Export	+ve	(Rashida, 2017)	Ministry of Manufacturing and Industry, (1980-2017)
iv)	Rebate		Rebate % Total Expenditure	+ve	(Epley et al. 2006)	Annual Development Plan, (1980-2017)
v)	R&D Expenditures		R&D % of Total Expenditure	+ve	(Szarowská, 2016)	Index Mundi Report, 1980-2017
vi)	Industrial Expenditures		I.E % of Total Expenditures	+ve	(Nekard & Ramie, 2011)	Pakistan Economic Survey
Control Variables						
3.	Gross Capital Formation	Gross Capital Formation is consists of outlays on addition to the fixed capital of the economy with changes in level of inventories		+ve	(Ali, et.al, 2012)	Index Mundi, (1980-2017)
4.	Per Capita Income	The Average Per Capita Income denotes the Individual purchasing power.		+ve	(Shahid, 2014)	International Financial Statistics, (1980-2017)
5.	Trade Openness	The Term used in the study is how much your trade is open to international market.		+ve	(Shahbaz, 2012)	Pakistan Statistic Bureau, (1980-2017)
6.	Foreign Direct Investment	Foreign Direct Investment reveals the capital inflow from foreign investors.		+ve	(Rahman, 2014)	International Financial Statistics (IFS, 1980-2017)
7.	Gross National Expenditure	The expenditure made by Government in its annual development plan.		+ve	(Muhammad & Karim, 2015)	International Financial Statistics (IFS, 1980-2017)
8.	Human Capital	The literacy rate of the country.		+ve	(Olyemi, 2012)	Pakistan Economic Survey, (1980-2017)
9.	Official Exchange Rate	The Exchange Rate of local currency in terms of U.S Dollars at current prices.		-ve	(Gherman, 2013)	State Bank of Pakistan, (1980-2017)
10.	Gross Domestic Product	GDP represents all the final goods and services produced inside economy within specific period of time.		+ve	(Su & Yao, 2016)	Annual Development Plan, (1980-2017)
11.	Domestic Credits	The amount of loan provided by the local banks to the residents of the country.		+ve	(Sheikh et al. 2010)	State Bank of Pakistan, (1980-2017)
12.	Expenditure on Education	The % share of GDP expended on Education		+ve	(Mallick et al. 2016)	Annual Development Plan, (1980-2017)
13.	Export of High Technology	High valued goods exported by the domestic Economy.		+ve	(Falk, 2007)	Ministry of Manufacturing and Industry, (1980-2017)
14.	Taxes on Trade	Represents how much average Tax is revealed on Imported Goods.		-ve	(Ellahi et al. 2011)	International Financial Statistics, (1980-2017)

Chapter IV

SHORT OVERVIEW OF PAKISTAN'S INDUSTRIAL POLICY FROM 1947-2017

4.1   Introduction

Pakistan is currently known as 6th populous country in the world with current population of 210 Million. From the report of World Bank, Pakistan is 24th Largest Economy in the world in Purchasing Power Priority term while it is 42nd largest economy in world in term of nominal GDP with $1647 per capita income that is 147th number in world wide. The total GDP of the economy for financial year 2017, has been recorded $1.060 Trillion in terms of Purchasing Power Priority. The GDP growth rate for financial year 2017 has been set out 5.28% with an average share of agriculture, industry and services 19.53%, 20.88% and 59.59% respectively. Economy of Pakistan has observed many ups and down in its journey from independence 1947 to 2017. The country has tasted the golden periods of 1960's and the worse of 1970's (Siddique & Iqbaal, April, 2005). The economy has adopted different industrial policies either to response the crises or as part of the medium term development plan, among which some never have seen their actualization. Pakistan has experienced 5 different channels of significant industrial Policy (Hussain & Ahmad, 2012). So in this chapter we will shortly elaborate the industrial Policy changes and responses with response to different time period according to changes or shifting from one policy change to another Policy change.

4.2   Industrial Policy in the era of Export Promotion and Import Substitution

The first channel start quickly after the independence of young country, when its biggest importer India imposed strict trade policy towards Pakistan to compel it rejoin the subcontinent (Kanwal, 2015). So infant country started its journey, with only 34 inherited industrial units comprising textile, cigarettes, rice, cotton ginning, and sugar with a total

contribution of 7% to total GDP (Hussain, 2016). Since after the conflict with India, Pakistan focused on its industrial sector and announced her first five year plan which basically focused on the manufacturing of different consumption goods, which made Pakistan at the very beginning encouraged investment in consumption goods and provided protection from external competition. In the initial period of newly born country the focus was given to Industry which has contributed the largest segment of economy soon after where the self reliance has been the principal of initial industrial policy of the new born country where both public and private sector has been encouraged all along to play a supreme role in industrialization of the country (Hussain, 2007). The Government of Pakistan banned textile items in 1952, that after achieving self sufficiency in cotton textiles in mid 50's government assumed export promotion in vital significant with amidst inflow of military and economic aid in late 50's made Pakistan foreign aid dependent growth phase (Anjum & Sgro, 2017). Pakistan has tasted the best economic growth in the period of Ayub's era where the manufacturing sector expanded at a record rate of 8.1% on average from 1958-1968, with an average GNP growth of 2.4% (Hussain, 2009).

The main focus of Ayub's regime of Industrial Policy was Import Substitution policy (Pursell, et.al., 2011). The theme behind the import Substitution Industrial Policy was based on the premise, which Pakistan should attempt to reduce its foreign dependency through the local production of industrialized products. The second five year plan proposed by Ayub's Government had consequently to be more ambitiously conceived and faithfully executed for the attainment of the targets in all sectors of the economy, including industry,, mining and agriculture by mobilizing the internal resources of the country and external assistance the country was able to procure and outlay of $10250 Million in foreign exchange and R.s 10950

in local currency was aimed at raising industrial production by 50% and achieving self sufficiency in food (Husain, 1994). With the advancement in Industrial sector the foreign aid and foreign debt received by the country played a vital role in the industrial sector. From 1948 to 1968 within 21 years of origin the country received $2432 million aids from UNO, IBRD, USA, UK and other advance countries and also able to get $4174 Million as debt that able to make the foreign reserve stabilization and support to improve its terms of trade (PBS, 1997). The average tariff rate on imports differed with respect to that of nature of goods, where the raw materials and Primary goods imports were even subsidized while the imports of manufactured and final goods were varied with respect to nature of the goods from 0 to 250% both at ad volarem and nominal tax rates. The average manufactured growth rate in the economy has been observed as 9% with highest during 1960-65 when on average growth been recorded 11.5% on average per annum, while lowest was in 1950's when the average manufacturing growth were recorded 4.4% between 1950-55 (PBS,1997).

For industrial setup the government allocated specific budget amount that was R.S 0.74 Billion in first five year plan 1955-1960, 60-65 it was 0.48 billion, 0.79 Billion in 1965-70 respectively which shows that there was little focus been given to industrial promotion in period 1948-68 coz at the same time the expenditure made by government on agriculture during the same time periods were 0.46, 0.91 and 1.38 Billion Rupees respectively (PBS, 1997). To promote the economic stability and balance of payment the Government of Pakistan opted Custom Act Rule in 1969, where it was expedient to consolidate and amend the rule and law relating to the levy and collection of custom duties like fees and service charges and to provide for other allied matters (FBR, 1969). Under the Custom Act Rule, there will be levied both ad volarem and nominal tariff on all the manufactured goods are

importing to Pakistan from any nation of the world and on all those goods that are being brought from any foreign country to any custom station in Pakistan and all goods brought in bond from one custom station to another and there will be no export duty levied on the goods exported from Pakistan.

From the initiation of first industrial policy in 1949, the government with after that made some slight changes but major focus of the government remained the same to focus on the initial policy with some amendment and changes responses to the time where the basic focus of government was recognizing the role which private enterprise could play in industrial development threw open the entire industrial field to it except a few selected industries having strategic importance for national security. This policy remained unchanged until the inauguration of a new industrial policy in 1972 (G.o.P, 1972). The government established many regulating institution that supports to boos up economic activities and industrial development like Pakistan Industrial Development Corporation (PIDC) in 1950 which in the end of 1972 completed 62 projects with a capital cost of 1242.6 million Rupees among which include fertilizers factories, Machine Tool Factory at Landhi, Heavy Mechanical Complex at Taxila etc (G.o.P, 1982). In 1962 the Government of Pakistan an industrial scheme with a theme "Pay As You Earn Scheme" for the promotion of industrialization and export promotion. Under Pay as You Earn Scheme, Plant and equipment can be imported from those countries and investors who are prepared to accept payment out of the export earnings of the products of the same Industrial Unit. Sanctioned issued under this scheme during 1965-68 amounted to Rs 366.2 million (G.o.P, 1969). In short the period of 1947-1968 in a newly born country was shed a good light on Industrialization in the economy through the ecouragment of Private sector investment. The below table gives a short look of government priorities,

introduced regulatory agencies or regulator and policy instruments and measures that used to promote the industrial sector and export performance in the economy.

Table 2: Industrial Policy Priorities, Regulatory Agencies, Policy Instruments and Measures from 1948-69

Year	Priorities	Regulatory Agencies	Instruments	Measures
1948-1969	Industrial Sector Growth Investment in Consumption Goods Promotion of Exports Promotion of SME's Custom Act Foreign Private Investment Public Investment Infant Industrial Protection	1: PICIC(1957) 2. PIFC(1956) 3: PITAC (1956) 4:IDBP (1961) Custom Act 1969 Ministry of Finance (1964) Small Industries Corporation (1965)	Foreign Aid & Debt 5:ISI Export Bonus Scheme Industrial Expenditure Unrestricted Remittance flow Bonus Import List Industrial Licensing Export Performance License Export Guaranteed Credit Scheme	Aid: $2532Million Loan: $4174 Million 6:I.E: R.s 2.01 Billion Public Investment: 152.9 Million Rupees PICIC: 1182.9 Million R.s IDBP: 1296Million R.s 7 EBS: 1461.9 Million R.s

(1)   Pakistan Industrial Credit and Investment Corporation (2) Pakistan Industrial Finance Corporation (3) Pakistan Industrial Technical Assistance Corporation

(4)   Industrial Development Bank of Pakistan (5) Import Substitution Industrialization (6) Industrial Expenditures (7) Export Bonus Scheme

4.3   Industrial Policy in period of Nationalization 1972-77

After the separation of East Pakistan, the economy of Pakistan get shocked because around 52% of total GDP share was coming from East Pakistan with highest number of Industrial Units were working there. So the new wave of significant industrial policy government adopted and most of the large scale manufacturing industries were nationalized. Public sector corporations were set out to facilitate the industrial sectors that was the beginning of today's deep rooted management distortions. The nationalization policy of government was a black mark on the economy of Pakistan, because due to some of the policies the economy performed at worse in its history (Zahoor, 1988). One of the major criticism made on Bhutto regime is that the elected government failed to adopt any five year development plan, but the government has put good attention on the clustering of industrial sector which from 1970-78

made 11.29 Billion rupees investment on industrial sector while in agriculture sector it was 6.49 Billion Rupees 1970-78. From the devaluation of Pakistani currency the government able to achieve 27.1% growth in exports in 1970-74 but after that the floods and Oil crises in OPEC countries cause to lower down the export of country so the average growth during 1974-78 has been observed 10.6% (Quddus & Saeed, 2005).

In February 1973, the State Bank of Pakistan decided to provide concessionary refinance facilities to the schedule banks against their advances given for nontraditional and newly emerging exports (G.o.P, 1973). Under the scheme of Refinance for nontraditional and emerging exports the State Bank will provide finance for export of all commodities except textile with a maximum rate of interest to be charged by the banks from the exporters under the scheme will be one percent above the Bank rate and the rate to be charged by the State Bank from the banks for refinance shall be two percent below the Bank Rate with a maximum period of repay within 6 months (G.o.P, 1973). The government decided to reduce the interst charges by banks to 12% on all fixed investment with reduction in marginal requirement for opening letter of credit (LoC) for the import of industrial raw materials and removed all taxes on issue of bonds share (Hussain & Ahmad, 2012). To achieve balancing modernization, the government increased tax credits from 1% to 5% on the cost of machinery and equipment in 1974-75 with fixed standing rebate of excise duty on additional 17 items. The state bank of Pakistan decided to reduce interest rate on bank advances for financing export of items through export finance scheme from 10% to 6%.

Government introduced a demarcation formula in 1977, that clearly declined the spheres of activity of private and public sectors. The agro based industries denationalized in a move designed to swiftly restore the confidence of business class (Zahoor, 1988). The below

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table gives a short description of priorities, new regulations, instruments and measures of industrial policy during the period of 1973-1977.

Table 3: Industrial Policy Measures and Instruments in 1973-1977

Year	Priority	Regulation	Instruments	Measures
1973-1977	Nationalization Regulation Currency Devaluation BIM[8] 1974 Credit Policy 1973 Demarcation Plan (1977)	Refinance Scheme for Export 1973 Security and Exchange Authority NDFC[9] (1973)	Foreign Debt Export Promotion Currency Devalue Foreign Assistance	Aid: $815 Million Loan: $6152 Million I.E: R.s 11.29 Billion F.A[10]: $21 Million

(8) Board of Industrial Management (9) National Development Finance Corporation (10) Financial Assistance

4.4   Industriazation Policy in Period of Deregulation and Privatization 1978-1988

The acts o nationalization and performance of public industrial sector remained the subject of criticism and controversy and the transfer of Managed Establishment Order (MEO 1978), nullified to a large extent in the pervasiveness of public sector as incorporated in the Economic Reforms Order (ERO, 1972), almost all the sectors reserved earlier for public sector investment were opened up for private sector. The government of Zia gave more importance to privatization program. The privatization commission has able to privatize 41 units out of 75 being nationalized in Bhutto period (PBS, 1997). In September 1977, the Zia Government took a bold decision and announced denationalization of nationalized agro based industries with further demarcation formula indicating the areas in which the public and private sector could operate was announced in December 1977, as a result heavy and basic chemicals and cement industries were opened for development by the private sector and industries involving investment of Rs Five Million were exempted from obtaining prior sanction except those which involved substantially recurring import liability and those based on machinery the import of which is banned under import policy limit has been raised to Rs Twenty million (G.o.P, 1988). Through the adoption of policy of developing basic and heavy

industries in the public sector, the public sector investment increased manifold. From 1970 to 1977 a total sum of 9152 Million Rupees have been invested by private sector in industrial side while a lump sum amount of 11937.1 Million Rupees by the public sector in industrial investment (G.o.P, 1977).

The major focus of Zia regime was many incentives for manufactured exports were made strengthened by introducing a flexible exchange rate in 1982, the standard rate of rebate of custom and sales tax for exports, the export subsidies ranging from 7 to 12% extended to all important manufactured exports (Qureshi, 1980). Post 1977-78 eras was in a way full circle return of the private sector with the growth rate in terms of production in the enterprises under the ministry of production almost stagnated during the last few years because the production index at constant prices of 1977-78 as base year remained at 238 during 1988-89 (PBS,1997). To encourage the foreign investor to invest in the country, the government in March 1978 announced five years tax holiday and remission of import duty on machinery for industries setup in specified under developed area of the prior and trough the transfer of managed establishments empowering the federal government to offer the former of nationalized industries the shares or proprietary interest in acquired established, that resulted Nowshehra Engineering Corporation limited and Lahore Engineering and Foundry Limited were returned to their former owners. Through Industrial Property Order 1979, industrial unit cannot be acquired arbitrarily by the Government as was done under nationalization policy of 1972.Through Industrial Investment Schedule (IIS) for the 5th plan period, the size of schedule was set 39.288 Billion rupees with a foreign exchange component of 21314 Million. The interest rate on loans for fixed investment in industry and agriculture was reduced from 12.5% to 11% which is less than the interest of 14% charged on commercial loans and for margin

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requirements for Letter of Credit (L/C's) for importing industrial raw materials have also been reduced. The scope of Export Finance Scheme been expanded and the rate of interest on bank advances for items covered by the scheme has been reduced from 10% to 3% within the case of exports locally manufactured machinery the interest rate on bank advances has been reduced to 2% (G.o.P, 1982). For the promotion of local industrial units the ceiling intial depreciation allownce admissible to plant and machinery raised from 25% to 40% with monetry limit of investment for the purpose of tax rebate increased from 40 thousand to 45 thousands, and the standard rate of sales ta on all locally produced goods been reduced from 20% to 12.5% and tax concession has been granted to dompstic exporting textile and engineering goods on account of publicity and free sampling abroad at the rate of 1.33 times of actual expenditures (G.o.P, 1988). The below table gives some of the instrumets and measures taken by government to promote Industrial structure.

Table 4: Industrial Policy Priorities, Instruments and Measures in Zia Regimes

Year	Priorities	Instruments	Measure
1978-1988	Export Promotion Deregulation of Nationalized Industries (1978) Transfer of Managed Establishment (1978) Industrial Investment Schedule 1979 Industrial Property Order 1979 Manage Float Exchange Rate (1982) Tariff Rationalization (1987-88)	FER Rebate of [12]C&S of exports Export Subsidies Foreign Assistance 5th Five Year Plan	Export% GDP: I.E: R.s 38.416 Billion Import tariff: F.A: $117 Million Industrial Sanctions: 30821 Million 5th Five Year: 40 Billion Subsidy: 56696 Million

(11) Foreign ExchangeReseve (12) Custom & Sale

4.5 Industrial Policy and Responses in Post Structural Adjustment Program 1988-1999

The adoption of Structural Adjustment Program, allowed Pakistan to make focus on free trade not only within the region but with all over the world. Pakistan like other developing

countries has been implementing many sect oral reforms as part of the overall economic liberalization program since 1990 with a view to improving the effectiveness of monetary and fiscal policy by making a shift from the direct to indirect monetary and fiscal control and greater reliance on market forces (G.o.P, 1991).

A dynamic and systematic process that lead a nation starts with the production of primary commodities and afterwards shifts to development adopting innovations, shifting to manufacturing by embarking on secondary commodities production and eventually expanding their tertiary i.e. services sector until all these sectors of the economy are integrated because, development requires, in the first place, integration of various sectors of the local economy (Sultan, 2008). Noman (2015) advocated that most of the advanced countries have been most successful in development have undertaken a variety of industrial policies which promote their manufacturing growth leading to export increase that produces good amount of foreign reserves that makes strengthen of their local currency which encourage investment that lead to promotion of employment and employment is directly associated with the purchasing power of individual and this purchasing power shows the standard of living in the society. Hence if there is strong and well equipped industrial policy is adopted in the state or economy the standard of life is also connected with it can be observed. So after retrieval of government power from Military regime to democracy the Benazir government focused on three principal's policy deletion, deregulation measures and privatization (Hayat,1999). The process of privatization after SAS (1988) implemented in 1990 in Pakistan with an aggressive privatization policy in order to improve the productivity of the government owned enterprises which within four years reached around 70 enterprises were considered for privatization and by the end of 1997, a total 92 of transactions carried the

reached to a number up to 106 which in monetary term reached up to approximately US$2 billion (Fatima & Rehman, 2012). During the period from 1988-1999, the government made a lump sum of 10.9 Billion Rupees in promotion of Industrial sector which showed that on average industrial sector grew by 5.25% per annum during 1988-1999. The average subsidy provided by the government fall from 1.50% in 1987 to 0.48% in 1997 as percentage of GDP, because of the agreement with that of Structural Adjustment Program of IMF and total per capita subsidy has been declined from R.s 64.4 in 1987 to 24.7 in 1997. The most affected portion of income group affected coz of reduction in subsidy were the lower income families of urban and rural areas of the country whom income was less than 2500 Rupees as their income reduced by 2.11% and consumption and production subsidies are decomposed, production subsidy directly affect the lower income group the most. That's why the poverty in period 1988-1999 increased in both rural and urban areas increasing from 17.32% in 1988 and 34% in 1998. The government was able to bring down its maximum tariff of 250% in 1988 down to 110% in 1996 as the simple average tariff rate fall from 41% to 25% and almost all type of necessary and manufactured goods import tariff was bring down only the auto sector of the economy was excessively high. From the report of (FBR, 2002), the government of Pakistan able to receive a total amount of 518497 Million Rupees from 1992-1998 in the form of Direct taxes where the major contributor was direct taxes whome share was 95% followed by welath tax that was 2.94% share in total amount while 1186174 Million Rupees in the form of Indirect Taxes with a contribution of Custom, Central Excise and Sales Tax 43.67%, 28.58% and 27.72% respectively.

To promote the export performance of the economy, Government setout its export policies focusing on re-exports of imported goods with a simplified version, priavte sector is

encouraged to export cement and cement clinker, to extend export finance facility on cotton, textile goods, non textile exports and selected minteral een prefered. Facility of duty free imports materials for subsequent export been extended (PBS, 1997). So we can see that the major part of federal revenues are based on custom and sales tax.

Table 5: Industrial Policy Priorities, Instruments and Measures 1988-1999

Year	Priorities	Instruments	Measures
1989-1999	[13]SAP (1988) Policy of Deletion(1991) Policy of Deregulation Secondary commodity Production Promotion of service sectors Integration of different Economic Sectors WTO (1995) Investment Policy (1997)	Trade Liberalization Foreign Debt	Customs: 518,091 Million Sale Tax: 329,030 Million Rebate: 10056.6Million Refund: 200.8 Million Subsidy:0.90% Privatization:$2 Billion I.E: R.s 10.9 Billion [14]Ex G: 53.4%(1991)

(13) Structural Adjustment Program (14) Export Growth

4.6 Industrial Policy Since 2000

Since January 2000, the government of Pakistn adopted the World Trade Organization Customs Valuation agreement and modified its system for valuation of goods to be imported and exported on Harmonized system to classify goods where customs duties are levied on ad volarem basis. As Pakistan was deficinet of exports and foreign exchange earnings in relation to its imports. So to boostup exports and increase foreign exchange earnings the government established Export Processing Zones Authority. In its Initial period of People Party's government the key industries were placed in exemption from payments of custom duty on imported machinery that is not manufactured locally. All the industrial units proposed to located in NWFP, Balochistan, FATA and some under developed areas of Sind and Punjab also been exempted from the levy of import surcharge on the imported machinery provided

that such machinery is not manufactured locally. The policy of privatization, deregulation and simplification of investment controls and sanctioning procedure help to improve investment climate in the country but the the political instability in the country put shed downward light on the golden adopted policies and the economy went down instead of getting improvement.

The final wave of significant industrial policy adopted in the period of Musharaf's Regime's where the main focus were given to privatization, that produce a significant macroeconomic stabilization in the economy where the economy tasted the golden growth of over 6% growth on average from 2002-2007. The adjustments to the tariff and deregulation let to major developments in consumer electronics and automobile industries. The deregulation oil, gas, media, Civil Aviation and telecommunication sectors also brought about significant positive results in the economy The era of 1999-2008 boomed up the foreign direct investment and specially the aid received by the Government of Pakistan due to Afghan War 2001, help the economic growth to boost up and economic growth was nearly around 6% on average for the decade and during Musharaf's regime Pakistan's large scale manufacturing and services sector grew at an average rate of 11% and 6% per annum respectively (Tanoli, 2007). The tariff rate on import in the economy was 46.50% on average which were brought down into 14.21% by liberalizing trade of Pakistan with the rest of the world (PBS, 2010).

During the era from 2000-08 the government sold cumulatively almost 7 billion dollars of assets and eased pressure on its budgetary resources as it no longer under wrote the losses of state owned companies and enterprise. For example from the privatization of HBL & UBL the government able to earn 41 billion Rupees (PBS, 2010). The investment Banks during the era 2000-2008 showed a tremendous growth in advancement of credit facilitation to investment rose from 27001 Million in 2000 to 58017 Million Rupees with overall facilitation of 305,548 Million Rupees from 2000-2008 (G.o.P, 2009). To encourage investment in under developed areas the Governement of Pakistan with the collaboration of World Bank and other Donor Partners propsed a plan to boostup industrial setup in KPK,

FATA and Balochistan initiated a project with a cost of $20 million around 203 Small and Medium Enterprises have been facilitated through the project that has resulted in rehabilitation of businesses and employment creation (G.o.P, 2015). Being a developing the economy of Pakistan's has a lot of issues and challenges among which one is low level of diversification of exports which has been recorded that out of total export on average 75% of the total export is contributed by only five different sectors i.e. textile, apparel products, leather and rice (Siddiquie, 2018). Siddiquie (2018), argued that our economy has failed to diversify its Industrial sector both at horizontal and vertical level, so to achieve the higher growth in manufacturing sector the government should focus on vertical diversification. Another major problem is associated with Government failure is government unable to meet the requirement of Research and Development expenditure which is backbone to innovation in technology. Din, et.al., (2016) have stated that before 7th five years plan the field of R&D is not given so much importance but in 7th five years plan R&D setup in the country has developed without systematic plan has resulted in a proliferation of institutes with overlapping efforts.

The in depth analysis of Industrial sector in Pakistan clearly elaborates that Pakistan in some phases able to achieve tremendous growth as compare to other neighboring and continental developing economies, but unable to sustain this coz almost all the policies in adoption of industrialization and instruments used was only to meet the rising or have been designed for shorter period of time. That's why the economy with outstanding growth in 1960's fall down one of the struggling economy in 1990's and since trade liberalization and policy of privatization the economy somehow performing better but after the financial crises of 2007 the country decided to shift the power of planning industrial policy to provincial through 18th amendment through which now the provincial government are using their own industrial policies to attract local and foreign investors to promote the business culture in their relevant provinces. In 2016 provincial government proposed its industrial policy for 2017-2021 with a brief objective of promoting Special Economic Zone's, with an incentive of

bearing 5% of markup on financing business in KPK, 25% of fixed capital costs, 25% transportation cost of manufactured goods from the industrial area to Karachi Port, 25% equity investment for female investors and the burden of 25% of electricity bills be paid by the government of KPK by its own self. The government at Federal level also encourage industrial sector through bringing down the average tariff rate to 9% to encourage the import to domestic economy with less protection to producer to make them able to stand against global competition. The removal of subsidies and shortage of raw materials and energy sector make black mark of government ability to promote industrial sectors. The encouragement of Export Processing Zones in many areas of the country support government to boost the export of many manufactured goods. The underlying table gives a brief description of the industrial policy measures taken by the government is given below.

Table 6: Industrial Priorities, Regulatory Authorities, Instruments and Measures Post 2000

Year	Priorities	Regulatory Authorities	Instruments	Measures
2000- and onward	Privatization Encouragements of FDI Poverty Reduction Growth [15]NAB Harmonized System Liberalization of International Trade Focus on Research and Development Strategic Trade Policy Framework	WTO Harmonized System (2000) [16]STFP (2009-12) Industry Support Services Multi Donor Trust Fund Public Sector Development Program	[17]PRGF Debt Portfolio Import Barriers End of Textile Quota	FDI: $400M Annually [17]TIMBFR: 4000 goods [19]MTR: 25% [20]ATR: 9% Privatization: $7 Billion [21]ExR: 51657.47Million Rupees [22]MDTF: $20Million [23]PSDP: 586.61 Million

(15) National Accountability Bureau (16) Strategic Trade Policy Framework (17) Poverty Reduction and Growth Facility (18) Total Import Barrier Reduction (19) Maximum Tariff Rate (20) Average Tariff Rate (21) Export Rebate (22) Multi Donor Trust Fund (23) Pakistan Socio Development Program

4.7   Conclusion

Since the independence the economy has adopted different policies to promote Industrial sector to boost the export of the economy. By summing up the industrial policies of different

era, we come to know that every era has designed tools and techniques to make policies to meet the short term changes, shocks and adjustment. There found lack of any long term visionary policies. By focusing the first two decades of Pakistan's independence we can see that the focus was given to new units of industrial production by giving benefits and incentives to the investors to promote industrialization with encouraging the current installed units to modernize and take advantage of Import Substitution, limited restriction was given to the newly establishing units with encouraging the expansion in production. Later the liberal government of Zulfiqar Ali Bhutto promoted the policy of nationalization to bring the different private production units into public to rule out by the state that discouraged the investors to promote industrialization and Pakistan faced its downward fall after the golden period and that let the Industrial contribution down in Gross Domestic Production. There may be two important factor that discourage the downfall share of Industrial sector in GDP i.e. either the investment was largely directed towards longer gestation projects that have yet to add production or may be the recovery from the recent international recession and inflation has been moved slowly in the era particularly in the textiles where demand continues to remain depressed. The newly powered military regime of Zia after Bhutto execution followed three major polices i.e. focused on liberalization, started to privatize the state owned institution and promotion of Export Processing Zones with major incentives in the establishment of EPZ's in backward area. Since Pakistan was an ally of United States of America and their allies in the Afghan War against Soviet Union, so there was huge inflow of foreign aid of financial assistance but because being a neighbor of Afghanistan in war zone we unable to attain the interest of foreign investment or any huge internal investment, that's why being remain more opened and liberalize economy in the region we unable to extend our

export and economy as it was doing by India and Bangladesh. After the adoption of Structural Adjustment Program we started to follow the principals and policies encouraged by International Monetary Fund and World Bank. The newly elected government and followed by other politically nominated government followed the policy of deletion, privatization and foreign reliance on debt and assistance that made the economy more foreign dependent. After the Atomic explosions of 1998, the economy suffered huge because most of the nations we were trading restricted and banned trade with Pakistan that let the export of the economy down. So the new military intervened government focused on Foreign Direct Investment and brought third Industrialization in the economy but it was temporary growth because after settlement of FDI, later caused to capital outflow that put pressure on current account balance and the share of manufacturing and industrial sectors in GDP and export remain stagnant that caused the economy to suffer. Even though the state made many of the bilateral and multilateral trade agreements with many countries and corporation but still due to low production diversification and dependence of low sophisticated goods and low competitiveness ability we unable to boost the export as that are doing in our neighborhood. After the 18th Amendment in the constitution of Government of Pakistan, the state decided to shift the industrial policy making to the provincial level, and now the provinces are making industrial policies according to their resource allocation and comparative production advantage.

Chapter V

DATA ANALYSIS

5.1   Introduction

The current chapter will highlight the data analysis where our focus will be on both descriptive and inferential statistics. Through descriptive statistics we will compare and contrast the behavior of different dependent and independent variable's nature of Pakistan with that of competing neighboring Asian Economies. In first section we will elaborate the Export Performance of Pakistan, India, Bangladesh and Sri Lanka. Then we will show the changes in the industrial Policy instruments of Pakistan with the competing Asian Economies. Third section we will see the Time series characteristics of our all dependent, independent and control variables. In Final section we will elaborate the significance of the relationship between dependent and independent variables.

5.1   Export Performance of Pakistan and Competing Asian Economies

According to State Bank of Pakistan, the export performance of Pakistan has remained weak and unstable over the past few decades. Pakistan's exports share in global market has declined from 18% in 1991 to 0.14% in 2017, while in the same period the Export Performance of competing Asian economies have depicted substantial increase specifically the share of Bangladesh in world exports have increased from 0.06% to 0.19% and that of India have jumped from 1.64% to 2.5% respectively in the same era. The overall exports of the economy has shown substantial growth that have increased from $3.2 billion in 1980 to 26.8 billion in 2016 with a peak of $ 31.4 billion in 2011 and $3.2 billion in 1980's. The average growth has been recorded 6.17% from 1980 to 2017 respectively; however it will be a mistake to look at this growth in isolation. When we carefully analyze the assess performance of Pakistan's export sector, it is necessary to see how

the sector has performed relative to world exports, that has shown that Pakistan's export sector seems to have performed poorly as its share of world exports is declining as discussed above.

The below table shows the exports share of Pakistan and competing Asian economies in terms share in world exports.

Table 7:   Share of Pakistan's Export in World Exports

Country	1980	1990	2000	2010	2016
Bangladesh	0.04	0.05	0.09	0.1	0.19
India	0.43	0.57	0.7	1.56	2.5
Pakistan	0.15	0.18	0.15	0.15	0.14

(Source: World Bank)

The above table describes that how there has been observed decline in Pakistan's export in Global market. The below table tell us about the Export Growth that has been recorded from 1980-2017.

Pakistan's exports have grown at an average rate of 9% from 1980 to 2017, with considerable fluctuations in performance. The economy performed well during 80's with an average growth rate of 10%, however fell sharply in 90's where the growth rate falling to 5% on average, but since then there has been observed improvement with average annual growth rate reaching a historical peak of 12% in 2000's but since 2014 the economy is facing decline in export Growth. The overall growth performance since 1980's shows not satisfactory results when we compare it with South Asian Economies because India's Exports Grew at an annual rate of 20% while that of Bangladesh is 14% since 2000.

Figure 1:   Pakistan's Export Growth from 1980-2017
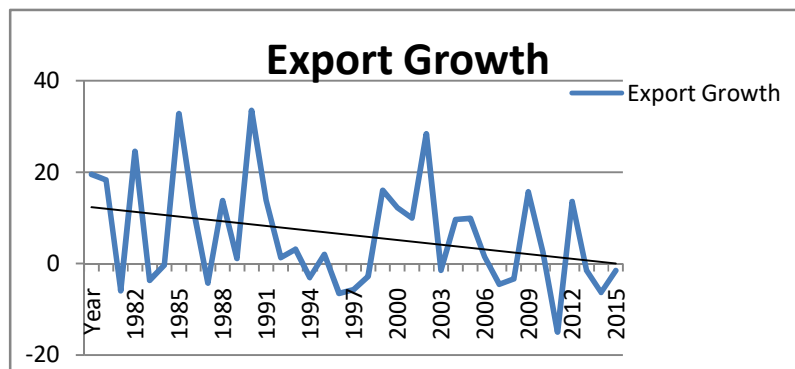
From the above table we can see that the economy has observed that there is instability in Export Growth of the Economy specifically since 1990's the economy has seen declines in Export Growth. There are two possible reasons either the economy failed to diversify in global and goods market or either the economy is not so much competitive such that couldn't compete in global market.

It is believed that the lack of Product and Market Diversification are reasons for Pakistan's poor Export performance.

a) Market Diversification

To boost up exports of any economy the major factor which is associated with international market is market diversification. By the term market diversification we means that how much our market is diversified and more number of demanding countries or consumers are willing to purchase from us. The market diversification is usually measured by different index showing that how much an economy is open or restricted for international trade, higher the barriers in international trade lower will be the diversification. Historically the market base of Pakistan has been fairly diversified and the market concentration index remained below 0.25, that is encouraging to compare this with the market concentration in other countries which stands 0.20 to India, 0.24 to Bangladesh and 0.37 of Sri Lanka and the export performance of Pakistan is doing quite well in market diversification of exports because this shown that 90% of Pakistan's exports were going to 51 countries showing the broad market base instead of wasting resources

trying to break into new markets but still have enough potential to diversify its market more as it is now. The below table gives cross comparison of direction of Pakistani exporting market of 1961-62 and 2016-17, that will make it clear that the economy is able to diversify its market in global level.

From the below diagram it is cleared that Pakistan's economy able to diversify its market because in 1960's 86% of Pakistani exports were going to only 10 countries that has been limited to only 60% in 2016 but top 45 countries are contributing 90% share of Pakistan's total exports. The total number of countries whom Pakistan was trading her goods and services reached at peak in 2005 where Pakistan's market partner were 213 countries that has been reduced to 195 in 2016. Only India in the region have higher number of exporting countries that stands 223 in 2005 while in 2016 the number of countries that were importing Indian goods and services were 219, while Bangladesh is exporting to 190 and Sri Lanka making exports to 193 countries.

Figure 2:   Country wise Distribution of Pakistan's Exports
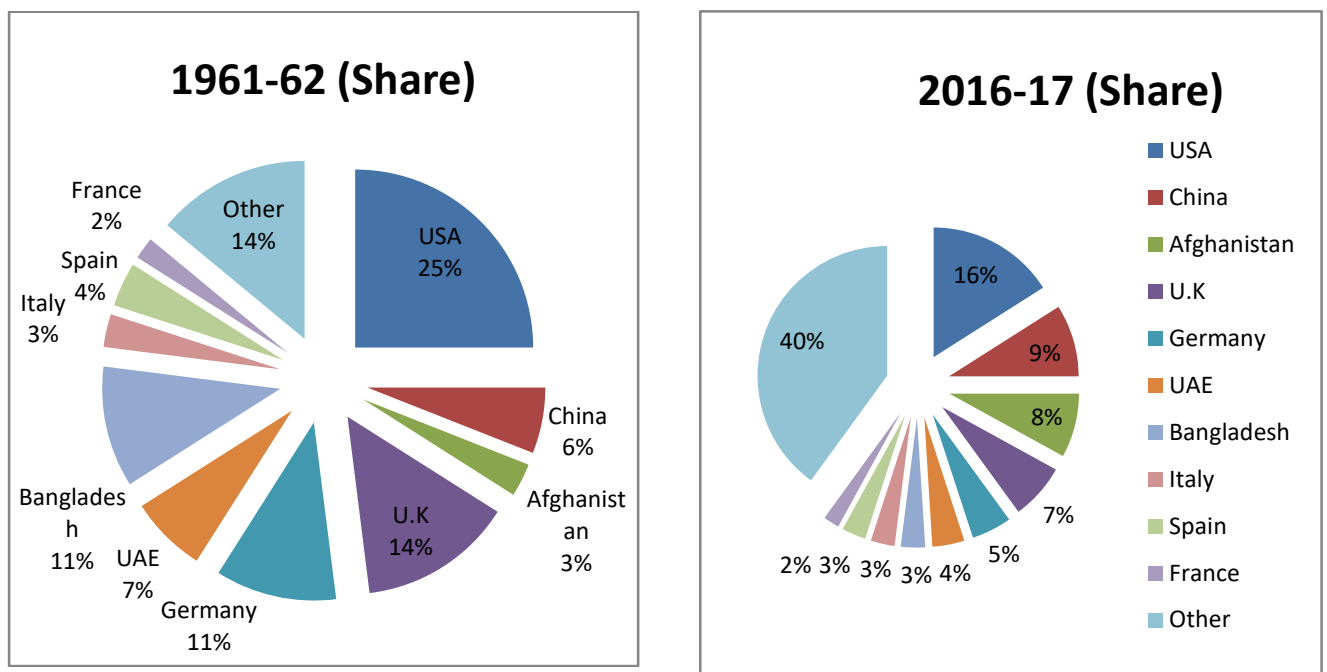
The trend shows that Bangladesh Economy is more rapidly growing in world market because in 2001 Bangladesh was exporting to 160 countries that reached to 190 in 2016. From

2001-2016 the average number of countries whom was exporting Pakistan, India, Bangladesh and Sri Lanka was 200, 220, 182 and 193 respectively. The below diagram show the number of countries to whom Pakistani and competing Asian Economies goods were exporting.

Figure 3: Total Number of Countries Asian Economies are Exporting
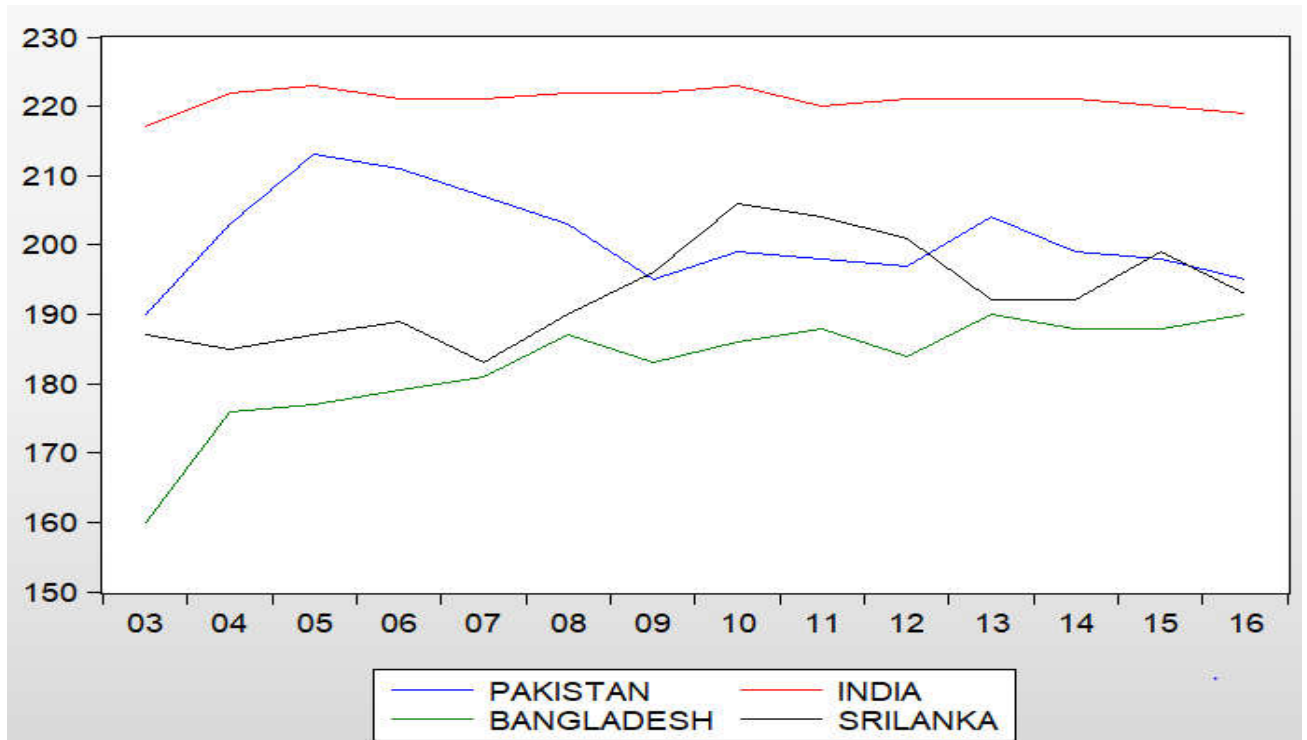
b) Product Diversification

To make better export performance either we need to diversify the market of exports or either we have to diversify the products. When we clearly analyze the pattern of Product concentration in Pakistan, we can see that product concentration have increased significantly in the early 90, but then followed a declining trend since 2003 and reached a minimum score of all time 0.43. The Economy of Pakistan performed quite well in broadening its product export base but the index of product concentration shows that its remains substantially higher than that of neighboring competing economies India, (0.25), Bangladesh (0.32) and Sri Lanka 0.35) that

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shows Pakistan suffers from a fairly concentrated product mix which is also evident from the data that only 14 Products accounted for 90% of total exports which shows the needs to focus on Product diversification. The major products which contribute more than 65% of our total exports are textile and rice. The below diagram show the concentration Index of Product for Pakistan's economy.

Figure 4: Product Diversification Index or Pakistan Economy: 1980-2017
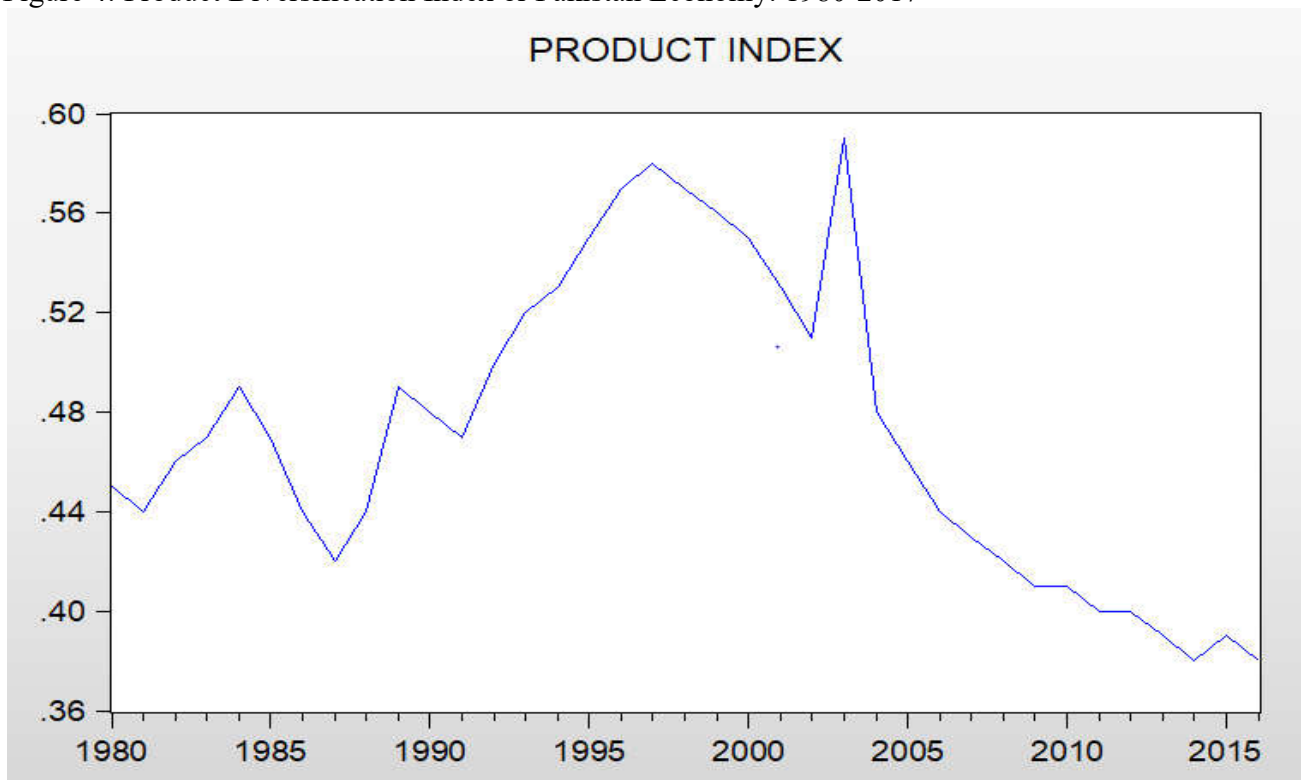
(Source: Data extracted from: United Nations Statistics Division - UN Comtrade)

From the above diagram we can see that the diversification Index of Pakistani Products have sharply risen during the period of 90's but since 2003 the concentration falls substantially. Increase in concentration index shows more reliance on few products while the lower or decline in concentration index means that more number of goods is exporting to global market. The comparison of 1960's major exporting goods with that of 2017's shows that still we are more relying on the goods that we were

exporting in 1960's are still dominant in 2017. The below table tells us about the changing pattern of Goods we are exporting to global market.

Figure 5: Top 4 Goods share to Total Exports of Pakistan

1960% Export Share

- Other 29%
- Rice 1%
- Leather 5%
- Cotton Manufacture 65%

2016% Export Share

- Other 31%
- Rice 9%
- Leather 5%
- Cotton Manufacture 55%
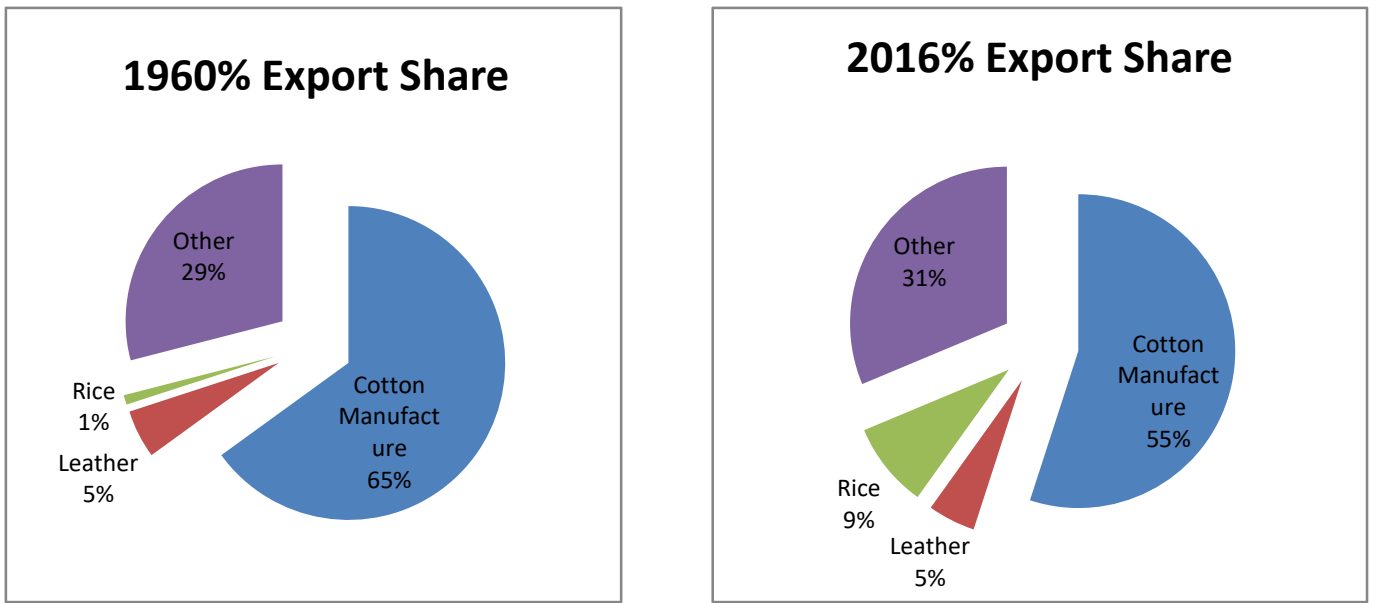
(Source: Pakistan Economic Survey)

From the above diagram its clear that we are still highly relying on cotton manufacture, cotton raw materials and cotton semi products with rice and leather as major contributors of Pakistani exporting commodities. The numbers of exporting goods since 2000 have been substantially changed. The below table tells us about the total number of goods Pakistan is exporting with cross comparison of South Asian competing economies. According Revealed Comparative Advantage from the above given export share of goods Pakistan we can see that the cotton manufacture export has remained the biggest part, but in last few years the Bangladesh and Sri Lankan economies are trying to capture the share and letting down the Pakistan's share.

The below table give a quick look to the revealed comparative advantage of textile sectors in Pakistan, India, Sri Lanka and Bangladesh.

Figure 6:   Revealed Comparative Advantage of Textile Sector between Asian Economies

Source: World Integrated Trade Solution
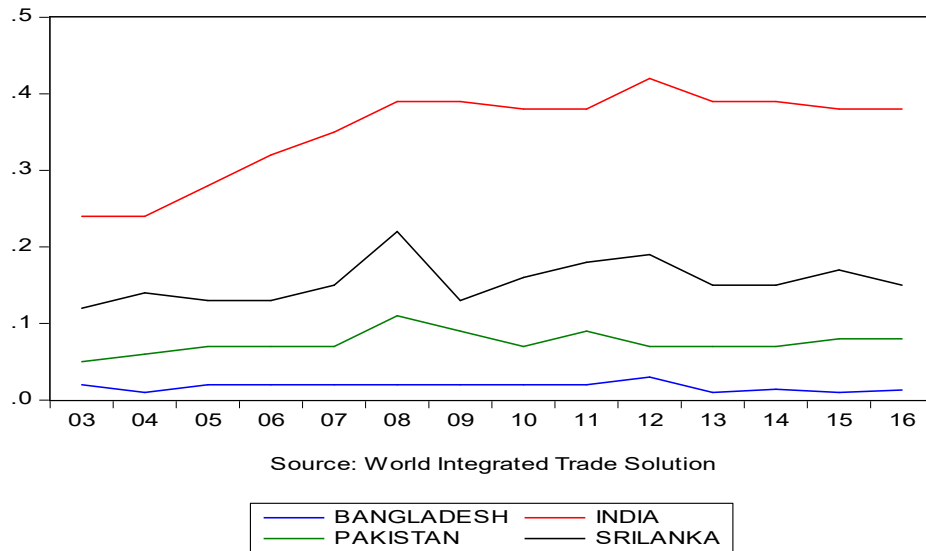
We can see that the share of Bangladesh and Sri Lanka is more rapidly increasing than Pakistan.

Figure 7:   Total Number of Goods Pakistan and Asian Countries Exporting

Source: World Integrated Trade Solution
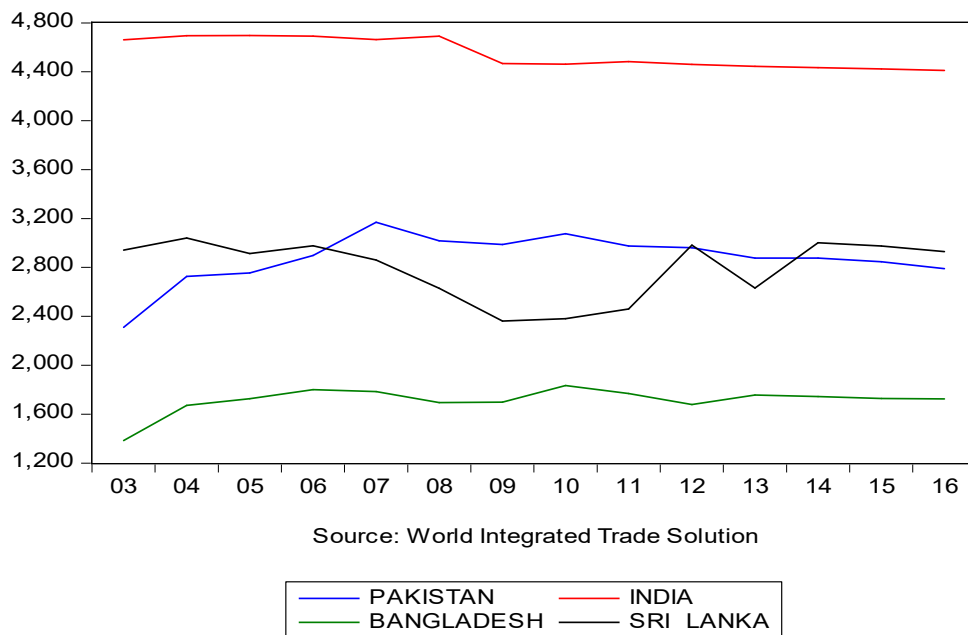
From the above diagram it's clear that Indian Economy is ahead from all other Asian economies currently exporting 4411 goods in global market. Sri Lank has performed very well since 2011 and now is ahead from that of Pakistan. The number of goods Pakistan is exporting have shown substantial increase from 2003-2006 but after the great financial crises of 2007-8, the economy is facing declining in number of goods exporting and since that its decreasing and currently Pakistan is exporting 2778 number of Goods while the number of importing goods is increasing and currently Pakistan is importing 4155 number of goods.

There is another important phenomenon that is associated to boost up export performance which is Export Competitiveness. The term export competitiveness is associated with countries goods that are exporting that how much u r competitive in world market. Most of countries in world find their selves more integrated in the global economy and in that scenario the importance of competitive advantage are enormous as trade agreements forced firms to face competition from domestic and global competitors. In broader term nation macro economic factors i.e. Exchange Rate and interest Rate or government deficit are said by many theorists as having significant role in competition.

c) Competitiveness

Export Competitiveness is the focus of all policy discussion because the term appear to be very obvious to many people but is quite problematic showing different things to different people i.e. the concept can be analyzed and assessed both at micro and macro level with the definition of competitiveness for a nation being more complex than a for a firm or an industry. At micro level, export competitiveness shows the ability of a firm to compete both domestic and international market where a firm will be said to be more competitive if it can produce goods and services at lower costs than its competitor (Reinert, 1995). A country's export competitiveness depends on its domestic producers such than their ability to expand and sustain their position in international markets directly or indirectly by supplying quality products in desired quantities on time and at competitive prices and by responding quickly to changes in demand through development of innovative capacities and market strategies. Every year since 1979 World Economic Forum

publish Global Competitiveness Index that ranked different countries of the world according to their competitive ability. From the recent report of Global Competitiveness Index, Pakistan stands 122/138 countries with Competitiveness score of 3.5/7. Only 16 countries in the world have worse condition as compare to that of Pakistan. India stands 39, Bangladesh 106 and Sri Lanka 71 with Competitiveness scores 4.52, 3.80 and 4.19 out of 7 respectively. The below diagram show the competitiveness trends in Pakistan. The table trends of Global Competitiveness Index for Pakistan from 1980-2017 shows not any very good satisfactory results about the growth in the index because we can see that from 1980-1988, we can see a smooth growth in Index while in the period from 1989-1999 there is fluctuation in the Index number but from 1999-2008 there is slight positive change in the index but after 2008 there can be seen again fluctuations in the index. This may be because of the internal political instability and insecurity of foreign investors in the economy.

Figure 8:   Global Competitiveness Index: 1980-2017

Pakistan's Global Competitiveness Index
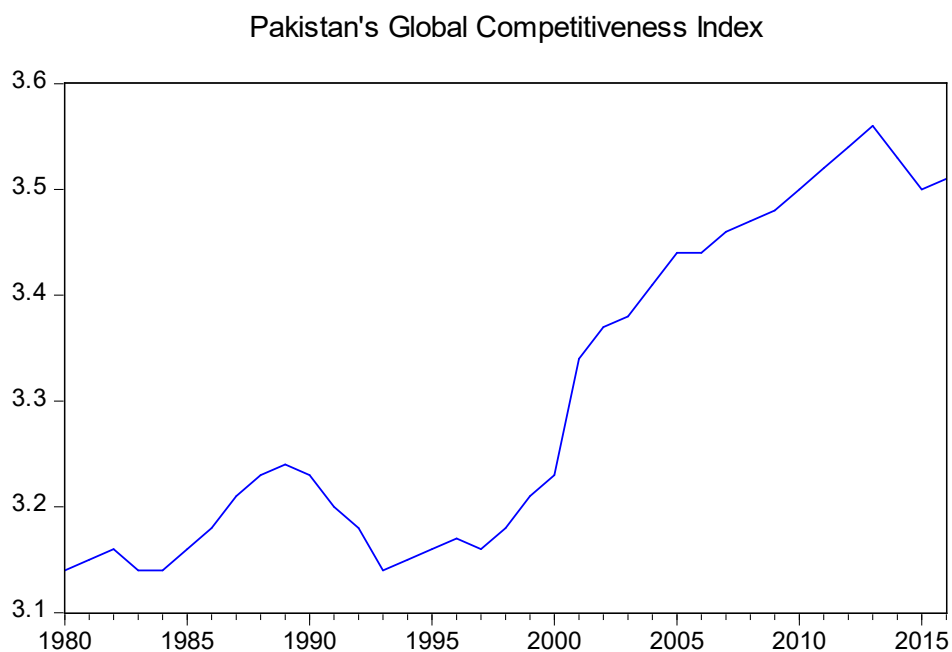
Source: Global Copmetitiveness and World Economic Forum

With a good competitive position it is also important that what is the market penetration for an exporting economy in global market? Market Penetration describes that how many customers are

willing to purchase the goods a country is exporting. From the data World Integrated Trade Solution we can see that the market penetration of Pakistan's economy is so far behind as compare to that of India and very close to that of Sri Lanka and Bangladesh. Market Penetration describes the demands from consumers to purchase the goods from the available market. The give table shows the market penetration of Pakistan and competing Asian Economies.

Figure 9:   Market Penetration of Asian Economies
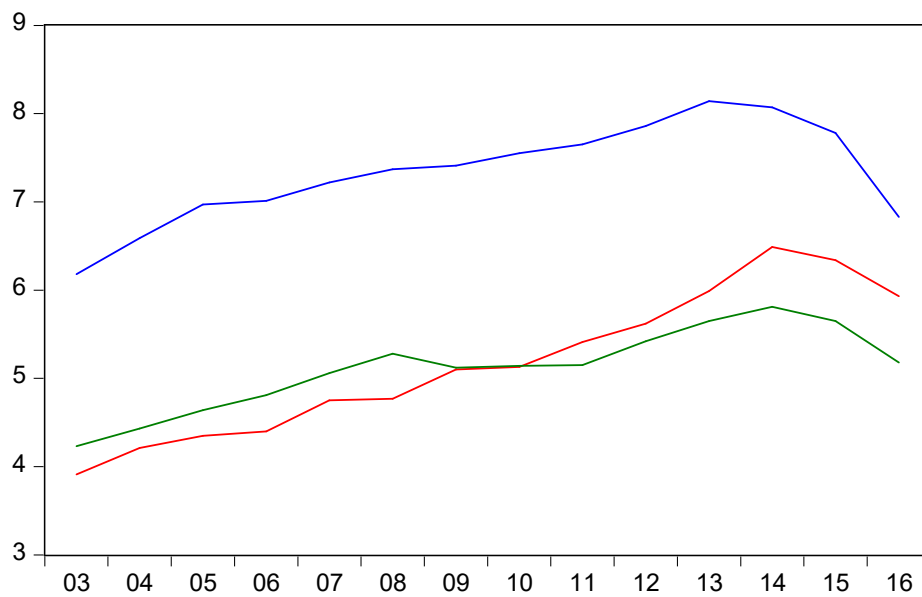
Source: World Integrated Trade Solution
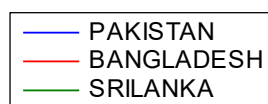
From the above table we can see that since 2010, Pakistan is facing decline in market penetration. Out of 100 customers there are only 6.83 customers they have accessed and willing to buy Pakistani exported goods. This shows that we have enough space to reach the customers and increase our exports if we make sure the good quality and lower cost price to compete the Asian economies.

One of the importance instruments that government use to deal with better export performance is Industrial Policy. By the term industrial policy we mean the involvement of government in business sector to promote public and private investment in the economy that will create more abilities and potential to cope the demand of local goods and products in international market. Since 1988 most of the nations in world are following structural adjustment program of IMF and World Bank that usually promote trade liberalization among nations in the world. By the term Trade liberalization we mean that minimum trade barriers among the trading nations. Pakistan being a sovereign and independent nation also has accepted the Structural Adjustment Program of IMF and World Bank and following trade liberalization with expansionary Industrial Policy encouraging Foreign Direct Investment, Minimum tariff on imported goods, removing the export subsidies, minimizing the export rebates, promoting economic processing zones, showing increase in R&D expenditures and encouraging private and public investments. So in this section we will elaborate how the industrial policy instruments of Pakistan are different from that of Competing Asian Economies. First we will differentiate the industrial policy instruments in individual instrument terms and then we will generate Principal Component Analysis of Industrial Policy Instruments and then compare the obtained values with each other.

5.2   Industrial Policy Instruments of Pakistan and Competing Asian Economies

Defining an industrial policy Akkemik (2009) states that a set of policies that is designed for the development of selected industries or sector to increase the welfare of the country and to achieve dynamic comparative advantages for these industries by use of state apparatus in resource allocation. So industrial policy is direct involvement of Government in market correction because some time due to demand and supply the price varies that put pressure on both domestic

prices and external balance of payments. Since here our focus is on macro level and all the industries manufacturing goods for both domestic and international market are under consideration. Therefore we will elaborate the industrial policy instruments at macro level set out for overall economy. Our focus in this section will be on six major instruments of Industrial Policy i.e. Import Tariff Rate, Export Subsidy, Industrial Expenditures, Export Rebates, Research and Development Expenditures and Export Processing Zones. We will compare and elaborate the performance of above mentioned instruments used in Pakistan with that of competing Asian Economies.

Starting from Import Tariff Rate, we can see from the view of most of the Development Economist, the Import Tariff Rate is one of the biggest barrier in International Trade. Import Tariff Rate reduces the imports of goods and services we are getting from abroad (Umer & Alam, 2013). There are two possibilities of using Import Tariff Rate in any economy either the government want to protect its infant industry or either government is facing current account deficit (Akkemik, 2009), therefore using Import tariff rate government make sure the capability and ability of domestic economy with competing economies. Before the adoption of Structural Adjustment Program (1988), most of the nation was using high rate of protection but after joining the World Bank and IMF program nations agreed to cut off their tariff rate and nowadays only few nation are protected economies while most of the nations are open for international trade. When we analyze the historical data of South Asian Economies we can see that mostly the economies were highly protected in 80's but after the adoption of Structural Adjustment Program they have cut the import tariff rate at huge level on average they cut the tariff rate from 90% in 1980 to 10% in 2017, that boosted up not only the imports of the goods and services but the export have also risen tremendously. Many of the authors have argued that Pakistan was more

liberalize and open for international trade as compare to other competing Asian Economies in early 90's and its share in world export was higher than Bangladesh and Sri Lanka but lower than India, but after the adoption of Structural Adjustment Program Bangladesh and Sri Lanka have brought down their import tariff rate more fastly as compare to Pakistan and now the share of Pakistan's export in global market is less than Sri Lanka and Bangladesh. The below table give a quick look of decreasing growth rate in import tariff rate of South Asian Economies.

Figure 10:   Trends in Growth of Import Tariff Rate of South Asian Economies
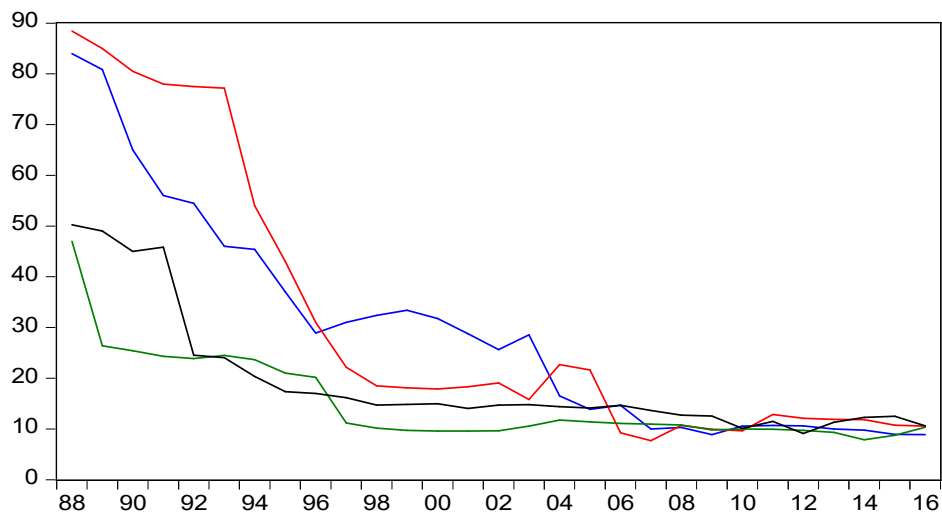
Source: World Development Indicators (WDI)
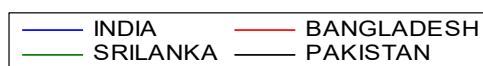
From the given graph we can see the trend of cutting down the import tariff rate in South Asian Economies. The highest rate of Protection was in Bangladesh where the average tariff rate of goods imported from abroad was 87% followed by India 84%, Pakistan 50% and Sri Lanka 47% respectively. After the adoption of Structural Adjustment Program Bangladesh cut down its import tariff rate and in 1999 the average import tariff rate of the above economies were 18%,

33%, 14% and 9% respectively while in 2017 the average rate of protection was 11, 8, 10 and 12% respectively.

Most of the developing nations who can't protect their infant industry through Import Tariff Rate mostly rely on subsidizing either the inputs of the final product or provide subsidies on the goods and services exported by the producers. Through the provision of subsidies government bring down the cost of production and support the local industry to boost up the industrial and manufacturing products. By carefully analyzing the historical data we can see that all four Asian Economies were subsidizing their industries to promote their industrial Production. The largest sector was different according to provision for example Pakistan mostly used to provide subsidies on energy provision, raw materials and cotton industry while India focused on crude oil, import of raw materials and metal sector while Bangladesh government mostly subsidezed the ceramic industries tht now comprises more than half of total Bangladesh's export. The below table gives a short description of the export subsidies in local currency

Figure 11:   Export Subsidies of South Asian Economies (Current Log LCU)

Source: WDI

INDIA   BANGLADESH   PAKISTAN
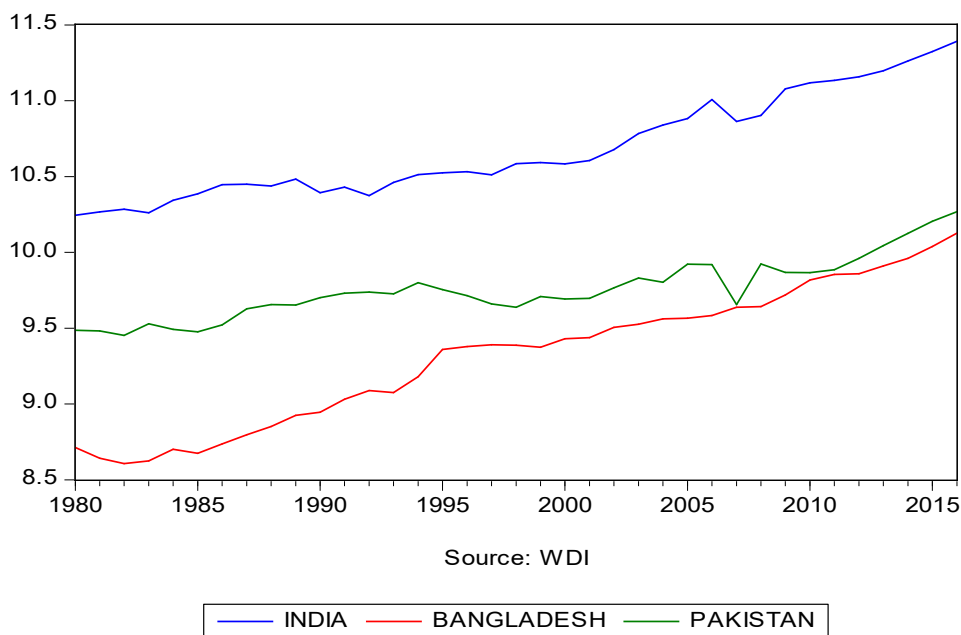
Export Processing Zones are one o the most popular economic tools for promotion of exports and expanded features of older Industrial Parks and for promotion of free trade area concepts. EPZ's from various economies reveals the fact that exports of goods are attributed to establishment of export zones because nowadays majority of goods in world trade are originated from countries where there are well established Export Processing Zones. In Asian Economies the Export Processing Zone of Kandala, India was the first EPZ established in 1965, that attracted other Asian Economies to promote EPZ's but the success of China, Taiwan and Malaysia increased the importance of EPZ's. Government of Pakistan passed EPZ ordinance in 1980 for promotion of EPZ's in Pakistan. The first Export Processing Zone in Pakistan established in Karachi in 1995 and up to now $6983 million dollars exports have been made from different EPZ's since their inceptions. The largest EPZ of Pakistan in Karachi Export Processing Zone that has contributed $4900 million since its inception followed by Saindak $1953 million and Duddar $46.62 million dollars in 2016-17. When we compare the total Exports from EPZ's of Pakistan with that of neighboring Asian Economies, we are much far behind from that of India and Bangladesh. Since its inception the EPZ's of India have contributed more than $120 billion in total exports of India while that of Bangladesh the EPZ's have contributed $12 billion while in Pakistan it has contributed only $6.9 billion. The below table give a quick look of total export from different EPZ's of Pakistan in 2010-11 and 2016-17.

Table 8:   Exports from different EPZ's of Pakistan

Name	2010-2-11	2016-17	
	Million US$	Million US $	Cumulative since Inceptions
Karachi	$321.0	$451.055	$4920 Million
Saindak	$239.0	$83.126	$1953 Million
Duddar	$12.0	$17.620	$46 Million
Risalpur	$1.0	$2.55	$17 Million
Sialkot	$1.0	$4.39	$14 Million

(Source: Ministry of Industries and Productions)

To improve the level of production and quality of production it is very important to find out the best and suitable methods that can bring cost down and production high. The developed nations of the world are mostly relying on Research and Development. Research and Development expenditures are consider as the important part of government expenditures and government fixed a specific amount or share from its total expenditures for Research and Development. South Asian economies also keep a lum sum amount of their annual expenditures on research and development.

The below graph gives a quick look of R&D expenditures made by the different competing Asian Economies.

Figure 12:   R&D Expenditures made by Competing Asian Economies
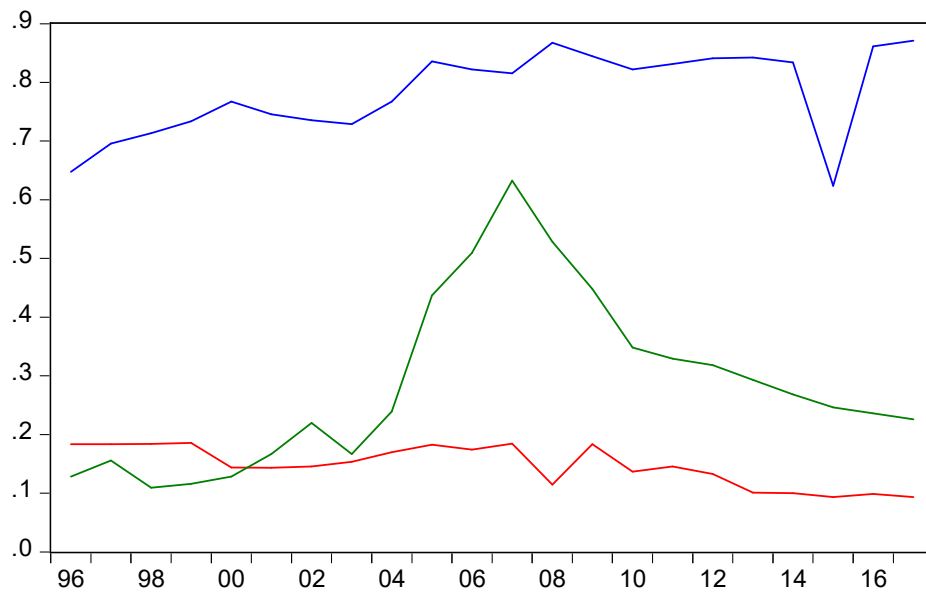
Source: World Integrated Trade Solution

From the above graph it's clear that there is changing pattern R&D expenditures made by the different economies. India expend higher amount than Pakistan and Sri Lanka while Pakistan

is also increasing its R&D expenditures in recent years especially in 2003-2006 but after the Global Financial Crises Pakistan reduced its R&D expenditures.

5.3   Unit Root Analysis of Dependent and Industrial Policy Instruments

The first step before moving or applying any econometric model is to check the problem of unit root to see the stationary of variables that confirms the best suitable method. Before move to check the long run relationship we will check the unit root problem of the variables and below table gives a quick look to the unit root analysis of dependent Variables and Industrial Policy Instruments.

Table 9:   Unit Root Analysis of Dependent and Industrial Policy Instruments

		ADF		Conclusion
Dependent Variables	Difference	without Trend	With Trend	
Export Sophistication	Level	-0.624	-1.968	I(1)
	First Difference	-5.562	-5.478	
Export Diversification	Level	-1.664	-6.6285	I(0)
	First Difference	-2.002	-3.721	
Export Competitiveness	Level	-0.517	-2.007	I(1)
	First Difference	-3.807	-3.770	
Independent Variables				
Import Tariff	Level	-2.983	-1.46	I(1)
	First Difference	-6.244	-7.254	
Export Subsidy	Level	-0.972	-2.17	I(0)
	First Difference	-6.888	-6.762	
Industrial Expenditures	Level	-2.001	-1.923	I(1)
	First Difference	-6.213	-6.762	
Export Rebate	Level	-1.267	-3.561	I(1)
	First Difference	-8.641	-8.638	

(Student's Own Estimations)

From the above table we can see that most of our dependent and independent variables are first order integrated. So here in this case we can't apply Ordinary Least Square (OLS) method. To find the long run and short run relationship we need to check the co-integration between the

dependent, independent and control variables. The process of co-integration depends on two conditions i.e.

1. The error term of the dependent and independent variables should be first order integrated i.e. e ≃ I(0)

2. The coefficient of lag of the error term should be negative and significant.

Co-Integration Analysis:

As we observed that most of our dependent and independent variables are first order integrated therefore we can't rely on simple equation modeling. We need to analyze the possibility of Co-Integration and that will be possible if the residuals of our models meet the criteria we discussed above.

Relationship between Industrial Policy Instruments and Dependent Variables:

To check the possibility of co-integration first we will check the difference level of our error terms, if the error terms are first order integrated than we will proceed to Engle-Granger steps of finding co-integration. The below table tell us about the relationship between dependent and Industrial Policy instruments treated as independent variables. The t-statistics and significance are highlighted in parenthesis and satiric respectively.

Table 10: Regression Results of Dependent and Independent Variables

Variables	Export Sophistication	Export Diversification	Export Competitiveness
Industrial Expenditures	-0.0175* (-2.22)	-0.196 (-1.58)	-0.000960 (-0.14)
Export Subsidy	-0.0183 (-1.58)	-0.938*** (-5.15)	-0.0402*** (-3.87)
R&D Expenditures	0.144 (2.01)	1.203 (1.07)	0.134* (2.08)
Import Tariff	-0.00681** (-7.02)	0.102*** (6.68)	-0.0009 (-1.04)
Rebate	-0.045 (-1.40)	-0.717 (-1.34)	0.0200 (-0.65)
Constant	4.601*** (25.59)	56.60*** (23.09)	3.635*** (25.99)

(t statistics in parentheses, * $p<0.05$, ** $p<0.01$, *** $p<0.001$)

From the above table we can see that some of the variables are giving significant results at 1%, while some of the variables have no significant relationship with that of dependent

variables. From the above calculation the error terms have been calculated and the results of unit root analysis of error terms showing the problem of unit root or not are given in the below table.

Table 11: Unit Root Analysis of Error Terms

		ADF		Conclusion
Error Terms	Difference	without Trend	With Trend	
E1	Level	-3.777	-3.622	I(0)
	First Difference	-8.076	-8.026	
E2	Level	-4.425	-4.364	I(0)
	First Difference	-7.992	-7.847	
E3	Level	-2.701	-2.746	I(1)
	First Difference	-6.781	-6.675	

From the findings of above table we can see that the error terms of first equations are zero order integrated showing the possibility of co-integration while the last model error term is first order integrated have no possibility of co-integrations. So to estimate the relationship between dependent and independent variables now we will rely on Error Correction Model that will clarify the speed of Adjustment.

5.4   Principal Component Analysis of Industrial Policy of Pakistan

The second objective of the study is to find the impact of Industrial policy on Export Performance of Pakistan. Since industrial Policy itself is not a variable but comprises different quantitative instruments that is use as tool to implement industrial policy and all the tools and instruments of Industrial policy using in the current study is discussed above. So to convert all the instruments of industrial policy into a single variable and which will represent the overall industrial policy we need to analyze all the variables combine form through the process of Principal Component Analysis. Usually Principal Component Analysis is use to remove the problem of multi co linearity means more than one variables are showing correlated with each

other, but since here we are dealing with industrial policy that comprises six different instruments, therefore we will rely on Principal Component Analysis that will create a new variable with proportion showing the percentage explanation of each variables.

The below table shows the composition of different variables in the newly created index of Industrial Policy Instruments into IP index. The Eigen values shows the decompositions of covariance matrix or correlation of the variables that describes series of uncorrelated linear combination of variables which contain most of the variance and the data reduction Eigen Vectors from Principal Component Analysis are usually inspected to know more about the structure of data. The Composition section highlights the share of different variables in constructing the index.

Table 12:   Principal Component Analysis of Industrial Policy Instruments

Component	Eigen value	Difference	Proportion	Cumulative		
Comp1	2.56595	1.33294	0.5132	0.5132		
Comp2	1.23301	0.514058	0.2466	0.7598		
Comp3	0.718948	0.353087	0.1438	0.9036		
Comp4	0.365862	0.24963	0.0732	0.9768		
Comp5	0.116232	.	0.0232	1		
Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Unexplained
Industrial Expenditures	0.0771	0.85	-0.0068	0.5	0.147	0
Export Subsidy	0.5883	0.0606	0.2281	0.0365	-0.772	0
R&D Expenditures	-0.3905	0.0239	0.9192	0.0386	-0.022	0
Import Tariff	0.4633	-0.467	0.1932	0.607	0.4019	0
Rebate	0.53	0.235	0.2561	-0.6154	0.4686	0

Note: (Note: *,**,*** show significant value at 1%, 5% and 10% respectively)

We can see that Industrial Expenditures contributes the most in constructing the variable with a proportion of 51.32% followed by Export Subsidy 24.66%, R&D 14.38%, Import Tariff 7.3 and Rebate 2.3% respectively.

5.5 ECM Model Estimation

Error Correction Model is used to show the speed of adjustment when there exist Co-Integration between dependent and independent variables.

The below table gives a quick look of ECM model findings in the study.

Table 13:   ECM on Export Sophistication

	E.S			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
d(PCA)	0.022902	0.008715	2.627956	0.0138*
d(EXPTOGDP)	0.014441	0.003348	4.313013	0.0002*
d(PCI)	0.517036	0.143852	3.594214	0.0012*
d(DC0	-0.00211	0.002034	-1.03565	0.3092
d(FDI)	3.13E-06	1.15E-05	0.272872	0.787
d(TO)	0.215394	0.16116	1.336519	0.1921
d(MSE)	0.20926	0.045844	4.564652	0.0001*
d(EXPEDU)	0.026238	0.013258	1.978999	0.0577**
(E-1)	-0.21744	0.110415	-1.96926	0.0589**
R-squared	0.989658	Mean dependent var	3.902224	
Adjusted R-squared	0.986703	S.D. dependent var	0.220063	
S.E. of regression	0.025376	Sum squared resid	0.01803	
Log likelihood	88.59179	Durbin-Watson stat	1.911395	

Note: (Note: *,**,*** show significant value at 1%, 5% and 10% respectively)

The above table shows the results of Error Correction Model of Export Sophistication with Industrial Policy, Export to GDP, Per Capital Income, Domestic Credits, Foreign Direct Investment, Trade Openness, Share of Manufacturing in Export, Expenditures on Education with their difference respectively and the lag of error terms. We can see that most of the variables are significant and showing positive relationship with Export Sophistication. The focused variable industrial Policy can be seen that it has positive relationship with Export Sophistication at 1% significant level showing that if Industrial Policy Instruments are focused one percent there will be on average 2.29% growth can be achieved in Export Sophistication. Export Sophistication basically relate to high income earning exporting commodities. Hence we can say that by focusing industrial policy, the goods we are exporting can be more valuable and income earners. The second most important point in the analysis is the significance and sign of lag of error term because it tells us about the speed of adjustment in long run relationship. We can see that the lag of Error term giving negative sign with significance at 5% showing convergent mode of adjustment in long term at the speed of 0.21%.

Table 14:   ECM on Export Diversification

Variable	Coefficient	Std. Error	t-Statistic	Prob.
d(PCA)	1.912198	0.208382	9.176398	0*
d(OER)	-0.00208	0.015454	-0.13445	0.8939
d(RD)	-3.13283	0.736982	-4.25089	0.0002*
d(IT)	0.165143	0.008999	18.35095	0*
d(GDP)	4.054342	0.174553	23.22697	0*
d(DC)	0.045504	0.043873	1.037183	0.3079
(EE-1)	-0.87701	0.087921	-9.97498	0*
R-squared	0.960375	Mean dependent var		48.15082
Adjusted R-squared	0.95245	S.D. dependent var		2.651156
S.E. of regression	0.578109	Sum squared resid		10.02631
Log likelihood	-28.3452	Durbin-Watson stat		1.942082

Note: (Note: *,**,*** show significant value at 1%, 5% and 10% respectively)

From the above table of ECM model on Export Diversification, we can see that the Instruments of Industrial Policy are highly significant with high impact on export diversification. In modern era most of the industrialized nation are focusing on to improve their expenditures on R&D, lowering down their Import Tariff, giving subsidies on imported raw materials and energy uses, providing good sorts of Rebate and making good expenditures on Industrial to promote industrial sectors in the economy. If industrial sector of any economy is fully established and produce efficiently than it will become so easy to diversify its economic structure. We can see as proof the instruments of industrial policy in case of Pakistan giving highly significant value showing that increase in industrial instruments by one percent the export diversification will boost up by 1.91 indices units. The lag of error terms shows a divergent value of greater than 0.8 with negative sign and highly significant value showing that in long run there is divergent possibility of high reluctant on Industrial Policy Instruments. Because in the case of provision of high subsidies, Export Rebate, Industrial Expenditures came from personal Income of the citizen and when there is significant increase in taxes that is the basic source of government revenue people income will effect that will cause to lower the demand of commodities and in future the industrial production will be slow down because of low demand. In the same way if the import tariff bring downs to minimum level there will be two possibilities, the local industry will have to face high competition and second the government revenue will be affect directly because some sorts of income is earning through Import tariff. Therefore the government will look after the best level where both the sufferance of local economy and balance of payment can be maintained. From the time series features of the above model we can see that value or r^2 is 0.960, showing that 96% variation in export diversification is due to the independent variable showing

the goodness of model while the Durban Watson statistics confirms that there is no problem of autocorrelation in the data.

Table 15:   ECM on Export Competitiveness

Variable	Coefficient	Std. Error	t-Statistic	Prob.
d(PCA)	-0.03997	0.014252	-2.80438	0.011*
d(GFC)	0.341615	0.02204	15.49947	0*
d(RD)	-0.04019	0.045603	-0.88129	0.3886
d(OER)	0.003434	0.001435	2.39306	0.0266*
d(TOT)	0.008685	0.001441	6.027676	0*
d(EHT)	0.004088	0.018174	0.224951	0.8243
(EEE-1)	0.451908	0.124682	3.624492	0.0017*
R-squared	-0.926755	Mean dependent var		3.227407
Adjusted R-squared	0.904781	S.D. dependent var		0.098512
S.E. of regression	0.030398	Sum squared resid	0.018481	
Log likelihood	60.06098	Durbin-Watson stat	1.845147	

Note: (Note: *,**,*** show significant value at 1%, 5% and 10% respectively)

From the given above table of ECM estimation on Export Competitiveness and other independent variables we can see that Instruments of Industrial Policy are giving negative relationship with Export competitiveness at high significant value of 1.1% showing that increase in industrial instruments will cause to lower the export competitiveness by 0.039 units. The coefficient of Lag of error term shows negative sign with probability of 0, showing high significant value with convergent possibility in the equation. the other variables i.e. Official

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Exchange Rate and Gross Capital Formation gives significant and positive relationship with export competitiveness at less than 5% significance level while R&D expenditures and Export of High Technology gives negative relationship with Export Competitiveness. The time series features shows that dependent variable's variation is 92% explained by the independent variables while there is no problem of autocorrelation in the data.

5.6   Analysis of Industrial Policy Instruments in Military vs. Democratic Regime in Pakistan

Since its independence the economy of Pakistan has faced unstable in its government regimes. Since the first Martial Law of 1956, the economy has never completed her publically elected government till 2002 when the first elected government completed her tenure from 2002-2006. Out of 72 years of independence 37 years has been ruled by military regimes while 35 years has been spent by democratically elected representatives. So most of the time the power has remained under the military dictatorship. Therefore the industrial policy of Pakistan being changed according to the will of on power government that brought many structural changes and breaks. The economy has observed many structural changes and breaks specially after 1971 when half of its GDP and GNP sharing province got separated from it and became newly born country of Bangladesh that put huge pressure on the economic circumstances. After the invasion of Soviet Union in Afghanistan and huge number of Afghani refugees moved to Pakistan for safety and security, the devaluation of Pakistani currency to boost the export which couldn't able to give satisfactory results, the adoption of Structural Adjustment Program in 1988 made more dependent on Foreign assistance and Loan, the Atomic Explosions of 1999 put again the economy in huge disaster because there has been made strict restrictions on Pakistan's export, the great financial crises of 2007 let down the export growth of Pakistan hitting its major exporting partners i.e. USA, UK and European market, war on terror inside Pakistani territory

and other factors made stuck off the economy and made her unable to achieve the goal of development and prosperity. To make the study simple and comprehensive we will now analyze the structural breaks and changes focusing only on military and democratic regimes that how the instruments of Industrial Policy in Pakistan have been affected during these periods. The period from 1980-88 is consider as completely military regime while the period from 1999-2007 is semi military because there was an autonomous body of parliament exists from the elected members but as the head of state was still military head, therefore we will consider this period also military regime. Therefore out of 37 years of study we will divide the time period from 19880-1988 and 1999-2007 that will be 18 years as military regime while the period from 1989-1998 and 2008-2016 which will be 19 years will be consider as democratic regimes.

Table 16: Military VS Democratic Regime's Industrial Policy Impact on Dependent Variables

	Export Sophistication		Export Diversification		Export Competitiveness	
Variables	Military	Democracy	Military	Democracy	Military	Democracy
Industrial	0.000811	0.0472**	-0.0213	0.471	0.0176*	-0.0369**
p(values)	(-0.09)	(3.48)	(-0.15)	(1.46)	-3.03	(-3.05)
Subsidy	0.0251	-0.00320**	0.0629	-1.104***	0.0152	-0.0428***
p(values)	(-0.83)	(-3.01)	(-0.13)	(-4.36)	-0.79	(-4.51)
R&D	0.605**	-0.00071	7.118*	-0.0885	0.605***	-0.0198
p(values)	(-3.6)	(-0.97)	(-2.65)	(-0.05)	-5.62	(-0.30)
Import Tariff	-0.085**	-0.0003	0.0850*	0.117*	-0.00161	0.00429*
p(values)	(-3.23)	(-0.09)	(-2.94)	(-2.63)	(-1.39)	(-2.58)
Rebate	-0.0347	-0.00052	-1.196	0.0823	0.0302	-0.0404
p(values)	(-0.72)	(-1.39)	(-1.56)	-0.09	-0.98	(-1.21)
_cons	3.722***	3.314***	45.19***	62.52***	2.701***	4.333***
p(values)	(-12.92)	(-8.54)	(-9.84)	(-10.48)	(-14.64)	(-19.37)

Note: (Note: *,**,*** show significant value at 1%, 5% and 10% respectively)

From the above table of comparison of the impact of industrial policy instruments on Export Sophistication, Export Diversification and Export Competitiveness between military and

democratic regimes, we can see that Industrial Expenditures plays significant and positive role in Export diversification and export competitiveness in democratic regimes while have positive impact in military regime only in export competitiveness, while in export diversification it has no significant role in diversifying economy. The export subsidy plays negative role all in case of export sophistication, export diversification and export competitiveness. Its huge upset and to be worry about export subsidy because most of the nation use export subsidy as an instruments to increase the export performance but in case of Pakistan export subsidy have negative impact both in military and democratic regime. Haq & Kamal (2007) explained that export promotion subsidy schemes are difficult to administer and are subject to manipulation for rent seeking purposes. From our analysis of studying Export subsidies to promote export performance both of the era has no significant impact on export performance and even in democratic regimes the export subsidy shows negative significant impact showing that increasing in export subsidy cause to reduce the export performance. When we carefully analyze the impact of R&D expenditures we can see that it gives positive and significant relationship in military regimes with all export performance indicator while in democratic regimes the R&D shows positive insignificant results. The Import tariff values reveals that its harmful for export performance in both regimes and will cause to lower down the export performance with a significant value at even 1% while the export rebate has no significant impact to export performance in both regime and the Wald test to remove the export rebate from the model shows it is insignificant and have no relationship with export performance and we can remove it from the equation.

Chapter VI

CONCLUSION AND POLICY RECOMMENDATION

6.1   Conclusion

The Pakistan's export performance has changed significantly over the years with the improvement in the share of primary and semi manufactured export because the shares of primary goods and semi manufactured goods with final manufactured goods in total export has declined and manufactured goods has been increased. Undoubtedly the pattern of Export performance has changed substantially in response to export reforms and the transition from primary manufactured products to finished manufactured goods, but the overall performance is not so promising showing declining trend. We have observed different policies that have been designed either to meet current issues and challenges or either to respond the crises but overall history tell us that we are unable to design a long term visionary policy to support and to promote export promotions, because the countries that were competitor in 1960's and 1970's are now left so much back in terms of export and other economic indicators. The era of 50's was mainly given focus on industrial setup and protective measures to promote industrial sector while in the era of Ayub's regime the economy promoted Import Substitution Industrialization and Export Promotion that help Pakistan in the line fast growing economy. Bhutto regime blamed the income inequality devoting the economy so preferred to nationalization procedures that shucked off the performance of Industrial sector and investors hesitated to make large investments and economy suffered a lot. The downfall of Pakistani economy started to rise because the upcoming periods of power mostly wasted the time on deregulation and deletion policies to get the confidence of investors that's why being an open and more liberalized economy as compare to other Asian Economies we unable to meet the necessities of modern changing requirements. In

the era of Zia Regimes (1978-1988) the economy followed deregulation, deletion and liberalization policy to promote industrial sector and export performance. After joining the IMF and World Bank's Structural Adjustment Program we let economy more dependent on Foreign Aid, Financial Assistance and borrowing that put the economy to pick nominal growth rather than real growth. After the atomic explosions of 1998, the economy went to sever shocked because most of the nations we were trading sanctioned to trade us and we left only with few trading partners that badly affected not only our export performance but also the industrial sector. The era of Musharaf's regime from (1999-2008) is consider as second golden period of Pakistan's exports because the export was growing more than 15% but it was like an empty balloon that was getting full only with empty airs because during this period we have seen huge inflow of Foreign Direct Investment that boosted the exports but once they setup the business and Capital outflow started and Pakistan started to suffer the current account balance that made Pakistan to more dependent on Foreign Aid and both domestically and international borrowing. The economy suffered huge that's why in international market its export share went down from 0.19 to 0.14 in 1990 and 2017 respectively. After the 18th Amendment in Pakistan's constitution, the State decided to handover the industrial policy making to the provincial level and now the provinces design industrial policies according to their interest.

In the above discussion we just shed light on Industrial policies and export performance since independence the economy has preferred. Analyzing the Industrial Policy instruments performance of Pakistan competing with Asian economies, we can see that before the Structural Adjustment Program, the economy of Pakistan was more liberalize and open for international trade as compare to other competing Asian economies because the average tariff rate was 50.2% which was very low as compare to India and Bangladesh have 84% and 88% respectively but Sri

Lanka have import tariff rate a little lower than Pakistan which was 47% in 1988. After joining Structural Adjustment Program the Asian economies let the import tariff more quickly to get down to make economies for international trade and in 1999 the average tariff rate in India, Bangladesh, Sri Lanka and Pakistan were 33%, 19%, 14% and 18% respectively that further brought down to 8.7%,11%, 12% and 10.4% in 2017. The export rebates data shows that India have increased its export subsidies much more than Pakistan during 1980-2005 but after the great financial crises of 2007, it brought its export subsidies to down but Pakistan still providing subsidies and protect some industries that are being subsidized and protected since long ago and the estimates of the study shows that the subsidies have no significant impact on Export Sophistication, Export Diversification and Export Competitiveness in Pakistan and the reality also accepts it because of subsidizing and protecting textile industry make other sectors to contribute less than the expected and new firms hesitate to invest in other sectors. The R&D expenditures show a significant positive relationship with the export performance. When we carefully analyze the industrial expenditures impact on export performance we can see over the time its impact is significant but when we compare the significance in military and democratic regimes, it gives unsatisfactory results of insignificant results of military regimes showing that military regime is not so good for industrial development.

One of the important debating phenomenon after Shenzhen Export Processing Zone and the success of Taiwan, Malaysia and Philippine, the economic processing zone sometimes refer to Export Processing Zones are getting much interest. Many of the developing nations are focusing to promote and stabilize these EPZ's with a number of benefits to investors. Comparing performance of EPZ's of Pakistan with neighboring Asian economies, we can see that India is more far ahead from us because India started to promote EPZ's in 1960 while Pakistan

established her first Economic Processing Zone in 1990's in Karachi and now there are 9 different EPZ's are functioning in the economy and the share in total export is not much so satisfactory as compare to other competing Asian economies. Government of Pakistan is proving huge amount on export subsidy, Export Rebate and Grants to the exporters to promote the export sectors but when we deeply analyze the impact on export performance, we get unsatisfactory results because either they are giving negative impact on export performance or either they are giving insignificant results showing no impact on export performance. The speed of adjustment in export performance we can see that shocks and changes have more qualities of convergence but at low speed for example if there comes shocks or crises or we make policy change than it takes -0.24, -0.89, -0.45 in Export Sophistication, Export Diversification and Export Competitiveness, means that it takes less time for adjusting Sophistication and Competitiveness as compare to Diversification because once the economy is diversified it will bring him under competition and that promote competitiveness that help economy to produce more sophisticated goods.

6.2   Policy Recommendations

The basic objective of the study was to see the impact of Industrial Policy on Export Performance of Pakistan. We saw that there is significant positive relationship between Industrial Policy and Export Performance. The findings of the study suggests that if there are some visionary and long term policies are adopted without any military interference in the economy the industrial policy can play a smooth role in promoting export performance in Pakistan and other developing economies. On the basis of the findings of the study, the following policy recommendations are made to attract the government interest to promote long term visionary

industrial policy to boost the exports such that we can able to overcome the problem of current account deficit and achieve the macroeconomic indicators related to development and growth.

1. We are still relying on few commodities that contribute more than 50% to our exports but in international market these commodities are less sophisticated, giving us small returns. We need to promote and encourage the industries that are more sophisticated. The Taxila Heavy Machinery Industry, The Heavy Machinery Industry of Landhi, The production of Fighter jets, Promotion and support to encourage Karachi Steel Mills etc are more sophisticated producing industries and goods and by exporting them we can able to sophisticate our manufacturing sector.

2. One of the important factors that need to capture the attention of high authorities is how much we are diversified? When we look towards market we can see we are well diversified because our trade is with more than 200 countries. We are making exports and imports with good number of economies, but the problem is we are exporting only limited number of commodities with international market. Currently in global markets there are trading more than 30 thousands commodities but we are only able to export less than 3 thousands. We are well endowed natural resource economy. Our natural resources, geographical location, environment all support us to rise in international market as trade hub. Therefore we need to diversify our industrial sector promoting new industrial units, encouraging innovations, promoting technical education, creating opportunities to new generations.

3. Export Competitiveness decides that how much you are efficient in production of a specific commodity. We are still relying on traditional mode of Production or out dated technology that makes to suffer high cost of production with low quality and in

international market there is price and quality war. So to win this war we need to promote our competitiveness. In global market Pakistan's standard certification is only a label without any quality have high price. So people move to better quality and low price goods that make us to suffer. Therefore we need to rectify our standard certification and make it efficient such that it becomes brand rather than a label.

4. Currently we are importing 4155 number of goods from different countries. The number of importer both registered and unregistered is more than 20000 traders out of which 85% of the importers have no contribution in exports and there are only few industrialists who re-invest their profit in Pakistan. They either convert their profit into Dollars or either they invest on Gold and real state because Gold have no records and very small chances of get raid on it while in Pakistan the real estate business is tax free and the value of real estate increases day by day. So without any industrial output or share in export the investors earn double profit from imports and non productive sector. We have to redesign our export policy i.e. if someone is willing to import goods from international market than he already must have some share in export up to a specific level, otherwise they will not allow importing from international market.

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