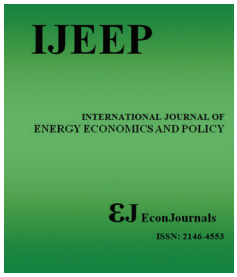

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Asymmetric Effect of Oil Prices on Export Performance: The Role of Export Financing Schemes in Pakistan

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ABSTRACT

This study aims to check the impact of export financing (EF) schemes like EF-25, oil prices, exchange rate, and foreign direct investment on export performance in Pakistan. The study utilized textile exports and non-textile exports to measure the export performance in Pakistan. Data for modelled variables are taken from the State Bank of Pakistan (SBP), and International Financial Statistics (IFS) for the period from 2004 to 2020. This study employed Auto Regressive Distributive Lags (ARDL) and Non-Linear Auto Regressive Distributive Lags (NARDL) models from 2004 to 2020 to check the symmetric and asymmetric impact of modelled variables on export performance in Pakistan. It is observed that there is a positive and significant impact of export financing schemes and oil prices on the performance of the export of Pakistan in both time regimes before and after the world financial crisis 2008. Asymmetric effects showed that positive shock in oil prices leads to a positive change in exports and negative shock also leads to a positive change in exports. The impact of export financing on the textile sector is significant and positive but it is insignificant in the case of oil prices. Whereas the impact of oil prices on non-textile exports of Pakistan is significant and a positive rather insignificant impact of export financing is found for non-textile exports. According to the results, export financing is favorable for Pakistan's export performance so it should be encouraged and more schemes should be introduced.

Keywords: Financing Scheme, Export performance, Pakistan, Oil Price, Foreign Direct Investment, Exchange Rate
JEL Classifications: C22, C50, F30, G10, G12, Q43

1. INTRODUCTION

Exports are just like fuel for the engine of economic stability, growth, and long-term development of an economy. Determinants of exports are of two types i.e. external and internal. Demand-side conditions are known as external factors and supply-side conditions are associated with internal factors. Internal factors are; exporting country's characteristics (size of natural resources, labour force participation, credit financing, market orientation, the country's revealed comparative advantage), managerial characteristics (international experience and educated entrepreneurs), and product characteristics (type of good either it is a consumer good or capital good, production cost and technology sophistication). External factors consist of domestic and foreign market characteristics (similarity or difference in the environment, geographical distance, cultural difference, political factors and legal requirements, consumer preferences, trade barriers) and industry characteristics (industry type and technological orientation).

There is a history of international trade which starts from the barter system and then it was substituted with Mercantilism in the era of the 16th and 17th centuries. When the world entered the 18th century it saw transference to liberalism. That was the time when first time in the history of economics Adam Smith known as the father of economics wrote the legendary book "The Wealth of Nations" in 1976. In that book, he explained gains of international trade can

be acquired by getting an absolute advantage in the production of any commodity. After him, David Ricardo extended the theory by developing the principle of comparative advantage, which has maintained its importance even today. Nowadays every nation wants to increase its exports to survive in the world. Every nation is competing with one another. Pakistan is also in this race and trying hard to expand its exports to increase its foreign reserves but still not achieved its goal. Due to fewer exports, Pakistan's financial status is very low and still lies on the list of developing countries. In this study, it is to be checked that Pakistan is spending on export financing to strengthen its exporter. Should it be increased more to get surplus in exports and on the other hand Pakistan is a labour abundant nation but oil prices strongly affect its import performance and similarly oil prices are important to utilized capital intensive techniques in the export sector.

As exports are a great support for the open economy, this study aims to investigate the symmetric impact of export financing schemes and the asymmetric impact of oil prices on export performance in the context of Pakistan. Most of the researchers who worked on export performance used linear models (Katsikeas et al., 1996; Ram, 1985). However, the majority of the macroeconomic variables show nonlinearities, mainly in oil prices because these are volatile (Falk, 1986; Neftci, 1984).

Asymmetric modelling is not rare or unusual rather many studies are there which encouraged asymmetric modelling and claimed that within social sciences asymmetries are usual and vital to the human state (Kahneman and Tversky, 2013; Shiller, 1994; 2015). Though the chief purpose of the present study is to investigate the asymmetric impact of export financing and oil prices on export performance; hence, many types of prices documented asymmetric patterns. This consists of the exchange rate (Arghyrou and Pourpourides, 2016; Bahmani-Oskooee and Fariditavana, 2016; Delatte and López-Villavicencio, 2012; Verheyen, 2013a; 2013b), inflation (Katrakilidis and Trachanas, 2012), and oil prices (Ibrahim, 2015; Lardic and Mignon, 2008; Qin et al., 2016; Raza et al., 2016).

In the literature on oil price, the asymmetric effect on export performance is unnoticed. Higher oil prices may lead to an increase in the cost of production in various sectors; this may lead to decreased production and raise unemployment and might be a reason for inflation. The proof which backed up this statement seemed in the study of Doğrul and Soytas (2010) and also mentioned by Katircioglu et al. (2015) in his study. The justification behind the interface between oil prices and exports is that Pakistan is a country which is an importer of oil and among world oil-importing countries it is on 33rd number (The World Factbook); so, it can be said that exports are affected by oil prices higher. Moreover, export financing, exchange rate, and FDI are also major factors of export performance in Pakistan. The textile sector is Pakistan's major export sector. By dividing exports into two main categories textile and non-textile, this study investigated the impact of export financing and oil prices on them.

In Figure 1 indicated that Pakistan's export growth is miserable for the previous two years and it has declined about 12.9% during 2016-17. Pakistan's exports are soaring between 19 billion since 2008-2017 and no substantial progress and progression has been observed in exports of Pakistan. Exports percentage of GDP is 13.39 in 2003 but dropped down to 7.46 in 2016.

Figure 2 indicated that the textile sector comprises 51% of total exports. 544 billion Rs. are earned from hosiery and garments only. So it can be said that textile is the main export sector of Pakistan whose importance cannot be forgettable. Since 2005 many of the Asian economies have been taking the benefits of quota closure for clothing and textile zone.

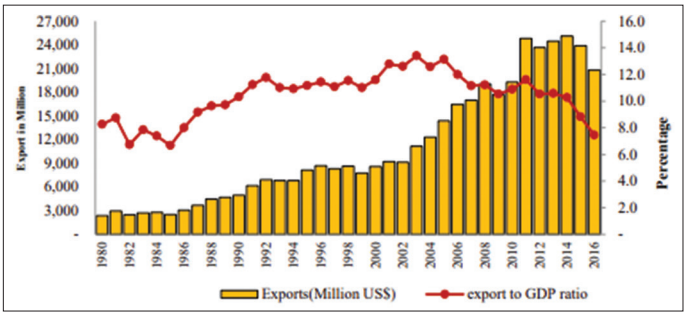
This study examines the impact of export financing and oil prices on Pakistan's total exports. The study also examines the impact of export financing and oil prices on Pakistan's total exports before and after the financial crisis of 2008. The symmetric impact of oil prices on Pakistan's total exports has also been examined.

2. LITERATURE REVIEW

2.1. Export Financing and Export Performance

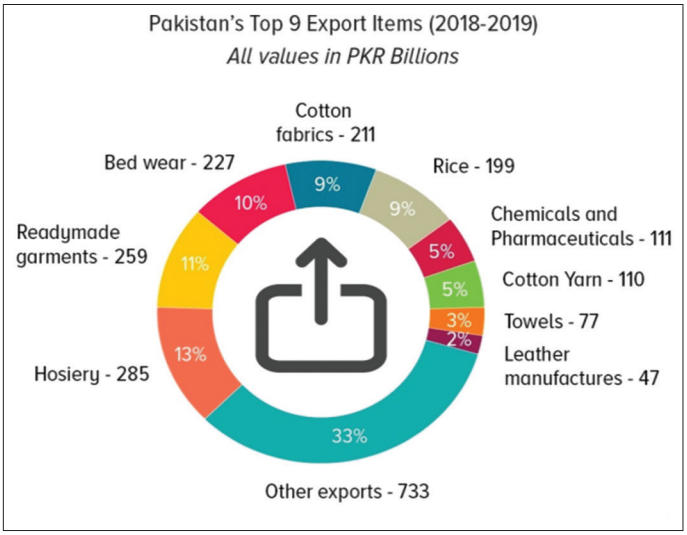
Akgündüz et al. (2018) investigated that do subsidized loans increased exports. A study mentioned that Turkey's central bank is giving a subsidized loan to its exporters, so the study was

Figure 1: Export trends in Pakistan



Source: State bank of Pakistan

Figure 2: In 2018-19 Pakistan's largest export industry is the textile industry



Source: Gillani Research foundation

conducted to check the performance of those firms which are getting benefits from such a rediscount credit policy. Behind this policy, the Central Bank of the Republic of Turkey (CBRT) has two goals i.e. expansion in foreign reserves and the other one is the promotion of exports. As it is a firm-level analysis so the results showed that the rediscount credit receiving firms have a positive relationship with exports rather the non-receivers. The findings are qualitatively comparable to the case of binary therapy with considerable beneficial effects on exports, sales, and workers and no influence on national sales and revenues. The estimates indicate that not only the current year's credits impact the company's output, but also the past year's credit. This is similar to the rediscount credits structure. A company that receives the rediscount credit must document a total export value in 2 years that is not less than the credit amount. A 1% rise in rediscount credits appears to boost exports in the same year by around 0.028% and in the following year by 0.029%. The impact of sales is 0.005% in the same year and 0.012% in the subsequent year.

Similarly, Felbermayr and Yalcin (2013), investigated that credit markets were collapsed in the crisis of 2008-2009 which badly affect exporters more than other firms. So many countries protect their exporting firms to be the defaulters against their foreign buyers both in the presence or absence of a financial crisis. In general export credit guarantees are considered as export subsidies which are not allowed by World Trade Organization (WTO) but there is a space under WTO agreement on subsidies and countervailing measures regarding export credit guarantees. Risks regarding export credits are not properly covered by privately organized financial markets so that's why the government has to interfere. The study concluded that there exists a positive relationship between export credit guarantees and exports. If public guarantees are increased by 1 % it will cause a.012 % increase in exports on average. Moreover, Broocks and Van Biesebroeck (2017), utilized two approaches to address a probable upward bias due to self-selection in assistance: study concentrated on sub-samples of companies where endogenous therapy choice is less probable, and (ii) use companies that receive the weakest type of assistance as compared to companies receiving wider assistance. The impacts stay positive and statistically significant, but in magnitude, they are smaller and much less accurately estimated in the second case.

2.2. Oil prices and Export Performance

Tried to investigate the relationship between oil prices and exports performance in China. Theoretically being an oil-importing country there should be a negative relationship between oil prices and exports but after applying the ARDL approach to the model where the impact of oil prices, labour productivity, real exchange rate, and foreign income on exports of china was checked over the monthly data for the period of 1992-2005. A study found that the relationship between oil prices and exports of China is positive and concluded as China is a labour abundant country so oil prices did not affect negatively.

Qianqian (2011) explained that Oil is an essential element for economic development. Due to increased demand for oil, as oil is used in every field of the economy nowadays, the reliance on imported oil is also increasing day by day in China. By applying the co-integration and error correction model, the study found that there exists a long-run relationship between oil prices and China's economic growth, inflation, net exports, and monetary policy. The results showed that the increase in global oil prices will lead to shrinking net exports and the real GDP and the real money supply whereas inflation will go up.

Jawad (2013), examined the effect of oil price volatility on economic growth in Pakistan. Coefficients were estimated using secondary data from 1973 to 2011. Linear regression analysis is used to evaluate the dependence between dependent and independent variables. Trade balance, private sector investment has a major impact on gross domestic output and public sector investment, oil price volatility has a negligible impact on gross domestic product. The study suggests that a proper plan and procedure must be put in place by the government in line with Pakistan's economic growth and demand that would help maintain a balance between oil demand and supply and reduce the effect of oil price volatility on growth. Meanwhile, Pakistan's government has also focused on its trade balance and is also trying to boost investment by the private sector to support its economic growth.

2.3. FDI and Export Performance

Fetai and Morina (2019), checked the impact of inflows of FDI on export performance on the transition economies of Europe from 2000 to 2015. The study showed that there is a positive relationship between FDI and exports and some other factors like investments and trade liberalization have also positive effects whereas real GDP and real exchange rate affect exports negatively.

Liu and Shu (2003), empirically investigated the determinants of Chinese export performance using cross-sectional data at the industry level. The study found that the export performance of different sectors is significantly affected by labour costs, foreign direct investment (FDI), and the size of the company. The study used cross-sectional industry-level data to explore the factors affecting the Chinese industry's export performance. The study found that FDI, labour costs, and size of the company significantly affect export performance. China produced 18% of the total labour-intensive commodities in the world. However, both India and Pakistan are abundant in labour, but China's exports are still much larger than both. These results show that Chinese companies have realized their relative advantages, but point to the need for the industry to improve its export structure to maintain growth. Contrary et al. (2019), checked whether FDI contributes to exports in India or not. The period chosen for this purpose is from 1980-to 2017. The study found that the FDI affects real exports adversely in the long-run period.

2.4. Exchange Rate and Export Performance

For some moment, policymakers, scholars, and professionals have been gaining attention from the link between export performance and exchange rate policy, especially for emerging countries. Recently, Vo and Zhang (2019) investigated the connection between devaluation of the exchange rate, volatility, and performance of exports. The assessment focuses on the production industry and ten of its subsectors involved in exporting products in Vietnam during the period 2000-2015 and twenty-six

main export partners. The study confirmed that a strategy that depreciates the currency of Vietnam appears in the brief term to improve manufacturing exports, whereas the resulting volatility of the exchange rate has clear adverse long-term impacts. The effect on manufacturing subsectors of exchange rate volatility relies on two variables, namely export type and export destination.

(Thuy and Thuy, 2019), used quarterly information from the first quarter of 2000 to the fourth quarter of 2014 to investigate the effect of exchange rate volatility on the exports in Vietnam. The study utilized the autoregressive distributed lag (ARDL) testing method to analyze the relationships between the volatility of exchange rates and exports. The study also considered the impact of depreciation and foreign earnings on Vietnam's exports using the demand function of exports. The study found that export quantity is negatively affected by exchange rate volatility. Domestic currency depreciation hurts exports in the short run, but it has a positive impact in the log-run, consistent with the J. curve impact. Surprisingly, a rise in a foreign country's real income effectively reduces the number of Vietnamese exports. These results indicate some political consequences for the management of the exchange rate scheme and the promotion of Vietnam's exports

2.5. Financial Crisis and Export Performance

Iacovone and Zavacka (2009), analyzed the impact of banking crises on exports. The study distinguished the effect of banking crises on export development from other exogenous shocks i.e. demand shock) based on information from twenty-three episodes of banking crises containing both developed and developing nations. Results indicated that, during a recession, exports of industries are more dependent on internal financing as compared to other industries. However, sectors with a higher degree of asset tangibility tend to be more resilient to a banking crisis. The effect of banking crises on exports is strong, as well as internal demand shocks. The impact of the latter is autonomous and complements that of a banking shock, and is of special importance to industries producing sustainable products.

During the worldwide economic crisis, Chor and Manova (2012), studied the collapse of international trade flows using comprehensive information on monthly US imports. The study demonstrated that long-term loans are a significant channel through which trade volumes were impacted by the crisis, exploiting the variation in capital cost across nations and over time, as well as the variation in economic vulnerability across industries. Countries with greater interbank prices and thus tighter credit markets during the crisis peak exported less to the US. This impact was particularly pronounced in industries requiring comprehensive external funding, having restricted access to trade credit, or having few assets that can be collateralized. Exports from financially fragile sectors were, therefore, more sensitive to internal capital costs than exports from less susceptible sectors, and during the financial crisis, this sensitivity increased. This study highlighted the quantitative impacts of financial crises on export volume.

Similarly, Bricongne et al. (2012), identified that during the global crisis, global trade declined rapidly and severely. This study utilized a distinctive French company dataset to match export information with firm-level loan limitations and demonstrates that most of the trade crash in 2008-2009 was due to unprecedented demand shock and product features. While the crisis impacted all companies, the impact on big companies was primarily on the intensive margin and resulted in a lower product portfolio being offered to export destinations. The impact on smaller exporters was to decrease or completely prevent exporting the variety of locations served. Credit limitations were an additional aggravation on companies operating in industries of strong economic reliance.

3. DATA AND METHODOLOGY

In this study monthly data is used from 2004 to 2020 and data for modelled variables is taken from the State Bank of Pakistan (SBP), and International Financial Statistics (IFS). This study developed six models to check the effect of export financing schemes, oil prices, exchange rate, and FDI on exports performance in Pakistan. in models 1, 2, 3, and 4 this study utilized total exports to measure the export performance (XP) as dependent variables while export financing scheme (EF), oil prices (OP), foreign direct investment (FDI) and exchange rate (ER) are used as independent variables. However, in model 5, textile export (T.XP), and in model 6 nontextile exports are used to measure export performance. This study utilized Auto Regressive Distributive Lag Models that are considered a powerful tool to calculate long-term economic time series relationships. The simple form of Autoregressive Distributive Lags (ARDL) regression model is as follow:

$$Y_t = \alpha_0 + \alpha_1 \bullet Y_{t-1} + \beta_0 X_t + \beta_1 X_{t-1} + \varepsilon t \quad (1)$$

Equation 1 indicates that both independent and dependent variables have the lag order of 1. The regression coefficient of X in the long-run equation and ECM equation can be expressed as follow:

$$k = \beta_0 + \beta_1/1 + \alpha_1$$

$$\Delta Y_t = \alpha_0 + (\alpha_1 - 1)(Y_{t-1} - k X_{t-1}) + \beta_0 \Delta X_{t-1} + \varepsilon t \quad (2)$$

A general ARDL (p0, p1, p2, p3,..., pn) model for one dependent variable Y and a set of independent variables X1, X2, X3,..., Xn, in which p_0 is lag of dependent variable and p_1----p_n are lags of the independent variable can be written as follows:

$$\Delta Y_t = \lambda_0 + \alpha_1 \sum_{i=1}^{p1} Y_{t-i} + \alpha_2 \sum_{i=0}^{p2} X1_{t-j} + \alpha_3 \sum_{k=0}^{p3} X2_{t-K} + \alpha_4 \sum_{l=0}^{p4} X3_{t-l} + \ldots\ldots + \alpha_n \sum_{m=0}^{pm} X4_{t-m} + \varepsilon_t \quad (3)$$

3.1. ARDL Specified Models

Model 1

$$\Delta EX_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 \Delta EX_{t-i} + \sum_{i=1}^{n} \alpha_2 \Delta EF_{t-i} + \sum_{i=1}^{n} \alpha_3 \Delta OP_{t-i} + \sum_{i=1}^{n} \alpha_4 \Delta FDI_{t-i} + \sum_{i=1}^{n} \alpha_5 \Delta ER_{t-i} + \lambda_1 EX_{t-1} \lambda_2 EF_{t-1} + \lambda_3 OP_{t-1} + \lambda_4 FDI_{t-1} + \lambda_5 ER_{t-1} + \in_t$$

Model 2

$$\Delta EX_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 \Delta EX_{t-i} + \sum_{i=1}^{n} \alpha_2 \Delta EF_{t-i} + \sum_{i=1}^{n} \alpha_3 \Delta OP^{-}_{t-i} + \sum_{i=1}^{n} \alpha_4 \Delta OP^{+}_{t-i} + \sum_{i=1}^{n} \alpha_5 \Delta FDI_{t-i} + \sum_{i=1}^{n} \alpha_6 \Delta ER_{t-i} + \lambda_1 EX_{t-1}\, \lambda_2 EF_{t-1} + \lambda_3 OP_{t-1} + \lambda_4 FDI_{t-1} + \lambda_5 ER_{t-1} + \in_t$$

Model 3

$$\Delta EX_t = \Phi_0 + \sum_{i=1}^{n} \Phi_1 \Delta EX_{t-i} + \sum_{i=1}^{n} \Phi_2 \Delta EF_{t-i} + \sum_{i=1}^{n} \Phi_3 \Delta OP_{t-i} + \sum_{i=1}^{n} \Phi_4 \Delta FDI_{t-i} + \sum_{i=1}^{n} \Phi_5 \Delta ER_{t-i} + \lambda_1 EX_{t-1}\, \lambda_2 EF_{t-1} + \lambda_3 OP_{t-1} + \lambda_4 FDI_{t-1} + \lambda_5 ER_{t-1} + \in_t$$

Model 4

$$\Delta EX_t = \beta_0 + \sum_{i=1}^{n} \beta_1 \Delta EX_{t-i} + \sum_{i=1}^{n} \beta_2 \Delta EF_{t-i} + \sum_{i=1}^{n} \beta_3 \Delta OP_{t-i} + \sum_{i=1}^{n} \beta_4 \Delta FDI_{t-i} + \sum_{i=1}^{n} \beta_5 \Delta ER_{t-i} + \lambda_1 EX_{t-1}\, \lambda_2 EF_{t-1} + \lambda_3 OP_{t-1} + \lambda_4 FDI_{t-1} + \lambda_5 ER_{t-1} + \in_t$$

Model 5

$$\Delta TEX_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 \Delta TEX_{t-i} + \sum_{i=1}^{n} \alpha_2 \Delta EF_{t-i} + \sum_{i=1}^{n} \alpha_3 \Delta OP_{t-i} + \sum_{i=1}^{n} \alpha_4 \Delta FDI_{t-i} + \sum_{i=1}^{n} \alpha_5 \Delta ER_{t-i} + \lambda_1 TEX_{t-1}\, \lambda_2 EF_{t-1} + \lambda_3 OP_{t-1} + \lambda_4 FDI_{t-1} + \lambda_5 ER_{t-1} + \in_t$$

Model 6

$$\Delta NTEX_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 \Delta NTEX_{t-i} + \sum_{i=1}^{n} \alpha_2 \Delta EF_{t-i} + \sum_{i=1}^{n} \alpha_3 \Delta OP_{t-i} + \sum_{i=1}^{n} \alpha_4 \Delta FDI_{t-i} + \sum_{i=1}^{n} \alpha_5 \Delta ER_{t-i} + \lambda_1 NTEX_{t-1}\, \lambda_2 EF_{t-1} + \lambda_3 OP_{t-1} + \lambda_4 FDI_{t-1} + \lambda_5 ER_{t-1} + \in_t$$

4. RESULTS

Before the empirical investigation, it is necessary to ensure the stationarity of the time series data; it implies that the mean and variance of the time series data remain the same over time. This study applied Augmented Dickey-Fuller (ADF) (Dickey and Fuller, 1979) and Phillips and Perron (Phillips and Perron, 1988) to confirm the stationarity of the data.

The null hypothesis of the ADF test states that Y_t has unit root or series is non-stationary while alternative hypothesis states that Y_t has no unit root and the series is stationary. To test for unit root, the ADF test statistic is compared with a corresponding critical value; if the absolute value of the test statistic is lower than that of the critical value, the null hypothesis is accepted and the series is non-stationary and then we can use the difference of the series. If the time series is stationary at level, it is called series is integrated at level [I (0)] and if the time series is non-stationary at the level and stationary at the first difference, it is called [I (1)]. The results of the ADF test and descriptive statistics have been reported in Table 1.

The probability value of Jarque Bera for all modelled variables is greater than a 5% level of significance that indicating that the data of all modelled variables are normally distributed. Moreover, the data of exports and oil prices is skewed towards the right side and has a long tail on the left side as the value of skewness has a negative sign for both variables. The other variables possess left side skewness and long tails on the right side which is shown by the positive value of skewness. All the variables have a kurtosis value less than 3 which means data is normally distributed and has a fine peak. Moreover, the results of ADF are reported in the lower panel of Table 2 and results indicate that all the variables are integrated at first difference except XP and OP which are stationary at level. These mixed results lead to applying ARDL for long-run cointegration.

4.1. ARDL Bound Test

Before the empirical investigation of short-run and long-run relationships; it is necessary to check the long-run co-integration among the series. Conventionally, Engle and Granger (1987) or Johansen (1988) are utilized to examine the long-run cointegration among series but it has been observed that these methods may produce biased results regarding long-run co-integration when some series are integrated at level [I (0)] and some are integrated at first difference [I (1)] (Engle and Granger, 1987; Johansen, 1988). Thus to obtain unbiased estimations, regardless of whether variables in the model are integrated I(0) and I(1), this study utilized ARDL bound test which was proposed by Pesaran et al. (2001). Therefore, the ARDL Bounds test is used to check the long-

Table 1: Descriptive Statistics

Measures	XP	OP	NER	FDI	EF
Mean	1714.239	78.10826	115.7740	262.8010	629.1087
Median	1774.500	75.72500	103.0989	200.3941	641.8000
Maximum	2665.000	132.8300	161.4620	973.4399	990.1000
Minimum	873.0000	31.33000	79.37794	47.43328	217.0000
Standard Deviation	391.0022	25.45068	27.57248	179.8286	204.6644
Skewness	-0.064853	-0.040369	0.353809	0.810036	0.081157
Kurtosis	2.122381	1.846992	1.453114	1.340234	1.895778
Jarque-Bera	4.559760	5.681690	1.63808	5.08196	0.027841
Probability	0.751411	0.14006	0.82441	0.14982	0.91841

Source: Authors' Calculations

run co-integration between the modelled variables, and results are reported in Table 3. The results indicate that the calculated value of F-statistic is greater than the lower and upper bound values; so there is significant long-run co-integration among modeled variables in model 1, 2, 3, 4, 5 and 6.

After confirmation of long-run co-integration among defined series, this study applied ARDL co-integration technique to estimate short-run and long-run estimates for its several advantages; first, in the case of small sample size, ARDL produce unbiased and reliable estimates, second, it incorporates various lag order of all variables while estimating short-run and long-run estimates and third, it produces short-run and long-run estimates in a single equation. The results of short-run and long-run estimates are reported in Tables 4, and 5. In Table 4, the result of model 1 indicates that oil prices, and export financing schemes have positive and significant while the exchange rate has a negative and significant long-run association with export performance. However, foreign direct investment has an insignificant impact on export performance in Pakistan.

Similarly, in model 2, results indicate that OP^+ and OP^- have a positive and significant long-run association with export performance; as oil prices increase export performance will increase and when oil prices decrease export performance increases. Model 3 indicates that before financial crises oil price, export finance, and foreign direct investment positively and significantly affect export performance while the exchange rate negatively and significantly affects export performance. However, model 4 indicates that after financial crises only oil prices and export financing significantly affect export performance while exchange rate and foreign direct investment insignificantly affect export performance. Model 6 indicates that EF positively and significantly while FDI and ER negatively and significantly affect textile export in long run. However, oil prices have an insignificant association with textile exports. Moreover, model 6 indicates that only oil prices have a significant impact on non-textile export in the long run while all other variables like ER, FDI, and EF have an insignificant impact on export performance in Pakistan.

Table 2: Unit Root Test

Variables	Augmented Dickey-Fuller		Phillip-Perrons	
	At Level		At First Difference	
	ADF	PP	ADF	PP
XP	-1.742	-2.507*	-4.450*	-4.384*
EF	0.028	2.417	-3.577*	-2.925*
OP	-3.662*	-2.597	-2.310*	-2.925*
FDI	-1.473	1.249	-3.596*	-3.577*
ER	-0.923	-1.629	-3.577*	-2.925**
T.XP	-1.473	1.249	-3.596*	-3.577*
N.T.XP	-1.868	-1.313	-6.245*	-6.224*

Source: Authors' Calculations

Table 3: ARDL Bounds Test

Critical Values	F. Statistics											
	F (XP/EF, OP, ER, FDI)								F (T.XP/EF, OP, ER, FDI)		F (N.T.XP/EF, OP, ER, FDI)	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	12.98397		11.38290		17.78739		7.458755		7.434475		26.16476	
	L.B	U.B	L.B	U.B	L.B	U.B	L.B	U.B	L.B	U.B	L.B	U.B
1%	3.74	5.06	3.41	4.68	3.74	3.52	3.74	5.06	3.74	5.06	3.74	5.06
2.5%	3.25	4.49	2.96	4.18	3.25	4.49	3.25	4.49	3.25	4.49	3.25	4.49
5%	2.86	4.01	2.62	3.79	2.86	4.01	2.86	4.01	2.86	4.01	2.86	4.01
10%	2.45	3.52	2.26	3.35	2.45	3.52	2.45	3.52	2.45	3.52	2.45	3.52
Decision	Long run Co-integration exists											

L.B stands for lower bound while U.B indicates upper bound

Table 4: Estimated Long Run Coefficients

Variables	Dependent variable: Export Performance							
	Model 1: ARDL		Model 2: NARDL		Model 3:Before Financial Crisis		Model 4: After Financial Crisis	
	β	P-Value	β	P-Value	β	P-Value	β	P-Value
C	2289.9	0.00	1592.8	0.02	2140.6	0.00	1418.7	0.01
OP	3.93*	0.00			4.24*	0.00	5.25*	0.00
OP^+			5.52*	0.00				
OP_-			4.21*	0.00				
EF	0.44*	0.00	0.32*	0.02	0.14*	0.02	0.63*	0.00
FDI	-0.11	0.43	-0.11	0.37	0.20*	0.00	-0.42	0.16
ER	-9.87*	0.00	-4.37*	0.02	-8.25*	0.00	-2.10	0.65
IV	**Model 5: Dep. variable: TXP**				**Model 6: Dep. variable: NTXP**			
	B		**P-Value**		**B**		**P-Value**	
C	1263		0.00		935212.5		0.11	
EF	284.11*		0.00		-223.62		0.54	
OP	1016.15		0.16		7694.59**		0.05	
FDI	-245.43*		0.00		-22.24		0.95	
ER	-4370.22		0.00		-4850.44		0.16	

Source: Authors' Calculations

Table 5 indicates the results of short-run dynamics. The results of the error correction term (ECT) indicate that if any external shock deviates the export performance from its trend growth path; in the case of model 1, 65% disturbance will be adjusted in the year while in mode 2, 68%, in model 3, 56%, in model 4, 63%, in model 5, 43% and in model 6, 38% disturbance will be adjusted in one year. So all the models are stable and will converge toward a trend growth path with the speed of 65%, 68%, 56%, 63%, 43%, and 38%. Moreover, the CUSUM test for models 1,3,4,5, and 6 ensure that series are stable in all defined error correction models. Furthermore, this study derived multiplier dynamic adjustments for model 2. The cumulative multipliers for oil prices are shown in Figures 3-5, and they confirm the existence of a positive nexus between oil prices

Table 5: The Short-Run Dynamics

Variables	Dependent Variable: Export Performance							
	Model 1: ARDL		Model 2: NARDL		Model 3:Before Financial Crisis		Model 4: After Financial Crisis	
	β	P-Value	β	P-Value	β	P-Value	β	P-Value
ΔOP	1.97	0.00			11.47	0.00	3.33	0.01
ΔOP^{+}			9.46	0.02				
ΔOP^{-}			2.90	0.00				
ΔEF	0.82	0.00	0.81	0.00	0.17	0.03	1.10	0.00
ΔFDI	0.14	0.05	0.12	0.08	0.12	0.04	0.10	0.40
ΔER	-19.83	0.04	-16.84	0.08	-24.63	0.00	-1.33	0.65
ECT(-1)	-0.65	0.00	-0.68	0.00	-0.56	0.00	-0.63	0.00
	Model 5: Dependent Variable: T.XP				Model 6: Dependent Variable: N.T.XP			
	B		P-Value		β		P-Value	
ΔEF	122.233		0.0007		-224.6749		0.5495	
ΔOP	437.169		0.1686		7730.556		0.0529	
ΔFDI	9.7463		0.7672		-22.3463		0.9547	
ΔER	-1880.150		0.0000		-4873.112		0.1653	
ECT(-1)	-0.43		0.0000		-0.38		0.0000	

Source: Authors' Calculations

Figure 3: Cusum Test for Model 1 and multiplier dynamics for Model 2

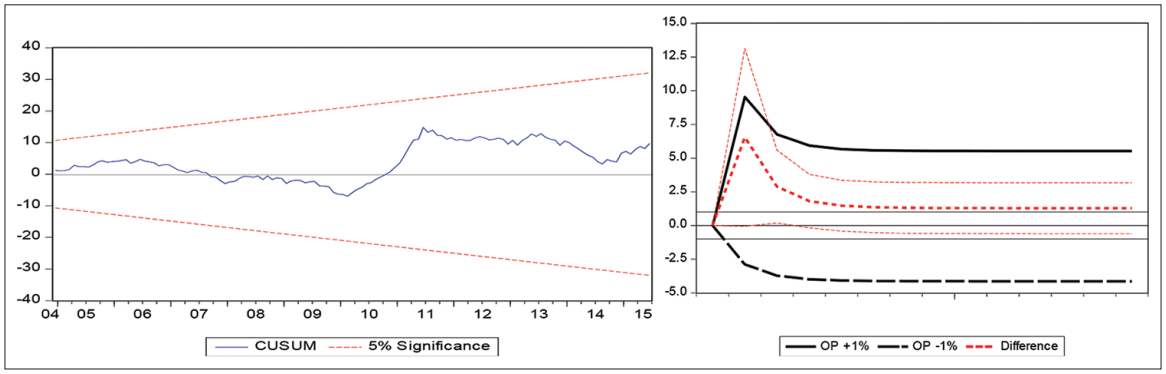


Figure 4: Cusum Test: Model 3 and 4

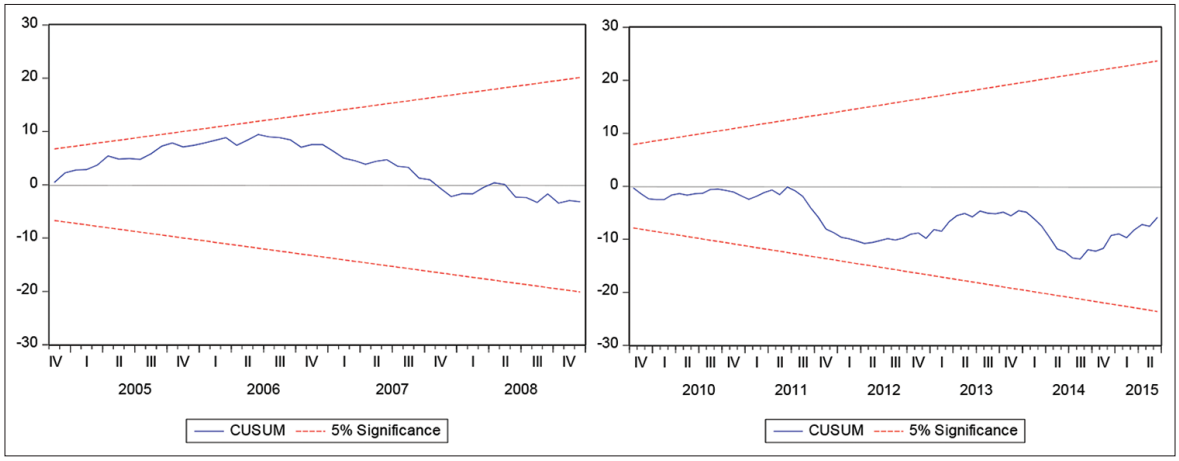
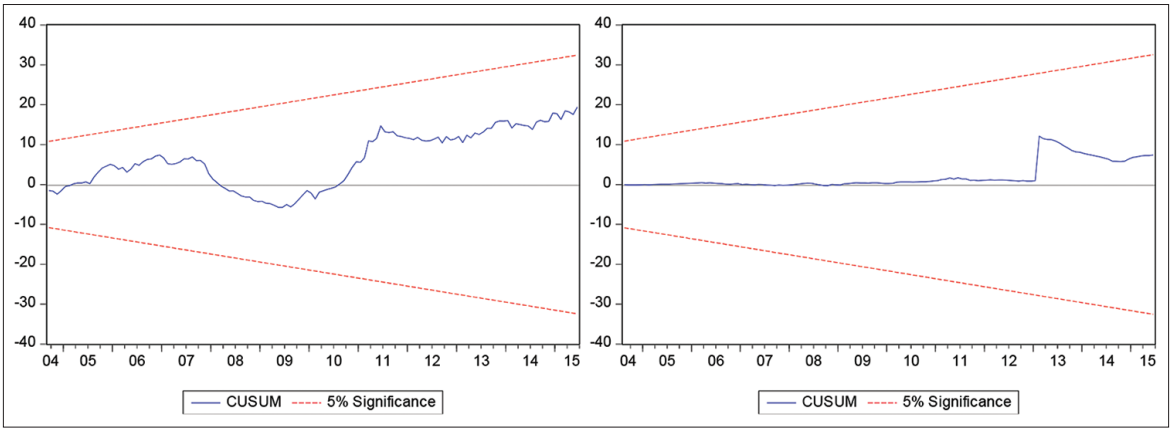


Figure 5: Cusum Test: Model 5 and 6



and export performance. The positive shock in oil price is more dominant than the negative shock.

5. CONCLUSION AND POLICY RECOMMENDATIONS

This study has examined six empirical models; model one examined the impact of export financing schemes like EF-25, oil prices, exchange rate, and foreign direct investment on export performance in Pakistan. Model two examined the asymmetric impact of oil prices on export performance; models three and four studied the impact of export financing schemes like EF-25, oil prices, exchange rate, and foreign direct investment on export performance before and after financial crises 2008. Model five and six examined the impact of export financing schemes, oil prices, exchange rate, and foreign direct investment on textile and non-textile export.

The results indicate that export financing schemes have a positive and significant long-run association with export performance in all models except model six. Our results are consistent with existing literature (Martincus and Carballo, 2008; Ribeiro et al., 2020; Van Biesebroeck et al., 2015) found the vital role of export financing schemes to increase export performance. Specifically, the global financial crisis of 2008 has forcefully demonstrated that export finance plays a key role to motivate local exporters to perform their jobs in international trade (Ter Wengel and Rodriguez, 2006).

This research is conducted on the export performance of Pakistan. Pakistan has tried hard to enhance exporters and to motivate people to export more and more. In this regard, the Pakistan government is benefiting the exporter with different export financing schemes as Pakistani exporter's main issue is finance as it's a capital-lacking country. In this study, the FE-25 scheme is taken for export financing which is used to finance the local exporter in foreign currency so that it can meet its import bills required to produce its exporting products (Zia, 2008). Studies proved that export financing has a positive significant impact on exports of Pakistan. It's proved that it is beneficial for local exporters especially for textile exporters and it should be increased. The second variable is oil prices. Theory suggests that oil prices affect the cost of production positively which can make goods expensive and can affect exports negatively but this study proved that oil prices affect exports positively. Even before and after the financial crisis of 2008 and non-textile exports are also affected by oil prices positively but textile exports are not affected by oil prices. In this regard, Faria et al. (2009) also revealed these results that oil prices have a positive impact on china's exports and the reason behind this is that China is labour abundant country and does not too much rely on machines that are affected by oil prices. So is the case with Pakistan because Pakistan is also a labour-abundant country and this rule can also be applied to Pakistan. This case is also checked via a non-linear approach as the behaviour of oil prices is asymmetric. Oil prices affect positively exports both with positive shock and negative shock.

The world financial crisis affected the whole world (Carvalhal and Leal, 2013), so in this study, it is also checked that before the financial crisis and after the financial crisis what will be the results. In this regard, there is a positive and significant impact of both export financing and oil prices before and after the world financial crisis of 2008 (Baumann and Braga, 1988). When the total exports are segregated into textile and non-textile exports the results show that on textile exports except oil prices all variables have a significant impact, FDI has a negative impact, Export financing and exchange rate have a positive impact on textile export performance (Ahmed, 2008). On non-textile exports only oil prices have significant impact and it is positive. This shows that a major sector of Pakistan in which Pakistan has a revealed comparative advantage does not affected by the change in oil prices. For non-textile exports when oil prices increase the cost of production increases overall the world but as Pakistan is a labor abundant nation so her cost of production is less affected by oil prices. Comparatively low cost of production leads to lower prices in world market due to which in spite of increase in oil prices non-textile exports increase and overall exports also increase. When oil prices decrease the products are much cheaper in the domestic market so the domestic demand increase and the major portion of produced goods is sold in domestic market and less is left to export. For this reason decrease in oil prices leads to decrease the exports of non-textile sector and so as the overall exports.

The government of Pakistan should increase export financing facilities to encourage exporters for the betterment of export performance. Results indicate that the exchange rate hurts exports. To take advantage of this government should increase exports in quantity and quality both to increase the receipts and on the other hand imports should be reduced by imposing trade restrictions on imports for example tariffs and quotas etc. Citizens of the nation should prefer national products to imported products so the import bill will be reduced and the exchange rate will be favourable. Four variables are used to check their impact on exports of Pakistan; however, more variables should be added in this model like labour force and human capital as Pakistan is a labour abundant nation so labour force could be a significant factor that can enhance the export sector of Pakistan.

REFERENCES

Ahmed, Y. (2008), The Textile Industry of Pakistan. Report on Textile Industry of Pakistan. Horizon Securities.

Akgündüz, Y.E., Kal, S.H., Torun, H. (2018), Do subsidised export loans increase exports? The World Economy, 41(8), 2200-2215.

Arghyrou, M.G., Pourpourides, P. (2016), Inflation announcements and asymmetric exchange rate responses. Journal of International Financial Markets, Institutions and Money, 40, 80-84.

Bahmani-Oskooee, M., Fariditavana, H. (2016), Nonlinear ARDL approach and the J-curve phenomenon. Open Economies Review, 27(1), 51-70.

Baumann, R., Braga, H.C. (1988), Export financing in LDCs: The role of subsidies for export performance in Brazil. World Development, 16(7), 821-833.

Bricongne, J.C., Fontagné, L., Gaulier, G., Taglioni, D., Vicard, V. (2012), Firms and the global crisis: French exports in the turmoil. Journal of International Economics, 87(1), 134-146.

Broocks, A., Van Biesebroeck, J. (2017), The impact of export promotion on export market entry. Journal of International Economics, 107, 19-33.

Carvalhal, A., Leal, R.P.C. (2013), The world financial crisis and the international financing of Brazilian companies. BAR-Brazilian Administration Review, 10, 18-39.

Chor, D., Manova, K. (2012), Off the cliff and back? Credit conditions and international trade during the global financial crisis. Journal of International Economics, 87(1), 117-133.

Delatte, A.L., López-Villavicencio, A. (2012), Asymmetric exchange rate pass-through: Evidence from major countries. Journal of Macroeconomics, 34(3), 833-844.

Dickey, D.A., Fuller, W.A. (1979), Distribution of the estimators for autoregressive time series with a unit root. Journal of the American Statistical Association, 74(366a), 427-431.

Doğrul, H.G., Soytas, U. (2010), Relationship between oil prices, interest rate, and unemployment: Evidence from an emerging market. Energy Economics, 32(6), 1523-1528.

Engle, R.F., Granger, C.W. (1987), Co-integration and error correction: Representation, estimation, and testing. Econometrica: Journal of the Econometric Society, 55, 251-276.

Falk, B. (1986), Further evidence on the asymmetric behaviour of economic time series over the business cycle. Journal of Political Economy, 94(5), 1096-1109.

Faria, J.R., Mollick, A.V., Albuquerque, P.H., León-Ledesma, M.A. (2009), The effect of oil price on China's exports. China Economic Review, 20(4), 793-805.

Felbermayr, G.J., Yalcin, E. (2013), Export credit guarantees and export performance: An empirical analysis for Germany. The World Economy, 36(8), 967-999.

Fetai, B., Morina, F. (2019), Does FDI inflow accelerate export performance in countries in transition? An empirical analysis of European countries in transition. Research in Economics and Business: Central and Eastern Europe, 11(1), 5-16.

Iacovone, L., Zavacka, V. (2009), Banking Crises and Exports: Lessons from the Past. Washington, DC: The World Bank.

Ibrahim, M.H. (2015), Oil and food prices in Malaysia: A nonlinear ARDL analysis. Agricultural and Food Economics, 3(1), 2.

Jawad, M. (2013), Oil price volatility and its impact on economic growth in Pakistan. Journal of Finance and Economics, 1(4), 62-68.

Johansen, S. (1988), Statistical analysis of cointegration vectors. Journal of Economic Dynamics and Control, 12(2-3), 231-254.

Kahneman, D., Tversky, A. (2013), Prospect theory: An analysis of decision under risk. In: Handbook of the Fundamentals of Financial Decision Making: Part I. Singapore: World Scientific. p99-127.

Katircioglu, S.T., Sertoglu, K., Candemir, M., Mercan, M. (2015), Oil price movements and macroeconomic performance: Evidence from twenty-six OECD countries. Renewable and Sustainable Energy Reviews, 44, 257-270.

Katrakilidis, C., Trachanas, E. (2012), What drives housing price dynamics in Greece: New evidence from asymmetric ARDL cointegration. Economic Modelling, 29(4), 1064-1069.

Katsikeas, C.S., Piercy, N.F., Ioannidis, C. (1996), Determinants of export performance in a European context. European Journal of Marketing, 30(6), 6-35.

Lardic, S., Mignon, V. (2008), Oil prices and economic activity: An asymmetric cointegration approach. Energy Economics, 30(3), 847-855.

Liu, X., Shu, C. (2003), Determinants of export performance: Evidence from Chinese industries. Economics of Planning, 36(1), 45-67.

Martincus, C.V., Carballo, J. (2008), Is export promotion effective in developing countries? Firm-level evidence on the intensive and the extensive margins of exports. Journal of International Economics, 76(1), 89-106.

Mohanty, S., Sethi, N. (2019), Does inward FDI lead to export performance in India? An empirical investigation. Global Business Review, 22(2), 0972150919832770.

Neftci, S.N. (1984), Are economic time series asymmetric over the business cycle? Journal of Political Economy, 92(2), 307-328.

Pesaran, M.H., Shin, Y., Smith, R.J. (2001), Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289-326.

Phillips, P.C., Perron, P. (1988), Testing for a unit root in time series regression. Biometrika, 75(2), 335-346.

Qianqian, Z. (2011), The impact of international oil price fluctuation on China's economy. Energy Procedia, 5, 1360-1364.

Qin, X., Zhou, C., Wu, C. (2016), Revisiting asymmetric price transmission in the US oil-gasoline markets: A multiple threshold error-correction analysis. Economic Modelling, 52, 583-591.

Ram, R. (1985), Exports and economic growth: Some additional evidence. Economic Development and Cultural Change, 33(2), 415-425.

Raza, N., Shahzad, S.J.H., Tiwari, A.K., Shahbaz, M. (2016), Asymmetric impact of gold, oil prices and their volatilities on stock prices of emerging markets. Resources Policy, 49, 290-301.

Ribeiro, J., Figueiredo, A., Forte, R. (2020), Export promotion programs: Differences between advanced and emerging economies. Journal of East-West Business, 26(3), 213-234.

Shiller, R.J. (1994), Macro markets: Creating Institutions for Managing Society's Largest Economic Risks. Oxford, United Kingdom: OUP Oxford.

Shiller, R.J. (2015), Irrational Exuberance: Revised and Expanded. 3rd ed.

Princeton, New Jersey: Princeton University Press.
Ter Wengel, J., Rodriguez, E. (2006), SME export performance in Indonesia after the crisis. Small Business Economics, 26(1), 25-37.
Thuy, V.N.T., Thuy, D.T.T. (2019), The impact of exchange rate volatility on exports in Vietnam: A bounds testing approach. Journal of Risk and Financial Management, 12(1), 6.
Van Biesebroeck, J., Yu, E., Chen, S. (2015), The impact of trade promotion services on Canadian exporter performance. Canadian Journal of Economics, 48(4), 1481-1512.
Verheyen, F. (2013a), Exchange rate nonlinearities in EMU exports to the US. Economic Modelling, 32, 66-76.
Verheyen, F. (2013b), Interest rate pass-through in the EMU-new evidence using the nonlinear ARDL framework. Economics Bulletin, 33(1), 729-739.
Vo, D.H., Zhang, Z. (2019), Exchange rate volatility and disaggregated manufacturing exports: Evidence from an emerging country. Journal of Risk and Financial Management, 12(1), 12.
Zia, B.H. (2008), Export incentives, financial constraints, and the (mis) allocation of credit: Micro-level evidence from subsidized export loans. Journal of Financial Economics, 87(2), 498-527.