Financial Sector Reforms and International Trade Competitiveness: A Case Study of Pakistan

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***Abstract*—This paper explores the relationship between financial development and international trade competitiveness in the case of Pakistan. An earlier study on this issue, Hanif and Jafri (2008), has some empirical limitations as it is based on Engle-Granger (1987) two steps procedure while dealing with multiple variables regressions. In this study we have used ARDL model by Pesaran, Shin and Smith (1999). We have also applied Johansen test for cointegration and checked the robustness of results established by the ARDL model. We have estimated the cointegration vector using Stock and Watson (1993) dynamic OLS method. We find a stable long run positive relationship between international trade competitiveness of Pakistan and its financial sector development. The estimated external finance elasticity of international trade competitiveness of textile sector in Pakistan is found to be 0.26 which is significantly higher than 0.17 estimated by Hanif and Jafri (2008).**

***Index Terms*——Competitiveness, Financial Sector, International Trade, Pakistan**

I. INTRODUCTION

CENTRAL bank, commercial banks, financial markets, and non bank financial institutions (like pension funds, insurance companies) constitute financial system of a country. Financial system utilizes country's productive resources to facilitate capital formation through the provision of a wide range of financial services to meet the different requirements of savers and saving users. Thus, financial system plays a crucial role in mobilizing and intermediating saving, and ensuring efficient allocation of these resources to productive sectors [Ang (2008)].

The literature on financial aspects of development and economic growth dates back to the early work by Gurley and Shaw (1955). The intellectual basis for restructuring of the financial sector was provided by McKinnon (1973) and Shaw (1973). Over the last few decades researchers have shown that financial sector development plays significant role in economic growth. At the backdrop of McKinnon (1973) and Shaw (1973), results of empirical studies in favour of financial liberalization, process of financial reforms was started in 1980s by most of the developing countries including Pakistan.

Reforming the financial sector may have implications for the structure of international trade if financial development is a determinant of a country's comparative advantage as Kletzer and Bardhan (1987) highlighted. Conventional theories of international trade focus on comparative advantage based on factor endowments concepts. The investigation of the association between financial sector and international trade competitiveness is a recent phenomenon in international economics literature. Kletzer and Bardhan (1987) highlight the contribution of some aspects of credit market imperfections to inter-country difference in patterns of specialization and trade, even when technology and endowments are identical between countries and economies of scale are alike. They show that these are the differences between countries in the domestic institutions of credit contract enforcement (under incomplete market information) which may lead to one country facing a higher interest rate or rationed credit compared to other countries and these differences may lead to differences in comparative advantages in processed goods which require more finance. Kletzer and Bardhan based their argument on a conjecture that more sophisticated manufactured finished products require more credit to cover selling and distribution costs than primary or intermediate products. They show that countries with a relatively better developed financial sector have comparative advantage in industries and sectors that rely more on external finance. Recent study by Fanelli and Medhora (2002) vindicates the argument of Kletzer and Bardhan (1987) by finding that comparative advantage is positively affected by the financial sector development.

Pakistan opted for export promotion in 1970s and 1980s over past import substitution policies. After signing a Structural Adjustment Programme with the IMF in 1988, Pakistan liberalized both imports and exports that continued during 1990s and later. It was almost the same time when Pakistan also started financial sector reforms as mentioned above.

There has been only one attempt so far to analyze the association between the financial sector and international trade competitiveness in the case of Pakistan. Hanif and Jafri (2008), constructing Revealed Comparative Advantage (RCA) index for the textile sector and using ratio of credit extended to the textile sector to the total non-government credit of the banking system as proxy for external finance, estimated the long run relationship between RCA index and external finance while controlling for other determinants of the international trade competitiveness of textile sector of Pakistan. However, their study has some empirical limitations including use of Engle-Granger (1987) two steps procedure on multiple variables regressions. In this study we have used recently developed test based on autoregressive distributed lagged (ARDL) model by Pesaran, Shin and Smith (1999) for investigating long run relationship between international trade

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competitiveness of Pakistan and its financial sector development, while considering the other determinants of competitiveness. We have also applied Johansen test for cointegration to check robustness of our results. Cointegrating vector is estimated by Dynamic OLS approach of Stock and Watson (1993). While Engle-Granger (1987) may reveal substantial bias and suffers from a non-standard asymptotic distribution, DOLS estimator provides valid and efficient inference on the parameters of a cointegrating vector.

Our findings suggest that there is stable long run positive relationship between international trade competitiveness of Pakistan and its financial sector development. The estimated external finance elasticity of international trade competitiveness of textile sector in Pakistan is found to be 0.26 which is 53 percent higher than estimated (0.17) by Hanif and Jafri (2008) using Engle and Granger approach.

The rest of the study is structured as follows. In Section 2, we review some of the theoretical and empirical research already conducted relating to finance trade nexus. In Section 3, we discuss the methodology we utilize for analyzing the finance-competitiveness nexus for Pakistan. In Section 4 we have present our empirical findings and concluding remarks are given in the last Section.

II. REVIEW OF LITERATURE

The emergence of financial sector is the result of time and space inconsistency of supply and demand of loanable funds, costs of acquiring information, and making transactions in an uncertain environment. Financial markets arise to ameliorate the problems created by information and transactions frictions. Among the macroeconomic variables that the empirical growth literature has identified as being highly correlated with growth performance is financial development [Detragiache and Ueda (2004), Khan and Senhaji (2000) and Levine (1997)]. Another such variable which is highly correlated with economic growth is the degree of openness [Frankel and Romer (1999), for example]. The development economists have rarely explored the area of relationship between financial development and trade patterns. However, Kletzer and Bardhan (1987), in their seminal work, show that countries with relatively well-developed financial sector have a comparative advantage in industries that depend more on external finance. In Kletzer and Bardhan (1987) model, even when technology and endowments are identical between the (two) countries and their economies of scale are also alike, credit market frictions lead to one country facing a higher (real) interest rate or rationed credit compared to other countries. This may happen amongst the different sectors in the same economy. As a result there may be differences in comparative advantages in processed goods which require more working capital, marketing cost, or trade finance. Kletzer and Bardhan (1987) presumed that more sophisticated manufactured finished products require more (external) finance to cover selling and distribution costs than primary or intermediate products.

Rajan and Zingales (1998) establishing the link between financial development and economic growth concluded that in countries with well-developed financial systems, industries that require more external finance grow faster. They argue that their result has implications for patterns of international trade, as well-developed financial sector is a source of comparative advantage for industries that require more external finance.

Beck (2002) reexamines the link between level of financial development and the level and structure of international trade. He analyses theoretically a channel through which economy-wide level of external finance determines the (commodity) structure of trade balance. Beck model focuses on the role of finance in mobilizing saving and facilitating large scale and high return projects. He also finds empirical evidence supporting his model that a well-developed financial sector translate into a comparative advantage in the production of manufactured goods, thus the level of financial development translates into comparative advantage in industries that are more dependent on external finance.

According to most recent empirical endeavor, Fanelli and Medhora (2002) suggest that the competitiveness of a country depends both on the price and non-price factors. For improving the price competitiveness devaluation can prove helpful in the short run. However the non-price competitiveness can be induced in industries by enhancing the level of productivity. They explain that in an environment of efficient financial markets the financial intermediaries are in a position of impacting the level of innovation by identifying and channeling funds to most efficient users. The imperfections in the financial market, on the other hand, reduce the ability of the financial sector to efficiently channel funds from lenders to the borrowers that negatively impacts the productivity growth. Hence, higher level of financial development impacts comparative advantage of a country by enhancing the level of productivity by identifying entrepreneurs with the best chances of successfully implementing innovative production processes.

There has been only one attempt so far to explore the relation between financial development and international trade competitiveness in the case of Pakistan and that is Hanif and Jafri (2008). Their findings suggest that dependence on external finance has a positive impact on the Pakistan's textile sector competitiveness both in the short and the long run. Their study has, however, some empirical limitations as it is based on Engle-Granger (1987) two steps procedure on multiple variables regressions. Despite the attractive asymptotic properties of the Engle-Granger two step procedure of cointegration, it has a few weaknesses; like the biased parameter estimates in finite samples and too low power of the test if applied to more than two variable regressions.

We have used Auto Regressive Distributed Lagged (ARDL) model by Pesaran, Shin and Smith (1999) to investigate long run relationship between international trade competitiveness

of Pakistan and its financial development while considering the other determinants of competitiveness. This test for a long run relationship between the variables is applicable irrespective of whether the regressors are I(0), I(1) or mutually cointegrated. Whilst the key element of Pesaran, Shin and Smith (1999) test based on ARDL model is that it is applicable irrespective of whether the regressors are I(0), I(1); it requires that the maximum order of integration is one. Thus we have checked whether the series used in this study are I(1) or otherwise. We found all the series integrated of order 1. While it fulfils one of the assumptions of ARDL approach to test for cointegration, it also allows us to apply Johansen maximum likelihood method of testing for cointegration and check the robustness of our results established by use of Pesaran, Shin and Smith (1999) test based on ARDL model. Once we are sure of cointegration between international trade competitiveness of Pakistan and Pakistan's level of financial sector development and other determinants of competitiveness, we estimate the cointegration vector using Stock and Watson (1993) Dynamic OLS or DOLS.

III. DATA AND METHODOLOGY

Time span of this study is 1974 to 2004 and we will be using annual data series. In order to measure competitiveness we have used Balassa (1965) index of Revealed Comparative Advantage for textile sector (RCAT) of Pakistan (being the largest manufactures export contributor). It is given by

$$RCAT_P = \frac{X_{PT}/X_P}{X_{wT}/X_w} \tag{3.1}$$

where X_{PT} is Pakistan's exports of textile sector, X_P is total exports of Pakistan, X_{wT} is world's exports of textile sector, and X_w is the overall exports in the world. If $RCAT_P$ is greater than unity it means that Pakistan has comparative advantage in production in her textile sector. Comtrade (United Nations, Statistics Division Database) data has been used for compiling RCAT index for textile sector of Pakistan.

Defining appropriate proxy for the role of financial sector in the providing external finance to the textile sector of Pakistan is surely a challenge. King and Levine (1993) has used ratio of claims on the nonfinancial private sector to total domestic credit as one of the proxies of financial development. Since our focus is on textile sector of Pakistan, in order to measure the role of financial sector in (providing external finance i.e. EXTF) international trade competitiveness we use the ratio of credit extended to the textile sector by deposit money banks to the total credit extended by such banks (excluding credit to government).

If we assume bi-variate relationship between the textile sector competitiveness (RCAT) and financial sector development (EXTF) and assume that rest of the variable explaining textile sector comparative advantage are showing in error term η_t then we can have the following model for estimating the relationship between RCAT and EXTF.

$$Log\ (RCAT_t) = \beta_0 + \beta_1 Log\ (EXTF_t) + \eta_t \tag{3.2}$$

If the estimate of the slope parameters β_1 turns out to be positively significant, it means more dependence of a textile sector on external finance helps a Pakistan achieve international trade competitiveness in textile sector.

However, external finance is not the only determinant of the Pakistan's competitiveness in textile sector. In order to assess the impact of financial sector development on the comparative advantage of the Pakistan's competitiveness in textile sector we have to control for other determinants as well. In the following we discuss other potential determinants of Pakistan's textile sector competitiveness.

The relative strength of a country's currency vis-a vis its competitors along with its domestic price level is an important source of comparative advantage to a country. We take this fact into account by inclusion of country's real effective exchange rate (REER) in our model.

Another very strong theoretical determinant of trade competitiveness is the terms of trade (TERT). It is measured by ratio of unit value of exports to the unit value of imports. It may be the case that both the REER and TERT are price variable and this may have some statistical implications. We will keep one of both of the two on the basis of their long run (statistical) significance as a determinant of Pakistan's international trade competitiveness.

Furthermore, Pakistan is amongst top five cotton producing countries and this natural edge gives our country a comparative advantage over its competitors. To capture the effect of this factor endowment, we would like to include cotton production (COTN) as an explanatory variable in the model.

The definition and sources of all the variables to be used in this study are explained in Table 1.

One the basis of the above discussion we would like to estimate the following econometric model:

$$\begin{aligned} Log\ (RCAT_t) &= \beta_0 + \beta_1 Log\ (EXTF_t) + \\ &\beta_2 Log\ (REER_t) + \beta_3 Log\ (COTN_t) \\ &+ \beta_4 Log\ (TERT_t) + \varepsilon_t \end{aligned} \tag{3.3}$$

We have used ARDL model of Pesaran, Shin and Smith (1999) to test cointegration international trade competitiveness of Pakistan and its financial development, while incorporating other determinants of competitiveness. This test is based upon estimation of the underlying VAR model, re-parameterized as an Error Correction Model (ECM).

TABLE 1: DEFINITION AND SOURCES OF DATA

Variable	Description	Source
RCAT	Revealed Comparative Advantage index for Textile Sector of Pakistan	Calculated using "Comtrade" data of UN Statistics Division
EXTF	Amount of External Finance availed by Textile Sector from Banking System as proportion of overall non-government assets of the banking sector.	SBP
REER	Real Effective Exchange Rate	SBP
COTN	Cotton Production in Pakistan	"Handbook of Statistics on Pakistan Economy" by SBP
TERT	Terms of Trade	Measured by ratio of unit value of exports to unit value of imports. We use Federal Bureau of Statistics data on unit value indices to construct this variable.

The VAR(p) model is

$$z_t = b + ct + \sum_{i=1}^{p} \Phi_i z_{t-i} + \varepsilon_t \tag{3.4}$$

where z represents a vector of variables. Under the assumption that the individual elements of z are at the most I(1), equation (3.4) can be written as a simple Vector ECM.

$$\Delta z_t = b + ct + \Pi z_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta z_{t-i} + \varepsilon_t \tag{3.5}$$

where $\Pi = -\left(I_{k+1} - \sum_{i=1}^{p} \Phi_i\right)$ and $\Gamma_i = -\sum_{j=i+1}^{p} \Phi_j, i = 1, \ldots . p-1$ are the $(k+1) \times (k+1)$ matrices of the long run multipliers and the short run dynamic coefficients. By making the assumption that there is only one long run relationship amongst the variables, Pesaran, Shin and Smith (1999) focus on the first equation in (3.5) and partition z_t into a dependant variable y_t and a set of forcing variables x. Under such conditions the matrices b, c, Γ and, most importantly, Π, the long run multiplier matrix can also be partitioned conformably with the partitioning of z.

$$\Pi = \begin{bmatrix} \pi_{11} & \pi_{12} \\ \pi_{21} & \Pi_{22} \end{bmatrix} \quad b = \begin{bmatrix} b_1 \\ b_2 \end{bmatrix} \quad c = \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} \quad \Gamma_i = \begin{bmatrix} \gamma_{11,i} & \gamma_{12,i} \\ \gamma_{21,i} & \gamma_{22,i} \end{bmatrix}$$

x is long run forcing for y implies that the vector $\pi_{21} = 0$, i.e. there is no feedback from the level of y on Δx. As a result the conditional model for Δy and Δx can be written as

$$\Delta y_t = b_1 + c_1 t + \pi_{11} y_{t-1} + \pi_{12} x_{t-1} + \sum_{i=1}^{p-1} \gamma_{11,i} \Delta y_{t-i} + \sum_{i=0}^{p-1} \boldsymbol{\gamma}_{12,i} \boldsymbol{\Delta x}_{t-i} + \varepsilon_{1t} \tag{3.6}$$

$$\Delta x_t = b_2 + c_2 t + \boldsymbol{\Pi}_{22} x_{t-1} + \sum_{i=1}^{p-1} \gamma_{21,i} \Delta y_{t-i} + \sum_{i=1}^{p-1} \boldsymbol{\Gamma}_{22,i} \boldsymbol{\Delta x}_{t-i} + \boldsymbol{\varepsilon}_{2t} \tag{3.7}$$

Under standard assumptions about the error terms in (3.6) and (3.7) Pesaran, Shin and Smith (1999) re-write (3.6) as

$$\Delta y_t = a_0 + a_1 t + \phi y_{t-1} + \delta x_{t-1} + \sum_{i=1}^{p-1} \upsilon_i \Delta y_{t-i} + \sum_{i=0}^{p-1} \varphi_i \Delta x_{t-i} + \varpi_t \tag{3.8}$$

which they call an unrestricted error correction model. Note that in (3.8) a long run relationship exists among the levels of variables if the two parameters ϕ and δ are both non zero in which case, for the long run solution of (3.8) we obtain

$$y_t = -\frac{a_0}{\phi} - \frac{a_1}{\phi} t - \frac{\delta}{\phi} x_t \tag{3.9}$$

Pesaran, Shin and Smith (1999) suggest to test the hypothesis of no long run relationship between y and x by testing the joint hypothesis that $\phi = \delta = 0$ in the context of equation (3.8).

Whilst the key element of Pesaran, Shin and Smith (1999) test based on ARDL model is that it is applicable irrespective of whether the regressors are I(0), I(1); it requires that the maximum order of integration is one. Thus we have checked whether the series used in this study are I(1) or otherwise. We found the series used in this study to be integrated of order 1. It allows us to apply Johansen maximum likelihood method of testing for cointegration and check the robustness of our results established by the ARDL model.

Once we are sure of cointegration between international trade competitiveness of Pakistan and Pakistan's level of financial sector development and other determinants of competitiveness, we have estimated the cointegration vector using Stock and Watson (1993) Dynamic OLS or DOLS. While Engle-Granger (1987) used by Hanif and Jafri (2008) may reveal substantial bias and suffers from a non-standard asymptotic distribution, DOLS estimator provides valid and efficient inference on the parameters of a cointegrating vector. The dynamic regression is estimated by OLS equation with the RHS endogenous variable(s), a constant and current, leads and lags of the differenced RHS endogenous variable(s) as explanatory variables.

IV. EMPIRICAL FINDINGS

Figure 1 shows the behaviour of revealed comparative advantage of textile sector of Pakistan (RCAT) and the share of credit extended to the textile sector in the total non-government credit of the banking system of Pakistan which we have used as a measure of external finance (EXTF). It shows that both the variables of interest move almost together. Figure 2 also depicts a positive association between the two variables.

The coefficient of correlation between revealed comparative advantage of textile sector of Pakistan and the share of credit extended to the textile sector in the total non-government credit of the banking system of Pakistan is 0.66 as shown in Table 2 on descriptive statistics and correlation matrix. The signs of other correlation coefficients are also in line with those expected according the conventional wisdom.

Figure 1: Time Series Plot of RCAT & EXTF

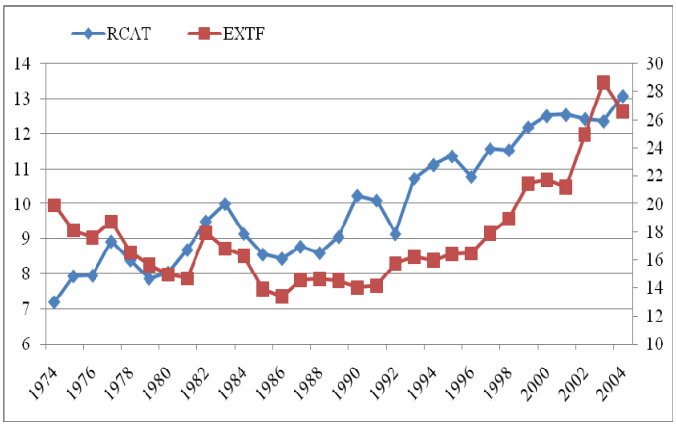


Figure 2: Scatter Plot of RCAT & EXTF

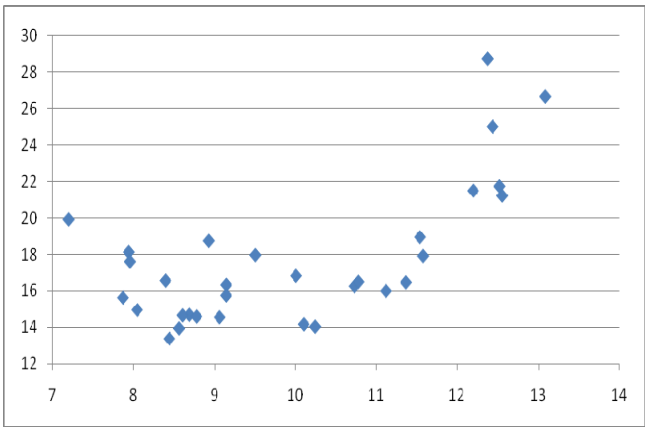


TABLE 2: DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

	RCAT	EXTF	REER	COTN	TERT
Mean	9.97	17.7	129.89	7.27	116.68
Median	9.51	16.48	112.84	8.39	115.19
Maximum	13.09	28.68	197.72	12.8	199.52
Minimum	7.21	13.38	81.06	2.56	78.68
Stand.Dev.	1.72	3.78	42.41	3.04	25.16
RCAT	1.00				
EXTF	0.66	1.00			
REER	-0.81	-0.37	1.00		
COTN	0.73	0.31	-0.94	1.00	
TERT	-0.76	-0.33	0.70	-0.76	1.00

As discussed in Section 3 we will be using a cointegration test based on ARDL model. For this purpose we need to estimate model in (3.8) based on our variables of interest. This requires specifying the lag order which we have found to be 1. This lag selection result is robust to various lag selection approaches like sequential modified likelihood ratio test (LR), Akaike information criterion (AIC), Schwartz information criterion (SC), final predication error (FPE) and Hannan Quinn information criterion (HQ). Thus, we estimate the following model.

$$\begin{aligned}\Delta Log\ (RCAT_{\ t}) &= \alpha_0 + \alpha_1 t + \phi Log\ (RCAT_{\ t-1}) + \\ &\delta_1 Log\ (EXTF_{\ t-1}) + \delta_2 Log\ (REER_{\ t-1}) + \\ &\delta_3 Log\ (COTN_{\ t-1}) + \delta_4 Log\ (TERT_{\ t-1}) + \\ &\nu_1 \Delta Log\ (RCAT_{\ t-1}) + \varphi_1 \Delta Log\ (EXTF_{\ t}) + \\ &\varphi_2 \Delta Log\ (REER_{\ t}) + \varphi_3 \Delta Log\ (COTN_{\ t}) + \\ &\varphi_4 \Delta Log\ (TERT_{\ t}) + \varphi_5 \Delta Log\ (EXTF_{\ t-1}) + \\ &\varphi_6 \Delta Log\ (REER_{\ t-1}) + \varphi_7 \Delta Log\ (COTN_{\ t-1}) \\ &+ \varphi_8 \Delta Log\ (TERT_{\ t-1}) + \varepsilon_t\end{aligned} \tag{4.1}$$

After estimation of the equation 4.1 we test joint hypothesis that all the coefficients of the lagged (level) regressors are jointly zero as a test of 'no long run relationship' between international trade competitiveness of Pakistan and its determinants including the financial development. The results of the hypothesis testing are presented in Table 3.

TABLE 3: TEST OF NO LONG RUN RELATIONSHIP BETWEEN INT. TRADE COMPETITIVENESS & ITS DETERMINANTS

Test Statistic	Value	Probability
F-Statistic	5.31	0.0059
Chi-Square	37.18	0.0000

From Table 3 we can see that we reject the null of no long run relationship between international trade competitiveness of Pakistan and its determinants including the level of financial sector development.

As we mentioned in above section the key element of ARDL testing procedure is to test for the existence of a long run relationship without pre-testing whether the series in the model are I(1) or I(0). However, it requires that the maximum order of integration is one. We have checked for the maximum order of integration of the series used in this study which found to be 1. We have used Dickey Fuller (DF) unit root test to test the time series properties of the series used. We use zero lag as suggested by 'Schwartz Information Criteria' for lag selection. Intercept and/or trend has been included on the basis of their statistical significance in the DF equation. The results of DF test are presented in Table 4 (with MacKinnon's one-sided p-values in the parentheses).

TABLE 4: TEST FOR ORDER OF INTEGRATION

Variable	DF Test Value(p-value)	
	At Levels	At First Differences
RCAT	-2.85 (0.19)	-5.33 (0.00)
EXTF	-1.46 (0.82)	-4.57 (0.00)
REER	-2.24 (0.44)	-3.75 (0.00)
COTN	-2.83 (0.20)	-7.18 (0.00)
TERT	-3.31 (0.08)	-5.23 (0.00)

The results of the DF unit root test show that all the series used in this study are integrated of order 1 as are stationary after first difference. While it fulfils one of the assumptions of ARDL approach to test for cointegration, it also allows us to apply Johansen maximum likelihood method of testing for cointegration and check the robustness of our results established above by using Pesaran, Shin and Smith (1999) test for long run relationship.

Thus we reexamine the relationship using the Johansen maximum likelihood method of testing for cointegration. This also requires specifying the lag order which we have found to be 1 and this is unanimous results of various lag selection tests as we discussed above.

In Table 5 the results of the Johansen maximum likelihood method of testing for cointegration have been presented.

Both the Trace test and Maximum Eigen Value test indicate existence of one cointegrating equation. Thus using both the ARDL and Johansen's cointegration testing approached we have established that there exists a long run relationship between international trade competitiveness of Pakistan and its determinants including the level of financial sector development.

TABLE 5: JOHANSEN'S TEST FOR COINTEGRATION

No. of Cointegrating Vector	Trace Statistic	P-Value	Maximum Eigen Value Statistic	P-Value
None	112.65	0.0004	56.48	0.0002
At Most One	56.17	0.1874	26.74	0.1970

We now estimate the cointegration vector using Stock and Watson (1993) Dynamic OLS or DOLS. While Engle-Granger (1987) used by Hanif and Jafri (2008) may reveal substantial bias and suffers from a non-standard asymptotic distribution, DOLS estimator provides valid and efficient inference on the parameters of a cointegrating vector. This method is superior to a number of other estimators as it can be applied to a system of variables with different orders of integration. The dynamic regression is estimated by OLS equation with the RHS endogenous variable(s), a constant and current, leads and lags of the differenced RHS endogenous variable(s) as explanatory variables. By inclusion of leads and lags of the differenced explanatory variables corrects for simultaneity bias and small sample bias. For calculation of standard errors we have used Newey-West Heteroscedasticity and Autocorrelation Consistent Covariance estimator.

In Table 6 we have presented the estimated external finance elasticity of international trade competitiveness of textile sector in Pakistan. The final model includes only the significant variables from amongst the RHS endogenous variable(s), and the current, leads and lags of the differenced RHS endogenous variable. The estimated coefficients and hence their standard errors and t-statistics the (significant) leads and lags differenced variables are not reported only because these estimated coefficients need not necessarily have some economic interpretation. We have given in the lower part of table some results related to diagnostic tests applied upon the residual series of the estimated model for RCAT using Stock and Watson DOLS method. All these results show that the estimated model does not suffer from any econometric problem. Figures 3 and 4 also exhibit about the stability of the estimated model.

TABLE 6: ESTIMATED STOCK AND WATSON DOLS MODEL FOR RCAT

Variable	Coefficient	Standard Error	t-statistic (p-value)
Constant	4.06	0.21	19.62 (0.00)
EXTF	0.26	0.06	4.41 (0.00)
REER	-0.27	0.04	-6.49 (0.00)
Diagnostic Statistics			
R-squared Adjusted			0.90
S.E of Regression			0.05
F-statistic			47.79
Ramsey RESET (F) statistic			1.63 (0.21)
Jarque Bera Test for Normality			0.63 (0.73)
Breush Godfrey LM Test for Serial Correlation			0.69 (0.51)

Figure 3

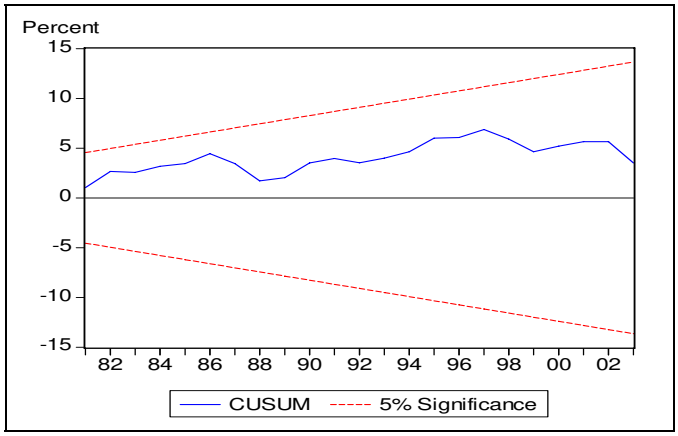
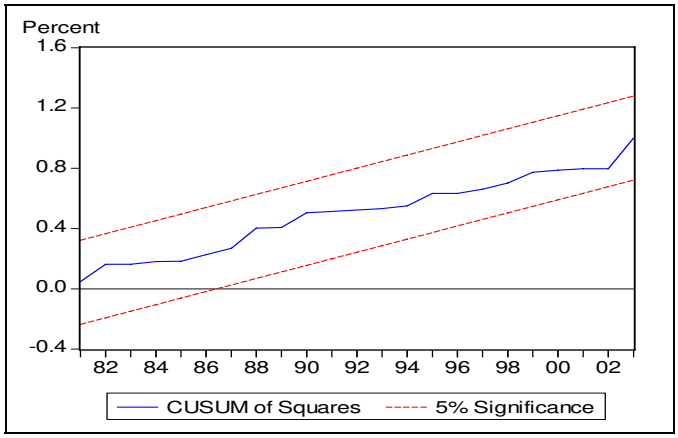


Figure 4



The estimated external finance elasticity of international trade competitiveness of textile sector in Pakistan is found to be 0.26. This is significantly higher than the same estimated around 0.17 by Hanif and Jafri (2008) using Engle and Granger approach. It shows that they have under estimated the elasticity of international trade competitiveness of textile sector in Pakistan.

In the final model estimated we do not find TERT to be significant this may be because we have used the terms of trade of overall international trade of Pakistan rather than that only related to textile sector of Pakistan. We understand that this is a limitation of this study. Thus the results suggested by this need to be interpreted with caution.

One may argue that variables like wage inflation, (domestic industrial) electricity prices and (high speed) diesel prices may also affect the textile sector competitiveness through cost of production channel. We tested these variables and could not find these variables to have statistically significant impact on textile sector competitiveness in the long run.

V. CONCLUSION

Financial sector of a country comprises entities engaged in transactions involving financial instruments in money, capital, and foreign exchange markets. This sector has strong linkages with other sectors of the economy like external, fiscal and real sectors. Reforming the financial sector may have implications for other sector of the economy and particularly for the structure of international trade if the level of financial development is a determinant of a country's comparative advantage as Kletzer and Bardhan (1987) highlighted. They show that countries with a relatively better developed financial sector have comparative advantage in industries and sectors that rely more on external finance. Fanelli and Medhora (2002) vindicates the argument of Kletzer and Bardhan (1987) by finding that comparative advantage is positively affected by the financial sector development.

Hanif and Jafri (2008) explored the association between the financial sector and international trade competitiveness in the case of Pakistan but this study has some empirical limitations. In this study we have used ARDL model approach of Pesaran, Shin and Smith (1999) to see if there is a long run relationship between international trade competitiveness of Pakistan and its financial development in a set up where other determinants of competitiveness are also considered. We have also applied Johansen cointegration test and checked the robustness of our results established by ARDL model. The cointegration vector is estimated using Stock and Watson (1993) dynamic OLS approach which provides valid and efficient inference on the parameters of a cointegrating vector.

Our findings suggest that there is stable long run positive relationship between international trade competitiveness of Pakistan and its level of financial sector development. The estimated external finance elasticity of international trade competitiveness of textile sector in Pakistan is found to be 0.26 which is significantly higher than (0.17) estimated by Hanif and Jafri (2008).

We do not have, however, different view than that of Hanif and Jafri (2008) on policy implications of the findings of our research that emphasizes the importance of financial sector development for strengthening of comparative advantage in the largest exporting sector of Pakistan. Thus it is important for Pakistan to not only continue with the ongoing financial reforms but to strengthen the same by implementation of the second generation reforms as this would further lead to accelerate the comparative advantages of Pakistan textiles exports in a highly competitive global external environment.

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