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Financial Development and Textile Sector Competitiveness: A Case Study of Pakistan

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Abstract

This paper makes an attempt to explore the relationship between the financial development and international trade competitiveness in the case of Pakistan – an issue that has not been investigated earlier. We construct Balassa's Revealed Comparative Advantage (RCA) index for textile sector of Pakistan. Using ratio of credit extended to the textile sector to the total non-government credit of the banking system (TCS) as proxy for external finance, we estimate long run relationship and ECM, between RCA index and TCS while controlling for other determinants of the international trade competitiveness of textile sector of Pakistan. In line with the findings of Beck (2002) and Fanelli and Medhora (2002), our results suggest that dependence on external finance has a positive impact on the country's textile sector competitiveness both in the short and the long run even when we control for traditional determinants of competitiveness.

JEL Classification: C32, F14, F49, E51, L67

Keywords: Financial Development, International Trade, Credit, Competitiveness

1. Introduction

Traditional theories of international trade focus on comparative advantage and factor endowments concepts. The link between financial development and international trade has rarely been investigated in the literature. Kletzer and Bardhan (1987) highlight the contribution of some aspects of credit market imperfections to inter-country differences in patterns of specialization and trade. They show that, even when technology and endowments are identical between countries and economies of scale are absent, differences between countries in the domestic institutions of credit contract enforcement under incomplete market information may lead to one country facing a higher real interest rate or rationed credit compared to other countries. This may lead to differences in comparative advantages in processed goods requiring more finance. They presumed 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 well-developed financial sector have comparative advantage in industries and sectors that rely more on external finance.

Over the last few decades researchers have shown that financial sector development plays significant role in economic growth. Reforming the financial sector may have implications 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. Thus, the effect of trade reforms on the structure of international trade might depend on the level of a country's financial development. 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.

There has been no attempt so far to analyse the relationship between the financial development and international trade competitiveness for the case of Pakistan. This paper is an

attempt to fill this gap by exploring the role of external finance on country's textile exports competitiveness.

In Pakistan, focus of trade policy started shifting from import substitution to export promotion since the decade of 1970s. In 1988, Pakistan signed a Structural Adjustment Programme with the IMF to address its balance of payments deficit problems which required an emphasis on greater liberalization of both imports and exports. The abolition of trade barriers moves resources to the products in which country has comparative advantage. While there are several links between financial development and international trade, this paper attempts to explore the ability of the financial sector to channel savings to private sector to help overcome liquidity constraints and raise the international trade competitiveness of the textile sector of Pakistan[1]. Our findings suggest that dependence on external finance has a positive impact on the country's textile sector competitiveness both in the short and the long run.

The rest of the paper is structured as follows. In Section 2, review of literature relating financial development and trade competitiveness is given. Section 3 discusses the data series, the model and the methodology utilized. The empirical results are presented in Section 4. The last Section concludes the paper by summarizing the findings of this study.

2. Review of Literature

The role of financial sector development for economic growth has extensively been studied in the literature [see for example, Detragiache and Ueda (2004), Khan and Senhadji (2000) and Levine (1997)]. However, only a few studies made specific investigation on the relationship between financial development and international trade competitiveness of a country. Kletzer and Bardhan (1987), in their seminal work in this area, show that countries with relatively well-developed financial sector have a comparative advantage in industries that depend on external finance. In Kletzer and Bardhan (1987) model, even when technology and

[1] The focus of this study is on textile sector, since textile exports capture around 90 percent share in the total manufactured exports of the country.

endowments are identical between the countries and economies of scale are absent, credit market frictions lead to one country facing a higher interest rate or rationed credit compared to other countries. This may lead to 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 goods require more finance to cover selling and distribution costs than primary or intermediate goods.

While exploring the link between financial development and growth Rajan and Zingales (1998) concluded that in countries with well-developed financial systems, industries that are naturally heavy users of external finance grow faster. They argue that this result has implications for trade patterns because well-developed financial sector is a source of comparative advantage for a country in industries that rely more on external finance.

Motivated from the argument of Rajan and Zingales (1998), Beck (2002) explores a 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 Fanelli and Medhora (2002), 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[2], 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.

3. Data, Model & Methodology

In order to measure competitiveness of textile sector of Pakistan we construct Balassa (1965) index of Revealed Comparative Advantage (RCA)[3]. This index measures the relative importance of a sector in a country's total exports with respect to the relative importance of the same sector in the overall exports in the world. It is given by the following equation (1)

$$RCA_{ij} = \frac{X_{ij} / X_i}{X_{wj} / X_w} \qquad (1)$$

where X_{ij} is country i's exports of sector j, X_i is total exports of country i, X_{wj} is world's exports of sector j, and X_w is the overall exports in the world. Thus, the ratio in the numerator is the share of sector j's export in country i's total exports and the ratio in denominator is the share of the same sector in world's overall exports[4]. If RCA_{ij} is greater than unity it means that country i has comparative advantage in production in her sector j. The data to construct RCA index is taken from "Comtrade" database of United Nations Statistics Division.

The evolution of RCA index is shown in the Figure 1 of the Annexure I. It shows that Pakistan's textile sector exports are inherently competitive in the world market since the

[2] In the form of - a) segmentation in the financial market, b) scarcity of long term credit for the financing of private firms, c) and, low capitalization of the stock markets as compared to the size of the economy.
[3] Time span of this study is 1974 to 2004 and we have used annual data series.
[4] There is one limitation of this measure: it can increase if the world overall exports rise more than the rise in world exports for sector of interest, even if numerator related to country concerned is constant over the time.

values of the RCA index are greater than unity throughout the period of analysis. Besides it also shows that country achieved continuous improvement in the level of competitiveness of textile sector during this period[5].

Various proxies have been used in the literature to measure financial sector development in a country. Some studies conducted specifically on finance–trade relationship have used firm level data in which the role of financial sector has been measured by firms' dependency on external finance. To the best of our knowledge there is no country study which uses macro variables for analyzing finance–trade nexus. We here construct a proxy of financial development by getting an idea from the measures constructed by King and Levine (1993) while studying finance–growth nexus. They used four proxies namely; ratio of the liquid liabilities to GDP, ratio of the assets of deposit money banks to the total assets of the banking system, ratio of claims on the nonfinancial private sector to total domestic credit (excluding credit to money bank), and the ratio of claims on the nonfinancial private sector to GDP. Our focus in this study is on the textile sector of Pakistan and hence we can measure financial sector role in this context as a ratio of the claims on the textile sector to the total value added in the textile sector. But we do not have data for the value addition of the Pakistan's textile sector (separately). The other proxy we can think of is the ratio of total nongovernment credit to the overall GDP. However, this will not be able to reflect share of the textile sector in the financial development process[6]. Therefore, we use the ratio of credit extended to the textile sector to the total non-government credit of the banking system[7] denoted by TCS (Textile

[5] We also calculated RCA index for high value added textile subsector and found it to be greater than unity since 1974. The RCA index for high value added textiles has almost similar pattern as that of the RCA index for (overall) textile sector. We have used the later one in this study. The thesis of Kletzer and Bardhan (1987) regarding role of financial sector in explaining the differences (between countries) in comparative advantages is based on the assumption that processed good require more finance. We would have attempted to explore the ability of Pakistan's financial sector to improve the international trade competitiveness by focusing on high value added textile subsector had private sector credit data was available for high value added textile subsector separately since 1974.

[6] Similar is the problem with the ratio of overall liquid liabilities to GDP (M2GR).

[7] However, there is one caveat with the use of this proxy: it shows concentration of the credit to the textile sector rather than the overall development of the financial sector. Best proxy would be the firm level data of external finance used by textile sector. But that requires a different approach for doing this work.

Credit Share). Figure 2 of the Annexure I shows the evolution of TCS during the period under study.

The model relating the role of finance to the textile sector competitiveness may be of the form

$$Log\ (RCA_t) = \beta_0 + \beta_1 Log\ (TCS_t) + \varepsilon_t \quad (2)$$

Where RCA is a measure of competitiveness of textile sector of Pakistan, TCS is a proxy for finance and ε is the error term. β_0 and β_1 are intercept and slope parameters, respectively, in the model. If the estimate of the slope parameters turns out to be positively significant, it means more dependence of a sector on external finance helps a country improve international trade competitiveness in that sector.

However, finance is not the only determinant of a country's international trade competitiveness in any sector. In order to assess the impact of finance on the comparative advantage we have to control for other determinants. 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 can take this fact into account by inclusion of country's real effective exchange rate (REER[8]) in the model. It determines the impact of country's exchange rate policy on trade sector. We expect sign of REER to be negative while we do regression analysis. With the appreciation (depreciation) of real effective exchange rate our textile sector exports will become costly (cheaper) for the international buyers and this will hurt (boost) demand and our exports will shrink (expand) and RCA will decline (rise) subsequently. Furthermore, Pakistan is world's fourth largest producer of cotton which is core input for textile sector. This natural edge gives our country a comparative advantage over the competitors. To capture this effect, we include cotton production (CTP) as an explanatory

[8] We defined it in a way that increase in REER means appreciation in our currency as compared with the trading partners.

variable in the model[9]. The definitions and sources of all the variables used in this paper are explained in Table 1 of the Annexure I. On the basis of the above discussion one may estimate the following model:

$$Log\ (RCA_t) = \beta_0 + \beta_1 Log\ (TCS_t) + \beta_2 Log\ (REER_t) + \beta_3 Log\ (CTP_t) + \varepsilon_t \quad (3)$$

But, if we examine the matrix showing simple correlation coefficients between RCA, TCS, REER, and CTP we observe that there is strong multicollinearity problem due to higher correlation between REER and CTP (-0.94) than the correlation between RCA and REER (-0.80) as well as RCA and CTP (0.73). We can not keep any one of the two out of the model as both these variables are significant from the theoretical point of view. REER is the policy variable that determines the impact of country's exchange rate policy on its trade sector. On the other hand cotton produced in Pakistan is the most important input for the textile sector and plays an important role in determining a country's trade pattern and hence international trade competitiveness. The solution we suggest here is to estimate the following two separate models:

$$Log\ (RCA_t) = \beta_0 + \beta_1 Log\ (TCS_t) + \beta_2 Log\ (REER_t) + \varepsilon_t \quad (4)$$

$$Log\ (RCA_t) = \gamma_0 + \gamma_1 Log\ (TCS_t) + \gamma_2 Log\ (CTP_t) + \varepsilon_t \quad (5)$$

β_2 in model (4) is expected to be negative as we discussed above, while γ_2 in model (5) is expected to have positive sign. As mentioned above, if the estimated slope parameters of TCS turn out to be positively significant, it means more dependence of textile sector on external finance helps Pakistan to improve her competitiveness in international trade in textile products and this is what we expect form our study.

[9] One may argue that variables like wage inflation (WINF), domestic industrial electricity prices (DIEP), and high speed diesel prices (HSDP) also affecting the textile sector competitiveness through cost of production channel. In this study, we do not find these variables to have statistically significant impact on textile sector competitiveness in the long run. However, while doing the short run analysis, we do find significance of domestic industrial electricity prices (DIEP).

Looking at their graphs (Figures 1 through 4 in Annexure I), all of our series RCA, TCS, REER, and CTP are expected to be integrated of order 1 at log levels. Using Augmented Dickey-Fuller (ADF) approach we test about stationarity of the time series used in this analysis. Then we test for the long run relationships among the variables as postulated in the models (4) and (5) using Engle-Granger two step procedure[10]. Later, from the equilibrium models, we use errors to built Error Correction Mechanisms (ECM) to see the short run dynamics of the models. In the ECMs we will also test if the variables like wage inflation (WINF), changes in domestic industrial electricity prices (DIEP), and/or high speed diesel prices (HSDP) have short run impact on the textile sector competitiveness through cost of production channel. We also test if textile sector competitiveness is impacted by Pakistan's bilateral nominal exchange rate with US in the short run.

4. Estimated Results

Before the econometric analysis we do some simple statistical analysis. The correlation matrix presented in Table 2 of the Annexure I shows that for the case of Pakistan there is a positive association between the textile credit share in the total non government credit advanced by the banking sector and the RCA index for textile sector of Pakistan; there is a negative association between real effective exchange rate and Pakistan's textile sector competitiveness; and cotton production and RCA index for textile sector are also positively correlated.

The first step in the econometric analysis is the univariate time series analysis. Augmented Dickey Fuller (ADF) unit root test have been used to test the time series properties of the data. Intercept and trend has been included on the basis of their statistical significance in the ADF equation. The results of ADF test presented in the Table 3 of the Annexure I show that all the variables of the models (4) and (5) are integrated of order one as are stationary after first difference.

[10] Passing necessary statistical diagnostic tests

While we estimate models (4) and (5) we find the problem of autocorrelation in the estimated equation. To resolve this issue, lagged dependent variable is included in each of these models. It is important to note that in addition to capturing the dynamic process, lagged dependent variable is also an excellent proxy for many of the omitted variables.

As seen from the Figure 1 of the Annexure I, there is some fall in RCA for textile sector in 1992 which reflects a boom year for cotton production all over the world. World cotton production reached from 87.2 million bales in 1991 to 95.4 million bales in 1992. Pakistan's cotton production also increased from the previous level of 9.6 million bales and reached a historic peak of 12.8 million bales in 1992. However, world share of textile products in overall exports rose more than that of Pakistan's textile exports share in our overall exports. Thus RCA declined in spite of the fact that our cotton production rose by 33.2% against world cotton production which rose by 9.4%. To capture this fall in RCA a dummy variable for 1992 is included.

Final equations estimated are presented in Table 4 of the Annexure I. First we see whether the variables in each of the two models exhibit long run relation or not. As suggested by Engle and Granger (1987), we test for the stationarity of the errors from estimated model (4) and (5). The ADF test results, presented in the Table 5 of the Annexure I, for cointegrating residuals confirm stationarity of the relationship between the variables in each of the two models, implying cointegration.

The results for both estimated models in (4) and (5) show that the more dependence of textile sector on external finance helps improve Pakistan's competitiveness in international trade in textile products[11]. The elasticity of RCA with respect to TCS ranges from 0.17 to 0.20. The regression results in Table 4 show that all the variables have expected signs. From the estimated model (4) we can see that the elasticity of RCA with respect to REER is -0.19.

[11] CGDR and M2GR are suitable proxies for financial development in overall economy rather than in the context of textile sector as we argued in above section. Furthermore, these indicators of finance are found to be insignificant when we regressed RCA index upon each of these separately with other determinants of RCA.

Appreciation of our currency, as compared with our trading partners, impacts our textile sectors competitiveness negatively. This is evident from the statistically significant estimated coefficient of REER in model 4. The elasticity of RCA with respect to CTP is 0.10. Further as expected, the coefficient of CTP from model (5) found to be positively significant[12].

Post estimation statistical diagnostic tests were applied to the residual series. These include Jarque-Bera test for normality, LM test for serial correlation, White tests for heteroscedasticity. Both the models have passed all these tests. In Figures 5 to 8 of the Annexure I we plot cumulative sum and cumulative sum of squares of recursive residuals along with their critical lines (at 5% level of significant). These plots confirm the estimated coefficients' stability and the stability of the error variance.

To test for cointegration between the variables in the models we apply standard unit root test upon the errors of these models. The results have been presented in the Table 5. These tests for cointegrating residuals confirm stationary relationship among the variables as we have postulated in models (4) and (5).

Having established cointegration as a long run property, ECM is a natural way of capturing dynamic adjustment to the long run. We estimate the following models using Error4 and Error5 estimated above using models (4) and (5) for which estimated results have been reported in Table 4.

$$\Delta Log(RCA_t) = \phi_0 + \phi_1 ERROR4_{t-1} + \phi_2 \Delta Log(TCS_t) + \phi_3 \Delta Log(NERD_t) + \phi_4 \Delta Log(RCA_{t-1}) + \phi_2 \Delta Log(DIEP_t) + \eta_t \quad (6)$$

$$\Delta Log(RCA_t) = \varphi_0 + \varphi_1 ERROR5_{t-1} + \varphi_2 \Delta Log(TCS_t) + \varphi_3 \Delta Log(NERD_t) + \varphi_4 \Delta Log(RCA_{t-1}) + \varphi_2 \Delta Log(DIEP_t) + \nu_t \quad (7)$$

[12] Another variable which we tried to control for is terms of trade (TOT) being very strong theoretical determinant of trade competitiveness. It is measured by ratio of unit value of export to unit value of imports. In both the models (4) and (5) we found estimated coefficient of Log(TOT) to be negative (as one should expect) but statistically insignificant (with p-values 0.14 and 0.20 respectively). Furthermore, inclusion of Log(TOT) in model (5) deteriorates both the AIC and BIC and thus we excluded Log(TOT) from the final equations we estimated for this study. We understand that this is a limitation of this study. Thus the results suggested by this need to be interpreted with caution.

In models (4) and (5) we have long run determinants of RCA. In addition to these determinants for the short run analysis using the ECMs we have also attempted to investigate if the variables like wage inflation (WINF), changes in domestic industrial electricity prices (DIEP), and/or high speed diesel prices (HSDP) have short run impact on the textile sector competitiveness through cost of production channel. The estimated ECM models in (6) and (7) are presented in Tables 6 and 7 respectively. The error terms are significant in both the models though it is significant in Model (7) at 10%. In both the models we find that there is a significant positive short run impact of external finance on Pakistan's competitiveness in international trade in textile products. It shows that dependence on external finance causes improvement in RCA for textile sector, also in the short run. We do not find statistical support for short impact of REER or CTP on RCA index in any of the two estimated ECMs. We, however, found changes in bilateral exchange rate (NERD)[13] significantly affect changes in RCA index in the short run. There is also negative significant impact of industrial electricity prices on RCA index in short run. Wage inflation and changes in high speed diesel prices do not have such impacts (the later may be insignificant because electricity price has already been showing short run impact).

5. Conclusion

Traditional theories of international trade focus on comparative advantage and factor endowments concepts. Kletzer and Bardhan (1987) show that, even when technology and endowments are identical between countries and economies of scale are absent, differences between countries in the domestic institutions of credit contract enforcement under incomplete market information may lead to differences in comparative advantages in processed goods requiring more 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.

[13] Pak rupees per US Dollar.

In this paper we attempt to explore the ability of the financial sector to raise the international trade competitiveness in Pakistan, with focus on textile sector. We construct Balassa's RCA index for the textile sector. Two models for this purpose have been estimated; one based on REER and other on the cotton production (CTP) along with the ratio of credit extended to the textile sector to the total non-government credit of the banking system (TCS). We find that there is a stable and long run relationship between RCA index and TCS in the presence of traditional determinants of the internal trade competitiveness of textile sector of Pakistan. For both the models, we also estimated ECMs. The results suggest that dependence on external finance has a positive impact in the improvement of country's textile sector competitiveness both in the short and the long run even when we control for traditional determinants of competitiveness. Thus, the thesis put forth by Kletzer and Bardhan (1987) that an efficient financial system helps in improving country's comparative advantage is supported by these results for the case of Pakistan. Competitiveness in the short run, however, is also impacted by Pakistan's bilateral nominal exchange rate with US and the domestic industrial electricity prices. The results of this paper need to be interpreted cautiously as there are certain limitations of the study; like the insignificance of terms of trade variable. Future research using the firm level data can help to explore this issue further.

The findings of this paper have useful policy implications that underline the importance of financial sector development for strengthening of comparative advantage in the largest exporting sector of Pakistan. Therefore, it is imperative for Pakistan to continue with the ongoing financial reforms. In addition, the implementation of the second generation reforms would further reduce the cost of doing business in Pakistan thus leading to improvement in the comparative advantages of country's exports in a highly competitive global external environment.

Annexure

Figure 1: Time Series Plot of RCA Index

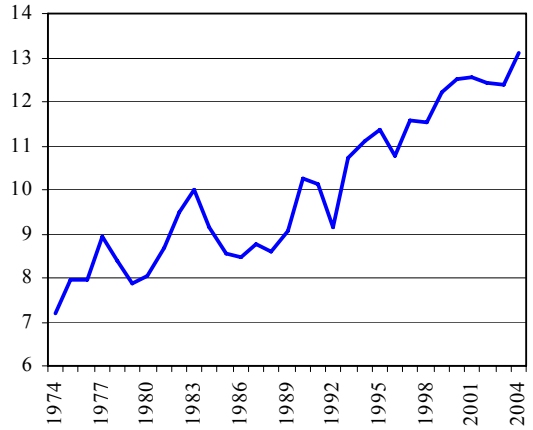


Figure 2: Time Series Plot of TCS

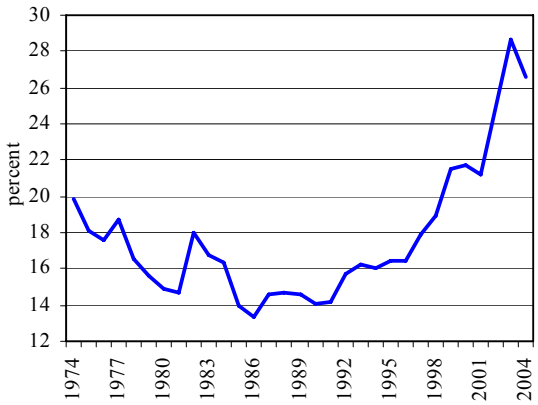


Figure 3: Time Series Plot of REER Index

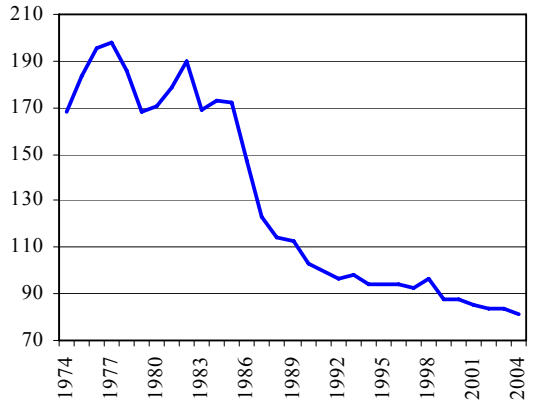
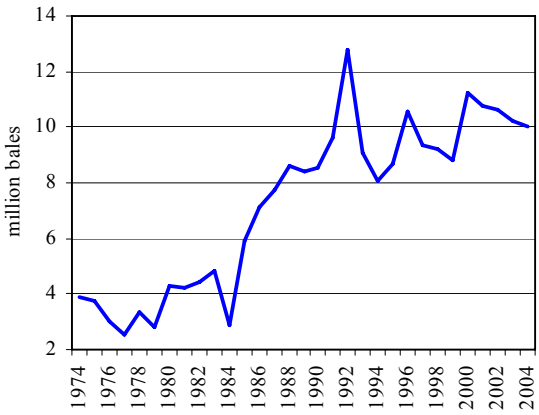


Figure 4: Time Series Plot of CTP



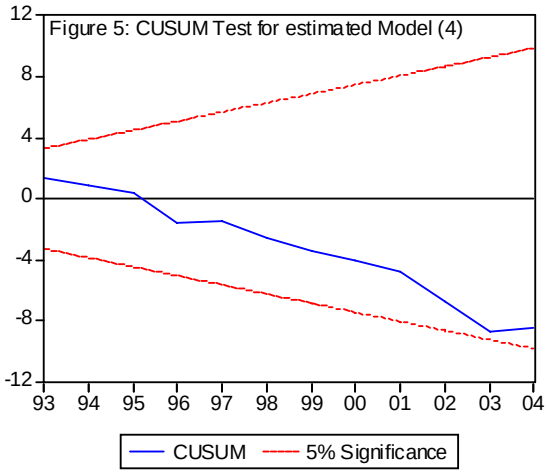


Figure 5: CUSUM Test for estimated Model (4)
12
8
4
0
-4
-8
-12
93 94 95 96 97 98 99 00 01 02 03 04
CUSUM
5% Significance

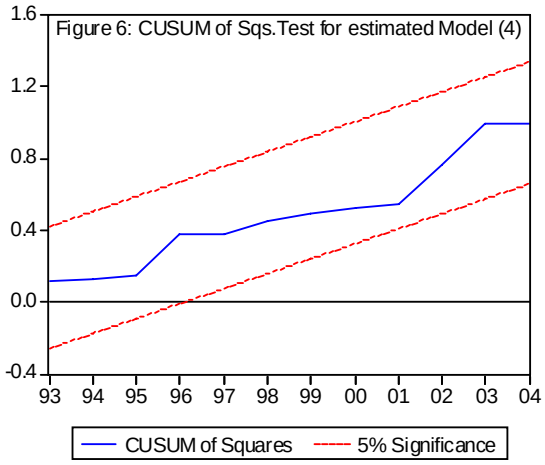


Figure 6: CUSUM of Sqs.Test for estimated Model (4)
1.6
1.2
0.8
0.4
0.0
-0.4
93 94 95 96 97 98 99 00 01 02 03 04
CUSUM of Squares
5% Significance

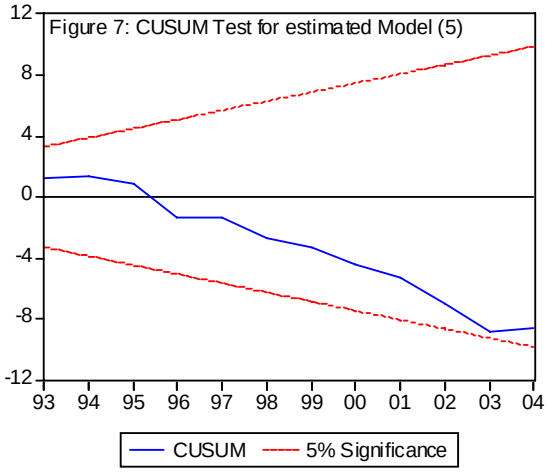


Figure 7: CUSUM Test for estimated Model (5)
12
8
4
0
-4
-8
-12
93 94 95 96 97 98 99 00 01 02 03 04
CUSUM
5% Significance

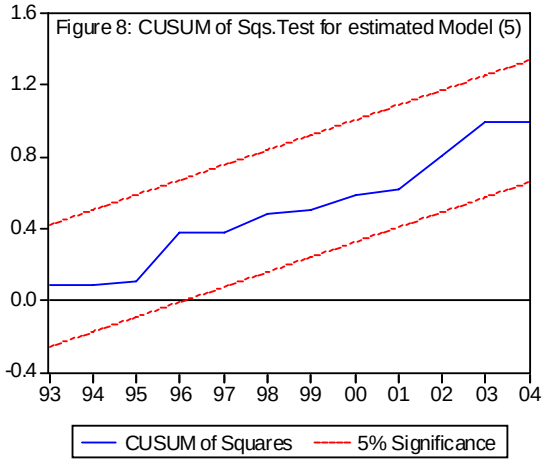


Figure 8: CUSUM of Sqs.Test for estimated Model (5)
1.6
1.2
0.8
0.4
0.0
-0.4
93 94 95 96 97 98 99 00 01 02 03 04
CUSUM of Squares
5% Significance

Table 1: Definition and Sources of the Data Used

Variable	Description	Source
RCA	Revealed Comparative Advantage index	Authors' calculation using "Comtrade" database of United Nations Statistics Division
TCS	Share of credit extended to textile sector in total non-government advances extended by the banking sector	State Bank of Pakistan
REER	Real effective exchange rate	State Bank of Pakistan
CTP	Log of cotton production	"Handbook of Statistics on Pakistan Economy" by SBP
WINF	Wage inflation in the textile sector.	Authors' calculation using textile sector wages data from "50 Years of Pakistan in Statistics" (Volume – IV), by FBS
HSDP	High speed diesel prices.	"50 Years of Pakistan in Statistics" (Volume – IV)
DIEP	Domestic industrial electricity prices	"50 Years of Pakistan in Statistics" (Volume – IV)
NERD	Nominal exchange rate of Dollar (Pak Rupees per US$)	State Bank of Pakistan

Table 2: Correlation Matrix

	RCA	**TCS**	**REER**	**CTP**
RCA	1.00	0.60	-0.80	0.73
TCS		1.00	-0.31	0.20
REER			1.00	-0.94
CTP				1.00

Table 3: Results of Unit Root Analysis

Variable	ADF[1] Test Value(p-value* in parentheses)		c, t, and n included[2]	
	At Levels	First Difference	At Levels	First Diff.
Log(RCA)	-2.85 (0.19)	-5.33 (0.00)	t, c	n
Log(TCS)	-1.46 (0.82)	-4.57 (0.00)	t, c	n
Log(REER)	-2.24 (0.44)	-3.75 (0.00)	t, c	n
Log(CTP)	-2.83 (0.20)	-7.18 (0.00)	t, c	n
Log(HSDP)	-1.70 (0.73)	-4.44 (0.00)	t, c	c
Log(DIEP)	-2.03 (0.56)	-5.67 (0.00)	t, c	c
Log(NERD)	-2.89 (0.18)	-3.77 (0.00)	t, c	c
WINF	-6.73 (0.00)		c	
*: MacKinnon's one-sided p-values				
1. We used zero lag as suggested by 'Schwartz Information Criteria' for lag selection 2. c, t, and n denotes constant, trend and none (of the two) included in the ADF regression estimated to test for unit root.				

Table 4: Results of Regression Analysis - Log (RCA) as dependent variable

	Model with Log(REER) {test-statistic in brackets} (p-value in parentheses)	*Model with Log(CTP)* {test-statistic in brackets} (p-value in parentheses)
Constant	1.61 (0.00)	-0.40 (0.05)
Log(TCS)	**0.17 (0.00)**	**0.20 (0.00)**
Log(REER)	-0.19 (0.00)	
Log(CTP)		0.10 (0.00)
Log (RCA(-1))	0.49 (0.00)	0.56 (0.00)
Dummy 1992	-0.13 (0.02)	-0.15 (0.00)
R^2	0.92	0.91
F-Stat	{72.00}(0.00)	{66.93}(0.00)
Jarque-Bera	{0.80} (0.67)	{1.51} (0.46)
Serial Correlation LM (F) test	{1.61}(0.22)	{0.54}(0.58)
White (F) test for Heteroscedasticity	{1.98}(0.10)	{1.81}(0.13)

Table 5: Test of Cointegration (Unit Root Test of Error)

	DF Test Value (p-value in parentheses)
	At Levels
Error from Model with Log (REER)	-4.19 (0.00)
Error from Model with Log (CTP)	-4.45 (0.00)

Table 6: Results of ECM Model 6

	test-statistic in brackets, and p-value in parentheses
Lagged Error4	-5.21 (0.03)
ΔLog(TCS)	2.42 (0.05)
ΔLog(NERD)	4.12 (0.00)
ΔLog(DIEP)	- 1.28 (0.00)

Table 7: Results of ECM for Model 7

	test-statistic in brackets, and p-value in parentheses
Lagged Error5	-0.40 (0.10)
ΔLog(TCS)	0.25 (0.06)
ΔLog(NERD)	0.35 (0.02)
ΔLog(DIEP)	- 0.12 (0.01)

References

Balassa, Bella (1965), "Trade Liberalization and 'Revealed Comparative Advantage'," *Manchester School of Economics and Social Studies*, 33: 99-123

Beck, Thorsten (2002), "Financial Development and International Trade: Is there a Link?" *Journal of International Economics*, 57: 107-131

Detragiache, Enrica and Kenichi Ueda (2004), "Does Financial Sector Development Help Economic Growth and Welfare," *World Economic Outlook*, April 2004, Washington,

Dickey, D. A. and W. A. Fuller (1979), "Distribution of the Estimators for Autoregressive Time Series with a Unit Root," *Journal of the American Statistical Association,* 74: 427–31

Engel, Robert, and Clive Granger (1987), "Co-Integration and Error Correction: Representation, Estimation and Testing," *Econometrica* 55: 251-276

Fanelli and Medhora (ed.) (2002), "Finance and Competitiveness: Framework and Synthesis" in "*Finance and Competitiveness in Developing Countries*" edited by Fanelli and Medhora, International Development Research Centre, Ottawa

Government of Pakistan (1998), *50 Years of Pakistan in Statistics*, Volume – IV, Federal Bureau of Statistics, Islamabad

Khan, Mohsin S., and Abdelhak Senhadji (2000), "*Financial Development and Economic Growth*," IMF Working Paper WP/00/209

King G. Robert and Levine Ross (1993), "Finance and Growth: Schumpeter Might be Right," *Quarterly Journal of Economics*," 108: 717-737

Kletzer, Ken and Bardhan, Pranab (1987), "Credit Markets and International Trade," *Journal of Development Economics*, 27: 57-70

Levine, R. (1997), "Financial Development and Economic growth: Views and Agenda", *Journal of Economic Literature*, 35: 688-726

Rajan R. and Luigi Zingales (1998), "Financial Dependence and Growth," *American Economic Review*, 88: 559-586

State Bank of Pakistan (2005), "*Handbook of Statistics on Pakistan Economy*," State Bank of Pakistan, Karachi.

مالی ترقی اور ٹیکسٹائل شعبے کی مسابقت: پاکستان کے حوالے سے ایک خصوصی جائزہ

عالمی تجارت کے روایتی نظریات مسابقتی برتری اور عامل کی صلاحیت کے تصورات کی بنیاد پر ہیں۔ مالی ترقی اور عالمی تجارت کے درمیان ربط پر بہت کم تحقیق ہوئی ہے۔کلیٹز راور بردھان (1987ء) نے تخصیص وتجارتی رجحانات کے بین الملکی فرق میں قرضہ جاتی منڈی کی غیر کاملیت کے کردار کی نشاندہی کی ہے۔ان کا کہنا ہے کہ جب ٹیکنالوجی و عامل کی صلاحیت مماثل ہوں اور کفایت حجم بھی موجود نہ ہو تو منڈی کی نامکمل اطلاعات کے تحت ممالک کے درمیان قرضہ جاتی معاہدوں سے متعلق قوانین اوران پر عملدرآمد میں فرق کی وجہ سے دیگر ممالک کی نسبت کسی ایک ملک میں (حقیقی) شرح سود کی سطح بلند اور قرضہ جات محدود ہوسکتے ہیں۔اس کے نتیجے میں ایسی تیار اشیاء جن کی پیدائش میں زیادہ مالکاری کی ضرورت ہوتی ہے، کی تقابلی برتری میں فرق پیدا ہوجاتا ہے۔ ان کا نکتہ نظر ہے کہ زیادہ جدت پسندی کی حامل تیار مصنوعات کی فروخت وتقسیم پر لاگت کے لیے بنیادی یا ثانوی مصنوعات کی نسبت زیادہ قرضہ جات کی ضرورت ہوتی ہے۔انہوں نے یہ نظریہ دیا ہے کہ قدرے ترقی یافتہ مالی شعبے کے حامل ممالک کو ان صنعتوں اور شعبوں میں تقابلی برتری حاصل ہے جن کا زیادہ تر بیرونی مالکاری پر انحصار ہوتا ہے۔

گزشتہ چند سالوں کے دوران محققین نے اپنے تجزیوں میں یہ بات واضح کی ہے کہ مالی شعبے کی ترقی اقتصادی نمو میں اہم کردار ادا کرتی ہے۔اگر مالی ترقی کی سطح کسی ملک کی تقابلی برتری کا ایک تعینی عامل ہو تو مالی شعبے میں اصلاحات اس ملک کی بین الاقوامی تجارت کی ساخت پر اثر انداز ہوسکتی ہیں، جیسا کہ کلیٹز راور بردھان (1987ء) نے واضح کیا ہے۔پس عالمی تجارت کی ساخت پر تجارتی اصلاحات کے اثرات کا انحصار ملک کی مالی ترقی کی سطح پر ہوسکتا ہے۔فانیلی اور مدھورا (2002ء) نے ایک حالیہ تحقیق میں کلیٹز راور بردھان (1987ء) کی دلیل کی تائید کی ہے۔ان کا کہنا ہے کہ تقابلی برتری مالی شعبے کی ترقی سے مثبت طور پر متاثر ہوتی ہے۔

اس جائزے میں پاکستان کی مالی ترقی اور پاکستان کی بین الاقوامی تجارتی مسابقت کے درمیان تعلق کا جائزہ لیا گیا ہے۔ یہ ایک ایسا موضوع ہے جس پر اس سے قبل پاکستان میں تحقیق نہیں ہوئی۔ہم نے پاکستان کے ٹیکسٹائل شعبے کے لیے بالاسا کا ظاہر تقابلی برتری کا اشاریہ تشکیل دیا ہے۔اس جائزے میں ٹیکسٹائل شعبے کو دیئے گئے قرضہ جات (بنسبت بینکاری نظام کے مجموعی غیر حکومتی قرضہ جات) کو بیرونی مالکاری کی پیمائش کے لیے استعمال کیا گیا ہے۔ہم نے پاکستان کے ٹیکسٹائل شعبے کی بین الاقوامی تجارتی مسابقت اور ٹیکسٹائل شعبے کو دیئے گئے قرضہ جات (بنسبت بینکاری نظام کے مجموعی غیر حکومتی قرضہ جات) کے درمیان طویل مدتی تعلق کا، دیگر تعینی عوامل کی موجودگی میں، اندازہ لگایا ہے۔ہم نے قلیل مدتی تحرکات کا بھی اندازہ لگایا ہے۔بیک (2002ء)، فانیلی اور مدھورا (2002ء) کی تحقیقات کی طرح ہمارے نتائج بھی ظاہر کرتے ہیں کہ مسابقت کے روایتی تعینی عوامل کی موجودگی میں بھی بیرونی مالکاری پر انحصار قلیل اور طویل مدت کے دوران ملک کے ٹیکسٹائل شعبے کی بین الاقوامی تجارتی مسابقت کے لیے مثبت اثرات کا حامل ہے۔