

The Impact of Trade Liberalization and Institutional Quality on the Services Sector of Pakistan

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Abstract

Per capita income and productivity of the services sector are very low in the developing nations, including Pakistan as compared to the developed nations. The present study examines the short run and long run impacts of trade liberalization, financial development, and quality of institutions on the growth of the services sector of Pakistan using time series data over the period of 1984-2013. The Cobb-Douglas production function has been augmented by adding quality of institutions, trade liberalization, and financial development variables to probe the impacts they have on the growth of services sector of Pakistan. The most recently developed combined cointegration technique by Bayer and Hanck (2013) has also been used to check the cointegration among the variables. Long run empirical results show that trade liberalization and financial development contributes positively to the growth of the services sector of Pakistan. The role of institutions is insignificant which means that the institutional development is still far away from taking the advantage of trade liberalization. These results suggest that trade liberalization and financial development process should carry on in the services sector as well. Moreover, to procure further benefits of trade liberalization in this sector, Pakistan should pay attention to developing political and economic institutions, because well-functioning institutions are a prerequisite to boost foreign trade and growth of the services sector of the country.

Keywords: Trade Liberalization, Institutional Quality, Services Sector, Pakistan

JEL Classification: F13, F14, F19

1. Introduction

Around the globe, trade liberalization, financial development, and quality of institutions have been considered key drivers for economic growth. Smith (1776) advocated that free trade would lead to an efficient use of global resources, which

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maximizes the economic and social welfare of the people. Trade reforms have been advocated by the international research scholars, World Bank (WB), International Monetary Fund (IMF), the World Trade Organization (WTO), and also by the developed nations (Rodriguez and Rodrik, 2000; Chaudhary and Ahmed, 2004). The connection among trade liberalization, quality of institutions, and economic growth has emerged as a new avenue of research for the contemporary researchers (North, 1993; Oslon et al., 2000). The relationship between financial development, trade liberalization, quality of institutions, and economic growth has been a central phenomenon in economics literature. In the global economy, trade liberalization is considered as one of the most important sources to create competition and determine economic growth. Moreover, ineffective legal system, poor quality of institutions and inept public policies reduce the volume of trade (North, 1993; Anderson and Marcouiller, 2002; Dollar and Kray, 2003).

Per capita income and productivity of the services sector are very low in the developing nations including Pakistan when compared to the developed nations. The literature identifies three reasons for this difference: role of international trade, geographical differences, and the quality of institutions. The significance of the services sector can be acknowledged by the degree of economic progress this sector exhibits and the contribution this makes to the other sectors of the economy. To strengthen the linkages of this sector with the other sectors of the economy, financial development, a better quality of economic and political institutions is inevitable. The services sector has been considered as the major contributor to the economic growth of South Asia since 1990s (Chanda, 2011). It has a strong association with economic modernization and growth for the development of an economy (Francois and Reinert, 1996). The economic growth of the services sector is equally important for both the developed and the developing economies. In the USA since 1987, services sector provides employment to 70 percent of the total labour force. This trend in the USA is expected to continue as more jobs are being created in this sector. Service sector growth is not only specific to the economy of the United States as this sector accounts for 58 percent of the global GDP as well. The share of services sector in GDP of the developed countries is more than 70 percent (Murdick, 1990).

The output of the services sector of Pakistan occupies a major share in its Gross Domestic Product (GDP). Growth in the services sector has been an important component of GDP growth of Pakistan. This sector is growing rapidly and contributes over 50 percent of GDP of Pakistan. Since 1990, services sector of Pakistan has been growing at a rate higher than that of industrial and agricultural sectors. The factors behind this very fast growth of the services sector in Pakistan

are financial and commercial banking services and telecommunication services due to a trade liberalization (Ajmair and Ahmad, 2011).

The services sector of Pakistan has been divided into six subsectors including Storage and Communication, Transport, Finance and Insurance, Wholesale and Retail Trade, Ownership of Dwellings, Defence and Government Administration, and Social Services (GoP 2014-15). In Pakistan, financial institutions have grown significantly such as the banking system in Pakistan has changed since 1990 due to trade openness, privatization of public banks and banking policies. Financial institutions and commercial banks help to finance several development projects which are based on partnership between public and private sector or even in the private sector. This enhances the functions as well as the income of the commercial banks (Mahmood *et al.* 2010).

Services sector of Pakistan is considered a major driver of economic growth these days. It employs 33.2 percent out of total labour force employed in the Pakistan. The share of this sector in the GDP of the developed countries is more than 70 percent; whereas, in Pakistan shares of services sector increased to 58.2 percent in 2013-2014 from 50.7percent in 1999-2000. In Pakistan, where the trade sector is included in the services sector, the contribution of the trade sector is 18.3 percent of GDP, and 31.8 percent in the services sector. The growth rate of this sector was registered 4.4 percent in the fiscal year 2013-14 (GoP 2014-15). There is hardly any comprehensive study, which investigated the impact of trade liberalization, financial development, and quality of institutions on the growth of services sector in case of Pakistan.

Following a brief background and importance of the study, the remainder of the paper has been organized as follows: the sources of data collection and methodology applied in this study are discussed, followed by the key findings and estimations. The paper concludes with policy recommendations that can prove instrumental towards promoting economic growth and improving the services sector in the country.

2. Literature Review

The triangle of trade liberalization, quality of institutions, and economic growth has developed into a nucleus of research among the contemporary economists and policy makers of economic development. They believe that such type of relationship is one of the most critical issues for the developing economies. It is an undeniable fact that trade is the engine of economic growth and was operated successfully during the nineteenth century. But the latest empirical literature

advocates that main cause of the poor economic performance of the developing countries, besides other variables, is also the poor quality of institutions.

The existing theoretical and empirical research on this issue also depicts that the higher the quality of institutions better the effects of foreign trade, human development, and economic development of a country (Oslon et al., 2000; North, 1993). In this literature, it is also suggested that for developing countries to fully benefit from the trade liberalization, improved quality of institutions might be crucial. Moreover, it has been observed from the empirical literature that quality of institutions exerts a positive impact on foreign trade as well as on economic growth (Kaufmann et al., 2002; Anderson and Marcouiller, 2002; Dollar and Kraay, 2003).

The countries that liberalized their economies and introduced market-oriented reforms were able to significantly benefit from this emerging scenario (Krueger, 1998). The other developing world, which opened up their economies, was unable to benefit from these trade reforms due to the lack of outward oriented trade policies. A country with a liberalized trade sector has numerous advantages, such as transfer of technology and an accelerated economic growth than a country which has not liberalized her trade sector (Bleaney 1999; Sinha and Sinha, 2000; Rodriguez and Rodrik, 2001; Liyod and Maclaren, 2000; and Baldwin and Forslid, 2000). Corruption and poor quality of institutions are also among the major obstacles in accelerating the volume of trade in developing countries (Anderson and Marcouiller, 2002).

Trade liberalizing policies have insignificantly contributed to economy in Pakistan. The reasons of this insignificant result are weak economic, political and institutional infrastructure faced by Pakistan. (Kemal et al.,2002). Countries with better institutions, trade more and grow faster (Dollar and Kraay ,2003). Effect of trade liberalizing policies on economic growth has been investigated by using the datasets of diverse countries of the globe. A study highlighted that trade liberalizing policies have positively contributed to the economic growth of these countries, but its nature of contribution is complex. This also concluded that there is a need of complementary domestic environment and government policies in addition to trade openness, to reap the fruits of trade liberalization (Yanikkaya, 2003).

The connection between the Pakistani services sector growth and trade liberalization has been empirically tested by various economists. They confirm that the economic growth of this sector depends on trade liberalizing policies, real capital stock, and employed labor force (Dutta and Ahmed, 2004). There is no or little controversy over the crucial role of both international trade and the quality of institutions in fostering the growth of the economies (Mamoon and Murshed,2006).

The effect of financial development, trade liberalization, and economic performance for Pakistan covering the period of 1961-2005 has been examined in this study which suggests that free trade policies have significantly contributed to economic growth by cutting the inefficiencies from the production process. Therefore, Pakistan should further liberalize their trade sector to stimulate the macroeconomic performance (Khan and Qayyum, 2007). Countries with openness in the services sector like telecom and financial institutions grow faster than other countries (Mattoo et al., 2006). The possible links among the amplified trade liberalization and technical efficiency in the services sector of the Brazilian economy has been investigated. They established insignificant impact of trade liberalization in this sector. The well-established services sector is important for high productivity and innovation. The services sector is responsible for the overall macroeconomic performance of an economy and for the welfare of the people of a country (Ajmair and Ahmed, 2011).

It can be concluded from the reviewed theoretical and empirical literature that relationship between trade liberalization, financial development, quality of institutions, and economic growth of services sector in Pakistan is inconclusive due to diverse reasons and needs to be empirically analyzed. This is the main objective of this study. The services sector is very important because investment in human capital and capacity building in the services sector is inevitable to improve the overall competitiveness of all the sectors of the economy of Pakistan.

3. Data and Econometric Methodology

3.1. Data Sources

Our empirical study is based on secondary datasets published at national and international levels. To carry out the empirical analysis, the current study uses time series data set for the Pakistani services sector covering the period from 1984 to 2013 for investigating the effect of openness of trade, financial development, and quality of institutions of the output of services sector. Selection of the time period is based on the logic that trade policies were introduced during early 1980s. World Development Indicators (2015), International Country Risk Guide (ICRG), various issues of Annual Reports, State Bank of Pakistan (SBP), and many issues of Pakistan Economic Survey have been consulted for the collection of secondary data for this study.

3.2. Theoretical Background and Model Specification

Smith (1776) advocated that free trade would lead to efficient use of world resources as an efficient use of global resources maximizes the economic and social

welfare of the people. Linear stage growth models, structural change, growth models, endogenous and exogenous growth theories exhibit saving, investment, labour, technological progress, physical and human capital as the potential sources of economic progress.

Since 1980s, economists and researchers have been analyzing the impact of trade liberalization on economic progress by extending the existing growth models (Krueger 1990, 1998; Grossman and Helpman 1991; Edward 1993,1998; Yanikkaya 2003). For Asian Economies, Das and Paul (2011) have employed the neoclassical Solow-growth model. Similarly, an endogenous-growth model developed by Robert Lucas has been used by Ghatak *et al.* (1995) for Turkey followed by Dutta and Ahmed (2004) and Chaudhary *et al.* (2010) for Pakistan. But, developing countries realized the fact that trade liberalization alone did not provide them fruitful results (Kemal *et al.*, 2002; Greenaway *et al.*, 2002). This, possibly, might be due to ignoring other important linkages like financial development, quality of institutions, or the use of weak proxies as well (to capture the impact of trade liberalization) in these models. Thus, there are many developing countries who failed to reap the benefits of trade liberalization.

Recent research focus on the above and point out that without improving the quality of institutions gains from trade liberalization cannot be enjoyed (Dollar and Kraay 2003; Rodrik *et al.* 2004; Borrmann *et al.* 2006). The Cobb-Douglas production function has an attribute that it gives direct elasticities. Therefore, this study uses Cobb-Douglas production function due to this advantage by incorporating the variables for the quality of institutions, trade openness and financial development.

To discover the relationship between trade liberalization, financial development, quality of institutions, and economic output, augmented Cobb-Douglas production function has been used. Following Mankiw *et al.* 1992, it may be represented as:

$$Y = AK^{\beta_1}L^{\beta_2}T^{\beta_3}F^{\beta_4}IQ^{\beta_5}e^{u_t} \quad (1)$$

We convert the augmented Cobb Douglas productions function into log linear model due to its various advantages. It yields more efficient results and gives direct elasticities. Transforming equation (1) into logarithmic form, it may be written as;

$$\ln Y_t = \ln A + \beta_1 \ln K_t + \beta_2 \ln L_t + \beta_3 \ln T_t + \beta_4 \ln F_t + \beta_5 \ln IQ_t + u_t \quad (2)$$

By putting $\ln A = \beta_0$ in equation (2) we get

$$\ln Y_t = \beta_0 + \beta_1 \ln K_t + \beta_2 \ln L_t + \beta_3 \ln T_t + \beta_4 \ln F_t + \beta_5 \ln IQ_t + u_t \quad (3)$$

Where $\ln Y_t$, $\ln K_t$, $\ln L_t$, $\ln T_t$, $\ln F_t$, $\ln IQ_t$, stands for log transform of real GDP (Proxy for economic growth), real gross fixed capital formation (proxy for real capital stock), employed labour force, real trade openness, real financial development, an index for quality of institutions, respectively, and a random error u_t term having normal distribution with zero mean and finite (constant) variance, at time “t”.

Equation (3) has been converted to equation (4) with little change for the services sector of Pakistan to attain the main aim of the study. We have divided all the variables of Equation (3) by total population to get all the variable in the per capita form, now equation (3) can be rewritten as for the services sector:

$$\ln Y_{It} = \beta_0 + \beta_1 \ln K_{It} + \beta_2 \ln L_{It} + \beta_3 \ln T_{It} + \beta_4 \ln F_{It} + \beta_5 \ln IQ_{It} + u_{It} \quad (4)$$

Where $\ln Y_{It}$, $\ln K_{It}$, $\ln L_{It}$, $\ln T_{It}$, $\ln F_{It}$, $\ln IQ_{It}$, and u_{It} stands for log transform of, real GDP of services sector (proxy for growth), real gross fixed capital formation (proxy for real capital stock), employed labor force of services sector, real services trade openness, real financial development of services sector, an index for institutional quality, and a random error u_{It} term, contains normal distribution which means it contain the zero mean and finite (constant) variance, at time “t” for the services sector, respectively. All the variables of Equation 4 are in real and per capita form. This equation has been employed for the empirical analysis of the services sector of Pakistan.

3.3. Econometric Methodology

Engle and Granger (1987) argued that time-series data sets are not stationary; therefore, we need to check the stationarity of the series included in the model to avoid the spurious results obtained from the application of OLS method. Datasets of time series have been checked through unit root tests. We have applied Augmented Dickey Fuller (ADF) and Phillips and Perron unit root tests to investigate the unit root properties of the variables.

The latest combined cointegration test, developed by Bayer and Hanck (2013) has been used to investigate whether there exists or not cointegration among the variables. To obtain the long run relationship among the variables, we applied the Ordinary Least Square (OLS). Similarly, Error Correction Method (ECM) is used to investigate the short run effect of independent variables on the dependent variable.

3.3.1. Augmented Dickey-Fuller Unit Root Test

The Augmented Dickey-Fuller (ADF) test, which was produced by Dickey and Fuller (1981) to check the stationarity in the time series data, is applied in the

following equation. This test detects the non-stationarity by using the following equation with intercept:

$$\Delta Y_t = \alpha + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots + \gamma_m \Delta Y_{t-m} + u_t, \quad t=1,2,\dots,n \quad (5)$$

Where Δ is a difference operator, t refers to the time period, and u_t is a residual at time period t . Y_t denotes the variable, which is investigated for stationarity. $\gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots + \gamma_m \Delta Y_{t-m}$ is used to correct the correlation problem among u_t and regressors of equation (5). The equation (5) includes intercept α and can also be assumed with intercept and time-trend T as follows:

$$\Delta Y_t = \alpha + \lambda T + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots + \gamma_m \Delta Y_{t-m} + u_t \quad (6)$$

$t=1,2,\dots,n$

Where λ is the coefficient of time-trend (T). ADF test checks the null hypothesis ($\delta = 0$), if δ is statistically significant, and it is not zero, then time series has no unit root problem. A time-series variable is stationary with two conditions. At first, δ should be statistically non-zero, and it should be negative.

3.3.2. Phillips and Perron Unit Root Test

Phillips and Perron (1988) developed the unit root test, which is different from ADF tests in dealing with heteroscedasticity and serial correlation. Phillips and Perron (PP) (1988) ignore the $\gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots + \gamma_m \Delta Y_{t-m}$ from ADF equation, which is for any serial correlation amongst error terms. The PP test removes the serial correlation by giving ranks to the residuals. Equation of PP test is as follows:

$$\Delta Y_t = \alpha + \lambda T + \delta Y_{t-1} + u_t, \quad t=1, 2, \dots, n \quad (7)$$

u_t may have heteroskedasticity, so for correction of serial correlation and heteroskedasticity. PP test uses the modified statistic Z_t and Z_δ which are as follows:

$$Z_t = \left(\frac{\hat{\sigma}^2}{\hat{\pi}^2} \right)^{1/2} \cdot t_{\delta=0} - \frac{1}{2} \left(\frac{\hat{\pi}^2 - \hat{\sigma}^2}{\hat{\pi}^2} \right) \cdot \left(\frac{T \cdot SE(\hat{\delta})}{\hat{\sigma}^2} \right), \quad (8)$$

$$Z_\delta = T \hat{\delta} - \frac{1}{2} \frac{T^2 \cdot SE(\hat{\delta})}{\hat{\sigma}^2} (\hat{\pi}^2 - \hat{\sigma}^2), \quad (9)$$

Where, $SE(\hat{\delta})$ is the standard error of $\hat{\delta}$. $t_{\delta=0}$ is the test statistic under the estimates of $\hat{\sigma}^2$ and $\hat{\pi}^2$, which are given below:

$$\hat{\sigma}^2 = \lim_{T \rightarrow \infty} T^{-1} \sum_{t=1}^T E[u_t^2], \quad (10)$$

$$\hat{\pi}^2 = \lim_{T \rightarrow \infty} \sum_{t=1}^T E[T^{-1} S_T^2], \quad (11)$$

Where $S_T = \sum_{t=1}^T u_t$ and T is the time-trend. Z_t and Z_μ of PP test follows the

same distribution as the t-statistic of ADF test under the null hypothesis ($\delta = 0$). PP test has an advantage over ADF test that it robust heteroskedasticity in the error term (u_t). Secondly, it does not need to specify the lag length for its estimation.

3.3.3. Bayer and Hanck (2013) Cointegration Test

When we make econometric analysis and apply the cointegration technique, a series is known as integrated if two or more variables of the time series are integrated at the individual level, but some linear combination of these variables might have a lower order of integration.

To check the stationarity among the non-stationary variables, Engle and Granger (1987) developed the first procedure of cointegration. This procedure is good when the data under estimation has a limited time period, compared to other economic time series. Later on, Johansen (1991) developed another cointegration technique known as Johansen maximum Eigen value technique. Johansen (1991) cointegration technique has the advantage that it permits more than one cointegrating relationship. For this reason, this approach is more pertinent than the Engle–Granger test. Phillips and Ouliaris (1990) developed another cointegration technique, which is based on residuals and is known as the Phillips–Ouliaris cointegration test. To calculate the cointegration among the time series, the study has the Error Correction Model (ECM) based F-test of Peter Boswijk (1994) and the ECM based t -test of Banerjee *et al.* (1998) available.

When these econometric cointegration techniques are applied, different outcomes might be possible. To augment the authority of cointegration test with the exclusive aspect of producing a joint test-statistic for the null hypothesis of no cointegration based on Engle and Granger, Johansen, Peter Boswijk, and Banerjee tests, Bayer and Hanck developed a new cointegration test in 2013 and known as

Bayer-Hanck cointegration test. This new test permits us to merge various individual cointegration test outcomes to offer a more convincing result. Following Bayer and Hank (2013), the blend of computed significance level (p -value) of individual cointegration test in Fisher's formulas is as follows:

$$EG - JOH = -2[\ln(\rho_{EG}) + (\rho_{JOH})] \quad (12)$$

$$EG - JOH - BO - BDM = -2[\ln(\rho_{EG}) + (\rho_{JOH}) + (\rho_{BO}) + (\rho_{BDM})] \quad (13)$$

Where ρ_{EG} , ρ_{JOH} , ρ_{BO} and ρ_{BDM} are the p -values of various individual cointegration tests respectively. It is assumed that if the estimated Fisher statistics exceed the critical values provided by Bayer and Hank (2013), the null hypothesis of no cointegration is rejected.

4. Empirical Results and Discussion

4.1. Unit Root Analysis

Appropriate information about the stationary properties of the variables included in the econometric model is a prerequisite in order to apply a cointegration test in a time series empirical analysis. The reason behind checking the stationary properties is that results of non-stationary time series are undependable, so by checking the stationary properties the study can get reliable results.

To check the properties of stationarity, the study uses Augmented Dickey–Fuller (1979) and Phillips and Perron (1988) unit root tests for each of the six-time series real GDP, financial development, trade openness, institutional quality, and real capital as well as for employed labour force.

The results of both the stationary tests with intercept and trend are presented in Table 1. This table exhibits that the variables of the series are not stationary at level with intercept and time trend by the ADF test. All the variables of the series are found stationary at first difference. This shows that integrating order of the variables is 1, i.e. They are integrated at I (1). The same inference can be drawn for another PP unit root test. So, it is found that variables of the time series have a unique integrating order. This distinctive order of integration of variables suggests applying the Bayer-Hanck (2013) combined cointegration tests like EG-JOH and EG-JOH-BO-BDM tests to examine the cointegration among the variables.

Table 1: Unit Root Analysis

Variables	ADF Test		PP Test		Stationary
	Level	1 st Dif	Level	1 st Dif	
$\ln Y_t$	-2.1254 (0.5102)	-3.9368** (0.0237)	-1.7892 (0.6838)	-3.7663** (0.0340)	I(1)
$\ln FD_t$	-2.3347 (0.4031)	-4.1698** (0.0142)	-1.7896 (0.6836)	-4.1971** (0.0133)	I(1)
$\ln TR_t$	-1.9167 (0.6201)	-4.7063* (0.0041)	-2.1713 (0.4868)	-4.7063* (0.0041)	I(1)
$\ln INS_t$	-2.4264 (0.3591)	-5.9574* (0.0002)	-1.7906 (0.5821)	-8.9160* (0.0000)	I(1)
$\ln K_t$	-2.9490 (0.1630)	-5.7973* (0.0003)	-2.9475 (0.1633)	-5.9070* (0.0002)	I(1)
$\ln L_t$	0.4853 (0.9831)	-10.4027* (0.0000)	-0.5637 (0.8639)	-10.405* (0.0000)	I(1)

Note: *, ** and *** significant at 1%, 5% and 10% level respectively

4.2. Lag Length Selection

Obligatory information about the appropriate lag length using unrestricted VAR (vector auto- regression) is required to implement the Bayer-Hanck (2013) combined cointegration approach to compute Fisher–statistics to investigate if cointegration exists between the variables of the series. The Fisher -statistics are sensitive with lag length vary selection. Lag length selection has been chosen following Akaike Information Criterion (AIC) which performs better than other criterion such as sequential modified LR test, Final Prediction Error (FPE), Schwarz Information Criterion (SC) and Hannan-Quinn information criterion (HQ) respectively. AIC provides consistent and reliable results regarding lag length selection. Since the data of the study is of annual frequency empirical results suggest that serial correlation is not an issue when the order of the VAR is taken at suggested lags (Chaudhary et.al, 2007). The results reported in Table 2 show that lag order 1 is suitable for the cointegration analysis.

4.3. Bayer and Hanck Cointegration Results

Table 3 displays the combined cointegration test results, including the EG-JOH, and EG-JOH-BO-BDM. It was found that Fisher-statistics for both EG-JOH and EG-JOH-BO-BDM tests exceed the critical values at one percent significance level when the openness of trade, capital and economic growth are used as independent variables for respective models. The test rejects the null hypothesis of the variables has no cointegration in these models.

Table 2: Lag Length Selection

VAR Lag Order Selection Criteria					
Lag	LR	FPE	AIC	SC	HQ
0	80.90175	NA	1.91e-10	-5.350125	-5.064653
1	203.2943	183.5888*	4.26e-13*	-11.5210*	-9.522716*
2	234.6656	33.61211	8.83e-13	-11.19040	-7.479260

Note: * indicates lag order selected by the criterion

Table 3: The Results of Bayer and Hanck Cointegration Analysis

Estimated Models	EG-JOH	EG-JOH-BO-BDM	Lag Order	Cointegration
$Y_t = f(FD_t, TR_t, INS_t, K_t, L_t)$	56.173*	63.816*	2	Exists
$FD_t = f(Y_t, TR_t, INS_t, K_t, L_t)$	6.414	7.158	2	Not Exists
$TR_t = f(Y_t, FD_t, INS_t, K_t, L_t)$	55.647*	110.910*	2	Exists
$INS_t = f(Y_t, FD_t, TR_t, K_t, L_t)$	6.813	12.075	2	Not Exists
$K_t = f(Y_t, FD_t, TR_t, INS_t, L_t)$	55.532*	115.067*	2	Exists
$L_t = f(Y_t, FD_t, TR_t, INS_t, K_t)$	7.682	10.588	2	Not Exists

Note: * represents significant at 1% level. Critical values at 1% level are 15.701 (EG-JOH) and 29.85 (EG-JOH-BO-BDM) respectively. Lag length is based on minimum value of AIC.

However, the null hypothesis is accepted when we are taking financial development, quality of institutions, and employed labour force as an explained variable, the cointegration test is not consistently able to reject the null hypothesis of no cointegration. This confirms that there is a cointegration among all the variables. Thus, overall, one can conclude that long run association exists among trade openness, quality of institutions, capital stock financial development, and employed labour force in case of Pakistan.

4.4. Long Run Empirical Results

The long run empirical results of the services sector of Pakistan have been presented in Table 4. Services trade openness, financial development, and employed labour force are significant and have expected signs. The variable of quality of institutions is insignificant. The capital stock is significant but has negative sign.

These results show that financial development of the services sector has an expected positive sign and is significant at the five percent level of significance. It

exerts a positive impact on the GDP of the services sector. A one percent increase in financial development leads to increase in the GDP of the services sector by 0.0733 percent.

Trade openness of this sector has positive sign and is significant at one percent level of significance. If other things do not change, one percent rise in services trade openness increases the GDP of this sector by 0.1106 percent. This could be attributed to the domestic economic and trade reforms introduced by the government of Pakistan during 1980s and 1990s. The smallest positive value indicates the good functioning of other factors like economic and political institutions.

Table 4: Long Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob. Values
Constant	7.6626*	0.182728	41.934	0.0000
$\ln FD_t$	0.0733**	0.033956	2.1606	0.0424
$\ln TR_t$	0.1106*	0.028522	3.8815	0.0009
$\ln INS_t$	-0.0485	0.044172	-1.0999	0.2838
$\ln K_t$	-0.0183***	0.010248	-1.7922	0.0875
$\ln L_t$	0.3063**	0.115707	2.6472	0.0151
R-squared		0.9876		
Adj. R-squared		0.9845		
F-statistic		332.7279*		
Durbin-Watson Test		1.7626		

Note: *, ** and *** significant at 1%, 5% and 10% levels of significance respectively

The empirical result of trade openness confirms the findings of Matt *et al.* (2001). His empirical study of the developing countries found that the trade liberalization index has a positive impact on the GDP of the services sector. A one percent rise in the trade liberalization index increases the services sector's GDP by 0.1106 percent. The results of our study are contradictory with the results of the study of the Gupta (2009). He found that trade of services sector has a negative impact on the GDP of the services sector at the one percent level of significance. The empirical study of Ajmair and Ahmed (2011) has also found the growth of exports in services sector negative but its impact is insignificant. The quality of institution variable demonstrates a negative and an insignificant effect on the growth of services sector's GDP. It means that institutional development is still far away to take the advantage of trade liberalization.

But Valeriani and Peluso (2012) found a positive and significant effect of quality of institutions on the services sector's GDP for both the developed and the developing economies. But the coefficient of the quality of institutions in the developed and the developing countries is different. A one percent increase in the quality of institutions in developed countries enhances the economic growth by 0.303 percent. For the developing countries, one percent improvement of in the quality of institutions increases the economic growth by 0.159 percent. Sarwar *et al.* (2013) has also found a positive association between the quality of institutions and economic growth. A one percent increase in the quality of institutions enhances the economic growth by 0.309 percent. The variable of capital stock has surprisingly negative sign and is statistically significant at the 5 percent level of significance. A one percent increase in capital stock decreases the services sector's GDP by 0.0183 percent. The employed labour force has a positive and a significant at the 10 percent level of significance. A one percent increase in the employed labour force of services sector enhances the GDP of the services sector by 0.3063 percent provided that there is no change in the other situation.

4.5. Short Run Empirical Results

Short run empirical results of the services sector of Pakistan are displayed in the Table 5. In the short run, trade openness of the services sector has a positive impact on the GDP of the service sector and significant at the 5 percent level of significance. A one percent increase in services trade openness increases the economic growth of this sector by 0.0716 percent.

The variable of quality of institutions has positive sign and financial development has negative sign but both are insignificant. The capital stock is negatively associated with the economic growth of services sector. Employed labour force has positive and statistically significant impact on the economic growth of the services sector. A one percent increase in employed labour force expands the GDP of the services sector by 0.1167 percent.

The sign of lagged error term is negative and is significant at one percent level. This confirms our established cointegration association among the variables. The statistical significance of the lagged error term with negative sign indicates the short run convergence to equilibrium path in the long run. The estimate of ECM_{t-1} is equal to -0.6316 and it is statistically significant at one per cent level. We found that any short run shock stems in the GDP of the services sector is corrected by 63.16 per cent in each year to achieve the stable long run equilibrium path.

Table 5: Short Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob. Values
Constant	0.0157***	0.0077	2.0509	0.0551
$\Delta \ln FD_t$	-0.0257	0.0315	-0.8146	0.4259
$\Delta \ln TR_t$	0.0716***	0.0365	1.9616	0.0655
$\Delta \ln INS_t$	0.0350	0.0399	0.8758	0.3926
$\Delta \ln K_t$	-0.0168**	0.0075	-2.2250	0.0391
$\Delta \ln L_t$	0.1167	0.0856	1.3627	0.1898
ECM_{t-1}	-0.6316*	0.2156	-2.9286	0.0090
R-squared		0.5363		
Adj. R-squared		0.3818		
F-statistic		3.4709*		
Durbin-Watson Test		1.6080		
Diagnostic Tests		F-statistic	Prob. value	
$\chi^2 SERIAL$		2.0975	0.1552	
$\chi^2 ARCH$		2.1367	0.1312	
$\chi^2 WHITE$		2.6210	0.1100	
$\chi^2 REMSAY$		0.2691	0.7229	

Note: * significant at 1% level of significance respectively. Normality of error term, serial correlation, autoregressive conditional heteroskedasticity, white heteroskedasticity and functional of short run model is indicated by $\chi^2 SERIAL$, $\chi^2 ARCH$, $\chi^2 WHITE$ and $\chi^2 REMSAY$ respectively.

The results of diagnostic tests are shown in the Table 5 (lower segment). They demonstrate no problem of non-normality of residual term. This exposes that error term has a normal distribution with constant variance and mean value is zero. The serial correlation does not exist and no problem of autoregressive conditional heteroskedasticity is found. We find no evidence of white heteroskedasticity. The findings by Ramsey reset show that the short run model is well constructed.

4.6. The VECM Granger Causality Analysis

Unidirectional causality is a pre-requisite if the variables have to be co-integrated (Granger 1969). The causal relation amongst the series has been investigated by employing a VECM Granger causality approach. The VECM Granger causality approach is the most appropriate method when all the variables are co-integrated at a unique order. There must be uni or bidirectional causality if it is confirmed that there is a cointegration among the series. The knowledge of

causal association is inevitable for the policy makers in formulating appropriate fiscal, monetary, and trade policies for achieving a sustainable economic growth.

Table 6: Long-and-Short Runs Causality

Dependent Variable	Direction of Causality						
	Short Run						Long Run
	$\Delta \ln Y_{t-1}$	$\Delta \ln FD_{t-1}$	$\Delta \ln TR_{t-1}$	$\Delta \ln INS_{t-1}$	$\Delta \ln K_{t-1}$	$\Delta \ln L_{t-1}$	ECM_{t-1}
$\Delta \ln Y_t$	....	0.3138 [0.7360]	1.6675 [0.2266]	0.0778 [0.9255]	2.7322*** [0.1022]	0.4793 [0.6297]	-0.7944* [-3.2634]
$\Delta \ln FD_t$	0.2046 [0.8172]	....	0.5329 [0.5976]	0.3603 [0.7033]	0.0464 [0.9548]	2.7355** * [0.0971]	....
$\Delta \ln TR_t$	0.6950 [0.5167]	0.3960 [0.6808]	....	0.0218 [0.9784]	0.3522 [0.7096]	0.0524 [0.9491]	-0.1761* [-3.7070]
$\Delta \ln INS_t$	1.4881 [0.2573]	0.3465 [0.7126]	0.5606 [0.5824]	....	4.6442** [0.0269]	1.5245 [0.2496]	....
$\Delta \ln K_t$	0.7775 [0.4798]	0.0328 [0.9678]	0.8337 [0.3412]	2.3180 [0.1377]	....	1.0910 [0.3647]	-0.1440** [-2.8153]
$\Delta \ln L_t$	0.8767 [0.4364]	2.4777 [0.1175]	0.1755 [0.8407]	0.0807 [0.9228]	0.3407 [0.7166]	....	....

Note: *, ** and *** show significance at 1%, 5% and 10% levels respectively.

The empirical results on the direction of long run and short run causality have been presented in Table 6. In the short run, empirical results of the VECM Granger causality approach reveal that Capital stock causes services growth. Financial development is caused by employed labour force. Capital stock causes the quality of the institution. In the long run, capital stock causes the economic growth and economic growth causes capital stock in Granger sense. The relationship between capital stock and services trade openness is bidirectional. The unidirectional causality is running from quality of institutions, financial development, and employed labour force to economic growth, trade openness to capital stock.

5. Conclusions and Policy Recommendations

The connection between financial development, quality of institutions, trade liberalization, and the economic growth of services sector has been a dominant phenomenon in economic literature. In the global economy, trade liberalization is considered as one of the most important sources to create competition and determine economic progress. Economic growth of the services sector has been an

important component of GDP growth in case of Pakistan. It contributes over 50 percent of towards GDP of Pakistan.

This study explores the short run and long run impacts of trade liberalization, financial development, and quality of institutions on the economic growth of the services sector of Pakistan by utilizing time series data over the period of 1984-2013. The Cobb-Douglas production function has been augmented by adding quality of institutions, trade openness, and financial development variables to probe their impacts on the growth of the services sector of a country. To check the stationarity of the data the Augmented Dickey -Fuller (ADF) and the Phillips and Perron (PP) unit root tests have been applied. The most recently developed combined cointegration technique by Bayer and Hanck (2013) has also been used to check the cointegration among the variables.

The long run results show that financial development of the services sector has an expected positive sign. It exerts a positive influence on the growth of the services sector. Trade liberalization of this sector has positive sign and is significant at the one percent level of significance. This could be attributed to the domestic economic and trade reforms introduced by the government of Pakistan during 1980s and 1990s. The small positive value indicates that the good functioning of the other factors like economic and political institutions is inevitable. The quality of institution variable shows insignificant impact on the growth of the services sector. It means that institutional development is still far away to take the advantage of trade liberalization in Pakistan. Employed labour force has positive and is significant.

In the short run, the study finds that impact of trade liberalization has a positive and significant impact on the GDP of the services sector. The variable of quality of institutions has positive sign, but is insignificant. Employed labour force has positive and significant impact on the growth of the services sector. The statistical significance of the lagged error term with negative sign indicates the short run convergence to equilibrium path in the long run. In the short run empirical outcomes of the VECM Granger causality approach reveal that capital stock causes services sector economic growth. Financial development is caused by employed labour force. Capital stock causes the quality of institution. In the long run, capital stock causes the economic growth of services sector to increase, and economic growth of services sector causes capital stock in Granger sense. The relationship between capital stock and services trade liberalization is bidirectional. The unidirectional causality is running from financial development, quality of

institutions and employed labour force to the growth of the services sectors, and services trade liberalization to capital stock.

Based on these results of the study, it is suggested that there is a need to improve the growth of the services sector in Pakistan because this sector has the strength to boost up the economic growth of the country as it contributes more than 50 percent of GDP. A well- established services sector is important for high productivity and innovation. The services sector is responsible for the overall macroeconomic performance of the economy and for the welfare of the people of a country. Moreover, these empirical findings also suggest that trade liberalization and financial development process should continue in the services sector. In order to accrue more benefits of trade liberalization in this sector, Pakistan should pay attention to develop political, financial, and economic institutions. The economic and political institutions need immediate attention to have more gains from services sector and this can only be done by improving law and order in the country. War on terrorism has negatively affected the growth performance of the services sector. Hence, better quality and improved functioning of the institutions are pre-requisite to boost the economic growth of the services sector of Pakistan. Data was not available on the subsectors of the services sector. Due to this limitation the empirical analysis of the subsectors of the services sector was not done in this study.

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