



Trade Openness and Economic Growth Nexus in Pakistan

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Abstract *This study explores the nexus amongst trade openness and economic growth for Pakistan for 1981-2019. Trade-openness is a dependent variable, and it is measured as imports plus exports to GDP ratio. Economic growth, Foreign Direct Investment, Inflation, Exchange rate, and interest rate are taken as explanatory variables. Co-integration approach by Johansen and Juselius (1988, 1991) has been used for long-run relationships. Results indicate that Trade-Openness has significantly affected the economic growth and other control variables of the study for Pakistan. There exist bidirectional Granger Causality in the selected variables.*

Key Words: Economic Growth, FDI, Trade Openness, Inflation, Exchange Rate, Pakistan, Cointegration, ADF

JEL Classification: C22, F10, F14, F43, O40

Introduction

Growth and development have resulted in Globalization. Information, products and knowledge are being exchanged among countries. The word “globalization” is not new, yet both the scope and rate of change of the globalization process seem to have changed in the positive direction over time (Taylor, 2006). Both the foreign direct investment and global trade flows have witnessed a significant increase since the 1980s (IMF, 2006) and almost all the open economies are affected by the current globalization process. The impact of globalization seems to be varying from economy to economy, depending upon the nature, structure and degree of openness of the economy.

Openness is characterized by an emphasis on transparency and free, unrestricted access to knowledge and information. Trade openness is a “phenomenon” of sharp economic integration between countries captured through trade liberalization, investment and capital flows, as well as technological changes.

Economic growth is a major indicator in the macroeconomics. We measure economic growth through the GDP growth rate of Pakistan. Pakistan may be considered as a growing economy in South Asia. Until 1960, s and 1970, s GDP growth rate of Pakistan were seemed to be lower than 5 percent while for the same period, inflation was documented to be higher than 10 percent. On average GDP growth rate remained at the level of 4 percent in Pakistan. Recently GDP growth rate for 2016 is 1.8 percent (Economic survey of Pakistan).

A general rise in prices and fall in the purchasing value of money. Inflation is a complex phenomenon and major factor in macroeconomics. There are two major factors of inflation.

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Demand pull-inflation appears in an economy when aggregate demand is higher than the aggregate supply. Cost push-inflation emerges in an economy as a result of an increase in the cost of basic inputs of the production process—inflation rate measured through consumer price index (CPI).

Problem Statement

Today world focus on trade openness and regional integration. New projects are initiated. Economic growth is a key objective of Pakistan, and low economic growth is the main problem of Pakistan. In this environment, it is very important to know how trade openness affects economic growth.

Objectives and Hypothesis of the Study

- To investigate the long-run relationship between trade openness and economic growth of Pakistan
- To suggest suitable policy implications.

H0: There is no relationship between Trade openness and Economic Growth.

H1: There is a positive relationship between Trade openness and Economic growth.

The article is organized into five sections, namely, introduction, literature review data and methodology, results and discussion and conclusions and policy implications respectively. References are given at the end.

Review of Literature

Contributing to literature, [Afzal et al., \(2013\)](#) analyzed openness, inflation and growth relationships in Pakistan by using time series data set and estimated through the autoregressive distributed lag model. He found a robust inverse relationship between inflation and openness.

In a study, [Mukhtar \(2010\)](#) analyzed does trade openness reduce inflation by using openness as an exogenous variable. They used the following variables budget deficit, exchange rate, trade openness, consumer price index, and GDP. They used multivariate co-integration and a vector error correction model. Cointegration test shows there is a significant negative long-run relationship between trade openness and inflation.

The relationship between trade openness and inflation had been analyzed by applying a single equation model for inflation treating trade openness as an independent variable. They used time-series data from 1976 to 2010. They take data from International monetary fund (IMF), World development indicator (WDI) and State bank of Pakistan (SBP). They apply the unit-root testing technique. The results show a significant positive effect of financial market openness on inflation with trade and import openness as a proxy ([Munir and Kausar, 2011](#)).

[Hussain \(2011\)](#) analyzed inflation and economic growth. Annual data for 1960-2006 has been used. According to the result of the study, inflation is positively related to economic growth in Pakistan and vice versa. The concern of causality between these two variables, it is found to be uni-directed. In other words, inflation is causing growth but not vice versa. Error Correction Models (ECM) have been used. The ECM test is estimated to see whether an economy is converging towards equilibrium in the short-run or not.

[Ashra \(2002\)](#) analyzed inflation and openness. They used a fixed effects model. They used panel data of 15 countries from 1980-90. The usual variables like rate of growth of money and agriculture output, the openness variables such as export to GDP and import to GDP ratio have a significant influence on the domestic rate of inflation.

[Ayyoub et al., \(2011\)](#) analyzed inflation's effects on economic growth. They used time-series data for period 1972-73 to 2009-10, and for analysis, they used the ordinary least square (OLS) method or technique. Negative and significant inflation and growth relationship have been found.

Results show prevailing inflation is harmful to GDP growth of the economy after the certain threshold level.

[Hanif and Batool \(2006\)](#) analyzed openness and inflation. They used augmented Dicky fuller (ADF) approach. They used Heteroscedasticity and Autocorrelation (HAC) estimator for estimating the model. They used a time series technique of data from 1973-2005. Openness variable such as growth in 'overall trade to GDP ratio' has a significant negative impact on domestic price growth in Pakistan.

[Jadoon et al., \(2015\)](#) analyzed trade liberalization, human capital and economic growth. There are four main channels in literature through which trade liberalization affects economic growth: capital accumulation, equality of factor prices among countries, knowledge transfer and energy transfer. Last two channels are related to human capital, in this study to see the impact of trade liberalization on the human capital and economic growth by using panel data analysis. The result showed that both developed and developing countries enjoy trade-led growth for the selected period. The impact of trade openness on human capital has been found positive for both groups but found significantly only for the developed countries due to well-trained human capital.

[Umer \(2014\)](#) analyzed the impact of trade openness on the economic growth of Pakistan. In this study, Autoregressive distributed lag (ARDL) approach over the period, 1960-2011 have been used. Overall empirical results showed that trade volume, investment and human capital have a positive and significant impact on economic growth. Findings further reveal that trade restrictions measures have a negative and significant impact on economic growth in long-run.

[Yusoff and Fabrina \(2012\)](#) analyzed trade openness, exchange rate, gross domestic investment and growth in Indonesia. This study used the Johansen co-integration test and granger causality test. The result suggests that there exists a long-run relationship among variables. All the estimated coefficients of the long-run equation have the correct positive sign and significant at the level 5 percent. The results from the granger causality test suggest that all the variables cause real GDP in the short-run. Indonesia should liberalize foreign trade, improve the domestic investment climate and maintain exchange rate stability.

[Manteli \(2015\)](#) analyzed trade openness cause growth. This study investigates the causal relationship between trade openness and economic growth in a sample of 87 countries during the period 1970-2013. The general tendency is that openness has a positive impact on economic growth. The empirical results confirm this ambiguous relationship and provide evidence which varies across the model specification. Regarding of the per capita income regression for all countries, as for as growth regression is concerned, it seems that there is a positive but not a robust impact on income, as the coefficient of openness is positive but at the same time insignificant.

[Barro \(1991\)](#) analyzed economic growth in a cross-section of countries. For 98 countries in the period 1960-1985, the growth rate of per capita GDP is positively related to initial human capital and negatively related to the initial level of real per capita GDP. Countries with higher human capital also have lower fertility rates and higher ratios of physical investment to GDP. Growth is inversely related to the share of government consumption in GDP, but significantly related to the share of public investment. Growth rates are positively related to measures of political stability and inversely related to measures of political stability and inversely relates to a proxy for market distortions.

[Bayar \(2016\)](#) analyzed the impact of openness and economic freedom on economic growth in the transition economies of the European Union. During the 1996-2012 period, through the use of panel data analysis. This study found there is a long-run relationship among the variables and both economic freedom and trade openness have a positive impact on economic growth, while financial openness has a negative impact on economic growth. Moreover, countries have improved their institutional and legal infrastructure to achieve sustainable economic growth and attract foreign capital.

[Romer \(1991\)](#) analyzed openness and inflation. He concludes that the prediction of the model in which the absence of recommitment in monetary policy leads to excessive inflation. Thus, under discretionary policymaking, money growth and inflation will be lower in more open economies. Romer used the paper which links between openness and inflation using cross country data. The results/data revealed a strong negative link between openness and inflation.

[Yanikkaya \(2003\)](#) analyzed trade openness and economic growth. This paper established that trade liberalization does not have a simple and straight forward relationship with growth using a large number of openness measure for a cross-section of countries over the last three decades. This study used two groups of trade openness measures. The regression results for numerous trade intensity ratios are mostly consistent with the existing literature. Estimated results showed that trade barriers are positively and, in the most specification, significantly associated with growth, especially for developing countries, and they are consistent with the findings of theoretical growth and development literature.

[Kurihara \(2013\)](#) analyzed international trade openness and inflation in Asia. The relationship in the world has been discussed, including economic growth for a long time from both theoretical and empirical ones; however, there has not been any consensus about this problem. It is necessary to analyze this relationship to achieve sound economic growth. Panel data in Asia and OECD countries are used to examine the relationship between international trade openness and inflation empirically in both areas. The results show that the relationship exists both in Asia and the Organization for Economic Cooperation and Development (OECD) countries; however, it exists strongly in Asia recent period.

Reza *et al.*, (2013) analyzed trade openness and inflation. Providing evidence from different countries, negative and positive effects of openness on the inflation rate has been discovered. This paper examined the answer by applying an unbalanced static panel data method of estimation for the Middle East and North American countries in the period of 1990-2010. In contrast to [Romer \(1993\)](#), which present a negative correlation between them, this paper explores that countries which more open degree of international trade are exposed to a higher rate of inflation.

[Shaheen *et al.*, \(2013\)](#) analyzed the impact of trade liberalization on economic growth in Pakistan. They used time-series data from the period 1975 to 2010. Trade openness, Gross fixed capital formation, foreign direct investment and inflation are important explanatory variables. The study used Johenson and Juselius (1990) for a long-run relationship. Results show that trade liberalization and Gross fixed capital formation have a positive and significant impact on economic growth. Foreign direct investment and inflation negatively affect the growth of the economy.

Sadia (2014) analyzed the impact of trade openness, FDI, Exchange rate and inflation on economic growth. The analysis based on time series data for the period 1980 to 2011. The study used Augmentin Dicky Fuller test to find out stationary of the variables and

Co-integration and (OLS) techniques have been used for the estimation. Co-integration results indicated the long-run relationship among the variables. The negative impact of trade openness can be overcome by producing import substitutes and creating conditions for trade surplus. Moreover, foreign direct investment and trade are considered an important variable that improves the influence of economic growth.

[Ghumro and Memon \(2015\)](#) analyzed the determinants of inflation. This research article highlights the main sources of inflation in the economy of Pakistan using an Autoregressive distributed lag model for the period from 1980-2012. Result revealed that one percent rise in the long-run money supply, exchange rate, total reserve and gross national expenditure change inflation by 0.16, 2.12, 0.36 and 1.78 percent points respectively. The error correction model with negative sign remains statistically significant with approximate 81% speed of adjustment to restore the equilibrium in the long-run, which shows the quick convergence.

Above all studies showed different results regarding Trade-Openness and economic growth nexus with mixed outcomes. Therefore, necessitating a re-investigation that there exists a relationship between Trade-Openness and economic growth along with control variables inflation,

exchange rate, FDI and interest rate. Present study augments the existing literature by using the latest data set and advanced econometric technique for analysis.

Data and Methodology

Based on the literature review in chapter two, we can summarize our finding in the form of the following theoretical model.

$$TO = f(GDP, CPI, ER, FDI, IR) \quad (1)$$

Empirical model based on existing literature, we formulate our empirical model as follows.

$$TO = f(\alpha + \beta_1 GDP + \beta_2 CPI + \beta_3 ER + \beta_4 FDI + \beta_5 REALIR + \epsilon_t) \quad (2)$$

Where

GDP= Gross domestic product

TO= export plus import to GDP ratio

CPI= consumer price index and it is used as a proxy of inflation

ER= exchange rate

FDI= foreign direct investment

IR= real interest rate

ϵ_t = error term

Definition of Variables Trade Openness (TROP)

“Real export plus imports as a percentage of GDP is used as a proxy for trade openness. Different proxies are used in the empirical studies for accounting trade openness. Such as export to GDP ratio, import to GDP ratios are used in this study. In this study, we used export plus import to GDP ratio. Trade openness is a dependent variable.

Gross Domestic Product (GDP)

An increase in the number of goods and services produced per head of the population over a period of time. We used GDP at the current prices to measure the Economic Growth in this study.

Consumer Price Index (CPI)

CPI is used to measure the fixed basket of goods and services that a consumer used in the course of one year. CPI is used as the proxy of inflation in this study.

Exchange Rate

We used real exchange rate in this study. The real exchange rate tells us how much the goods and services in the domestic country can be exchanged for the goods and services in a foreign country.

Foreign Direct Investment (FDI)

FDI is an investment made by a company or individual in one country in business interest in other country in the form of either establishing business operation in other country, such as ownership or controlling interest in a foreign company. We used FDI in the percentage of GDP in this study.

Interest Rate

The interest rate or Real interest rate is the rate of interest an investor, saver or lender receives after allowing for inflation. World Bank (World Development Indicator WDI) is the main source of data. Consumer price index, Exchange rate, Foreign Direct Investment, and the real interest rate has been taken from WDI. The data of GDP at the current prices have been taken from the Economic Survey of Pakistan.

Augmented Dicky Fuller Test

The stationarity of the time series is at what level of difference is a probable examination with the

help of most famous ADF test of Dicky and fuller (1981) and Phillips Perron (PP) (1988) unit root test. These tests are considered as the fundamental test for the order of integration of the time series data. These two tests have two hypotheses; the first hypotheses are non-stationarity, and the alternative hypotheses are stationarity in the series. Null hypotheses of the test are that there exist unit root and data is non-stationary at 5 % level of significance. Table 4.1 presents the consequences of the ADF of the variables under thought.

Johansen’s Co-Integration Technique

Maximum Eigenvalue Test

- H₀:** r cointegrating vector
- H₁:** r+1 cointegrating vector

$$\text{The test statistic is: } \lambda_{\max} = -T \ln(1 - \lambda_{r+1}) \quad (3)$$

Again, the asymptotic distribution under the null is non-standard. Johansen and Juselius computed them by simulations. Reject the null if the test statistic is greater than the critical value. Johansen and Juselius considered 5 different cases for the cointegrating vector. They differ by deterministic components (time trend and a constant) in the test equation. Which one is sensible depends on common sense and economic theory (if the two are compatible)?

Trace Test

- H₀:** There are at most r cointegrating vector
- H₁:** There is more than r cointegrating vector

$$\text{The Test statistics are: } \Delta_{\text{trace}} = -T \sum_{i=r+1}^n \ln(1 - \lambda_i) \quad (4)$$

Johansen and Juselius computed the critical values by simulation. If the test statistic is greater than the critical values, reject the null.

Granger Causality Test in VECM

Considered a bivariate ECM of co-integration I (1)

$$\Delta y_t = c + \Gamma_1 \Delta y_{t-1} + \dots + \Gamma_p \Delta y_{t-p} + a e_{t-1} + u_t \quad (5)$$

In this case, we must restrict the error correction term under the null since e_{t-1} is a function of past Y_t

- H₀:** y_{2t} does not cause y_{1t} implies $\gamma_{1,12} = \dots = \gamma_{p,12} = a_1 = 0$
- H₁:** y_{2t} Causes y_{1t}

Results and Discussion

In this section of the article, results have been reported in table 1 through 6 based on the econometric methodology discussed in chapter 3.

Table 1. Augmented Dicky Fuller Test

Variables	With intercept		With intercept and trend	
	Level	1 st difference	Level	1 st difference
TO	-2.95	-7.39	-2.90	-7.32
GDP	-1.52	-6.02	-2.07	-5.96
CPI	-4.49	-9.14	-4.57	-8.91
ER	1.55	-7.14	-1.42	-8.01
FDI	-1.76	-4.06	-1.79	-4.03
Real IR	-1.45	-4.96	-1.83	-4.85

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

Table 1 presents the results of ADF unit root tests for all the variables under consideration, and test results showed that all variables are non-stationary at the level. After taking the first difference, all the variables become stationary hence integrated of I(1), a precondition for applying Johansen and Juselius (1988, 1991) co-integration technique.

Lag Length Selection Criteria

The “lag length checked by Schwarz Bayesian Criteria (SBC) and Akaike Information Criteria (AIC) produce renounce results. Both criteria prescribe lag length 2. To continue to the following step, the lag length 2 is chosen in this study”. The outcomes are accounted in table 2 below:

Table 2. Selection of Lag Length

Lag	LR	AIC	SC	HQ
0	NA	29.207	29.47	29.299
1	250.39	22.537	24.42060*	23.21796*
2	37.0423	22.96262	26.394	24.160
3	51.87094*	21.91139*	26.926	23.662

In table 2, HQ and SC criteria show that lag 1 is appropriate criteria. While LR and AIC criteria show that lag 3 is the appropriate criteria.

Table 3. Serial Correlation LM Test

Lags	LM-Stat	Probability
1	48.58	0.079
2	56.69	0.0154
3	45.58	0.13

In table 3 the maximum eigenvalue test indicates that there exist 4 cointegrating equation at level 5 %.

Table 4. “Cointegration Rank Test (Trace)

“Hypothesized Nos of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.913	235.27	103.84	0.0000
At most 1*	0.829	149.44	76.97	0.0000
At most 2*	0.673	87.64	54.07	0.0000
At most 3*	0.474	6.35	9.16	0.0011
At most 4*	0.428	25.35	20.26	0.0074
At most 5**	0.166	6.355	9.16	0.1650

*Note: Trace indicates 5 cointegrating eqn (s) at the level 0.05*denotes rejection of the hypothesis at the level 0.05. **Mackinnon-Hanug Michelis (1999) p-values.”*

Table 5. “Cointegration Rank Test (Maximum Eigenvalue)

“Hypothesized No of CE (s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.914	85.83	40.95	0.0000
At most 1*	0.829	61.79	34.80	0.0000
At most 2*	0.673	39.18	28.59	0.0016
At most 3*	0.474	22.51	22.29	0.0467
At most 4*	0.429	19.59	15.89	0.0125
At most 5**	0.166	6.355	9.16	0.1650

Maximum-eigenvalue test indicates 5 cointegrating eqn(s) at the level 0.05

**denotes rejection of the hypothesis at the level 5%*

***Mackinnon-Haug-Michelis (1999) p-values”.*

Table 6. “Granger Causality Test

Null Hypothesis	Obs.	F- Statics	Prob.
“IR does not cause TO	36	0.7272	0.544
TO does not cause IR	36	0.5433	0.656
GDP does not cause TO	36	4.0185	0.016
TO does not cause GDP	36	0.9169	0.444
FDI does not cause TO	36	0.8067	0.500
TO does not cause FDI	36	0.4288	0.733
ER does not cause TO	36	1.2882	0.297
TO does not cause ER	36	1.5649	0.219
CPI does not cause TO	36	1.2872	0.297
TO does not cause CPI	36	0.4149	0.743
GDP does not cause IR	36	0.9504	0.429
IR does not cause GDP	36	1.7915	0.170
IR does not cause ER	36	0.5412	0.657
CPI does not cause IR	36	0.1237	0.945
IR does not cause CPI	36	0.2446	0.864
FDI does not cause GDP	36	0.4476	0.720
GDP does not cause FDI	36	0.4273	0.730
ER does not cause GDP	36	0.9725	0.419
GDP does not cause ER	36	3.1827	0.038
CPI does not cause GDP	36	0.2818	0.838
GDP does not cause CPI	36	0.3437	0.793
ER does not cause FDI	36	3.9472	0.017
FDI does not cause ER	36	2.2861	0.056
CPI does not cause FDI	36	2.9321	0.050
FDI does not cause CPI	36	2.0698	0.126
CPI does not cause ER	36	0.7778	0.515
ER does not cause CPI”	36	1.4452	0.249”

In table 6, serial correlation does not exist at the first lags, and the null hypothesis also rejects these three lags. In table 4 Trace test indicates that there exist 6 cointegrating equation at the level 5 In table 4.6 The Granger causality test shows a bidirectional relationship between TO and all other variables; therefore null hypothesis is rejected.

Conclusion

This study was conducted to empirically analyze growth and trade openness in Pakistan. To test the hypothesis that there exists a long-run relationship among variables. To test the model empirically, we have used the annual time series data covering the period from 1981 to 2019. To evaluate the long-run relationship among variables, we have utilized Johansen’s Cointegration technique to estimate the empirical model. The finding in our study offers new knowledge of trade openness, economic growth, exchange rate, inflation, foreign direct investment and real interest rate.

All the variables are associated with trade openness. Augmented Dicky Fuller Test indicates that all variables have the same order of integration. Thus, meeting Johansen and Juselius’s Cointegration test’s pre-requisite, applied the Trace test and Maximum Eigenvalue test to establish the existence of the long-run relationship. Trace value test indicates that there exist 5 cointegrating equation at 5 % level of significance, and this shows that there exists a long-run relationship among variables. Granger causality test shows that there exists a bidirectional relationship between trade openness and all other variables, because the null hypothesis rejected. Future research agenda may be to extend and reinvestigate present work using an even larger sample size data on different countries employing modern techniques of co-integration that takes into account the effects of structural reforms through structural breaks.

References

- Afzal, M., Malik, M. E., Butt, A. R., & Fatima, K. (2013). Openness, inflation and growth relationships in Pakistan: An application of ARDL bounds testing approach. *Pakistan Economic and Social Review*, 13-53.
- Ali, W., & Abdullah, A. (2015). The Impact of Trade Openness on the Economic Growth of Pakistan: 1980-2010. *Global Business and Management Research*, 7(2), 120.
- Anwar, M. M., Khan, G. Y., & Khan, S. J. I. (2017). Effect of increase in oil price on inflation in Pakistan. *International Review of Humanities and Scientific Research*, 2(2), 216-223.
- Ashra, S. (2002). Inflation and openness: a study of selected developing economies. *Indian Council for Research on International Economic Relations. Working Paper*, (84).
- Ayyoub, M., Chaudhry, I. S., & Farooq, F. (2011). Does inflation affect economic growth? The case of Pakistan. *Pakistan Journal of social sciences*, 31(1), 51-64.
- Barro, R. J. (1991). Economic growth in a cross section of countries. *The quarterly journal of economics*, 106(2), 407-443.
- Barro, R. J. (1995). Inflation and economic growth (No. W5326). National bureau of economic research.
- Bayar, Y. (2015). Impact of Openness and Economic Freedom on Economic Growth in the Transitional Economies of European Union. In 11th International Conference of Asecu Openness, Innovation, Efficiency and Democratization as Preconditions for Economic Development (p. 61).
- Bibi, S., Ahmad, S. T., & Rashid, H. (2014). Impact of Trade Openness, FDI, Exchange Rate and Inflation on Economic Growth: A Case Study of Pakistan. *International Journal of Accounting and Financial Reporting*, 4(2), 236.
- Chaudhry, I. S., Ayyoub, M., & Imran, F. (2013). Does Inflation matter for Sectoral growth in Pakistan? An Empirical Analysis. *Pakistan Economic and Social Review*, 71-92.
- Din, M. U., Ghani, E., & Siddique, O. (2003). Openness and economic growth in Pakistan. *The Pakistan Development Review*, 795-807.
- Ghumro, N. H., & Memon, P. A. (2015). Determinants of Inflation: Evidence from Pakistan using Autoregressive Distributed Lagged Approach. *Sukkur IBA Journal of Management and Business*, 2(1), 17-30.
- Gries, T., & Redline, M. (2012, June). Trade openness and economic growth: a panel causality analysis. In *International Conferences of RCIE, KIET, and APEA, March* (pp. 16-18).
- Haddad, M., Lim, J. J., & Saborowski, C. (2010). Trade openness reduces growth volatility when countries are well diversified.
- Hanif, M. N., & Batool, I. (2006). Openness and inflation: A case study of Pakistan.
- Hanushek, E. A. (2013). Economic growth in developing countries: The role of human capital. *Economics of Education Review*, 37, 204-212.
- Hussain, S., & Malik, S. (2011). Inflation and economic growth: Evidence from Pakistan. *International Journal of Economics and Finance*, 3(5), 262.
- Jadoon, A. K., Rashid, H. A., & Azeem, A. (2015). TRADE LIBERALIZATION, HUMAN CAPITAL AND ECONOMIC GROWTH: EMPIRICAL EVIDENCE FROM SELECTED ASIAN COUNTRIES. *Pakistan Economic and Social Review*, 53(1), 113.
- Jin, J. C. (2006). Openness, growth, and inflation: Evidence from South Korea before the economic crisis. *Journal of Asian Economics*, 17(4), 738-757.
- Khan, G. Y., Razaq, S., & Mehboob, S. (2019). Corruption and Globalization Nexus with Economic Growth of Selected SAARC Countries. *European Online Journal of Natural and Social Sciences: Proceedings*, 8(1 (s)), pp-133.
- Kurihara, Y. (2013). International trade openness and inflation in Asia. *Research in World Economy*, 4(1), 70.
- Manteli, A. (2015). Does Trade Openness Cause Growth? An Empirical Investigation.
- Montalbano, P. (2011). Trade openness and developing countries' vulnerability: Concepts, misconceptions, and directions for research. *World Development*, 39(9), 1489-1502.

- Mukhtar, T. (2010). Does trade openness reduce inflation? Empirical evidence from Pakistan. *The Lahore Journal of Economics*, 15(2), 35.
- Munir, S., & Kiani, A. K. (2011). Relationship between Trade Openness and Inflation: Empirical Evidences from Pakistan (1976—2010). *The Pakistan Development Review*, 853-876.
- Rauf, A., Khan, A. A., Ali, S., Qureshi, G. Y., Ahmad, D., & Anwar, N. (2017). Fiscal decentralization and delivery of public services: evidence from education sector in Pakistan. *Studies in Business and Economics*, 12(1), 174-184.
- Romer, D. (1993). Openness and inflation: theory and evidence. *The Quarterly Journal of Economics*, 108(4), 869-903.
- Shabbir, M. S., Bashir, M., Abbasi, H. M., Khan, G. Y., & Abbasi, B. A. (2020). Effect of domestic and foreign private investment on economic growth of Pakistan. *Transnational Corporation Review*, 12(4), 1-13. DOI: 10.1080/19186444.2020.1858676.
- Shahbaz, M., Ahmad, K., & Chaudhary, A. R. (2008). Economic growth and its determinants in Pakistan. *The Pakistan Development Review*, 471-486.
- Shaheen, S., Ali, M. M., Kauser, A., & Ahmed, F. B. (2013). Impact of trade liberalization on economic growth in Pakistan. *Interdisciplinary Journal of Contemporary research in business*, 5(5), 228-240.
- Umer, F. (2014). Impact of Trade Openness on Economic Growth of Pakistan: An ARDL Approach. *Journal of Business & Economic Policy*, 1(1), 2014.
- Yanikkaya, H. (2003). Trade openness and economic growth: a cross-country empirical investigation. *Journal of Development economics*, 72(1), 57-89.
- Yusoff, M., & Febrina, I. (2012). Trade openness, exchange rate, gross domestic investment, and growth in Indonesia. *The Asian Conference on the Social Science. Osaka, Japan*.