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PERSONAL INCOME TAX AND ECONOMIC GROWTH: A COMPARATIVE STUDY BETWEEN CHINA AND PAKISTAN

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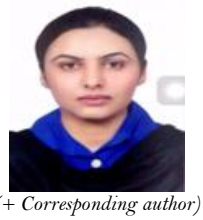

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ABSTRACT

The present study explores the relationship between personal income tax and economic growth in China and Pakistan. For empirical analysis, bivariate and multivariate Granger causality frameworks have been utilized. The results do not support bivariate framework because it omit main variables. Then four important additional variables were introduced in multivariate framework to capture the country specific effect. The results under multivariate framework conclude there exist long-run positive unidirectional causality from personal income tax to real gross domestic product per capita (RGDPPC). The results showed that personal income tax, trade openness, inflation has positive while dependency ratio and agriculture has negative relation with economic growth for Pakistan while for China personal income tax, trade openness and agriculture sector has positive while inflation and dependency ratio shows negative relationship. Speed of adjustment predicts that system will move to equilibrium rapidly while diagnostic tests approve the perfectness of the model.

Contribution/ Originality: From the best of author's knowledge, similar comparative study in case of China and Pakistan has not been conducted so far. Bivariate and multivariate granger causality framework has been utilized in this study.

1. INTRODUCTION

This paper examines the impact of personal income tax on economic growth for China and Pakistan. Tax is any penalty, amount or fee that is payable. Taxation plays an important role in the process of revenue generation and to run various activities in an economy (Amin *et al.*, 2014). Mahmood and Chaudhary (2013) views that taxes are classified into two main categories (direct and indirect taxes). Direct taxes are gained through corporate profit, income and properties while indirect taxes are levied on value added import tax and sales tax. This increase could be an expansion in annual growth rate, one time surge to the size of an economy that does not affect the upcoming growth rate but puts the economy on a higher growth path or both. Tax revenue is considered a significant and influential tool for the enhancement of economic growth in a country. Taxation system is an efficient and strong channel to mobilize the internal resources of a country. The key objective of taxation system is to reduce income inequality, finance public goods and services in an economy, to promote efficient allocation of resources, and economic stabilization. Are taxes cause growth? This is the question which has been discussed in many empirical

and theoretical studies. Literature suggests connection between taxes and economic growth of an economy. Various tax instruments have different influences on exogenous as well as endogenous (neo-classical) growth theory. Exogenous growth theory discusses that changes in tax strategy may not have long run growth effect but also generate temporary effects (Ramsey, 1928; Solow, 1956; Lee and Gordon, 2005). On the other side, the proponents of endogenous theory believe that change in tax rate may have long run growth effect and increase economic activity (Romer, 1986; Lucas, 1988; Easterly and Rebelo, 1993).

Barro (1990) contributes a significant revolution to describe the influence of personal income tax on economic growth. According to Barro's setup, a surge in income taxes raises the rate of growth while growth becomes slower when income tax rates increase beyond a given threshold (Futagami *et al.*, 1993; Aschauer, 2000; Marrero, 2008). In the past, various studies try to assess the progressivity of income tax structure in Pakistan. In developing countries, this area of research has in the past received less importance, given the income tax constitutes relatively smaller portion of the overall revenue collection (Sicat and Arvind, 1988; Bird and Eric, 2005; Bernardi *et al.*, 2006; Bird, 2008).

In literature, much importance has given to the development experiences of Pakistan and China, however, a comparative study to investigate policies toward catching up process using a common framework is not so far. Pakistan and China started their development journey in the same decade of 1950 to attain the target of economic growth. In 1980, Pakistan's GDP per capita was about 1.6 times than china. After 1990, the income gap between them started decline rapidly by China's fast growth rate and sluggishness in Pakistan's growth rate. After 1997, China left Pakistan behind in term of per capita income and became the fast growing developing economy of the world. China as a major force in the world has remained significant economic phenomenon of the past quarter century. while, Pakistan lagged behind in catching up process **(Figure 1. a)** shows the growth trajectories of both countries.

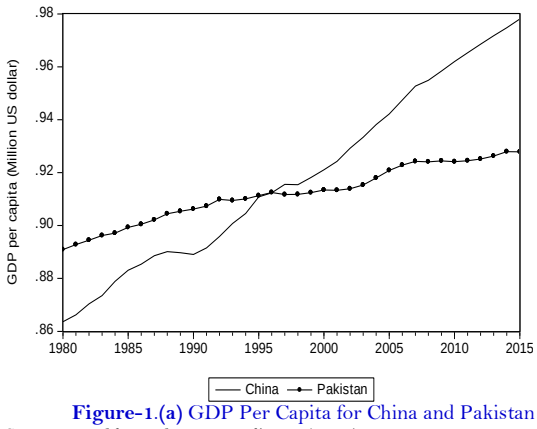
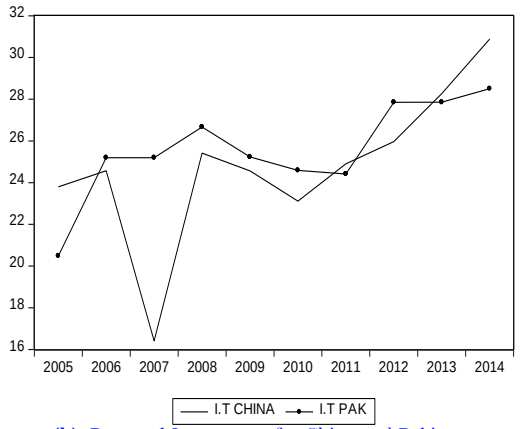


Figure-1.(a) GDP Per Capita for China and Pakistan
Source: World Development Indicator (WDI)
(China Statistical Yearbook, 2016) & State Bank of Pakistan (SBP)



(b). Personal Income tax for China and Pakistan

Tax policy can affect economic growth of a country and it is obvious from the literature that tax on wages is a way to enhance economic growth. Personal income tax policy has gone through several rounds of revision as it has become an increasing source of revenue collection and a policy instrument in China's fiscal system since past decades. Personal income tax in Pakistan and China is showing an upward trend **(Figure 1. b).** Previous data indicates that in China, total direct tax revenue was 11,917,531 Million Yuan and personal income tax share was 737,661 Million Yuan which increased to 12,492,220 Million Yuan and individual income tax share also increased to 861,727 Million Yuan from 2014-2015 (CSY, 2016). In Pakistan, during 2014-15, the amount of income tax was 278,599 Billion Rupee that reached to 327,367 Billion Rupee in 2015-16 (GOP, 2015-16).

Various studies explore the impact of personal income tax on economic growth but no comparative study has found in case of China and Pakistan. Most of the economists found positive relation between PIT and economic

growth. Majority of the economists seem to agree with the point that imposition of tax on personal income of individuals is good for economic growth. Every country has different method for revenues collection. Some countries increase taxes while others do not alter their policies regarding taxation. Koch *et al.* (2005) found income tax and economic growth has direct relationship in South Africa. Ebimobowei and Ebiringa (2012) investigated the growth of Nigeria during 1970 to 2010. By using Johansen Co-integration and Granger causality test, they found long run relation between personal income tax and economic growth in Nigeria. Umoru and Anyiwe (2013) found that only direct taxes are enhancing growth in Nigeria.

2. DATA, MODEL AND RESULTS

2.1. Data

This section discusses the variables adopted in present study, their measures and data sources. Time series data is utilized for the period of 1986-2015 according to the data availability. The data source is The World Bank (World Development Indicators), State Administration of Taxation of the People's Republic of China (SAT) and State Bank of Pakistan (SBP).

Keeping in view the theoretical framework following econometric model is given below:

$$Ln(RGDP) = \beta o+\beta_1 ln(PIT)+ \beta_2 ln(TO)+ \beta_3 ln(CPI)+ \beta_4 ln(DEP)+ \beta_5(AGR)+\varepsilon_t$$

Table-1. Variables Description

Variables	Description of notations
RGDP	Real GDP Per Capita
PIT	Personal Income Tax (tax imposed on salaries of individuals)
TO	Trade Openness (exports plus imports divided by GDP)
CPI	Inflation (measured by consumer price index)
DEP	Dependency Ratio (people younger than 15 or older than 64)
AGR	Agriculture (value added per worker, value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs)

Data is transformed in logarithmic form as it provides efficient, better and consistent results. Data in logarithmic form not only make the data smooth but also remove the problem of heteroskedasticity.

In present study, bound test of co-integration was used developed by Pesaran *et al.* (2001) to examine the presence of long-run association among variables. Bound test is based on autoregressive distributed lag (ARDL) approach. Furthermore, this approach can be used when variables are I (1) or I (0). Various unit root tests are available but in present study, I used augmented Dickey and Fuller (1979;1981) test (ADF test) with intercept and time trend. The number of lags is selected through Schwarz Information Criterion (SIC). The results of unit root test are described in **(Table 2 & 3)** respectively.

Table-2. ADF Test (For Pakistan)

Variables	ADF			
	Level		First Difference	
	Intercept	Trend & intercept	Intercept	Trend & intercept
LOGRGDP	-0.6568	-4.0629*	-4.2227*	-4.4615*
LOGPIT	-1.5642	-1.7727	-5.4223*	-5.3835*
LOGCPI	-2.4299	-2.3668	-5.5447*	-5.4576*
LOGTO	-2.2883	-2.5807	-6.1300*	-6.2796*
LOGDEP	-0.9378	-2.0063	-4.9823*	-5.0578*
LOGAGR	-0.8932	-1.9395	-6.0000*	-5.9538*

Here the lag length of each variable is determined through SBC, * reflects the rejection of null hypothesis of unit root problem (non-stationarity) of variables at 1% level of significance. SBC: Schwarts and Bayesian Criteria, ADF: Augmented Dicky-Fuller

Table-3. ADF Test (For China)

Variables	ADF			
	Level		First Difference	
	Intercept	Trend & intercept	Intercept	Trend & intercept
LOGRGDP	-3.8874*	-3.8185	-5.2266*	-5.5647*
LOGPIT	-2.1520	-1.8297	-4.8296*	-4.9553*
LOGCPI	-3.0514	-4.0302	-5.8114*	-5.7324*
LOGTO	-1.7025	-1.2938	-4.7838*	-4.9273*
LOGDEP	-1.5218	-2.4202	-4.5064*	-4.4965*
LOGAGR	-1.1005	-4.3531*	-5.4803*	-5.3603*

Here the lag length of each variable is determined through SBC, * reflects the rejection of null hypothesis of unit root problem (non-stationarity) of variables at 1% level of significance. SBC: Schwartz and Bayesian Criteria, ADF: Augmented Dickey-Fuller

To check the stationarity of variables with drift and other factor, intercept term is employed for the specification of unit root. Pesaran *et al.* (2001) found that SBC is better than Akaike information criterion (AIC), as it chooses smallest possible lag length but AIC selects the maximum relevant lag length. Results of table 2 & 3 shows that we can use ARDL technique because some variables are stationary at level $I(0)$ while rest are stationary at integrated at $I(1)$.

In this study, we used bounds test for co-integration. Firstly, I considered only bivariate long-run relationship among personal income tax (PIT) and economic growth (RGDP). Then four additional control variables, that are, TO, CPI, DEP and AGR are added as control variables. These control variables are introduced in the multivariate long-run framework to capture the country's specific effects. In bivariate framework, bound testing approach indicates whether long run association exists in one of the following unrestricted error correction models:

$$\Delta RGDP_t = \alpha_0 + \sum_{i=1}^{n} \Delta RGDP_{t-i} + \sum_{i=0}^{n} \Delta PIT_{t-i} + RGDP_{t-1} + PIT_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta PIT_t = \beta_0 + \sum_{i=1}^{n} \Delta PIT_{t-i} + \sum_{i=0}^{n} \Delta RGDP_{t-i} + PIT_{t-1} + RGDP_{t-1} + \varepsilon_{2t} \quad (2)$$

In equation (1), the null hypothesis of no co-integration amongst the variables is (H0: $\alpha 1 = \alpha 2 = 0$) against alternative hypothesis that is {H1: $(\alpha 1 \neq 0) \cup (\alpha 2 \neq 0)$}. In equation (2), the null hypothesis is (H0: $\beta 1 = \beta 2 = 0$) against alternative hypothesis that is {H1: $(\beta 1 \neq 0) \cup (\beta 2 \neq 0)$}. The null hypothesis tested with F-test. The results of bound test specify the exists long run relationship between RGDP and PIT when RGDP is taken as dependent variable but no long run relationship exists when PIT is taken as dependent variable **(Table 3)**.

Table-4. ARDL Bound Test

Dependent	China	Pakistan
LOGRGDP	5.0492 (2)*	9.1360 (1)*
LOGPIT	3.4884 (1)	1.6659 (1)

Note: * indicate significance of variables at 1%, 5% and 10% respectively. The null hypothesis of no cointegration is tested with F-statistics, critical value bounds are from Pesaran *et al.* (2001). Values in parenthesis represent number of lags.

On the basis of Augmented Dickey Fuller results, we will apply ARDL technique to find long run and short run association among variables.

The lags of ARDL model are selected through SIC. The long-run coefficients of the model are described in **(Table 5)**. The results of independent variable show that there exist insignificant relationship between RGDP and PIT for both China and Pakistan. The results of short run Granger causality test are stated in **(Table 6).** This causality test has been analyzed through F-test based. These results suggest that there is a unidirectional short run Granger causality running from RGDPP to PIT.

Table-5. ARDL Approach

Independent	China	Pakistan
LOGPIT	-0.0078	-10.7201
	(-1.4184)	(-0.0423)

Dependent variable is Real GDP per capita (RGDPPC)
Note: Number in parenthesis is t-ratio.

Table-6. Short run Granger causality test

Dependent	China	Pakistan
LOGPIT	-0.6279*	-0.0014*
	(-3.7753)	(-5.4406)

*indicate variable is significant at 1%significance level. Number in parenthesis is t-ratio.

In the multivariate framework, the bounds test describes whether long run association exists among variables or not. The results are reported in (Table 7).

Table-7. Bound test for Co-integration

Dependent	F-statistics	Co-integration
F (PIT, TO, CPI, DEP, AGR)	25.34*	Yes
F (PIT, TO, CPI, DEP, AGR)	29.73*	Yes
Critical value bounds Significance level	I (0)	I (1)
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18

* statistical significance at 1%

(Table 7) shows that F statistics of both models exceeds the upper bound value that depicts rejection of null hypothesis. It shows cointegration exist among variables exists. The next step is the estimation of long run and short run relationship among variables by using ARDL model approach.
The equation of ARDL is as follows,

$$\Delta LOGRGDP_{ti} = \beta_o + \sum_{i=1}^{k} \beta_1 LOGPIT_{t-1} + \sum_{i=1}^{k} \beta_2 LOGTO_{t-1} + \sum_{i=1}^{k} \beta_3 LOGCPI_{t-1} + \sum_{i=1}^{k} \beta_4 LOGDEP_{t-1}$$
$$+ \sum_{i=1}^{k} \beta_5 AGR_{t-1} + \sum_{i=1}^{k} \lambda_1 LOGRGDP_{t-1} + \sum_{i=1}^{k} \alpha_1 \Delta LOGPIT_{t-1} + \sum_{i=1}^{k} \alpha_2 \Delta LOGTO_{t-1} + \sum_{i=1}^{k} \alpha_3 \Delta LOGCPI_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_4 \Delta LOGDEP_{t-1} + \sum_{i=1}^{k} \alpha_5 \Delta AGR_{t-1} + \sum_{i=1}^{k} \delta_1 \Delta LOGRGDP_{t-1} + \varepsilon t \quad (3)$$

In equation (3), Δ is the first difference operator, β_0 is constant, ε_t is white noise error term, β_1, β_2, β_3, β_4, β_5 are error correction dynamics, while α_1, α_2, α_3, α_4, α_5 represents the long-run relationship among variables.
H0:δ0= δ 1= δ 2 = δ 3 = δ 4 = δ5=0
H1: δ0 ≠ δ 1 ≠δ 2 ≠ δ 3 ≠ δ 4 ≠ δ5 ≠0.

After having the long run association among variables and finding the long run coefficients of the variables, one need to move for short run coefficients. Thus, short run models for the variables will be as:

$$\Delta LOGRGDP_{ti} = \alpha + \sum_{i=1}^{k} B_i \Delta LOGPIT_{t-1} + \sum_{i=1}^{k} \delta_i \Delta LOGTO_{t-1} + \sum_{i=1}^{k} \varphi_i \Delta LOGCPI_{t-1} + \sum_{i=1}^{k} \chi_i \Delta LOGDEP_{t-1}$$
$$+ \sum_{i=1}^{k} \lambda_i \Delta AGR_{t-1} + \sum_{i=1}^{k} \eta_i \Delta LOGRGDP_{t-1} + \nu ECM_{t-1} \quad (4)$$

Table-8. Estimated Long Run Results of Economic Growth Model based on ARDL approach

	LOGPIT	LOGTO	LOGCPI	LOGDEP	LOGAGR
PAKISTAN	0.1871*	0.2113*	0.0899*	-0.1253	-10.8667*
	(0.0194)	(0.0469)	(0.0171)	(0.0292)	(1.1002)
	[9.6333]	[4.4983]	[5.2460]	[-4.2910]	[-9.8770]
CHINA	0.0058*	0.0225	-0.1862*	-0.0306*	0.1370*
	(0.0033)	(0.0144)	(0.0743)	(0.0094)	(0.0379)
	[1.7389]	[1.5654]	[-2.5047]	[-3.2413]	[3.6071]

Real GDP per Capita (RGDPPC) is dependent variable.
Standard error and t-statistics are given in () and [] respectively. *represent statistical significance at 1%. ARDL: Autoregressive distributive lag.

(Table 8) demonstrates positive and significant impact of personal income tax on economic growth in case of China and Pakistan. Higher tax on salaries and wages leads to increase tax revenue which in turn will enhance economic growth (Slemord, 2003). Barro (1990) indicates a significant revolution in characterizing the influence of personal income tax on economic growth. The enhancement of income tax in Barro's setup raises economic growth, while growth becomes slower when income tax rates increase beyond a given threshold. Literature also favors a direct relationship between economic growth and personal income tax. Marrero and Novales (2007); Marrero (2008); Koch *et al.* (2005); Aschauer (2000); Futagami *et al.* (1993) also found positive relationship.

Trade openness has positive but significant link with economic growth for Pakistan while for China it shows insignificant impact on growth. Trade openness is considers as the key factor to fuel economic growth. Shahbaz and Lean (2012) found trade openness promote economic growth. Vehapi *et al.* (2015) found significant relationship while Menyah *et al.* (2014) found insignificant relationship between trade openness and economic growth.

The results of inflation showed a direct linkage with economic growth in Pakistan. Malik and Chowdhury (2001) also concluded a direct relationship between both variables for Pakistan. Our results stated that both variables affect each other positively and have significant impact. In fact, the results of present study can be justified as Tobin portfolio-shift effect, that is, increasing inflation stimulate people for more investment in physical capital and cut their real balance holdings. While inflation showed negative linkage with economic growth for China. Hwang and Wu (2011) indicate that increasing is damaging for economic growth whereas moderate inflation benefits growth in case of China. They concluded that every one percentage rise in inflation rate impedes economic growth by 0.61 percent. China's inflation rate for most of its provinces fluctuated between -2% and 2%, with some outliers reaching -3% and 3%. This reflects relatively unstable price and negatively affect economic growth (D'Amico, 2015). Fischer (1993) and Barro (1995) found negative influence of inflation on growth.

Agriculture sector has positive connection with economic growth in Pakistan while positive relationship for China. Aleksandar and Srdan (2017) also found agriculture sector has higher influence on economic growth. In Pakistan, agriculture sector recorded negative growth of -0.19 percent against the growth of 2.53 percent last year. The reduction in growth occur due to several factors, such as, decline in the production of cotton, rice, maize and various other crops due to dangerous weather (Pakistan Economic Survey, 2015-16).

Dependency ratio has also negative and significant influence on economic growth for China and Pakistan. The decline in labor force and a surge in elderly population can cause for low economic growth. The reduction in labor force, due to an increasing population (below 15 and above 65) could translate into lower economic growth.

In table 9, the upper part shows personal income tax, trade openness, agriculture and inflation have positive influence on economic growth in the short run in Pakistan while dependency ratio shows negative but insignificant impact. For Pakistan, ECM value is -0.71 which shows that deviation from long run equilibrium to short run dynamics is corrected by about 71% after each year. The t-value of ECM coefficient is -10.076 which is significant and shows the convergence to the long run equilibrium.

Table-9. Short-run Granger causality test

	LOGPIT	LOGTO	LOGCPI	LOGDEP	LOGAGR
Pakistan	0.08275*	0.0716*	0.0315*	-0.0107	-4.2787*
	(0.0157)	(0.0235)	(0.0077)	(0.0427)	(0.6813)
	[5.2425]	[3.0482]	[4.0450]	[-0.2519]	[-6.2795]
ECM (-1)	-0.71*				
	(0.0708)				
	[-10.076]				
China	-0.0134*	-0.0211	-0.2092*	-0.4345*	-0.0170
	(0.0039)	(0.0174)	(0.0632)	(0.0510)	0.0201)
	[-3.3742]	[-1.2113]	[-3.3090]	[-8.5054]	[-0.8464]
ECM (-1)	-0.70*				
	(0.1462)				
	[-4.807]				

Real GDP per Capita is dependent variable.
Standard error and t-statistics are given in () and [] respectively. *represent statistical significance at 1%. ECM: Error Correction Model

The lower part depicts personal income tax, inflation and dependency ratio put negative and significant impact on economic growth while trade openness and agriculture showed negative and insignificant relation with growth. In China, ECM value is -0.70 which is highly significant and shows that deviation from long run equilibrium to short run dynamics is corrected by about 70% after each year. The t-value of ECM coefficient is -4.807 which is significant and shows the convergence to the long run equilibrium.

2.2. Stability Test

Model stability is investigated by the CUSUM and CUSUM of squares of recursive residuals tests, suggesting that the parameters are stables as the values fall inside the critical bands at 5% level (Fig. 2, 3, 4, 5).

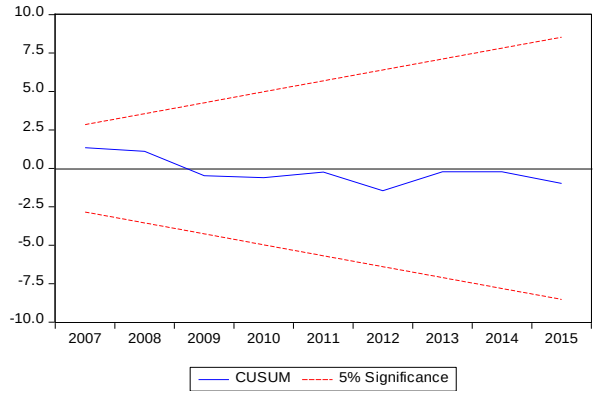


Fig-2. Cumulative sum of recursive residuals (CUSUM)

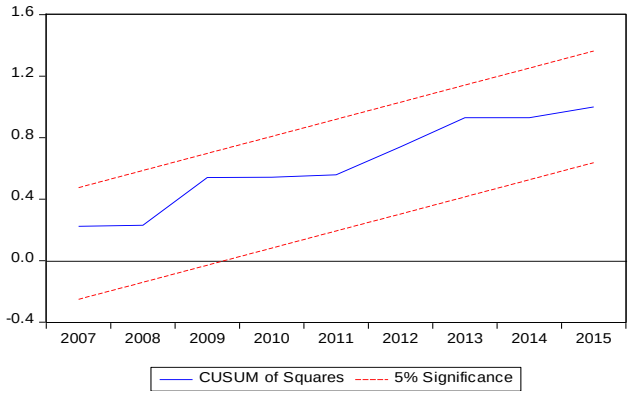


Fig-3. Cumulative sum of squares recursive residuals (CUSUMsq)

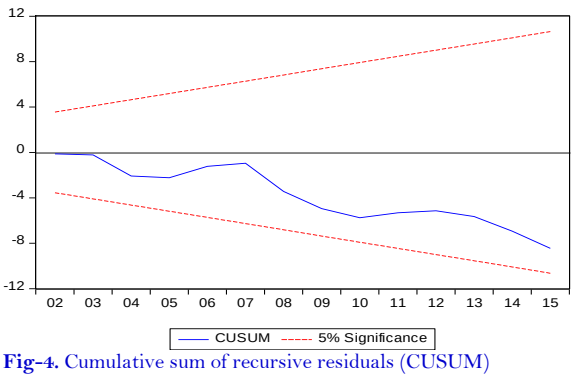


Fig-4. Cumulative sum of recursive residuals (CUSUM)

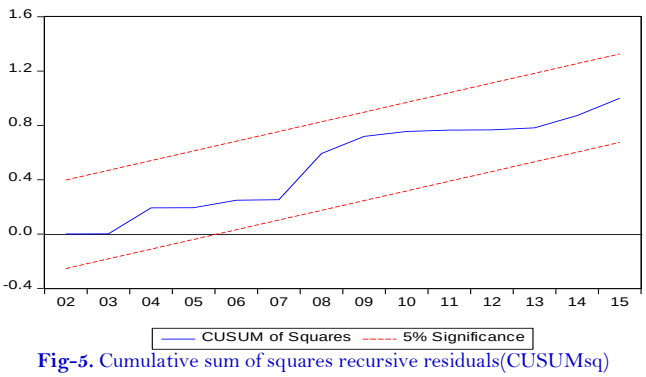


Fig-5. Cumulative sum of squares recursive residuals(CUSUMsq)

The plot graphs **(Fig. 4-7)** of CUSUM and CUSMSQ statistic remains within the bounds at 5% significance level, then we can say that the coefficients in the model are stable.

3. CONCLUSION

The objective of present study was to examine how personal income tax and all other control variables affect economic growth in case of Pakistan and China. This study analysis the time series data from 1986 to 2015 by using ARDL model in order to capture long run and short run association among variables. Economic growth was measured by using RGDP that is our dependent variable while independent variables include personal income tax, inflation, trade openness, dependency ratio and agricultural production. Bound test propose the existence of long run bond between variables. Results demonstrate that personal income tax is positively and significantly related with economic growth in case of China and Pakistan. Higher tax on salaries and wages of people leads to higher tax revenue which in turn will enhance economic growth. Trade openness is positively related with economic growth of Pakistan while in case of China it shows insignificant impact on growth. Inflation has positive and significant bond with economic growth of Pakistan and China. Agriculture sector has positive significant relationship with economic growth in China and Pakistan. Dependency ratio put negative but significant influence in China and Pakistan. The coefficient of ECM in economic growth model is negative but significant, which shows the convergence to the long run equilibrium.

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REFERENCES

Aleksandar, D. and Srdan, 2017. Evaluation of agriculture and industry effect on economic health by ANFIS approach. Physica A: Statistical Mechanics and its Applications, 479: 396-399. *View at Google Scholar | View at Publisher*

Amin, A., A.M. Nadeem, S. Parveen, M.A. Kamran and S. Anwar, 2014. Factors affecting tax collection in Pakistan: An empirical investigation. Journal of Finance and Economics, 2(5): 149-152. *View at Google Scholar | View at Publisher*

Aschauer, D.A., 2000. Do states optimize? Public capital and economic growth. Annals of Regional Science, 34(3): 343–363. *View at Google Scholar | View at Publisher*

Barro, R.J., 1990. Government spending in a simple model of endogenous growth. Journal of Political Economy, 98(5): S103–S125. *View at Google Scholar*

Barro, R.J., 1995. Inflation and economic growth. Bank of England Quarterly Bulletin. NBER Working Ppaer 5326. National Bureau of Economic Research.

Bernardi, L., G. Luca and F. Laura, 2006. Tax systems and tax reforms in SU HBVouth and East Asia: Overview of tax systems and main policy issues. In Bernardi, L., A. Fraschini and P. Shome (Eds.), Tax Systems and Tax Reforms in South and East Asia. London: Routledge. pp: 3-35.

Bird, R.M., 2008. Tax challenges facing developing countries. National Institute of Public Finance and Policy Working Paper.

Bird, R.M. and Z.M. Eric, 2005. The limited role of personal income tax in developing countries. Journal of Asian Economics, 16(6): 928-946. *View at Google Scholar | View at Publisher*

China Statistical Yearbook, 2016. Compiles by National Bureau of Statistics of China.

D'Amico, N., 2015. Corruption and economic growth in China: An emirical analysis. Senior Honors Projects: 78. Available from http://collected.jcu.edu/honorspapers/78.

Dickey, D.A. and W.A. Fuller, 1979. Distribution of the estimators for autoregressive time series with a unit root. Journals - American Statistical Association, 74(366a): 427-431. *View at Google Scholar | View at Publisher*

Dickey, D.A. and W.A. Fuller, 1981. Likelihood ration statistics for autoregressive time series with a unit root. Econometrica, 49: 1057-1072. *View at Google Scholar | View at Publisher*

Easterly, W. and S. Rebelo, 1993. Marginal income tax rates and economic growth in developing countries. European Economic Review, 37(2): 409-417. *View at Google Scholar | View at Publisher*

Ebimobowei, A. and O.T. Ebiringa, 2012. Petroleum profit tax and economic growth in Nigeria. International Journal of Management Sciences and Business Research, 1(9): 12-22. View at Google Scholar

Fischer, S., 1993. The role of macro-economic factors in growth. Journal of Monetary Economics, 32(3): 485-512. View at Google Scholar

Futagami, K., Y. Morita and A. Shibata, 1993. Dynamic analysis of an endogenous growth model with public capital. Scandinavian Journal of Economics, 95(6): 607–625. View at Google Scholar | View at Publisher

Hwang, J.T. and M.J. Wu, 2011. Inflation and economic growth in China: An empirical analysis. China & World Economy, 19(5): 67-84. View at Google Scholar | View at Publisher

Koch, S.F., N.j. Schoeman and J.J. Van Tonder, 2005. Economic growth and the structure of Taxes in South Africa: 1960-2002. South African Journal of Economics, 73(2): 190-210. View at Google Scholar | View at Publisher

Lee, Y. and R.H. Gordon, 2005. Tax structure and economic growth. Journal of Public Economics, 89(5): 1027-1043. View at Google Scholar | View at Publisher

Lucas, R.E., 1988. On the mechanics of economic development. Journal of Monetary Economics, 22(1): 3-42. View at Google Scholar

Mahmood, H. and A.R. Chaudhary, 2013. Impact of FDI on tax revenue in Pakistan. Pakistan Journal of Commerce and Social Sciences, 7(1): 59-69. View at Google Scholar

Malik, G. and A. Chowdhury, 2001. Inflation and economic growth: Evidence from four South Asian countries. Asia-Pacific Development Journal, 8(1): 123-135. View at Google Scholar | View at Publisher

Marrero, G.A., 2008. Revisiting the optimal stationary public investment policy in endogenous growth economies. Macroeconomic Dynamics, 12(02): 172–194. View at Google Scholar | View at Publisher

Marrero, G.A. and A. Novales, 2007. Income taxes, public investment and welfare in a growing economy. Journal of Economic Dynamics and Control, 31(10): 3348–3369. View at Google Scholar | View at Publisher

Menyah, K., S. Nazlioglu and Y. Wolde-Rufael, 2014. Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach. Economic Model, 37: 386–394. View at Google Scholar | View at Publisher

Pesaran, M., Y. Shin and R. Smith, 2001. Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3): 289-326. View at Google Scholar | View at Publisher

Ramsey, F.P., 1928. A mathematical theory of saving. Economic Journal, 38(152): 543-559. View at Google Scholar | View at Publisher

Romer, P.M., 1986. Increasing returns and long-run growth. Journal of Political Economy, 94(5): 1002-1037. View at Google Scholar | View at Publisher

Shahbaz, M. and H.M. Lean, 2012. The dynamics of electricity consumption and economic growth: A revisit study of their causality in Pakistan. Energy, 39(1): 146– 153. View at Google Scholar | View at Publisher

Sicat, G.P. and V. Arvind, 1988. Personal income taxes in developing countries. World Bank Economic Review, 2(1): 123-138. View at Google Scholar | View at Publisher

Slemord, J., 2003. The truth about taxes and economic growth. Challenge, 46(1): 5-14. View at Google Scholar

Solow, R.M., 1956. A contribution to the theory of economic growth. Quarterly Journal of Economics, 70(1): 65-94. View at Google Scholar

Umoru, D. and M.A. Anyiwe, 2013. Tax structures and economic growth in Nigeria: Disaggregated empirical evidence. Research Journal of Finance and Accounting, 4(2): 65-79. View at Google Scholar

Vehapi, M.F., L. Sadiku and M. Petkovski, 2015. Empirical analysis of the effects of trade openness on economic growth: An evidence for South East European countries. Procedia Economics and Finance, 19: 17-26. View at Google Scholar | View at Publisher