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Probing Real Economic Growth through Institutional Quality and Fiscal Policy in Selected Asian Countries

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Abstract

The current study examined the effect of institutional development and fiscal policy on real economic growth of four selected countries including Pakistan, India, Bangladesh and Sri Lanka. It employed Dynamic panel-data estimation, one-step system Generalized Method of Moments (GMM) technique to address the issue of potential endogeneity, which may arise in the presence of institutions. The real economic growth in Panel data covering the period from 1990 to 2024 provides ample evidences that (i) tax rates have positive and significant impacts on real economic growth (ii) government expenditures on social indicators helps in not augmenting real growth (iii) link between institutional quality and real economic growth is positive and significant (iv) trade openness restricts real growth. Accordingly, the study suggested that government should enhance expenditures on social indicators, despite of the fact that it has negative impact. To fulfill this purpose, there is need to increase tax-to-GDP ratio through expanding the tax base; not alone the tax rate in selected countries. Furthermore, there is also a need to restructure certain main institutions which may help to improve economic growth, government accountability, equity, security situations, and economic transparency.

***Keywords*:** Economic growth, GMM, institutional quality, fiscal policy, taxes

Introduction

Real Economic growth may shift production possibility curve (PPC), creating jobs, and also boasting businesses of nations. Without a significant increase in Gross Domestic Product (GDP), it may not be possible to create productive employment opportunities, reduce poverty rates, and also to minimize the actual extent of income inequality among the masses. Since 2005 to 2019 GDP in Pakistan has been increasing at an average rate of 5%,

which has now reduced post Covid-19; this is not enough to meet the requirements of ever-growing population. Moreover, economic growth does not show pattern of sustainability, which is very important to achieve Sustainable development Goals (SDGs) by 2030. Table 1 shows that the economic growth path of Pakistan's economy, which is changing over time. In some decades, it showed an impressive growth (reason may be regime), while in other decades this impetus was lost. Political Instability has a lot to say in this. Overall tax revenues, non-tax revenues and fiscal deficit are shown in Table 1. It is very strong that the tax-to-GDP ratio is quite low in Pakistan and it needs to be augmented in order to meet the basic living ideals. One should, though, be careful about the raised level of government expenditure and taxes. This is since distortionary taxation decreases economic growth after certain threshold levels. Tax bases are not fixed; they can be developed or damaged (Bird, 2008). Thus, there is a necessity to enhance tax-to-GDP ratio in Pakistan without having any bad influence on real economic growth.

The situation is India is different as it is having GDP growth of as high as 9.7% (2021-22) and 9.2% (2023-24). Bangladesh has around 5% growth average from 2020-24. Sri Lanka story is even more interesting, showing a volatile picture of average 3.6 % (2020-24). To avoid significant economic problems in the future, there is a dire need to study the determinants of real growth in the context of fiscal policy and institutional quality with a sample of four big Asian tigers capturing around 23.4% percent of world population (making $1/4^{th}$ of World). Neoclassical and endogenous growth models provide theoretical basis to further examine the link among crucial fiscal policy variables and real economic growth. Fiscal indicators predominantly include tax revenues, which play a vital role for the sustainability of a country especially ones like in our sample. Fiscal Indicators as thus the main source of government revenue and fulfill public and social requirements by providing government goods and services.

An ample body of works are available which has concentrated on the relationship among taxes and growth. Results may differ across nations due to fiscal variables involved, policy variable used, and additionally across time span in the same state. Barro (1990) offered robust evidence in favor of the view that higher taxes are growth hampering. The results were confirmed by other studies, while in others, they were overruled. For example, findings of Engen and Skinner, (1996) and Engen and Skinner,

(1992) confirmed that growth rate is weakened by taxes, while studies, such as Mendoza et al. (1997), Koester and Kormendi (1989), and Katz et al. (1983) did not classify any significant impact of taxes on growth. The present study examined the impact of tax rates on real economic growth of Pakistan; since there is a inconsistent debate among economists in this regard. Moreover, the study also prescribed policies in which tax-to-GDP ratio can be increased in Pakistan.

Table 1

Fiscal Indicators (% of GDP) of Pakistan

	Edu. Exp.	Health Exp.	Total Exp.	GDP growth	Total Revenue	Tax Revenue	Non tax	Fiscal deficit
1970's	1.9	0.5	21.9	5.0	13.7	11.4	2.3	8.6
1980's	2.3	0.8	24.6	6.3	17.0	13.8	3.2	7.0
1990's	2.6	0.8	24.3	4.5	17.0	13.5	3.5	6.9
2001-2005	1.9	0.6	17.6	5.1	14.0	10.7	3.3	3.8
2006-2010	2.5	0.5	19.2	4.0	13.9	9.7	4.2	5.4
2011-2015	2.3	0.5	19.9	3.9	13.5	10.1	3.3	6.9
2016	2.4	0.8	19.9	4.6	15.3	12.6	2.7	4.6
2017	2.7	0.9	21.3	5.2	15.4	12.4	3.0	5.8
2018-2020	1.8	0.5	21.8	5.5	15.2	13.0	2.2	6.5
2020-25	2.1	1.4	-	2.1	12.5	11.1	-	6.7

Note. Source: Pakistan Economic Survey (Various Years) and World Bank (2002). The figures are averages and may vary slightly.

The current study intended to capture the influence of social indicators on real growth of selected Asian countries. However, we have remained our major focus on Pakistan in debate as the situation is more vulnerable here. Social indicators refer to the welfare of human beings or societies, and an aggregate measure of government expenditures on education and health. Table 1 shows that expenditures on social indicators have never been the main focus of economic planning in Pakistan. In our country, one-third of the children do not have any access to school education. This is contrary to the article 25-A of the Constitution, which ensures education as a basic right for every kid for age reaching between 5-16 years. On the other hand, health expenditures in Pakistan are low-slung, though they are rising persistently. Health is the basic right of every citizen and is a vigorous precondition of development. Pakistani government does not consider health as a important area (Akram & Khan, 2007). Over the past ten years, the economy is

disbursing 0.5 - 0.9 % of GDP on health services. According to World Health Organization (WHO), countries should spend the least of 6% of GDP on lifesaving and basic services (PES 2016-17). These percentages are much lower than the looked-for levels. Since there comes an inverted U-shaped relationship between government expenditures and economic growth, this analysis is remarkably significant for Pakistan, while taking other three countries in comparison to strengthen the arguments.

One of the functions of the state is to maintain social order, that is, to build deep and shallow institutional quality. In Solow model, Ramsey-Cass-Koopmans model, and New Endogenous growth models, the major explanatory variables, such as institutions, infrastructure, and culture have not been given much importance in policy making. This is because they are not considered leading variables of sustainable economic growth. However, these variables have gained ample importance in the analysis of recent research; particularly North (1990) emphasized it considerably, on which he received Nobel prize in 1993. The idea of institutions has again received a Nobel prize in 2024 (most recently). It is also well-known that the doctrine of evolutionary theory has linkages with the New Institutional Economics (NIE) as stated by Nelson and Winter (1985) and North (1990).

Nobel laureates, Douglass North, Acemoglu, Simon Johnson, and Ronald Coase, changed the early intuitions of new institutional economics into strong theoretical and logical tools that laid a strong base of new research. According to institutional economics, institutions are of vital importance to determine the purpose of the nation. Unlike the neoclassical theories, it does not take institutions as assumed. The logic behind this claim is that some countries have developed since their institutional framework enhances agent well-organized behavior, while others are facing problems because their institutional framework does not put off corruption and demerit. Rodrik (2008) examined those countries without or poor-quality institutions cannot develop.

There is strong cross-country empirical evidence that the implications of institutions cannot be deserted to evaluate development level around the world (Acemoglu et al., 2001, Hall & Jones, 1999). Institutional framework plays an significant role in economic activities. Strong institutions promote investment, growth, human resources, merit, good governance, as well as help to overcome serious conflicts, cultural tensions, and social aggression (Chu, 2001; Aron, 2000; Dollar & Kray, 2003; Jütting, 2003; North, 1990;

Rodrik et al., 2002; World bank, 2002). The weak institutional framework leads towards pitiable governance as highlighted by Hassan (2002); Government of Pakistan (1999), and DRI/ McGraw-Hill (1998). The present study focused on whether Pakistan has witnessed better governance overtime or serious work desires to be assumed to expand real growth.

From the above discussion, it is clear that the position of institutions cannot be neglected to increase growth. Plenty of literature has analyzed the role of institutions in economic growth (Assane & Grammy, 2003; Hare, 2001; Knack & Keefer, 1995). This study is the primary endeavor to explore the joint effect of institutions and fiscal policy on real economic growth of Pakistan, as well as, it also prescribed policy implications for the same.

Theoretical Framework

This section investigates the joint influence of institutional structures and fiscal policy on real economic growth. Barro (1990) derived a mathematical model for closed economy in which households lived infinitely and they maximized their utility as follows:

$$U=\int_0^{\infty} u(A)e^{-\rho t}dt \quad (1)$$

where, A denotes the consumption of a person and ρ is more than 0 and it shows that the time preference is constant. If the population rate is also kept constant (unchanged), then the utility function would be written as;

$$u(A) = \frac{A^{1-\theta}-1}{1-\theta} \quad (2)$$

Here $\sigma > 0$,

Production function of each household can be written as follows:

$$Y_i=f(k_i) \quad (3)$$

where, Y represents the output of each worker $_{(i)}$ and k depicts capital per worker (K_i). Each individual works in a certain period of time with no labor leisure choice. The development rate of consumption per person is obtained by first order condition for utility maximization subject to given in equation number1 subject to the budget constraint of equation number 3.

$$\frac{\dot{A}}{A} = \frac{1}{\theta}(f' - \rho) \quad (4)$$

In equation (4), f' shows marginal product of the capital. Rebelo (1991) assumed rate of return on capital as constant, so

$$Y=Bk \quad (5)$$

where, B is greater than 0, and represents 'stable net capital marginal product'.

Here, to justify the statement of constant returns, capital includes both human and physical capital (as Solow model). Surely, in the production process, both these capitals must not be the perfect substitutes. Henceforth, production generally indicates constant returns when both of these capitals are considered jointly, though, shows diminishing returns to scale when one of the inputs is taken separately. Now replacing $f' = B$ in the equation (4) imparts:

$$f = \frac{A\cdot}{A} = \frac{1}{\sigma}(B - \rho) \quad (6)$$

Here, f shows per capita growth rate.

When government sector is included in the study, then it is assumed that (gb) is the extent of government amenities. Note that government amenities are considered as inputs in private sector production. Production however exhibits constant returns in gb and k is considered jointly, however, depicts diminishing returns to scale when k maybe considered independently. The production function is written as follows:

$$y= \Phi (k,gb)= k.\Phi(\frac{gb}{k}) \quad (7)$$

In the equation, Φfulfills the requirement of diminishing and positive marginal products. It is presumed that production function is Cobb-Douglass, and it is given as:

$$\frac{y}{k} = \Phi(\frac{gb}{k}) = A(\frac{gb}{k})^{\alpha} \quad (8)$$

Here, $0 < \alpha < 1$. After simplifying, we get

$$y= Bk^{1-\alpha}gb^{\alpha} \quad (9)$$

Here, y depicts the output per capita; B is the factor of productivity, k stands for private per capita capital, and gb shows government amenities. If public spending is backed by a flat rate of income tax, then;

$$G = R = ly = l.\Phi\left(\frac{G}{k}\right) \quad (10)$$

where, R depicts revenue of the government, l shows tax rate, and G stands for aggregate spending. Equation 10 shows balanced budget constraint. Though, in emerging economies, balanced budget is rigid to observe, so Kneller et al. (1999) assumed unbalanced budget of government in certain periods. Now rephrasing equation (10) as,

$$nG + Cg + u = Ll + \tau n y \quad (11)$$

In the above equation, u precisely shows budget surplus (or deficit) in a specified period. Lt and Cg stands for lump-sum taxes and government financed consumption (non-productive). Distortionary taxes are denoted by (τ). The expected signs of τ and G are negative and positive (prediction). Ricardian equivalence holds if u is zero, otherwise it may not be really zero (Bleaney et al., 2000).

In theory, we find that private investment is not much influenced by lump sum tax rates, though, proportional tax does influence private investment. Concerning this model, Barro and Sala-i-Martin (1992) obtained growth in the long-term as follows:

$$\gamma = \delta(1-\tau)(1-\alpha)D^{\frac{1}{1-\alpha}}\left(\frac{gp}{y}\right)^{\frac{\alpha}{1-\alpha}} - \sigma \quad (12)$$

where, δ and σ are the parameters in the desired utility function. Both institutional (w_{it}) and fiscal (p_{jt}) variables in line with Kneller et al. (1999) are considered and, hence growth equation becomes,

$$y_i = \alpha + \sum_{i=1}^{k}\beta_i w_{it} + \sum_{j=1}^{m}\gamma_j p_{jt} + \in_{it} \quad (13)$$

To study the effect of institutions and fiscal policy on real economic growth, the general equation is written as follows:

$$Y = \beta_0 + \beta_1 FV_t + \beta_2 V_t + \mu \quad (14)$$

In the equation (14), FV symbolizes the fiscal variables and V shows the institutional variables along with control variables. Hence, following specific equation was derived on the basis of previous studies:

GDP = f (TAXRATE, OPEN, IQ, GESI, LAG1RGDP)

Description of Variables

The data in this study covered the time period 1990-2024. The data for variables was drawn from World Development Indicators and International Country Risk Guide. The study employed Generalized Method of Moments (GMM) regressions to deal with the potential endogeneity, which may arise in the presence of shallow and deep institutions.

Table 1

Description of Variables

Abbreviations	Detail
RGDP	GDP (current US$)
TAXRATE	Tax revenue (% of GDP) is used as a proxy for tax rate, (Chuma, (2015) has used ratio of tax revenues to GDP as proxy for tax rate)
OPEN	Log of real trade where trade is (imports + exports) /2 * GDP (Note: Exports of goods and services (constant) and Imports of goods and services (constant)
IQ	The data of institutional quality (IQ) variable was obtained by compiling various components of political risks from International Country Risk Guide (ICRG). These components are ethnic tensions, law and order, and external conflict. By taking all these variables, an index of IQ was developed by Principal Component Analysis (PCA).
LAG1RGDP	Log of RGDP
GESI	It is an aggregate measure of government expenditures on social indicators, that is, education and health.

The Estimator

Aghion et al. (2004) and Greif and Latin (2004) consider institutions as endogenous. Since institutions were taken as independent variables in our model, therefore GMM regressions was applied to deal with potential endogeneity. According to Omri and Chaibi (2014), GMM estimators may solve the potential endogeneity issues in independent variables by introducing/inclusion of instrumental variables. The first lag of the independent variables would be used as instruments in the model i.e., RGDP. GMM is predicated on the assumption that Laws of Large Numbers can be applied to sample averages and the Central Limit Theorem may be

applied to scaled sample averages. Hansen's (1982) novel presentation accepts that the data is stationary, as well as ergodic, and conditions hold that allow the application of these limit theorems. Estimations regarding GMM would be covered in next section.

GMM Results

The impact of tax rates on real economic growth was positive, and the coefficient was significant. This relationship is plausible i.e., higher the tax revenues, it will increase the government's fiscal space to finance public investment (such as infrastructure, education and health) and productive public goods that raise private-sector productivity. On the other hand, according to Barro (1990), higher tax rate tends to reduce growth. Arisoy and Unlukaplan (2010) noted that an increase in tax rates would lead towards worse returns from investment of both human capital and expected profitability of research and development activities.

Pasha (2018) noticed that an increase in tax-to-GDP ratio of over 3% of GDP from the time period 2013-2017 is attributable to higher rates of taxes in the case of Pakistan. Interestingly both positive and negative results are well justified. Negative link between tax rates and real growth is justifiable on many grounds. For instance, according to FBR's year book in 2016 in Pakistan, more than 72% of tax proceeds were accumulated from the industrial units. Though, during the same year, the contribution of services sector in revenue generation was around 25% and the share of agriculture sector was even below than 3%. Clearly, the burden of taxes on industry is unfair, hindering the real growth in Pakistan. Levine and Renelt (1992) also did not prosper in finding a strong cross-country linking between fiscal policy variables and growth rates in the long-run. Other possible interpretation may be incorporated by following Barro (1990) that when alterations are shaped from income tax then it designates that equilibrium is not Pareto optimal, precisely, saving rate and growth level of the country is stumpy from social point of view.

The coefficient of trade openness is negative which may show uncompetitive prices of not only Pakistani products but also of selected sample. Importantly Pakistan, Bangladesh and Sri Lanka are facing economic vulnerabilities which may lead to impacts in the international market due to inflation rate and energy crisis in the nations. Moreover,

region's exports are lower than imports on average and hence not much is gained from the policies of free trade.

The results showed a positive link between institutional quality and real growth, moreover, the coefficient of institutional quality was significant. This is due to fact that some institutions are strong but vary across nations. According to Ishrat Husain (2018), there is a strong need to restructure certain key political institutions which may aid to expand economic growth, responsibility, equity, safety, and transparency. Significant contribution of institutions towards real economic growth is also due to limited access social order or extractive institutions in India.

Table 2

Estimated Dynamic panel-data estimation, one-step system GMM Results for Real Economic Growth

Variables	Coefficient	*SE*	*t*-Statistic	Prob.
TAXRATE	0.096***	0.028	3.440	0.001
IQ	0.018**	0.008	2.200	0.034
GESI	-0.023**	0.010	-2.240	0.031
OPEN	-0.003***	0.001	-2.830	0.008
LAG1RGDP	1.006***	0.007	142.090	0.000
C	-0.1882	0.172041	-1.09	0.281
Observations		43		
Number of ids		4		
Prob(F-stat)		0.000		
AR1		0.000		
AR2		0.657		

Note. The dependent variable is Real GDP. Institutional quality variable (IQ) is treated as endogenous. *, ** and *** show significance at 1%, 5% and 10% level respectively

As suggested by the endogenous growth theory and empirical growth models/economic theory (see introduction), economic growth depends positively and significantly on its previous values (see LAG1RGDP). Next, the variable government expenditure (GESI) on social indicators is an aggregate measure of government expenditures on education and health services and its coefficient comes out to be negative and significant. Our results show that economic growth exhibits *perseverance* since past

performance builds productive capacities through (i) capital accumulation, (ii) technological diffusion, and most importantly (iii) institutional learning.

Conclusion

The present study examined the efficiency of public spending, taxes, and institutional quality for real economic growth. Literature on economic growth either throws light on the consequences of tax rates or institutional development on economic growth. Earlier studies have generally shown inconsistent results regarding the impact of tax rates on economic growth, while institutional development is considered stimulus in stimulating economic growth. The present study explored combined effect of institutional quality and tax rates on real economic growth of four Asian countries i.e., Bangladesh, Sri Lanka, Pakistan and India. Moreover, study makes significant endeavor to capture the real impact of social indicators on real economic growth as limited work has been done in this dimension.

The study applied GMM regressions to deal with potential endogeneity in the presence of institutions in our study. The key outcomes of the empirical investigations can be summed up as follows: Firstly, the tax rates have a positive influence on real economic growth, importantly, the coefficient's value remains significant. Secondly, results showed that real economic growth is negatively and significantly affected by social indicators in Pakistan. Thirdly, there is a positive and a significant link between institutional quality and real growth. Fourthly, the coefficient of trade openness is negative. Lastly, as suggested by the theory, results showed a positive and robust connection between real economic growth and its previous values.

To achieve the regional goal of inclusive growth and sustainable development goals, there is a dire need to focus on public spending, particularly on social indicators, i.e., quality health and education should be given due priority in Pakistan. Furthermore, public policy should be planned with the sole focus to increase tax-to-GDP ratio through expanding the tax base, not the alone the tax rate. Lastly, further restructuring of institutions (shift to open access social order) can help to improve real economic growth.

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

The data associated with this study will be provided by the corresponding author upon request.

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