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IMPACT OF TAX STRUCTURE DYNAMICS, HUMAN RESOURCE DEVELOPMENT AND DISTRIBUTION OF INCOME ON ECONOMIC GROWTH OF PAKISTAN

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ABSTRACT

This study is carried out to investigate the impact of taxes on the economic growth of Pakistan. Tax is a compulsory payment to the government by the residents of the nation to cover the cost of services rendered by the government for the general welfare of its citizens. The debate and empirical results regarding the impact of taxes and specifically tax structure is highly controversial for researchers and policymakers. Economic growth is adversely affected by taxes, while some researchers claim a positive effect. Therefore it was felt to investigate the impact of tax structure on the economic growth of Pakistan. To test it empirically, the researcher took the time series data ranges from 1985 to 2021 on tax structure and economic growth. GDP growth is dependent, while tax structure, i.e., direct and indirect taxes, human development index, and income distribution, were selected as independent variables. After ensuring that the variables are stationary, the Autoregressive Distributive Lag (ARDL) approach to co-integration was applied to detect connections between variables. Results found that direct taxes have a positive and significant effect on GDP growth, while indirect taxes have a significant and negative impact on the GDP growth of Pakistan. Also, the impact of HDI on GDP growth is positive and significant, while the Gini coefficient has a negative and significant impact on the GDP growth of Pakistan. It is suggested that to increase the economic growth of Pakistan, direct taxes would be increased, as it will also reduce the Gini coefficient and unequal income distribution, While indirect taxes would be decreased to enhance economic growth. Also, the government should adopt such policies which could encourage human development, as it is crucial for the economic development of Pakistan.

Keywords: ARDL; Taxes; HDI; Economic growth; Gini coefficient.

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INTRODUCTION

The history of growth dates back to the new classical economist Solow (1956). They presented their famous Solow growth model, considered a pioneer for all economic growth models. Solow based his model on four variables, i.e., a dependent variable is output (Y) which depends upon technology (A), also called the effectiveness of labor, labor (L), and capital (K). Here output Y depends upon capital K, technology A or labor L, and “t” shows time. According to Solow, the capital “K” and Technology “A” values are exogenously determined, so this model is also called the exogenous growth model. After then, a new idea about growth was developed by Romer (1986) and Lucas (1988) as they empirically evaluated and claimed that the level of technology “A”, which is accumulated by knowledge and human capital, is determined endogenously.

Therefore, their model was called the endogenous growth model. This was a new dimension in research in the 1980s, which attracted the focus of different growth economists, and therefore this field was much further extended and empirically tested by various researchers.

Explanation of the new model: Romer called technology the combination of two things human capital and accumulation of knowledge. Knowledge can be accumulated by “learning by doing” and research and experiments. Therefore their model is also called the research and development model. He also mentioned that the more effective role in economic growth motivation is played by technology, as mentioned above. Human capital can be improved by receiving knowledge, research, and experiments, and we can call this process human resource development. Training, education, and research of the labor force and their hard work are more important. The more skilled labor force can be more productive and efficient than the unskilled workforce. The deficiency of skilled labor can lead to sluggish economic growth (Teixeira and Queirós, 2016). Evolution of fiscal policy and taxes: In Solow's (1956) economic growth model, the role of the public sector is minimal, i.e., there is no active and permanent role played by fiscal policy on long-run economic growth. By achieving economic growth, they recommend only a transitory impact of fiscal policy. While the proponents of endogenous growth theorists Romer (1986), Lucas (1988), and Rebelo (1992) claim a significant permanent role of fiscal policy on economic growth in the long run. Fiscal policy has two aspects, i.e., the revenue side, which is collected through taxes, and the expenditure side, incurred on various projects. The new growth theorists incorporate taxes and evaluate the significant impact of taxes on the GDP growth of an economy. This study evaluates the impact of taxes on the economic growth of Pakistan. Also, the imposition of taxes will affect the society members differently as it will reshuffle the distribution of income (measured through the Gini coefficient). Also, this study will capture the dynamics and impacts of taxes on different sectors of the economy, and this can also be assessed by utility analysis and welfare changes by deriving a utility function model, which is,

On the other side, endogenous-growth economists argue that economic growth should originate from the interactions or decisions made by the economic agents, disputing the notion of exogenous growth. Endogenous growth is permitted, and the declining MPK assumption is modified in order to guarantee that the economy will develop positively over the long term (Barro and Sala-i Martin, 2004).

In exploring the research area about Pakistan taxation and its economic analysis, the purpose of this research was to conclude the factors that affect the growth of the Pakistani economy and to suggest measures for improving and boosting economic development among the international scope of appropriate tax structures. The nexus between tax growth has always been the most debatable as well as having high controversy among policymakers and economists. This area has been evaluated in large theoretical and empirical studies. However, in almost all studies, a significant correlation is found between tax structure and economic growth. However, the mode of the impact of taxes on economic activity brings numerous controversial results. For this purpose, it is necessary to briefly explain the taxes.

Taxation

Taxes are financial burdens placed on individuals or property owners to pay for government expenses. According to the legislative authorities, taxes are considered compulsory government contributions rather than voluntary payments or donations. Nowadays, more focus is being given to the characteristics of economic systems in the race for a globalized international environment in achieving potentially more prosperous economic goals (Iqbal et al., 2020). Although each country's tax system has separate economic regulations accordingly, countries develop their own appropriate system for the economy. Developing countries like Pakistan also try to utilize and opt for various fiscal and political influences and economic

measures to achieve the target of rapid economic growth. So for this, an appropriate tax system is necessary to achieve this task, i.e., getting the goal of economic growth in a country.

Purpose of taxes

Reducing economic inequality and allocating funds for public goods and services are the primary goals of the tax system, i.e., to enhance efficiency in resource allocation and to maintain economic stabilization (Musgrave, 2008).

Impact of Taxes

Taxation can lead to distortions, which are bad for economic progress (Hanif et al., 2019). Taxation has three effects on development: Taxes have the potential to increase the cost of capital and deter investment. High taxes deter investment and hinder economic growth (Ahmad et al., 2018). If these are imposed on labor, human capital, and saving, taxes have a big and significant impact. People opt to participate in lower-taxed activities instead of higher-taxed ones. The primary cause is that heavy taxation induces people to work less time, engage in less productive activities, or even quit their jobs completely, all of which reduce economic growth (Hanif et al., 2019). It still takes a lot of research to analyze how fiscal policy and tax systems affect growth in the long term and the health of the economy. Therefore this study also investigates the changes brought about by taxation, human development, technology, and income distribution on Pakistan's economic growth.

Taxes and FDI

Tax incentives for investors are common in attracting foreign direct investment (FDI). Some discriminating tax treatments having the general fiscal regulations in one country contributes and helps in boosting local businesses and economic growth.

Human capital as a major source of economic growth

According to Lucas (1988), one of the main drivers of endogenous growth is human capital, which is built up through the educational system. A nation can achieve and experience a rapid growth rate when its citizens gain a mostly qualitative and high level of education. As a result, the quality of the educational system for the younger generation should be prioritized for social welfare as well as economic growth (Baiardi et al. 2019).

Research and development, as well as investment return (both for human and physical capital), are impacted by tax increases (R&D). Due to the fact that lower returns indicate less innovation and accumulation, the tax's detrimental consequence is a slower growth rate. By lowering the percentage of savings and investments, the potential for taxes is to hinder economic growth. If the tax rate is decreased, companies and people will invest more money and time in R&D. Higher taxes hurt economic growth because there are fewer incentives for workers to work. Our research shows clear evidence that increasing taxes on the wealthiest reduces income inequality.

Categories of the taxes

Direct and indirect taxes make up the two main categories of the tax system. A direct tax is a type of tax where the person paying the tax is subjected to it directly. The cost of taxes cannot be passed on to another person (Khan and Khan, 2021). In the event of an indirect tax, the government collects money from middlemen. Taxpayers are not the ones who ultimately suffer the financial burden. Due to variations in tax collection tactics, income sources, and tax burden distribution, indirect and direct taxes have different effects on the economy. For the government and other relevant parties to make the necessary plans, it is very much needed to emphasize the appropriate rate regarding indirect and direct taxes for economic

growth. Taxes, particularly indirect taxes, are the main way to generate income in Pakistan (Khan and Khan, 2021). Regarding the primary taxes, direct and indirect taxes (which also include surcharges) differ greatly.

Indirect taxes, including surcharges, make up a bigger portion of total income streams (federal and provincial) than direct taxes (Shafiq et al., 2022). The distortion in resource allocation caused by indirect taxes placed an excessive load on the economy. As of the fiscal year 2019–20, direct taxes make up 32% of all taxes, and 70% of those taxes are collected via withholding (which defies the Direct Tax claim) (Khan and Khan, 2021). According to a recent Central Bank of Pakistan report, indirect taxes make up 60% or more of the total tax revenue received, whilst direct taxes have never made up 40% of it over the past few years. Another indicator of Pakistan's overreliance on indirect taxes is a substantial tax gap. Indirect tax evasion is more problematic and less frequent than direct tax avoidance Shafiq et al. (2022).

The literature on economic development generally agrees that eliminating absolute poverty and lowering income disparity depends on economic growth. The majority of experts and decision-makers believe that high tax rates not only discourage and impede economic growth but are also ineffective at dispersing income and wealth (Piketty & Saez, 2014). Economic experts are now focusing their research on the redistribution element of taxation as a result of the persistence of significant income inequality both between and within countries (Khan and Khan 2021). Despite the fact that income disparity rises in the early phases of an economic expansion, he predicted that as the economy matures, it will finally start to decline (Blotevogel et al., 2022). However, distributional issues are now a critical challenge in many nations. In terms of welfare and equal income distribution, effective fiscal policy and the right combination of taxes are crucial (Bhatti et al., 2015).

The current research study also reveals that in Pakistan, the tax structure is regressive in nature. Data analysis revealed that comparatively more indirect taxes lead to higher income inequality which finally decreases the economic growth of Pakistan (Khan & Khan, 2021). It is important to assess the effect of GST on the level of income inequality and economic growth of Pakistan because global inequality is rising day by day (Zulfiqar, 2019). The GST is regressive, meaning that lower-income groups pay more in taxes than middle- and higher-income groups do. Human resource development and economic growth: The Human Development Index (HDI) was first suggested by the United Nations Development Program in 1990. It focuses on fundamental human functioning capabilities that are a factor necessary to all abilities and are essential for the survival of humans in the world (Herianingrum et al., 2019). A long and healthy life, knowledge, and a good standard of living are three essential aspects of human development that are succinctly summarized by the Human Development Index (HDI). The corrected indices for the geometric means of the three dimensions make up the HDI. Since 1990, the Human Development Index, according to United Nations Development Program (UNDP), has become the most widely used measure of prosperity. Pakistan is ranked as the sixth-longest country on earth and has a poor human movement status. Pakistan is ranked 123rd out of 146 countries in the world in terms of its degree of vulnerability. Objectives of the current study is to find the the impact of Direct and Indirect taxes on the Economic growth of Pakistan and to find the Impact of Human Resource Development and Distribution of Income on the Economic Growth of Pakistan. Finally, this study is conducted to suggest some policies which are more likely to enhance the economic growth of Pakistan.

REVIEW OF LITERATURE

In economic and political circles, there has been a lot of discussion over how taxes affect economic growth and investment. Tax reduction advocates contend that lower tax rates encourage saving, investing, and productive work and have an effect on a nation's economic growth (Ferede & Dahlby, 2012). For example,

the studies by Iqbal et al. (2020) and Iram et al. (2020) show different results in economic growth as a consequence of the change in taxes. In evaluating the tax revenue systems of India and Pakistan from 1999–2000 to 2008–2009, Aamir et al. (2011) conducted an extensive study. The findings demonstrated that although India prioritized direct tax, Pakistan concentrated on collecting indirect tax. The two countries' economies were affected by their respective tax systems in distinct ways. The gap between the poor and rich was wider in the nation with high indirect tax revenue. Pakistan's focus on indirect taxes made it difficult to manage the country's budget deficit. To lessen the detrimental effects of the wealth gap on the economy, the researchers advised the government of Pakistan to reform its tax structure aiming to increase the proportion of direct tax collection. Neog and Gaur (2020) investigated how taxes affected India's economic growth. India's 20 states were included in the study from 1991 to 2016. A square estimate approach panel was utilized in the study, which examined a negative correlation between service tax and state economic growth, while property and capital transaction taxes also had a significant but positive effect on economic growth. Dladla and Khobai (2018) used data from the South African Reserve Bank for the years 1981 to 2016 to examine the impact of taxation on economic growth in South Africa. The findings indicated that tax has a negative impact on economic growth, decreasing it by 0.01% for every 1% increase in the tax rate. Ahmad et al. (2018) evaluated a study on indirect taxes on economic growth in Pakistan by examining yearly data from 1974 to 2010. The long and short-term associations between variables were examined using the ARDL technique for co-integration. According to their findings, an increase in indirect taxes leads to a decrease in a nation's GDP growth or a loss in the economic growth of 1.68% for every 1% increase in indirect taxes. Ouma (2019) chose the economy of Kenya and investigated the impact of tax income on economic growth. For this, she used time series data from 1964 to 2016 in the study, along with regression analysis for empirical estimation. She found that taxes have a positive effect on economic growth. Palić et al. (2017) looked at the effect of personal income tax on Croatia's GDP growth using data from 2000 to 2016. He looked at the data using the Johenson co-integration and error correction models. His research demonstrates that higher personal income taxes have a positive long-term effect on economic growth. Ozpence and Mercan (2020) studied the connection between taxation and economic growth. The analysis in the study is done for Turkey by using time series annual data, which spans the years 1970 to 2018. The results of the data analysis showed that taxes have a significant negative impact on economic growth.

In order to undertake quantitative research, Nainggolan et al. (2022) tested all Indonesian provinces by incorporating panel data from 34 provinces collected between 2015 and 2019. The findings showed that total government spending and the human development index positively and significantly affected economic growth. Research to determine the impact of human and physical capital on GDP growth was evaluated by Gulcemal (2020). This study used a panel data set of 16 developing nations from 1990 to 2018 to examine the long-term effects of physical and human capital on GDP. According to test results, economic growth is supported by human development. Taqi et al. (2021) examined a study that looked at how Pakistan's GDP per capita, which measures economic growth, changed from 1980 to 2018 in relation to HDI. The findings of this study showed that each nation's HDI and GDP had a significant and strong link. The conclusion is that the GDP per capita can be impacted positively by HDI levels. On the one hand, new opportunities for economic expansion are made possible by rising levels of human development. Bouincha and Karim (2018) conducted a study investigating a causal association between inequality and economic growth from 1990 to 2015 using data from 189 nations. Their results found that only the developed countries' model shows a statistically negative relationship between economic growth and income inequality. The results of 22 empirical research studies on the connection between economic inequality and economic growth between 1917 and 2018 are evaluated in Dorofeev's (2022) examined article. In

order to analyze and organize the findings of earlier empirical investigations, he employed meta-analysis. In 59% of the prior empirical research, the literature review and analysis of the findings show a negative correlation between income inequality and economic growth.

Nizami et al. (2022) conducted empirical research to address the problems surrounding the interactions between income inequality and long-term economic growth by examining panel data from 39 nations for the years 1980–2019. According to his calculations and research, this association was positive in the sample of nations on an average of 57.8% between 1980 and 2018. He found that there is unquestionably a stronger negative relationship between economic growth and income disparity for low-income countries and a stronger positive correlation for high-income per capita nations.

METHODOLOGY

Sample Size and Data collection

This study uses time series data for 38 years from 1985 to 2021 on tax structure, i.e., direct and indirect taxes, GDP growth, HDI, and the Gini index. The data on taxes is obtained from the World development indicator (World Bank), taken in the local currency unit, while the data on the Gini index and HDI is also obtained from the World development indicator (World Bank, 2021).

Unit Root Test

To check whether variables are stationary, the Augmented Dickey-Fuller (ADF) test is incorporated by using the E-views program. Usually, the variables become stationary by taking the first difference. In this study, only HDI is integrated at a level in results of the ADF test, while direct taxes, indirect taxes, and Gini are found to be integrated at first difference. Therefore, the ARDL technique is recommended because the variables are a combination of $I(0)$ and $I(1)$.

Bound Test

The bound test demonstrates the long-term relationships between the explanatory and dependent variables. If the F-statistics value is more than or equal to the upper or lower boundaries, then there is a long-term relationship, and vice versa. Similarly, the F-statistic is useless if its value is between the upper and lower boundaries.

Optimal Lag Selection

The ideal lag selection criteria are used to reduce residual correlation. In particular, the Akaike Information Criteria (AIC) and Schwartz Information Criteria are used to determine the degree of lag time from vector autoregressive (VAR) (SC). As a general rule, choose the condition with the lowest value. Because the model is better, the lower the value.

Co-integration Test

The following stage is to look at co-integration among variables after determining the order of integration of the variables. If there is a long-term, or equilibrium, link between two variables, that relationship is referred to as co-integration. As the results of ADF, tests show that only HDI is stationary at a level $I(0)$ while GDP, Direct taxes, indirect taxes, and Gini coefficient are stationary at the first difference $I(1)$. Therefore, in this case, the ARDL co-integration technique has been applied to find long-run results.

Error Correction Mechanism

The ECM technique may be used to analyze the short-run dynamics between variables if two variables were co-integrated over the long run. ECM reconciles the co-integrated time series' static long-run balance

connection with its dynamic short-run imbalance. The results of the error correction model show how quickly long run disequilibrium returns following short-run shocks.

The lag order of the variables is decided as a second phase once co-integration is discovered and continues using the Schwarz Bayesian criteria, Akaike information criteria, or Hanan Quinn criteria. The error correction model (ECM) would then be predicted after the long-run coefficients of the model were confirmed, along with the lag order. The ARDL technique was employed in this work to determine whether the variables had a long-term relationship before estimating the error correction model (ECM).

ARDL Representation of the Model

Model 1

$$\begin{aligned} \Delta LGDP_t = & \alpha + \delta_1 LGDP_{t-1} + \delta_2 LD_TAX_{t-1} + \delta_3 LINDIRECT_TAX_{t-1} + \delta_4 LHDI_{t-1} \\ & + \delta_5 LGINI_{t-1} + \sum_{i=1}^p \alpha_i \Delta LGDP_{t-i} + \sum_{i=0}^{q1} \beta_1 \Delta LD_TAX_{t-i} + \sum_{i=0}^{q2} \beta_2 \Delta LINDIRECT_TAX_{t-i} \\ & + \sum_{i=0}^{q3} \beta_3 \Delta LHDI_{t-i} + \sum_{i=0}^{q4} \beta_4 \Delta LGINI_{t-i} + \mu_t \end{aligned} \quad (1)$$

δ_i = long run multipliers

β_1 = short run dynamic coefficients

Co-integration Approach

In the first step of the ARDL Bounds Testing Approach, the model is estimated using the OLS method, and after that, the F-test is used to determine the joint significance of the lagged levels of the variables.

$$H_0: \delta_1 = \delta_2 = \delta_3, \delta_4 = 0$$

$$H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq 0$$

In the second step following conditional ARDL (p1, q1, q2, q3, q4) long run model will estimated, if co-integration is established;

$$\begin{aligned} LGDP_t = & \alpha + \sum_{i=1}^{p1} \delta_1 LGDP_{t-i} + \sum_{i=1}^{q1} \delta_1 LGDP_{t-i} + \sum_{i=1}^{q2} \delta_2 LD_TAX_{t-i} + \sum_{i=1}^{q3} \delta_3 LINDIRECT_TAX_{t-i} \\ & + \sum_{i=1}^{q4} \delta_4 LHDI_{t-i} + \sum_{i=1}^{q5} \delta_5 LGINI_{t-i} + \mu_t \end{aligned} \quad (2)$$

In this final step, the short run dynamic coefficients can be found by estimating the following equilibrium correction model.

$$\begin{aligned} \Delta LGDP_t = & \beta_0 + \sum_{i=1}^p \alpha_i \Delta LGDP_{t-i} + \sum_{i=0}^{q1} \beta_1 \Delta LD_TAX_{t-i} + \sum_{i=0}^{q2} \beta_2 \Delta LINDIRECT_TAX_{t-i} \\ & + \sum_{i=0}^{q3} \beta_3 \Delta LHDI_{t-i} + \sum_{i=0}^{q4} \beta_4 \Delta LGINI_{t-i} + \mu_t \end{aligned} \quad (3)$$

RESULTS AND DISCUSSION

The unit root test results for the variables particular to each level are shown in Table No.1. To establish whether a variable is stationary, the researcher utilized the intercept, intercept & trend, and none. It is claimed that all of the variables under consideration, with the exception of LHDI, are non-stationary in level when compared to the critical values of the ADF statistic with intercept, intercept cum trend, and none. The following is a list of outcomes.

Table 1. Unit root test at Level ($\alpha=0.05$).

No.	Variables	Test equation	T-Statistics	Critical Values (5%)	Probability	Deceision
1	lgdp_current	Intercept	-0.683254	-2.945842	0.8384	Non-Stationary
		Trend & intercept	-2.272189	-3.540328	0.4376	
		None	14.16164	-1.950394	1.0000	
2	ldirect_tax	Intercept	-2.662472	-2.945842	0.904	Non-Stationary
		Trend & intercept	-2.297458	-3.540328	0.4246	
		None	2.529401	-1.950394	0.9965	
3	lind_tax	Intercept	-2.485289	-2.945842	0.1273	Non-Stationary
		Trend & intercept	-2.675516	-3.540328	0.2520	
		None	2.379746	-1.950394	0.9949	
4	Lgini	Intercept	-2.564140	-2.945842	0.1096	Non-Stationary
		Trend & intercept	-3.458185	-3.544284	0.0600	
		None	-0.369305	-1.950394	0.5444	
5	Lhdi	Intercept	-2.403034	-2.948404	0.1482	Stationary
		Trend & intercept	-2.367438	-3.548490	0.3889	
		None	-3.859480	-1.950687	0.0003	

The hypothesis for checking unit root is explained as; $H_0: \delta = 0$ Unit Root exists (Non-Stationary), $H_1: \delta \neq 0$ No Unit Root (Stationary) .

Where H_0 denotes the null hypothesis and H_1 the alternative hypothesis, L shows the natural log, as the study used a double log functional form. The variables LGDP, LDIRECT TAX, LINDIRECT TAX, and LGINI are non-stationary at level whereas the variable LHDI is stationary at level when the T-statistics values of all variables are bigger than the critical values at the 05% significance level.

Table 2. Test for Stationarity (at 1st difference) ($\alpha=0.05$).

S. No	Variable Name	Test equation	T-Statistics	Critical Values (5%)	Probability	Deceision
1	d(lgdp_current)	Intercept	-6.859414	-2.948404	0.0000	Stationary at 1st difference
		Trend & intercept	-6.932890	-3.5442284	0.0000	
		None	-0.414859	-1.952066	0.5255	
2	d(ldirect_tax)	Intercept	-5.783021	-2.948404	0.0000	Stationary at 1st difference
		Trend & intercept	-6.425806	-3.544284	0.0000	
		None	-4.888314	-1.940687	0.0000	
3	d(lind_tax)	Intercept	-5.679728	-2.948404	0.0000	Stationary at 1st difference
		Trend & intercept	-2.504050	-3.595026	0.3235	
		None	-3.895782	-1.952066	0.0003	
4	d(lgini)	Intercept	-5.665082	-2.948404	0.0000	Stationary at 1st difference
		Trend & intercept	-5.683867	-3.544284	0.0002	
		None	-5.738522	-1.950687	0.0000	

The other variables, LGDP, LDIRECT_TAX, LINDIRECT_TAX, and LGINI, are all stationary at the first difference because the T-statistics values are less than the critical values at the 5% significance level. This is illustrated in the above Table 2.

Table 3. Bounds Tests for Co-integration (Model - 1).

Test Statistic	Value	K
F-statistic	4.891105	4
Bond Critical Values		
Significance	Lower Bound	Upper Bound
10%	3.03	4.06
5%	3.47	4.57
2.5%	3.89	5.07
1%	4.4	5.72

Note: Computed F-statistic: 4.5891105(Significant at 5% marginal values). E-Views 10 (x64) provide Critical Values are obtained from Pesaran et al. (2001),

The null hypothesis of no co-integration is rejected, as shown in table no. 4.3. The calculated F-statistics value is bigger than the upper bound value of 5% level of significance, which means it is outside the critical bound values.

Table 4. Long Run Results (Model - 1) using the ARDL Approach (ARDL: 1, 0,0,0, and 0).

Variable	Coefficient	Std. Error	T-statistic	PROB.
LD_TAX	0.159059	0.074051	2.147978	0.0402
LINDIRECT_TAX	-0.196743	0.078584	-2.503609	0.0182
LHDI	0.687356	6.77670	3.014293	0.0188
LGINI	-0.627580	0.367670	-1.706910	0.0985

Note: Dependent variable is LGDP.

Here the null and alternative hypotheses in the generalized form are as; H_0 : The independent variables have no significant impact on the dependent variable "LGDP". H_1 : The independent variables have a significant impact on the dependent variable "LGDP". If the significant value is ≤ 0.05 , reject the null hypothesis.

LD TAX, LDIRECT TAX, LINDIRECT TAX, LGINI, and LHDI are the independent variables of model 1 in the preceding table No: 4, and LGDP is the dependent variable. An independent variable significantly affects the dependent variable, and vice versa, if the probability value is equal to or less than 0.05. In the mentioned long-run coefficients ARDL Approach results, we can observe that the Coefficient of LD TAX has a positive and substantial sign, signifying a positive influence on LGDP. For example, a one percent increase in direct tax will, on average, improve GDP or economic growth by 0.159 percent. These results are the same in line with Raynor (2013), Ebiringa and Yadirichukwa (2012), Stoilova and Patonov (2020), Neog and Gaur (2020), and Ahmad et al. (2018). As they all found that to increase the economic growth of a country, the government should increase direct taxes.

We can also see that the Coefficient of LINDIRECT_TAX has a negative and significant sign indicating that indirect taxes have a negative impact on GDP growth in Pakistan. It means that increase in indirect taxes by one percent results in a decrease economic growth of Pakistan by 0.196 percent on average. These results are the same as have been founded by Rahul (2015), Ahmad et al. (2018), and Gaur (2020), etc., as they all suggested that to increase economic growth, the government would decrease the ratio of indirect taxes.

The Coefficient of LHDI also has a positive sign suggesting that human resource development has a positive and significant impact on the GDP growth of Pakistan. This indicates that a 1% rise in HDI causes a 0.687 % boost in Pakistan's economic growth. These results match with Nainggolan et al. (2022), Gulcemal (2020), Taqi et al. (2021). They all suggested that to increase economic growth, and the government would encourage such policies which can develop the human resources of a country.

The Coefficient of LGINI has a negative sign proposing a significant and negative effect on economic growth at 10% as its P-Value is 0.09. It means that a one percent increase in unequal income distribution (Gini coefficient) leads to a decrease economic growth of Pakistan by 0.627 percent on average. These results are identical to Bouincha and Karim (2018), Dorofeev's (2022), Medina et al. (2021), and Nizami et al. (2022); they all found that the increase in unequal income distribution has an adverse effect on that country's economic growth. Therefore it is suggested that government should adopt such policies, which are helpful in reducing unequal income distribution in a country and lead to fast economic growth.

Table 5. Short Run Results of Model-1 (dependent Variable: D(LGDP).

Variable	Coefficient	Std. Error	T-statistic	Prob.
D(LD_TAX)	0.106848	0.048329	2.210823	0.0351
D(LINDIRECT_TAX)	-0.132161	0.052466	-2.519006	0.0175
D(LHDI)	0.461730	0.472457	0.977295	0.3365
D(LGINI)	-0.421576	0.256077	-1.646286	0.1105
D(@TREND())	0.083292	0.019198	4.338688	0.0002
CointEq(-1)	-0.671748	0.148508	-4.523308	0.0001

The short-run coefficients estimates are founded through Error Correction Model (ECM) and given in table No.5, where the Error Correction term is equal to -0.671748 with significant P-Value 0.0001, showing there is short-run disequilibrium. Table 4.5 shows that all the variables except D(LHDI) and G(GINI) are significant. D(LD_TAX) has a significant and positive effect on D(LGDP), while D(LINDIRECT_TAX) has a significant but negative effect.

Table 6. Diagnostics tests for data (MODEL-1).

Ramsey's Reset test: H0 : Equation has been Correctly Specified		
Ramsey-value	p-value	Result of the test
0.129406	0.7217	The specified equation is accurate.
Breusch- Goldfrey serial-correlation LM test: H0: No serial correlation exists.		
B.G.S LM-value	p-value	Result of the test
0.165792	0.8481	No serial correlation exists.
Hetroskedasticity test: H0 : No Hetroskedasticity exists		
ARCH-stat	p-value	Result of the test
0.194922	0.6617	No hetroskedasticity exists in model
Normality Test (Jarque Bera test): H0 : The residual are Normal		
Jarque Bera-value	p-value	Result of the test;
1.2103	0.5407	Residuals are distributed normally

Since the p-value (0.7217) is higher than 0.05, the estimated results of the Ramsey RESET test show that the provided model has an accurate functional structure. The p-value (0.8481) of the Lagrange Multiplier test (LM test) for the residual serial correlation is higher than 0.05 throughout the interim period. There is no serial correlation between the variables considered in the model, and the serial correlation hypothesis

is thus rejected. Similar to the t-test, the ARCH test's p-value (0.6617) is higher than 0.05, indicating that the model under test does not exhibit heteroskedasticity. The Jarque Bera (J-B) test is performed to determine whether the residues are normal. The p-value (0.5407) is higher than 0.05 in this instance as well, which is in line with the residuals' normal distribution. Over the course of the investigation, all calculated coefficients remain the same. All diagnostic tests support the model's validity, so the model's consistent parameters are accurate and helpful to the government in formulating policy.

CONCLUSIONS AND RECOMMENDATIONS

This study examines how the tax system impacts Pakistan's economic development, including direct and indirect taxes, HDI, and income distribution. The current study uses annual time series data, and the analysis covers the years 1985 through 2021. The World Development Indicators are used as sources of data to compile the variable data. The enhanced Dickey-Fuller test verifies the stationarity of the variables. The unit root test's findings reveal that only the HDI is integrated to order zero $I(0)$, while all other variables, including direct and indirect taxes, the Gini coefficient, and GDP, are at the first difference $I(1)$ stationary. Due to the mixed order of integration of the variables and to get both short-run and long-run results, the ARDL approach is used. The study's findings indicate that every variable significantly affects Pakistan's economic growth. Direct taxes and HDI have both short- and long-term positive and significant effects on economic growth in Pakistan, whereas indirect taxes and the Gini coefficient have both negative and significant long-term effects. According to the findings, a one percent increase in direct taxes leads to an increase in the economic growth of 0.159 percent, while a one percent increase in indirect taxes leads to a decrease economic growth of Pakistan by 0.196 percent. Also, a one percent increase in Human resource development (HDI) leads to an increase in the economic growth of Pakistan by 0.687 percent, while a one percent increase in unequal income distribution (Gini) leads to a decrease in the economic growth of Pakistan by 0.627 percent. Keeping in mind these empirical results of the study, the government of Pakistan must maintain a close eye on the structure of its tax rates. Raising taxes results in lower labor force participation, which lowers output as a whole. Also, increasing consumption taxes discourages the aggregate consumption of an economy due to increasing cost-push inflation. According to this study, it would be essential to lower tax rates, particularly indirect taxes, as they are harmful to both economic growth and income distribution. As suggested, the changes in tax structure would help Pakistan's economy grow faster. In order to raise the revenue required to pay for government spending that promotes economic growth, the government should make sure tax structures are appropriate. By assessing Pakistan's GDP growth, this study also looks at the impact of HDI on the country's economic growth from 1980 to 2021. The findings of this study showed a high and significant association between HDI and GDP growth, i.e., a one percent increase in Human resource development (HDI) leads to an increase in the economic growth of Pakistan by 0.687 percent, leading to the conclusion that HDI levels may strongly impact Pakistan's economic growth. Therefore, it is recommended that the government focus its efforts more on developing human capital. Governments should provide good and improved healthcare policies and facilities for both the poor and the rich in the field of life expectancy, providing better education and ensuring fair income distribution.

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