

Taxation impact on Development in Pakistan

Hafiz Muhammad Zahid, Sarfraz Ahmad, Muhammad Arham khan

Abstract— The objective of the research is to find out the "Taxation impact on Development in Pakistan" In this research data is used from (1985-2015) and data is taken from WDI and various uses of the economic survey. In my study, I use the variables Human Development Index (HDI) is a dependent variable and independent variables are Taxes, National Savings, Foreign Direct Investment (FDI), Trade Opens and Inflation. In this research, the ADF technique is used to check the stationary and ARDL technique is applied. When we applied ARDL than this result shows the taxes is positively affected by the Human Development Index (HDI). And inflation has a negative effect on development but national saving positively effect on HDI and the foreign direct investment (FDI) has a negative effect on the Human development index.

Index Terms— Taxation, Development, economic survey, Taxes

1. INTRODUCTION

TAX

Tax is an amount of money that the government needs to give more and more benefits to their public and also to run their other expenditures. Another word it is a fee that charged by the government on product or activity. Taxation system plays a very important role, to meet developmental and non-developmental expenditures, and ultimately to augment economic growth. Taxation, effects production, and growth. It is analyses by Odusola (2006), that government revenue, at some time is motivated by the changes in the tax base, tax policies, and tax rates. Taxes impedes, household's ability to work, will to work, decisions to save, consumption, labor supply, and investment. The tax system of any country also interferes with the allocation of resources. A well organized, efficient and effective tax system is a necessary requirement for economic growth. Taxes determine the level and speed of economic growth in countries of the globe (Omojemite and Godwin 2012). Countries with organized and stable taxation

system grow rapidly, over the period compared, with those countries, not have such good individualities. The World Bank relates economic performance in developing countries to the level of taxation and finds that countries with lower marginal tax rates have higher economic growth. In the United States, at least some economists believe that cutting federal taxes would spur enough growth in the national economy that the budget deficit would increase by only 73 percent of the tax cut. Moreover, recent evidence by Auerbach and Hassett (1992) suggests that the user cost of capital plays an important role in stimulating nonresidential fixed investment in the United States.

Tax to GDP ratio is a best and comprehensive indicator to check the tax revenue status in any country. Tax to GDP ratio in Pakistan is 9.75 percent. Tax to GDP ratio in Finland is 57 %, in Denmark and Norway is 55.6 %, 55.4% succeeding.

In Pakistan, the situation is very bad even in comparison to Asian economies, like in Nepal it is 19.9 percent, in Taiwan 15.1 percent,

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com

Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com

Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com

in Singapore 15 percent and in Sri Lanka, it is 12.3 percent, while tax to GDP ratio in Sudan, Burma, Cuba, and in Nigeria, it is less than Pakistan's tax to GDP ratio. Tax to GDP ratio, in Pakistan is similar to sub-Saharan African countries. So ultimately, the situation of Pakistan, in this scenario is worse as compared to other countries.

Tax to GDP ratio is a best and comprehensive indicator to check the tax revenue status in any country. Tax to GDP ratio in Pakistan is 9.75 percent. Tax to GDP ratio in Finland is 57 %, in Denmark and Norway is 55.6 %, 55.4% succeeding.

The Human Development Index (HDI) is a composite statistic of life expectancy, education, and per capita income indicators, which are used to rank countries into four tiers of human development. A country scores higher HDI when the lifespan is higher, the education level is higher, and the GDP per capita is higher. The HDI was developed by the Pakistani economist Mahbub ul Haq, often framed in terms of whether people are able to "be" and "do" desirable things in their life and was published by the United Nations Development Programme.

2. LITERATURE REVIEW

SOBEL et al (1996) investigated the MEASURING THE GROWTH AND VARIABILITY OF TAX BASES OVER THE BUSINESS CYCLE. The main objective of this study was they analyzed the time-series properties of income and taxes or identify the potential problems. In which study they used the STANDARD MODEL of tax revenue. In this study they used a different variable (1) Adjusted Gross Income (AGI) (2) Corporate Taxable Income (CINC) (3)Retail Sales (SALES) (4)Nonfood Retail Sales (NFSALES) (5)Motor Fuel Usage (FUEL) (6)Liquor Store Sales (LIQUOR). And they Estimates of Long-Run Elasticity and the Estimates of Short-

Run Elasticity. In this study, they used secondary data. That study conclusion was the income elasticity of tax bases is important in the long run as an indicator of tax revenue growth and in the short run as a measure of the cyclical variability of tax revenues. This study shows the Estimates of the income elasticity of various taxes had commonly obtained by regressing log level of tax revenues on the log level of income with the traditional methods of estimation.

GARETH D. MYLES (2000) investigated Taxation and Economic Growth. This study main objective was how taxation affects the rate of economic growth. In which study the theoretical models isolate a number of channels through which taxation can affect growth and that these effects may be very substantial. In which study they were used two models (1) exogenous growth model (2) endogenous growth model.

Terry F. Buss (2001) investigated The Effect of State Tax Incentives on Economic Growth and Firm Decisions. This study main objective was why the Tax incentives were not part of many state budget processes. And other main things in this study they explain the background of tax intensive. In which look at the literature on state tax incentives to business as an economic development tool—tax exemptions, tax rates, specific taxes, and tax exports to other states. They used data of any state of 15 Most Common Tax Incentives, 1986 and 1996.

KARRAS et al (2009) investigate taxes effects on economic growth. The main objective of this study was changing in taxes effect on economic growth. This study was 19 European countries data used and they were obtained from OECD's for the time period was 1965-2003. In which we also look the effects of four of the largest types of taxes: taxes on income, profits, and capital gains; taxes on property; social security contributions; and taxes on

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com

Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com

Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com

goods and services. In this study, they use the benchmark model. In this study, the conclusion was that a number of interesting extensions can be pursued.

Azeem et al (2013) investigated the relationship between tax rate and economic growth in Pakistan. An Empirical Analysis of Tax Rate and Economic Growth Linkages of Pakistan. The main objective of the study was to analyze the long and short-run relationships between tax rate and economic growth of Pakistan. The model was based on the endogenous growth theory. The time series data were obtained from various sources ranging from 1975-2009. The conclusion of that study pointed out the long run negative relationship between tax rate and real GDP per capita.

Ahmad et al (2016) investigated TAXES AND ECONOMIC GROWTH AN EMPIRICAL ANALYZED OF PAKISTAN. The main Objectives of this phenomena (i) investigate the impact of total taxes on economic growth (ii) verify how much economic growth is influenced by total taxes. This study empirically investigated the relationship between total tax revenues and economic growth in Pakistan. This study used annual time series data of Pakistan from 1974 to 2010. This study explains Total tax revenues have an inverse relationship between tax and economic growth, in long run. In this study, they used annual time series data for 37 years (1974-2010).

3. Objective

- The main objective of the research is to find out the "taxation effect on the economy.
- To find out the taxation effect on inflation.

4. METHDOLOGY

In this exploration subject, distinctive variables are utilized, and Human development index is taken as the dependent variable in the model. The independent variables are the foreign direct in-

vestment (FDI), Inflation, National saving, Trade openness, and Taxes. Model for the variables are built as:

Stationary Stochastic Process:

A stochastic process is said to be stationary if its mean and variance are invariable (constant) over time and the duration of its codivergence between the two quantify periods depends upon the two second periods and not the actualized time at which the covariance is computed. Spurious regression is with high R², t-statistics, F-statistics and low Durbin Watson (DW). A type of stochastic process which has received the great attention of analysts while conducting research on time series data is a stationary stochastic process. We adopt Y_t to be stochastic instant serial with these features:

$$\text{Mean: } E(Y_t) = \mu$$

$$\text{Variance: } \text{var}(Y_t) = E(Y_t - \mu)^2 = \sigma^2$$

$$\text{Covariance: } \gamma_k = E(Y_t - \mu)(Y_{t+k} - \mu)$$

So, for analysis the true relationship among two or more than two variables it is necessary to check that either the series is stationary or non-stationary.

The concept of Stationary and Non-Stationary

A stochastic process where all of its statistical properties do not change with time is called stationary. There are many tests to check whether the series is stationary or not. At an informal level Stationary can be checked through:

- (1) Graphical analysis
- (2) The Correlogram test

Tests for Stationary

Unit Root Test:

To estimate the model first of all Augmented Dickey-Fuller (ADF) test is applied to check the stationary of variables. Some variables were stationary at first difference it means some were I (1) and

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com

Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com

Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com

some variables were stationary at the level it means some were I (0). This status of variables allows applying Auto regressive dependent lags (ARDL) test to check the long run relationship among variables. After checking the stationary, ARDL Tests were applied at data. The time series data for all the variables are used for the period of 1985 to 2015. The data of the Human development index and Inflation has taken from World Development Indicator (WDI). The data of National saving has been taken from State bank of Pakistan. The data of foreign direct investment has been taken from the Pakistan Economic Survey.

Technique:

All Variables were stationary at different level. So, we apply the Autoregressive distributed lag model. The result of ARDL has obtained. Now we check the result and discussed it. How much HDI will affect by the independent variables. After confirming the existence of Co integration relation between the covariates, the long-run coefficients for the selected ARDL (2, 2) are presented in the table. The results of Table show that the estimated coefficient of Tax is significant and positively affects the HDI.

Model:

Since all the variables are time series, most macroeconomic time series are a trend. In such a case, the standard regression producer easily leads to the correct conclusion.

The Equation

$$HDI = \beta_0 + \beta_1 (Inf) + \beta_2 (Saving) + \beta_3 (Trade\ opn) + \beta_4 (FDI) + \beta_5 (TAX) + \mu_i$$

HDI= Human development index

Inf= Inflation

Saving= National saving

Trade opn = Trade openness

FDI=Foreign direct investment

Tax= Taxes

μ_i = Random error term independently distributed with zero mean and constant variance.

$B_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$

RESULTS AND DISCUSSION

It is an augmented form of Dickey-Fuller. In conducting the Dickey-Fuller test, it was assumed that the error term μ_t was uncorrelated. But in the case, the assumption is violated and μ_t is correlated, Dickey and Fuller have developed a test, known as the Augmented Dickey-Fuller (ADF) test.

TABLE: Unit root test

Variables	At level			1 st difference
	T-stats calculated	T-stats tabular	Probability	T-stats calculated
FDI	-2.2736	-3.5742	0.1861	-2.9221
Trade opn	-1.8413	-3.5683	0.6592	-4.8831
HDI	-4.7137	-3.5806	0.0040	-5.7033
Inflation	-2.1686	-3.5683	0.4889	-6.5583
Taxes	-1.995	-3.5683	0.5803	-5.1765
N saving	0.5182	-3.5442	0.5300	-4.1289

To estimate the model first of all Augmented Dickey-Fuller (ADF) test is applied to check the stationary of variables. Some variables were stationary at first difference it means some were I (1) and

some variables were stationary at the level it means some were I (0). This status of variables allows applying Auto regressive dependent lags (ARDL) test to check the long run relationship among variables. After checking the stationary, ARDL Tests were applied at data.

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com
Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com
Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com

Dependent Variable: HDI

Method: ARDL

Sample (adjusted): 1985- 2015

Included observations: 30 after adjustments

TAX	0.008502	0.002444	3.479102	0.0132
TAX(-1)	0.005667	0.002683	2.111899	0.0070
Log Trade opns	0.708629	0.168277	0.524582	0.6187
Log Trade opns(-1)	0.088275	0.168277	0.524582	0.6187
LogTrade opns(-2)	0.434196	0.131902	3.291818	0.0166
Log Trade opns(-3)	0.374984	0.131078	2.860766	0.0288
C	24.99147	5.337548	4.682200	0.0034

Variables	Coefficient	Std.Error	t-Statistic	Prob.
HDI(-1)	-0.268537	0.176655	-1.520121	0.1793
HDI(-2)	-0.760324	0.131379	-2.016065	0.0012
HDI(-3)	-0.323227	0.160326	-2.016065	0.09004
FDI	-6.25E-07	1.78E-07	-3.669664	0.0105
FDI(-1)	2.63E-07	2.91E-07	0.903915	0.4009
FDI(-2)	-2.36E-07	2.59E-07	-0.908213	0.3988
FDI(-3)	3.06E-07	1.50E07	2.043256	0.0871
INFLATION	-0.001521	0.002083	-0.730094	0.4928
INFLATION(-1)	-0.010738	0.003332	-3.22287	0.0181
INFLATION(-2)	-0.005461	0.002374	-2.300156	0.0611
INFLATION(-3)	-0.009389	0.001915	-4.9-3432	0.0027
SAVING	1.17E-11	2.42E-12	4.848516	0.0029
SAVING(-1)	-1.19E-11	4.67E-12	-2.558113	0.0430
SAVING(-2)	7.23E-11	4.51E-12	1.602506	0.1602
SAVING(-3)	-2.45E-12	3.37E-12	-0.7270662	0.4942

R-Squared 0.991020

Adjust R-Squared 0.959589

S.E of Regression 0.013515

All Variables were stationary at different level. So, we apply the Autoregressive distributed lag model. The result of ARDL has obtained. Now we check the result and discussed it. How much Human development index will affect by the independent variables. After confirming the existence of Co integration relation between the covariates, the long-run coefficients for the selected ARDL (2, 2) are presented in the table. The results of Table show that the estimated coefficient of Tax is significant and positively affects the HDI. Accordingly, the result shows that Tax positively affects the HDI by 0.008502 percent all things being the same. And The result shows the foreign direct investment negatively affect Development because it is not invested in the right place and it goes in the hence of corruption.

Autoregressive Distributive lag (ARDL) Bounds Test

We can apply the autoregressive distributed lag bound test. However, before we apply the Autoregressive Distributed Lag (ARDL)

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com
Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com
Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com

bounds testing approach, the appropriate lag length is selected using Schwarz Criteria (SC). Accordingly, Figure 2 reveals that ARDL (2,2) is the appropriate model the bound test in Table 2 shows that the computed F-statistics (11.79861) is greater than the upper bound of 3.41 at one percent level. Hence, we can reject the null hypothesis that no long-run relationships exist, accepting the alternative there exists a long-run co-integration relation between Taxes and HDI in Pakistan.

BOUND TEST TABLE 3:

Test Statistics	Value	K
F Statistics	11.79861	5
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.92	4.18
1%	3.41	4.68

The result in Table 3 shows that the estimated coefficient of Tax is significant and positive effects on HDI. The short-run dynamics coefficients from the estimation of the ARDL. Similarly, to our previous lag selections, the error correction lag for the ARDL (2,2) are selected through Schwarz criteria (SC). As can be seen in the table, the estimated error correction coefficient is significant at the one percent level and has a positive sign. This indicates that the adjustment is not only slow but tends towards divergence from the initial level. Specifically, in the current period trade openness tends to further diverge from the long-run equilibrium level.

Since our error correction coefficient is significant at one percent level, the finding confirms there is a short-run positive impact of Taxes on the HDI.

CONCLUSION AND POLICY RECOMMENDATIONS :

The major intention of this research is to investigate the association, involving total taxes and development, over the period 1985-2015, in the long run, and short run. Total taxes have a positive effect on development in long run. Total tax revenues have a positive effect on HDI in long run. Due to a one percent increase in total taxes, HDI would increase by 0.008 percent. In the short run, the impact of total taxes on HDI is significant. According to research results, it is imperative to decrease the indirect taxes, and to increase the direct taxes, if we want to augment development. Currently. The result shows the foreign direct investment negatively effect on Development because it is not invested in the right place and it goes in the hence of corruption.

The contribution of direct taxes, out of whole tax revenues is only 33 percent, and the share of indirect taxes is 63 percent, while it should be reversed if development has to increase. There is also need to augmentation the tax base/network and setting the accurate precedence, with improved tax administration. In spite of increasing the total tax revenues economic growth is stagnant, because of the utilization of taxes, on non-development expenditures, instead of developmental programs. First and far most step that should be taken by the government, is that the government should urgently plan, to broaden the tax base, on an urgent basis, because, only less than 2.5 million people pay income tax, out of the total population of 195 million. It is a reality that the government of Pakistan is heavily depending upon foreign finance, to fulfill its running expenditures. So, concerned study suggest following recommendations to increase the level of revenues

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com
Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com
Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com

through taxation. Research results show that total taxes have a positive impact on development, due to the huge share of indirect taxes in total taxes (with the share of 63 percent in total tax revenues), So indirect taxes are responsible for the positive impact of total taxes, in development. According to research results, indirect taxes should be increased, to increase HDI. To impart the positive impact of total tax revenues on development, the direct taxes will have to increase, or we can say the ratio of direct to indirect taxes will have to improve.

Odusola, A. (2006). Tax Policy Reforms in Nigeria . JEL(3).

Omojomite, U., and I. Godwin, 2012, Fiscal deficit and the productivity of the Nigeria tax system 1970-2010, Journal of sustainable development, 5(4)

REFERENCES

Auerbach, A. J. and K. Hassett, 1992 "Tax Policy and Business Fixed Investment in the United States," Journal of Public Economics 47, 141- 170.

F. Buss, T. (2001). *The Effect of State Tax Incentives on Economic Growth and Firm Location Decisions* (Vol. 15).

KARRAS, G. (2009). *TAXES AND GROWTH IN EUROPE* (Vol. 2). South-Eastern Europe Journal of Economics.

Muhammad Masood Azeem, M. M. (2013). An Empirical Analysis of Tax Rate and Economic Growth Linkages of Pakistan. *Pakistan Journal of Life and Social Sciences* , 11(1), 14-18.

MYLES, G. D. (2000). *Taxation and Economic Growth* (Vol. 21). WILEY.

Shazad Ahmad, M. S. (2016). *Taxes and economic growth: an empirical analysis of Pakistan* (Vol. 5). European Law Review.

Sobel, R. S. (1996). *Measuring the Growth and Variability of Tax Bases Over the Business Cycle* (Vol. 49). National Tax Association.

.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com.com

Author 1: Hafiz Muhammad Zahid Pursuing Mphil degree from NUML University Islamabad, Pakistan. **Email:** zahdkhan73@gmail.com

Author 2: Sarfraz Ahmad Pursuing MPhil degree from PIDE University Islamabad, Pakistan. **Email:** Sarfraz.ahmad7243@gmail.com

Author 3: Muhammad Arham khan Pursuing Mphil degree from PIDE University Islamabad, Pakistan. **Email:** Arhamkhansherwani@live.com