GO Green Research and Education

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

The Impact of Tax Reform on Economic Growth: Evidence from Pakistan: An ARDL Approach

Dr. Muhammad Shakeel

Assistant Professor of Economics, Government Islamia Graduate College Civil Lines Lahore

Muhammad Ibrahim Saeed

Senior Research Associate, ORIC, University of Management and Technology

Sidra Raza

Lecturer, Department of Economics and Statistics, University of Management and Technology

Abstract

This study investigates the impact of Tax Reform on economic growth by using time series data from 1978 to 2011 for Pakistan economy. Augmented Dickey Fuller (ADF) test is applied to check the stationarity of variables. Tax Reform, Literacy rate, Import, foreign direct investment (FDI) and economic growth variables are considered. Autoregressive Distributive Lag (ARDL) approach to co-integration proposed by Pesaran et al. (1999, 2001) is employed to find short run and long run relationship among variables. Results indicate that tax reform has negative and significant impact on economic growth both in short run and long run, whereas effect of foreign direct investment on economic growth is positive and significant. Moreover, import has positive and insignificant effect on economic growth in short run, but in long run its effect is negative and significant. Finally, Literacy rate is an insignificant determinant of economic growth. Diagnostic tests confirm that functional form is appropriate, and no serial correlation and heteroscedasticity is found, which highlights the performance of the estimated model. The CUSUM and CUSUMSQ are showing that the model is structurally stable and are lying within the 5% of critical bounds.

Keywords: Economic Growth, Tax Reform, FDI, ARDL, Pakistan.

Introduction

The overall structure of Pakistan economy is based on two sides; the first one is "Income & the other is Expenditure" side. To collect or generate revenues is the key duty of any government and the second that is more important than the first is to consume these

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

generated resources in such a way that no section of the society should remain deprived of those benefits.

Sincere efforts made by the government authorities to raise its tax collection in different period of time are known as tax reform. To measure tax reforms overall tax structure is considered, which varies from decade to decade due to gap between direct and indirect tax collections. Dynamic tax reform is constructed during different phases of revenue generation in Pakistan.

Here, we are not concerned with the debate rather to critically evaluate the revenue generation activities of the government. In this regard different efforts were made by the government in different periods. These efforts are called "Tax reforms". This is the main issue of our study i.e what are the impact of these reforms on the economic growth of Pakistan. To measure the impact of taxes on economy is a quantitative phenomenon as has been done many times in Pakistan but to measure the impact of tax reform is a qualitative phenomenon which is the basic purpose of this study.So, measuring tax reforms is a complicated procedure. For this purpose we tried to quantify these reforms on the base of the index developed as by physical quality of life index methods or by Human development index method. The difference between PQLI, HDI and tax reforms index is the dynamic rates of taxes in different periods. So, we developed this tax reforms index with dynamic rates of taxes during different phases of revenue generation of Pakistan.

Government needs revenues to meet the spending requirements to maintain it at adequate level of investment and more effective public services (Ahmed and Stern 1991) Tax policies in practice differ dramatically between richer and poor countries. Richer countries rely primarily on broad based income and consumption taxes and little use of tariffs as a source of revenue. Poorer countries, in contrast, make much less use of broad – based taxes, relying on excise taxes and tariff. Corruption and red tape are also more common in poor countries (Gorden & Li 2005)

Problems with the tax system of Pakistan is that the tax base is not broad, there is progressivity in tax system due to the major proportion of indirect tax, always short fall to

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

the revenue targets set by the tax administration . The reasons of this short fall are the inefficiency, corruption and political influence of elite class and feudal. Tax system of Pakistan is not scientific rather complicated and manual. Tax perception of the people of Pakistan is very misleading due to unawareness and the harassment of tax machinery for specific purpose of corruption.

Tax reforms are the efforts of the governments to enhance its revenues. These tax incomes will be spent on development expenditures and the development expenditure will ultimately generate growth. Growth of right direction will cause economic welfare which is the basic purpose of every government. So, the main function of the fiscal policy is the resource mobilization of a country. Resources mobilized in right direction will foster economic activity and the result of this economic activity will increase employment opportunities, improve public services and investment friendly atmosphere. Improvement in social overhead capital and direct production activities and the result will be definite and sustainable economic growth in the country.

Pakistan government is also trying to follow the path of right direction towards resource mobilization in the form of taxes and tax reforms. The burden of direct taxes was 80% of total tax collection in sixties and early of the seventies, afterward the ratio changed and indirect taxes were 70 % in eighties. In the next two decade this ratio was also improved and at present almost 62% are the indirect taxes and 38% are direct taxes which shows the progressivity of tax system (Economic survey, various issues). This progressivity is pleasant but not up to the mark as required. The need of the hour is to devise such measures which may fruitful to the required limits this is the basic purpose of our study.

The rest of the paper is arranged as follows. Section II, discusses most relevant literature, In Section III theoretical frame is discussed. Methodology and date sources are explained in section IV. Empirical results with clarification are explained in section V. Whole study is concluded in section VI and finally, appropriate policy suggestions are presented in section VII.

Review of Previous Studies

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Harley (1965) examined the determination of government revenues. He discussed the less developed countries especially. The selected period is (1957-60) and almost 60 countries were selected. In this study Harly discussed the variable and determinants of government revenue .The findings of this study show the positive and significant relationship of per capita income as well as import to GDP ratio.

Allan A. Tait & et al. (1979) analyzed the comparison of taxation of almost 63 countries during the period of (1972-76). For his study he analyzed the impact of per capita GNP, openness Agriculture to GDP ratio, Mining to GDP ratio and Export to GDP ratio. Findings of this study show that Export, Mining and openness has positive & significant impact on tax to GDP ratio while Agriculture to GDP ratio has negative and insignificant impact on tax to GDP ratio.

Stern (1984) analyzed that efficiency which requires for "Optimum taxation and tax policy." He was of the view that optimum taxation is one of the most important parts of modern theory of public finance. In this study he concluded that if we want to require efficiency then uniform commodity tax or increasing marginal income tax rate should be uniform. This study gives a number of useful practical decision making principles.

Nizar (1984) examined a very important area of Resource mobilization in Pakistan. He discussed the relationship between saving and tax. He brought to light three main components of saving as public saving, private saving and saving of the business firms. The idea presented by Nizar encourage saving and then reforms the saving it will bring positive change for the economy. Many proposals of tax reform introduced to improve saving by cutting public expenditure. Agriculture income tax and domestically produced goods should also be in tax net for increasing tax revenues.

Akbar and Ahmed (1997) evaluated that elasticity and Buoyancy exactly present the right scenario of tax structure of a country. They tried to measure the tax structure through elasticity and Buoyancy of various federal taxes during the period of 1973-1990. This study concluded that elasticity and buoyancy of taxes is low. They also concluded that the current expenditure are more buoyant than development expenditure.Fred Kakongoro (1999)

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

analyzed the responsiveness of tax revenues to growth. He discussed the case of Uganda. In this study income tax, sales tax, excise duty, values added tax as well as the total tax as independent variables. GDP is the dependent variable. The findings of this study are that dependent variable relates positively & significantly to the independent variable. So the impact of independent variable is positive and significant in the economy of Uganda.

Mukkaram (2001) estimated the elasticity of buoyancy of taxes in Pakistan. She concluded differently about direct and indirect taxes. According to her, Elasticity and Buoyancy of direct taxes are greater than indirect taxes. For measuring Elasticity and Buoyancy the chain techniques is used and found the rigidity in custom and excise duty. This rigidity is due to the low elasticity of taxes in Pakistan especially in indirect taxes.

Bilquees (2004) measured the elasticity & buoyancy in tax collection of Pakistan. For estimation elasticity & buoyancy she selected the time series data for the period of (1974-2003). She analyzed the tax system of Pakistan very critically and tried to determine the factors responsible for the size of elasticity coefficients of tax. The approach adopted for it is Divisia Indes approach. She found that changes in tax system didn't bring the significant improvement in the tax collection of Pakistan. However, the growth in services sector and high coefficients of sales tax are alarming for the middle class and poor class of Pakistan due to the regressivity of our tax system. This will lead towards the inequality in Pakistan.
Dale W. Jogerson (2012). This study evaluates The US tax Reform Act 1986. In this study Dale analyzed the impact of effective tax rate on income from capital employed by corporate sector, non corporate sector and household sector. They measured the impact on US economic growth with and without tax reforms.This study suggests that tax reforms depend not only with policy change but also elasticity play important role. For this purpose of measuring economic impacts dynamic general model is required. In this case indexing US tax system receives priority. These tax reforms introduced by administration have potential gains in welfare from the tax reforms act 1986 but these are substantial and these gains will diminish at moderate rate of inflation. US economic growth and tax reforms evaluate the

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

impact at present as well as in future. The main thing in notice is to keep in view the inflation rate of present and future.

Ogbonna, G.N. Appah Embimobowei (2012) analyzed the impacts of tax reforms of Nigeria during the period of (1994 - 2009). This time series study found the results that during this period tax reforms impact the Nigerian economy positively and significantly. These tax reforms brought improvement in the working of tax machinery of Nigeria. Improved tax machinery increased the tax revenues will ensure a sustainable economic growth. These tax reforms align the economy and achieved its macro Economic goals and stability. A tax system without corruption, with efficient and effective tax machinery can only obtain sustainable economic growth.

Theoritical Foundations or Framework

"Taxes not only help to create the state but also to form it. The tax system was the organ of development of which entitled the other organ**".(Schumpeter 1918)**Commission of National Taxation Reform 1985 suggested to bring the "Tax Reforms" to improve the revenue collection along with the administrative reforms to improve administration of tax collection. Tax machinery is the most important part for improving revenue collection. No doubt, Tax reforms and administrative reforms are much important and has good impact on revenue collection but only for present not for future due to inflation rate.

Along with tax reforms "Tax Elasticity" has very important place in revenue growth. As in the studies of Mukkaram (2001), Janathan (1998), Bilquees (2004). Tax reforms keeping in view the tax elasticity may bring positive changes not only for present but also for future. Tax is the key for opening the doors of development, resources mobilization, and efficient, equitable, fair and proper distribution of resources in the country. The impact of taxes on economic growth may be positive as well as negative. If the dead weight loss is greater than the tax revenues the impact of tax on GDP is negative and if the dead weight loss of the tax is less than the tax revenue then the impact of tax is positive on GDP . Now the important question arises in what way we can measure the dead weight loss and tax revenues. It is the

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

elasticity of demand & Supply which will determine the both. So, there exists a causal relationship between economic growth and tax revenues of a country. This relationship is also by directional as GDP impacts taxes and taxes impacts GDP.

Here, in our study we see the impact of tax reforms introduced during different period in the tax history of Pakistan. Tax impact on GDP is a quantitative measurement but the impact of tax reforms is a qualitative measurement. As we briefly mentioned in the introduction that for the measurement of tax reforms we shall develop an index of tax. The base for the development of tax index is the index of physical quality of life index by Moris & mcalpine (1982-83) and Human development index developed by Dr. Mahboob –ul- Haq and UNDP, at different times. such type of study also discussed the quantification of reforms in india by Dolakia & Solanki (2001) the process of formulation the Tax reforms index is not complicated enough but it is dynamic as compared with other PQLI or HDI index . The reason of this dynamic behavior is the changing rates of taxes over the longer period of time. As in Pakistan the ratio of direct and indirect taxes is changing with the change in time. In seventies the ratio was 20-80. In eighties the ratios was 30-70. And in 1990s and afterward the composition of taxes is 40 and 60 percent of direct and indirect taxes, respectively.

The work of Dolakia & Solanki in (2001) focused on developing a composite index of fiscal performance consisting of six fiscal indicators and the stages are earned on the basis of the value of index for different years. Bhide and Panda (2002) had come up with another fiscal index made up of five components, for judging the quality of central government budget. Again Dolakia (2005) & vacllam annati constructed a composite index for all states and Andra Pradesh respectively by taking eight key ratios, based on which ranked ware given the states for their physical performance form (1991-2003).

Keeping in view the changing rates of taxes the index developed accordingly:

$$\text{Tax Reforms Index} = \left[\text{A.V} - \text{Mn.V} \;/\; \text{Mx- Mn.V} \right]$$

Where,

Actual Value: The value of the concerning year.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Minimum Value: Minimum value represents the smallest value during the years selected.

Maximum value: Maximum value represents the largest value during the year selected.

For finding maximum values or minimum values

Direct Tax Rate = Direct tax /GDP x 100

Indirect Tax Rate = Indirect tax / GDP x 100

Tax Reforms Index

Tax reform index is constructed keeping in view the varying or changing nature of direct and indirect taxes over different periods of time.

Tax Reforms Index for 1978 -1990	
Direct Tax	Indirect Tax
20 % = 1/5	80% = 4/5
Tax Reforms Index = 1/5 [A.V – Mn.V / Mx- Mn.V] + 4/5 [A.V – Mn.V / Mx- Mn.V]	
Tax Reforms Index for 1991 – 2000	
Direct Tax	Indirect Tax
30 % = 1.5 / 5	70% = 3.5/5
Tax Reforms Index = 1.5/5 [A.V – Mn.V / Mx- Mn.V] + 3.5/ 5 [A.V – Mn.V / Mx- Mn.V]	
Tax Reforms Index for 2001 – 2011	
Direct Tax	Indirect Tax
40 % = 2/5	60% = 3/5
Tax Reforms Index = 2/5 [A.V – Mn.V / Mx- Mn.V] + 3 /5 [A.V – Mn.V / Mx- Mn.V]	

Data Collection and Methodology

Secondary data is collected for this study. Data sources are World Development Indicators (WDI), International Monetary Fund (IMF), Economic surveys of Pakistan, state bank of

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Pakistan and various statistical year books. In this study time series data is used from 1978 to 2011. The variables employed are economic growth, Tax Reforms, Literacy rate, Import and foreign direct investment (FDI) of Pakistan. Keeping in view the theoretical framework so our final Econometric model is as under:

$$Ln\ (EG_t) = \beta_0 + \beta_1\ Ln\ (TR_t) + \beta_2\ Ln\ (LR_t) + \beta_3\ Ln\ (IMP_t) + \beta_4\ Ln\ (FDI_t) + \mu_t$$

(-) (-) (-) (+)

Tax reform, Literacy rate, and Import have negative impact on economic growth, whereas foreign direct investment (FDI) is expected to have positive effect on economic growth.

EG= Economic Growth is in percentage.

TR = Tax Reform is taken as percentage of GDP.

LR = Literacy rate is in percentage.

IMP =Import (Million)

FDI =Foreign Direct Investment (Million)

Where, β0, β1, β2, β3, β4 are the respective parameters.

Economic growth is taken as dependent variable, which indicates increase in country's national Income or increase in per capital income represents economic growth. On the other hand, independent variables can be explained as:Tax Reforms are all the efforts and struggles done for the improvement of tax revenue collection of a country is tax reforms. Literacy rate shows the ratio of educated persons of a country. All the uses of visible and invisible goods and services from abroad are called import. Investment whether private or public from outside the country is called foreign direct investment by foreigners is FDI.

To get the empirical results various econometrics techniques have been used in the past. But in this study Auto Regressive Distributive Lag (ARDL) to co integration proposed by Peasarn and Shin (1999, 2001) is employed due to the following appealing reasons:

This technique is used because of following advantages:

1. The variables discussed in the model can be I (0) or I (1) and both.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

2. By using ARDL techniques the model can be lagged adequately to minimize the intensity of serial correlation.
3. With the use of ARDL we can develop a dynamic errors correction model.
4. Through ARDL technique, the endogeneity problem can be avoided.
5. ARDL technique gives unbiased estimate of the long run model and valid T- statistics.

The ARDL equation is given below:

$$\Delta \text{Ln(EG)}_t = \beta_0 + \beta_1 \text{Ln(EG)}_{t-1} + \beta_2 \text{Ln(TR)}_{t-1} + \beta_3 \text{Ln(LR)}_{t-1} + \beta_4 \text{Ln(IMP)}_{t-1} + \beta_5 \text{Ln(FDI)}_{t-1} + \sum_{i=1}^{n} \delta_i \Delta \text{Ln(EG)}_{t-i} + \sum_{i=0}^{n} \theta_i \Delta \text{Ln(TR)}_{t-i} + \sum_{i=0}^{n} \eta_i \Delta \text{Ln(LR)}_{t-i} + \sum_{i=0}^{n} \gamma_i \Delta \text{Ln(IMP)}_{t-i} + \sum_{i=0}^{n} \varphi_i \Delta \text{Ln(FDI)}_{t-i} + U_t$$

In the above equation, it is important to note that [β_1, β_2, β_3, β_4, and β_5] are long run coefficients, whereas remaining are short-run coefficients.

The null and alternative hypotheses are as follows:

$$H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0 \qquad \text{(No long run relationship exist)}$$

Against the alternative hypothesis:

$$H_1 : \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0 \qquad \text{(long run relationship exist)}$$

The error correction representation of equation is given below:

$$\Delta \text{Ln(EG)}_t = \beta_0 + \sum_{i=1}^{n} \delta_i \Delta \text{Ln(EG)}_{t-i} + \sum_{i=1}^{n} \theta_i \Delta \text{Ln(TR)}_{t-i} + \sum_{i=1}^{n} \eta_i \Delta \text{Ln(LR)}_{t-i} + \sum_{i=1}^{n} \gamma_i \Delta \text{Ln(IMP)}_{t-i} + \sum_{i=1}^{n} \varphi_i \Delta \text{Ln(FDI)}_{t-i} + \lambda \text{(ECM)} + U_t$$

The above mentioned equation in ARDL method of estimation explains the short run dynamic behavior of the model. ECM is actually the 1st lag of error term which is attained from the long-run relationship, and co-efficient (λ) of error correction model shows the speed of adjustment. It must be statistically significant and negative for establishing co

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

integration and long run causality the lagged error correction term must be highly significant and negative too. The importance of negative sign is that it shows the convergence is short run dynamic.Finally, Cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) test is used for stability of the variables in short run and long run. If the plots of the CUSUM and CUSUMSQ are lying within the critical bounds of 5 % significance levels the null hypothesis cannot be rejected. It means that the variables used in the model are stable structurally.

Empirical Results and Discussion

In Table 1 ADF test is utilized to verify the stationarity of variables at level and 1st difference with trend and drift assumption.

Table 1: Augmented Dickey- Fuller Test with Trend and with Intercept.

Null Hypothesis: There is unit root; Alternative Hypothesis: There is no unit root

Variables	Level / 1st Difference	ADF test statistic		Conclusion
		Intercept	Intercept & Trend	
Ln (EG)	Level	-4.206978*	-4.398208*	I (0)
Ln (TR)	Level	-1.274601	-2.697320	----
Δ Ln (TR)	First Diff	-6.554918*	-6.585574*	I (1)
Ln (LR)	Level	-0.023582	-2.492424	----
Δ Ln (LR)	First Diff	-6.091412*	-5.948111*	I (1)
Ln (IMP)	Level	-0.090237	-2.123997	----
Δ Ln (IMP)	First Diff	-5.308219*	-5.242053*	I (1)
Ln (FDI)	Level	-1.197031	-2.440975	----
Δ Ln (FDI)	First Diff	-5.417855	-5.379253*	I (1)

Note: * denote significance at 5%.

In order to find out that the variables are stationery or not we apply unit root test. Unit root test is prerequisite to apply ARDL to determined whether ARDL can be or cannot be applied, we use unit root. ARDL cannot be applied when variables are I (2). Augmented Dicky fuller (ADF) test is applied in order to determine the order of integration. The result of table 1 shows that dependant variable is I (0) and the independent variables are I (1).

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Since variables used are integrated of different order [I (0) and I (1)], therefore ARDL technique is employed.

Table 2: VAR Lag Order Selection Criteria

Endogenous variables: LNEG LNTR LNLR LNIMP LNFDI
Exogenous variables: C
Sample: 1978 2011
Included observations: 32

Lag	Log L	LR	FPE	AIC	SC	HQ
0	-26.62190	NA	4.97e-06	1.976369	2.205390	2.052283
1	112.1396	225.4874*	4.15e-09*	-5.133725*	-3.759598*	-4.678241*
2	127.0852	19.61615	8.80e-09	-4.505328	-1.986094	-3.670273

* Indicates lag order selected by the criterion
LR: sequential modified likelihood ratio test statistic (each test at 5 percent level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Optimum lag length is checked by VAR lag length criteria. Different lag length criteria are reported in table 2. Three lag order selection criteria (AIC, SC and HQ) clearly indicate that optimal lag length is one. Now it is up to the researcher to choose any one of these criteria to select the lag order for ARDL.

Table 3: Diagnostic Tests

Item	**Test Applied**	**CHSQ (χ^2)**	**Probability value**
Serial correlation	Lagrange Multiplier Test	1.1089	[0.292]
Functional Form	Ramsey's reset test	0.4193	[0.517]
Normality	Test of skewness and Kurtosis	5.5646	[0.062]
Heteroscedasticity	White Test	1.8408	[0.175]

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Various diagnostic tests are reported in table 3, which confirms that estimated model is free from serial correlation and hetroskadasicity. Moreover, the functional form is appropriate and stochastic residuals are normally distributed (Appendix-A).

Table 4: Bounds Testing in ARDL Model

F-statistic	**95% LCB**	**95% UCB**	**90% LCB**	**90% UCB**
6.6405	3.2178	4.6443	2.6867	3.8991
W-statistic	**95% LCB**	**95% UCB**	**90% LCB**	**90% UCB**
33.2026	16.0888	23.2217	13.4337	19.4955
LCB= Lower Critical Bound		UBC= Upper Critical Bound		

Bound testing is the precondition to apply ARDL approach, which confirms the existence of long-run relationship among variables. In table 4, both calculated F-statistic and W-statistic are higher than upper critical bound (UBC) at 5 % level of significance. This implies that long run relationship exist among variables.

Table 5: ARDL (1, 1, 1, 1, 0) selected based on AIC

(Dependent Variable, ln EG)

Regressor	**Coefficients**	**Standard Error**	**T Ratio**	**Probability**
Ln EG(-1)	-0.38710	0.17681	-2.1893	[0.039]
Ln TR	-0.90316	0.37195	-2.4282	[0.023]
Ln TR(-1)	-0.90502	0.35841	-2.5251	[0.019]
Ln LR	2.4633	1.7308	1.4232	[0.168]
Ln LR(-1)	-2.7452	1.5433	-1.7788	[0.088]
Ln IMP	0.34211	0.63832	0.53595	[0.597]
Ln IMP(-1)	-1.2645	.56814	-2.2257	[0.036]

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Ln FDI	0.53530	0.12789	4.1855	[0.000]
Constant	10.6923	1.7482	6.1163	[0.000]
R-Squared 0.6464		R-Bar-Squared 0.5286		
DW-statistic 2.1803		F-Stat. F(8,24) 5.4853[0.001]		

Table 5 shows the dynamic analysis of the variables. This table shows the independent such as tax reforms and foreign direct investment (FDI) are significant but tax reforms has negative impact and FDI has positive impact on economic impact. Whereas, literacy rate and Import are insignificant and have positive impact on economic growth. R^2 (Coefficients of determination) is less than the value of Durbin Watson which represents there exist no spurious regression in the model. F-statistic shows the overall significance of the variables used in the model. $R^2 = 0.64$, which means that 64 % variation in dependant variable, is due to independent variables included in the model. Moreover, $\beta1 = -0.90$ shows that 1 percent increase in tax reforms leads to 0.90 percent decrease in economic growth. $\beta4 = 0.53$ illustrate that 1 percent increase in FDI leads to 0.53 percent increase in economic growth. Microfit 5.0 is used to find the empirical results, ARDL (1, 1, 1, 1, 0) selected based on AIC.

Table 6: Estimated Long Run Coefficients for Selected ARDL Model

(Dependent Variable, ln EG)

Regressor	Coefficients	S. Error	T Statistic	Prob.
Ln TR	-1.3036	0.30127	-4.3270	[0.000]
Ln LR	-0.20323	0.59614	-0.34091	[0.736]
Ln IMP	-0.66498	0.20923	-3.1782	[0.004]
Ln FDI	0.38591	0.086925	4.4396	[0.000]
Constant	7.7084	0.95520	8.0699	[0.000]

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Table 6 shows that literacy rate has negative and insignificant impact on economic growth in long-run. Whereas, Tax reform and Import are negatively and significantly affecting economic growth in the long-run. More FDI is bringing more and economic growth for the Pakistan economy.

Table 7: Error Correction Representation for the Selected ARDL Model

(Dependent Variable, ln EG)

Regressor	Coefficients	S. Error	T Statistic	Prob. Value
Δ Ln TR	-0.90316	0.37195	-2.4282	[0.022]
Δ Ln LR	2.4633	1.7308	1.4232	[0.166]
Δ Ln IMP	0.34211	0.63832	0.53595	[0.596]
Δ Ln FDI	0.53530	0.12789	4.1855	[0.000]
Δ Constant	10.6923	1.7482	6.1163	[0.000]
ECM(-1)	-1.3871	0.17681	-7.8449	[0.000]
R-Squared	0.7551	R-Bar-Squared	0.6735	
DW-statistic	2.1803	F-Stat. F(5,27)	14.8034 [0.000]	

ECM = Ln (EG) + 1.3036* Ln (TR) + 0.20323* Ln (LR) + 0.66498* Ln (IMP) - 0.38591*Ln (FDI) -7.7084*Constant

Table 7, demonstrates the results of short run by using ARDL approach. It is found that both tax reform and foreign direct investment (FDI) have significant impact on economic growth. Moreover, Literacy rate and import have insignificant effect on economic growth. According to Bannerjee et al. (1998), the highly significant error correction term further verifies the existence of a stable long-run relationship. The coefficient of ECM is negative and significant, which suggest convergence of model towards equilibrium. The result of this error correction model is trustworthy since it passes all diagnostic tests. ECM coefficient of our model is (-1.38), which implies that deviation from long-term disequilibrium in economic growth is corrected by 138% percent over the each year.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Figure 1: Plot of Cumulative Sum of Recursive Residuals.

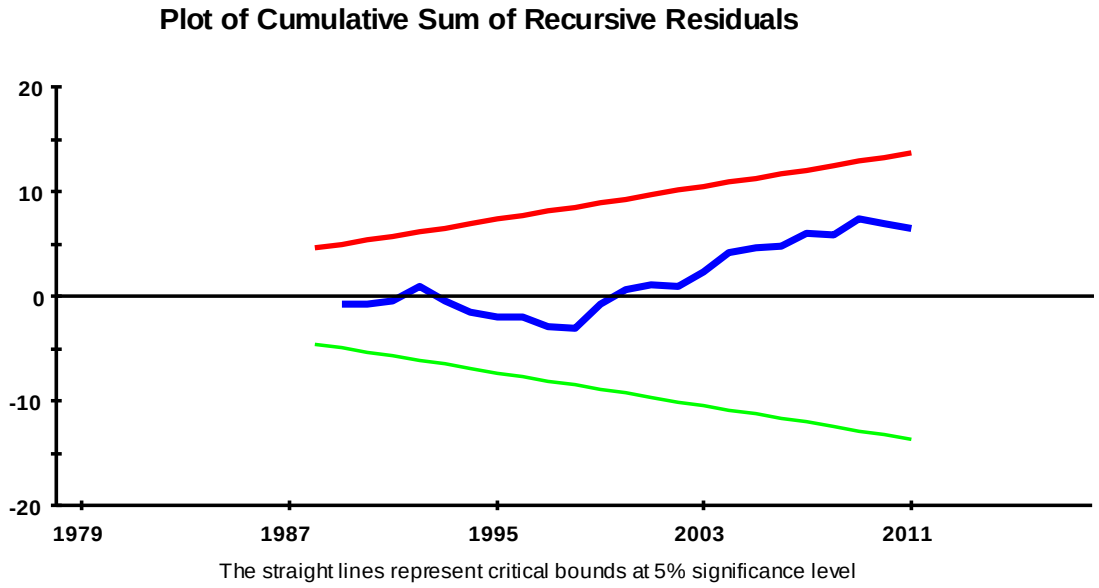
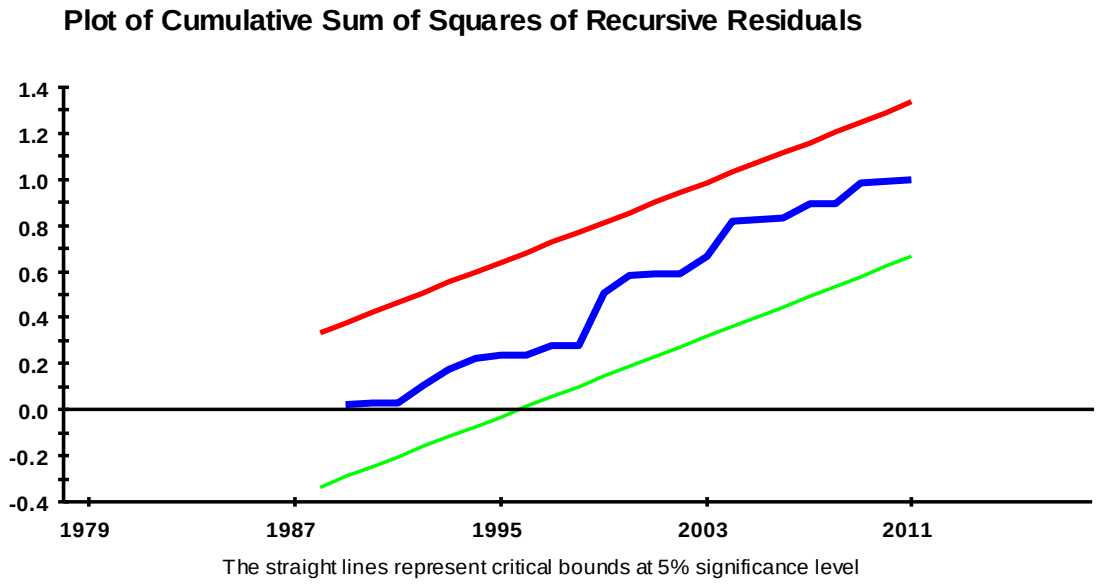


Figure 2: Plot of Cumulative Sum of Squares of Recursive Residuals.



Cumulative sum (CUSUM) and cumulative sum square (CUSUMSQ) test is employed to check the structural stability of short run and long run co efficient. The null hypothesis of

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

stability of coefficients in the given regression cannot be rejected if the plots CUSUM and CUSUMSQ statistics are found within the critical bounds of 5 percent level of significance.

Conclusion and Policy Recommendations

The tax reform does not guarantee growth as in case of Pakistan but not same for all other developed and developing countries. These tax reforms have negative impact on economic growth of Pakistan. The reason for the decrease in economic growth is as these reforms are not accompanied with right direction, evasion and avoidance could not be controlled, it is against the principles of equity, efficiency and effectiveness. The distributional impacts of these reforms are negative. The introduced tax reforms in Pakistan were not integrated with whole system of the economy. Most of all, these tax reforms are only on paper based rather than practically applicable.

Results indicate that tax reform has negative and significant impact on economic growth in short run and long run, whereas foreign direct investment has positive and significant impact on economic growth both in short run and long run. Moreover, import has positive and insignificant effect on economic growth in short run, but in long run its effect is negative and significant. Finally, Literacy rate is an insignificant determinant of economic growth.

Diagnostic tests confirm that model is free from serial correlation and hetroskadasicity. Moreover, the functional farm is correct and stochastic residuals are normally distributed. ARDL bound testing confirms that presence of long-run relationship among variables. The coefficient ECM is negative and significant, which suggest that there is high speed of convergence to the equilibrium level when the economy is shocked. Finally, Cumulative sum (CUSUM) and cumulative sum square (CUSUMSQ) test is employed to check the structural stability of short run and long run coefficients. Both CUSUM and CUSUMSQ are showing that the model is structurally stable and are lying within the 5% of critical bounds.

Policy Recommendations

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

- Tax reforms should be strongly integrated according to the reforms agenda of the whole economy. Tax reforms in isolation for improving the tax structure may not fruitful as in the case of Pakistan.
- The purpose for tax reforms should improve the distributional impacts of the economy because it was not so due to the negligence of basic principle of equity, efficiency and effectiveness. Recommend tax reforms are only those which should improve distributional impact and remove disparities
- Timing of tax reforms is much important with the cyclical fluctuation of the economy. Tax reforms should be cyclical rather counter cyclical. In Pakistan cyclical fluctuations have been ignored while introducing tax reforms.
- Tax reforms should be systematic institutional and automatic. It should not be politicized or motivated for some specific section.
- Most of all tax reforms should make the tax system broad based universal, revenue generated, minimum avoided and must keep in view the growth oriented policy of the whole economy.
- Sectoral tax should be introduced as is the experience of the Uruguay where simplification,
- broad base and tax payer identification system was introduced.
- Endogenous growth model should be preferred to exogenous growth model for growth and this will lead to the proper exploitation of the resources of the country through taxes.
- Bilquees (2004) found that high coefficients of sales tax are alarming specially for middle class and poor class. Result of that there is inequality and regressivity of our tax. So the coefficients of direct taxes should be higher than indirect taxes.
- There should be a strong institutional economic system which should generate and institutional tax system. So the tax system should be institutionalized.

References

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Chilliah, R.J , 1971 . Trends in Taxation in Developing Countries. IMF Staff Papers Vol-18 no.2 PP 254-331.

Stern, (1984). Optimum Taxation & Tax Policy.IMF Staff Papers Vol-31 no.1.

Nizar, (1984).Domestic Resource Mobilization in Pakistan.World Bank staff Working Paper no. 632.

Bird, R (1987).A New Look at Indirect Taxes in Developing Countries.World Development Report Vol-15 no. 09 PP 1151-1162.

Akbar & Ahmad (1997) .Elasticity and Buoyancy w.r.t GDP. Pakistan Economic and social Review Vol-XXXV no.1.

Mansfeild, C.Y (1972). Elasticity & Buoyancy of Tax System in Paraguay. IMF Staff Papers Vol-19 no.2.

Jonathan (1998). Estimated Tax Buoyancy Elasticity & Stability.African Economy Policy Paper no. 11.

Mukarram (2001). Elasticity and Buoyancy of major Taxes in Pakistan. Pakistan Economic + Social Review Vol-XXXIX no. 01 PP75.

Ogbonna, G.N & Appah Ebimobowei (2012) .Impact of Economic Reforms and Economic Growth in Nigeria .Maxwell Scientific Organization 2012.

Luigi Bernardi & Angela Fraschini (2005) .Tax System & tax Reforms in India.Working paper no. 51 April 2005.

Dale W.Jorgenson & Kun Young Yen (2012). Tax Reforms and US Economic Growth Journal & Political Economy 98(5) part 2 October 18, 2012.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Nguyen M.A (2009) Tax System & Reforms in Japan International & Asian Research Group Final Report-August 27, 2009 Centre for Economic Research Department. JCER.

Fjeldstad Odd-Helge (1995) Bergen,1995(37) Taxation & Tax Reforms in Tanzania CHR. Michelson Institute Development Studies Human Rights.

Harley H. Hinriches (1965).Determinants of Govt. Rev Shares among less Developed Countries.

Jorgen R. & Elliott R. Moss(1967) Measuring Tax efforts in Developing Countries.

Alan A. Tait Wiffeid (1979).International Comparison & Taxation for Selected Developing countries.

Fred Kakongoro Muhumuza (1999)How responsive is Tax Revenue to Growth in Ugand.

Economic Survey of Pakistan various Issues

Report of National Taxation Reform Commission (1986) Final Report, Central Board of Revenue, Islamabad.

World Development indicators, Washington, DC, World Bank (2011)

State Bank of Pakistan, 2010

Statistical Bureau of Pakistan, Various issues,

S. Akbar Zaidi "Issues in Pakistan Economics"

Saeed Ahmad & Saeed Ahmad Sheikh (2011).Tax Reforms in Pakistan (1990-2010)International Journal of Business and Social Science, Vol-II no. 20 (November 2011).

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

Imran Sharif Chaudhury & Farzan Munir (2010). Determinants of Tax Revenue in Pakistan 2010. Pakistan Journal of Social Science Vol-III no. 2, (Dec-2010) PP (439-452).

Bilquees, F. (2004). Elasticity & Buoyancy of Tax System in Pakistan. The Pakistan Development Review, 43(1)(73-93).

Ehrhart, H. (2009).Assessing the relationship between Democracy & Domestic Taxes in Developing Countries.CERDI, ETUDES Documents, E. 30.

Sally Wallace & Harini Kannan (2008).International Study Programme working Paper (08-12) December (2008).Pakistan Comprehensive Individual Income Tax Reforms Round 2.

International Studies Programme Andrew Young School of Policy Study Georgia State University. Atlanta, Georgia 30303. United State of America.