INDIRECT TAXES AND ECONOMIC GROWTH:
An Empirical Analysis of Pakistan

Shahzad AHMAD,* Maqbool H. SIAL** and Nisar AHMAD***

Abstract

The study investigates the empirical relationship between indirect taxes and economic growth in Pakistan. For estimation, the annual time series data (1974 to 2010) was used. The main purpose of the research is to find the long-run and short-run relationship between indirect taxes and economic growth. Philips Perron and Augmented Dickey fuller unit root tests were used to check the stationarity of every variable in the study. Auto Regressive Distributed Lag (ARDL) bounds testing approach for cointegrations (developed in 2001) was applied to estimate the long-run and short-run relationship among the variables. Indirect taxes have negative and significant effect on economic growth in long-run while its coefficents in short-run were insignificant. Due to one per cent increase in indirect taxes, economic growth would decrease by 1.68 per cent. ECM coefficient of indirect taxes shows 45 per cent speed of adjustment in a year. According to the research results it is imperative to decrease indirect taxes and increase the direct taxes, if we want to augment the economic growth. Currently, contribution of direct taxes out of total tax revenue is only 33 per cent and the share of indirect taxes is 63 per cent, while it should be reversed if economic growth has to increase.
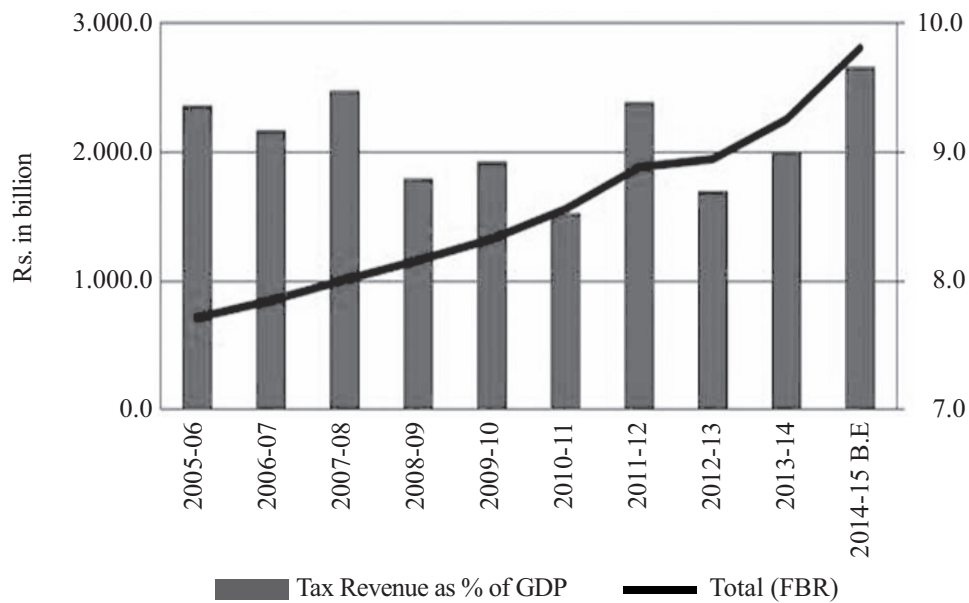
Key words: Indirect Taxes, ARDL, Economic Growth.
JEL Classification: E62, H20.

I. Introduction

Tax is an obligatory backbone of financial collection of a country which is charged directly or indirectly from people, for services provided by the government or its departments. The main part of the proceeds comes from taxes and an important aim of tax system is to finance public expenditures. Tax system also theaters a very important role in achieving other targets, like equity, social and economic enhancement of an economy. A well structured, proficient and successful tax system is an essential prerequisite for economic growth. Countries with structured and firm taxation system grow faster over the period as compared to those countries which do not have such distinctiveness. Taxation system plays a very significant role to meet developmental and non-developmental expenditures, and eventually to enhance economic growth. Taxation system especially effects the manufacturing and intensification of economic growth.

*MPhil Scholar, Department of Economics, **Professor and Dean, Social Sciences, University of Sargodha, Sargodha, ***Assistant Professor, Department of Economics, University of Sargodha Sub-Campus Bhakkar, Pakistan.

FIGURE 1

FBR Tax Revenue

Historically, for the initial few decades the tax system of Pakistan remained constant because the country inherited it from the British system (government of Indian Act 1935). From the inception of Pakistan the country is depending on foreign donors like IMF, World Bank, and the other international donors; as well as, on domestic sources like State Bank of Pakistan (in case of deficit financing). Due to shortage of funds and ruined economy of Pakistan, financial institutions and local public sources located within the country were also approached. In 1950s tax to GDP ratio of Pakistan was 5 per cent and then in 1960s it rose to 9 per cent. Thereafter, the government took action to broaden the tax base and improved the tax laws, to eliminate corruption and to bring improvements in the tax administration. Pakistan's tax system was facing structural problems like much reliance on indirect taxes and taxes on international trade. Since 1947, the tax system needed reforms to improve its economic status. Serious efforts regarding taxation reforms were initiated in 1990s, initially in the form of withholding tax [Hussain (2009)]. Figure 1 shows the history of tax to GDP ratio in Pakistan for the fiscal years 2005-06 to 2014-15.

1. *Global Comparisons*

Tax to GDP ratio is a best and comprehensive indicator to check the tax revenue status of any country. Tax to GDP ratio of some selected countries is shown in Table 1. In Pakistan, the situation of tax to GDP ratio is 9.75 per cent which is too low as compared to the other Asian economies. In Nepal it is19.9 per cent, Taiwan is 15.1 per cent, Singapore is 15 per cent and in Sri Lanka it is 12.3 per cent; while tax to GDP ratio in Sudan, Burma, Cuba, and Nigeria, is less than our country; but however, our tax to GDP ratio is similar to the sub-Saharan African countries. Therefore, in this scenario the ultimate situation of Pakistan is worse as compare to other countries.

2. *Non-Tax Sources in Pakistan*

Non-tax revenue is a recurring income earned by government from sources other than the taxes. Public income received through government, commercial enterprises and, grants and gifts is the supply of non-tax revenue of the government. A variety of services provided by government, police and defense, social and community services, such as medical services and economic services, like railways and powers also generate revenue to the government of Pakistan. Receipts under this head are interest receipts, dividend and profit from the public sector companies. Under public administration, government authorities can increase a quantity of funds in shape of fee, fines, penalties and special assessments.

Fee is imposed by government for providing service to beneficiaries and can be cited as 'payment to defray the cost of recurring services undertaken by the government, primarily in the public interest but conferring a measurable advantage to payers.' Passport fee, court fee, etc., belongs to this category. Likewise, license fee is charged to grant permission for some activity by the controlling authority, for example, driving license, import license, liquor permit, etc. Generally, the quantity of fee depends on the cost of service rendered; thus, fee is dissimilar from the price. Price is 'one times

TABLE 1

Tax to GDP Ratio

Finland	57.00%	USA	18.10%
Denmark	55.60%	China	21.30%
Norway	55.40%	Nepal	19.90%
France	51.70%	Taiwan	15.10%
Sweden	51.80%	Singapore	15.00%
France	51.70%	Sri Lanka	12.30%

Source: The World Factbook.

payment' for acquiring something but fee is obligatory contributions. However, both are made for a particular service. Fines and penalties are imposed and collected from offenders of laws as punishment. Collections of such levies are inconsequential as a source of public proceeds.

A special assessment highlighted by Seligman (1893) is a compulsory contribution levied in proportion to social benefits derived to defray the cost of a specific improvement to property undertaken in the public interest. This means that when government undertakes a public improvement work, such as construction of roads, parks, drainage, and street lights, etc., it makes available a special benefit to people who avail these facilities. As a consequence, the value and rents and price of property surrounding the activity may go up. Therefore, the government may entail some special levy to recover a part of the operating cost, so incurred. Such levy is different from a tax. Profit of state undertakings is an important source of revenue for Pakistan, for example, the central government runs railways, air lines, ships, with surplus from this head which contribute to the revenue budget of the central budget.

In Pakistan gifts and grants, generally form a very small part of public revenue. Patriotic people or institutions may make small amount of gift to the state but intentional nature of grant is in huge amount. Gifts have some importance, particularly during war or disasters. In present days, grant from one government to another have much significance. Local government receive grant from the state government who receive it from the centre. When grant is made by one country to another it is called foreign aid. Generally poor countries receive this kind of aid from rich nations which may be in the type of military aid, financial aid, health and food aid, education aid, and technological aid, etc.

3.   Objectives of the Study

The main objectives of this study are to:
a)   Verify how much economic growth is influenced by the indirect taxes in long- period and in short-period.
b)   Examine the impact of indirect taxes on economic growth.
c)   Provide policy recommendations.

4.   Hypothesis to be Tested

Construction of hypothesis is an important element in any empirical research work. The analysis of different theories of taxation and past review of literature helps to formulate the hypotheses. Hypothesis of this sutdy is constructed on the basis of direct taxes and economic growth relationship, which is as following:
H0 :   Indirect taxes do not have negative relationship with economic growth.
H1 :   Indirect taxes have negative relationship with economic growth.

5. *Significance of the Study*

The research explains the growth in national income affected by reducing or increasing the indirect taxes. It would help to identify empirically as to how much the indirect tax will have to be increased or decreased, to augment the economic growth. It will also help to improve the taxation system of Pakistan and provide guidelines to policy makers to reform the tax system of Pakistan.

After the introduction (Section I), literature review of work that has been inaugurated in the past is provided in Section II. Data and methodology are developed in Section III, while empirical results and discussion are presented in Section IV. Finally (in Section V), the paper is concluded with policy recommendations.

II. Literature Review

The main objective of the review of literature is to have knowledge of the work that has been inaugurated in the past, nationwide and internationally. In the area of taxes and growth association, most studies were accessible from USA, European and the OECD countries. Comparing Pakistan with all these countries the share of research exertion on this issue is very little; and so there is a lot of space to fill the gap with fruitful research associated with this topic.

Solow (1956) carried out a study about taxes and growth association. It was inspected in his new classical growth model that taxes have no effect on steady state growth, while income tax has negative impact on economic distribution. Romer (1986) précised in his demonstration that government expenditures and policy of taxes have an enduring long period growth effects .With mention to taxation growth relationship, meeting point was on the past facts of United States tax variation from 1945–2007. The study results illustrated that exogenously augment in taxes, reduces deficit in budget, diminish growth of high income tax and turn down the enduring rate of economic growth.

Easterly and Rebelo (1993) employed a mock-up of 32 typically OECD countries where positive relationship among income average marginal rate of tax and the level of real per capita earning was observed. The outcome illustrated that developed countries depend a lot on their income tax, in order to match to the developing states. Engen and Skinner (1996) employed three techniques to measure the impact of tax development. Results of the study revealed that due to tax reforms, change in economic growth would be up to 0.2 to 0.3 percent. It was also inspected that due to such slight alterations in economic growth the people of United States have positive affect on their living standards. Skinner (1988) used data of thirty-one countries of Africa for the periods 1965 to 1982. Differences in tax policies had affect on economic growth of these countries. Twenty per cent increase in import tax and personal tax led to 0.14 per cent and 0.41 per cent decline in output growth. On the other hand 20 per cent increase in cor-

porate tax led to decline in growth by 0.17 per cent, plus the indirect effect of -0.04. It was concluded that a balanced contribution of excise and sales taxes or consumption taxes could help to augment economic growth. Williams (2001) projected that tax flexibility and average tax buoyancy was 1.14 during the phase of 1976 to1990. It was also examined that indirect tax constituents, like stamp levies and utilization taxes were the main stimulators of the rate of tax buoyancy in the tax system of Barbados. Moreover, the whole tax elasticity was not aggregated into charges, direct taxes, stamp elasticity and duty's elasticity. It was accomplished that direct taxes had larger tax elasticity as compared to indirect taxes because there were less optional changes between 1976 and 1986.

Lea and Gordon (2005) visualized how the tax approaches affected the growth of a country by means of both the cross sectional and time series data for 1970-1997. Company tax rate was negatively associated with growth in a cross section fact of seventeen nations. Reducing the commercial tax by ten per cent could amplified the yearly growth rate by approximately 1.1 per cent. Paulson and Kaplan (2008) accomplished from the study that the top marginal tax rates had an injurious significant impact on growth in the region of USA, and larger regressivity had confirmatory affect on growth; and income tax too had an injurious impact on growth.

Dua, et al. (2000) accomplished that income tax had negative and significant effect on GDP. Export taxes had negative as well as significant effect. Income tax, government expenditures and overseas capital inflow had common impact in both the countries, while currency provisions, overseas funds, interest rates and monetary liberalization did not have common impacts in both the countries. Arisoy and Unlukaplan (2010) examined the effect of direct-indirect tax composition on economic growth. Indirect taxes were significantly positively correlated to economic growth. Finally, it was concluded that share of indirect taxes should be more than that of direct taxes, if there is a planning to augment the economic growth.

Mashkoar, et al. (2010) observed the relationship among tax revenues and the rapidity of economic growth by pertaining the ARDL technique from 1973 to 2008. The direct tax to GDP ratio significantly reasoned the real GDP growth which showed that high stage of direct taxes would augment the real economic growth. Further, coefficient of error correction term indicate low pace of convergence in the long run.

Thus, the literature review reveals that the present research work is an addition to the existing work to examine the impact of direct taxes on economic growth, in context to Pakistan's economy.

III. Data and Methodology

The annual time series data for 37 years (1974-2010) has been used in this study. It was obtained from the International Financial Statistics (IFS) of IMF and the Economic Surveys of Pakistan. Computer programs like Eviews and Micro fit were used

for models estimation and for diagnostic tests and graphs. Indirect taxes, physical capital, human capital and inflation rate are independent variables, other than taxes (as determinants of economic growth in the models). These variables were used as illuminating variables to elude the trouble of functional biasedness or to institute the model in proper functional form. All variables including dependent variable are in millions Pk. Rupees (except the growth rate) and are in natural log form. Variables of the series have been converted into log form in order to reduce the non-stationarity effects to compress the values, to bring the values into same scale and to interpret the variables in percentage form, in the model.

1. *Demonstration of the Variables*

a) *These are expressed as*:

i) *LnGDP (Gross Domestic Product)* is a dependent variable. The real GDP growth per capita is to bring it into play as a substitute (proxy) for economic growth. To convert the nominal GDP into real GDP, the nominal GDP was divided with CPI (consumer price index); and then the real GDP was divided on total population of Pakistan; to get real GDP per capita.

ii) *LnIDT (indirect taxes)* include general sales tax, customs duty and the excise duty, etc., but here indirect taxes have been taken collectively. The indirect taxes are divided into nominal GDP (at market price) to make them indirect to GDP ratio form. Indirect to GDP ratio form was converted into percentage form by multiplying by 100. After this, natural log of this variable was taken.

b) *Descriptions of variables, other than taxes (determinants of economic growth) are as*:

i) *LnPC (physical capital)* is a gross fixed capital formation (both private and governmental capital) which has been used as a proxy for physical capital. GFCF was divided by nominal GDP (at market price); as PC=GFCF/GDP. Gross fixed capital formation to GDP ratio form was converted into percentage form by multiplying by 100 and then it was converted into natural log form.

ii) *In LnHCF (human capital)*, primary school enrollment ratio was employed as a proxy for human capital. Number of primary school enrollment was divided by total employed labor force of Pakistan, like HCF=PSER/LF. Primary school enrollment to labor force ratio was converted into percentage form by multiplying by 100. After this, it was converted into natural log form.

iii) *INF rate* was simply an inflation rate of Pakistan.

2. *Methodology*

To determine relationship between the indirect taxes and economic growth, there was a need to apply reasonable model for empirical analysis. Most of the research work exercise the Johansen-Juselius (1992) and Engle and Granger (1987) co-integration techniques for checking the co-integration between variables in the long run. Johansen-Juselius technique is also applied in this study to test for cointegration. For doing so, all variables should be incorporated at same array.

Therefore, to solve this issue the ARDL technique [industrialized by Pesaran, et al. (2001)] can be employed to cointegration. This technique tests the cointegration association, devoid of considering the same order of integration of all variables which are either integration of 1(0), 1(1) or are mutually integrated. Before following the other step the modeling strategy follow the initial order of integration which is stationary to variables and is tautened by means of the Augmented Dickey-Fuller (ADF) test and the Philips Peron (PP) test.

- If the variables are integrated at (0) or (1) or the combination of both, the ARDL technique can be applied to analyze the long-run association, among variables.
- If the variables shows the cointegration association in the long-run, the next step is to apply the error correction mechanism (ECM) for analyzing the short-run dynamics of the variables.

3. *ARDL Modeling Approach*

Popularized by Pesaran and Pesaran (1997) and others, this technique has the subsequent econometric advantages as compared to further cointegration approaches.

a) The long run and short run parameters of the concerned model can be anticipated concurrently.

b) Testing the survival of long run association by this approach is easy without considering the concerned regressors which are stationary at 1(0) or 1(1) or the combination of both.

c) In case of small sample sizes the bounds testing technique of Pesaran, et al. (2001) is preferable.

The ARDL bound test is based on F-statistic which has a non-standard distribution. Thus, two critical values have been given by Pesaran, et al. (2001) for the cointegration test. The lower critical bound curves understand all variables which are I(0) and show that there is no cointegration among variables, while the upper bound assumed that all variables are I(1). There is cointegration amongst the variables. If the calculated F-statistics fall on top of higher limit (bound) the critical value of F-tabulated (later initiated by Pesaran) the null of no cointegration is dis-

carded and there will be existence of cointegration in the variables, in the long run. If it falls below the lesser limit (bound) the null is not discarded; and if it lies within the critical value bound, the outcomes would be inconclusive.

4. *Error Correction Mechanism*

If two variables are cointegrated in the long-run the error correction apparatus can be implemented to examine the short-run dynamics among variables. ECM reconcile the static long-run balance association of cointegrated time series by its vibrant short-run imbalance. When cointegration is found and inveterate, then as a second phase, the lag order of variables is chosen by means of Akaike information criteria or Schwarz Bayesian criteria. After the lag order is confirmed the long-run coefficients of the model is anticipated; and then the ECM is also be anticipated.

5. *Specification of the Model*

Null hypothesis of the study is that indirect taxes do not have negative relationship with economic growth. This hypothesis is anticipated by ARDL bounds testing technique to cointegration on the subsequent equation.

$$GDP = \beta_0 + \beta_1\,IDT + \beta_2 PC + \beta_3\,HCF + \beta_4\,INF + \varepsilon_t \qquad (1)$$

Equation (1) can be converted into Log form as:

$$LnGDP = \beta_0 + \beta_1\,LnIDT + \beta_2 LnPC + \beta_3\,LnHCF + \beta_4\,LnINF + \varepsilon_t \qquad (2)$$

It is a kind of Log. The Log model where physical capital, human capital and inflation rate are independent variables The null hypothesis for the above mentioned log form equation is formulated to Equation (3) which shows no long run relationship:

$$H_0 = \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0 \qquad (3)$$

The alternative hypothesis shows LR relationship, is as:

$$H_1 \neq \lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq 0 \qquad (4)$$

The null hypothesis of no long-run association amid indirect taxes and economic growth is tested by Equation (5):

$$DLnGDP_t = \beta_0 + \sum_{i=1}^{4} \beta_{1i} \, DLnGDP_{t-i} + \sum_{i=1}^{4} \beta_{2i} \, DLnIDT_{t-i} + \sum_{i=1}^{4} \beta_{3i} \, DLnPC_{t-i}$$
$$+ \sum_{i=1}^{4} \beta_{4i} \, DLnHCF_{t-i} + \sum_{i=1}^{4} \beta_{5i} \, DLnINF_{t-i} + \lambda_1 \, LnGDP_{t-1} + \lambda_2 \, LnIDT_{t-1}$$
$$+ \lambda_3 \, DLnPC_{t-1} + \lambda_4 \, LnHCF_{t-1} + \lambda_5 \, LnINF_{t-1} + \mu_t \tag{5}$$

6. *Variable Addition Test*

The following ECM model in ARDL formulation is used to guesstimate the short-run association amid economic growth, indirect taxes, physical capital, human capital and the inflation rate.

$$DLnGDP_t = \beta_0 + \sum_{i=1}^{4} \beta_{1i} \, DLnGDP_{t-i} + \sum_{i=1}^{4} \beta_{2i} \, DLnIDT_{t-i} + \sum_{i=1}^{4} \beta_{3i} \, DLnPC_{t-i}$$
$$+ \sum_{i=1}^{4} \beta_{4i} \, DLnHCF_{t-i} + \sum_{i=1}^{4} \beta_{5i} \, DLnINF_{t-i} + \alpha ECM_{t-i} + \mu_t \tag{6}$$

IV. Empirical Results and Discussion

The time series data have been used to estimate taxes and economic growth relationship. In this study, Table 2 shows results with intercept and trend while Table 3 shows results including intercept but no trend.

The estimated result of Table 4 depicts that variables of indirect taxes and physical capital are highly significant in the long run while variables of human capital and inflation rate are insignificant. Indirect taxes have negative relationship with economic growth while physical capital has positive link with economic growth. Due to one per cent change in indirect taxes, economic growth reduces by 1.68 per cent in the long-run. One percent change in physical capital is a reason of augmenting economic growth by 1.66 per cent. Coefficient value of human capital is 0.027 and t-ratio is 0.173. Variable of inflation rate has correct negative sign with coeffi-

TABLE 2

Outcomes of ADF and PP including Intercept and Trend

Variables	ADF Level	ADF Diff.	PP Level	PP Diff.	OI	Results
LnGDP	-2.183	-5.307*	-2.687	-6.692*	1(1)	Stationary
LnIDT	0.569	-4.198**	0.394	-6.293*	1(1)	Stationary
LnPC	-4.082**	-4.699	-3.517**	-3.770	1(0)	Stationary
LnHCF	-1.584	-4.246**	-1.550	-5.337*	1(1)	Stationary
LnINF	-2.808	-4.864*	-2.813	-6.571*	1(1)	Stationary

1% critical value	-4.2505	1% critical value	-4.2412*	
5% critical value	-3.5442	5% critical value	-3.5426**	
10% critical value	-3.2032***	10% critical value	-3.2032***	

cient value of -0.061 but it is insignificant. In long-run the inflation rate has no impact on economic growth. Coefficient of constant term is also highly significant with positive sign and coefficient value of 4.438 and t-ratio of 3.428.

Table 5 highlights the outcomes of Error Correction Model (ECM) based on Akaike Information Criterion. The coefficient of ECM is significant and has correct negative sign. The value of ECM coefficient is -0.457 with t-ratio of -3.221. The ECM coefficient shows the speed of adjustment and long-run association amid direct taxes and economic growth. ECM coefficient indicates that due to shock in the short-run 0.45 per cent adjustment would take place in long-run disequilibrium in a year.

In Table 6 the value of R^2 is 0.84 which shows that how well the OLS regression line fit the data or shows as to how much the explanatory variables explains the dependent variable - its value vary between zeros to one. The value of adjusted R^2 is

TABLE 3

Outcomes of ADF and PP including Intercept but no Trend

Variables	ADF Level	ADF Diff.	PP Level	PP Diff.	OI	Results
LnGDP	0.050	-5.188*	-1.942	-6.636*	1(1)	Stationary
LnIDT	-0.411	-4.020*	-0.591	-6.142*	1(1)	Stationary
LnPC	-4.222*	-4.749	-3.831*	-3.752	1(0)	Stationary
LnHCF	-0.922	-4.614*	-0.799	-5.280*	1(1)	Stationary
LnINF	-3.193**	-4.823	-3.130**	-6.329	1(0)	Stationary

1% critical value	-3.6353*	1% critical value	-3.6228*
5% critical value	-2.9499**	5% critical value	-2.9446**
10% critical value	-2.6133***	10% critical value	-2.6105***

TABLE 4

ARDL (3, 4, 4, 3, 2) Model Based on AIC

Regressors	Coefficients	Standard Errors	T-Ratios	Probability
LnIDT	-1.686*	0.163	-10.331	0.000
LnPC	1.660*	0.308	5.390	0.000
LnHCF	0.027	0.158	0.173	0.865
LnINF	-0.061	0.053	-1.161	0.268
C	4.438*	1.294	3.428	0.005

*Highlight one percent level of significance.
Note: Microfit 4.1 Student version was used by the authors for Estimations.

TABLE 5

Results of ARDL (3, 4, 4, 3, 2) Error Correction Model based on AIC

Regressors	Coefficients	Standard Errors	T-Ratios	Probability
dLnIDT	-0.024	0.115	-0.21	0.836
dLnPC	0.313*	0.092	3.385	0.004
dLnHCF	0.232***	0.118	1.961	0.067
dLnINF	0.005	0.023	0.252	0.804
dC	2.030*	0.476	4.259	0.001
ECM (-1)	-0.457*	0.142	-3.221	0.005

Note: *Highlight one per cent level of significance.

0.58 which is also called the corrected R^2. Standard error of regression guesstimates the standard deviation of error term μ_t. Value of F-statistics is 4.07 and is highly significant showing joint significance of the model. Durbin Watson (DW) statistics is a test to check autocorrelation between variables in the model; the ideal value of which should lay betweens 1.9 to 2.1 but here its value is 2.3.

1. Stability Test

Figure of CUSUM (Figure 2) shows that its plot remain inside the critical 5 per cent limit and CUSUMSQ (Figure 3) statistics do not surpass the critical borders. These graphs show the firmness of long-run coefficients and constancy of long-run association amid the indirect taxes and economic growth.

V. Conclusion and Policy Recommendations

The main aim of this research is to investigate the association in long-run and short-run, involving indirect taxes and economic growth, over the period 1974-201. Indirect taxes have negative and significant effect on economic growth in long-run. Due to one per cent increase in indirect taxes, economic growth would decrease by

TABLE 6

Results of ARDL (3, 4, 4, 3, 2) Error Correction Model based on AIC

R^2	0.84	$\overline{AdjR}^2$	0.58
S.E Reg	0.024	F-Statistics	4.07 (0.004)
RSS	0.006	AIC	71.82
D.W	2.390	SBC	56.11

Plot of Cumulative Sum of Recursive Residuals

Note: The straight lines represent critical bounds at 5% significance level.

FIGURE 2

CUSUM and CUSUMSQ

Plot of Cumulative Sum of Squares of Recursive Residuals

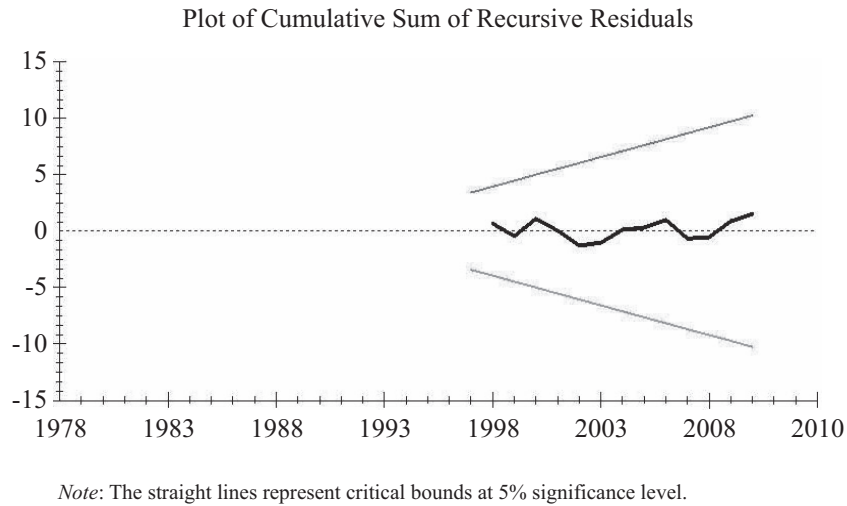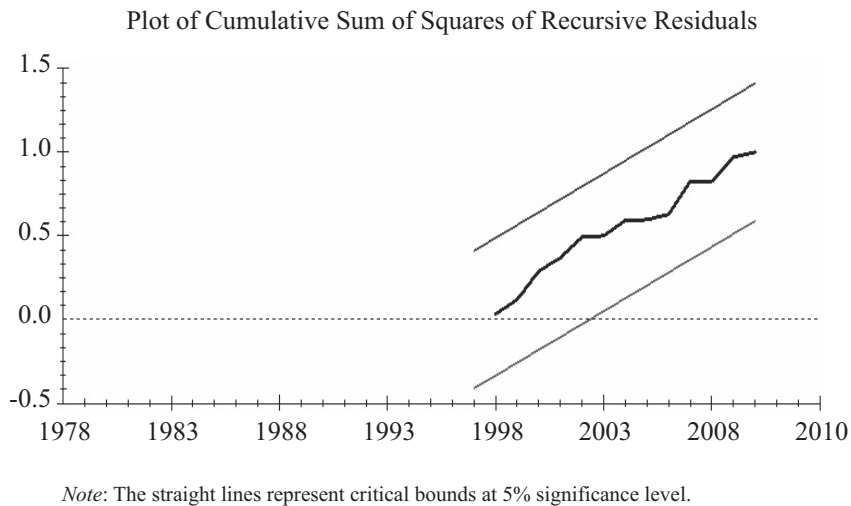*Note*: The straight lines represent critical bounds at 5% significance level.

FIGURE 3

CUSUM and CUSUMSQ

1.68 per cent, while it has insignificant result in the short-run. Value of short run coefficient is -0.024 per cent while the value of standard error and t-ratio are 0.115, -0.210, respectively. ECM coefficient of indirect taxes shows 45 per cent speed of adjustment in a year. According to the research results, it is imperative to decrease the indirect taxes, if in order to augment the economic growth. Currently, contribution of direct taxes out of the whole tax revenues is only 37 per cent and the share of indirect taxes is 63 per cent, while it should be reversed if economic growth has to increase. In spite of increasing the total tax revenue, economic growth is stagnant because of the utilization of taxes on non-development expenditures, instead of developmental programs.

The study suggests the following recommendations to improve the taxation system of Pakistan. Research results shows that indirect taxes have negative impact on economic growth, and the value of its coefficient is -1.68. Therefore, indirect taxes must be reduced in long-run to increase the economic growth. Our tax system should be according to the cannons of simplicity, equity, economy, benefit, certainty, convenience, elasticity, productivity, diversity, expediency and canons of co-ordination, etc, to get the objective of high economic growth through taxation reforms.

University of Sargodha, Sargodha and
University of Sargodha Sub-Campus, Bhakkar, Pakistan

Bibliography

Akmal, M.S., 2007, Stock returns and inflation: An ARDL econometric investigation utilizing Pakistani data, Pakistan Economic and social Review, 45(1): 89-105.

Alam, J., and Rogers, 2011, Do state fiscal policies affect state economic growth? Working paper.1107, Tulane University.

Avi-Yonah, R., and Y. Margalioth, 2007, Taxation in developing countries: Some recent support and challenges to the conventional view, Virginia Tax Review, 27(1): 1-32.

Arisoy, I., and I. Unlukaplan, 2010, Tax composition and growth in Turkey: An empirical analysis, International Research Journal of Finance and Economics, 59: 50-61.

Asterio, D., and S. Price, 2007, Applied Econometrics, A modern approach. 1st edition, Palgrave Macmillian.

Arnold, J., 2008, Do tax structure affect aggregate economic growth? Empirical Evidence from a panel of OECD countries. Working paper No.643, OECD Economics Department.

Bell, W.R., R. Miller, K.M. Wolter, and D.A. Dicky, 1986, Unit roots in time series models: Tests and implications, The American Statistician, 40: 12-26.

Brasoveanu, L.O., and I. Brasoveanu, 2008, The correlation between fiscal policy and economic growth, Theoretical and Applied Economics, 7(524): 19-26.

Dalamagas, B., 2003, The effect of tax rate changes on output and government deficits, Applied Economic Letters, 10: 97-101.

Dicky, D.A., and W.A. Fuller, 1981, Likelihood ratio statistics for autoregressive time series with a unit root, Econometricia, 49: 1057-1072.

Dua, P., R.A. Ismail, and S. Dominick, 2000, The impact of financial and fiscal variables on economic growth; The case of India and Korea, International Economic Journal, 14: 133-150.

Easterly, W., and S.T. Rebelo, 1993, Marginal income tax rates and economic growth in developing countries, European Economic Review, 37: 409-417.

Engen, E., and J. Skinner, 1996, Taxation and economic growth, National Tax Journal, 49:617-42.

Engle, R.F., and C.W.J. Granger, 1987, Cointegration and error correction representation estimation and testing, Econometrica, 55: 251-276.

Granger, C.W.J., 1969, Investigating causal relations by econometrics models and cross-spectral methods, Econometricia, 37: 424-438.

Granger, C.W.J., and P. Newbold, 1974, Spurious regression in econometrics, Journal of Econometrics, 2(2): 111-120.

Government of Pakistan, various Issues, Economic survey of Pakistan, Ministry of finance, Pakistan.

Gujrati, D.N., 2004, Basic econometrics, 4th edition, The McGraw-Hill, India.

Granger, C.W.J., 1981, Some properties of time series data and their use in econometric model specification, Journal of Econometrics, 16: 121-130.

Hakim, T.A., and I. Bujang, 2011, The impact and the consequences of tax revenues components on economic indicators: Evidence from panel group data, International Research Journal of Finance and Economics, 63: 82-95.

Hall, A., 1994, Testing for a unit root in time series pretest data based model selection, Journal of Business Statistics, 12: 461-470.

Hasan, A., and Z.M. Nasir, 2008, Macroeconomic factors and equity prices: An empirical investigation by using ARDL approach, The Pakistan Development Review, 47: 501-513.

Holcombe, R.G., and D.J. Lacombe, 2004, The effect of state income taxation on per capita income growth, Public Finance Review, 32: 292-312.

Husain, I., 1999, Pakistan the economy of an elitist state, 2nd edition, Oxford University Press, Pakistan, : 135-144.

Iqbal, Z., and G.M. Zahid, 1998, Macroeconomic determinants of economic growth in Pakistan, The Pakistan Development Review, 37(2): 125-148.

Johansen, S., and K. Juselius, 1992, Testing structural hypotheses in a multivariate cointegration analysis at the purchasing power parity and the uncovered interest parity for the UK, Journal of Econometrics, 53:211-244.

Johanson, S., and J. Katarina, 1990, Maximum likelihood estimation and inference on cointegration with application to the demand for money, Oxford Bulletin of Economics and Statistics, 52(2): 169-210.

Johanson, A., C. Heady, J. Arnolds, B. Brys and L. Vertica, 2008, Taxation and economic growth, Working paper 620, OECD Economics Department.

Keho, Y., 2011, Tax structure and economic growth in Cote d'ivoire: Are some taxes better than others? Asian Economic and Financial Review, 1(4): 226-235.

Koch, S.F., N.J. Schoeman, and J.J.V. Tonder, 2005, Economic growth and the structure of taxes in South Africa: 1960-2002, South African Journal of Economics, 73(2): 190-210.

Lea, Y., and R.H. Gordon, 2005, Tax structure and economic growth, Journal of Public Economics, 89: 1027-1043.

M.C.K., L. Arokiasamy and C.L.A. Suat, 2010, Indirect taxation: Awareness and impact on undergraduates, International Research Journal of Finance and Economics, 41: 43-50.

Mehdi, S., and R. Motiee, 2011, Workforce as an important factor in Iran's economic development, Journal of Education and Vocational Research, 1(2): 60-66.

Mutascu, M.I., and D.C. Danuletiu, 2011, Taxes and economic growth in Romania. A VAR approach, Annuals Universitatis Apulensis Series Oeconomica, 1(13): 94-105.

Mashkoor, M., S. Yahya and S.A. Ali, 2010, Tax revenue and economic growth: An empirical analysis for Pakistan, World Applied Science Journal, 10(11): 1283-1289.

Owolabi, S.A., and A.T. Okwu, 2011, Empirical evaluation of contribution of value added tax to development of Lagos state economy, Middle Eastern Finance and Economics, 9: 24-34.

Odusola, A., 2003, Internally generated revenue at the local government: issues and challenges, Paper presented at the workshop on 'revenue generations at the state level in Ibadan University.

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

Pasha, A.G., 2010, Can Pakistan get out of the low tax-to-GDP trap? The Lahore Journal of Economics,15: 171-185.

Philips, P.C.B., and P. Perron, 1988, Testing for a unit root in time series regressions, Biometrika, 75(2): 335-346.

Pesaran, M.H., and B. Pesaran, 1997, Working with Microsoft 4.0: An interactive approach, Oxford: Oxford University Press.

Pesaran, M.H., Y. Shin, and Smith, R.J., 2001, Bounds testing approaches to the analysis of level relationships, Journal of Applied Econometrics, 16: 289-326.

Poulson, B.W., and J.G. Kaplan, 2008, State income taxes and economic growth, Cato Journal, 28(1): 53-71.

Romer, P.M., 1986, Increasing returns and long run growth, The Journal of Political Economy, 94(5): 1002-1037.

Refaqat, S., 2003, Social incidence of the general sales tax in Pakistan, Working Paper 03/216, IMF.

Seligman, Edwin R.A., 1893, The theory of progressive taxation, Political Science Quarterly, 8: 220-223.

Skinner, J., 1988, Taxation and output growth in Africa, Working Paper 73, The World Bank.

Solow, R.M., 1956, A contribution to the theory of economic growth, The Quarterly Journal of Economics, 70(1): 65-95.

State Bank of Pakistan, 2010, Hand book of statistics on Pakistan Economy 2010.

Stock, J.H., and M.W. Watson, 2010, Introduction to Econometrics, 3rd edition, Prentice Hall.

Taha, R., Nanthakumar Loganathan and S.R.N. Colombage, 2011,The effect of economic growth on taxation revenue: The case of a newly industrialized country, International Review of Business Research Papers, 7(1): 319-329.

Williams, M.V., 2001, Managing public finance in a small developing economy: The case of Barbados, London: Greenwood Publishing Group.