TAX REVENUE DETERMINENTS OF PAKISTAN

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Abstract

The world is rapidly transforming into global village and trade liberalization has gained exceptional attention from various developed as well as developing. Pakistan has been facing continuous fiscal deficit problem on an average of 5.2 percent of the GDP. Pakistan has adopted a number of tax reforms and administrative measures to improve tax collections. The policy option of trade liberalization causes the problem of a reduction in the revenue collection from customs duty. Reduction of trade tax revenue due to trade liberalizing is a common problem in both the developing and developed countries. Thee research focused on the fiscal costs of trade liberalization, which Pakistan has had to endure. The study tried to estimate the determinants of the tax yield in Pakistan, to improve the tax capacity of Federal Board of Revenue. The fiscal policy maker facing issue to raise the tax revenue to compensate the loss of trade tax revenue due to trade liberalization. In this case study we tried to highlight the determinants of tax revenue of Pakistan and estimates made for the period of 1995-2015 through VAR model. The Wald coefficient test (F-test) which showed the existence of a strong co-integration between tax revenue and all the other independent variables. The long-run coefficients of these variables showed that effective tariff rates, agriculture to GDP ratios, and capital openness have shown significant and positive impacts on the tax revenue of Pakistan during the period under consideration. It is suggested that supportive macroeconomic policies and conducive environment facilitate trade policies in Pakistan as tax revenue determinants are identified for successful implementation of trade liberalization policies in the economy of Pakistan.

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1. Introduction

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Optimistic economists favor international trade and consider it part and parcel of economic growth and development. In this era of globalization, developing countries are facing new fiscal revenues challenges and they are forced to change their traditional revenue collections methods under the headship of WTO, IMF and World Bank. The relationship between tax revenue and trade liberalization is considered to be an indirect outcome derived mainly from the response of consumption and production decisions to the price changes, occasioned by trade policy changes.

Throughout economic history, Pakistan has been facing tough fiscal challenges because of inefficient tax system, ineffective expenditures planning and utilization of resources inefficiently. Fiscal deficit of Pakistan reaches to 5 percent of GDP during 2014-15 which delays effective tax reforms implementations. In order to get its existing modern shape of indirect and direct taxes, the domestic tax structure of Pakistan has gone through different reforms. The Federal Board of Revenue (FBR) is planning for an efficient and a comprehensive policy for modernizing and re-structuring the whole custom operations and tax administrations of Pakistan.

In this policy, it becomes necessary to examine the present enactment of the tax system and to seek ways to reform it, with the objectives of generating adequate revenues, enhancing efficiency and equity. Like other developing countries, Pakistan also lacks effective tax structures. It needs to implement and establish efficient and effective tax structures. Moreover, Pakistan still faces significant a number of issues in the establishment of its domestic policy on the taxes because of globalization and other national and international motives. The last three decades have shown a considerable change towards open trade regimes, as a part of the policy which is based on the lending programs of the World Bank and the World Trade Organization (WTO) rules of Jones (2011). In this changing world the international scenario of globalization Pakistan needs policy options to improve the tax revenue. In this study we try to formulize some revenue determinants for the economy of Pakistan. In the 2nd part the study after literature review, we developed a model for revenue determinants of Pakistan and after calculation of strength of each determinant we put some suggestion for the policy makers.

2. Literature Review

Generally, in literature the best proxy of the trade reform policy and trade liberalization has remained a topic of discussion among the economists and the policymakers. There is a large number of studies available in the existing literature, which suggest that numbers of tax revenue determinants for policy options. Ramzan S. (2016) studied the experiences of developing nations for the time period 1975-2010 and showed exchange rates, GDP, population, and urbanization are the significant determinants of the trade taxes and consider trade tax as major source of revenue for these countries. These countries faced fiscal imbalances during the process of trade liberalisation. Therefore, they opted other domestic tax options to recover its loss of revenue. Castro,G.Á. (2014) study the OECD countries and showed that gross domestic product per capita, the industrial sector, and civil liberties have positive impact on the tax revenue while the agricultural sector and the share of foreign direct investment in gross fixed capital formation have negative impact. Tax efforts and tax gap are stable over time but diverse across countries regardless the level of development of the economies, K. (2013) during the case study of Turkey, eestimation results reveal that tax revenues in Turkey significantly affected by agricultural and industrial sector share in GDP, foreign debt stock, monetization rate of the economy and urbanization rate whereas the sign of the agricultural sector's share is negative as expected. The results suggest that openness to foreign trade has no significant impact on tax revenues in Turkey. Bazzoni (1994), investigated the relationship between the fiscal performance and movements in the exchange rates, the terms of trade, and other macroeconomic aggregates in the 28 sub-Saharan African countries during 1980-91. It was found that the tax bases, in most of these countries were heavily dependent on the imports and import substitutes. Consequently, an overvaluation of exchange rates in the countries can result in a widening of the fiscal deficit. The countries with a variable exchange rate strategy failed to attain price stability but were able to enhance their fiscal balance, competitiveness, and growth. Pelzman (2004), shared the policies that were chosen by the Jamaican and the Moroccan economies. These economies deteriorated their hidden border taxes and converted them into customs duties. The study concluded that while implementing any trade liberalization reforms, a federal government must ensure its sound fiscal background as the immediate impact of trade liberalization occurs in the form of revenue losses. It is a policy guideline for other economies to change their tax policy reforms, in-order to overcome the fiscal deficit problem which arises after the adoption of trade liberalization policies depending upon the economic structure and tax determinants, of the respective country.

In the recent Annual Report of State Bank of Pakistan (2016-17), it was reported that the tax-to-GDP ratio of Pakistan fell to 12.5 percent in the financial year 2017. During the last few decades, the tax and the administrative reforms implementation have led to a growth of the tax collection, which has remained consistently higher than the growth of the nominal GDP. Despite the improvements, the tax to GDP ratio of Pakistan still remains one of the lowest in the region of South Asia. Similarly, regardless of the recent progress, the revenues of Pakistan remain significantly low as compared to the other developing countries. As well as the tax efforts expected for the country's level of development, remain minimal too. This reflects the narrow tax bases, overgenerous tax concessions and exemptions, weak and fragmented revenue administration, and the structural feature of the economy (IMF, 2016).

Pakistan has been facing continuous fiscal deficit problem on an average of 5.2 percent of the GDP, average 9.2 percent of the tax-to-GDP ratio from the early 2000's, and 30 percent as compared to developed economies (Nawaz, 2007). The existing fiscal imbalance in Pakistan causes lower domestic savings and investments, lower tax GDP ratio, and impeding growth performance. Some case studies of Pakistan to discuss the problem of tax collections in Pakistan and try to highlight some determinants in different time periods and use different methodologies this regards. In this regards Mahmood (2009), mentions that the performance of the economy of Pakistan was quite good till the 1980's. Although, the economic structure of Pakistan is shifting towards trade liberalization but that shift is too below the standard patterns. Pakistan's economy is working under high fiscal deficits, high unemployment, high aggregate demand, unstable GDP growth, high poverty rate, and external sector imbalances. Because of this fact, it is important to determine the tax determinants of the tax structure of the economy of Pakistan. Zaman (2012), has empirically investigated the determinants of trade and the aggregate tax revenues of Pakistan for the period 1975 to 2010. Moreover, it showed that the GDP, population growth, trade openness, and urbanization significantly affect the total taxes. Exchange rates, GDP, population, and urbanization are the significant determinants of the trade taxes. Jaffri (2015), analyzes the empirical association between the domestic tax revenues and trade liberalization, in the case of Pakistan from 1982-2013. He argued that sound and stable trade policy, along with a favorable environment will promote the import of the raw materials, capital, and intermediate goods. These goods will enhance trade in the country, which in return would lead to the enhancement of tax collection in Pakistan. The study suggested to reduce trade restrictions, in-order to maximize revenue returns. Martinez (2007), retreated in his study that Pakistan has had adopted short-run substitute measures for enhancing tax revenues and lesser consideration was made for the long-term structural reforms. Besides the problems with the economic distortions and horizontal inequities, the main problem of Pakistan's tax system is the lack of the revenue adequacy. Caliari (2008), examines the relationship between the domestic investment policies and the trade policies. The study mentions that the relationship between export-led-growth and fiscal policies is uncertain. It reveals that there is hope for the restructure of an economic model, which would be efficient and consistent according to the situations of the emerging nations. Similarly, Sumera (2012), studied that during 1975-2010, in Pakistan exchange rate and population were negatively related to tax revenue, while trade openness, trade share and GDP showed positive relation with tax revenue. Urbanization also showed significant and positive result in relation to tax revenue, Mahmood, H. &.Chudhaary (2013)Impact of FDI on tax revenue in Pakistan Foreign direct investment and gross domestic product per person employed have positive and significant impact on tax revenue. So, the study concludes the positive contribution of foreign direct investment in tax revenue in Pakistan during 1975-2010. Kalim (2013), claimed the total debt servicing, trade volume, and the time trends have had a significantly positive relationship with the fiscal deficit in case of Pakistan. Following the literature review, this part of study tries to analyze the tax policy for 1995 -2015 in Pakistan and used the Ratio of tax collections to GDP, as tax revenue a dependent variable. In this regards this study try to suggest tax revenue determinant to enhance the total tax revenues, under the scenario of trade liberalization. So, that Pakistan would be able to control the problem of fiscal deficit, in the coming years. This study has also tried to explore the other options for Pakistan, which may be adopted for revenue collections instead of reduction/controlling of trade liberalization.

3. Methodology and Data

In this study we have used a simple specification which is used by many studies in literature. The independent variables such as tax ratio to GDP, which proxies a generally, greater capability tax collections, the percentage of imports plus exports to GDP as a positive of favorable tax collections, the percentage share of agricultural sector in GDP as a negative or unfavorable tax collection, capital openness and effective tax rate share chosen as tax determinants for Pakistan economy. In previous literature these factors contribute significantly in determine tax structure of a nation. The lack of data prevents us from including other potentially important control variables, such like the status of service sector, population growth, growth of industrial sector, the mineral and extraction sector in the economy. The data used for the estimation is taken from the Federal Board of Revenue, International Monetary Fund (IMF)

Statistics Yearbook by Government Finance Division and World Development Indicators by World Bank.

This study investigated the factor, sectors of Pakistan economy as determinant of tax revenue. In this regards Ratio of tax revenue to GDP considered as dependent variable followed by effective rate, Agriculture to GDP ratio and capital openness has significant and positive effect on Tax to GDP ratio whereas trade openness and Per Capita income as dependent variables for the time series of 1995-2015.

Initially, a stationarity test has been performed and found series integrated in different orders combination of I(0) and I(1) series. After the appropriate lags determined for the model, stationarities, cointegration amongst the variables and applied both long run and short run tests at level and found mixed order integration i.e I(0) and I(1). In this situation traditional methods such as Engel Granger and Johansen Cointegration are not applicable which require the same order of integration. Pesaran (2001) developed an approach for examining the relationship between dependent and independent variables when selected variables have mix order of integration, *i.e.* I (1) and I (0) data. However, there are some prerequisites of this methodology such as dependent variable must be I (1) and none of variable is I (2). Thus, suitable technique is Bound Testing Procedure or Autoregressive Distributed Lag (ARDL) approach to cointegration because the key assumptions of ARDL model are fulfilled here.

Table1:ARDL Bounds Test

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	6.4675	6

Table2: Cointegrating Form

Variable	Coefficient	t-Statistic	Prob.
D(CAP_OP____)	0.0058	3.8601	0.0008
D(EFF_RATE)	0.0522	5.4800	0.0000
D(PCI__000_)	-0.0001	-0.0406	0.9680
D(AG)	0.0736	0.9930	0.3315
D(XM)	-0.0230	-0.4458	0.6600

Cointeq = T - (0.0089*CAP_OP____ + 0.0806*EFF_RATE -0.0002 *PCI__000_ + 0.1136*AG -0.0355*XM + 6.5761)

Table3: Long Run Coefficients

Variable	Coefficient	t-Statistic	Prob.
CAP_OP____	0.0089	3.120583	0.0050
EFF_RATE	0.0806	6.308678	0.0000
PCI__000_	-0.0002	-0.040688	0.9679
AG	0.1135	1.051594	0.3044
XM	-0.0355	-0.425512	0.6746
C	6.5761	1.847970	0.0781

We developed ARDL model among the variables of Tax revenue to DGP ratio (T), Effective tariff rate (Er), Trade Openness (Xm), Agriculture to GDP ratio (Ag), Capital openness to GDP ratio (Ct), and Per Capita income (Y). Initially, a stationarity test has been performed and found series integrated in different orders combination of I(0) and I(1) series. After the appropriate lags determined for the model, stationarities, cointegration amongst the variables and applied both long run and short run tests at level and found mixed order integration i.e I(0) and I(1). It is also called Bound Test.

$$T = a + bY + c\ Xm + d\ Ag + f\ Ct + Er + e \qquad (1)$$

The model (1) has been estimated as

$$T = 6.58 - 0.0002\ Y - 0.04\ Xm + 0.12\ Ag - 0.01\ Ct + 0.08\ Er \qquad (2)$$

Now we go to check whether these variables having long run association. For this go for ARDL Bound Test and apply Wald statistics. The calculated F-statistic for model tax to GDP ratio (T) is 6.467549 and we compared it Pasaran critical value at 5 percent level of significance as our model is unrestricted and having no trend. In the Pesaran table the low bound critical value at 5 percent level is 5.17 and upper bound value comes to 6.36. As per guide line our F-statistics is greater than the upper bound value therefore we reject our hypothesis and concluded that all variable in the model having long run association ship. As the series of dependent and independent variables are cointegrated which exbits a long-run relation between variables. It implies the series are related and can be conmined in a linear fashion. That is , even if there are shocks in the short run, which may affect movement in the individual series, they wuld converge with time (in the long run). Hence, it estimate both long-run and short-run models. Therefore appropriate estimation techniques are autoregressive distributed lag (ARDL) . Appropriate conintegration test is the Bouns test proposed by Persaran, Shin and Smith (2001).

Table4: ARDL MODEL

Variable	Coefficient	t-Statistic	Prob.*
T(-1)	0.3512	2.6490	0.0147
CAP_OP____	0.0058	3.8601	0.0008
EFF_RATE	0.0523	5.4800	0.0000
PCI__000_	-0.00012	-0.0405	0.9680
AG	0.0737	0.9930	0.3315
XM	-0.0230	-0.4458	0.6600
C	4.2666	1.9838	0.0599
R-squared	0.9300		
Adjusted R-squared	0.9109		
S.E. of regression	0.4362		
Sum squared resid	4.1871		
Log likelihood	-13.087		
F-statistic	48.741		
Prob(F-statistic)	0.0000		

The above results of the long-run coefficients of ARDL model showed that effective rate, Agriculture to GDP ratio and capital openness has significant and positive effect on Tax to GDP ratio whereas trade openness and Per Capita income have shown negative but significant effect. These finding are not consistent with earlier findings of other studies (Gupta, 2007 and Dioda, 2012). Agriculture sector share in total GDP has positive effect on Tax to GDP ratio during the period of study. Implications of this evidence are that in Pakistan taxes are not levied on agriculture sector production. It is difficult to levy tax due to its informal and subsistence nature of economy. Agriculture sector share in GDP is 20% and in employment is 45% but its contribution in tax revenue is not more than 2.5% this exemption from tax is adversely affecting the economy. Previous studies have also pointed out that agriculture share negatively affect tax revenue (Immurana, 2013, Karagöz, 2013, Basirat, 2014). Per capita income has insignificant effect on tax revenue in long-run in Pakistan. These findings are not consistent with earlier evidence. In practice Pakistan's income taxation policy is regressive where the income and average tax rate have inverse relationship as income increases the tax rate on taxable amount decrease. The coefficient of openness variable is negative and significant. The sign of coefficient is same in both long-run and short run.

Pakistan still faces a number of issues in framing policy related to domestic tax structure because of globalization and other national and international factors. Pakistan is facing fiscal challenges because it expenditures heavily depend on tariff taxes. As a developing nation, Pakistan tries to solve it issues related domestic taxation structure for gaining the real benefits of trade liberalization. In developing countries globalization and dominant domestic issues provide space and guidance for the tax system convergence. These issues decrease the new policy choices for taxation available to Pakistan.

Pakistan, like many other countries involved in customs tariff reforms; they have experienced significant difficulties in recovering revenue losses from tariff taxes with domestic taxes. There has been an inability of the tax system to adjust the deviations in economic structure i. e. the most significant in the area of services. Other contributing factors within the structure of the economy include: (i) agriculture sector cover a large portion of economic activities which are mostly exempted from all important taxes; (ii) unskilled labor are covering most part of total labor force with wage levels that are exempted from income tax; (iii) weak accounting standards and low educational attainment / high illiteracy rates. There is needed to adopt long-term strategy to hit real goal of the tax policy and follow the objective like such as simplicity, reduced economic distortions in the allocation of resources or distributional considerations.

The main issue with the domestic tax policy formulation process in Pakistan that in reality it is not working well at all; current practices are not according to international standards. It is common practice in Pakistan that considerable attention is paid to potential revenue in every year budget time, little attention is being given at FBR and the Ministry of Finance to the need for deeper admired comprehensive reforms of the tax system. There are several reasons contributing to this state of affairs but the most important single reason is the lack of focus by the government on the importance of tax policy within the portfolio of federal government policies. One problem is that the roles played by the FBR and other areas of the Ministry of Finance in tax policy formulation are at present time not comprehensively defined. Although the current structure of the FBR provides for several offices that can play a role in tax policy formulation but it appears that the rest of the Ministry of Finance has inhibited itself from any active role in this process.

The most visible role of the Ministry of Finance is to set annual revenue collection quotas for FBR. But the major problem in this concern is that tax policy formulation lies within the office of the Support Member for Tax Policy and Reforms to a lesser extent with the offices of the Support Member for Legal and the Functional Members of Fiscal Research and Statistics.

4. Conclusion and Suggestions

The quality and scope of tax structure depends on available work force, if experienced and trained staff is provided to FBR it will provide required results. They can handle fiscal analyses ranging from revenue forecasts and micro-simulations based on real taxpayer return, they use data to answer the questions about not only the potential revenue impact of different measures but also their distributional impact and potential effects on the efficiency of economic system. For example, some of the preliminary evaluations Pakistan's tax system has conducted by the report involving final tax incidence and marginal effective rates of taxation should be routine practice within the FBR. The job being currently done by the Fiscal Research and Statistics" unit at FBR is of high quality and quite commendable especially given the extreme scarcity of resources available. The main problem with this system, it lies not in which analysis is being done but on what else needs to be done. This scarcity of fiscal analysis capabilities is aggravated by the fact that the Ministry of Finance does not appear to have the capability to conduct any fiscal analysis separately or in addition to that conducted by the FBR. "As just discussed above, a main weakness of government's tax policy practice has been its inability to withstand the pressures of different interest groups, which demand number of concessions and eventually distortions in the tax system. In short, the inadequate technical capacity within the government has been another major reason for the lack of appropriate tax policy.

Both institutions, the FBR and Ministry of Finance should seek to develop formal projects to set up considerably strengthened fiscal analysis units. There is also sizable underground economy and informal sector, Kemal (2002) has estimated the underground economy to be at 35-40 percent of GDP. The level of tax evasion appears to be really high. This is related to the sizable underground economy but tax evasion is also present in the formal economy. The study also estimates that tax evasion arising from the underground economy may be as high as 7 percent of GDP. Hints of significant tax evasion in the formal economy also abound. Keen (1999) proposes on the basis of information from a labor force survey that urban wage earners could exceed by a factor of three those that are registered to pay personal income taxes. The high levels of tax evasion tend to reflect the low tax morale of taxpayers (their willingness to contribute voluntarily to tax revenues). The tax compliance and tax morale literature has shown that poor governance institutions, high levels of perceived corruption and inefficient public sector with poor public service delivery are all major contributing factors to tax evasion. Pakistan continues to score poorly in most of those factors. It also noted that, tax policy itself has contributed to lackluster collections by defining very narrow tax bases especially for the major taxes (income and GST).

In the presence of imperfect information about market opportunities and prices, the firms and workers may be unable to understand benefits attached with trade liberalization. Empirics reveal that failure of trade liberalization is mostly attached with inconsistent and inefficient macroeconomic policies. Following the trade policy options: most of economists and policy makers favor for gradual liberalization. The gradual liberalization of trade has some political as well as economic reasons. If the existing trade reforms are not provided reasonable adjustments, then it is most likely that trade liberalization would not take place. Trade liberalization in immediate response has some gradual adjustment steps. If the partners of international trade agreements want to increase the credibility of trade liberalization they must announce different trade reforms with the passage of time. FBR brings frequent changes in tax structure of Pakistan; so that simplicity and certainty can be brought in the existing tax structure. If complications are introduced in tax system that will create difficulty for practitioners and taxpayers and less amount of tax revenue would be collected. So it is suggested that for reducing the taxation cost for welfare, government tries to make its most of expenditure with the help of tax while shocks in expenditures must be referred to public debt instead of deficit financing. The debt by the government must be incurred in the time of emergency and must be paid back at the end of emergency. So if the government of Pakistan should apply these reforms then most of fiscal problems of Pakistan can be resolved without further ignoring trade liberalization.

The experience of trade liberalization in Pakistan has increased overall welfare and quantum of trade and consumer surplus as well. Trade diversion in the economy has improved the trade balances in international level. Trade liberalization policies along with improved macroeconomic policies will contribute positively in tax reform policies of the economy. During 1950-2015 in Pakistan, there are 11 episodes of reductions of tariffs have been identified. There is tax friendly atmosphere and sufficient tax capacity in Pakistan which can help fiscal and monetary policies to recover the loss of revenue due to trade liberalization within 2 years and long run losses need only 10 years to recover.

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