The Dynamic Effects of Tax Policy Shocks on the Performance of Banking Sector in Pakistan

Hamad Manzoor[*], Abdul Jalil[†]

Abstract

This study is an attempt to empirically investigate the transmission of taxes towards the performance of banks in Pakistan. For this purpose, 23 banks are selected over the period of 2007-2020. The selection of variables and models is based on economic theory whereas estimation of the models is done through Panel Vector Auto-Regressive (PVAR) estimation methodology. Under this methodology, the causal relationship between tax rate (policy variable) and return on assets (performance of banks) is analysed through the Granger causality test which reveals that fiscal policy instrument (tax) causes performance of banks. After that, analysis of Impulse Response Functions (IRFs) is carried, which depicts the patterns of responses for banks' specific variables to shock in tax rate are remarkable and noteworthy. It implies that innovation in tax affects the structure and conduct quicker as compared to performance. This behaviour of banks implies that tax policy is being transmitted effectively in Pakistan.

Keywords: Tax rate, Return on Assets, Banks, Panel VAR

JEL Classification: C33, H2, G21

Introduction

It is evident that sound and stable financial sector ensures progressive economy with increased living standard of public. Over the past few decades, financial industry has progressed with not bound and faced some downfall in form different crises (Asian financial crisis, Global financial Crisis 2007-9). The financial burden of taxes is intertwined with the flows of fund in financial industry. On the one hand, tax is major source of government revenue; while it influences the decision making of every segment of society i.e., consumers, producers as well as those providing the services of financial intermediaries. Along with this, the structure and conduct of financial sector (mainly banking sector) are core elements for determination of performance and profitability of banks. Whenever there are changes in tax policy, it brings about reforms in the structure and conduct of banking sector to enhance/maximize their profit.

The impact of tax is vastly researched for non-financial firm and a very few studies have covered the taxation impact for financial industry. The optimistic views for impact of taxes on banking sector include that it is significant to bring stability of financial sector via avoiding the risk element (Freixas and Rochet, 2013). Other than this, the banking sector can play vital role in case if financing the public expenditure based on higher taxes (Claessens, Keen & Pazarbasioglu, 2010). The pessimist views of tax influence on banking sector are it would affect banks in two ways; first, the loan issued by banks are reduced as the economic activity is adversely affected by taxes. Second, the interest rate offered by banks for provision of loan is increased in response of this taxes levied. In both ways, the overall performance of banking sector is halted.

The banking sectors adjust their structure and conduct as they are revealed to a tax increase, hence the performance indicators are also affected (Schandlbauer, 2017). The banks usually transfer the burden of these additional taxes on their consumer (in form of higher charges for off-balance sheet activities) and on their borrower (in form of higher interest rate), hence most of the tax incidence is passed on to the next party (Demirgüç-Kunt and Huizinga (1999 and 2001), Caminal (2003) and Albertazzi and Gambacorta (2010), Buch, Hilberg and Tonzer (2016), Capelle-Blancard and Havrylchyk (2017)).

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The purpose of this study is to check the causality of tax on the performance of banking sector. Along with this, it is also investigated that how banks will respond in changes of tax policy and finally how the performance of banks is determined as response of shock for futuristic point of view.

Literature Review

The theoretical literature on taxes and financial sector is indecisive. Some argue tax must be levied on final consumption, and not on the intermediate transaction as services provided by financial sector. Consumers of financial services should be charged with low taxes and investors /borrowers from banks should be exempted (Boadway and Keen (2003)). The optimal tax policy should exempt capital and capital related items (Chamley, 1986). Similarly, bank profit must be free from taxes (Huizinga, 2004).

Hanson and Rocha (1986) investigated the role of taxes on bank interest spread. The higher taxes add in the interest rate as compared to lower tax and hence influence cost and profit of banks. Kogler (1996) investigated the effect of tax on bank of European Union. Due to higher taxes, the net interest income of banks is increased. This income gain is associated with higher interest charged in response of taxes. Bemirguc-Kunt and Huizinga (1999) found shifting of tax burden from banks to consumers in developed and developing country. Albertazzi and Gambacorta (2010) found that corporate income tax is not bound only to banking sector, rather it influences both the financial as well as non – financial sector.

The demand of bank loans from non – financial industry is altered due to tax policy. In context of banks, slight changes in taxes reduces banks' profitability as there are other determinants of performance of banks in shape of competition and cost structure. So, the banks adjust their operating cost to maintain certain level of profit along with higher tax rate. Buch et al. (2016) examined the tax impact on banking system for Germany. They found that taxes have influenced the composition and size of banks' balance sheets. Banks face the lower growth of loans and charge higher interest rate because of levying taxes.

Capelle-Blancard and Havrylchyk (2017) examined the impact of the tax on Hungarian banking sector and found that bank tax is fully passed on to interest rate and higher incidence is observed fir consumers as compared to producers. The return on assets (ROA) are not influenced by tax changes as the increased interest rates on loans entirely reimburses for cost of tax to banks. Banerji et al. (2017), who have investigated the impact of tax on profits of Japanese banks. They learned that bank have increased net interest income and decreased the loans in response of taxes. Haskamp (2018) found that taxed banks have increased the interest rates on their loans.

Fagbemi, Olaniyi and Ognudipe (2019) found negative significant impact of tax on the financial performance of banks in Nigeria. Nengzih (2019) emphasized on the avoidance of tax on avoidance of earning management for Indonesian banking sector and found no significance relation between these two. There is found positive nexus between tax and price volatility of stocks in baking sector of US (Tasnai, Al-Habshi & Rosman, 2020). Schwab, Stomberg and William (2021) investigated tax effectiveness for different sector in US and state that banking sector is relative more responsive towards taxes as compared to other industries.

There are very few studies being done in Pakistan on with reference to banking sector and none in context of bank responses towards taxes, although it is an influential sector of the economy. This study will bridge gap in literature, helps policy makers in banking sector and authorities for devising tax policy of Pakistan.

Banking Sector Reforms in Pakistan

Many developed and developing countries have undertaken extensive financial reforms over the past three to four decades[‡]. The prime focus of these reforms was to create a healthy competitive financial

[‡] The Financial and Sector Assessment Program (FSAP), introduced by International Monetary Fund (IMF) and World Bank (WB), is to identify the strengths and weaknesses of the financial system to prevent or minimize the likelihood of financial crisis, if there is any. The goal of FSAP is to help countries to enhance the resilience to crisis and foster economic growth by promoting financial stability and diversification.

market that will stimulate economic growth. Like other developing countries, Pakistan had also implemented a sequence of financial reforms in generally and banking reforms in specifically since late 1980s.

The financial sector reforms include liberalization of interest rate, opened capital account, creating opportunities for offshore finance and portfolio diversification. The privatization of public sector enterprises changed the nature of bank clients and privatization of public sector banks changed the banks operated. Due to different measures of reforms in financial sector, Pakistan has experienced a considerable change in its structure and performance over the last two and half decade. The enhanced competition in Pakistan's banking sector resulted in production diversification, improved financial services and growth of equity and debt market and mobilization of savings.

In general, it is believed that financial sector liberalization is necessary to achieve allocative efficiency. There are various sources through which financial reforms could lead to improvement performance. The most important is through competition, as large number of financial market participants would result in reduced cost and better product services for consumers. Second, the better financial services facilitate in mobilizing savings that are further used for growth-oriented investment channels.

The banks in Pakistan have gone through nationalization in 1974 and later, privatized in 1991 under the shed of financial and banking reforms. It is obvious from the facts that privatization of banking sectors has improved efficiency level through optimum allocation of resources. In the phase of financial and banking reforms, it is evident to have reduced administrative costs and fund mobilization under the pressure of competitiveness, and above all, it brought about the higher efficiency and improved performance in the banking sector. The fiscal policy instrument – taxes affect structure and conduct of banking sector. It is one of the tools for bringing reforms in banking sectors internally as banks respond to tax changes and decide about the changes in the interest rate to maximize their performance.

Specification and Econometric Methodology

The performance of a bank can be evaluated by using different measure like return on assets, and profit loss before and after taxation. Performance of banking sector depends upon structure parameter (including the size of bank, capital to asset ratio) and conduct (administrative expenditure and return on equity). The theoretical framework in this study is borrowed form Bain (1968) work of Structure-Conduct-Performance paradigm:

$$Performance = f\ (Structure, Conduct, Tax, X) \quad (1)$$

Where X is for other controlled variables. As this study aims to investigate the impact of taxes on the performance of banks.

The return on asset (ROA) is used for measuring performance of a bank. Bank size and capital asset ratio (CAPAST) are used to proxy the structure parameters of banks. High bank size converges to higher profit ratio as well as the increase in capital (capital asset ratio) leads towards higher return and hence improved performance. The administrative expenditures (AdmExp) and return on equity (ROE) are employed for measurement of conduct. The following is the functional form of model, based on the earlier literature.

$$ROA = f(Size, CapAst, ROE, AdmExp, Tax) \quad (2)$$

The econometric model, following the above given variables, and considering the nature of data i.e., panel data, is as below:

$$ROA_{it} = \alpha + \beta_1 LSIZE_{it} + \beta_2 CAPAST_{it} + \beta_3 ROE_{it} + \beta_4 LADMEXP_{it} + \beta_5 TAX_{it} + \varepsilon_{it} \quad (3)$$

The variables of size and administrative expenditure are taken with the natural logarithm.

Estimation Technique

To estimate the tax policy impact on performance of banks, Panel Vector Autoregressive (VAR) is used. Sims (1980) designed and applied VAR technique for first time as an alternative of autoregressive distributed lag model. Furthermore, Holtz – Eakin *et al.* (1988) introduced panel VAR model and recently

Abrigo and Love (2015) have developed the interpretative extension of panel VAR technique in GMM framework.

For the meaningful interpretation of Panel VAR, there are following techniques that consists of panel VAR stability, panel Granger Causality test, panel impulse response functions and panel forecast error variance decomposition.

Data and Variables

The data used in this study is assessed through published reports of Financial Statement Analysis by State Bank of Pakistan (SBP). The data includes 23 banks over the period of 2007 to 2020. The data for tax is derived from Pakistan's Economic Survey. Table 1 briefly explain the variables, along with precise definition.

Table 1: Variables (abbreviation) and variable description.

Variable	Description
Performance	
Return on Asset (ROA)	It shows about the nature of profit relative to total assets and is calculated as net profit/loss after tax divided by total assets.
Structure	
Size (LSize)	The size of a bank is measure through the assets it held. Log of total assets shows the size of a bank.
Capital to asset ratio (CapAst)	It shows that whether a company has enough capital or not and is calculated as total capital divided by total assets.
Conduct	
Return of equity (ROE)	It is the value of outstanding claims by shareholders of banks. It is calculated as total shareholders' equity divided by its total assets.
Administrative expenditures (LAdmExp)	These expenditures consist of commissions, insurance, payroll costs, rent, subscription, supplies, travel expense of executives and utilities.
Fiscal Policy Instrument	
Tax (TAX)	Tax revenue as a percentage of GDP is taken for this variable.

Data Analysis

The summary statistics for the above-mentioned variables are given in Table 2. The mean value of ROA is 0.0058, whereas the minimum value is -0.064 and maximum value is 0.0372. the standard deviation for ROA is very low, indicating consistency and mean-reverting behaviour for ROA. It implies that the ROA is some banks is negative, implying the loss, while for the whole panel, the average ROA is positive, indicating that most of the bank are having sound performance in most years. The mean value of LSIZE is 19.37 with highest standard deviation of 1.35, whereas the minimum value is 15.80 and maximum value is 22.02. the return on equity (ROE) shows higher mean and standard deviation value than ROA, along with negative value of ROE for some banks (indicated from minimum value).

Table 2: Summary Statistics of Selected Data

Variable	No. of Bank	Obs.	Mean	Std. Dev.	Min	Max
ROA	N=23	322	0.005805	0.01364	-0.064	0.0372
LSIZE		322	19.37012	1.336465	15.80389	22.01627
ROE		322	0.025713	0.885866	-14.7427	2.3471
LADMEXP		322	15.70273	1.18749	12.04383	18.23618
CAPAST		322	0.089653	0.065029	-0.031	0.5186
TAX*		14*N	5.926243	0.588972	5.229262	7.110502
* Tax bear single observation for each cross section of Bank.						

The administrative expenditures are having mean of 15.70, standard deviation of 1.19, minimum of 12.04 and maximum of 18.23. it shows that administrative expenditures of each bank are aligned with the competition element of banks. The capital asset ratio is averaged at 0.0896, and some of the banks are having negative capital, due to which the minimum value is negative. The mean value of TAX in 5.93, with standard deviation of 0.59, minimum value is 5.22 and maximum value of TAX is 7.11. the mean value of tax is tilted toward minimum values, showing consistency and presence of some outliers as the maximum value of tax is far away from mean value as compared to minimum value.

The correlation matrix is provided in Table 3. Correlation of return on assets is positive with size of bank, return on equity, administrative expenditure, and tax; whereas return on assets is inversely related to capital asset ratio. The correlation matrix highlights moderate association of bank size, return on equity and administrative expenditure with return on assets and low association of capital asset ratio and tax with return of asset. Capital asset ratio has also negative association with size of bank and tax.

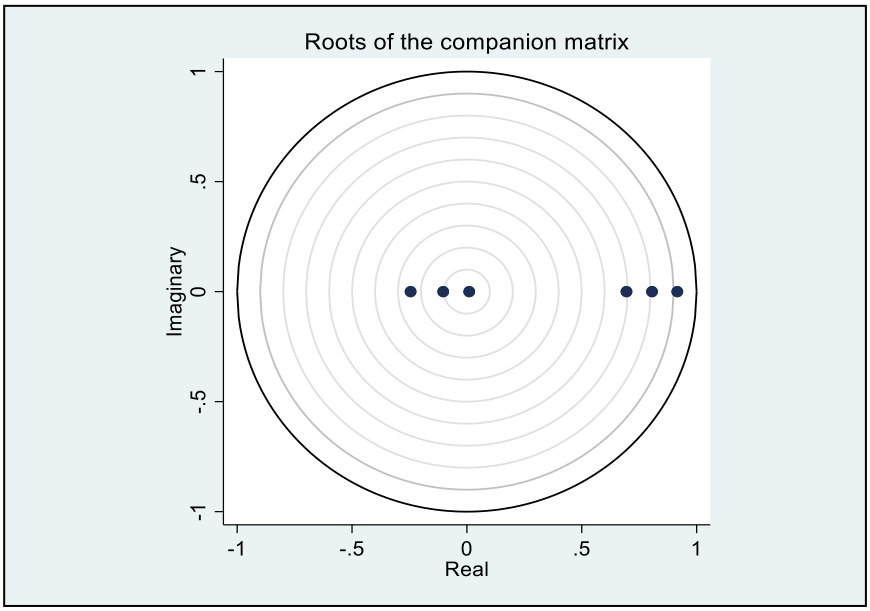
Table 3: Correlation Matrix of Selected Data

	ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
ROA	1					
LSIZE	0.4979	1				
ROE	0.4274	0.1612	1			
LADMEXP	0.4509	0.9685	0.1433	1		
CAPAST	-0.1481	-0.508	0.0609	-0.43	1	
TAX	0.0292	0.3499	0.0655	0.325	-0.1862	1

Results and Discussion

Before employing the Panel VAR technique, stationarity of the data series has been checked and it has seen that data has not achieved the stationary state. After this, the stability of Panel VAR is checked, based on modulus – calculated from real and imaginary roots[§]. The stability condition of Panel VAR is that the modulus must lie in unit circle. Figure 1 shows that the estimated panel VAR is stable as all of roots of companion matrix lie with unit circle.

Figure 1: Panel VAR Stability Graph of Banks



[§] Modulus $= \sqrt{real^2 + imaginary^2}$

After checking the stability condition, next Panel Granger Causality test is applied to find out the Granger causality of taxes (TAX) on the variables of banking sector which are selected for the purpose of analysis. Results of panel Granger causality test are presented in Table 4. It is obvious that tax granger causes return on asset, size of bank and return of equity as the p-value of test rejects the null hypothesis. Additionally, tax policy does not granger cause administrative expenditure and capital asset ratio of banks (see Table 4). Other bank specific variables return on equity, administrative expenditure and capital asset ratio also cause performance of banks (See Appendix1).

Table 4: Panel Granger – Causality Test

Null Hypothesis (H_0)	P – Value	Remarks
TAX does not Granger cause ROA	0.0640*	Reject H_0
TAX does not Granger cause LSIZE	0.0000***	Reject H_0
TAX does not Granger cause ROE	0.0000***	Reject H_0
TAX does not Granger cause LADMEXP	0.1320	Do Not Reject H_0
TAX does not Granger cause CAPAST	0.2520	Do Not Reject H_0

Panel Impulse response functions are given in Figure 2. The response of return of assets due to shock in tax (see section TAX: ROA in Figure 2) shows quick divergence in ROA in first period. After that ROA starts to converge towards its long run equilibrium path. But the speed of convergence is very slow as compared to divergence in first time. After 4th period, the speed of convergence is further slow than before and throughout the period, it is moving towards the steady state level, and remained closer and closer, but could not meet that. The response of return on equity due to impulse in tax (see section TAX: ROE in Figure 2) is similar of that ROA. The main difference between two responses is that return of equity finally approached to its long-run steady state level.

The responses of bank size and administrative expenditure remained significantly divergent due to impulse in taxes (see section TAX: LSIZE and TAX: LADMEXP in Figure 2). The rate of divergence is higher in start and after halfway, the divergence speed becomes very slow, and these indicators turns to be stagnant (inverted platy – U curve shaped).

To talk about the impulse – response of capital to asset ratio, it initially diverges in first time (see section TAX: CAPAST in Figure 2). Then, it starts to converge in the very next period, but this convergence is not stable, and it starts to diverge and throughout the period of analysis, it remained divergent. The speed of divergence is fast initially and then declined over the time, indicating the (platy – U curve shaped).

The forecast error variance decomposition (FEVD) of responses return on assets (ROA) in banks is presented in Figure 3. This figure shows the variation in ROA is attributed due to three indicators. First, it is having majorly its own role; secondly, capital to asset ratio and lastly taxes. All other variables (size of bank, return on equity and administrative expenditures) have negligible impact on the response of ROA. The magnitude of variation ROA is 79 percent initially and ends up with 68 percent over the span of 10 years. Capital asset ratio is contributing minimum of 19 percent and maximum of 26 percent at 10th period in the total variation of ROA. The contribution of taxes in total response of ROA is minimum of 2 percent and maximum of 5 percent.

The response of banks' size and administrative expenditure are highly contributed by impulses in taxes 26 percent and 16 percent respectively (see Appendix 2 for FEVD of all other bank specific variables).

Figure 2: Orthogonalized IRFs of Banks

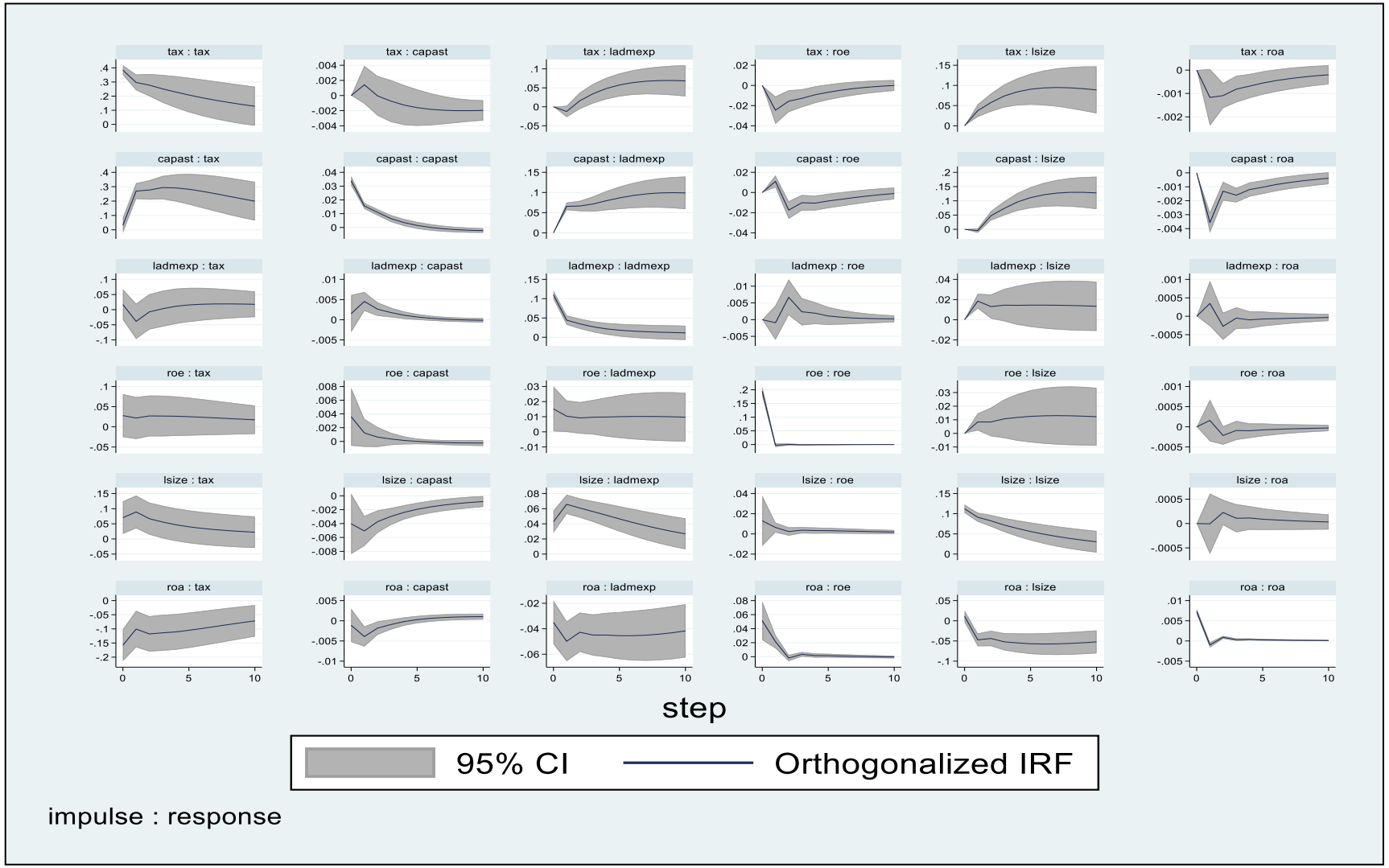
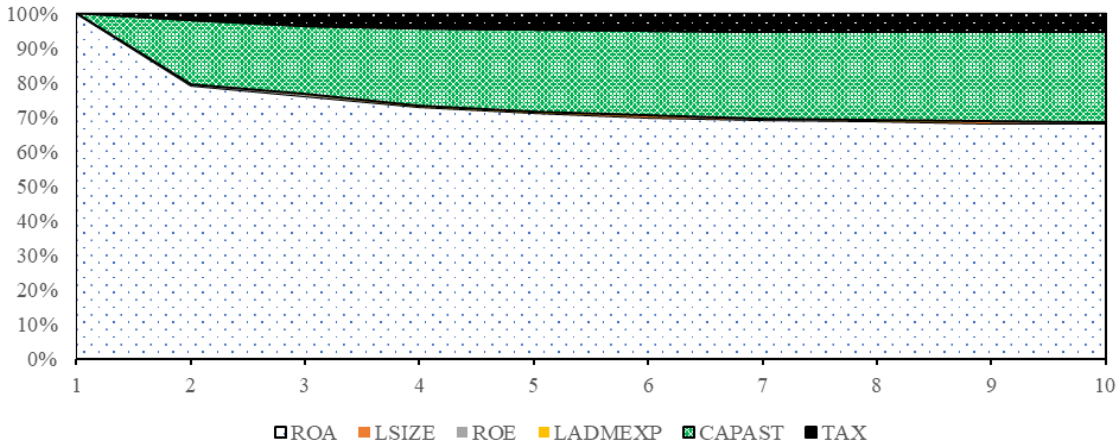


Figure 3: Forecast Error Variance Decomposition of ROA in Bank



Conclusion

This study is an attempt to empirically investigate the transmission of taxes towards performance of banks in Pakistan. For this purpose, 23 banks are selected over the time period of 2007-2020. Selection of variables and models is based on economic theory whereas estimation of the models is done through Panel Vector Auto Regressive (PVAR) estimation methodology. The results obtained from estimation reveal that there exists strong Granger causality between tax rate and return on assets. As, an innovation in tax policy, affects banks' performance (return of assets), returns on equity and size of bank.

The patterns of impulse response functions and forecast error variance decomposition demonstrate that a tax shock affects the contents of bank's balance sheet. One reason of quick response in bank's contents could be that banks play a role of financial intermediary and set their interest rates according to the changes tax policy rate. In nutshell, banks are taking effects of tax shocks and transmitting it into the economy by altering the supply and demand of loans respectively.

The basic objective of tax imposition is to have stable and sound finances for government. The changes in tax rate provide signal to banks and economic agents associated with financial intermediary. Banks are important pillars of the economy and are being affected by changes in tax policy rate. Based on findings, it is suggested to have a robust stabilized tax rate which should neither to be too high to dislocate the borrowing operations of banks nor too low to panic the banks performance and hence maintaining balance in economy,

It is also suggested that banks should spend on administrative efficiently for optimal output and better performance. For better performance, banks must maintain a level of assets to enhance the output and profits. it is also advisable to sustain a level of capital asset ratio where the profits are non-decreasing.

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Appendix 1

Table A1: Panel Granger – Causality Test

Null Hypothesis (H_0)	P – Value	Remarks
LSIZE does not Granger cause ROA	0.1620	Do Not Reject H_0
ROE does not Granger cause ROA	0.0000***	Reject H_0
LADMEXP does not Granger cause ROA	0.0010***	Reject H_0
CAPAST does not Granger cause ROA	0.0000***	Reject H_0
TAX does not Granger cause ROA	0.0640*	Reject H_0
ROA does not Granger cause LSIZE	0.0000***	Reject H_0
ROE does not Granger cause LSIZE	0.0000***	Reject H_0
LADMEXP does not Granger cause LSIZE	0.0000***	Reject H_0
CAPAST does not Granger cause LSIZE	0.0090***	Reject H_0
TAX does not Granger cause LSIZE	0.0000***	Reject H_0
ROA does not Granger cause ROE	0.0310**	Reject H_0
LSIZE does not Granger cause ROE	0.0000***	Reject H_0
LADMEXP does not Granger cause ROE	0.8510	Do Not Reject H_0
CAPAST does not Granger cause ROE	0.0000***	Reject H_0
TAX does not Granger cause ROE	0.0000***	Reject H_0
ROA does not Granger cause LADMEXP	0.0000***	Reject H_0
LSIZE does not Granger cause LADMEXP	0.0000***	Reject H_0
ROE does not Granger cause LADMEXP	0.0010***	Reject H_0
CAPAST does not Granger cause LADMEXP	0.0000***	Reject H_0
TAX does not Granger cause LADMEXP	0.1320	Do Not Reject H_0
ROA does not Granger cause CAPAST	0.3710	Do Not Reject H_0
LSIZE does not Granger cause CAPAST	0.0000***	Reject H_0
ROE does not Granger cause CAPAST	0.0000***	Reject H_0
LADMEXP does not Granger cause CAPAST	0.0000***	Reject H_0
TAX does not Granger cause CAPAST	0.2520	Do Not Reject H_0
ROA does not Granger cause TAX	0.6960	Do Not Reject H_0
LSIZE does not Granger cause TAX	0.0000***	Reject H_0
ROE does not Granger cause TAX	0.0000***	Reject H_0
LADMEXP does not Granger cause TAX	0.0000***	Reject H_0
CAPAST does not Granger cause TAX	0.0000***	Reject H_0

Appendix 2

Table A2(a): Forecast Error Variance Decomposition

Response	Period	Impulse					
		ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
ROA	1	1	0	0	0	0	0
	2	0.7926	0.0000	0.0004	0.0018	0.1854	0.0199
	3	0.7612	0.0007	0.0010	0.0027	0.1992	0.0353
	4	0.7288	0.0008	0.0010	0.0026	0.2242	0.0424
	5	0.7112	0.0010	0.0011	0.0027	0.2367	0.0473
	6	0.6991	0.0011	0.0012	0.0027	0.2456	0.0503
	7	0.6913	0.0011	0.0012	0.0027	0.2514	0.0523
	8	0.6861	0.0011	0.0012	0.0027	0.2553	0.0535
	9	0.6826	0.0012	0.0013	0.0027	0.2579	0.0543
	10	0.6803	0.0012	0.0013	0.0027	0.2597	0.0548
Response	Period	Impulse					
		ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
LSIZE	1	0.0096	0.9904	0.0000	0.0000	0.0000	0.0000
	2	0.0935	0.8329	0.0028	0.0136	0.0008	0.0563
	3	0.1075	0.6994	0.0036	0.0130	0.0575	0.1191
	4	0.1187	0.5608	0.0044	0.0123	0.1306	0.1732
	5	0.1211	0.4487	0.0048	0.0113	0.2049	0.2093
	6	0.1205	0.3656	0.0050	0.0104	0.2665	0.2320
	7	0.1186	0.3053	0.0052	0.0097	0.3154	0.2459
	8	0.1164	0.2613	0.0052	0.0092	0.3536	0.2544
	9	0.1142	0.2288	0.0053	0.0088	0.3834	0.2595
	10	0.1123	0.2043	0.0053	0.0085	0.4070	0.2627
Response	Period	Impulse					
		ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
ROE	1	0.0650	0.0041	0.9309	0.0000	0.0000	0.0000
	2	0.0740	0.0050	0.9037	0.0000	0.0029	0.0144
	3	0.0731	0.0050	0.8909	0.0011	0.0100	0.0200
	4	0.0728	0.0053	0.8847	0.0012	0.0123	0.0236
	5	0.0725	0.0056	0.8803	0.0013	0.0149	0.0255
	6	0.0723	0.0058	0.8776	0.0013	0.0164	0.0265
	7	0.0722	0.0060	0.8761	0.0013	0.0174	0.0269
	8	0.0722	0.0061	0.8753	0.0013	0.0180	0.0271
	9	0.0721	0.0063	0.8749	0.0013	0.0183	0.0272
	10	0.0721	0.0064	0.8747	0.0013	0.0184	0.0272

Table A2(b): Forecast Error Variance Decomposition

Response	Period	Impulse					
		ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
LADMEXP	1	0.0798	0.1194	0.0149	0.7859	0.0000	0.0000
	2	0.1290	0.2147	0.0117	0.4895	0.1497	0.0052
	3	0.1376	0.2453	0.0105	0.3797	0.2169	0.0101
	4	0.1437	0.2478	0.0098	0.3047	0.2635	0.0305
	5	0.1441	0.2358	0.0092	0.2482	0.3039	0.0588
	6	0.1421	0.2176	0.0087	0.2054	0.3380	0.0882
	7	0.1388	0.1983	0.0083	0.1731	0.3670	0.1144
	8	0.1352	0.1804	0.0079	0.1487	0.3915	0.1362
	9	0.1318	0.1647	0.0076	0.1302	0.4120	0.1537
	10	0.1286	0.1513	0.0074	0.1160	0.4293	0.1674

Response	Period	Impulse					
		ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
CAPAST	1	0.0010	0.0138	0.0110	0.0019	0.9722	0.0000
	2	0.0110	0.0281	0.0098	0.0154	0.9344	0.0014
	3	0.0121	0.0341	0.0092	0.0182	0.9252	0.0012
	4	0.0122	0.0382	0.0089	0.0195	0.9196	0.0015
	5	0.0121	0.0411	0.0088	0.0200	0.9156	0.0024
	6	0.0120	0.0431	0.0088	0.0202	0.9120	0.0039
	7	0.0122	0.0444	0.0088	0.0202	0.9086	0.0058
	8	0.0126	0.0452	0.0087	0.0201	0.9054	0.0080
	9	0.0130	0.0457	0.0087	0.0200	0.9023	0.0102
	10	0.0135	0.0460	0.0087	0.0199	0.8995	0.0124

Response	Period	Impulse					
		ROA	LSIZE	ROE	LADMEXP	CAPAST	TAX
TAX	1	0.1384	0.0277	0.0043	0.0016	0.0058	0.8222
	2	0.0970	0.0359	0.0035	0.0049	0.2049	0.6537
	3	0.0915	0.0327	0.0037	0.0034	0.2824	0.5862
	4	0.0883	0.0294	0.0038	0.0026	0.3386	0.5372
	5	0.0868	0.0267	0.0040	0.0023	0.3778	0.5024
	6	0.0860	0.0247	0.0041	0.0022	0.4063	0.4767
	7	0.0855	0.0231	0.0041	0.0023	0.4275	0.4575
	8	0.0851	0.0219	0.0042	0.0024	0.4435	0.4428
	9	0.0849	0.0210	0.0042	0.0025	0.4558	0.4315
	10	0.0847	0.0203	0.0043	0.0026	0.4653	0.4228