CHAPTER -4

ESTIMATION OF GROWTH AND PERFORMANCE OF AGRICULTURAL FINANCE BY SCHEDULES COMMERCIAL BANKS

This chapter estimates the growth and performance of agricultural finance by scheduled commercial banks. The purpose of this chapter is to provide information about the expansion of India's public and private commercial banks' branch networks, deposits, and advances between the time period 1991 to 2014.

In the agriculture sector, the importance of commercial banks has increased drastically following the nationalization of banks. The agriculture sector is helped by commercial banks in many ways. Commercial banks were given a greater role after the Green Revolution.

Modernization and mechanization of agriculture increased the need for credit among farmers. A key component of the Green Revolution strategy was the development of new farming methods and technologies to help agricultural farmers. Commercial banks became more accessible to the farmers and helped them implement the new farming techniques by means of agricultural credit. Commercial banks provide long-term and medium-term financing for the purchase of equipment, upgrades, expanding production capacity, and other enhancements. India relies on financial institutions for all types of agricultural credit. The commercial banks in rural areas are the most important source of credit, and they have an important role to play in improving agricultural productivity. Creating a credit from bank deposits increases the circulation of money from one sector to another sector or we may say that commercial bank helps n circulating money from surplus to deficit areas. The creation of credit indirectly contributes to the growth of the money supply in an economy. The quality of money in circulation is affected by bank lending and investment activities. With the help of commercial banks, the productive sector could be credited with a significant share. Commercial banks provide a large amount of short-term funding for agriculture. They typically lend funds for short-term, primarily to cover working capital needs. As a result, the vast majority of loans are demand loans. In most cases, the type of collateral depends on the assets that a borrower pledges or mortgages to the banks. Apart from above introduction, next section of this chapter empirically analyzes the following areas of commercial banks:

4.1 Bank Group-Wise Deposits in Total for Scheduled Commercial Banks

4.2 Growth of Commercial Bank Deposits: A Case of Public and Private Sector Banks

4.3 Bank Group-Wise Advances in Total for Scheduled Commercial Banks

4.4 Growth of Commercial Bank Advances: A Case of Public and Private Sector Banks

4.5 Commercial Banks' Branch Coverage by Bank Group

4.6 Growth of Commercial Bank Branches: A Case of Public and Private Sector Banks

4.1 Bank Group-Wise Deposits in Total for Scheduled Commercial Banks

MODEL: 4.1

LOG (SCBTD) = α_0+ α_1 LOG (PBTD) + α_2 LOG (PVTD) +μ_1

Dependent Variable: Scheduled Commercial Bank Total Deposits (SCBTD)

Independent Variable: Public Sector Commercial Bank Total Deposits (PBTD)

Independent Variable: Private Sector Commercial Bank Total Deposits (PVTD)

Table 4.1: Contribution of Public and Private Sector Commercial Bank Deposits to Schedule Commercial Bank Total Deposits (1991-2014)

Dependent Variable: LOG(SCBTD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.648073	0.971962	1.695614	0.1047
LOG(PBTD)	0.682195	0.165691	4.117280	0.0005
LOG(PVTD)	0.250699	0.113004	2.218495	0.0377
R-squared	0.989408	F-statistic		980.8027
Adjusted R-squared	0.988399	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.218046			

Source: Author's Own Calculation

From 1991 to 2014, the above table shows the contribution of public and private sector commercial bank deposits to total deposits of commercial bank deposits. As we can see from the above table, public sector commercial bank deposits contribute more to commercial banks' total deposits than private sector commercial bank deposits. The public sector commercial bank deposits coefficient is 0.68. It implies that one percent increase in total deposits of public sector commercial bank deposits leads to a 0.68 percent increase in total deposits of scheduled commercial bank deposits. Coefficient of private sector commercial bank deposit is 0.25, it implies that a one percent increase in total deposits of private sector commercial bank deposits leads to 0.25 percent increase in total deposits of commercial bank

deposits. F statistics demonstrate that the overall model is statistically significant. T-value indicates that public sector commercial bank deposits and private sector commercial bank deposits as an independent variables are significant at the 5 percent significance level. Based on the R-squared value of 0.98, over 98 percent of the variations in commercial bank total deposits can be explained by the independent variables.

MODEL: 4.2

LOG (SCBTID) = α_0+ α_1 LOG (PBTID) + α_2 LOG (PVTID) +μ_1

Dependent Variable: Scheduled Commercial Bank Time Deposits (SCBTID)

Independent Variable: Public Sector Commercial Bank Time Deposits (PBTID)

Independent Variable: Private Sector Commercial Bank Time Deposits (PVTID)

Table 4.2: Contribution of Public and Private Sector Commercial Bank Time Deposits to Schedule Commercial Bank Time Deposits (1991-2014)

Dependent Variable: LOG(SCBTID)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.324824	0.599089	2.211397	0.0382
LOG(PBTID)	0.748842	0.105689	7.085327	0.0000
LOG(PVTID)	0.198836	0.074672	2.662780	0.0146
R-squared	0.990430	F-statistic		1086.718
Adjusted R-squared	0.989519	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.230020			

Source: Author's Own Calculation

The above table shows the contribution of public and private sector commercial bank time deposits to commercial bank time deposits between 1991 and 2014. According to the table above, public sector commercial banks contribute more time deposits to total commercial bank time deposits than private sector banks do. Public sector commercial banks' time deposits coefficient is 0.74. As a consequence, an increase in public sector commercial bank time deposits by one percent will result in a 0.74 percent increase in commercial bank time deposits. The coefficient of private sector commercial bank time deposit is 0.19, which implies that a one percent increase in private sector commercial bank time deposits will result in a 0.19 percent increase in commercial bank time deposits. F- Statistics demonstrate the

statistical significance of the overall model. At the 5 percent significance level, the T-values indicate that private sector and public sector commercial bank time deposits are significant as independent variables. Based on the R-squared value of 0.99, independent variables account for 99 percent of the variation in time deposits at commercial banks.

MODEL: 4.3

LOG (SCBDD) = α_0+ α_1 LOG (PBDD) + α_2 LOG (PVDD) +μ_1

Dependent Variable: Scheduled Commercial Bank Demand Deposits (SCBDD)

Independent Variable: Public Sector Commercial Bank Demand Deposits (PBDD)

Independent Variable: Private Sector Commercial Bank Demand Deposits (PVDD)

Table 4.3: Contribution of Public and Private Sector Commercial Bank Demand Deposits to Schedule Commercial Bank Demand Deposits (1991-2014)

Dependent Variable: LOG(SCBDD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.965646	1.722967	0.560456	0.5811
LOG(PBDD)	0.774202	0.255634	3.028560	0.0064
LOG(PVDD)	0.201344	0.130983	1.537180	0.0139
R-squared	0.986171	F-statistic		748.7946
Adjusted R-squared	0.984854	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.294518			

Source: Author's Own Calculation

This table presents the contribution of commercial bank demand deposits from 1991 to 2014 from public and private sector commercial banks. On the basis of the table above, public sector commercial banks are a greater contributor to total commercial banks' demand deposits than private sector banks. The demand deposits coefficient of public sector commercial banks is 0.77. An increase of one percent in demand deposits for public sector commercial banks will thus lead to an increase of 0.77 percent in demand deposits for commercial banks. Private sector commercial bank demand deposits have a coefficient of 0.20, so an increase of one percent in private sector commercial bank demand deposits will result in an increase of 0.20 percent in commercial bank demand deposits. F-statistics show that the overall model is

statistically significant. T-values indicate that private sector and public sector commercial bank demand deposits are significant as independent variables at the 5% significance level. As a result of the R-squared value of 0.98, independent variables account for 98 percent of the variation in demand deposits of commercial banks.

MODEL: 4.4

LOG (PBTD) = α_0+ α_1 LOG (PBDD) + α_2 LOG (PBTID) +μ_1

Dependent Variable: Public Sector Commercial Bank Total Deposits (PBTD)

Independent Variable: Public Sector Commercial Bank Demand Deposits (PBDD)

Independent Variable: Public Sector Commercial Bank Time Deposits (PBTID)

Table 4.4: Contribution of Public Sector Commercial Bank Demand Deposits and Time Deposits to Public Sector Commercial Bank Total Deposits (1991-2014)

Dependent Variable: LOG(PBTD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.270194	0.185720	1.454842	0.1605
LOG(PBDD)	0.261248	0.073785	3.540693	0.0019
LOG(PBTID)	0.780511	0.052259	14.93534	0.0000
R-squared	0.999466	F-statistic		19667.94
Adjusted R-squared	0.999416	Prob(F-statistic)		0.000000
Durbin-Watson stat	0.466906			

Source: Author's Own Calculation

The above table illustrates the share of demand deposit and time deposits by public sector commercial banks to total deposits of public sector commercial banks from 1991 to 2014. The table above shows that time deposits are a greater contributor to total deposits at public sector commercial banks than demand deposits. The coefficient for demand deposits of public sector commercial banks is 0.26. Thus, a one percent increase in demand deposits will increase the total deposits for public sector commercial banks by 0.26 percent. Time deposits at public sector commercial banks have a coefficient of 0.78, meaning that a one-percent increase will translate into 0.78 percent growth in total deposits at public sector commercial banks. According to the F-statistics, the overall model is statistically significant. At the 5% significance level, public sector commercial bank demand deposits and public sector

commercial bank time deposits are significant independent variables. R-squared value of 0.99 indicates that independent variables account for 99 percent of the variation in total deposits of public sector commercial banks.

MODEL: 4.5

LOG (PVTD) = α_0+ α_1 LOG (PVDD) + α_2 LOG (PVTID) +μ_1

Dependent Variable: Private Sector Commercial Bank Total Deposits (PVTD)

Independent Variable: Private Sector Commercial Bank Demand Deposits (PVDD)

Independent Variable: Private Sector Commercial Bank Time Deposits (PVTID)

Table 4.5: Contribution of Private Sector Commercial Bank Demand Deposits and Time Deposits to Private Sector Commercial Bank Total Deposits (1991-2014)

Dependent Variable: LOG(PVTD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.853818	0.046650	18.30258	0.0000
LOG(PVDD)	0.389568	0.023466	16.60137	0.0000
LOG(PVTID)	0.621560	0.022918	27.12135	0.0000
R-squared	0.999787	F-statistic		49233.90
Adjusted R-squared	0.999766	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.154075			

Source: Author's Own Calculation

In the above table, demand deposits and time deposits in private sector commercial banks are presented as a proportion of total private sector commercial bank deposits from 1991 to 2014. Compared with demand deposits, time deposits represent a larger portion of total deposits at private sector commercial banks. Demand deposits at private sector commercial banks have a coefficient of 0.38. The total deposits for private sector commercial banks will therefore increase 0.38 percent for every one percent increase in demand deposits. Private sector commercial banks' time deposits have a coefficient of 0.62, meaning that an increase of one percent will result in a growth of 0.62 percent in their overall deposits of private sector commercial banks. F-statistics indicate that the overall model is statistically significant. Demand deposits and time deposits in private sector commercial banks are significant

independent variables at the 5% significance level. R-squared values of 0.99 indicate that independent variables explain 99 percent of the variation in total deposits of private sector commercial banks.

4.2 Growth of Commercial Bank Deposits: A Case of Public and Private Sector Banks

MODEL: 4.6

LOG (PBDD) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Public Sector Commercial Bank Demand Deposits (PBDD)

Independent Variable: Time (1991-2014)

Table 4.6: Growth Rate of Public Sector Commercial Bank Demand Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PBDD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.42679	0.035551	293.2921	0.0000
TIME	0.112227	0.002488	45.10674	0.0000
R-squared	0.989303	F-statistic		2034.618
Adjusted R-squared	0.988817	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.598541	**Instantaneous rate of growth**		**11.22**
Anti-Log(α_1)	1.118766	**Compound rate of growth**		**11.87**

Source: Author's Own Calculation

The above table depicts the growth rate of public sector commercial bank demand deposits in India from 1991 to 2014. The result shows there is a significant positive trend of demand deposits of public sector commercial banks during the period under consideration. It increased at a rate of 11.22 percent per annum at the significance of five percent significant level. The compound growth rate of demand deposits of public sector commercial banks is 11.87 percent. The obtained R-squared and F-statistic are satisfactory in this regression model.

MODEL: 4.7

LOG (PVDD) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Private Sector Commercial Bank Demand Deposits (PVDD)

Independent Variable: Time (1991-2014)

Table 4.7: Growth Rate of Private Sector Commercial Bank Demand Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PVDD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.316950	0.061557	118.8652	0.0000
TIME	0.219281	0.004308	50.90015	0.0000
R-squared	0.991580	F-statistic		2590.825
Adjusted R-squared	0.991197	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.857494	**Instantaneous rate of growth**		**21.92**
Anti-Log(α_1)	1.245181	**Compound rate of growth**		**24.51**

Source: Author's Own Calculation

The table above shows that the demand deposits of private sector commercial banks have increased during the study period. During the period 1991-2014, demand deposits of private sector commercial banks showed a significant positive trend. At five percent significant level of statistical significance, the results indicate a 21.92 percent increase in demand deposits of private sector commercial banks annually. The compound growth rate of demand deposits of private sector commercial banks is 24.51 percent. The coefficient of determination is 0.99 as determined by the results. This model's overall significance is demonstrated by F statistics.

MODEL: 4.8

LOG (SCBDD) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Scheduled Commercial Bank Demand Deposits (SCBDD)

Independent Variable: Time (1991-2014)

Table 4.8: Growth Rate of Scheduled Commercial Bank Demand Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(SCBDD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.50693	0.049936	210.4099	0.0000
TIME	0.131389	0.003495	37.59588	0.0000
R-squared	0.984674	F-statistic		1413.450

Adjusted R-squared	0.983977	Prob(F-statistic)	0.000000
Durbin-Watson stat	1.941446	**Instantaneous rate of growth**	**13.13**
Anti-Log(α_1)	1.140411	**Compound rate of growth**	**14.04**

Source: Author's Own Calculation

According to the results presented in the table above, the growth rate of demand deposits of scheduled commercial banks has increased during the period 1991 and 2014. The growth of demand deposits of scheduled commercial banks has been trending upwards during the entire study period. The demand deposits of scheduled commercial banks increased at a growth rate of 13.13 percent per annum. The compound growth rate of demand deposits of scheduled commercial banks is 14.04 percent. The coefficient of determination of is 0.98 as shown in the results, and F statistics indicate that the overall model is statistically significant.

MODEL: 4.9

LOG (PBTID) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Public Sector Commercial Bank Time Deposits (PBTID)

Independent Variable: Time (1991-2014)

Table 4.9: Growth Rate of Scheduled Public Sector Commercial Bank Time Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PBTID)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.44989	0.036321	315.2386	0.0000
TIME	0.158860	0.002542	62.49518	0.0000
R-squared	0.994399	F-statistic		3905.648
Adjusted R-squared	0.994144	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.327706	**Instantaneous rate of growth**		**15.88**
Anti-Log(α_1)	1.172173	**Compound rate of growth**		**17.21**

Source: Author's Own Calculation

During the period 1991 to 2014, a significant positive trend can be found in both the instantaneous and compound growth rates of time deposits of public sector commercial banks. The regression model depicts that the compound growth rates of time deposits of public sector commercial banks is 17.21 percent. Further, the result shows that growth rates of time deposits of public sector commercial banks increased at a rate of 15.88 percent per annum, significant at 5 percent level. The value of the coefficient of determination is 0.99 which means the independent variable in the model can explain 99 percent of the variation in the dependent variable. Considering the overall model, the F test indicates it is statistically significant.

MODEL: 4.10

LOG (PVTID) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Private Sector Commercial Bank Time Deposits (PVTID)

Independent Variable: Time (1991-2014)

Table 4.10: Growth Rate of Scheduled Private Sector Commercial Bank Time Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PVTID)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.843261	0.104058	84.98366	0.0000
TIME	0.222876	0.007283	30.60405	0.0000
R-squared	0.977050	F-statistic		936.6079
Adjusted R-squared	0.976007	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.150179	**Instantaneous rate of growth**		**22.28**
Anti-Log(α_1)	1.249665	**Compound rate of growth**		**24.96**

Source: Author's Own Calculation

In both the instantaneous and compound growth rates of time deposits of private sector commercial banks from 1991 to 2014, there was a significant positive trend. Time deposits of private sector commercial banks exhibit a compound growth rate of 24.96 percent, according to the regression model. Further, the study shows that growth rates of time deposits in private sector commercial banks increased by 22.28 percent per year, significant at a 5 percent level. The value of coefficient of determination is 0.97, means that the independent variable in the

model can account for 97 percent of the variation of the dependent variable. The F test indicates that the overall model is statistically significant.

MODEL: 4.11

LOG (SCBTID) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Scheduled Commercial Bank Time Deposits (SCBTID)

Independent Variable: Time (1991-2014)

Table 4.11: Growth Rate of Scheduled Commercial Bank Time Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(SCBTID)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.65717	0.052606	221.5940	0.0000
TIME	0.163291	0.003682	44.35257	0.0000
R-squared	0.988940	F-statistic		1967.150
Adjusted R-squared	0.988437	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.006802	**Instantaneous rate of growth**		**16.32**
Anti-Log(α_1)	1.177379	**Compound rate of growth**		**17.73**

Source: Author's Own Calculation

The results presented in the table above indicate that the growth rate of time deposits of scheduled commercial banks has increased during the period 1991 and 2014. It is evident that time deposits at scheduled commercial banks have been trending upwards during the entire period under consideration. A 16.32 percent increase in annual time deposits was recorded by scheduled commercial banks. The compound growth rate of time deposits of scheduled commercial banks is 17.73percent. The coefficient of determination of is 0.98 as shown in the results, and F statistics indicate that the overall model is statistically significant.

MODEL: 4.12

LOG (PBTD) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Public Sector Commercial Bank Total Deposits (PBTD)

Independent Variable: Time (1991-2014)

Table 4.12: Growth Rate of Public Sector Commercial Bank Total Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PBTD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.92833	0.025951	459.6400	0.0000
TIME	0.153520	0.001816	84.52685	0.0000
R-squared	0.996930	F-statistic		7144.788
Adjusted R-squared	0.996791	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.416892	**Instantaneous rate of growth**		**15.35**
Anti-Log(α_1)	1.1659311	**Compound rate of growth**		**16.59**

Source: Author's Own Calculation

A positive trend can be seen in both the instantaneous and compound growth rates of total deposits at public sector banks during the period 1991-2014. According to the regression model, the compound growth rate of total deposits of public sector commercial banks is 16.59 percent. In addition, the results showed that total deposits of public sector commercial banks grew at a rate of 15.35 percent per annum, significant at a 5 percent level. The coefficient of determination in this model is 0.99, which means that the independent variable can explain 99 percent of the variation in the dependent variable. Considering the overall model, the F test indicates it is statistically significant.

MODEL: 4.13

LOG (PVTD) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Private Sector Commercial Bank Total Deposits (PVTD)

Independent Variable: Time (1991-2014)

Table 4.13: Growth Rate of Private Sector Commercial Bank Total Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PVTD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.198094	0.072592	126.7095	0.0000
TIME	0.224179	0.005080	44.12647	0.0000
R-squared	0.988828	F-statistic		1947.145

Adjusted R-squared	0.988320	Prob(F-statistic)	0.000000
Durbin-Watson stat	1.199592	**Instantaneous rate of growth**	**22.41**
Anti-Log(α_1)	1.25129498	**Compound rate of growth**	**25.12**

Source: Author's Own Calculation

The table above indicates that private sector commercial bank total deposits have increased during the study period. A significant positive trend is observed in the total deposits of private sector commercial banks during the period 1991 and 2014. The results indicate a 22.41 percent annual increase in total deposits of private sector commercial banks at a five percent significance level of statistical significance. The compound growth rate of total deposits of private sector commercial banks is 25.12 percent. According to the results, the coefficient of determination is 0.98. Based on the F statistics, this model proves to be significant overall.

MODEL: 4.14

LOG (SCBTD) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Scheduled Commercial Bank Total Deposits (SCBTD)

Independent Variable: Time (1991-2014)

Table 4.14: Growth Rate of Scheduled Commercial Bank Total Deposits both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(SCBTD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.09019	0.050720	238.3723	0.0000
TIME	0.161035	0.003550	45.36636	0.0000
R-squared	0.989424	F-statistic		2058.107
Adjusted R-squared	0.988943	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.125835	**Instantaneous rate of growth**		**16.10**
Anti-Log(α_1)	1.17472608	**Compound rate of growth**		**17.47**

Source: Author's Own Calculation

As can be seen from the results shown in the table above, the growth rate of total deposits at scheduled commercial banks between 1991 and 2014 has been consistently positive. There

has been an upward trend in total deposits at scheduled commercial banks throughout the review period. There was a 16.10 percent increase in total deposits annually at scheduled commercial banks. A compound growth rate of 17.47 percent is recorded for the total deposits of scheduled commercial banks. As shown in the results, the coefficient of determination is 0.98, and the F statistics indicate the model is statistically significant.

4.3 Bank Group-Wise Advances in Total for Scheduled Commercial Banks

MODEL: 4.15

LOG (PBTA) = α_0+ α_1 LOG (PBAGR) +μ_1

Dependent Variable: Public Sector Commercial Bank Total Advances (PBTA)

Independent Variable: Public Sector Commercial Bank Agricultural Advances (PBAGR)

Table 4.15: Contribution of Public Sector Commercial Bank Agricultural Advances to Public Sector Commercial Bank Total Advances (1991-2014)

Dependent Variable: LOG(PBTA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.885002	0.120215	15.68024	0.0000
LOG(PBAGR)	1.025743	0.010526	97.44430	0.0000
R-squared	0.997688	F-statistic		9495.391
Adjusted R-squared	0.997583	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.377625			

Source: Author's Own Calculation

The above table illustrates the contribution of agricultural advances in total advances of public sector commercial banks from 1991 to 2014. The public sector commercial bank agricultural advances coefficient is 1.02. It implies that one percent increase in public sector commercial bank agricultural advances leads to a 1.02 percent increase in total advances of public sector commercial banks. The value of F -Statistics is 9495.391, the large value of the F-statistic shows that public sector commercial bank agricultural advances impacted total advances significantly. The value of R^2 is 0.99, which implies that the explanatory variable accounted for over 99 percent of the variance in public sector commercial bank total advances.

MODEL: 4.16

LOG (PVTA) = α_0+ α_1 LOG (PVAGR) +μ_1

Dependent Variable: Private Sector Commercial Bank Total Advances (PVTA)

Independent Variable: Private Sector Commercial Bank Agricultural Advances (PVAGR)

Table 4.16: Contribution of Private Sector Commercial Bank Agricultural Advances to Private Sector Commercial Bank Total Advances (1991-2014)

Dependent Variable: LOG(PVTA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.824099	0.197193	19.39267	0.0000
LOG(PVAGR)	0.872897	0.021133	41.30581	0.0000
R-squared	0.987270	F-statistic		1706.170
Adjusted R-squared	0.986691	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.608530			

Source: Author's Own Calculation

The above table demonstrates the contribution of private sector commercial bank agricultural advances to private sector commercial bank total advances in India during 1991 to 2014. In the regression model, a private sector commercial bank agricultural advance has a regression coefficient of 0.87. In this model, the estimated coefficient is statistically significant and shows a positive impact on the private sector commercial banks total advances. It indicates that increasing agricultural advances by private sector commercial banks by one percent leads to a 0.87 percent increase in total advances of private sector commercial banks. According to the F-statistics (value of F-statistics= 1706.170), the overall significance weighs in favour of the model. Likewise, the value of R-squared is 0.98.

MODEL: 4.17

LOG (SCBTA) = α_0+ α_1 LOG (PBTA) + α_2 LOG (PVTA) +μ_1

Dependent Variable: Scheduled Commercial Bank Total Advances (SCBTA)

Independent Variable: Public Sector Commercial Bank Total Advances (PBTA)

Independent Variable: Private Sector Commercial Bank Total Advances (PVTA)

Table 4.17: Contribution of Public and Private Sector Commercial Bank Total Advances to Scheduled Commercial Bank Total Advances (1991-2014)

Dependent Variable: LOG(SCBTA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.518442	0.533090	2.848379	0.0096
LOG(PBTA)	0.706622	0.097006	7.284315	0.0000
LOG(PVTA)	0.231915	0.069584	3.332883	0.0032
R-squared	0.992970	F-statistic		1483.060
Adjusted R-squared	0.992300	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.305655			

Source: Author's Own Calculation

The results presented in the above table demonstrate the impact of total advances made by public sector commercial banks and private sector commercial banks on total advances of scheduled banks during the year 1991 to 2014. The value of the estimated coefficient of public sector commercial bank total advances is 0.70. It shows that an increase in the total advances of public sector commercial banks by one percent leads to an increase in the scheduled commercial bank total advances by 0.70 percent. The estimated coefficients of the independent variables are all statistically significant at the significance level of 0.05. The model's estimation results suggest that the coefficient of private sector commercial bank total advances is 0.23. Accordingly, an increase of one percent in private sector commercial bank total advances leads to an increase of 0.23 percent in scheduled commercial bank total advances. The value of F - Statistics is 1483.060, implies that the explanatory variables in the model altogether affect scheduled commercial bank total advances in a significant way. The value of the coefficient of determination is 0.99. The regression coefficients suggest that public sector commercial bank total advances has a greater impact on scheduled commercial bank total advances than private sector commercial bank total advances.

MODEL: 4.18

LOG (SCBTA) = α_0+ α_1 LOG (PBAGR) + α_2 LOG (PVAGR) +μ_1

Dependent Variable: Scheduled Commercial Bank Total Advances (SCBTA)

Independent Variable: Public Sector Commercial Bank Agricultural Advances (PBAGR)

Independent Variable: Private Sector Commercial Bank Agricultural Advances (PVAGR)

Table 4.18: Contribution of Public and Private Sector Commercial Bank Agricultural Advances to Scheduled Commercial Bank Total Advances (1991-2014)

Dependent Variable: LOG(SCBTA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.312347	0.733197	5.881570	0.0000
LOG(PBAGR)	0.623359	0.123642	5.041646	0.0001
LOG(PVAGR)	0.265692	0.075872	3.501851	0.0021
R-squared	0.991180	F-statistic		1179.977
Adjusted R-squared	0.990340	Prob(F-statistic)		0.000000
Durbin-Watson stat	2.094461			

Source: Author's Own Calculation

This table above presents the analysis of the impact of agricultural advances made by public and private sector commercial banks on the total advances of scheduled banks. Public sector commercial bank agricultural advances have an estimated coefficient of 0.62. According to the analysis, an increase in agricultural advances of public sector commercial banks by one percent increases total scheduled commercial bank advances by 0.62 percent. Statistically significant estimates are obtained for all the independent variables at a significance level of 0.05. The model's estimation results suggest that the coefficient of private sector commercial bank agricultural advances is 0.26. Therefore, a one percent increase in private sector commercial bank agricultural advances result in a 0.26 percent rise in scheduled commercial bank total advances. A value of 1179.977 for F - Statistics indicates that all explanatory variables together affect scheduled commercial bank total advances significantly. 0.99 is the value of the coefficient of determination. Regression coefficients suggest agricultural advances by public sector commercial banks are more influential to total scheduled commercial bank advances.

MODEL: 4.19

LOG (PBAGR) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Public Sector Commercial Bank Agricultural Advances (PBAGR)

Independent Variable: Time (1991-2014)

Table 4.19: Growth Rate of Public Sector Commercial Bank Agricultural Advances both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PBAGR)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.216212	0.073619	125.1885	0.0000
TIME	0.171290	0.005152	33.24577	0.0000
R-squared	0.980484	F-statistic		1105.281
Adjusted R-squared	0.979597	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.162389	**Instantaneous rate of growth**		**17.12**
Anti-Log(α_1)	1.18683488	**Compound rate of growth**		**18.68**

Source: Author's Own Calculation

The table above shows the growth rate of public sector commercial bank agricultural advances from 1991 to 2014. A positive trend has emerged in total agricultural advances made by public sector commercial banks during the period under review. In public sector scheduled commercial banks, agricultural advances increased by 17.12 percent annually. A compound growth rate of 18.68 percent is recorded for the public sector commercial bank agricultural advances. According to the results, the coefficient of determination is 0.98, and the F statistics indicate the model is statistically significant.

4.4 Growth of Commercial Bank Advances: A Case of Public and Private Sector Banks

MODEL: 4.20

LOG (PBTA) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Public Sector Commercial Bank Total Advances (PBTA)

Independent Variable: Time (1991-2014)

Table 4.20: Growth Rate of Public Sector Commercial Bank Total Advances both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PBTA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.33157	0.067651	167.5013	0.0000
TIME	0.176251	0.004735	37.22661	0.0000
R-squared	0.984373	F-statistic		1385.820
Adjusted R-squared	0.983663	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.229867	**Instantaneous rate of growth**		**17.62**
Anti-Log(α_1)	1.192737398	**Compound rate of growth**		**19.27**

Source: Author's Own Calculation

In the table above, the growth rate of total advances at scheduled commercial banks between 1991 and 2014 can be seen. Total advances at scheduled commercial banks increased over the review period. Total advances at scheduled commercial banks increased by 17.62 percent annually. Total advances of scheduled commercial banks grew at a compound rate of 19.27 percent. The results indicate a coefficient of determination of 0.98, and F statistics indicate that the model is statistically significant.

MODEL: 4.21

LOG (PVAGR) = α_0+ α_1 t + μ_1

Dependent Variable: Private Sector Commercial Bank Agricultural Advances(PVAGR)

Independent Variable: Time (1991-2014)

Table 4.21: Growth Rate of Private Sector Commercial Bank Agricultural Advances both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PVAGR)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.629538	0.108765	51.75888	0.0000
TIME	0.279631	0.007612	36.73584	0.0000
R-squared	0.983959	F-statistic		1349.522
Adjusted R-squared	0.983230	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.323405	**Instantaneous rate of growth**		**27.96**
Anti-Log(α_1)	1.322641667	**Compound rate of growth**		**32.26**

Source: Author's Own Calculation

From 1991 to 2014, the table above shows the growth rate of agricultural advances from private sector commercial banks. The total agricultural advances made by private sector commercial banks over the period under review showed a positive trend. The increase in agricultural advances in private sector scheduled commercial banks was 27.96 percent annually. For private sector commercial bank agricultural advances, a compound growth rate of 32.26 percent is recorded. According to the results, the coefficient of determination is 0.98, and F statistic indicates that the model is statistically significant.

MODEL: 4.22

LOG (PVTA) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Private Sector Commercial Bank Total Advances (PVTA)

Independent Variable: Time (1991-2014)

Table 4.22: Growth Rate of Private Sector Commercial Bank Total Advances both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(PVTA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.710187	0.078067	111.5734	0.0000
TIME	0.246323	0.005464	45.08477	0.0000
R-squared	0.989293	F-statistic		2032.636
Adjusted R-squared	0.988806	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.309550	**Instantaneous rate of growth**		**24.63**
Anti-Log(α_1)	1.279312724	**Compound rate of growth**		**27.93**

Source: Author's Own Calculation

The above table shows the growth rate of total advances of private sector commercial banks over the study period. A significant positive trend is observed in the total advances of private sector commercial banks during the period 1991 and 2014. The results indicate a 24.63 percent annual increase in total advances of private sector commercial banks at a five percent significance level of statistical significance. The compound growth rate of the total advances of private sector commercial banks is 27.93 percent. According to the results, the coefficient of determination is 0.98. Based on the F statistics, this model proves to be statistically significant overall.

MODEL: 4.23

LOG (SCBTA) = α_0+ α_1 t + μ_1

Dependent Variable: Scheduled Commercial Bank Total Advances (SCBTA)

Independent Variable: Time (1991-2014)

Table 4.23: Growth Rate of Scheduled Commercial Bank Total Advances both Instantaneous and Compound (1991-2014)

Dependent Variable: LOG(SCBTA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.54454	0.061029	189.1653	0.0000
TIME	0.181754	0.004271	42.55407	0.0000
R-squared	0.987997	F-statistic		1810.849
Adjusted R-squared	0.987451	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.533755	**Instantaneous rate of growth**		**18.17**
Anti-Log(α_1)	1.199319125	**Compound rate of growth**		**19.93**

Source: Author's Own Calculation

The table illustrates the growth rate of total advances at scheduled commercial banks during the period 1991 to 2014. During the review period, total advances at scheduled commercial banks have been increasing. The total amount advanced annually by commercial banks increased by 18.17 percent. A compound growth rate of 19.93 percent is recorded for the total advances of scheduled commercial banks. As shown in the results, the coefficient of determination is 0.98, and the F statistics indicate that the model is statistically significant.

4.5 Commercial Banks' Branch Coverage by Bank Group

MODEL: 4.24

LOG (SCBR) = α_0+ α_1 LOG (PBR) + α_2 LOG (PVR) +μ_1

Dependent Variable: Rural Branches of Scheduled Commercial Banks (SCBR)

Independent Variable: Rural Branches of Public Sector Commercial Banks (PBR)

Independent Variable: Rural Branches of Private Sector Commercial Banks (PVR)

MODEL: 4.25

LOG (SCBTB) = α_0+ α_1 LOG (PBTB) + α_2 LOG (PVTB) +μ_1

Dependent Variable: Total Branches of Scheduled Commercial Banks (SCBTB)

Independent Variable: Total Branches of Public Sector Commercial Banks (PBTB)

Independent Variable: Total Branches of Private Sector Commercial Banks (PVTB)

MODEL: 4.26

LOG (SCBU) = α_0+ α_1 LOG (PBU) + α_2 LOG (PVU) +μ_1

Dependent Variable: Urban Branches of Scheduled Commercial Banks (SCBU)

Independent Variable: Urban Branches of Public Sector Commercial Banks (PBU)

Independent Variable: Urban Branches of Private Sector Commercial Banks (PVU)

MODEL: 4.27

LOG (SCBM) = α_0+ α_1 LOG (PBM) + α_2 LOG (PVM) +μ_1

Dependent Variable: Metropolitan Branches of Scheduled Commercial Banks (SCBM)

Independent Variable: Metropolitan Branches of Public Sector Commercial Banks (PBM)

Independent Variable: Metropolitan Branches of Private Sector Commercial Banks (PVM)

MODEL: 4.28

LOG (SCBSU) = α_0+ α_1 LOG (PBSU) + α_2 LOG (PVSU) +μ_1

Dependent Variable: Semi urban Branches of Scheduled Commercial Banks (SCBSU)

Independent Variable: Semi urban Branches of Public Sector Commercial Banks (PBSU)

Independent Variable: Semi urban Branches of Private Sector Commercial Banks (PVSU)

Table 4.24: Distribution of branches by bank group among commercial banks

Model 4.24: LOG (SCBR) = α_0+ α_1 LOG (PBR) + α_2 LOG (PVR) +μ_1							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	2.217155	1.283930	1.726851	0.1034	0.9906	1.20	845.0681
LOG(PBR)	0.807869	0.167539	4.821981	0.0002			
LOG(PVR)	0.027827	0.053028	0.524756	0.6069			

Model 4.25: LOG (SCBTB) = α_0+ α_1 LOG (PBTB) + α_2 LOG (PVTB) +μ_1

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	0.294318	0.151484	1.94290	0.0678	0.9997	1.002	42130.26
LOG(PBTB)	0.998488	0.020733	48.1603	0.0000			
LOG(PVTB)	0.009126	0.008540	1.06858	0.2994			

Model 4.26: LOG (SCBU) = α_0+ α_1 LOG (PBU) + α_2 LOG (PVU) +μ_1

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	0.401280	0.095619	4.196659	0.0004	0.9998	1.30	80952.23
LOG(PBU)	0.843605	0.016560	50.94087	0.0000			
LOG(PVU)	0.167457	0.007943	21.08360	0.0000			

Model 4.27: LOG (SCBM) = α_0+ α_1 LOG (PBM) + α_2 LOG (PVM) +μ_1

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	-0.000176	0.119065	-0.001475	0.9988	0.9997	1.37	49083.13
LOG(PBM)	0.937194	0.020597	45.50197	0.0000			
LOG(PVM)	0.103146	0.009662	10.67584	0.0000			

Model 4.28: LOG (SCBSU) = α_0+ α_1 LOG (PBSU) + α_2 LOG (PVSU) +μ_1

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	1.303913	0.660274	1.974807	0.0648	0.9987	1.40	6851.973
LOG(PBSU)	0.731348	0.121389	6.024836	0.0000			
LOG(PVSU)	0.200809	0.063253	3.174675	0.0055			

Source: Author's Own Calculation

The regression model 4.24 identifies the impact of public sector rural branches, private sector rural branches and scheduled commercial bank rural branches. The regression estimates suggest that rural branches of public sector commercial banks is positively and statistically significantly related to the rural branches of scheduled commercial banks in India. On the other hand rural branches of private sector commercial banks are also positively but insignificantly related to rural branches of scheduled commercial banks. Rural branches of public sector commercial banks have a coefficient of 0.80, this implies that increase in rural branches of public sector commercial banks by one percent leads to a 0.80 percent rise in total rural branches of scheduled commercial banks. Accordingly rural branches of private sector commercial banks have a coefficient of 0.027, this implies that increase in rural branches of private sector commercial banks by one percent leads to a 0.027 percent rise in total rural branches of scheduled commercial banks. In this case, the value of R^2 is 0.99, which is quite satisfactory. The value of F-statistics is 845.0681, which implies that the regression model as a whole is therefore statistically significant.

In the regression model 4.25, the estimated coefficient of independent variable total branches of public sector commercial banks (PBTB) is statistically significant and shows a positive impact on the total branches of the scheduled commercial banks. Total branches of public sector commercial banks has a regression coefficient of 0.99, it indicates that increase in total branches of public sector commercial banks by one percent leads to a 0.99 percent increase in total branches of scheduled commercial bank branches. The coefficient of total branches of private sector commercial banks is 0.009, which indicates that an increase in total branches of private sector commercial banks will increase total branches of commercial banks by 0.009 percent. According to the value of F-statistics (42130.26), the overall model is significant. Likewise, the R-square value is 0.99 which indicates a good fit.

The regression model 4.26 illustrates the impact of urban branches of public sector commercial banks and urban branches of private sector commercial banks on the total urban branches of scheduled commercial bank branches. The coefficient of PBU (urban branches of public sector schedule commercial banks) and coefficient of PVU (urban branches of private sector scheduled commercial banks) indicate that it has a positive relation with urban branches of scheduled commercial banks. According to the estimated coefficient of scheduled public sector commercial bank (0.84), an increase of one percent in urban branches of public sector scheduled commercial banks results in a 0.84 percent increase in total urban branches of scheduled commercial banks. The value of the estimated coefficient of urban branches of private sector commercial bank is 0.16, it indicates that increasing urban branches of private

sector commercial banks by one percent leads to a 0.16 percent increase in total urban branches of scheduled commercial banks. The F test for the overall model also indicates that it is highly significant, F=80952.23. The value of R^2 is 0.99, which implies that over 99 percent variations in the urban branches of scheduled commercial banks were explained by the independent variables.

The regression model 4.27 indicates the impact of metropolitan branches of public commercial banks and private commercial banks on metropolitan branches of scheduled commercial banks. The value of the estimated coefficient of metropolitan branches of public sector commercial banks is 0.93. It shows that an increase in the metropolitan branches of public sector commercial banks by one percent leads to an increase in the metropolitan branches of scheduled commercial banks by 0.93 percent. The estimated coefficients of the independent variables are statistically significant at the significance level of 0.05. The model's estimation results suggest that the coefficient of metropolitan branches of private commercial banks is 0.10. Accordingly, an increase of one percent in metropolitan branches of private sector commercial banks leads to an increase of 0.10 percent in total metropolitan branches of scheduled commercial banks. The value of F - Statistics is 49083.13, implies that the explanatory variables in the model altogether affect total metropolitan branches of scheduled commercial banks in a significant way. The value of the coefficient of determination is 0.99, according to the model the explanatory variables in the model explain approximately 99 percent of the variance of metropolitan branches of scheduled commercial banks.

The regression model 4.28 illustrates the impact of semi urban branches of public and private sector commercial banks on the semi urban branches of scheduled commercial banks. The estimated coefficient of semi urban branches of public sector commercial banks is 0.73, which means an increase of one percent in semi urban branches of public sector commercial banks results in a 0.73 percent increase in total semi urban branches of scheduled commercial banks. The value of the estimated coefficient of semi urban branches of private sector commercial banks is 0.20, it indicates that increasing semi urban branches of private sector commercial banks by one percent leads to a 0.20percent increase in total semi urban branches of scheduled commercial banks. The F test for the overall model also indicates that it is highly significant, F= 6851.973. The value of R^2 is 0.99.

4.6 Growth of Commercial Bank Branches: A Case of Public and Private Sector Banks

MODEL: 4.29

LOG (SCBR) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Rural Branches of Scheduled Commercial Banks (SCBR)

Independent Variable: Time (1991-2014)

MODEL: 4.30

LOG (SCBSU) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Semi urban Branches of Scheduled Commercial Banks (SCBSU)

Independent Variable: Time (1991-2014)

MODEL: 4.31

LOG (SCBU) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Urban Branches of Scheduled Commercial Banks (SCBU)

Independent Variable: Time (1991-2014)

MODEL: 4.32

LOG (SCBM) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Metropolitan Branches of Scheduled Commercial Banks (SCBM)

Independent Variable: Time (1991-2014)

MODEL: 4.33

LOG (SCBTB) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Total Branches of Scheduled Commercial Banks (SCBTB)

Independent Variable: Time (1991-2014)

MODEL: 4.34

LOG (PBR) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Rural Branches of Public Sector Commercial Banks (PBR)

Independent Variable: Time (1991-2014)

MODEL: 4.35

LOG (PBU) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Urban Branches of Public Sector Commercial Banks (PBU)

Independent Variable: Time (1991-2014)

MODEL: 4.36

LOG (PBSU) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Semi Urban Branches of Public Sector Commercial Banks (PBSU)

Independent Variable: Time (1991-2014)

MODEL: 4.37

LOG (PBM) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Metropolitan Branches of Public Sector Commercial Banks (PBM)

Independent Variable: Time (1991-2014)

MODEL: 4.38

LOG (PBTB) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Total Branches of Public Sector Commercial Banks (PBTB)

Independent Variable: Time (1991-2014)

MODEL: 4.39

LOG (PVTB) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Total Branches of Private Sector Commercial Banks (PVTB)

Independent Variable: Time (1991-2014)

MODEL: 4.40

LOG (PVR) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Rural Branches of Private Sector Commercial Banks (PVR)

Independent Variable: Time (1991-2014)

MODEL: 4.41

LOG (PVU) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Urban Branches of Private Sector Commercial Banks (PVU)

Independent Variable: Time (1991-2014)

MODEL: 4.42

LOG (PVSU) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Semi Urban Branches of Private Sector Commercial Banks (PVSU)

Independent Variable: Time (1991-2014)

MODEL: 4.43

LOG (PVM) = $\alpha_0 + \alpha_1 t + \mu_1$

Dependent Variable: Metropolitan Branches of Private Sector Commercial Banks (PVM)

Independent Variable: Time (1991-2014)

Table 4.25: Commercial banks' branch growth rates by bank group

Model 4.29: LOG (SCBR) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	10.42353	0.037848	275.4062	0.0000	0.8316	1.25	719.1970
TIME	-0.002246	0.002649	-0.848055	0.0405	Anti-Log(α_1)		0.997756
Instantaneous rate of growth		**-0.22**	**Compound rate of growth**				**-0.21**
Model 4.30: LOG (SCBSU) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	9.239184	0.045463	203.2242	0.0000	0.8550	1.16	129.8226
TIME	0.036253	0.003182	11.39397	0.0000	Anti-Log(α_1)		1.036918
Instantaneous rate of growth		**3.62**	**Compound rate of growth**				**3.69**
Model 4.31: LOG (SCBU) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	8.938447	0.037917	235.7344	0.0000	0.9124	1.10	229.2295
TIME	0.040177	0.002654	15.14033	0.0000	Anti-Log(α_1)		1.040995

Instantaneous rate of growth		**4.01**	**Compound rate of growth**				**4.09**
Model 4.32: LOG (SCBM) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	8.592339	0.034399	249.7810	0.0000	0.9562	1.35	481.0966
TIME	0.052805	0.002407	21.93391	0.0000	Anti-Log(α_1)		1.054224
Instantaneous rate of growth		**5.28**	**Compound rate of growth**				**5.42**
Model 4.33: LOG (SCBTB) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	10.91250	0.038140	286.1151	0.0000	0.7787	1.12	774.2008
TIME	0.023486	0.002669	8.798868	0.0000	Anti-Log(α_1)		1.023763
Instantaneous rate of growth		**2.34**	**Compound rate of growth**				**2.37**
Model 4.34: LOG (PBR) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	9.799460	0.048556	201.8160	0.0000	0.8207	1.25	496.957
TIME	0.007096	0.003183	2.229255	0.0381	Anti-Log(α_1)		1.007121
Instantaneous rate of growth		**0.70**	**Compound rate of growth**				**0.71**
Model 4.35: LOG (PBU) = $\alpha_0 + \alpha_1 t + \mu_1$							
Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	8.825276	0.036275	243.2881	0.0000	0.8867	1.12	172.2077
TIME	0.033315	0.002539	13.12279	0.0000	Anti-Log(α_1)		1.033876
Instantaneous rate of growth		**3.33**	**Compound rate of growth**				**3.38**

Model 4.36: LOG (PBSU) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	9.013584	0.045309	198.9368	0.0000	0.8043	1.14	190.42153
TIME	0.030153	0.003171	9.509024	0.0000	Anti-Log(α_1)		1.030612
Instantaneous rate of growth		**3.01**	**Compound rate of growth**				**3.06**

Model 4.37: LOG (PBM) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	8.510589	0.033879	251.2075	0.0000	0.9434	1.39	367.2614
TIME	0.045438	0.002371	19.16407	0.0000	Anti-Log(α_1)		1.046486
Instantaneous rate of growth		**4.54**	**Compound rate of growth**				**4.64**

Model 4.38: LOG (PBTB) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	10.55754	0.037176	283.9911	0.0000	0.7828	1.12	179.3129
TIME	0.023171	0.002602	8.905784	0.0000	Anti-Log(α_1)		1.023441
Instantaneous rate of growth		**2.31**	**Compound rate of growth**				**2.34**

Model 4.39: LOG (PVTB) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	8.007212	0.064596	123.9588	0.0000	0.893962	1.10	185.4729
TIME	0.061568	0.004521	13.61884	0.0000	Anti-Log(α_1)		1.063502
Instantaneous rate of growth		**6.15**	**Compound rate of growth**				**6.35**

Model 4.40: LOG (PVR) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	6.929324	0.111636	62.07081	0.0000	0.8688	1.26	446.9906
TIME	0.016518	0.007813	2.114215	0.0461	Anti-Log(α_1)		1.016655
Instantaneous rate of growth		**1.65**	**Compound rate of growth**				**1.66**

Model 4.41: LOG (PVU) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	6.523637	0.049641	131.4175	0.0000	0.95	1.11	428.8526
TIME	0.071945	0.003474	20.70876	0.0000	Anti-Log(α_1)		1.074596
Instantaneous rate of growth		**7.19**	**Compound rate of growth**				**7.45**

Model 4.42: LOG (PVSU) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	6.904346	0.085520	80.73412	0.0000	0.8088	1.13	931.0412
TIME	0.057751	0.005985	9.649048	0.0000	Anti-Log(α_1)		1.059451
Instantaneous rate of growth		5.77	**Compound rate of growth**				**5.94**

Model 4.43: LOG (PVM) = $\alpha_0 + \alpha_1 t + \mu_1$

Variable	Coefficient	Std.Error	t-Statistic	Prob.	R^2	D-W	F-statistics
C	5.973798	0.028132	212.3484	0.0000	0.9914	1.49	2543.599
TIME	0.099296	0.001969	50.43411	0.0000	Anti-Log(α_1)		1.104393
Instantaneous rate of growth		**9.92**	**Compound rate of growth**				**10.43**

Source: Author's Own Calculation

The results of model 4.29 depict the growth rate of rural branches of scheduled commercial banks in India. The result shows there is a declining trend in the growth of rural branches of scheduled commercial banks during the period under consideration. It declined at a rate of 0.22 percent per annum at the significance of five percent significant level. The compound growth rate of rural branches of scheduled commercial banks is -0.21percent. The obtained R-squared and F-statistic are satisfactory in this regression model.

The results of model 4.30 show the instantaneous and compound growth rate of semi urban branches of scheduled commercial banks during the study period. The regression model depicts that the compound growth rate of semi urban branches of scheduled commercial banks is 3.69 percent. Further, the result shows that semi urban branches of scheduled commercial banks increased at a rate of 3.62 percent per annum, significant at 5 percent level. Here the value of the coefficient of determination is 0.85 which means the independent variable in the model can explain 85 percent of the variation in the dependent variable. The F test for the overall model shows that it is significant.

The results in the model 4.31above show the growth of urban branches of scheduled commercial banks during the period 1991 to 2014. Urban branches of scheduled commercial banks grew at a rate of 4.01 percent per annum. The compound growth rate of urban branches of scheduled commercial banks was recorded at 4.09 percent. Results indicate a coefficient of determination of 0.91. The overall model is statistically significant, as shown by F statistics.

As per the results in model 4.32 above, the metropolitan branches of scheduled commercial banks increased significantly by 5.28 percent per year during the period1991 to 2014. During this period, the compound growth rate of metropolitan branches of scheduled commercial banks was 5.42 percent. The result indicates that the coefficient of determination is 0.95. F statistics demonstrate that the overall model is statistically significant.

The regression model 4.33 shows that the total branches of scheduled commercial banks have increased during the study period. During the period 1991-2014, growth rate of total branches of scheduled commercial banks showed a positive trend. At five percent significant level of statistical significance, results indicate a 2.34 percent increase annually in total branches of scheduled commercial banks. The compound growth rate of total branches of scheduled

commercial banks is 2.37 percent. The coefficient of determination is 0.77 as determined by the results. This model's overall significance is demonstrated by F statistics.

During the period1991-2014, a positive trend can be found in both the instantaneous and compound growth rates of rural branches of public sector commercial banks as per the model 4.34 above. The regression model depicts that the compound growth rates of rural branches of public sector commercial banks is 0.71 percent. Further, the result shows that growth rates of rural branches of public sector commercial banks increased at a rate of 0.70 percent per annum. The value of the coefficient of determination is 0.82 which means the independent variable in the model can explain 82 percent of the variation in the dependent variable. Considering the overall model, the F test indicates it is statistically significant.

The above model 4.35 provides the Instantaneous and Compound growth rate of urban branches of public sector commercial banks from 1991 to 2014. According to the results, the urban branches of public sector commercial banks increased significantly over the study period by 3.33 percent annually and 3.38 percent compounded. F statistics demonstrate that the overall model is statistically significant.

From 1991 to 2014, both the Instantaneous and Compound growth rate of semi urban branches of public sector commercial banks are shown in the model 4.36 above. Semi urban branches of public sector commercial banks increased by 3.01 percent annually and 3.06 percent compounded during the study period, as per the results. The value of the coefficient of determination is 0.80. F statistics demonstrate that the overall model is statistically significant.

The results in the model 4.37 in above table depict the growth rate of metropolitan branches of public sector commercial banks in India. The result shows there is a significant positive trend in growth rate of metropolitan branches of public sector commercial banks in India during the period under consideration. It increased at a rate of 4.54 percent per annum at the significance of five percent significant level. The compound growth rate of metropolitan branches of public sector commercial banks in India is 4.64 percent. The obtained R-squared and F-statistic are satisfactory in this regression model.

In the above table, model 4.38 provides the Instantaneous and Compound growth rate of total branches of public sector commercial banks from 1991 to 2014. According to the results, the

total branches of public sector commercial banks increased significantly over the study period by 2.31 percent annually and 2.34 percent compounded. The coefficient of determination is 0.78 as determined by the results. F statistics demonstrate that the overall model is statistically significant.

As per the results drawn from model 4.39 in above table, both the Instantaneous and Compound growth rate of total branches of private sector commercial banks has shown a positive trend. Total branches of private sector commercial banks increased by 6.15 percent annually and 6.35 percent compounded during the study period, as per the results. F statistics demonstrate that the overall model is statistically significant.

The model 4.40 in the table above shows the growth rate of rural branches of private sector commercial banks from 1991 to 2014. A positive trend has emerged in the growth rate of rural branches of private sector commercial banks during the period under review. Rural branches of private sector commercial banks increased by 1.65 percent annually. A compound growth rate of 1.66 percent is recorded for the rural branches of private sector commercial banks. According to the results, the coefficient of determination is 0.86, and the F statistics indicate the model is statistically significant.

The results presented in the model 4.41 in the table above indicate that the growth rate of urban branches of private sector commercial banks has increased during the period 1991 and 2014. It is evident that urban branches of private sector commercial banks have been trending upwards during the entire period under consideration. A 7.19 percent increase in urban branches of private sector commercial banks was recorded. The compound growth rate of urban branches of private sector commercial banks is 7.45 percent. The coefficient of determination of is 0.95 and F statistics indicate that the overall model is statistically significant.

The model 4.42 in the table above describes the Instantaneous and Compound growth rate of semi urban branches of private sector commercial banks. Semi urban branches of private sector commercial banks increased by 5.77 percent annually and 5.94 percent compounded during the study period, as per the results. The value of the coefficient of determination is 0.80. F statistics demonstrate that the overall model is statistically significant.

The above model 4.35 provides the Instantaneous and Compound growth rate of metropolitan branches of private sector commercial banks from 1991 to 2014. According to the results, the

metropolitan branches of private sector commercial banks increased significantly over the study period by 9.92 percent annually and 10.43 percent compounded. The obtained R-squared and F statistics demonstrate that the overall model is statistically significant.

Summary of Results

Impact of Independent variable on dependent variable

Dependent Variable	Independent Variable	Degree of Impact
SCBTD	PBTD	0.68
SCBTD	PVTD	0.25
SCBTID	PBTID	0.74
SCBTID	PVTID	0.19
SCBDD	PBDD	0.77
SCBDD	PVDD	0.20
PBTD	PBDD	0.26
PBTD	PBTID	0.78
PVTD	PVDD	0.38
PVTD	PVTID	0.62
PBTA	PBAGR	1.02
PVTA	PVAGR	0.87
SCBTA	PBTA	0.70
SCBTA	PVTA	0.23
SCBTA	PBAGR	0.62
SCBTA	PVAGR	0.26

SCBR	PBR	0.80
SCBR	PVR	0.02
SCBTB	PBTB	0.99
SCBTB	PVTB	0.009
SCBU	PBU	0.84
SCBU	PVU	0.16
SCBM	PBM	0.93
SCBM	PVM	0.10
SCBSU	PBSU	0.73
SCBSU	PVSU	0.20

Source: Author's Own Calculation

Growth rate (Percentage)

Variable	**1991-2014**
PBDD	11.22
PVDD	21.92
SCBDD	13.13
PBTID	15.88
PVTID	22.28
SCBTID	16.32
PBTD	15.35
PVTD	22.41
SCBTD	16.10

PBAGR	17.12
PBTA	17.62
PVAGR	27.96
PVTA	24.63
SCBA	18.17
SCBR	-0.22
SCBSU	3.62
SCBU	4.01
SCBM	5.28
SCBTB	2.34
PBR	0.70
PBU	3.33
PBSU	3.01
PBM	4.54
PBTB	2.31
PVTB	6.15
PVR	1,65
PVU	7.19
PVSU	5.77
PVM	9.92

Source: Author's Own Calculation