



Trend analysis of scheduled commercial banks

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Abstract

Banking system plays a critical role in any modern economy. Banks in India have been undergoing dynamic challenges over the past few years as it is evident from indicators. Among the banking institutions, scheduled commercial banks play a dominant role in the economic development of the country. The present study is mainly concerned with the trend analysis of comparative profiles of Public Banks, Private Banks and Foreign Banks in India during the period of 1990 to 2020 that reflects the impact of new competitive environment on the bank's performance in terms of various selected indicators namely deposits, investments, advances, borrowings and assets/ liabilities. The study has collected data through secondary sources from various issues of Statistical Table Relating to Banks. The Log-Lin model and OLS methods were used for data analysis, represented by Instantaneous and Compound Annual Growth Rate. The results have found strong witnessed that the Private Sector Banks surpasses the other bank groups and topped the position in all the indicators followed by Foreign Banks and Public Sector Banks.

Keywords: public sector banks, private sector banks and foreign banks

Introduction

It has been around one and half decade since financial sector reforms were initiated in India. As banks are the major segment of the financial sector in India, reform measures are primarily aimed at improving the performance of the banking sector. An efficient banking system has significant positive externalities, which increases the efficiency of economic transaction in general. Commercial Banks are the oldest and the largest banking institutions in India.

The post-nationalization era commercial banks were faced numerous consequential problems. With poor training, lack of employee efficiency and productivity went down, problem of non-recovery of loans cropped up, and pre-emption of funds in meeting statutory requirements went up, resulting in reduced profitability of banks. It was such a situation in 1991 when the new economic policies were launched by the Government. A Committee on financial sector under the Chairmanship of Shri M, Narashimham was appointed which suggested measures of far-reaching significance to improve efficiency, productivity and profitability of banks. These measures have been largely implemented.

Classification of Scheduled Commercial Banks in India

On the basis of ownership and control over management commercial banks in India are classified into four broad categories i.e.

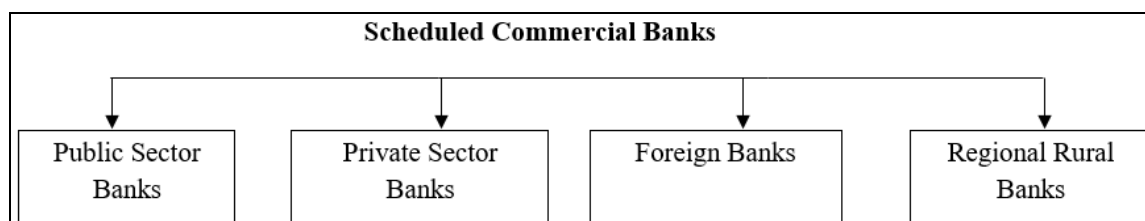


Fig 1

Public sector banks are those in which the majority stake is held by the Government of India and these banks accounts for the major share of the banking business in India. Public sector banks together make up the largest category in the Indian banking system. Public sector banks have taken the lead role in branch expansion, particularly in the rural areas. Before merger and acquisitions of public sector banks, there are sub-classified into two categories i.e.

a. State Bank of India Group, and

b. Nationalized Banks.

Private Sector Banks are those banks in which major part of stake or equity are held by the private shareholders. These are the major players in the banking sector as well as in expansion of the business activities India. The present private-sector banks equipped with all kinds of contemporary innovations, monetary tools and techniques to handle the complexities are a result of the evolutionary process over two centuries. Private Sector banks fall in two categories. Those private sector banks which were in existence at the time of nationalization are 23 and are called Old Private Sector Banks. The banks, which came in operation after 1991, with the introduction of economic reforms and financial sector reforms are called “new private-sector banks”.

The presence of foreign banks in India has benefitted the financial system by enhancing competition, transfer of technology and specialized skills resulting in higher efficiency and greater customer satisfaction. They have also enabled large Indian companies to access foreign currency resources from their overseas branches in times of foreign currency constraint. They are active players in the money market and foreign exchange market which has contributed to enhancing the liquidity and deepening of these markets in terms of both volumes and products. Foreign banks will be permitted to have either branches or subsidiaries not both.

The growing trend of banking services is found significant after the new economic reforms in India. Prudent banking regulation is recognized as one of the reasons why India was less affected by the global financial crisis. In order to analyse the trends of Scheduled Commercial Banks, present study has taken into consideration of bank group wise major components of balance sheet namely deposits, investments, advances, borrowings and Total liabilities and assets for the time period of 1990-2020. Trend analyses are required for these essential indicators to understand the financial health of the SCBs.

Review of Literature

Batra Vrinda, Batra Neetika (2020) analysed the trends of NPAs over the last 14 years (2005-2018) and tests the differences in performance levels by way of NPAs of the three types of bank groups as per ownership type (public sector, private sector and foreign banks). The findings of the study indicated that the trend has been increasing since the year 2011 and the problem is more serious for public sector banks.

Kumar Praveen and Pavithra (2017) examined recent trends and developments of banking sectors in order to present the technological developments in Indian banking sector. The study concluded that banking sector in India is progressing with the increased growth in customer base, due to the newly improved and innovative facilities offered by banks. The economic growth of the country is an indicator for the growth of the banking sector.

Malyadri and Sirisha (2015) [2] examined comparative profiles of Public Banks, Private Banks and Foreign Banks for a period of 2006-13. The tool used for data analysis of the profile of bank group wise is Compound Annual Growth Rate (CAGR) which is expressed in percentages. The results have found strong evidence that the Private Sector Banks surpasses the other bank groups and topped the position in all the parameters.

Rajakumar Dennis, Shetty Anita B, Karmarkar Vishakha M (2013) analyzed trends in bank deposits between 2008 and 2012. The group-wise analysis showed that banks were not evenly affected in the post-crisis period. The study argued that nationalised banks enjoyed more confidence of depositors at the time of the crisis due to the state guarantee; it makes more sense for banks to remain under state control so as to avoid loss of confidence of depositors.

It is observed by the literature review that there are studies which concentrate emerging trends in banking sector through modern technology, digitalization of banking system. Only few studies are concern group wise performance of banking sector through parameter like NPAs, and deposits. But there are other major components of balance sheet of banking sector namely investment, advances, borrowings and assets, which are true parameter to measure the financial health and stability of banking sector. Therefore the present study needs to full fill the research gap.

Objective

- To examine the trends in Scheduled Commercial Banks

Data and Methodology

To analyze bank group wise trends in SCBs, data for 31 years, that is from 1990-2020 has been used. The required data on the selected indicators has been compiled from various issues of Report on Trend and Progress of Banking in India, RBI. In order to observe the growth rate of selected indicators, the Log-Lin model and OLS tools were used for data analysis, represented by Instantaneous and Compound Annual Growth Rate.

Log-Lin Model

In order to measure the growth rate, the following compound interest formula is used.

$$Y_t = Y_0(1 + r)^t \quad (1)$$

Here r is the compound rate of growth of Y. Taking the natural logarithm of the equation (1), it is rewritten as

$$\ln Y_t = \ln Y_0 + t \ln(1 + r) \quad (2)$$

By denoting $\beta_1 = \ln Y_0$ and $\beta_2 = \ln(1 + r)$

Now the equation (2) is written as

$$\ln Y_t = \beta_1 + \beta_2 t \quad (3)$$

By adding the stochastic term to equation (3), the compound growth rate model (Log-Linear) model can be written as

$$\ln Y_t = \beta_1 + \beta_2 t + u_t \quad (4)$$

The model represented in (4) is known as semi-log model where one variable is in logarithmic form. In this Log-Lin model, the slope coefficient (β_2) measures the relative change in the value of Y for given absolute change in the value of regressor (t). The coefficient of the model is estimated by using OLS method. The statistical significance to t value of β_2 indicates whether the instantaneous growth of the observed variable over time period is significantly different from zero; thus, it can be conclude that the trend value of the variable under study is significant. The obtained value of β_2 multiplied by 100 is referred as semi elasticity; and this numerical value measures the instantaneous rate of growth. However, the compound growth rate is obtained by computing antilog of $(\beta_2 - 1)$.

Based on the results of OLS estimates, the results of Log-Linear model and growth rates of investment, deposits, advances, borrowings and assets/liabilities of Public Sector Banks (PSBs), Private Sector Banks (PVBs) and Foreign Banks (FBs) are represented from Table 1 to Table 10. The time series line of the variables is also presented in Figure 1 to Figure 5.

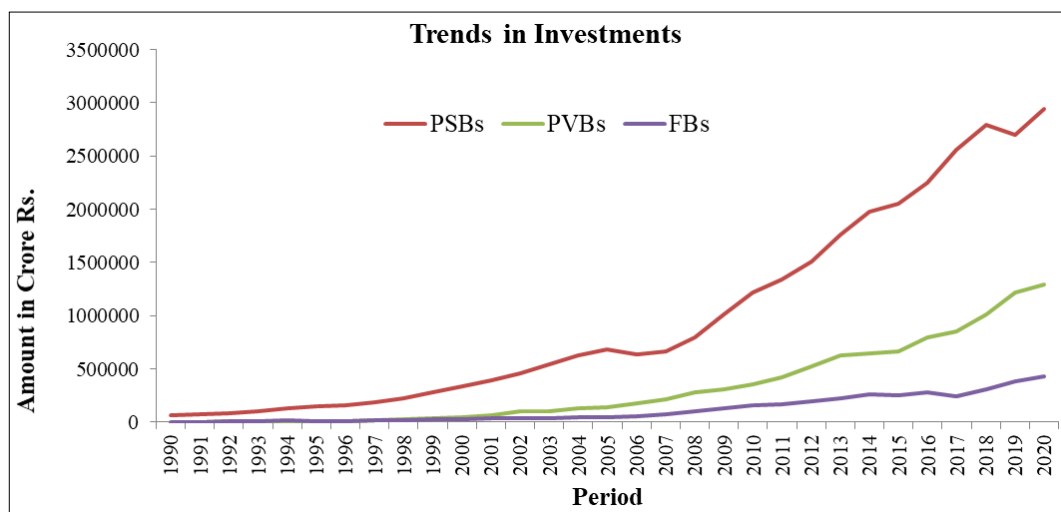


Fig 1: Trends in Investment

Figure 1 represents the line graph of investments of PSBs, PVBs and FBs. The overall movement of the line graph of investment of all three types of banks from 1990 to 2020 is upward. However, the significance of upward trend in the investment of all three types of banks is empirically examined by constructing Log-Linear model and the result is portrayed in Table 1.

Table 1: Estimates of Log-Lin Model for Trends in Investment

Regression Statistics		PSBs	PVBs	FBs
Multiple R		0.9925	0.9821	0.9832
R Square		0.9850	0.9645	0.9666
Adjusted R Square		0.9845	0.9632	0.9655
Standard Error		0.1500	0.3762	0.2732
RSS (Regression Sum of Square)		42.8595	111.3692	62.7361
ESS (Error Sum of Square)		0.6522	4.1032	2.1646
F-Value		1905.6986	787.1084	840.4700
P-value		0.000	0.000	0.000
Regression coefficient for PSBs				
	Coefficients	Standard Error	t Stat	P-value
Intercept	11.1307	0.0552	201.6417	0.0000

Time	0.1315	0.0030	43.6543	0.0000
Regression coefficient for PVBs				
Intercept	8.1248	0.1385	58.6818	0.0000
Time	0.2119	0.0076	28.0555	0.0000
Regression coefficient for FBs				
Intercept	8.3230	0.1006	82.7635	0.0000
Time	0.1590	0.0055	28.9909	0.0000

As per the result presented in Table 1, the numerical coefficient of β_2 of for PSBs is 0.1315, the t-value of β_2 is 43.6543, and it is statistically significant at 5%. Similarly, the numerical coefficient of β_2 of for PVBs is 0.2119, the t-value of β_2 is 28.0555, and it is statistically significant at 5%. In the same line of PSBs, PVBs, the numerical coefficient of β_2 of for FBs is 0.1590, the t-value of β_2 is 28.9909, and it is statistically significant at 5%. Thus, it can be conclude that trend value of investment of all three types of banks is positive and significantly different from zero. Thus, based on the result presented in Table 1, the estimated value of instantaneous and compound growth rate of investment of all three types of banks from 1990 to 2020 is presented in Table 2.

Table 2: Instantaneous and Compound Growth Rate for Trends in Investment (%)

Sl. No	Bank Group wise Trends in Investment	Instantaneous Growth Rate (IGR)	Compound Growth Rate (CGR)
1	PSBs	13.15%	14.05%
2	PVBs	21.19%	23.60%
3	FBs	15.90%	17.24%

As per Table 2, both instantaneous and compound grow rate per annum from 1990 to 2020 of all three types of banks is double digit, in which investment of private banks is highest (IGR is 21.19% and CGR is 23.60%) in the study period, followed by foreign banks (IGR is 15.90% and CGR is 17.24%). Though the absolute amount of investment in public sector banks is high, the growth rate of investment in the study period is relatively less for public sector banks (IGR is 13.15% and CGR is 14.05%) when compared to rest of the bank group.

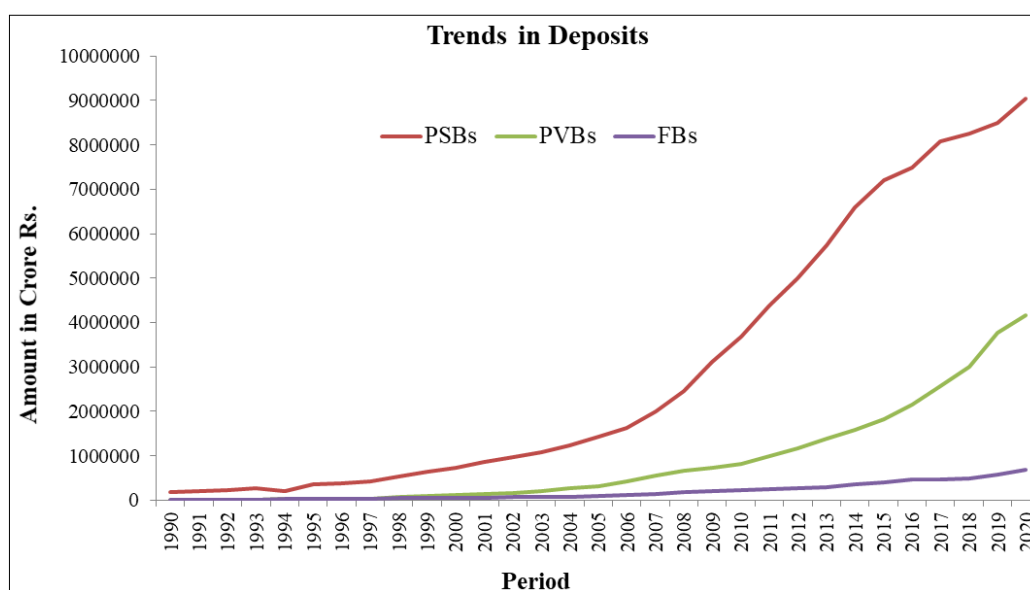


Fig 2: Trends in Deposits

Figure 2 represents the line graph of deposits of PSBs, PVBs and FBs. The line graph of deposits of bank group wise from 1990 to 2020 is increasing trend. However, the significance of upward trend in the deposits of all three types of banks is empirically examined by constructing Log-Linear model and the result is portrayed in Table 3.

Table 3: Estimates of Log-Lin Model for Trends in Deposits

Regression Statistics	PSBs	PVBs	FBs
Multiple R	0.9939	0.9926	0.9908
R Square	0.9878	0.9853	0.9816
Adjusted R Square	0.9874	0.9847	0.9810
Standard Error	0.1481	0.2392	0.1797

RSS (Regression Sum of Square)	51.7363	110.9077	50.0055
ESS (Error Sum of Square)	0.6363	1.6596	0.9366
F-Value	2357.7936	1938.0060	1548.2733
P-value	0.000	0.000	0.000
Regression coefficient for PSBs			
	Coefficients	Standard Error	t Stat
Intercept	11.9040	0.0545	218.3262
Time	0.1444	0.0030	48.5571
Regression coefficient for PVBs			
Intercept	9.0631	0.0881	102.9267
Time	0.2115	0.0048	44.0228
Regression coefficient for FBs			
Intercept	9.2080	0.0661	139.1997
Time	0.1420	0.0036	39.3481

As per the result presented in Table 3, the numerical coefficient of β_2 of for PSBs is 0.1444, the t-value of β_2 is 48.5571, and it is statistically significant at 5%. Similarly, the numerical coefficient of β_2 of for PVBs is 0.2115, the t-value of β_2 is 44.0228, and it is statistically significant at 5%. In the same line of PSBs, PVBs, the numerical coefficient of β_2 of for FBs is 0.1420, the t-value of β_2 is 39.3481, and it is statistically significant at 5%. Thus, it can be infer that trend value of deposits of all three types of banks is positive and significantly different from zero. Thus, based on the result presented in Table 3, the estimated value of instantaneous and compound growth rate of deposits of all three types of banks from 1990 to 2020 is presented in Table 4.

Table 4: Instantaneous and Compound Growth Rate for Trends in Deposits

Sl. No	Bank Group wise Trends in Deposits	Instantaneous Growth Rate (IGR)	Compound Growth Rate (CGR)
1	PSBs	14.44%	15.54%
2	PVBs	21.15%	23.55%
3	FBs	14.20%	15.26%

As per Table 4, both instantaneous and compound grow rate per annum from 1990 to 2020 of all three types of banks is double digit, in which deposits of private banks is highest (IGR is 21.15% and CGR is 23.55%) in the study period, followed by public sector banks (IGR is 14.44% and CGR is 15.54%). The growth rate of deposits in the study period is relatively less for foreign sector banks (IGR is 14.20% and CGR is 15.26%) when compared to both private and public sector banks.

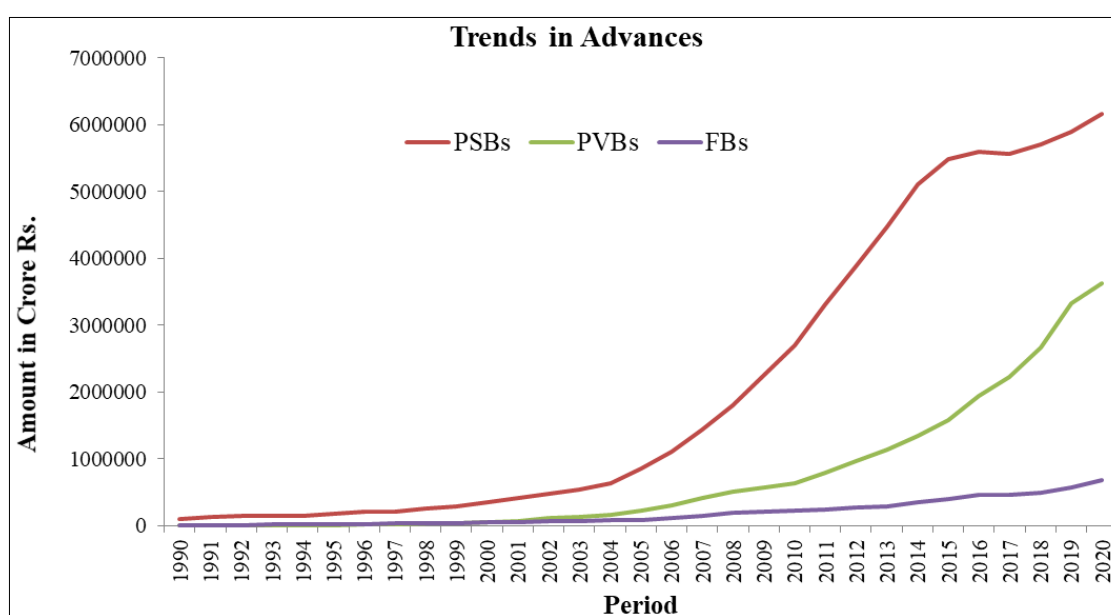


Fig 3: Trends in Advances

Figure 3 represents the line graph of advances of PSBs, PVBs and FBs. The overall movement of the line graph of advances of all three types of banks from 1990 to 2020 is upward. However, the increasing trend in the advances of all three types of banks is empirically examined by constructing Log-Linear model and the result is portrayed in Table 5.

Table 5: Estimates of Log-Lin Model for Trends in Advances

Regression Statistics		PSBs	PVBs	FBs
Multiple R		0.9876	0.9938	0.9839
R Square		0.9754	0.9876	0.9681
Adjusted R Square		0.9746	0.9871	0.9670
Standard Error		0.2301	0.2422	0.2547
RSS (Regression Sum of Square)		60.9891	135.1152	57.1073
ESS (Error Sum of Square)		1.5357	1.7006	1.8819
F-Value		1151.7445	2304.1549	880.0354
P-value		0.000	0.000	0.000
Regression coefficient for PSBs				
	Coefficients	Standard Error	t Stat	P-value
Intercept	11.2339	0.0847	132.6285	0.0000
Time	0.1568	0.0046	33.9374	0.0000
Regression coefficient for PVBs				
Intercept	8.3212	0.0891	93.3562	0.0000
Time	0.2334	0.0049	48.0016	0.0000
Regression coefficient for FBs				
Intercept	8.7198	0.0938	92.9961	0.0000
Time	0.1517	0.0051	29.6654	0.0000

As per the result presented in Table 5, the numerical coefficient of β_2 of for PSBs is 0.1568, the t-value of β_2 is 33.9374, and it is statistically significant at 5%. Similarly, the numerical coefficient of β_2 of for PVBs is 0.2334, the t-value of β_2 is 48.0016, and it is statistically significant at 5%. In the same line of PSBs, PVBs, the numerical coefficient of β_2 of for FBs is 0.1517, the t-value of β_2 is 29.6654, and it is statistically significant at 5%. Thus, it can be infer that trend value of advances of all three types of banks is positive and significantly different from zero. Thus, based on the result presented in Table 5, the estimated value of instantaneous and compound growth rate of advances of all three types of banks for the study period is presented in Table 6.

Table 6: Instantaneous and Compound Growth Rate for Trends in Advances

Sl. No	Bank Group wise Trends in Advances	Instantaneous Growth Rate (IGR)	Compound Growth Rate (CGR)
1	PSBs	15.68%	16.98%
2	PVBs	23.34%	26.29%
3	FBs	15.17%	16.39%

As shown in the Table 6, both instantaneous and compound grow rate per annum from 1990 to 2020 of all three types of banks is double digit, in which advances of private banks is highest (IGR is 23.34% and CGR is 26.29%) in the study period, followed by public sector banks (IGR is 15.68% and CGR is 16.98%). The growth rate of advances in the study period is relatively less for foreign banks (IGR is 15.17% and CGR is 16.39%) when compared to both private and public sector banks.

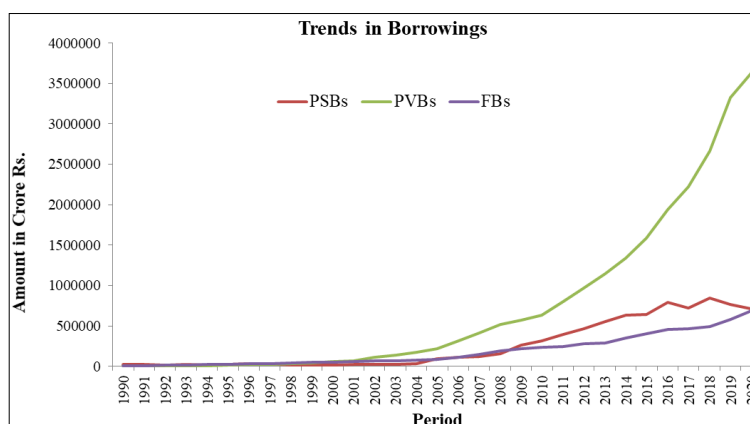
**Fig 4:** Trends in Borrowings

Figure 4 represents the line graph of borrowings of PSBs, PVBs and FBs. The trend line of borrowings of all three types of banks from 1990 to 2020 is upward. However, the significance of increasing trend in the borrowings of all three types of banks is empirically examined by constructing Log-Linear model and the result is portrayed in Table 7.

Table 7: Estimates of Log-Lin Model for Trends in Borrowings

Regression Statistics		PSBs	PVBs	FBs
Multiple R		0.9331	0.9646	0.9549
R Square		0.8706	0.9305	0.9118
Adjusted R Square		0.8661	0.9281	0.9087
Standard Error		0.5774	0.4241	0.4329
RSS (Regression Sum of Square)		65.0342	69.8784	56.1604
ESS (Error Sum of Square)		9.6669	5.2167	5.4335
F-Value		195.0972	388.4591	299.7435
P-value		0.000	0.000	0.000
Regression coefficient for PSBs				
	Coefficients	Standard Error	t Stat	P-value
Intercept	8.8546	0.2125	41.6659	0.0000
Time	0.1619	0.0116	13.9677	0.0000
Regression coefficient for PVBs				
Intercept	8.4956	0.1561	54.4191	0.0000
Time	0.1679	0.0085	19.7094	0.0000
Regression coefficient for FBs				
Intercept	7.8274	0.1593	49.1287	0.0000
Time	0.1505	0.0087	17.3131	0.0000

As per the result presented in Table 7, the numerical coefficient of β_2 of for PSBs is 0.1619, the t-value of β_2 is 13.9677, and it is statistically significant at 5% since the p-value is 0.000 which is less than 0.05. Similarly, the numerical coefficient of β_2 of for PVBs is 0.1679, the t-value of β_2 is 19.7094, and it is statistically significant at 5% since the p-value is 0.000 which is less than 0.05. In the same line of PSBs, PVBs, the numerical coefficient of β_2 of for FBs is 0.1505, the t-value of β_2 is 17.3131, and it is statistically significant at 5% since the p-value is 0.000 which is less than 0.05. Thus, it can be conclude that trend value of borrowings of all three types of banks is positive and significantly different from zero. Thus, based on the result presented in Table 7, the estimated value of instantaneous and compound growth rate of borrowings of all three types of banks from 1990 – 2020 is presented in Table 8.

Table 8: Instantaneous and Compound Growth Rate for Trends in Borrowings

Sl. No	Bank Group wise Trends in Borrowings	Instantaneous Growth Rate (IGR)	Compound Growth Rate (CGR)
1	PSBs	16.19%	17.58%
2	PVBs	16.79%	18.28%
3	FBs	15.05%	16.24%

Table 8 clearly represents that both instantaneous and compound grow rate per annum from 1990 to 2020 of all three types of banks is double digit, in which borrowings of private banks is highest (IGR is 16.79% and CGR is 18.28%) in the study period, followed by public sector banks (IGR is 16.19% and CGR is 17.58%). The growth rate of borrowings in the study period is relatively less for foreign banks (IGR is 15.05% and CGR is 16.24%) when compared to both private and public sector banks.

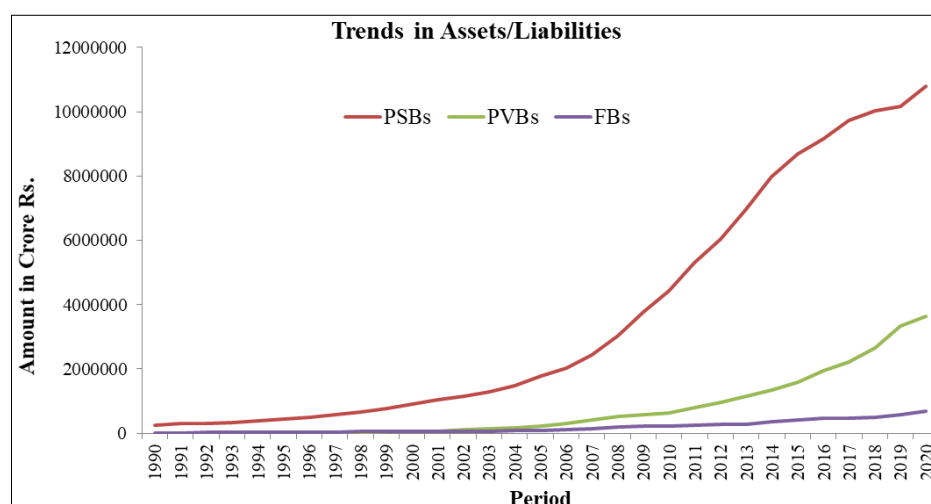
**Fig 5:** Trends in Assets/Liabilities

Figure 5 represents the line graph of assets/liabilities of PSBs, PVBs and FBs from 1990 to 2020 which is in upward. However, the significance of upward trend in the assets/liabilities of all three types of banks is empirically examined by constructing Log-Linear model and the result is portrayed in Table 9.

Table 9: Estimates of Log-Lin Model for Trends in Assets /Liabilities

Regression Statistics		PSBs	PVBs	FBs
Multiple R		0.9947	0.9920	0.9915
R Square		0.9894	0.9840	0.9831
Adjusted R Square		0.9891	0.9834	0.9825
Standard Error		0.1334	0.2568	0.1828
RSS (Regression Sum of Square)		48.3818	117.3706	56.3140
ESS (Error Sum of Square)		0.5160	1.9125	0.9689
F-Value		2718.9462	1779.7636	1685.4483
P-value		0.000	0.000	0.000
Regression coefficient for PSBs				
	Coefficients	Standard Error	t Stat	P-value
Intercept	12.2034	0.0491	248.5398	0.0000
Time	0.1397	0.0027	52.1435	0.0000
Regression coefficient for PVBs				
Intercept	9.2598	0.0945	97.9622	0.0000
Time	0.2175	0.0052	42.1872	0.0000
Regression coefficient for FBs				
Intercept	9.6296	0.0673	143.1240	0.0000
Time	0.1507	0.0037	41.0542	0.0000

As per the result presented in Table 9, the numerical coefficient of β_2 of for PSBs is 0.1397, the t-value of β_2 is 52.1435, and it is statistically significant at 5%. Similarly, the numerical coefficient of β_2 of for PVBs is 0.2175, the t-value of β_2 is 42.1872, and it is statistically significant at 5%. In the same line of PSBs, PVBs, the numerical coefficient of β_2 of for FBs is 0.1507, the t-value of β_2 is 41.0542, and it is statistically significant at 5%. Thus, it can be conclude that trend value of assets/liabilities of all three types of banks is positive and significantly different from zero. Thus, based on the result presented in Table 9, the estimated value of instantaneous and compound growth rate of assets/liabilities of all three types of banks from 1990 – 2020 is presented in Table 10.

Table 10: Instantaneous and Compound Growth Rate for Trends in Assets /Liabilities

Sl. No	Bank Group wise Trends in Assets /Liabilities	Instantaneous Growth Rate (IGR)	Compound Growth Rate (CGR)
1	PSBs	13.97%	14.99%
2	PVBs	21.75%	24.30%
3	FBs	15.07%	16.26%

Table 10 clearly shown that, both instantaneous and compound growth rate per annum from 1990 to 2020 of all three types of banks is double digit, in which advances of private banks is highest (IGR is 21.75% and CGR is 24.30%) in the study period, followed by foreign sector banks (IGR is 15.07% and CGR is 16.26%). The growth rate of assets/liabilities in the study period is relatively less for public sector banks (IGR is 13.97% and CGR is 14.99%) when compared to both private and foreign banks.

Therefore, bank group wise trend analysis of investment, deposits, advances; borrowings, assets and liabilities witnessed private sector banks are outstripped public sector banks and foreign banks in all the indicators, which are statistically significant. In the same line, the estimated value of Instantaneous and Compound growth rate of all the indicators from 1990 – 2020 has also proved. It can be conclude that financial health of private sector banks are better compare to public and foreign banks. However, being a major stake holder public sector banks are least performer in all the selected indicators.

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