

CHAPTER 4

METHODOLOGY AND DATA DESCRIPTION

In order to fulfil the objective of the study, following methodology is used consists of three stages: first the technique of compound growth rate (CAGR); second is the coefficient of variation; third is the computation of aggregate index for performance of banks. The compound growth rate is computed by fitting an exponential function to the relevant data. An exponential trend equation is defined as:

$$Y = ab^t e^u$$

Where b is $1+g$ and g is the compound growth rate, Y is the variable whose growth rate is sought to be computed and u is the random disturbance term,

The semi natural logarithmic transformation of this function is:

$\ln Y = \ln a + t \ln b + u$ Which is a semi log linear function. And 'ln' is natural logarithm.

The values of the parameter a and b in this equation are estimated by using OLS method. CAGR is computed by using the formula:

$$\text{CAGR (g\%)} = (\text{anti-log } b - 1) * 100$$

Second is the coefficient of variation computed as a ratio of standard deviation to arithmetic mean of observations is used to study inter-bank variation of performance. When multiplied by 100, the coefficient of variation value is interpreted as the extent of variation as a percentage of arithmetic mean. .

For comparing the performance of banks, we have selected 10 parameters in the form of ratios of which 8 parameters range between the values zero and one while other ratios are not bounded. These eight ratios are: priority sector advances to total advances(p_1), secured advances to total advances(p_2), return on assets to total assets(p_3), return on equity to total equity(p_4), net

npa to net advances(p_5), interest income to total assets(p_6), wage bill to total income(p_7), and burden to total assets(p_8).

Using these parameters a composite index of non-performance (NPI) is obtained as Euclidean distance between the actual performance point P (P_1, P_2, \dots, P_8) and highest performance point H(1,1.....1) in the eight dimensional space using the formula:

$$NPI = \frac{\sqrt{(1-P_1)^2 + (1-P_2)^2 + \dots + (1-P_8)^2}}{8} \quad \text{for each bank}$$

A composite index of performance (CPI) based on these 8 parameters is obtained using the formula,

$$P.I. = 1 - NPI$$

Having discussed the performance of individual private sector banks on the basis of 10 parameters and on the basis of one composite performance index CPI, the performance of private sector banks as one group and public sector banks as second group were compared simply on the basis of taking average of Performance Index of public and private sector banks separately as is explained below:

$$\text{Average Performance Index (Public Sector Banks)} = \sum PI / 14$$

$$\text{Average Performance Index (Private Sector Banks)} = \sum PI / 9$$