

CHAPTER V  
ESTABLISHMENT UTILISATION

An analysis of expenditure of the fourteen nationalised banks with the help of an 'Expense Indicator' reveals that the banks have spent more than proportionately on various items of expenditure in relation to the revenue earned/generated by them. This increase in the 'Expense Indicator' has reduced their profit margin, as has already been varified in the 'Profit Margin' analysis and has also affected the profitability of these banks adversely. However, it remains to be seen if this increase in the 'Expense Indicator' has been mainly due to an increase in the under-utilisation of staff by these banks or due to a more than proportionate increase on their establishment expenditure. There is a general impression that during the post-nationalisation period the profitability of banks has declined mainly due to under-utilisation of staff. In order to varify this, through an empirical enquiry, we have analysed the degree of establishment utilisation in banks during 1972-82.

The main object of the analysis given below is to test the hypothesis that the 'Establishment Utilisation' by the nationalised banks has declined during 1972-82, or in other words to find out if these banks have

really over-spent on their staff during the period. The need for testing this hypothesis rests on the premises that other things being equal, 'Establishment Utilisation' and 'Profitability' have a positive correlation.

As already pointed out, these banks were called upon to take up new challenges in terms of rapid expansion of banking facilities in semi-urban and rural areas by opening new branches, financing vigorously the priority sectors of the economy such as agriculture, exports, small scale industrial units etc., and providing credit facilities and other services to the masses. Simultaneously, these banks were required to mobilise savings and temporary money surpluses at the mass level. The implementation of these and similar other programmes had a significant financial implication in terms of additional recruitment of banking personnel at different levels which gave an impression that banks have over spent on their establishment, to meet the identified social objectives, affecting their profitability adversely. The terms 'Establishment' and 'Establishment Expenses' mean 'bank staff' and 'all expenses including salary, bonus, pension, etc', respectively.

In order to test the hypothesis, the operational data of these banks have been analysed through an

indicator called 'Establishment Utilisation Indicator' (EUI). The establishment utilisation indicator is the ratio (%) of establishment expenses to total revenue or income of a bank during a defined period of time. This indicator is so defined as to indicate an inverse relationship to establishment utilisation. In other words, an increase in the EUI means a decline in the Establishment Utilisation and vice-versa. Similarly, a decline in the EUI means that the establishment utilisation by the bank has improved. In other words, if the EUI of a bank increases over a period of time, it means that the bank has spent more than proportionately on its staff relative to its income and if the EUI declines, it means that the total revenue of the banks has increased more than proportionately to its establishment expenses. The rationale of this technique is that banks incur establishment expenses to carry on their business which generates revenue. Hence, any increase in the establishment expenses must be justified, at least by the proportionate increase in the total revenue. Since the nationalised banks differ significantly in size, for the purpose of analysis, they have been classified into two homogeneous groups on the basis of their relative size determined by their working funds, advances and number of branches. For this study

'working funds' comprise paid-up capital, reserves and surpluses and total deposits of the banks. Data analysed in this study are based on the published financial statements of these banks.

In this study, firstly, the changes in the EUI of the nationalised banks during 1972-82 have been analysed to find out whether the establishment utilisation by these banks has improved or declined during the period. Afterwards, the changes in the EUI have been explained with the help of an identity called 'Establishment Utilisation' Model, and at the end the changes in the establishment expenses of these banks have been analysed in relation to changes in their 'size of operation', mainly with a view to reassure ourselves about the main finding of the study.

#### Inter-stratum analysis

Table 1 shows the establishment utilisation indicator (EUI) of these banks for the years 1972 and 1982. The establishment expenses of all the nationalised banks together were 36 per cent of their total revenue in 1972. This percentage declined to 20.71 per cent in 1982.

It is evident from the table that the establishment utilisation by the nationalised banks has not only

improved for these banks as a whole but the improvement is evident separately in each and every stratum also. Indeed, the improvement in the establishment utilisation had been below the average improvement achieved by all the banks together in the case of medium banks. In other words, the revenue generated per rupee of expenditure on establishment had increased during the period.

#### Intra-stratum analysis

A comparison of the performance of individual banks within their respective stratum reflects their relative achievements in improving their establishment utilisation. The EU of the large banks as a whole was 34.61 in 1972. It showed a decline of 14.70 percentage points during 1972-82. Compared to this average of improvement in establishment utilisation, we find that the improvement in EU of Punjab National Bank and Central Bank of India had been much above the average. The EU of Bank of India, Bank of Baroda and United Commercial Bank had been much below the average. Thus, we find that in Stratum A (large banks) each bank has been better able to utilise its establishment or staff in 1982 compared to 1972.

TABLE V.1

Establishment Utilisation Indicator

(Rs. Lakhs)

Stratum/ Bank	1972			1982		
	Estab- lish- ment	Total Revenue	EUI(%)	Estab- lish- ment	Total Revenue	EUI(%)
<u>Stratum A</u>						
Central	2414	6198	39.00	8106	34047	24.00
India	1447	4820	30.00	7343	39816	18.00
PNB	1608	4556	35.00	6522	37065	18.00
Baroda	1480	4552	33.00	7187	40729	18.00
UCO	1035	2945	35.00	5116	23435	22.00
Average	7984	23071	34.61	34274	175092	20.00
<u>Stratum B</u>						
Canara	1029	2767	37.00	6398	26887	24.00
United	804	2112	38.00	3522	15780	22.00
Syndicate	741	2093	35.00	5338	24563	22.00
Union	814	1975	41.00	4682	18271	26.00
Dena	684	1803	38.00	2920	10916	27.00
Allahabad	527	1490	35.00	2465	11317	22.00
Indian	430	1237	35.00	3087	15564	20.00
IOB	421	1214	35.00	3658	22609	16.00
MAHA	366	1112	33.00	2264	10324	22.00
Average	5816	15803	37.00	34334	156231	22.00
Average of A + B	13800	38874	35.00	68608	331323	21.00

$$\text{EUI} = \frac{\text{Establishment Expenses}}{\text{Total Revenue}} \times 100$$

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

A perusal of EUI in respect of Stratum B (medium banks) reveals that though these banks as a whole have been able to achieve a 15 percentage points decline in their EUI during 1972-82, there are wide variations in the performance of individual banks within the stratum. In all the medium banks the EUI has declined during the period which reflects an improvement in their establishment utilisation. The improvement in establishment utilisation achieved by Indian Overseas Bank was of the highest order amongst the medium banks. The EUI decline was above the stratum average in the case of United Bank of India and Indian Overseas Bank. Their EUI declined by 16 and 19 percentage points, respectively. It can, thus be inferred that amongst medium banks, the establishment utilisation of seven banks has improved during the period and that these banks have controlled and managed their establishments in such a manner that the gross revenue generated per rupee of expenditure on their establishment has improved during 1972-82.

#### Explanation

The observed phenomenon of decrease in EUI (i.e. increase in establishment utilisation) can be explained in a number of ways, but in this study, the following two aggregative indicators have been used to explain

the changes in the EUI over time.

- (i) The ratio of total expenditure to total income; and
- (ii) The ratio of establishment expenditure to total expenditure.

The first indicator called 'Expense Indicator' shows the expenditure incurred by a bank to generate its total revenue. Even in the absence of a change in the composition of total expenses incurred by a bank over a given period of time, a change in this ratio will reflect a change in the ratio of all the components of expenditure to total revenue. In our analysis, this ratio, thus explains the changes in EUI that occurred due to changes in the aggregate expenditure and total revenue.

The second indicator called 'Composition Indicator' shows changes in the composition of total expenditure over a period of time. The total expenditure of a bank consists of 'wage components' called 'establishment expenses' and 'non-wage component' which includes interest payments and other expenses. A change in the composition of total expenditure, cetirus paribus, shows a change in the ratio of each component of expenditure to total revenue. In other exercise, this

indicator has been used to explain the change in the EUI of a bank and to point out how far the wage component (establishment expenses) of total expenditure has been responsible for the change in the utilisation of establishment by a bank over a period of time.

The relationship between the 'Establishment Utilisation' (EUI) and the two indicators described above can be expressed in the form of the following identity:

$$EUI = \frac{EE}{TE} \times \frac{TE}{TI}$$

Where,

EE or Establishment expenses include salaries, bonus, pension, etc. paid to the present and past employees of the bank.

TE or Total expenses include establishment expenses, interest paid on deposits and borrowings and all other expenses.

TI or Total income includes interest and discount earned and all other items of revenue.

From the above identify, it follows that any change in the establishment utilisation indicator over time, is uniquely related to the changes in the two indicators or ratios mentioned above.

Tables 2 and 3 contain the two indicators for the years 1972 and 1982 which explain the change in the

'Establishment Utilisation Indicator' during the period of the study.

It is clear from table 2 that the 'Expense Indicator' has increased from 98.05 per cent in 1972 to 98.43 per cent in 1982. In the case of all the nationalised banks taken together, except in the case of three banks viz., Central Bank of India, Indian Overseas Bank and Bank of Maharashtra, where the 'Expense Indicator' has increased in each and every bank in 1982 over 1972. This increase in the 'Expense Indicator' reflects that the total expenses of the nationalised banks have increased more than proportionately to the total revenue of these banks. In the absence of any change in the proportion of staff expenses to total expenditure (as reflected in expense indicator), this increase in expense indicator would have resulted in an increase in the EUI. But this has been offset by more than proportionate decline in the composition indicator (Table 3).

The 'Composition Indicator' (Table 3) of all the nationalised banks together was 36 per cent in 1972. It declined to 27.04 per cent in 1982. During the period of the study, the 'Composition Indicator' has gone down in each stratum. The simple explanation that can be drawn from the identity analysis is that the

TABLE V.2

Expense Indicator

(Rs.lakhs)

Stratum/ Bank	1972			1982		
	Total expenses	Total revenue	Total expense Indi- cator	Total expenses	Total revenue	Total expense Indi- cator(%)
<u>A. Large Banks</u>						
Central	6156	6198	99.32	33659	34047	98.86
India	4677	4820	97.03	39310	39816	98.73
PNB	4445	4556	97.56	36266	37065	97.84
Baroda	4448	4552	97.72	39924	40729	98.02
UCO	2854	2945	96.91	23086	23435	98.51
Average	22582	23072	97.88	172245	175092	98.37
<u>B. Medium Banks</u>						
Canara	2710	2767	97.94	26430	26887	98.30
United	2076	2112	98.30	15645	15780	99.14
Syndicate	2046	2093	97.75	24160	24563	98.36
Union	1936	1975	98.03	17991	18271	98.47
Dena	1770	1803	98.17	10815	10916	99.07
Allahabad	1473	1490	98.86	11152	11317	98.54
Indian	1214	1237	98.14	15429	15564	99.13
IOB	1205	1214	99.26	22147	22609	97.96
MAHA	1107	1112	99.55	10114	10324	97.97
Average	15537	15803	98.00	153883	156231	98.00
Average of A + B	38123	38880	98.05	326128	331323	98.43

$$\text{Expense Indicator} = \frac{\text{Total Expenses}}{\text{Total Revenue}} \times 100$$

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

TABLE V.3  
Composition Indicator

Stratum/ Bank	1972			1982		
	Estab- lishment Expenses	Total Expenses	Compo- sition Indi- cator (%)	Estab- lishment Expenses	Total Expenses	Compo- sition Indi- cator (%)
<u>A. Large Banks</u>						
Central	2414	6156	39.00	8106	33659	24.00
India	1447	4677	31.00	7343	39310	19.00
PNB	1608	4445	36.00	6522	36266	18.00
Baroda	1480	4448	33.00	7187	39924	18.00
UCO	1035	2854	36.00	5116	23086	22.00
Average	7985	22582	35.00	34424	172245	20.00
<u>B. Medium Banks</u>						
Canara	1029	2710	38.00	6398	26430	24.00
United	804	2076	39.00	3522	15645	23.00
Syndicate	741	2046	36.00	5338	24160	22.00
Union	841	1936	42.00	4682	17991	26.00
Dena	684	1770	39.00	2920	10815	27.00
Allahabad	527	1473	36.00	2465	11152	22.00
Indian	430	1214	35.00	3087	15429	20.00
IOB	421	1205	35.00	3658	22147	17.00
MAHA	366	1107	33.00	2264	10114	22.00
Average	5820	15540	37.00	34334	153883	22.00
Average of A + B	13806	38123	36.00	68608	326128	21.04

$$\text{Composition Indicator} = \frac{\text{Establishment Expenses}}{\text{Total Expenses}} \times 100$$

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

total expenses of banks have grown more than proportionately to their total revenue during 1972-82, but the increase in total expenditure had not been due to a more than proportionate increase in the wage component or establishment expenses. It can thus be concluded that the EUI of nationalised banks has declined during 1972-82, inspite of a more than proportionate increase in the total expenditure, mainly due to a decline in the 'composition indicator' which reflects that the establishment expenses of banks have not increased in proportion to increase in the total expenses of the banks. However, an important objection to accepting the above finding can be that the entire analysis of establishment expenses or total expenses has been done in relation to total revenue or income of banks which contains in an important sense, an exogenously determined element, i.e. the interest part of the total income, which is significantly influenced by the credit regulation policy of the Reserve Bank of India. Since an increase in the interest income of a bank due to an increase in the lending rates cannot be directly related to the wage component of a bank's expenditure, it is necessary to confirm the findings of our previous analysis through an analysis of establishment expenses in relation to the size of operations of a bank. The

EUI analysis is, therefore, extended to find out the relative movement of establishment expenses and size of operations. The size of operations of a bank can be determined by deposits, advances, number of branches and such other criterion but we have taken 'Working Funds' of a bank as an index of its size of operations. It may be pertinent to point out here that the Indian Banks' Association has also accepted 'Working Funds' as an index of the size of operations of a bank. For the purpose of our analysis, therefore, ratios of 'Establishment Expenses' to 'Total Working Funds' have been calculated and compared for the years 1972 and 1982.

It is clear from table 4 that the ratio (%) of 'Establishment Expenses' to total 'Working Funds' of all the nationalised banks together has declined from 2.63 per cent in 1972 to 1.81 per cent in 1982. Similarly, this ratio has declined by 0.81 and 0.87 percentage points in the case of the large and medium banks respectively. Thus, it can be concluded that there is no prima facie case to believe that the establishment expenses of these banks have gone beyond proportions in the recent past. There is no explicit indication of over-spending on staff during the period of the study.

Table V.4

Ratio of Establishment Expenses to Total Working Funds

Stratum/ Bank	(Rs. Lakhs)					
	1972			1982		
	Estab- lishment Expenses	Working Funds	% of Estab- lishment Expenses to total Working Funds	Estab- lishment Expenses	Working Funds	% of Estab- lishment Expenses to total Working Funds
<u>A. Large Banks</u>						
Central	2414	81849	2.95	8106	416555	1.95
India	1447	69777	2.07	7343	428249	1.71
PNB	1608	62956	2.56	6522	436594	1.49
Baroda	1480	60236	2.46	7187	451481	1.59
UCO	1035	42624	2.43	5116	265517	1.93
Average	7985	317444	2.53	34274	1998396	1.72
<u>B. Medium Banks</u>						
Canara	1029	36973	2.78	6398	327767	1.95
United	804	29921	2.69	3522	185689	1.90
Syndicate	741	27474	2.70	5338	277474	1.92
Union	814	25637	3.18	4682	214712	2.18
Dena	684	22355	3.06	2920	115167	2.54
Allahabad	527	18425	2.86	2465	129121	1.91
Indian	430	16715	2.58	3087	163824	1.88
IOB	421	16185	2.60	3658	259514	1.41
MAHA	366	14781	2.48	2264	114227	1.98
Average	5820	208469	2.79	34334	1787495	1.92
Average of A + B	13806	525914	2.63	68608	3785891	1.81

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

### Out-put Analysis

We have analysed the establishment utilisation with the help of EUI. The establishment utilisation indicator has shown an improvement during the period 1972-82. It has also revealed that the total expenses of these banks have increased more than proportionately to their total revenue. Therefore, an attempt has been further made with the help of output technique to analyse the establishment utilisation of the nationalised banks. The banks have been grouped into two categories, viz., large banks and medium banks. The establishment utilisation is measured with the help of Net Profit Per Employee (NPPE), Advances Per Employee (APE) and Deposits Per Employee (DPE).

Table 5 reveals the establishment utilisation in terms of Net Profit Per Employee (NPPE). The average net profit per employee of all the banks has increased from Rs.437.05 to Rs.1412.45 in 1982. In case of each and every individual bank also the net profit per employee has increased for the same period with Punjab National Bank, Bank of Baroda and Indian Overseas Bank having NPPE above the average. Thus, eleven nationalised banks have NPPE below the average.

TABLE V.5

Net Profit Per Employee

Stratum/ Bank	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
<u>A. Large Banks</u>										
Central	258.35	356.49	420.69	453.70	450.81	378.75	407.50	1019.85	988.31	498.05
India	88.43	939.55	1429.96	1365.01	1238.90	1154.00	1359.50	1275.73	1423.13	1305.87
PNB	597.29	753.17	1665.49	NA	1480.51	1354.52	1287.80	1323.40	1331.44	2133.51
Baroda	573.89	640.25	1596.47	1563.06	1629.44	1162.37	1465.42	1955.91	1979.28	2305.79
UCO	682.35	672.22	1416.93	1356.35	1083.72	1109.00	1081.97	972.82	953.33	1228.18
<u>B. Medium Banks</u>										
Canara	384.06	471.40	1174.97	1251.28	1313.51	1333.88	1423.21	1466.84	1386.60	1276.95
United	66.88	697.37	1109.32	854.40	682.52	732.33	864.09	746.85	794.47	731.94
Syndicate	417.03	506.70	1035.90	1088.32	1013.13	940.27	1060.66	587.33	1327.10	1419.76
Union	373.47	452.75	998.86	N.A.	851.24	844.20	855.58	1067.03	981.16	1108.42
Dena	134.32	202.26	566.80	601.72	606.43	584.35	585.22	635.23	541.24	710.21
Allahabad	184.66	326.82	1094.56	1070.13	752.69	876.61	1283.30	1232.16	1229.28	1129.20
Indian	445.58	607.00	1521.08	2216.51	1101.13	1288.59	1179.09	1069.23	794.63	792.48
IOB	394.37	1649.58	2072.25	3283.55	3237.37	2884.39	2642.38	2627.08	2360.17	2168.50
MAHA	278.37	264.13	269.38	313.97	274.10	259.44	581.11	1004.44	983.50	1511.22
Average of A + B	437.05	598.81	1147.42	1469.74	1116.77	1046.97	1143.20	1233.79	1270.74	1412.45

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

Now, we shall analyse the APE for the nationalised banks for 1972-82. The establishment utilisation depends upon the efforts of the banks' employees to increase their advances (sales). The increase in the advances will increase their total income. Therefore, the trend in advances per employee will highlight the establishment utilisation of these banks.

Table 6 shows the advances per employee (ADE). The advances per employee have gone up from Rs.2.34 lakhs in 1973 to Rs.5.75 lakhs in 1982 of all the banks taken together. In the case of individual banks also, we find that each and every nationalised bank has also made an improvement in advances per employee (APE) during 1972-82. But, Indian Overseas Bank, Bank of Baroda, Bank of India and Punjab National Bank have recorded advances per employee above the average. Thus, majority of the nationalised banks have the advances per employee below the average. After analysing the NPPE and APE we now propose to examine the establishment utilisation of banks in relation to their deposits.

The deposits are considered as the output side of the banks. So establishment utilisation of these banks can be measured by calculating the changes in the deposits (output) per employee during the period of the study.

TABLE V.6

Stratum/Bank	Advances Per Employee (Rs. Lakhs)										
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	
<u>A. Large Banks</u>											
Central	2.15	2.25	2.69	3.32	3.44	3.62	4.03	4.52	5.25	5.83	
India	3.18	3.17	3.62	4.28	4.23	4.52	4.91	5.52	5.95	6.44	
PNB	3.50	2.68	3.22	4.11	3.82	4.07	4.52	5.08	5.65	6.25	
Baroda	2.54	2.75	3.45	4.30	4.50	4.38	4.87	5.53	6.28	6.71	
UCO	2.47	2.72	2.87	3.40	3.77	3.95	4.41	4.80	5.71	5.42	
<u>B. Medium Banks</u>											
Ganara	1.98	2.32	2.89	3.53	3.33	3.51	3.87	4.04	4.49	4.82	
United	2.24	2.65	3.30	3.61	3.71	3.72	4.47	4.51	4.84	5.17	
Syndicate	2.04	2.17	2.54	3.07	3.07	3.02	3.38	4.19	5.49	5.93	
Union	2.07	2.28	2.58	3.21	2.92	3.03	3.20	3.46	4.16	4.64	
Dena	2.07	2.76	2.36	2.83	3.14	3.34	3.66	3.76	4.13	4.35	
Allahabad	2.35	2.48	2.47	2.94	3.00	3.27	3.63	4.01	4.60	4.48	
Indian	2.42	2.58	2.99	3.46	3.53	3.91	4.22	4.56	5.30	5.57	
IOB	2.21	2.43	2.86	3.47	3.79	4.23	4.82	5.74	6.85	7.45	
MAHA	2.00	2.38	3.00	3.67	3.88	3.77	4.07	4.20	4.45	4.47	
Average of A + B	2.34	2.52	2.98	3.89	3.56	3.78	4.19	N.A.	5.38	5.75	

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

Table 7 shows the deposits per employee of the nationalised banks for 1973-82. The average deposits per employee have increased from Rs.3.56 lakhs in 1973 to Rs.8.88 lakhs in 1982. In the case of individual nationalised banks also the deposits per employee have also recorded a rise. But Bank of Baroda, Indian Overseas Bank, Bank of India and Punjab National Bank have shown an increase of deposits per employee above the average and rest of the banks are below the average in this respect.

Thus the analysis of establishment utilisation in terms of BPPE, APE and DPE has revealed that only Punjab National Bank, Bank of Baroda and Indian Overseas Bank are above the average.

#### Inter and Intra Stratum Analysis of NPPE

In order to gain further insight into the performance of banks in their establishment utilisation, calculated in terms of various output variables, we propose to analyse the 'Net Profit Per Employee' (NPPE) of these banks with a view to determine, if there is any positive or negative relationship between the size of establishment of a bank, (determined on the basis of total employee) and its profitability, determined on the basis

TABLE V.7

## Deposits Per Employee

Stratum/Bank	(Rs. Lakhs)									
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
<u>A. Large Banks</u>										
Central	3.22	3.43	3.83	4.74	5.18	5.98	6.80	7.90	8.65	9.81
India	4.49	4.40	5.06	6.07	6.20	7.28	8.07	9.16	9.73	10.36
PNB	4.42	4.61	5.05	5.85	6.14	6.84	7.96	9.15	9.96	10.51
Baroda	4.03	4.39	5.28	6.31	7.05	7.13	8.26	10.02	11.35	11.80
UCO	3.80	3.98	4.22	5.01	5.55	6.17	7.17	8.13	9.06	8.62
<u>B. Medium Banks</u>										
Canara	3.12	3.57	4.29	4.80	5.06	5.66	5.95	7.23	7.90	8.49
United	3.51	4.08	4.81	4.91	5.48	6.23	7.75	8.05	9.04	9.32
Syndicate	3.04	3.28	3.58	4.11	4.49	4.91	5.41	6.63	8.14	8.57
Union	2.96	3.27	3.80	4.37	4.69	4.87	5.41	6.24	7.16	8.00
Dena	2.82	3.05	3.28	3.75	4.50	5.34	6.13	6.42	7.02	7.62
Allahabad	3.81	3.76	4.05	4.36	4.86	5.41	6.50	7.03	7.96	8.28
Indian	3.44	3.78	4.45	4.84	5.24	6.26	6.99	7.78	7.99	8.71
IOB	3.38	3.70	4.19	4.97	5.87	6.93	7.64	8.76	9.98	10.91
MAHA	2.90	3.27	3.92	4.86	5.47	5.83	6.69	7.40	7.72	7.73
Average of A + B	3.56	3.80	4.36	5.47	5.49	6.15	6.97	N.A.	8.41	8.88

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

TABLE V.8Establishment Utilisation in Banks - 1982

Strata/Bank	No. of employees	Net Profit Per employee (Rs.)
<u>Stratum A</u>		
Central India	39326	478.05
PNB	39848	1305.87
Canara	37450	2133.51
Baroda	35789	1276.92
	34912	2305.79
Average	187325	7500.14
<u>Stratum B</u>		
UCO	28416	1228.18
Syndicate Union	28385	1419.76
IOB	25261	1108.42
	21305	2168.50
Average	103367	5924.86
<u>Stratum C</u>		
United Indian	18444	731.94
Allahabad	17035	792.48
Dena	14612	1129.00
MAHA	14221	710.00
	13896	1511.22
Average	78208	4874.64

Source: Analysis is based on data published in the Financial Statements of the concerned banks.

of its Net Profit Per Employee or NPPE, arrived at by the following equation,

$$\text{NPPE} = \frac{\text{NP}}{\text{E}},$$

Whereas,

- NP - indicates the net profit after tax, and
- E - indicates the total number of employees, arrived at by totalling the number of officers of all categories, clerical staff and subordinate staff.

The NPPE of all the banks has been calculated for the terminating year of the study and for the purpose of inter stratum and intra stratum analysis, all the banks have been stratified into three arranged homogenous strata viz. A, B and C in the declining order of the size of banks determined on the basis of the number of employees.

The analysis, given in table 8 reveals that average establishment utilisation in terms of NPPE has been highest for stratum A followed by stratum B and C respectively. Thus, it can be inferred that at the stratum level, there is a positive relationship between the 'size' and 'the NPPE' in case of nationalised banks. At the aggregative level also, the co-efficient of correlation between 'E' and 'NPPE' confirms the same

finding. In spite of these two statistical findings, it cannot be finally inferred that 'larger number of employees' in a bank enables the banks to have a 'higher NPPE' as we find in an intra stratum analysis that the NPPE in the case of Central Bank of India has been lowest amongst all the nationalised banks in spite of its largest size determined on the basis of the number of employees. As against this, the NPPE of Indian Overseas Bank has been second highest amongst all the nationalised banks though it ranked only 9<sup>th</sup> in size amongst the nationalised banks. Also, a 'Rank correlation' between 'E' and 'NPPE' in the case of nationalised banks does not show any positive and strong relationship. Thus, in the final analysis, it can be inferred and concluded that the number of employees and the profitability are not the inter dependent variables. The profitability of a bank, even in terms of NPPE thus depends on some other operating variables.

Coefficient of Correlation  
Between Number of Employees and Profitability

x	y	$d_x = x - 25000$	$d_y = y - 1000$	$d_x^2$	$d_y^2$	$d_x d_y$
39326	478.05	14326	- 521.95	205234276	272431.80	- 7477455.70
39848	1305.87	14848	305.87	220463104	93556.45	4541557.76
37450	2133.51	12450	1133.51	155002500	1284844.92	14112199.50
35789	1276.92	10789	276.92	116402521	76684.68	2987689.88
34912	2305.79	9912	1305.79	98247744	1705087.52	12942990.48
28416	1228.18	3416	228.18	11669056	52066.11	779462.88
28385	1419.76	3385	419.76	11458225	176198.45	1420887.60
25261	1108.42	261	+ 108.42	68121	11754.89	28297.62
21305	2168.50	3695	1168.50	13653025	1365392.25	4317607.50
18444	731.94	6556	- 268.06	42981136	71856.16	- 1757401.36
17035	792.48	7965	- 207.52	63441225	43064.55	- 1652896.80
14612	1129.00	10388	+ 129.00	107910544	16641.00	1340052.00
14221	710.00	10779	- 290.00	116186841	84100.00	- 3125916.00
13896	1511.22	11104	511.22	123298816	261345.88	5676586.88
		<u>119874</u>	<u>+4564.73</u>	<u>1181257134</u>	<u>5515024.66</u>	<u>+48147332.10</u>
			<u>-1287.53</u>			<u>-14013669.86</u>
			<u>3277.20</u>			<u>34133662.24</u>

Whereas, x = Number of employees.  $\bar{d}_x = x - 25000$  (Deviation method)  
y = NP per employee.  $\bar{d}_y = y - 1000$  (Deviation method)

$$\begin{aligned}
 r_{x^d y^d} = r_{xy} &= \frac{\sum d_x d_y - \frac{\sum d_x \sum d_y}{n}}{\sqrt{\left(\sum d_x^2 - \frac{(\sum d_x)^2}{n}\right) \left(\sum d_y^2 - \frac{(\sum d_y)^2}{n}\right)}} \\
 &= \frac{34133662.24 - \frac{119874 \times 3277.20}{14}}{\sqrt{\left(1181257134 - \frac{(119874)^2}{14}\right) \left(5515024.66 - \frac{(3277.20)^2}{14}\right)}} \\
 &= \frac{34133662.24 - 28060790.91}{\sqrt{(1181257134 - 1026412562.57)(5515024.66 - 10740039.84)}} \\
 &= \frac{6072871.33}{\sqrt{(154844571.43)(5225015.18)}} \\
 &= \frac{6072871.33}{12443.65 \times 2285.82} \\
 &= \frac{6072871.33}{28443944.04} \\
 &= 0.213 \\
 &= 0.2
 \end{aligned}$$

Rank CorrelationBetween Number of Employees and Profitability

<u>x</u>	<u>y</u>	<u>R<sub>1</sub></u>	<u>R<sub>2</sub></u>	<u>d</u>	<u>d<sup>2</sup></u>
39326	478.05	13	1	12	144
39848	1305.87	14	9	5	25
37450	2133.51	12	12	0	0
35789	1276.92	11	8	3	9
34912	2305.79	10	14	-4	16
28416	1228.18	9	7	2	4
28385	1419.76	8	10	-2	4
25261	1108.42	7	5	2	4
21305	2168.50	6	13	-7	49
18444	731.94	5	3	2	4
17035	792.48	4	9	0	0
14612	1129.00	3	6	-3	9
14221	710.00	2	2	0	0
13896	1511.22	1	11	-10	100

$$\sum d^2 = 368$$

Rank correlation

$$r = 1 - \frac{6 \sum d^2}{n^3 - n}$$

Where,

- d - difference between the respective ranks.  
n - number of observations.

$$r = 1 - \frac{6 \times 368}{14^3 - 14}$$

$$= 1 - .8006$$

$$= 0.20$$

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