APPENDICES

Appendix - I

Trend analysis of Housing Loan of past period for EBL

Year (X)	Housing Loan (y)	x=X - 2062/3/31	x^2	xy	Trend Value Yc
2059/3/32	165	- 3	9	- 495	182.89
2060/3/32	421.4	- 2	4	- 842.8	479.23
2061/3/31	795.5	- 1	1	- 795.5	775.57
2062/3/31	1121.5	0	0	0	1071.91
2063/3/32	1445.1	1	1	1445.1	1368.25
2064/3/32	1679	2	4	3358	1664.59
2065/3/31	1875.9	3	9	5627.7	1960.93
	$\Sigma y = 7503.4$	$\Sigma x = 0$	$\Sigma x^2 = 28$	$\Sigma xy = 8297.5$	

Period 2062/3/31 assumed base year

Since, $\Sigma y = 7503.4$, $\Sigma x = 0$, $\Sigma x^2 = 28$, $\Sigma xy = 8297.5$, n = 7

$$\because a = \frac{\Sigma y}{n} = \frac{7503.4}{7} = 1071.91$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{8297.5}{28} = 296.34$$

Now, Equation of Trend line Yc = a + bx

$$= 1071.91 + 296.34\ x$$

Trend value for period 2066/3/31 = 1071.91 + 296.34 × 4 = 2257.27

Trend value for period 2067/3/30 = 1071.91 + 296.34 × 5 = 2553.61

Trend value for period 2068/3/30 = 1071.91 + 296.34 × 6 = 2849.95

Appendix - II

Trend analysis of Housing Loan of past period for KBL

Year (X)	Housing Loan (y)	x=X - 2062/3/31	x^2	xy	Trend Value Yc
2059/3/32	10.65	- 3	9	- 31.95	3.59
2060/3/32	42.32	- 2	4	- 84.64	26.31
2061/3/31	48.62	- 1	1	- 48.62	49.03
2062/3/31	40.94	0	0	0	71.75
2063/3/32	83.79	1	1	83.79	94.47
2064/3/32	110.39	2	4	220.78	117.19
2065/3/31	165.58	3	9	496.74	139.91
	$\Sigma y = 502.29$	$\Sigma x = 0$	$\Sigma x^2 = 28$	$\Sigma xy = 636.1$	

Period 2062/3/31 assumed base year

Since, $\Sigma y = 502.29$, $\Sigma x = 0$, $\Sigma x^2 = 28$, $\Sigma xy = 636.1$, $n = 7$

$\because a = \frac{\Sigma y}{n} = \frac{502.29}{7} = 71.75$

$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{636.1}{28} = 22.72$

Now, Equation of Trend line $Yc = a + bx$

$= 71.75 + 22.72\ x$

Trend value for period 2066/3/31 = 71.75 + 22.72 × 4 = 162.63

Trend value for period 2067/3/30 = 71.75 + 22.72 × 5 = 185.35

Trend value for period 2068/3/30 = 71.75 + 22.72 × 6 = 208.07

Appendix - III

Trend analysis of Total Loan and Advance of past period for EBL

Year (X)	Total Loan & Advance (y)	x=X - 2062/3/31	x^2	xy	Trend Value Yc
2059/3/32	8361.6	- 3	9	- 25084.8	7875.07
2060/3/32	9025.1	- 2	4	- 18050.2	9282.98
2061/3/31	10576.2	- 1	1	- 10576.2	10690.89
2062/3/31	11908.9	0	0	0	12098.8
2063/3/32	12768.6	1	1	11908.9	13506.71
2064/3/32	14929.7	2	4	29859.4	14914.62
2065/3/31	17121.5	3	9	51364.5	16322.53
	$\Sigma y = 84691.6$	$\Sigma x = 0$	$\Sigma x^2 = 28$	$\Sigma xy = 39421.6$	

Period 2062/3/31 assumed base year

Since, $\Sigma y = 84691.6$, $\Sigma x = 0$, $\Sigma x^2 = 28$, $\Sigma xy = 39421.6$, n = 7

$$\because \text{ a} = \frac{\Sigma y}{n} = \frac{84691.6}{7} = 12098.8$$

$$\text{b} = \frac{\Sigma xy}{\Sigma x^2} = \frac{39421.6}{28} = 1407.91$$

Now, Equation of Trend line Yc = a + bx

= 12098.8 + 1407.91 x

Trend value for period 2066/3/31 = 12098.8 + 1407.91 × 4 = 17730.44

Trend value for period 2067/3/30 = 12098.8 + 1407.91 × 5 = 19138.35

Trend value for period 2068/3/30 = 12098.8 + 1407.91 × 6 = 20546.26

Appendix - IV

Trend analysis of Total Loan and Advance of past period for KBL

Year (X)	Total Loan & Advance (y)	x=X - 2062/3/31	x^2	xy	Trend Value Yc
2059/3/32	578.01	- 3	9	- 1734.03	505.54
2060/3/32	947.58	- 2	4	- 1895.16	904.82
2061/3/31	1158.15	- 1	1	- 1158.15	1304.1
2062/3/31	1715.03	0	0	0	1703.38
2063/3/32	1933.97	1	1	1933.97	2102.66
2064/3/32	2739.55	2	4	5479.1	2501.94
2065/3/31	2851.37	3	9	8554.11	2901.22
	Σy =11923.66	Σx = 0	Σx^2 =28	Σxy =11179.84	

Period 2062/3/31assumed base year

Since, Σy = 11923.66, Σx = 0, Σx^2 = 28, Σxy = 11179.84, n = 7

$\because$ a = $\frac{\Sigma y}{n} = \frac{11923.66}{7}$ = 1703.38

b = $\frac{\Sigma xy}{\Sigma x^2} = \frac{11179.84}{28}$ = 399.28

Now, Equation of Trend line Yc = a + bx

= 1703.38 + 399.28 x

Trend value for period 2066/3/31 = 1703.38 + 399.28 × 4 = 3300.5

Trend value for period 2067/3/30 = 1703.38 + 399.28 × 5 = 3699.78

Trend value for period 2068/3/30 = 1703.38 + 399.28 × 6 = 4099.06

Appendix V (a)

Correlation between Housing loan and Total loan for EBL

(Rs in million)

Year	Housing Loan (X)	Total Loan (Y)	X.Y	X^2	Y^2
2059/3/32	165	8361.6	1379664	27225	69916354.56
2060/3/32	421.4	9025.1	3803177.14	177577.96	81452430.01
2061/3/31	795.5	10576.2	8413367.1	632820.25	111856006.4
2062/3/31	1121.5	11908.9	13355831.35	1257762.25	141821899.2
2063/3/32	1445.1	12768.6	18451903.86	2088314.01	163037146
2064/3/32	1679	14929.7	25066966.3	2819041	222895942.1
2065/3/31	1875.9	17121.5	32118221.85	3519000.81	293145762.3
	ΣX=7503.4	ΣY= 84691.6	ΣXY=102589131.6	ΣX=10521741.28	ΣY =1084125541

$$r_{xy} = \frac{n\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

Where,

r = Karl person's coefficient of correlation

n = number of observation in series X and series Y

ΣX = Sum of the observations in series X

ΣY = Sum of the observations in series Y

ΣX^2 = Sum of the square of observation in series in X

ΣY^2 = Sum of the square of observation in series in Y

ΣXY = Sum of the product of the observations in series X and series Y

$$r_{xy} = \frac{7 \times 102589131.6 - (7503.4)(84691.6)}{\sqrt{7 \times 10521741.28 - (7503.4)^2}\sqrt{7 \times 1084125541 - (84691.6)^2}}$$

$$= 0.972$$

Probable Error (P.E) of Correlation coefficient

$$P.E.(r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}}$$

$$= 0.014$$

Correlation between Housing Loan and Total Loan for KBL

Appendix V (b)

Correlation between Housing loan and Total loan for KBL **(**Rs. In million)

Year	Housing Loan (X)	Total Loan (Y)	XY	X^2	Y^2
2059/3/32	10.65	578.01	6155.81	113.42	334095.56
2060/3/32	42.32	947.58	40101.59	1790.98	897907.86
2061/3/31	48.62	1158.15	56309.25	2363.90	1341311.42
2062/3/31	40.94	1715.03	70213.33	1676.08	2941327.90
2063/3/32	83.79	1933.97	162047.35	7020.76	3740239.96
2064/3/32	110.39	2739.55	302418.92	12185.95	7505134.20
2065/3/31	165.58	2851.37	472129.84	27416.74	8130310.88
	ΣX=502.29	ΣY= 11923.66	ΣXY=1109376.09	ΣX= 52567.85	ΣY =24890327.78

Now, $r_{xy} = \frac{n\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$

Where,

r = Karl person's coefficient of correlation

n = number of observation in series X and series Y

ΣX = Sum of the observations in series X

ΣY = Sum of the observations in series Y

ΣX^2 = Sum of the square of observation in series in X

ΣY^2 = Sum of the square of observation in series in Y

ΣXY = Sum of the product of the observations in series X and series Y

$$r_{xy} = \frac{7 \times 1109376.09 - (502.29)(11923.66)}{\sqrt{7 \times 52567.85 - (502.29)^2}\sqrt{7 \times 24890327.78 - (11923.66)^2}}$$

$$= 0.922$$

Probable Error (P.E) of Correlation coefficient

$$P.E.(r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}}$$

$$= 0.038$$