Appendix – I

Home Loan: Contribution and average growth rate of NIBL (In million)

Year	Home Loan (X)	Total Loan (Y)	% of Home loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$	$Growth = \frac{(Ending - Begining)}{Begining}(Y)$
062/63	1978.02	13,178	15.01 %	0	0
063/64	3242.84	17,769	18.25 %	0.64	0.64
064/65	5951.77	27,529	21.62 %	0.84	0.84
065/66	7895.71	36,827	21.44 %	0.33	0.33
066/67	7190.47	40,948	17.56 %	-0.09	-0.09
Total =				**1.71**	**1.35**
Average Growth Rate (%)				**42.80 %**	**33.68 %**

For Home Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.of\ years} x100\%$$

$$= \frac{1.71}{4} x100\ \%$$

= **42.80 %**

For Total Loan and Advance (Y):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.of\ years} x100\%$$

$$= \frac{1.35}{4} x100\ \%$$

= **33.68 %**

Appendix – II

Home Loan: Contribution and average growth rate of KBL (In million)

Year	Home Loan (X)	Total Loan (Y)	% of Home loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$	$Growth = \frac{(Ending - Begining)}{Begining}(Y)$
062/63	873.20	7,008	12.46 %	0	0
063/64	1478.92	9,062	16.32 %	0.69	0.29
064/65	2176.51	11,522	18.89 %	0.47	0.27
065/66	3083.28	14,795	20.84 %	0.42	0.28
066/67	2425.99	14,966	16.21 %	-0.21	0.01
Total =				**1.37**	**0.86**
Average Growth Rate (%)				**34.22 %**	**21.50 %**

For Home Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.of\ years} x100\%$$

$$= \frac{1.37}{4} x100\ \%$$

= **34.22 %**

For Total Loan and Advance (Y):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.of\ years} x100\%$$

$$= \frac{0.86}{4} x100\ \%$$

= **21.50 %**

Appendix – III

Home Loan: Contribution and average growth rate of MBL (In million)

Year	Home Loan (X)	Total Loan (Y)	% of Home loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$	$Growth = \frac{(Ending - Begining)}{Begining}(Y)$
062/63	899.31	6,147	14.63 %	0	0
063/64	1204.14	7,320	16.45 %	0.34	0.19
064/65	1773.08	8,964	19.78 %	0.47	0.22
065/66	2728.15	12,985	21.01 %	0.54	0.45
066/67	2528.94	14,973	16.89 %	-0.07	0.15
Total =				**1.28**	**1.02**
Average Growth Rate (%)				**31.93**	**25.43**

For Home Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.of\ years} x100\%$$

$$= \frac{1.28}{4} x100\ \%$$

= **31.93 %**

For Total Loan and Advance (Y):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.of\ years} x100\%$$

$$= \frac{1.02}{4} x100\ \%$$

= **25.43 %**

Appendix – IV

Auto Loan: Contribution and average growth rate of NIBL (In million)

Year	Auto Loan (X)	Total Loan (Y)	% of Auto loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$
062/63	297.82	13,178	2.26 %	0
063/64	589.93	17,769	3.32 %	0.98
064/65	1070.88	27,529	3.89 %	0.82
065/66	1671.95	36,827	4.54 %	0.56
066/67	2194.81	40,948	5.36 %	0.31
Total =				**2.67**
Average Growth Rate (%)				**66.75**

For Auto Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.\ of\ years} x100\%$$

$$= \frac{2.67}{4} x100\ \%$$

= **66.75 %**

Appendix – V

Auto Loan: Contribution and average growth rate of KBL (In million)

Year	Auto Loan (X)	Total Loan (Y)	% of Auto loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$
062/63	227.06	7,008	3.24 %	0
063/64	424.10	9,062	4.68 %	0.87
064/65	629.10	11,522	5.46 %	0.48
065/66	868.47	14,795	5.87 %	0.38
066/67	932.38	14,966	6.23 %	0.07
Total =				**1.81**
Average Growth Rate (%)				**45.13**

For Auto Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.\ of\ years} x100\%$$

$$= \frac{1.81}{4} x100\ \%$$

= **45.13 %**

Appendix – VI

Auto Loan: Contribution and average growth rate of MBL (In million)

Year	Auto Loan (X)	Total Loan (Y)	% of Auto loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$
062/63	205.31	6,147	3.34 %	0
063/64	338.92	7,320	4.63 %	0.65
064/65	467.02	8,964	5.21 %	0.38
065/66	747.94	12,985	5.76 %	0.60
066/67	932.82	14,973	6.23 %	0.25
Total =				**1.88**
Average Growth Rate (%)				**46.94**

For Auto Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.\ of\ years} x100\%$$

$$= \frac{1.88}{4} x100\ \%$$

= **46.94 %**

Appendix – VII

Personal Loan: Contribution and average growth rate of NIBL (In million)

Year	Personal Loan (X)	Total Loan (Y)	% of Personal loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$
062/63	772.23	13,178	5.86 %	0
063/64	1224.28	17,769	6.89 %	0.59
064/65	2100.46	27,529	7.63 %	0.72
065/66	3115.56	36,827	8.46 %	0.48
066/67	3963.77	40,948	9.68 %	0.27
Total =				**2.06**
Average Growth Rate (%)				**51.41**

For Personal Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.\ of\ years} x100\%$$

$$= \frac{2.06}{4} x100\ \%$$

= **51.41 %**

Appendix – VIII

Personal Loan: Contribution and average growth rate of KBL (In million)

Year	Personal Loan (X)	Total Loan (Y)	% of Personal loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$
062/63	185.71	7,008	2.65 %	0
063/64	260.99	9,062	2.88 %	0.41
064/65	398.66	11,522	3.46 %	0.53
065/66	575.53	14,795	3.89 %	0.44
066/67	636.06	14,966	4.25 %	0.11
Total =				**1.48**
Average Growth Rate (%)				**37.04**

For Personal Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.\ of\ years} x100\%$$

$$= \frac{1.48}{4} x100\ \%$$

= **37.04 %**

Appendix – IX

Personal Loan: Contribution and average growth rate of MBL (In million)

Year	Personal Loan (X)	Total Loan (Y)	% of Personal loan on total loan	$Growth = \frac{(Ending - Begining)}{Begining}(X)$
062/63	284.61	6,147	4.63 %	0
063/64	409.19	7,320	5.59 %	0.44
064/65	570.11	8,964	6.36 %	0.39
065/66	890.77	12,985	6.86 %	0.56
066/67	872.93	14,973	5.83 %	-0.02
Total =				**1.37**
Average Growth Rate (%)				**34.34**

For Personal Loan (X):

$$Average\ Growth\ Rate = \frac{Total\ Growth}{No.\ of\ years} x100\%$$

$$= \frac{1.37}{4} x100\ \%$$

= **34.34 %**

Appendix – X

Correlation Coefficient between Home Loan and Total Loan for NIBL (In million)

Year	Home Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	1978.02	13,178	26066347.56	3912563.12	173659684.00
2063/64	3242.84	17,769	57622023.96	10516011.27	315737361.00
2064/65	5951.77	27,529	163846276.33	35423566.13	757845841.00
2065/66	7895.71	36,827	290775312.17	62342236.40	1356227929.00
2066/67	7190.47	40,948	294435365.56	51702858.82	1676738704.00
Total	**$\sum x$ = 26,258.81**	**$\sum Y$ = 136,251**	**$\sum XY$ = 832,745,325.58**	**$\sum x^2$ = 163,897,235.74**	**$\sum y^2$ = 4280209519.00**

Now, the correlation coefficient between Home Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 832{,}745{,}325.58 - 26{,}258.81\ x\ 136{,}251}{\sqrt{5\ x\ 163{,}897{,}235.74 - (26{,}258.81)^2}\ .\sqrt{5\ x\ 4{,}280{,}209{,}519 - (136{,}251)^2}}$$

∴ r = 0.965

So, $\mathbf{r^2}$ **= 0.931**

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

= 0.0207

Appendix – XI

Correlation Coefficient between Home Loan and Total Loan for KBL (In million)

Year	Home Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	873.2	7,008	6119385.60	762478.24	49112064.00
2063/64	1478.92	9,062	13401973.04	2187204.37	82119844.00
2064/65	2176.51	11,522	25077748.22	4737195.78	132756484.00
2065/66	3083.28	14,795	45617127.60	9506615.56	218892025.00
2066/67	2425.99	14,966	36307366.34	5885427.48	223981156.00
Total	**$\sum x$ = 10,037.9**	**$\sum Y$ = 57,353**	**$\sum XY$ = 126,523,600.80**	**$\sum x^2$ = 23,078,921.43**	**$\sum y^2$ = 706,861,573.00**

Now, the correlation coefficient between Home Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 126{,}523{,}600.80 - 10{,}037.9\ x\ 57{,}353}{\sqrt{5\ x\ 23{,}078{,}921.43 - (10{,}037.9)^2}\ .\sqrt{5\ x\ 706{,}861{,}573.00 - (57{,}353)^2}}$$

∴ r = 0.951

So, $\mathbf{r^2}$ **= 0.904**

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

= 0.0291

Appendix – XII

Correlation Coefficient between Home Loan and Total Loan for MBL (In million)

Year	Home Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	899.31	6,147	5528058.57	808758.48	37785609.00
2063/64	1204.14	7,320	8814304.80	1449953.14	53582400.00
2064/65	1773.08	8,964	15893889.12	3143812.69	80353296.00
2065/66	2728.15	12,985	35425027.75	7442802.42	168610225.00
2066/67	2528.94	14,973	37865818.62	6395537.52	224190729.00
Total	**$\sum x$ = 9,133.62**	**$\sum Y$ = 50,389**	**$\sum XY$ = 103,527,098.86**	**$\sum x^2$ = 19,240,864.25**	**$\sum y^2$ = 564,522,259.00**

Now, the correlation coefficient between Home Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 103{,}527{,}098.86 - 9{,}133.62\ x\ 50{,}389}{\sqrt{5\ x\ 19{,}240{,}864.25\ -(9{,}133.62)^2}\ .\sqrt{5\ x\ 564{,}522{,}259.00\ -(50{,}389)^2}}$$

∴ r = 0.953

So, $\mathbf{r^2}$ **= 0.909**

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

= 0.0274

Appendix – XIII

Correlation Coefficient between Auto Loan and Total Loan for NIBL (In million)

Year	Auto Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	297.82	13,178	3924671.96	88696.75	173659684.00
2063/64	589.93	17,769	10482466.17	348017.40	315737361.00
2064/65	1070.88	27,529	29480255.52	1146783.97	757845841.00

2065/66	1671.95	36,827	61572902.65	2795416.80	1356227929.00
2066/67	2194.81	40,948	89873079.88	4817190.94	1676738704.00
Total	**$\sum$x = 5,825.39**	**$\sum$Y = 136,251**	**$\sum$XY = 195,333,376.18**	**$\sum x^2$ = 9,196,105.87**	**$\sum y^2$ = 4,280,209,519.00**

Now, the correlation coefficient between Auto Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 195{,}333{,}376.18\ - 5{,}825.39\ x\ 136{,}251}{\sqrt{5\ x\ 9{,}196{,}105.87\ - (5{,}825.39)^2}\ .\sqrt{5\ x\ 4{,}280{,}209{,}519 - (136{,}251)^2}}$$

$\therefore$ r = 0.990

So, **r^2 = 0.980**

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

= 0.0062

Appendix – XIV

Correlation Coefficient between Auto Loan and Total Loan for KBL (In million)

Year	Auto Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	227.06	7,008	1591236.48	51556.24	49112064
2063/64	424.1	9,062	3843194.20	179860.81	82119844
2064/65	629.1	11,522	7248490.20	395766.81	132756484
2065/66	868.47	14,795	12849013.65	754240.14	218892025
2066/67	932.38	14,966	13953999.08	869332.46	223981156
Total	**$\sum x$ = 3,081.11**	**$\sum Y$ = 57,353**	**$\sum XY$ = 39,485,933.61**	**$\sum x^2$ = 2,250,756.47**	**$\sum y^2$ = 706,861,573**

Now, the correlation coefficient between Auto Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 39{,}485{,}933.61 - 3{,}081.11\ x\ 57{,}353}{\sqrt{5\ x\ 2{,}250{,}756.47\ -(3{,}081.11)^2}\ .\sqrt{5\ x\ 706{,}861{,}573\ -(57{,}353)^2}}$$

∴ r = 0.998

So, $\mathbf{r^2}$ **= 0.995**

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

= 0.0014

Appendix – XV

Correlation Coefficient between Auto Loan and Total Loan for MBL (In million)

Year	Auto Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	205.31	6,147	1262040.57	42152.20	37785609
2063/64	338.92	7,320	2480894.40	114866.77	53582400
2064/65	467.02	8,964	4186367.28	218107.68	80353296

2065/66	747.94	12,985	9712000.90	559414.24	168610225
2066/67	932.82	14,973	13967113.86	870153.15	224190729
Total	**$\sum$x = 2,692.01**	**$\sum$Y = 50,389**	**$\sum$XY = 31,608,417.01**	**$\sum x^2$ = 1,804,694.04**	**$\sum y^2$ = 564,522,259**

Now, the correlation coefficient between Auto Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 31{,}608{,}417.01\ - 2{,}692.01\ x\ 50{,}389}{\sqrt{5\ x\ 1{,}804{,}694.04\ - (2{,}692.01)^2}\ .\sqrt{5\ x\ 564{,}522{,}259\ - (50{,}389)^2}}$$

$\therefore$ r = 0.998

So, **r^2 = 0.996**

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

= 0.0013

Appendix – XVI

Correlation Coefficient between Personal Loan and Total Loan for NIBL (In million)

Year	Personal Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	772.23	13,178	10176446.94	596339.17	173659684
2063/64	1224.28	17,769	21754231.32	1498861.52	315737361
2064/65	2100.46	27,529	57823563.34	4411932.21	757845841
2065/66	3115.56	36,827	114736728.12	9706714.11	1356227929
2066/67	3963.77	40,948	162308453.96	15711472.61	1676738704
Total	**$\sum x$ = 11,176.30**	**$\sum Y$ = 136,251**	**$\sum XY$ = 366,799,423.68**	**$\sum x^2$ = 31,925,319.63**	**$\sum y^2$ = 4,280,209,519**

Now, the correlation coefficient between Personal Loan (X) and Total Loan (Y) is:

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

$$= \frac{5\ x\ 366{,}799{,}423.68\ -11{,}176.30\ x\ 136{,}251}{\sqrt{5\ x\ 31{,}925{,}319.63\ -(11{,}176.30)^2}\ .\sqrt{5\ x\ 4{,}280{,}209{,}519\ -(136{,}251)^2}}$$

∴ r = 0.992

So, $\mathbf{r^2}$ **= 0.983**

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

= 0.0050

Appendix – XVII

Correlation Coefficient between Personal Loan and Total Loan for KBL (In million)

Year	Personal Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	185.71	7,008	1301455.68	34488.20	49112064
2063/64	260.99	9,062	2365091.38	68115.78	82119844
2064/65	398.66	11,522	4593360.52	158929.80	132756484

2065/66	575.53	14,795	8514966.35	331234.78	218892025
2066/67	636.06	14,966	9519273.96	404572.32	223981156
Total	**$\sum$x = 2,056.95**	**$\sum$Y = 57,353**	**$\sum$XY = 26,294,147.89**	**$\sum x^2$ = 997,340.88**	**$\sum y^2$ = 706,861,573**

Now, the correlation coefficient between Personal Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 26{,}294{,}147.89\ - 2{,}056.95\ x\ 57{,}353}{\sqrt{5\ x\ 997{,}340.88\ - (2{,}056.95)^2}\ .\sqrt{5\ x\ 706{,}861{,}573\ - (57{,}353)^2}}$$

$\therefore$ r = 0.992

So, **r^2 = 0.984**

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

= 0.0047

Appendix – XVIII

Correlation Coefficient between Personal Loan and Total Loan for MBL (In million)

Year	Personal Loan (X)	Total Loan and Advance (Y)	XY	X^2	Y^2
2062/63	284.61	6,147	1749497.67	81002.85	37785609
2063/64	409.19	7,320	2995270.80	167436.46	53582400
2064/65	570.11	8,964	5110466.04	325025.41	80353296
2065/66	890.77	12,985	11566648.45	793471.19	168610225
2066/67	872.93	14,973	13070380.89	762006.78	224190729
Total	**$\sum x$ = 3,027.61**	**$\sum Y$ = 50,389**	**$\sum XY$ = 34,492,263.85**	**$\sum x^2$ = 2,128,942.70**	**$\sum y^2$ = 564,522,259**

Now, the correlation coefficient between Personal Loan (X) and Total Loan (Y) is given as:

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

$$= \frac{5\ x\ 34{,}492{,}263.85\ -3{,}027.61\ x\ 50{,}389}{\sqrt{5\ x\ 2{,}128{,}942.70\ -(3{,}027.61)^2}\ .\sqrt{5\ x\ 564{,}522{,}259\ -(50{,}389)^2}}$$

∴ r = 0.972

So, $\mathbf{r^2}$ **= 0.945**

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

= 0.0166

Appendix – XIX

Trend Analysis of Home Loan for NIBL (in million)

Year (X)	Home Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	1978.02	-2.00	4.00	-3956.04	2236.21
2063/64 (2)	3242.84	-1.00	1.00	-3242.84	3743.99
2064/65 (3)	5951.77	0.00	0.00	0.00	5251.76
2065/66 (4)	7895.71	1.00	1.00	7895.71	6759.54
2066/67 (5)	7190.47	2.00	4.00	14380.94	8267.32
N = 5	**∑Y = 26258.81**	**∑x = 0**	**∑ X^2 = 10**	**∑XY= 15077.77**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$\boldsymbol{a} = \frac{\sum \boldsymbol{Y}}{\boldsymbol{N}} = \frac{26258.81}{5} = 5251.76$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{15077.77}{10} = 1507.78$$

Now, putting the values of **a** and **b** in the above equation of the best fit or the trend line equation we get the actual trend line.

Hence, the trend line is

$\boldsymbol{Y_{c=}5251.76 + 1507.78x}$ – (1)

The trend values can be calculated from equation (1) by putting the respective values of X

For 2062/63, when X = -2, Yc = 5251.76 + 1507.78 x (-2) = 2236.21

For 2063/64, when X = -1, Yc = 5251.76 + 1507.78 x (-1) = 3743.99

For 2064/65, when X = 0, Yc = 5251.76 + 1507.78 x (0) = 5251.76

For 2065/66, when X = 1, Yc = 5251.76 + 1507.78 x (1) = 6759.54

For 2066/67, when X = 2, Yc = 5251.76 + 1507.78 x 2) = 8267.32

Also,

For 2067/68, when X = 3, Yc = 5251.76 + 1507.78 x (3) = 9775.09

For 2068/69, when X = 4, Yc = 5251.76 + 1507.78 x (4) = 11282.87

Appendix – XX

Trend Analysis of Home Loan for KBL (in million)

Year (X)	Home Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	873.2	-2.00	4.00	-1746.40	1065.59
2063/64 (2)	1478.92	-1.00	1.00	-1478.92	1536.59
2064/65 (3)	2176.51	0.00	0.00	0.00	2007.58
2065/66 (4)	3083.28	1.00	1.00	3083.28	2478.57
2066/67 (5)	2425.99	2.00	4.00	4851.98	2949.57
N = 5	**$\sum$Y = 10037.90**	**$\sum$x = 0**	**$\sum X^2 = 10$**	**$\sum$XY= 4709.94**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{10037.90}{5} = 2007.58$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{4709.94}{10} = 470.99$$

Hence, the trend line is

$$\boldsymbol{Y_{c=} 2007.58 + 470.99x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 2007.58 + 470.99x (3) = 3420.56

For 2068/69, when X = 4, Yc = 2007.58 + 470.99x (4) = 3891.56

Appendix – XXI

Trend Analysis of Home Loan for MBL (in million)

Year (X)	Home Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	899.31	-2.00	4.00	-1798.62	870.07
2063/64 (2)	1204.14	-1.00	1.00	-1204.14	1348.40
2064/65 (3)	1773.08	0.00	0.00	0.00	1826.72
2065/66 (4)	2728.15	1.00	1.00	2728.15	2305.05
2066/67 (5)	2528.94	2.00	4.00	5057.88	2783.38
N = 5	**∑Y = 9133.62**	**∑x = 0**	**∑ X^2 = 10**	**∑XY= 4783.27**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{9133.62}{5} = 1826.72$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{4783.27}{10} = 478.33$$

Hence, the trend line is

$$\boldsymbol{Y_c = 1826.72 + 478.33x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 1826.72 + 478.33x (3) = 3261.71

For 2068/69, when X = 4, Yc = 1826.72 + 478.33x (4) = 3740.03

Appendix – XXII

Trend Analysis of Auto Loan for NIBL (in million)

Year (X)	Auto Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	297.82	-2.00	4.00	-595.64	189.88
2063/64 (2)	589.93	-1.00	1.00	-589.93	677.48
2064/65 (3)	1070.88	0.00	0.00	0.00	1165.08
2065/66 (4)	1671.95	1.00	1.00	1671.95	1652.68
2066/67 (5)	2194.81	2.00	4.00	4389.62	2140.28
N = 5	**∑Y = 5825.39**	**∑x = 0**	**∑ X^2 = 10**	**∑XY= 4876.00**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{5825.39}{5} = 1165.08$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{4876.00}{10} = 487.60$$

Hence, the trend line is

$$\boldsymbol{Y_c = 1165.08 + 487.60x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 1165.08 + 487.60x (3) = 2627.88

For 2068/69, when X = 4, Yc = 1165.08 + 487.60x (4) = 3115.48

Appendix – XXIII

Trend Analysis of Auto Loan for KBL (in million)

Year (X)	Auto Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	227.06	-2.00	4.00	-454.12	245.22
2063/64 (2)	424.1	-1.00	1.00	-424.10	430.72
2064/65 (3)	629.1	0.00	0.00	0.00	616.22
2065/66 (4)	868.47	1.00	1.00	868.47	801.72
2066/67 (5)	932.38	2.00	4.00	1864.76	987.22
N = 5	**∑Y = 3081.11**	**∑x = 0**	**∑ X^2 = 10**	**∑XY= 1855.01**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{3081.11}{5} = 616.22$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{1855.01}{10} = 185.50$$

Hence, the trend line is

$$\boldsymbol{Y_c = 616.22 + 185.50x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 616.22 + 185.50x (3) = 1172.73

For 2068/69, when X = 4, Yc = 616.22 + 185.50x (4) = 1358.23

Appendix – XXIV

Trend Analysis of Auto Loan for MBL (in million)

Year (X)	Auto Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	205.31	-2.00	4.00	-410.62	165.59
2063/64 (2)	338.92	-1.00	1.00	-338.92	352.00
2064/65 (3)	467.02	0.00	0.00	0.00	538.40
2065/66 (4)	747.94	1.00	1.00	747.94	724.81
2066/67 (5)	932.82	2.00	4.00	1865.64	911.21
N = 5	**$\sum$Y = 2692.01**	**$\sum$x = 0**	**$\sum X^2 = 10$**	**$\sum$XY= 1864.04**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{2692.01}{5} = 538.40$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{1864.04}{10} = 186.40$$

Hence, the trend line is

$$\boldsymbol{Y_c = 538.40 + 186.40x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 538.40 + 186.40x (3) = 1097.61

For 2068/69, when X = 4, Yc = 538.40 + 186.40x (4) = 1284.02

Appendix – XXV

Trend Analysis of Personal Loan for NIBL (in million)

Year (X)	Personal Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	772.23	-2.00	4.00	-1544.46	580.39
2063/64 (2)	1224.28	-1.00	1.00	-1224.28	1407.82
2064/65 (3)	2100.46	0.00	0.00	0.00	2235.26
2065/66 (4)	3115.56	1.00	1.00	3115.56	3062.70
2066/67 (5)	3963.77	2.00	4.00	7927.54	3890.13
N = 5	**$\sum$Y = 11176.30**	**$\sum$x = 0**	**$\sum X^2 = 10$**	**$\sum$XY= 8274.36**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{11176.30}{5} = 2235.26$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{8274.36}{10} = 827.44$$

Hence, the trend line is

$$\boldsymbol{Y_c = 2235.26 + 827.44x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 2235.26 + 827.44x (3) = 4717.57

For 2068/69, when X = 4, Yc = 2235.26 + 827.44x (4) = 5545.00

Appendix – XXVI

Trend Analysis of Personal Loan for KBL (in million)

Year (X)	Personal Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	185.71	-2.00	4.00	-371.42	168.34
2063/64 (2)	260.99	-1.00	1.00	-260.99	289.87
2064/65 (3)	398.66	0.00	0.00	0.00	411.39
2065/66 (4)	575.53	1.00	1.00	575.53	532.91
2066/67 (5)	636.06	2.00	4.00	1272.12	654.44
N = 5	**∑Y = 2056.95**	**∑x = 0**	**∑ X^2 = 10**	**∑XY= 1215.24**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$\boldsymbol{a} = \frac{\sum \boldsymbol{Y}}{\boldsymbol{N}} = \frac{2056.95}{5} = 411.39$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{1215.24}{10} = 121.52$$

Hence, the trend line is

$\boldsymbol{Y_c = 411.39 + 121.52x}$ – (1)

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 411.39 + 121.52x (3) = 775.96

For 2068/69, when X = 4, Yc = 411.39 + 121.52x (4) = 897.49

Appendix – XXVII

Trend Analysis of Personal Loan for MBL (in million)

Year (X)	Personal Loan (Y)	X = x - 3	X^2	XY	Y_c = trend value
2062/63 (1)	284.61	-2.00	4.00	-569.22	273.88
2063/64 (2)	409.19	-1.00	1.00	-409.19	439.70
2064/65 (3)	570.11	0.00	0.00	0.00	605.52
2065/66 (4)	890.77	1.00	1.00	890.77	771.34
2066/67 (5)	872.93	2.00	4.00	1745.86	937.17
N = 5	**∑Y = 3027.61**	**∑x = 0**	**∑ X^2 = 10**	**∑XY= 1658.22**	

Here, the number of years is odd (i.e. N= 5) therefore, the origin is taken at 3 yrs.

Now, the equation of trend line can be given as:

$$y_c = a + bx$$

Where, the constants **a** and **b** can be calculated as:

$$a = \frac{\sum Y}{N} \qquad = \frac{3027.61}{5} = 605.52$$

$$\boldsymbol{b} = \frac{\sum \boldsymbol{XY}}{\sum \boldsymbol{X^2}} = \frac{1658.22}{10} = 165.82$$

Hence, the trend line is

$$\boldsymbol{Y_c = 605.52 + 165.82x} \quad \text{– (1)}$$

The trend values can be calculated from equation (1) by putting the values of X

For 2067/68, when X = 3, Yc = 605.52 + 165.82x (3) = 1102.99

For 2068/69, when X = 4, Yc = 605.52 + 165.82x (4) = 1268.81