Appendix – 1

Sample Calculation of Growth Rate of Total Investment

Growth rate is calculated from

$D_n = D_o (1+g)^{n-1}$

D_n = Total Investment of nth year

D_o = Total Investment of Initial year

G = Growth Rate

N = Number of Year

HBL

Here,

$D_{65} = 13340$

$D_{61} = 2878$

N = 5yr

$D_{65} = D_{61} (1+g)^{n-1}$

Or, $13340 = 2878 (1+g)^{5-1}$

Or, $4.63 = (1+g)^4$

Or, $(4.63)^{1/4} = 1+g$

Or, 1+g = 1.4673

Or, g = 1.4673-1

Or, g = 0.4673

∴ g = 46.73%

EBL

Here,

$D_{65} = 5059$

$D_{61} = 2483$

N = 5yr

$D_{65} = D_{61} (1+g)^{n-1}$

Or, $5059 = 2483 (1+g)^{5-1}$

Or, $2.0375 = (1+g)^4$

Or, $(2.0375)^{1/4} = 1+g$

Or, 1+g = 1.1947

Or, g = 1.1947-1

Or, g = 0.1947

∴ g = 19.47%

Appendix – 2

Sample Calculation of Growth Rate of Deposit

HBL

Here,

D_{65} = 31805

D_{61} = 22761

N = 5yr

$D_{65} = D_{61}(1+g)^{n-1}$

Or, $31805 = 22761(1+g)^{5-1}$

Or, $1.3973 = (1+g)^4$

Or, $(1.3973)^{1/4} = 1+g$

Or, 1+g = 1.0872

Or, g = 1.0872-1

Or, g = 0.0872

∴ g = 8.72%

EBL

Here,

D_{65} = 23976

D_{61} = 8064

N = 5yr

$D_{65} = D_{61}(1+g)^{n-1}$

Or, $23976 = 8064(1+g)^{5-1}$

Or, $2.9732 = (1+g)^4$

Or, $(2.9732)^{1/4} = 1+g$

Or, 1+g = 1.3131

Or, g = 1.3131-1

Or, g = 0.3131

∴ g = 31.31%

Appendix – 3

Sample Calculation of Growth Rate of Loan and Advances

HBL

Here,

D_{65} = 19985

D_{61} =13082

N = 5yr

$D_{65} = D_{61}(1+g)^{n-1}$

Or, $19985 = 13082(1+g)^{5-1}$

Or, $1.5277 = (1+g)^4$

Or, $(1.5277)^{1/4} = 1+g$

Or, 1+g = 1.1118

Or, g = 1.1118-1

Or, g = 0.1118

∴ g = 11.18%

EBL

Here,

D_{65} =18814

D_{61} = 6117

N = 5yr

$D_{65} = D_{61}(1+g)^{n-1}$

Or, $18814 = 6117(1+g)^{5-1}$

Or, $3.0757 = (1+g)^4$

Or, $(3.0757)^{1/4} = 1+g$

Or, 1+g = 1.3243

Or, g = 1.3243-1

Or, g = 0.3243

∴ g = 32.43%

Appendix – 4

Calculation the required values of HBL

HBL								**Rs in 10 billion**
Year	Profit(Y)	Investment + Loan & Advance (X)	Deposit (X_1)	XY	X^2	XX_1	X_1Y	X_1^2
2065	2	159	227	318	25281	36093	454	51529
2066	3	187	248	561	34969	46376	744	61504
2067	4	264	264	1056	69696	69696	1056	69696
2068	4	294	299	1176	86436	87906	1196	89401
2069	6	333	318	1998	110889	105894	1908	101124
	19	**1237**	**1356**	**5109**	**327271**	**345965**	**5358**	**373254**

Substituting the sum values in the above equations.

$19 = 5a + 1237b + 1356b_1$…….v

$5109 = 1237a + 327271b + 345965b_1$……vi

$5358 = 1356a + 345965b + 373254b_1$……vii

Multiplying equation v by 1237 and equation vi by 5 and subtracting equation vi form v.

$23503 = 6185a + 1530169b + 1677372b_1$…….×1237

$25545 = 6185a + 1636355b + 1729825b_1$……×5

\- - - -

$-2042 = -106186b - 52453b_1$

$-(2042 = 106186b + 52453b_1)$……..viii

Multiplying equation v by 1356 and equation vii by 5 and subtracting equation vii from v.

$25764 = 6780a + 1677372b + 1838736b_1$……×1356

$26790 = 6780a + 1729825b + 1866270b_1$……×5

\- - - -

$-1026 = -52453b - 27534b_1$

$(1026 = 52453b + 27534b_1)$……..ix

Again Multiplying equation viii by 27534 and equation ix by 52453 and subtracting equation ix form viii.

$56224428 = 2923725324b + 1444240902b_1$……×27534

$53816778 = 2751317209b + 1444240902b_1$……×52453

\- - -

$2407650 = 172408115b$

$b = 0.014$

Substituting the value of b in equation viii we get

$2042 = 106186b + 52453b_1$

$2042 = 106186 \times 0.014 + 52453b_1$

$b_1 = 0.0105$

Again the substituting the value of b and b_1 in equation v

$19 = 5a + 1237b + 1356b_1$

$19 = 5a + 1237 \times 0.014 + 1356 \times 0.0105$

$19 = 5a + 31.56$

$5a = -12.56$

$a = -2.512$

Substituting the value of a, b, and b_1

$y = -2.512 + 0.014x - 0.0105x_1$

To find out the profit in future, let's assume x and x_1 as 300 Then,

$y = a + bx + b_1x_1$

$= -2.512 + 0.014 \times 300 + 0.0105 \times 300$

$= 4.84$

The profit is $4.84 \times 100000000 = 484000000$

Keeping the value of x as constant and changing the value of x_1 as 350.

$y = a + bx + b_1x_1$

$= -2.512 + 0.014 \times 300 + 0.0105 \times 350$

$= 5.363$

The profit is $5.36 \times 100000000 = 536000000$

Again Keeping the value of x_1 is as constant and changing the value of x as 350.

$y = a + bx + b_1x_1$

$= -2.512 + 0.014 \times 350 + 0.0105 \times 300$

$= 5.54$

The profit is $5.54 \times 100000000 = 554000000$.

EBL								Rs in 10 billion
Year	Profit(Y)	Investment + Loan & Advance (X)	Deposit (X_1)	XY	X^2	XX_1	X_1Y	X_1^2
2065	1	86	80	86	7396	6880	80	6400
2066	1	100	100	100	10000	10000	100	10000
2067	2	143	138	286	20449	19734	276	19044
2068	2	190	190	380	36100	36100	380	36100
2069	4	238	239	952	56644	56882	956	57121
	10	**757**	**747**	**1804**	**130589**	**129596**	**1792**	**128665**

Calculation of required value of EBL

Substituting the sum values in the above equations

$10 = 5a + 757b + 747b_1$…….v

$1804 = 757a + 130589b + 129596b_1$……vi

$1792 = 747a + 129596b + 128665b_1$……vii

Multiplying equation v by757 and equation vi by 5 and subtracting equation vi form v.

$7570 = 3785a + 573049b + 565479b_1$…….×757

$9020 = 3785a + 652945b + 647980b_1$……×5

\- - - -

$-1450 = -79896b - 82501b_1$

$-(1450 = 79896b + 82501b_1)$……..viii

Multiplying equation v by 747 and equation vii by 5 and subtracting equation vii from v.

$7470 = 3735a + 565479b + 558009b_1$……×747

$8960 = 3735a + 647980b + 643325b_1$……×5

\- - - -

$-1490 = -82501b - 85316b_1$

$(1490 = 82501b + 85316b_1)$……..ix

Again Multiplying equation viii by85316 and equation ix by 82501 and subtracting equation ix form viii.

$123708200 = 6816407136b + 7038655316b_1$……×85316

$122926490 = 6806415001b + 7038655316b_1$……×82501

\- - -

$781710 = 9992135b$

$b = 0.08$

Substituting the value of b in equation viii we get

$1450 = 79896 \times 0.08 + 82501b_1$

$-4941.68 = 82501b_1$

$b_1 = -0.06$

Again the substituting the value of b and b_1 in equation v

$10 = 5a + 757b + 747b_1$

$7 = 5a + 757 \times 0.08 + 747 \times -0.06$

$a = -1.15$

Substituting the value of a, b, and b_1

$Y = -1.15 + 0.08x - 0.06x_1$

To find out the profit in future, let's assume x and x_1 as 200. Then

$y = a + bx + b_1x_1$

$= -1.15 + 0.08 \times 200 + (-0.06 \times 200)$

$= 2.85$

The profit is $2.85 \times 100000000 = 285000000$

Keeping the value of x as constant and changing the value of x_1 as 250

$y = a + bx + b_1x_1$

$= -1.15 + 0.08 \times 200 + (-0.06 \times 250)$

$= -0.15$

The profit is $-0.15 \times 100000000 = -15000000$

Again keeping the value of x_1 as constant and changing the value of x as 250

$y = a + bx + b_1x_1$

$= -1.15 + 0.08 \times 250 + (-0.06 \times 200)$

$= 6.85$

The profit is $6.85 \times 100000000 = 685000000$.

Appendix – 5

Calculation of co-relation between investment and deposit

HBL

(Rs. in million)

Year	Investment + Loan and Advance (X)	Deposit (Y)	XY	X^2	Y^2
2065	1596	2276	3632496	2547216	510176
2066	1875	2483	4655625	3515625	6165289
2067	2641	2646	6988086	6974881	7001316
2068	2949	2991	8820459	8696601	8946081
2069	3332	3180	10595760	11102224	10112400
	$\sum$ X= 12393	$\sum$ Y= 13576	$\sum$ XY= 34692423	$\sum X^2$ = 32836547	$\sum Y^2$ = 32735262

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}.\sqrt{n\sum y^2 - (\sum y)^2}}$$

$$r = \frac{5\times 34692423 - 12393\times 13576}{\sqrt{5\times 32936547 - (12393)^2}\ .\ \sqrt{5\times 32735262 - (13576)^2}}$$

$$r = \frac{5214747}{\sqrt{10596286}.\sqrt{20631466}}$$

$$r = \frac{5214727}{14785699.66}$$

$$r = 0.3527$$

Coeff. Of Determination (r^2) = r × r = 0.3527 × 0.3527 = 0.1244

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

$= 0.6745 \times \frac{1-0.3527^2}{\sqrt{5}}$

$= 0.6745 \times 0.039158$

$= 0.0264$

6 × P.E = 6 × 0.0264

= 0.1584

$r \rangle 6P.E$ Therefore Correlation is significant.

EBL

(Rs. in million)

Year	Investment + Loan and Advance (X)	Deposit (Y)	XY	X^2	Y^2
2065	860	806	693160	739600	649636
2066	1003	1010	1013030	1006009	1020100
2067	1433	1380	1977540	2053489	1904400
2068	1904	1910	3636640	36252165	3648100
2069	2387	2397	5721639	5697769	5745609
	$\sum$ X= 7587	$\sum$ Y= 7503	$\sum$ XY= 13042009	$\sum X^2$ = 45749032	$\sum Y^2$ = 12967845

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}.\sqrt{n\sum y^2 - (\sum y)^2}}$$

$$r = \frac{5\times 13042009 - 7587\times 7503}{\sqrt{5\times 45749032 - (7587)^2}\ .\ \sqrt{5\times 12967845 - (7503)^2}}$$

$$r = \frac{8284784}{\sqrt{171182591}.\sqrt{8544216}}$$

$$r = \frac{8284784}{38244226.048}$$

$$r = 0.2166$$

Coeff. Of Determination (r^2) = $r \times r$ = 0.2166 × 0.2166 = 0.0469

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

= $0.6745 \times \frac{1-0.2166^2}{\sqrt{5}}$

= 0.6745×0.4079

= 0.2751

6 × P.E = 6 × 0.2751

= 1.6507

$r \angle 6P.E$ Therefore Correlation is significant

Appendix – 6

Calculation of Investment Trend for Next Five Year

HBL

(Rs. in million)

Year (X)	Investment (Y)	x(X- $\overline{X}$)	y(Y- $\overline{Y}$)	xy	x
2065	15960	-2	-10446	20892	4
2066	18755	-1	-7651	7651	1
2067	26406	0	0	0	0
2068	29494	1	3088	3088	1
2069	33325	2	6919	13838	4
		$\sum x = 0$	$\sum y = -8090$	$\sum xy = 45469$	$\sum x^2 = 10$

We have,

Y = a +bx…….. (i)

$\sum y = \text{na} + b\sum x$ ……..(ii)

$\sum xy = a\sum x + b\sum x^2$ …… (iii)

= -1618

From equation (iii) we get

$\sum xy = a\sum x + b\sum x^2$

Or,45469= a.0 + b $\times 10$

Or, b = $\frac{45469}{10}$

= 4546.9

From equation (i) we get

Y = a + bx

Or, Y - $\overline{Y}$ = a + b (X - $\overline{X}$)

Or, Y = $\overline{Y}$ + a + b (X - $\overline{X}$)

Now,

Y_{66} = 26406 -1618+ 4546.9(2066-2063)

= 38429

Y_{67} = 26406 - 1618+ 4546.9 (2067-2063)

= 42976

Y_{68} = 26406 - 1618+ 4546.9 (2068-2063)

= 47523

Y_{69} = 26406- 1618+ 4546.9 (2069-2063)

= 52069

Y_{70} = 26406-1618+ 4546.9 (2070-2063)

= 56616

EBL

(Rs. in million)

Year (X)	Investment (Y)	$x(X-\overline{X})$	$y(Y-\overline{Y})$	xy	x
2065	8600	-2	-5726	11452	4
2066	10034	-1	-4292	4292	1
2067	14326	0	0	0	0
2068	19044	1	4718	4718	1
2069	23873	2	9547	19094	4
		$\sum x = 0$	$\sum y = 4247$	$\sum xy = 39556$	$\sum x^2 = 10$

We have,

Y = a +bx…….. (i)

$\sum y = \text{na} + b\sum x$ ……..(ii)

$\sum xy = a\sum x + b\sum x^2$ …… (iii)

From equation (ii) we get

$\sum y = na + b\sum x$

Or, 4247 = 5a + b.0

Or, $a = \frac{4247}{5} = 849.4$

From equation (iii) we get

$\sum xy = a\sum x + b\sum x^2$

Or, 39556 = a.0 + b $\times 10$

Or, $b = \frac{39556}{10} = 3955.6$

From equation (i) we get

Y = a + bx

Or, $Y - \overline{Y} = a + b(X - \overline{X})$

Or, $Y = \overline{Y} + a + b(X - \overline{X})$

Now,

Y_{66} =14326 + 849.4 + 3955.6 (2066-2063)

= 27042

Y_{67} =14326 + 849.4 + 3955.6(2067-2063)

= 30998

Y_{68} = 14326 + 849.4 + 3955.6(2068-2063)

= 34953

Y_{69} = 14326+ 849.4 + 3955.6 (2069-2063)

= 38909

Y_{70} = 14326 849.4+ 3955.6(2070-2063)

= 42865

Appendix – 7
Questionnaire-Survey

1. Banking is the sector; most of the investors are like to invest? Do you agree?

   a. Yes [ ] b. No [ ] c. Cannot Say [ ]

2. Do you think Nepalese Investors are aware about Stock Market?

   a. Yes [ ] b. No [ ] c. Little Known [ ]

3. Are the Banks in Nepal duly publishing their financial statements?

   a. Yes [ ] b. No [ ] c. Cannot Say [ ]

4. Does the political environment affect the banks investment policy?

   a. Yes [ ] b. No [ ] c. Don't Know [ ]

5. What is the most influencing factor that affects the bank's investment policy?

   a. Expected Profit [ ] b. Past Performance [ ]

   c. History of Board of Director [ ]

6. Now, which of the following trend is prevalent in bank?

   a. Consumer banking [ ] b. Wholesale banking [ ]

   c. Industrial loan [ ]

7. In your opinion, what do you think of landing process at bank?

   a. Social Status [ ] b. Income [ ]

   c. Marketing [ ] d. All of above [ ]

8. Have you even obtained of bank loan?

   a. Yes [ ] b. No [ ] c. Will not say [ ]

9. If yes, what loan type was it?

   a. Home loan [ ] b. Business loan [ ]

   c. Mortgage loan [ ] d. Education loan [ ]

10. In your opinion, what are the major's things to be taken for increase of investment from banking in Nepal?

_____

_____

_____

Name: ……

Address: ……

Phone no: ……..