PORTFOLIO CLASS 11

HOME WORK SUPPORT

COVERAGE

Question			Answer			Lecture Time
Q. No	Page no.	Book	Q. No	Page no.	Book	
33	44	HW Q BOOK	33	113	HW ANS BOOK	00:00:31 - 00:19:59
36	45	HW Q BOOK	36	115	HW ANS BOOK	00:20:00 - 00:38:48
29	42	HW Q BOOK	29	110	HW ANS BOOK	00:38:49 – 00:39:36
30	43	HW Q BOOK	30	111	HW ANS BOOK	00:39:37 – 00:40:29

PART VII: AMBIGUOUS

Question 33: SSEI HW Book Page No. 44

The following information is available with respect of Jaykay Ltd.

Year	Jay Kay Limited		Market		Return on Govt. Bonds
	Average Share Price (₹)	DPS (₹)	Average Index	Dividend Yield (%)	
2002	242	20	1812	4	6
2003	279	25	1950	5	5
2004	305	30	2258	6	4
2005	322	35	2220	7	5

Compute Beta Value of the company as at the end of 2005. What is your observation?

(Source: ICAI)

ANSWER:

Computation of Beta Value

Calculation of Returns

$$\text{Returns} = \frac{D_1 + (P_1 - P_0)}{P_0} \times 100$$

Year	Returns
2002 – 2003	$\frac{25 + (279 - 242)}{242} \times 100 = 25.62\%$
2003 – 2004	$\frac{30 + (305 - 279)}{279} \times 100 = 20.07\%$
2004 – 2005	$\frac{35 + (322 - 305)}{305} \times 100 = 17.05\%$

Calculation of Returns from market Index

Year	% of Index Appreciation	Dividend Yield %	Total Return %
2002 - 2003	$\frac{1950 - 1812}{1812} \times 100 = 7.62\%$	5%	12.62%
2003 - 2004	$\frac{2258 - 1950}{1950} \times 100 = 15.79\%$	6%	21.79%
2004 - 2005	$\frac{2220 - 2258}{2258} \times 100 = (-)1.68\%$	7%	5.32%

Computation of Beta

Year	X	Y	XY	Y^2
2002-2003	25.62	12.62	323.32	159.26
2003-2004	20.07	21.79	437.33	474.80
2004-2005	17.05	5.32	90.71	28.30
	62.74	**39.73**	**851.36**	**662.36**

$$\bar{X} = \frac{62.74}{3} = 20.91,\ \bar{Y} = \frac{39.73}{3} = 13.24$$

$$\beta = \frac{\sum XY - n\overline{XY}}{\sum Y^2 - n\bar{Y}^2}$$

$$= \frac{851.36 \ - \ 3(20.91)(13.24)}{662.36 \ - \ 3(13.24)^2}$$

$$= \frac{851.36 \ - \ 830.55}{662.36 \ - \ 525.89} = \frac{20.81}{136.47} = 0.15$$

PART VII: AMBIGUOUS

Question 36: SSEI HW Book Page No. 45

The following information is available for the share of X Ltd. and stock exchange for the last 4 years.

	X Ltd.		Index of Stock Exchange	Return from Market funds	Return from Govt. Securities
	Share Price	Divided Yield			
Present Year	197.00	10%	2182	16%	15%
1 year ago	164.20	12%	1983	15%	15%
2 year ago	155.00	8%	1665	16%	16%
3 year ago	121.00	10%	1789	10%	14%
4 year ago	95.00	10%	1490	18%	15%

With above information available please calculate:

i. Expected Return on X Ltd.'s share.
ii. Expected Return on Market Index.
iii. Risk Free Rate of Return
iv. Beta of X Ltd

(Source: ICAI)

ANSWER:

i. Expected Return on X Ltd.'s Share

Average % Annual Capital Gain $[197, 95]^{1/4}$ -1 = 0.20 i.e 20%

Average % dividend yield = $\frac{10\%+12\%+8\%+10\%+10\%}{5}$ =10%

Therefore, expected return on share of X Ltd. = 20% + 10% = 30%

ii. Expected Return on Market Index

Average Annual % Capital gain

$[2182 \div 1490]^{1/4}$ -1 = 0.10 i.e. 10%

Average % of dividend yield

$\frac{16\%+15\%+16\%+10\%+18\%}{5}=15\%$

Thus, expected return on Market Index = 10% + 15% = 25%

iii. Return from Central Govt. Securities

$$\frac{15\%+15\%+16\%+14\%+15\%}{5}=15\%$$

Thus, Risk Free Rate of Return = R_f = 15%

iv. Beta Value of X Ltd.

E (Rx) = R_f + [E(R_m) – R_f] β_x

Accordingly,

$$\frac{E(R_x)-R_f}{E(R_m)-R_f}=\beta_x$$

$$\frac{30\%-15\%}{25\%-15\%}=\frac{15}{10}=1.50$$

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Question 29: SSEI HW Book Page No. 42

The following information is available with respect of Krishna Ltd.

Year	Krishna Ltd. Average share price (₹)	Dividend per Share (₹)	Average Market Index	Dividend Yield	Return on Govt. bonds
2012	245	20	2013	4%	7%
2013	253	22	2130	5%	6%
2014	310	25	2350	6%	6%
2015	330	30	2580	7%	6%

Calculate the Beta Value of the Krishna Ltd. at the end of 2015 and State your observation.

(Source: ICAI)

ANSWER:

i. Computation of Beta Value

Calculation of Returns

$$\text{Returns} = \frac{D_1 + (P_1 - P_0)}{P_0} \times 100$$

Year	Returns
2012 – 13	$\frac{22 + (253 - 245)}{245} \times 100 = 12.24\%$
2013 – 14	$\frac{25 + (310 - 253)}{253} \times 100 = 32.41\%$
2014 – 15	$\frac{30 + (330 - 310)}{310} \times 100 = 16.13\%$

Calculation of Returns from market Index

Year	% of Index Appreciation	Dividend Yield %	Total Return %
2012–13	$\frac{(2130 - 2013)}{2013} \times 100 = 5.81\%$	5%	10.81%
2013–14	$\frac{(2350 - 2130)}{2013} \times 100 = 10.33\%$	6%	16.33%
2014–15	$\frac{(2580 - 2350)}{2350} \times 100 = 9.79\%$	7%	16.79%

Computation of Beta

Year	Krishna Ltd. (X)	Market Index (Y)	XY	Y^2
2012–13	12.24%	10.81%	132.31	116.86
2013–14	32.41%	16.33%	529.25	266.67
2014–15	16.13%	16.79%	270.82	281.90
Total	**60.78%**	**43.93%**	**932.38**	**665.43**

Average Return of Krishna Ltd. $= \frac{60.78}{3} = 20.26\%$

Average Market Return $= \frac{43.93}{3} = 14.64\%$

$$\text{Beta}(\beta) = \frac{\sum XY - n\bar{X}\bar{Y}}{\sum Y^2 - n(\bar{Y})^2} = \frac{932.38 - 3 \times 20.26 \times 14.64}{665.43 - 3(14.64)^2} = 1.897$$

ii. Observation

	Expected Return (%)	Actual Return (%)	Action
2012 – 13	6%+ 1.897(10.81% - 6%) = 15.12%	12.24%	Sell
2013 – 14	6%+ 1.897(16.33% - 6%) = 25.60%	32.41%	Buy
2014 – 15	6%+ 1.897(16.79% - 6%) = 26.47%	16.13%	Sell

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Question 30: SSEI HW Book Page No. 43

You have been given the following information about Swecha Ltd.

	Swecha Ltd.		Market		
Year	Average Share price	Dividend per share	Average Index	Dividend Yield %	Return on Govt. bond %
2017	460	30	4060	5	5.5
2018	497	33	4320	6.5	5.5
2019	523	38	4592	4.5	5.5
2020	556	43	4780	6	5.5
2021	589	50	4968	5.5	5.5

i. Compute the Beta value of the company as at the end of year 2021.

ii. What is your Observation?

(*Source: ICAI*)

ANSWER:

i. Computation of Beta Value

Calculation of Returns

$$\text{Returns} = \frac{D_1 + (P_1 - P_0)}{P_0} \times 100$$

Year	Returns from Swecha Ltd.	Returns from market Index
2018	$\frac{33 + (497 - 460)}{460} \times 100 = 15.22\%$	$\frac{(4320 - 4060)}{4060} \times 100 + 6.50\% = 12.90\%$
2019	$\frac{38 + (523 - 497)}{497} \times 100 = 12.88\%$	$\frac{(4592 - 4320)}{4320} \times 100 + 4.50\% = 10.80\%$
2020	$\frac{43 + (556 - 523)}{523} \times 100 = 14.53\%$	$\frac{(4780 - 4592)}{4592} \times 100 + 6.00\% = 10.09\%$
2021	$\frac{50 + (589 - 556)}{556} \times 100 = 14.93\%$	$\frac{(4968 - 4780)}{4780} \times 100 + 5.50\% = 9.43\%$

Computation of Beta

Year	Swecha Ltd. (X)	Market Index (Y)	XY	Y^2
2018	15.22%	12.90%	196.34	166.41
2019	12.88%	10.80%	139.10	116.64
2020	14.53%	10.09%	146.61	101.81
2021	14.93%	9.43%	140.79	88.92
Total	57.56%	43.22%	622.84	473.78

Average Return of Krishna Ltd. = $\frac{57.56}{4}$ = 14.39%

Average Market Return = $\frac{43.22}{4}$ = 10.81%

Beta (β) = $\frac{\sum XY - n\bar{X}\bar{Y}}{\sum Y^2 - n(\bar{Y})^2} = \frac{622.84 - 4\times14.39\times10.81}{473.78 - 4(10.81)^2}$ = 0.097

ii. Observation

	Expected Return (%)	Actual Return (%)	Action
2017	5.5% + 0.097(12.90% - 5.5%) = 6.22%	15.22%	Buy
2018	5.5% + 0.097(10.80% - 5.5%) = 6.01%	12.88%	Buy
2019	5.5% + 0.097(10.09% - 5.5%) = 5.95%	14.53%	Buy
2020	5.5% + 0.097(9.43% - 5.5%) = 5.88%	14.93%	Buy