Assignment 6 EVA & CAPM

In the two graphs below the share price of Nike and SAP are plotted; and compared to a market indicator the DOW Jones index.

1   Explain what is meant with a Beta of 0.77 for Nike.

2   Explain what is meant with a Beta of 1.24 for SAP.

Nike Inc   (NYSE:NKE)   Add to portfolio

100.28 +0.29 (0.29%)

Real-time: 10:03AM EDT
NYSE real-time data - Disclaimer
Currency in USD

Range	100.26 - 100.85	Div/yield 0.28/1.12
52 week	71.10 - 103.79	EPS 3.50
Open	100.69	Shares 682.19M
Vol / Avg.	3,189.00/3.73M	Beta 0.77
Mkt cap	86.35B	Inst. own 84%
P/E	28.73	

g+1 194

Compare: [Enter ticker here] [Add] ☑Dow Jones ☐S&P 500 ☐ADDYY ☐PMMAF ☐DECK ☐CROX ☐YUEIF ☐KSWS ☐ALPAF   more »

Zoom: 1d 5d 1m 3m 6m YTD 1y 5y 10y All
Oct 28, 2014 - Apr 21, 2015
● Dow Jones +7.41% ● NKE +9.64%

Nov 2014   Dec 2014   Jan 2015   Feb 2015   Mar 2015   Apr 2015

10%
5%
0%
-5%

2014   2015

Settings | Technicals | Link to this view   Volume delayed by 15 mins.

SAP SE (ADR)   (NYSE:SAP)   Add to portfolio

74.17 +1.85 (2.56%)

Real-time: 10:18AM EDT
NYSE real-time data - Disclaimer
Currency in USD

Range	74.07 - 74.38	Div/yield 1.37/1.84
52 week	62.82 - 82.70	EPS 2.94
Open	74.16	Shares 1.20B
Vol / Avg.	343,223.00/1.02M	Beta 1.24
Mkt cap	91.77B	Inst. own 4%
P/E	25.23	

g+1 55

Compare: [Enter ticker here] [Add] ☑Dow Jones ☐S&P 500 ☐IBM ☐ADBE ☐ORCL ☐MSFT ☐ERIC ☐ACN ☐FJTSY   more »

Zoom: 1d 5d 1m 3m 6m YTD 1y 5y 10y All
Oct 28, 2014 - Apr 21, 2015
● Dow Jones +7.12% ● SAP +13.41%

Nov 2014   Dec 2014   Jan 2015   Feb 2015   Mar 2015   Apr 2015

10%
5%
0%
-5%

2014   2015

Settings | Technicals | Link to this view   Volume delayed by 15 mins.

To calculate the required return on equity (R$_E$) the Capital Asset Pricing Model (CAPM) can be used.

3   Explain why the required return on equity for SAP (R$_{E-SAP}$) should be higher than the required on return equity for NIKE (R$_{E-NIKE}$).

4   The CAPM is based on a so-called strong assumption: *"Capital markets are efficient"*. Do you agree about the empirical validity of this assumption? Explain your line of reasoning.

	Company name	Valuation			Financial ratios	Operating metrics		Stock metrics
		Price	Earnings per share	P/E ratio	Total debt to equity	Return on avg assets	Return on avg equity	Beta
IBM	**Intl. Business Ma...**	169.78	15.75	10.78	343.82	12.92	90.89	0.65
SAP	SAP SE (ADR)	75.18	2.98	25.25	52.63	10.00	18.46	1.27
MSFT	Microsoft Corpora...	47.87	2.41	19.89	25.22	14.02	26.17	1.10
ORCL	Oracle Corporation	43.08	2.39	18.03	51.57	12.73	23.94	1.41
HPQ	Hewlett-Packard C...	33.26	2.61	12.72	73.04	4.80	18.57	1.51
VMW	VMware, Inc.	88.23	2.04	43.29	19.79	6.43	12.31	1.18
ETSZF	ETFS COMMODITY SEC	25.25						
CSCO	Cisco Systems, Inc.	28.82	1.67	17.23	36.91	7.61	13.57	1.34
CA	CA, Inc.	32.24	1.70	18.96	31.71	7.54	16.15	1.35
FJTSY	Fujitsu Ltd (ADR)	33.77	0.98	34.38	97.82	1.86	8.12	0.92
INTC	Intel Corporation	32.08	2.35	13.63	24.54	12.70	20.51	0.97

From the table above we can observe that IBM has a ROE of 90.89, and Microsoft has a ROE of 26.17.

5   Provide two reasons from the table above to explain this large difference in ROE. Explain your line of reasoning.

6   Explain why the inverse value of the P/E ratio of SAP (25.25) is an indicator for the required return on equity for SAP (R$_{E-SAP}$).

7   Calculate the risk-premium for IBM, if we assume that the R$_E$ for IBM is 9.28% and the risk-free interest rate (R$_{RF}$) is 2.64%. Show your calculations.

8   The debt to equity ratio for Intel is 24.54. Calculate the equity ratio (ε) and the debt ratio (λ). Show your calculations.

Schweinfurt AG has 2.0 million shares of equity outstanding.

The equity currently sells for € 25 per share.

The firm's debt is publicly traded and was recently quoted at 92% of face value.

It has a total face value of €10 million, and it is currently priced to yield 12%.

The risk-free interest rate is 3%, and the market risk premium is 8 per cent.

The estimated Beta is 1.19.

Corporate tax rate is 25%

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9   Calculate the WACC for Schweinfurt AG. Show your calculations.

10   Retrieve the relevant missing data from the annual reports (2019) from Philips, Unilever and Heineken to calculate: λ, ε, R_E, WACC and EVA^{TM}

	Philips	Heineken	Unilever
Equity			
Debt			
Assets			
NOPAT			
Tax rate	0,35	0,35	0,35
B = Beta	1,62	1,16	0,78
R_m	11%	11%	11%
R_d	6%	6%	6%
R_{rf}	3%	3%	3%
ε = eguity ratio			
λ = debt ratio			
R_e			
WACC			
EVA			