

PGDM / IB Batch 2015-17,  
Business Analysis & Valuation  
DM-411/IB-441 411

Trimester – IV, End-Term Examination: September 2016

Time allowed: 2.5 Hours

Max Marks: 50

Roll No: \_\_\_\_\_

**Instruction:** Students are required to write Roll No on every page of the question paper, writing anything except the Roll No will be treated as **Unfair Means**. In case of rough work please use answer sheet.

Make assumptions wherever necessary and write them down at the end of solution.

Sections	No. of Questions to attempt	Marks	Marks
A	3 out of 5 (Short Questions)	5 Marks each	$3 \times 5 = 15$
B	2 out of 3 (Long Questions)	10 Marks each	$2 \times 10 = 20$
C	Compulsory Case Study	15 Marks	15
		<b>Total Marks</b>	<b>50</b>

**SECTION A**

A 1. You have been asked to estimate the expected growth in earnings in MNL Bank, a regional bank that reported \$ 2 in earnings per share in the most recent year on a book value of equity, per share, of \$10. The firm paid out \$0.50 in dividends per share.

a. Assuming that the firm can maintain the return on equity and payout ratio from last year for the next 5 years, estimate the expected growth rate in earnings for the next 5 years.

b. Now assume that the banking crisis will create the following changes: the firm will be required to raise its equity capital by 50% immediately by regulatory authorities, to set aside 20% of earnings each period to cover bad loans and to suspend dividend payments for the next 5 years. Estimate the new expected growth rate in earnings per share.

A 2. Merck & Company has 1.13 billion shares traded at a market value of \$32 per share, and \$1.918 billion in book value of outstanding debt (with an estimated market value of \$2 billion). The equity has a book value of \$5.5 billion, and the stock has a beta of 1.10. The firm paid interest expenses of \$160 million in the most recent financial year, is rated AAA and paid 35% of its income as taxes. The thirty-year government bond rate is 6.25%, and AAA bonds trade at a spread of twenty basis points (0.2%) over the treasury bond rate.

What is the cost of capital?

A 3 Citra Limited generated Rs. 100 million net income this year. Net working capital investment was Rs. 8 million and capital expenditure was Rs. 130 million. During the year company did not borrow / paid any loan. Also consider following information (in millions of Rupees):

Beginning gross fixed assets= 180;

Ending gross fixed assets= 272.

Beginning accumulated depreciation = 60;

Ending accumulated depreciation = 80.

Depreciation expense= 54

In addition, a piece of equipment with an original book value of Rs 38 m was sold for Rs 20 m. The equipment had a book value at the time of the sale of Rs 4 m. The gain was classified as unusual.

Calculate free cash flow to equity

A 4. KVV Ltd.'s most recent FCFF is Rs. 5,000,000. KVV's target debt-to-equity ratio is 0.25. The market value of the firm's debt is Rs. 10,000,000, and KVV has 2,000,000 shares of common stock outstanding. The firm's tax rate is 40%, the shareholders require a return of 16% on their investment, the firm's before-tax cost of debt is 8%, and the expected long-term growth rate in FCFF is 5%. Calculate the value of the firm and the value per share of the equity.

A 5. XD Ltd. has a NOPAT as adjusted for EVA purposes of INR 562.98 million. It currently has invested capital of INR 5,700 million and a WACC of 10%. The company has total debt of INR 1,500 million. Find the EVA for XD Ltd. Also assume that it will show a 5% increase in perpetuity. Find the value of the firm and the value of the firm's equity.

### Section B

B 1. A) What is residual income approach? In which conditions one should use this? (4)

B) Continental Financial Products has a required rate of return of 14%. The current book value is Rs 6.50. Earnings forecasts for 2017, 2018, and 2019 are Rs 1.10, 1.00, and 1.10, respectively. Dividends in 2017 and 2018 are forecasted to be Rs 0.50 and 0.60, respectively. Assume the dividend in 2019 as a liquidating dividend, which means that Continental will pay out its entire book value in dividends and cease doing business at the end of 2019. Calculate the value of Continental's stock using the residual income model (6)

B 2. What is relative valuation? Explain with suitable examples the concept of trailing, multiple and justified multiples. Mention what kind of multiples you will use for these industries – manufacturing, infrastructure, banking and a retail firm. (2+6+2)

B 3. Sweet & Spicy, a food processing company has come to you for some help in estimating its cost of capital so that it can evaluate future investment opportunities. The firm has been listed on a major stock exchange and regression beta is 0.45. The firm is in two businesses, and you have collected the following information on them:

Comparable firms

Business	Revenues	Unlevered Beta	EV /Sales Ratio
Food Processing	INR 1600 million	0.60	0.50
Restaurants	INR 400 million	1.20	3.00

Sweet & Spicy has 10 million shares outstanding, trading at INR 60 a share, INR 500 million in debt. The risk free rate is 7%, the equity risk premium is 8% and the firm has a rating of BBB (with a default spread of 2%). The marginal tax rate for all firms is 40%. Estimate the cost of equity and WACC for the firm.

### Section C

Management of Sprite Limited is not happy with the current valuation given by the market to the company. Sprite Limited recently acquired and amalgamated another company to grow inorganically. As a result of recent acquisition, company is burdened with debt which company wants to reduce. It is decided to go slow on new capital expenditure and pay back the debt in next five years and in equal installments with the help of future cash flows so that company can get back its desired credit rating as early as possible.

In the latest financial result company reported an EBITDA of Rs. 100 crores. Current depreciation amount is Rs. 36 crores and capex is Rs. 30 crores. Recently acquired debt is Rs. 200 crores.

It is assumed that for the next 5 years, EBITDA will grow at a rate of 15% whereas depreciation and capex will grow at 5%. It is assumed that from 6<sup>th</sup> year onward free cash flow will remain as reported in fifth year.

Company's marginal tax rate is 35%. Cost of debt is 10% pretax and interest will be paid on the outstanding debt amount at the beginning of the period.

Current risk free rate is 7% and risk premium is 8%. Company market beta is 1.22 and equity market capitalization is Rs. 600 crores.

What should be the right valuation of the company in your opinion?

**Present Value Table**

Present value of 1 i.e.  $(1 + r)^{-n}$

Where  $r$  = discount rate  
 $n$  = number of periods until payment

Periods (n)	Discount rate (r)										
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.305	11
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	11
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	12
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	13
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	14
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	15

### Annuity Table

Present value of an annuity of 1 i.e.  $\frac{1 - (1 + r)^{-n}}{r}$

Where  $r$  = discount rate  
 $n$  = number of periods

Periods (n)	Discount rate (r)										
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	2
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	3
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	4
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	5
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	6
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	7
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	8
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	9
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	10
11	10.37	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	11
12	11.26	10.58	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	12
13	12.13	11.35	10.63	9.986	9.394	8.853	8.358	7.904	7.487	7.103	13
14	13.00	12.11	11.30	10.56	9.899	9.295	8.745	8.244	7.786	7.367	14
15	13.87	12.85	11.94	11.12	10.38	9.712	9.108	8.559	8.061	7.606	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	2
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	3
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	4
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	5
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	6
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	7
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	8
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	9
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	10
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	11
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	12
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	13
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	14
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	15