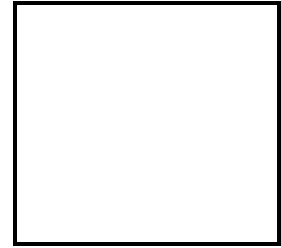


STOCKHOLM UNIVERSITY

School of Business



Solutions supplement

Company Valuation CVA

7.5 Credits

Date:	December 13, 2011
Time:	16.00-19.00
Permitted aids:	Calculator & dictionary
Responsible teacher:	Peter Malmqvist

Write your placement code on each answer sheet. Your name and social security number should only be marked on the cover sheet.

1. Please answer each question in the designated area on the answer sheet.
2. The exam consists of three parts – multiple choice, questions and a valuation case.
3. In order to receive a final grade all course requirements must be approved.
4. The exam gives a maximum score of 100 points.
5. The grading will be: A = 90-100, B = 80-89, C = 70-79, D = 60-69, E = 50-59 F = 0-49

Part I contains multiple-choice questions. To each question there is always just one correct answer. You get 2 points for a correct answer. No answer gets nil points. For a wrong answer you get minus 2 points, but 4 answers can be wrong without having a negative impact on the other answers. You must have 50 percent of the points on Part I to get a pass.

Part II is a valuation case based on the valuation model presented on the course. You must have 50 percent of the points on Part II to get a pass.

Both parts will be considered when assessing the grade on the course.

PART I – Mark with a cross (X) the correct alternative

You get 2 points for a correct answer. For a wrong answer you get minus 2 points, but 4 answers can be wrong without having a negative impact on the other answers.

1a

2a

3a

4b

5a

6a

7c

8b

9a

10c

11a

12b

13c

14a

15c

16a

17b

18a

19a

20b

21c

22b

23a

24b

25c

PART II – Case

A) Rearrange the balance sheet to fit the DCF structure (15 p):

Balance sheet 2011 Q3 Boliden	Quarterly report	Working Capital (non-interest bearing)	Operating fixed (non-interest bearing)	Interest bearing capital (WACC)
Intangible fixed assets	3 550		3 550	
Tangible fixed assets	23 863		23 863	
Financial fixed assets (1)	212		212	
Deferred taxes	59			59
Total fixed assets	27 685	0	27 625	59
Inventories	8 679	8 679		
Current receivables	2 951	2 951		
Short-term investments (2)	4			4
Cash/bank	733			733
Current assets	12 367	11 630	0	737
Total assets	40 052	11 630	27 625	796
Equity	20 929			20 929
Minority/Non-controlling	0			0
Total equity	20 929	0	0	20 929
Provision for pensions (1)	693		693	
Deferred tax provisions	2 904			2 904
Other provisions (1)	1 133	1 133		
Interest-bearing LT liabilities	6 912			6 912
Long-term liabilities	11 642	1 133	693	9 816
Interest-bearing current liabilities	141			141
Tax liabilities	738	738		
Other liabilities	6 602	6 602		
Current liabilities	7 481	7 340	0	141
Total equity/liabilities	40 052	8 473	693	30 886
Working capital (net)		3 157		
Operating fixed (net)			26 932	
Financial assets				796
Interest bearing debt				7 053
Debt (net)				6 257
Deferred tax				2 904

B. Calculate the WACC (the weighted average cost of capital) for Boliden based on the balance sheet December 31, 2010 using a target rate (not iteration). For credit ratings, use the Damodaran figures included in the assignment. Show the calculations and explain the choices you make (5 p).

WACC: 9,14 %

Target WACC	Cap cost aft tax	Marketval	Capital weight	
Debt	0,50%	2,92%	23,14	0,17 0,51%
Deferred tax		0,00%	9,89	0,07 0,00%
Minority/Non-controlling		11,50%	0,04	0,00 0,00%
Value of equity (target weight)		11,50%	99,39	0,75 8,63%
Target WACC			132,5	1,00 9,14%

C. Calculate the present value of the free cash flow (FCF) in Boliden for the estimated year 2020. Use the WACC that is included in the spreadsheet. Show the calculations. (15 p)

Present value of FCF (2020): 3,61 (SEK/share)

Value - FCF/NOPLAT SEK per share	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Explicit forecast period									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Income statement data										
Revenue	156,30	175,68	193,24	208,70	221,23	230,07	239,28	248,85	258,80	269,16
<i>Annual growth rate of revenue</i>	16,4%	12,4%	10,0%	8,0%	6,0%	4,0%	4,0%	4,0%	4,0%	4,0%
EBITA	19,42	21,78	19,32	16,70	17,70	18,41	19,14	19,91	20,70	21,53
<i>EBITA margin</i>	12,4%	12,4%	10,0%	8,0%	8,0%	8,0%	8,0%	8,0%	8,0%	8,0%
Tax 27,0%	-5,24	-5,88	-5,22	-4,51	-4,78	-4,97	-5,17	-5,38	-5,59	-5,81
NOPLAT	14,18	15,90	14,11	12,19	12,92	13,44	13,97	14,53	15,11	15,72
Where of: Depreciation	-7,79	-8,76	-9,63	-10,40	-11,03	-11,47	-11,93	-12,41	-12,90	-13,42
Gross cash flow	21,97	24,66	23,74	22,59	23,95	24,91	25,90	26,94	28,02	29,14
Balance sheet data										
Working capital	16,24	18,26	20,08	21,69	22,99	23,91	24,87	25,86	26,90	27,97
<i>Working cap/rev</i>	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%
Operating fixed assets	103,34	116,16	127,78	138,00	146,28	152,13	158,21	164,54	171,12	177,97
<i>Operating fixed assets/Revenue</i>	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%
Invested capital	119,59	134,42	147,86	159,69	169,27	176,04	183,08	190,41	198,02	205,94
Gross cash flow	21,97	24,66	23,74	22,59	23,95	24,91	25,90	26,94	28,02	29,14
Change in working capital	-2,29	-2,01	-1,83	-1,61	-1,30	-0,92	-0,96	-0,99	-1,03	-1,08
Change in invested capital	-22,38	-21,57	-21,25	-20,63	-19,31	-17,32	-18,01	-18,73	-19,48	-20,26
FCF	-2,70	1,07	0,67	0,36	3,34	6,67	6,93	7,21	7,50	7,80
Adjustable WACC	8,00%									
Present Value Factor	0,926	0,857	0,794	0,735	0,681	0,630	0,583	0,540	0,500	0,463
PV of FCF	-2,50	0,92	0,53	0,26	2,27	4,20	4,04	3,90	3,75	3,61

E. Calculate the continuing value for Boliden. Use the WACC that is included in the spreadsheet. Show the calculations and explain the choices you have made, for instance which technique for calculating the continuing value you have used (10 p).

Continuing Value: 94,65 (SEK/share)

Value - FCF/NOPLAT <i>SEK per share</i>	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Beyond
	Explicit forecast period										Perp year
Income statement data	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Revenue	156,30	175,68	193,24	208,70	221,23	230,07	239,28	248,85	258,80	269,16	279,92
<i>Annual growth rate of revenue</i>	16,4%	12,4%	10,0%	8,0%	6,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%
EBITA	19,42	21,78	19,32	16,70	17,70	18,41	19,14	19,91	20,70	21,53	22,39
<i>EBITA margin</i>	12,4%	12,4%	10,0%	8,0%	8,0%	8,0%	8,0%	8,0%	8,0%	8,0%	8,0%
Tax 27,0%	-5,24	-5,88	-5,22	-4,51	-4,78	-4,97	-5,17	-5,38	-5,59	-5,81	-6,05
NOPLAT	14,18	15,90	14,11	12,19	12,92	13,44	13,97	14,53	15,11	15,72	16,35
Where of: Depreciation	-7,79	-8,76	-9,63	-10,40	-11,03	-11,47	-11,93	-12,41	-12,90	-13,42	-13,96
Gross cash flow	21,97	24,66	23,74	22,59	23,95	24,91	25,90	26,94	28,02	29,14	30,30
Balance sheet data											
Working capital	16,24	18,26	20,08	21,69	22,99	23,91	24,87	25,86	26,90	27,97	29,09
<i>Working cap/rev</i>	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%	10,4%
Operating fixed assets	103,34	116,16	127,78	138,00	146,28	152,13	158,21	164,54	171,12	177,97	185,09
<i>Operating fixed assets/Revenue</i>	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%	66,1%
Invested capital	119,59	134,42	147,86	159,69	169,27	176,04	183,08	190,41	198,02	205,94	214,18
Gross cash flow	21,97	24,66	23,74	22,59	23,95	24,91	25,90	26,94	28,02	29,14	30,30
Change in working capital	-2,29	-2,01	-1,83	-1,61	-1,30	-0,92	-0,96	-0,99	-1,03	-1,08	-1,12
Change in invested capital	-22,38	-21,57	-21,25	-20,63	-19,31	-17,32	-18,01	-18,73	-19,48	-20,26	-21,07
FCF	-2,70	1,07	0,67	0,36	3,34	6,67	6,93	7,21	7,50	7,80	8,11
Adjustable WACC	8,00%										
Present Value Factor	0,926	0,857	0,794	0,735	0,681	0,630	0,583	0,540	0,500	0,463	
PV of FCF	-2,50	0,92	0,53	0,26	2,27	4,20	4,04	3,90	3,75	3,61	
Sum of PV of FCF during explic	20,99										
Terminal value 1 stage convergen	204,34										
PV of terminal value	94,65										