

Stories to Numbers

The Assumptions

	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	76559.0	0.15	0.02		0.02	
Operating margin (b)	-0.031	-0.031	0.096		0.096	
Tax rate	0.25	0.25	0.25		0.25	
Reinvestment (c)		Sales to capital ratio =	3.8	RIR=	0.2	
Return on capital	-0.1178	Marginal ROIC =	0.7598		0.1	
Cost of capital (d)		0.0925	0.075		0.075	

The Cash Flows

	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	68903.10	-0.05	-3445.16	-3445.16	-2014.71	-1430.44
2	79238.57	0.05	3747.98	3672.28	2719.86	952.42
3	91124.35	0.10	8747.94	6560.95	3127.84	3433.12
4	104793.00	0.10	10060.13	7545.10	3597.01	3948.08
5	120511.95	0.10	11569.15	8676.86	4136.57	4540.29
6	135455.43	0.10	13003.72	9752.79	3932.50	5820.30
7	148730.07	0.10	14278.09	10708.56	3493.32	7215.24
8	159438.63	0.10	15306.11	11479.58	2818.04	8661.54
9	166772.81	0.10	16010.19	12007.64	1930.05	10077.60
10	170108.27	0.10	16330.39	12247.80	877.75	11370.04
Terminal year	173510.43	0.10	16657.00	12492.75	2498.55	9994.20

The Value

Terminal value	181712.74	
PV(Terminal value)	78736.13	
PV (CF over next 10 years)	29139.75	
Value of operating assets	107875.89	
Adjustment for distress	10787.59	Probability of failure =0.20
- Debt & Mnority Interests	28532.00	
+ Cash & Other Non-operating assets	10030.00	
Value of equity	78586.30	
- Value of equity options	0.00	
Number of shares	566.00	
Value per share	138.85	Stock was trading at =127.68

Input sheet

Date of valuation	
Company name	

Numbers from your base year below (in consistent units)

	This year
Country	
Industry	
Industry (Global)	
Revenues	76559.0
Operating income or EBIT	-2102.0
Interest expense	0.0
Book value of equity	-8617.0
Book value of debt	28532.0
Do you have R&D expenses to capitalize?	yes
Do you have operating lease commitments?	no
Cash and Marketable Securities	10030.0
Cross holdings and other non-operating assets	0.0
Minority interests	0.0
Number of shares outstanding =	566.0
Current stock price =	127.68
Effective tax rate =	0.25
Marginal tax rate =	0.25

The value drivers

Revenue growth rate for next year	-0.1
Operating Margin for next year	-0.05
Compounded annual revenue growth rate - years 2-5 =	0.15
Target pre-tax operating margin (EBIT as % of sales in year 10) =	0.096
Year of convergence	3.0
Sales to capital ratio (for computing reinvestment) =	3.8

Market numbers

Riskfree rate	0.85
Riskfree rate	0.0925

Other inputs

Do you have employee options outstanding?	no
Number of options outstanding =	7.27
Average strike price =	1.29
Average maturity =	7.0
Standard deviation on stock price =	0.45

Default assumptions.

In stable growth, I will assume that your firm will have a cost of capital similar to that of typical mature companies (riskfree rate + 4.5%)	
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Do you want to override this assumption	yes
If yes, enter the cost of capital after year 10 =	0.075
I will assume that your firm will earn a return on capital equal to its cost of capital after year 10. I am assuming that whatever competitive advantages you have today will fade over time.	
Do you want to override this assumption	yes
If yes, enter the return on capital you expect after year 10	0.1
I will assume that your firm has no chance of failure over the foreseeable future.	
Do you want to override this assumption	yes
If yes, enter the probability of failure =	0.2
What do you want to tie your proceeds in failure to?	V
Enter the distress proceeds as percentage of book or fair value	0.5
I will assume that your effective tax rate will adjust to your marginal tax rate by your terminal year. If you override this assumption, I will leave the tax rate at your effective tax rate.	
Do you want to override this assumption	no
I will assume that you have no losses carried forward from prior years (NOL) coming into the valuation. If you have a money losing company, you may want to override tis.	
Do you want to override this assumption	no
If yes, enter the NOL that you are carrying over into year 1	250.0
I will assume that today's risk free rate will prevail in perpetuity. If you override this assumption, I will change the riskfree rate after year 10.	
Do you want to override this assumption	yes
If yes, enter the riskfree rate after year 10	0.02
I will assume that the growth rate in perpetuity will be equal to the risk free rate. This allows for both valuation consistency and prevents "impossible" growth rates.	
Do you want to override this assumption	no
If yes, enter the growth rate in perpetuity	-0.05
I have assumed that none of the cash is trapped (in foreign countries) and that there is no additional tax liability coming due and that cash is a neutral asset.	
Do you want to override this assumption	no
If yes, enter trapped cash (if taxes) or entire balance (if mistrust)	140000.0
& Average tax rate of the foreign markets where the cash is trapped	0.15

Stories to Numbers

	Revenue growth rate	Revenues	EBIT (Operating margin)	EBIT (Operating income)	Tax rate
Base year	0.0	76559.0	-0.031	-2373.4	0.25
1	-0.1	68903.1	-0.05	-3445.155	0.25
2	0.15	79238.565	0.0473	3747.9841	0.25
3	0.15	91124.3498	0.096	8747.9376	0.25
4	0.15	104793.0023	0.096	10060.1282	0.25
5	0.15	120511.9526	0.096	11569.1474	0.25
6	0.124	135455.4347	0.096	13003.7217	0.25
7	0.098	148730.0673	0.096	14278.0865	0.25
8	0.072	159438.6321	0.096	15306.1087	0.25
9	0.046	166772.8092	0.096	16010.1897	0.25
10	0.02	170108.2654	0.096	16330.3935	0.25
Terminal year	0.02	173510.4307	0.096	16657.0013	0.25

	EBIT(1-t)	- Reinvestment	FCFF	NOL	Cost of capital
Base year	-2373.4	0.0	0.0	0.0	0.0
1	-3445.155	-2014.7105	-1430.4445	3445.155	0.0925
2	3672.2768	2719.8592	952.4176	0.0	0.0925
3	6560.9532	3127.8381	3433.1151	0.0	0.0925
4	7545.0962	3597.0138	3948.0824	0.0	0.0925
5	8676.8606	4136.5659	4540.2947	0.0	0.0925
6	9752.7913	3932.4953	5820.296	0.0	0.089
7	10708.5649	3493.3244	7215.2405	0.0	0.0855
8	11479.5815	2818.0434	8661.5381	0.0	0.082
9	12007.6423	1930.0466	10077.5957	0.0	0.0785
10	12247.7951	877.7516	11370.0435	0.0	0.075
Terminal year	12492.751	2498.5502	9994.2008	0.0	0.075

	Cumulated discount factor	PV(FCFF)	Sales to capital ratio	Invested capital	ROIC
Base year	0.0	0.0	0.0	20143.2	-0.1178
1	0.9153	-1309.2859	3.8	18128.4895	-0.19
2	0.8378	797.9355	3.8	20848.3487	0.1761
3	0.7669	2632.856	3.8	23976.1868	0.2736
4	0.702	2771.5538	3.8	27573.2006	0.2736
5	0.6426	2917.5934	3.8	31709.7665	0.2736
6	0.5901	3434.5567	3.8	35642.2618	0.2736
7	0.5436	3922.2047	3.8	39135.5862	0.2736
8	0.5024	4351.5567	3.8	41953.6296	0.2736
9	0.4658	4694.1441	3.8	43883.6762	0.2736
10	0.4333	4926.6398	3.8	44761.4278	0.2736
Terminal year					0.1

Terminal cash flow	9994.2008
Terminal cost of capital	0.075
Terminal value	com.back.example.OutputSheet.A18TerminalValue@180bc464
PV(Terminal value)	78736.131
PV (CF over next 10 years)	29139.7548
Sum of PV	107875.8858
Probability of failure =	0.2
Proceeds if firm fails =	53937.9429
Value of operating assets =	97088.2972
- Debt	28532.0
- Minority interests	0.0
+ Cash	10030.0
+ Non-operating assets	0.0
Value of equity	78586.2972
- Value of options	0.0
Value of equity in common stock	78586.2972
Number of shares	566.0
Estimated value /share	138.845
Price	127.68

Price as % of value	0.9196
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