# Stada: A Back-of-the-Envelope Return Analysis

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#### 1 Introduction

The acquisition of Stada by the two financial sponsors Bain Capital and Cinven belongs to the largest private equity transactions in Germany. Based on publicly available information<sup>1</sup>, the enterprise value amounts to over 5.4 billion Euro with a 2017 EBIT multiple of about 17.5:

Puchase Price		
Equity value	€	4,324
Existing debt	€	1,432
Cash	€	321
EV	€	5,435
EBIT 2017e	€	311
Implied Multiple		17.48

Sources and uses of funds are summarized below:

Sources of funds		
Equity	€	2,850
Debt		
Term loan B	€	1,700
Senior notes	€	340
Secured notes	€	735
Total debt	€	2,775
Cash on hand	€	321
Total sources	€	5,946
Uses of funds		
Equity	€	4,324
Existing debt	€	1,432
Transaction costs	€	183
Other	€	7
Total uses	€	5,946

<sup>&</sup>lt;sup>1</sup><u>http://www.niddahealthcare-offer.com/</u>.

Instead of running a full-fledged LBO analysis, let's have a look how the investors can achieve a return on their invested equity of 25%.

#### 2 Base Case

If we assume that

- the exit multiple in five years from now equals the entry multiple of 17.5 times EBIT,
- the consensus estimates<sup>2</sup> for the EBIT will be achieved up to and including 2020, and
- the EBIT will continue to grow at a rate of 5% in 2021 and 2022,

the enterprise value of the company will increase to almost 8 billion Euro:

EBIT 2020e	€	413
EBIT 2022e	. €	455
Exit multiple		17.48
Implied EVe 2022	€	7,957

What we need to estimate is how much of the 8 billion Euro enterprise value will be equity. We can then calculate the IRR on the investment of 2.85 billion equity from the funds.

The debt is structured in a way that there are no principal repayments in the first seven years, i.e. the 2.775 billion Euro debt (term loan B, senior notes, secured notes) remains unchanged.

The only unknown variable is the cash generated (positive or negative) by Stada during the holding period. The following table summarized the base case assumptions.<sup>3</sup>

Cash gene	rated until exit																		
			2018		2019		2020		2021	1	2022								
EBIT		€	346	€	382	€	413	€	434	€	455								
Taxes		€	104	€	115	€	124	€	130	€	137	30%	Tax rate						
EBIAT		€	242	€	268	€	289	€	304	€	319								
Reinvestm	ient	€	121	€	134	€	145	€	152	€	159	50%	Reinvestment rate (as a percentage of I			e of EBIAT)			
Operating	cash flow	€	121	€	134	€	145	€	152	€	159								
Interest te	rm Ioan B	€	68	€	68	€	68	€	68	€	68	4%	Interest rat	e; repayme	nt in 2024				
Interest se	enior notes	€	17	€	17	€	17	€	17	€	17	5%	Interest rat	e; repayme	nt in 2025				
Interest se	cured notes	€	26	€	26	€	26	€	26	€	26	3.50%	Interest rat	e; repayme	nt in 2024				
Interest re	volver	€	10	€	10	€	10	€	10	€	10	5%	Interest rat	e; revolving	credit facili	ty of €400 m	nillion		
Total inter	est expense	€	121	€	121	€	121	€	121	€	121								
Tax shield		€	32	€	32	€	32	€	32	€	32	26.50%	Tax rate; or	nly 75% of ir	nterest expe	nse deducti	ble at trade	tax on earni	ngs
Net finance	ing cash flow	€	89	€	89	€	89	€	89	€	89								
Cash gene	rated	€	32	€	45	€	56	€	63	€	71	€ 267	Total cash (	generated d	uring holdin	g period			

The EBIT forecast is based on the consensus estimates up to and including 2020 and assumes an annual growth rate of 5% thereafter. The 30% tax rate is the German marginal tax rate for corporations.

The reinvestment assumptions will have the biggest impact on the cash generated during the holding period. Reinvestment is defined here as capital expenditures plus increase in working

<sup>&</sup>lt;sup>2</sup> Retrieved from Bloomberg terminal.

<sup>&</sup>lt;sup>3</sup> I have no insight at all on the deal. I might be terribly wrong. In case you disagree with my assumption, I'm happy to share my Excel file so that you can run the model with your own predictions. Just drop me an e-mail (ralf.hafner@htw-berlin.de).

capital less depreciation. Growth requires reinvestment. And Stada management projects high EBITDA growth rates.<sup>4</sup> Industry averages for the reinvestment rate<sup>5</sup> are at about 50%<sup>6</sup>, and I will use this rate for the base case. The operating cash flow will then amount to 50% of the after-tax operating income.

Interest expenses will reduce this operating cash flow. The interest rates for the notes are publicly available, but I did not find a rate for the term loan B, so that I made an estimate of 4%.<sup>7</sup> Stada secured a revolving credit line of 400 million Euro. My assumption is a 50% average drawdown at an interest rate of 5%. The tax rate used for the tax shield considers that only 75% of the interest expense is deductible for the German trade tax on earnings (Gewerbesteuer).

Under these assumptions, the company will generate 267 million Euro of cash during the holding period.<sup>8</sup> This amount will reduce net debt at the end of the holding period, leading to an equity value of 5.449 billion Euro:

Return calculat	tions									
EV 2022e		€ 7,957								
Less: Debt 2022	2e	€ 2,775	Assumes no principal repayment until exit							
Plus: Cash gene	erated	€ 267	Total cash generated during holding period							
Implied equity value 2022		€ 5,449								
Equity invested	2017	€ 2,850								
Holding period		5	Years							
IRR		13.84%	at	50%	Reinvestme	ent rate (as a	a percentage	e of EBIAT)		

The resulting IRR on the invested equity of less than 14% is a bit off the default rate of 25% though.

### 3 25% Return Based on Consensus Estimates

Using the goal seek function of Excel we can set the IRR to 25% and see what reinvestment rate would be necessary to get to this return. The result would be a value of minus 178.5%, or positive cash flows of about 500 million Euro annually – a highly unlikely scenario.

<sup>&</sup>lt;sup>4</sup> <u>https://www.stada.de/fileadmin/user\_upload/A\_stada.de/5\_Investor\_Relations.de/05\_Finanz</u> publikationen/001\_Finanzberichte/2016/Analysts\_Conference\_Presentation.pdf, page 23.

<sup>&</sup>lt;sup>5</sup> Reinvestment as a percentage of the after-tax operating income.

<sup>&</sup>lt;sup>6</sup> See for example the data available on Damodaran's website under Data, Cash Flow Estimation, Capital Expenditures, <u>http://www.damodaran.com/</u>.

<sup>&</sup>lt;sup>7</sup> Lincoln International publishes financing terms, <u>http://liag.com.de/dl/DAG\_Deal\_Reader\_Q2-2017.pdf</u>, page 5.

<sup>&</sup>lt;sup>8</sup> I refrained from calculating compound interest here.

Cash gener	rated until exit																		
			2018	- 2	2019	- 1	2020	- 2	2021	2	2022								
EBIT		€	346	€	382	€	413	€	434	€	455								
Taxes		€	104	€	115	€	124	€	130	€	137	30%	Tax rate						
EBIAT		€	242	€	268	€	289	€	304	€	319								
Reinvestm	ent	€	(432)	€	(478)	€	(516)	€	(542)	€	(569)	-179%	Reinvestme	ent rate (as	a percentage	e of EBIAT)			
Operating	cash flow	€	674	€	745	€	805	€	845	€	888								
Interest ter	rm loan B	€	68	€	68	€	68	€	68	€	68	4%	Interest rat	e; repayme	nt in 2024				
Interest se	nior notes	€	17	€	17	€	17	€	17	€	17	5%	Interest rat	e; repayme	nt in 2025				
Interest se	cured notes	€	26	€	26	€	26	€	26	€	26	3.50%	Interest rat	e; repayme	nt in 2024				
Interest re	volver	€	10	€	10	€	10	€	10	€	10	5%	Interest rat	e; revolving	credit facili	ty of €400 m	hillion		
Total inter	est expense	€	121	€	121	€	121	€	121	€	121								
Tax shield		€	32	€	32	€	32	€	32	€	32	26.50%	Tax rate; only 75% of interest expense deductible at trade tax of						ngs
Net financing cash flow		£	80	£	80		80	£	80	£	80								
Cash generated		•	89	÷	89	۰.	03	•	07	•	07								
Cash gener	rated	€	586	€	657	€	716	€	757	€	799	€ 3,514	Total cash (	generated d	uring holdin	g period			
Cash gener	rated	€	586	€	657	€	716	€	757	€	799	€ 3,514	Total cash (	generated d	uring holdin	g period			
Cash gener	rated	€	586	€	657	€	716	€	757	¢	799	€ 3,514	Total cash (	generated d	uring holdin	g period			
Cash gener	rated culations	€	586	€	657	€	716	€	757	¢	799	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale	rated culations	€ €	7,957	€	657	€	716	€	757	€	799	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale EV 2022e Less: Debt	culations	€ € €	7,957	€ € Ass	657 umes no	€ €	716	€ €	757 ment u	€ €	799 2xit	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale EV 2022e Less: Debt Plus: Cash	culations 2022e generated	€ € € €	7,957 2,775 3,514	€ € Ass Tot	657 umes no al cash g	€ €	716 ncipal re	€ € epay	757 ment u	€ € ntil e	299 799 exit riod	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale EV 2022e Less: Debt Plus: Cash Implied eq	rated culations 2022e generated uity value 2022	€ € € €	7,957 2,775 3,514 8,696	€ € Ass Tot	657 umes no al cash g	€ opri gene	716 ncipal re	€ epay	757 ment ur	€ € ntil e g pe	299 799 exit riod	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale EV 2022e Less: Debt Plus: Cash Implied eq Equity inve	rated culations 2022e generated uity value 2022 ested 2017	€ € € € €	7,957 2,775 3,514 8,696 2,850	€ Ass Tot	657 umes no al cash g	€ opri	716 ncipal re	€ epay uring	757 ment ur	€ ntil e	2799 2xit riod	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale EV 2022e Less: Debt Plus: Cash Implied eq Equity inve Holding pe	culations 2022e generated uity value 2022 ssted 2017 riod	€ € € €	586 7,957 2,775 3,514 8,696 2,850 5	€ Assi Tot: Yea	657 umes no al cash g	€ € p pri gene	716 ncipal re	€ epay uring	757 ment ur	€ entil e	799 exit riod	€ 3,514	Total cash (	generated d	uring holdin	g period			
Return cale Return cale EV 2022e Less: Debt Plus: Cash Implied eq Equity inve Holding pe IRR	rig cash now rated 2022e generated uity value 2022 ssted 2017 riod	€ € € €	586 7,957 2,775 3,514 8,696 2,850 5 25.00%	€ Assi Tota	657 umes no al cash g rs at	€ € p pri gene	-179%	€ epay uring Reir	757 ment ur g holdin	€ € ntil e g per	2799 exit riod ate (as a	€ 3,514 percentage	Total cash (	generated d	uring holdin	g period			

## 4 Sensitivity Analysis on 25% IRR

In the following scenario, I set the IRR to 25%, the reinvestment rate to zero and solved for the required annual growth rate of the EBIT 2017e of 311 million Euro. The EBIT would have to grow by 14% each year until 2022.

EBIT 2017e	€	311
Implied multiple		17.48
Annual EBIT growth rate	•	14%
EBIT 2022e	€	589
Exit multiple		17.48
Implied EVe 2022	€	10,290

Cash gener	rated until exit												
			2018	2	2019	2	2020	2	2021	2	022		
EBIT		€	353	€	401	€	456	€	518	€	589		
Taxes		€	106	€	120	€	137	€	155	€	177	30%	Tax rate
EBIAT		€	247	€	281	€	319	€	363	€	412		
Reinvestm	ent	€	-	€	-	€	-	€	-	€	-	0%	Reinvestment rate (as a percentage of EBIAT)
Operating	cash flow	€	247	€	281	€	319	€	363	€	412		
Interest ter	rm Ioan B	€	68	€	68	€	68	€	68	€	68	4%	Interest rate; repayment in 2024
Interest se	nior notes	€	17	€	17	€	17	€	17	€	17	5%	Interest rate; repayment in 2025
Interest se	cured notes	€	26	€	26	€	26	€	26	€	26	3.50%	Interest rate; repayment in 2024
Interest revolver		€	10	€	10	€	10	€	10	€	10	5%	Interest rate; revolving credit facility of €400 million
Total inter	est expense	€	121	€	121	€	121	€	121	€	121		
Tax shield	Tax shield		32	€	32	€	32	€	32	€	32	26.50%	Tax rate; only 75% of interest expense deductible at trade tax on earnings
Net financi	ng cash flow	€	89	€	89	€	89	€	89	€	89		
Cash gener	ated	€	159	€	192	€	231	€	274	€	323	€ 1,179	Total cash generated during holding period
Return cal	rulations												
EV 2022e		£	10,290					-					
Less: Debt	2022e	£	2.775	Ass	umes n	o pri	ncipal r	enav	ment u	ntil e	xit		
Plus: Cash	generated	£	1.179	Tot	al cash i	zene	rated d	urine	noldin	g per	riod		
Implied ea	uity value 2022	£	8.693						,	6			
Equity inve	sted 2017	£	2.850										
Holding pe	riod	-	2,000	Yea	rs								
IRR		-	24.99%		at		0%	Reir	vestm	ent ra	ate (as a	a percentag	e of EBIAT)
		-									(45)		

How realistic is a growth rate of 14% for the EBIT? The following table contains data that could be helpful and that each analyst will interpret differently. My judgement is that it is possible<sup>9</sup>, but very ambitious.

Consensus estimate for EBITDA 2019	€ 519			
Management estimate for EBITDA 2019	€ 580	Management estimate for sales 2019	€ 2,675	
Difference in €	€ 61	EBITDA in percent of sales	21.68%	
Difference in percent	11.84%	EBITDA margins European drug companies	28.54%	Rait Hatner:
		EBITDA margin Teva (current)	29.89%	marginEurope file.
Consensus estimate for EBIT 2019	€ 382	EBITDA margin Dr Reddy's (current)	17.91%	
Implied EBIT 2019 of this scenario	€ 401			
Difference in €	€ 19			
Difference in percent	5.01%			
Consensus estimate for EBIT 2020	€ 413			
Implied EBIT 2020 of this scenario	€ 456			
Difference in €	€ 43			
Difference in percent	10.44%			

How realistic is a reinvestment rate of zero percent? Stada was close to this mark in the past two business years and increased profits. Again, possible, but very ambitious.

Finally, I ran a sensitivity analysis with the data table function of Excel. The following table contains combinations of reinvestment rates and EBIT growth rates leading to an IRR of 25%:

					IRR sensitiv	ity analysis								
					A									
					Annual EBH	growth rat	te during no	laing perio	a					
			10.0%	10.5%	11.0%	11.5%	12.0%	12.5%	13.0%	13.5%	14.0%	14.5%	15.0%	
		-50%	22.08%	22.80%	23.53%	24.24%	24.96%	25.67%	26.37%	27.08%	27.77%	28.47%	29.16%	
		-40%	21.61%	22.34%	23.07%	23.79%	24.51%	25.22%	25.93%	26.64%	27.34%	28.04%	28.73%	
	e	-30%	21.14%	21.88%	22.61%	23.33%	24.05%	24.77%	25.48%	26.19%	26.90%	27.60%	28.30%	
	rat	-20%	20.66%	21.40%	22.14%	22.87%	23.59%	24.31%	25.03%	25.74%	26.45%	27.16%	27.86%	
	ent	-10%	20.17%	20.92%	21.66%	22.39%	23.12%	23.85%	24.57%	25.29%	26.00%	26.71%	27.41%	
	Ę.	0%	19.68%	20.43%	21.17%	21.91%	22.65%	23.38%	24.10%	24.82%	25.54%	26.25%	26.96%	
	ves	10%	19.17%	19.93%	20.68%	21.42%	22.16%	22.90%	23.63%	24.35%	25.07%	25.79%	26.50%	
	ein	20%	18.66%	19.42%	20.17%	20.92%	21.67%	22.41%	23.14%	23.87%	24.60%	25.32%	26.03%	
	æ	30%	18.14%	18.90%	19.66%	20.42%	21.17%	21.91%	22.65%	23.39%	24.12%	24.84%	25.56%	
		40%	17.60%	18.38%	19.14%	19.91%	20.66%	21.41%	22.15%	22.89%	23.63%	24.36%	25.08%	
		50%	17.06%	17.84%	18.62%	19.38%	20.14%	20.90%	21.65%	22.39%	23.13%	23.86%	24.59%	

<sup>&</sup>lt;sup>9</sup> The management estimate may not include the effects from having new shareholders willing to contribute to a global growth strategy – Stada's activities currently focus on selected countries with Germany , Italy, Spain, Russia, Belgium, France, Vietnam and Serbia accounting for 75% of total sales.