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Brand Valuation

A case study on Lindt & Sprüngli

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ABSTRACT

Typically absent from financial statements, the brand of a company remains most times in the dark of finance. After all, it is the unconscious rationale behind consumers´ or employees´ choices for a product or a company, and how would you capitalize that? Some would say it is even esoteric.

Nevertheless, its importance cannot be undermined. Brands are the most important individual asset of many companies and, as such, to know its value can be key for the company´s decision making. Built through years of investments in recognition, the brand is associated with certain product characteristics such as quality or price, but also eco-friendliness or fair trade. Perception, therefore, is key to understand its value.

We have tried in this research paper to gather the predominant valuation methods in the industry, using them to value Lindt as brand. The broad range of results yielded by the different methods must not come as a surprise; as mentioned, the value is dependent on the evaluator´s perception of the brand. While some of the methods provide different solutions to try to objectivize this perception, this remains a subjective task after all. As a result, the main objective of this paper is to evaluate the relevance of each method, providing recommendations on the conditions to use one or the other.

TABLE OF CONTENT

1. INTRODUCTION 10
  1.1 THE IMPORTANCE OF BRAND VALUATION 10
    1.1.1. THE CONCEPT OF BRAND 10
    1.1.2 THE GROWING RELEVANCE OF BRAND VALUE 11
  1.2 SCOPE OF THE THESIS 15
2. OVERVIEW OF EXISTING BRAND VALUATION METHODS 16
  2.1. COST-BASED METHODS 16
    2.1.1 Historical cost of creation 16
    2.1.2 Replacement cost 17
    2.1.3 Cost to recreate 17
  2.2. MARKET-BASED METHODS 18
    2.2.1. Brand sale 18
    2.2.2. Residual method 18
    2.2.3. Price to sales ratio – Damodaran 18
    2.2.4. Interbrand's valuation method – Differential earnings 20
    2.2.5. Simon & Sullivan (1993) brand equity method 23
  2.3. INCOME-BASED METHODS 25
    2.3.1. Discussion around the discount factor for brand valuation 25
    2.3.2. Price premium 27
    2.3.3. Gross margin and operating profit comparison methods 29
    2.3.4. Royalty relief 30
    2.3.5. Brand strength analysis 33
    2.3.6. Excess cash flow 35
    2.3.7. Real options 38
3. CASE STUDY: LINDT & SPRÜNGLI 41
  3.1. MARKET OVERVIEW 41
  3.2. DESCRPITION OF LINDT & SPRÜNGLI 44
    3.2.1. History of Lindt & Sprüngli 44
    3.2.2. Company overview 45
    3.2.3. Lindt & Sprüngli business strategy 47
    3.2.4. SWOT analysis 49
    3.2.5. Financial statements analysis 51
    3.2.6. Branding 53
  3.3. COMPARABLE NON-BRANDED COMPANIES 54

3.3.1. Natra 54
3.4. BRAND VALUATION 57
3.4.1. Justification of the choice 57
3.4.2. Valuation common assumptions 58
3.4.2.1. Tax rate, inflation and other common hypotheses 58
3.4.2.2. Discount factor computation 59
3.4.3. COST-BASED APPROACHES 62
3.4.3.1. Historical cost of creation method 62
3.4.3.2. Replacement cost method 64
3.4.3.3. Cost to recreate method 66
3.4.4. MARKET-BASED APPROACHES 67
3.4.4.1. Brand sale method 67
3.4.4.2. Residual method 69
3.4.4.3. Price to sale ratio – Damodaran method 70
3.4.4.4. Interbrand's valuation method – differential earnings 74
3.4.4.4.1. Brand differential earnings 75
3.4.4.4.2. Brand strength analysis 75
3.4.4.4.3. Brand profits multiplier 78
3.4.4.4.4. Brand Value & Sensitivities 79
3.4.4.5. Simon & Sullivan (1993) brand equity method 80
3.4.5. INCOME-BASED APPROACHES 82
3.4.5.1. Price premium method 82
3.4.5.1.1. Lindt & Natra product prices 82
3.4.5.1.2. Superior charges and brand value 83
3.4.5.2. Gross margin and operating profit comparison methods 86
3.4.5.3. Royalty relief method 88
3.4.5.4. Brand strength analysis 91
3.4.5.4.1. Survey – brand's influence 91
3.4.5.4.2. Brand value & sensitivities 92
3.4.5.5. Excess cash flow method 95
3.4.5.5.1. Assumptions & Required Returns 95
3.4.5.5.2. Results & Sensitivity Analysis 97
3.4.5.6. Real options 98
3.4.5.6.1. Lindt Brand Value with no Growth 98
3.4.5.6.2. Future growth options 99
3.4.5.6.2.1. Expansion Option to the United States 101

3.4.5.6.2.2. Expansion Option to Europe 103
3.4.5.6.2.3. Expansion Option to China 103
3.4.5.6.3. Final Brand Value 106
3.5. RESULTS SUMMARY 107
4. OWN VIEWS AND RECOMMENDATION 110
5. APPENDIX 113
5.1. Brand strength analysis - survey 116
5.2. Natra Financial Statement Analysis 113
6. BIBLIOGRAPHY 117

LIST OF FIGURES AND TABLES

FIGURES

FIGURE 1. PERSPECTIVES ON BRAND CONCEPT 11
FIGURE 2. INTERBRAND'S VALUATION METHOD, S CURVE 22
FIGURE 3: AVERAGE ROYALTY RATE ACROSS INDUSTRIES, ROYALTYSOURCE 32
FIGURE 4. VOLUME OF PRODUCTION IN THE EU MANUFACTURING INDUSTRY 41
FIGURE 5. EUROPEAN COCOLATE CONFECTIONARY MARKET EVOLUTION 42
FIGURE 6. MARKET SHARE ON THE CHOCOLATE COMPETITIVE ENVIORNEMNT (2016-2017) . 43
FIGURE 7. GLOBAL SALES DISTRIBUTION BY MARKETS 45
FIGURE 8. LONG-TERM SALES GROWTH 46
FIGURE 9. LINDT & SPRÜNGLI BRAND PORTFOLIO 47
FIGURE 10. LINDT'S INNOVATION FUNNEL 48
FIGURE 11. NATRA SALES EVOLUTION 55
FIGURE 12. HYPOTHESES COMMON TO ALL METHODOLOGIES 58
FIGURE 13. BRAND STRENGTH S-CURVE 79
FIGURE 14. AVERAGE ROYALTY FOR CONSUMER & LEISURE PRODUCTS 89
FIGURE 15. BRAND VALUATION ANALYSIS - FOOTBALL FIELD 109
FIGURE 16. BRAND VALUATION METHODS - SUMMARY MATRIX 112

TABLES

TABLE 1: PORTION OF MARKET CAP REPRESENTED BY INTANGIBLE ASSETS FOR S&P 500 COMPANIES 12
TABLE 2; CONTRIBUTION OF TOP 10 BRANDS TO MARKET CAPITALIZATION, BRANDFINANCE® 13
TABLE 3: HISTORICAL COST OF CREATION, EXAMPLE OF APPLICATION 16
TABLE 4: PRICE TO SALE RATIO (DAMODARAN), EXAMPLE OF APPLICATION 19
TABLE 5: INTERBRAND'S VALUATION METHOD, BRAND DIFFERENTIAL EARNINGS 21
TABLE 6: PRICE PREMIUM, EXAMPLE OF APPLICATION 28
TABLE 7: GROSS MARGIN AND OPERATING INCOME COMPARISON, EXAMPLE OF APPLICATION 30
TABLE 8: ERROR IN THE 25% RULE, ROYALTYSOURCE 31
TABLE 9: ROYALTY RELIEF METHOD, EXAMPLE OF APPLICATION 33
TABLE 10: EXAMPLE OF SURVEY RESULT FOR THE BRAND STRENGTH ANALYSIS 34
TABLE 11: OTHER EXAMPLES OF SURVEY RESULTS, BRAND STRENGTH ANALYSIS 35
TABLE 12: EXCESS CASH-FLOW, EXAMPLE OF APPLICATION 37

TABLE 13: BLACK&SCHOLES FORMULA APPLIED TO A GROWTH OPTION 39
TABLE 14. LINDT & SPRÜNGLI CONSOLIDATED INCOME STATEMENT 51
TABLE 15. LINDT & SPRÜNGLI CONSOLIDATED BALANCE SHEET - ECONOMIC VIEW 51
TABLE 16. WEIGHTED-AVERAGE OF MARKET INDICATORS AND LINDT'S SALES DISTRIBUTION 58
TABLE 17. WACC CALCULATION FOR LINDT 60
TABLE 18. WACC CALCULATION FOR NATRA 61
TABLE 19. HISTORICAL COST METHOD - CALCULATIONS & SENSITIVITY ANALYSIS 63
TABLE 20. REPLACEMENT COST METHOD - CALCULATIONS & SENSITIVITY ANALYSIS 65
TABLE 21. BRAND SALE METHOD - CALCULATIONS 68
TABLE 22. BRAND SALE METHOD - SENSITIVITY ANALYSIS 69
TABLE 23. RESIDUAL METHOD CALCULATIONS 70
TABLE 24. INDUSTRY DIVIEND PAY-OUT RATIO ANALYSIS 71
TABLE 25. PRICE-TO-SALE RATIO CALCULATIONS 72
TABLE 26. DAMODARAN METHOD - SENSITIVITY ANALYSIS 74
TABLE 27. BRAND ATTRIBUTABLE EARNINGS CALCULATION 75
TABLE 28. BRAND STRENGTH SCORE CALCULATION 76
TABLE 29. BRAND VALUE CALCULATION 80
TABLE 30. INTERBRAND SENSITIVITY ANALYSIS 80
TABLE 31. PRICE AND VOLUME CALCULATIONS 82
TABLE 32. PRICE PREMIUM METHOD CALCULATIONS 84
TABLE 33. PRICE PREMIUM SENSITIVITY ANALYSIS 86
TABLE 34. GROSS MARGIN AND OPERATING PROFIT COMPARISON METHODS – CALCULATIONS 87
TABLE 35. GROSS MARGIN AND OPERATING PROFIT COMPARISON METHODS - SENSITIVITY ANALYSIS 88
TABLE 36. ROYALTY RELIEF METHOD - CALCULATIONS 89
TABLE 37. ROYALTY RELIEF METHOD - SENSITIVITY ANALYSIS 90
TABLE 38. BRAND STENGTH ANALYSIS - SURVEY RESULTS AND BRAND VALUATION 93
TABLE 39. BRAND STRENGTH ANALYSIS - SENSITIVITY ANALYSIS 95
TABLE 40. EXCESS CASH FLOW METHOD - ASSUMPTIONS 96
TABLE 41. EXCESS CASH FLOW METHOD - CALCULATIONS 97
TABLE 42. EXCESS CASH FLOW METHOD - SENSITIVITY ANALYSIS 98
TABLE 43. REAL OPTIONS - BRAND VALUE WITH NO GROWTH 99
TABLE 44. REAL OPTIONS - INVESTMENTS BY GEOGRAPHIES 101
TABLE 45. REAL OPTIONS - USA EXPANSION OPTION 102
TABLE 46. REAL OPTIONS - EUROPE EXPANSION OPTION 104
TABLE 47. REAL OPTIONS - CHINA EXPANSION OPTION 105

TABLE 48. REAL OPTIONS - FINAL BRAND VALUE 106
TABLE 49. BRAND VALUATION METHODS - SUMMARY 107

1. INTRODUCTION

1.1 THE IMPORTANCE OF BRAND VALUATION

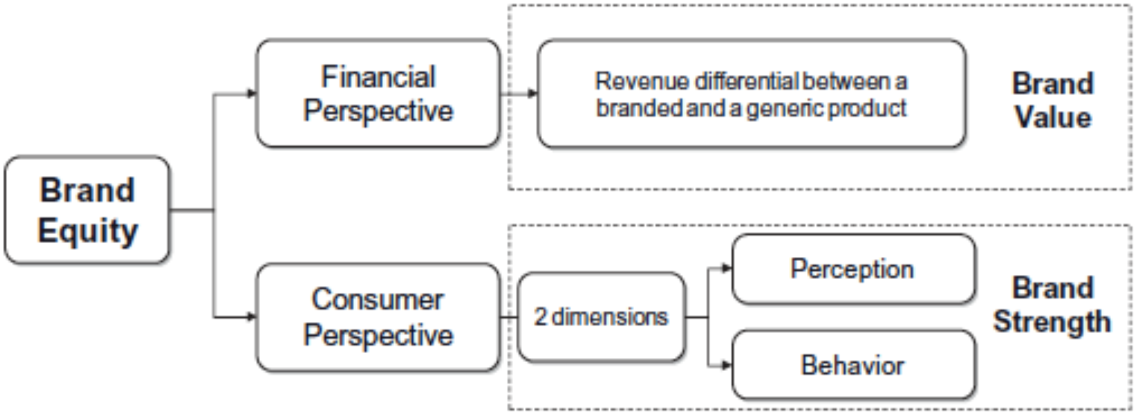
1.1.1. THE CONCEPT OF BRAND

When dealing with any asset valuation, we must first define it. This is especially important with intangible assets and, particularly, with brands. A good understanding of the concept of brand will help us limit the scope of the valuation methods we should apply in order to value it accurately.

Under an accounting perspective, IFRS defines an *intangible asset* as an "identifiable non-monetary asset without physical substance" and IAS 38 claims that they shall be recognized if and only if, (a) it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and (b) the cost of the asset can be measured reliably. Hence, many assets such as internally generated brands do not meet those requirements for accounting purposes. However, they are still controlled by the company and represent a source of future profits, which allows it to be considered a non-recognizable intangible asset. It is also important to note that the term *brand* can refer to different concepts (Haigh and Knowles, 2004): (1) a name, logo and other associated visual elements that are valuable when they carry goodwill; (2) an experience transcending logo and related visual elements, thus including intellectual property rights; and (3) the business unit that operates under that brand.

Despite the conflict that brands present under accounting principles to be recognized in the balance sheet, they do constitute intangible assets from an economic and management standpoint. Brand brings economic value to the firm in form of visual identity, reputation, consumer experience and a tight relationship with the target market.

We can infer that the complexity and the broad scope that covers the concept of *brand* make it difficult to value it. On the one hand, some may define it as a perceived or behavioral value, as brand includes loyalty, perceived quality, and associations that allow the firm to earn greater volume and margins. On the other hand, some others interpret that brand value is the difference resulting from the discounted future cash flows of a branded and non-branded product – please see Figure 1 below (Salinas, 2009).



Brand Equity
Financial Perspective
Revenue differential between a branded and a generic product
Brand Value
Consumer Perspective
2 dimensions
Perception
Behavior
Brand Strength

FIGURE 1. PERSPECTIVES ON BRAND CONCEPT

Brands have, thus, a monetary economic value that we seek to determine through the brand valuation process that will be further discussed. On the one side, brands create value affecting the demand side, allowing to sell a product at a higher price given the sales volume and the functional and/or emotional attributes linked to such products. Moreover, strong brands can not only stabilize demand levels, but also transfer those values to other products and markets. On the other hand, value is also created on the supply side, reducing operating costs through providers' loyalty, economies of scale and an improvement of operational activities (Salinas, 2009).

1.1.2 THE GROWING RELEVANCE OF BRAND VALUE

Traditionally, tangible assets were regarded as the main source of business value. After all, an asset is defined as a "resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity". Valued at cost or outstanding value, they appear in the Balance Sheet and their cash-flows are independent and easily identifiable.

Intangibles, on the contrary, are harder to identify. Their value is enclosed across assets and most of the times –it is the case for self-developed brands– they have never been explicitly valued because there were no recorded development or acquisition costs. However, no one doubts of their importance, with patents, technology and brands at the heart of corporate success, and the market is aware of it. It is one of the main explanations for the gap between companies' book value and market capitalization. The following table shows the average portion of total market value represented by intangible assets for S&P 500 companies in 2005, split by sector, as reported by Parr (2007):

Intangibles as % of total market cap	
Energy	*69%*
Materials	*78%*
Consumer discretionary	*88%*
Consumer staples	*94%*
Healthcare	*89%*
Financials	*64%*
Telecommunications	*79%*
Information technology	*82%*
Utilities	*62%*
Average	***78%***

TABLE 1: PORTION OF MARKET CAP REPRESENTED BY INTANGIBLE ASSETS FOR S&P 500 COMPANIES

For some of these industries, such as Healthcare, telecommunications or consumer discretionary, the intangible asset domination can be easily understood by the importance of intellectual property. However, it is surprising that all industries rely so much on intangible assets.

The brand in particular is many businesses' most important individual asset. The following table shows the contribution of the top 10 brand values (as reported by BRANDFINANCE® for 2018) to their company's market capitalization:

Rank	Brand name	Country	Value ($m)	Market cap	*% Brand*
1	Amazon	United States	150,811	796,780	*18.9%*
2	Apple	United States	146,311	811,170	*18.0%*
3	Google	United States	120,911	776,260	*15.6%*
4	Samsung	South Korea	92,289	276,835	*33.3%*
5	Facebook	United States	89,684	463,940	*19.3%*
6	AT&T	United States	82,422	224,650	*36.7%*
7	Microsoft	United States	81,163	822,080	*9.9%*
8	Verizon	United States	62,826	230,400	*27.3%*
9	Walmart	United States	61,480	290,180	*21.2%*
10	ICBC	China	59,189	252,200	*23.5%*
	Average				*22.4%*

TABLE 2: CONTRIBUTION OF TOP 10 BRANDS TO MARKET CAPITALIZATION, BRANDFINANCE®

Some would find it surprising that in R&D and manufacturing heavy companies such as Apple or Samsung, where manufacturing sites and patents are of ground-breaking, most advanced technology, brand value accounts for 18% and 33% of total market capitalization respectively. They would not be considering brands' enormous economic impact. In a world of abundant choices, brands are the unconscious –or sometimes conscious– explanation behind a consumer or employee choice. It shapes consumption in a way that cannot be materially explained by traditional measures of competitive advantage such as quality or price positioning. As such, the brand explains a significant portion of the tangible assets' cash-flow productivity.

It is clear now that brands are of utmost importance, but is its valuation as a separate asset really an interesting matter? Literacy identifies three main reasons for brand valuation: M&A transactions, financial reporting and management accounting.

In M&A transactions, brands can be critical assets. Firms may pay significant premiums on top of the market value of "identifiable assets" in the form of goodwill. This asset captures the present value of the portion of cash-flows that cannot be explained by individually identified assets such as tangible assets or capitalized intangibles. In this context, building a brand valuation model may be a sanity check to evaluate the reasonability of this goodwill amount; the market is not unused to goodwill impairments. Furthermore, it may explain significant differences in bids between competitors for an acquisition. Acquirers may have different cash-flow expectations of the brands, independently of the target's brand-specifics. As an example, $71bn The Walt Disney's offer for most of 21st Century Fox's assets, overbid Comcast's by c. 10%. This came after an original offer by Disney of $52bn (c. 27% less). Disney's dialectics to justify such increase point more towards an increased perception in brand complementarities than anything else, with Disney's CEO saying "the combination of Disney's and Fox's unparalleled collection of businesses and franchises will allow us to create more appealing high-quality content, expand our direct-to-consumer offerings and international presence". As such, Disney expects to leverage its Marvel, Pixar and Lucasfilms platforms to unlock more value from 21st century Fox production business than Comcast would.

Some countries such as France or the UK, accept the recognition of acquired brands in the Balance Sheet, making brand valuation relevant for financial reporting. A thorough calculation is due as it will be subject to auditing. For example, in 2017, LVMH, 1st French group by market capitalization, had €12bn of brands and trade names capitalized in its Balance Sheet (c. 18% of total assets). Additionally, this dimension may have very significant tax consequences. If a multinational group can locate the brand ownership in a more favorable tax jurisdiction, and thus minimize the share of profit attributable to subsidiaries in less-favorable tax jurisdictions, it would be optimizing tax expense (Wasserman, 2015).

Finally, like any other performance metric, brand valuation can be an indicator of the health of a business. As we have mentioned, brands reflect across the productivity of all assets, explaining a higher generation of cash-flows despite same level of tangible assets, for example. An increase in brand valuation would as such represent a better perception of the brand by consumers or employees translating into a better business performance. In summary, brand valuation may be seen as a way of evaluating marketing performance through the language of finance, bridging the gap between these two worlds. This is certainly more appealing to management than looking at performance through more "classical" marketing metrics such as customer satisfaction.

1.2 SCOPE OF THE THESIS

It has been established that brands are very important; their economic impact is very significant and as such they can explain differences in market valuations, being key in the context of M&A, for example. However, their effect in the financial performance may be difficult to identify and separate from other assets. As a result, it becomes pertinent to analyze the existing brand valuation methods to understand their advantages and limitations.

For that reason, this thesis aims to provide a critic view of the methods developed for brand valuation – i.e. cost-based methods, income-based techniques and market-based methodologies (Monika et al. 2013) – providing a recommendation of which should be used under what circumstances, and assessing the benefits and limitations that each method offers. All the brand valuation methods will then be used to value the brand of a real listed company, more concretely the Swiss global leader in the premium chocolate sector: Lindt & Sprüngli.

2. OVERVIEW OF EXISTING BRAND VALUATION METHODS

2.1. COST-BASED METHODS

This approach values brands on the basis of the historical cost of creating or what it might cost to recreate a similar brand.

2.1.1 HISTORICAL COST OF CREATION

This method is a capitalization exercise, as it uses the historical cost of creating the brand to estimate the brand value. Useful at the initial stages of the brand creation, where incurred marketing costs can be listed and brand benefits are yet to be exploited, this method loses interest for well-established brands. To determine what percentage of these marketing costs are incurred to create the brand, it is common practice to use the Salinas ratio (Salinas G. , 2009) which tends to have values between 75% and 95%.

Its main pitfall is that it is not sound from a conceptual point of view, as the cost of creating a brand has little to do with the present value of its future cash flows. Value should be derived from future economic benefits, not past expenditure. Additionally, it may be difficult to capture all historical development costs. This method may provide a reference point, but it is hardly relevant from a theoretical or practical point of view.

The following is an artificial example of an application of the method:

Brand X, €m	2015	2016	2017	2018	Total
Personel expenses	1.5	1.7	1.7	1.8	6.7
SG&A	0.9	0.8	0.8	0.7	3.2
Advertising expenses	15.4	12.3	15.7	16.2	59.6
Total expenditure	17.8	14.8	18.2	18.7	69.5
Total brand value					**69.5**

TABLE 3: HISTORICAL COST OF CREATION, EXAMPLE OF APPLICATION

2.1.2 REPLACEMENT COST

The replacement cost method consists on the same exercise as the historical cost to recreate method, but adjusting costs for inflation and bringing them to the present by using a risk-adjusted discount factor.

This method bridges part of the conceptual issue of considering that capitalize past costs are equal to the market value of the brand by actualizing these costs. Again, despite being actualized, the cost of creating a brand has little to do with the present value of its future cash-flows, which makes this method hardly relevant as well.

2.1.3 COST TO RECREATE

This approach determines the potential costs of developing the brand to reach its current status. Its main pitfall is the same as the previous method; value should be derived from future economic benefits rather than past expenditures.

It solves the issue of the *Historical cost of creation* method of having to identify every single cost associated to the brand. As such, it relies on expert knowledge to estimate how much would it cost to recreate the brand if it was to be built from scratch today.

2.2. MARKET-BASED METHODS

2.2.1. BRAND SALE

Sometimes, it is possible to value a brand by reference to previous transactions in which similar brands were valued and disclosed. The method is probably the most reliable and connected to reality of all.

The main pitfall of market-based brand valuation methods is the scarceness of relevant transactions from which to build a comprehensive set of comparables, thus making it difficult to apply. Furthermore, as previously mentioned, the brand value perceived by an acquirer may differ significantly from the value perceived from another acquirer, or the market in general. Realized in the form of synergies, this difference may significantly amplify the value assigned to a brand.

2.2.2. RESIDUAL METHOD

As exposed by Salinas (2009), Keller proposed the valuation of the brand as the residual value resulting from subtracting the market value to the net asset value. This would correspond to the value of intangibles, one of which is the brand.

This method may be useful to provide a ceiling for valuation, but is rather simplistic. The net asset value captures the difference between the historical cost of the book value of assets and liabilities, which may be far from their market values. A possible solution for the following issue may be to start by calculating adjusted book values, common practice in value investing. Adjusted book values try to capture or estimate, when possible, market values of recorded assets in the balance sheet.

2.2.3. PRICE TO SALES RATIO – DAMODARAN

Developed by Damodaran, this method calculates brand value as the difference between the estimated price to sales ratio for a branded company and that of an unbranded company multiplied by the branded company sales.

$$Brand\ value = \left(\frac{Price}{Sales_{(Branded)}} - \frac{Price}{Sales_{(Unbranded)}}\right) * Sales_{(Branded)}$$

The price to sales ratio is defined as following:

$$\frac{Price}{Sales} = \frac{PAT}{Sales}\frac{(1+g)p}{Ke-g}\left(1-\left(\frac{1+g}{1+Ke}\right)^{n}\right)+\frac{PAT}{Sales}\frac{p_n(1+g)^n(1+g_n)}{(Ke-g_n)(1+Ke)}$$

Where:

PAT is the profit after tax; *g* and *gn* are the current and perpetual growth rate respectively *Ke* is the cost of equity; *p* and *pn* are the current and perpetual payout ratios *n* is the total number of years.

The following is a simplified example of the implementation of the model:

In €m	Branded	Unbranded
Inputs		
Sales	1,600	400
EBIT	560	80
Growth rate	*4%*	*6%*
Payout ratio	*12%*	*25%*
Number of years	5	5
Perpetual growth rate	*2%*	*2%*
Perpetual payout ratio	*15%*	*15%*
Cost of equity	*8%*	*12%*
Calculations		
Price to sales ratio	1.2x	0.6x
Price to sales ratio difference	0.6x	
Branded sales	1,600	
Brand value	**984**	

TABLE 4: PRICE TO SALE RATIO (DAMODARAN), EXAMPLE OF APPLICATION

The main perk of this method is that it is intuitive and very easy to compute once comparables have been identified. This may be easy for some industries, such as pharmaceutics for example, where there are large listed companies dedicated to the production of generic products.

However, in most industries, listed comparables tend to have somewhat of a brand recognition. As a result, it may be difficult to identify a generic company with disclosed information. But even if there was, this method could be underestimating the scale effect on multiples. All else being equal, scale tends to have a favorable effect on valuation multiples. Moreover, by growing, companies tend to create brand recognition. Therefore, it is fair to assume that in most cases the unbranded company will be significantly smaller than the branded one. Thus, the difference in multiples will have an embedded undesirable effect due to scale on top of the “brand effect”.

2.2.4. INTERBRAND’S VALUATION METHOD – DIFFERENTIAL EARNINGS

Developed by Interbrand (interbrand.com), the idea of this method is to value the brand by applying a multiple to the differential earnings generated by a branded product. That is the extra earnings that a branded product generates by the fact of being branded. Therefore, the first step is to calculate this differential earnings, and then find the appropriate multiple to apply.

Fernández (2001) detailed the steps followed by Interbrand to calculate the differential earnings, applied to EBIT. In order to avoid short-term earnings volatility, the author recommends using historical EBIT for the last three years, weighting them by a 1 factor for year -2, a 2 factor for year -1 and a 3 factor for year 0, adjusted by inflation.

$$EBIT = \frac{1 * EBIT_{-2} * (1 + i_{-2})^2 + 2 * EBIT_{-1} * (1 + i_{-1}) + 3 * EBIT_0}{6}$$

To estimate the differential earnings, it is recommended to use the difference in EBIT margins between the branded product and a comparable generic product, and apply the difference in margins to the branded product sales. Moreover, when the weighted mean of the historical EBITs is greater than the branded product’s forecasted EBIT for future years, an allowance is made to include the decrease. Also, capital remuneration, defined as the return on capital that would have been used for the development of a private brand, and tax are deducted from the differential earnings. The allowance for capital could approximated by taking the return on capital of the industry from the production of a private label; this is may be very subjective. The following is a simplified example of how to compute the differential earnings:

In €m		2016	2017	2018	2019E
Branded product EBIT margin		*28.0%*	*30.0%*	*26.0%*	*30.0%*
Generic product EBIT margin		*15.0%*	*15.5%*	*16.0%*	*18.0%*
Branded product sales		925	950	975	1,000
EBIT differential per year		120	138	98	120
Inflation adjustment	*2%*	1.04	1.02	1.00	
Weighting factors		1	2	3	
Weighted average PV of EBIT differential		116.4			
Allowance for decrease in EBIT		0			
Capital remuneration		-40.0			
Tax	*30%*	-22.9			
Brand differential earnings		**53.5**			

TABLE 5: INTERBRAND'S VALUATION METHOD, BRAND DIFFERENTIAL EARNINGS

Once the brand differential earnings have been estimated, the multiplier has to be computed. Interbrand's exercise's 1st step consists on calculating the brand strength from a 7-factor model. As reported by Fernandez (2001):

*"**1. Leadership** (max score 25) A leading brand is more stable and has more value than another brand with a lower market share, because leadership gives market influence, the power to set prices, control of distribution channels, greater resistance to competitors, etc.*

***2. Stability** (max score 15) Brands that have become consolidated over long periods of time or which enjoy a high degree of consumer loyalty obtain high scores in this factor.*

***3. Market** (max score 10) A brand in a stable, growing market with high entry barriers will score very high.*

***4. Internationality** (max score 25) Brands operating in international markets have more value than national or regional brands. However, not all brands are able to cross cultural and national barriers.*

***5. Trend** (max score 10) A brand's tendency to keep up-to-date and relevant for the consumer increases its value.*

***6. Support** (max score 10) Brands that have received investment and support must be considered to be more valuable than those that have not. The quantity and quality of this support is also considered.*

***7. Protection** (max score 5) The robustness and breadth of the brand's protection ("legal monopoly") is a critical factor in its valuation."*

After assigning a score from 0 to their maximums to each of the factors, we obtain an overall brand strength score out of 100. Then, this brand strength is expressed as a multiple on an S-curve ranging from 0x to a maximum multiple. Salinas (2009) mentions the maximum multiple is 20, while Fernández (2001) uses the relevant market PE ratio. The following is an example of the S-curve:

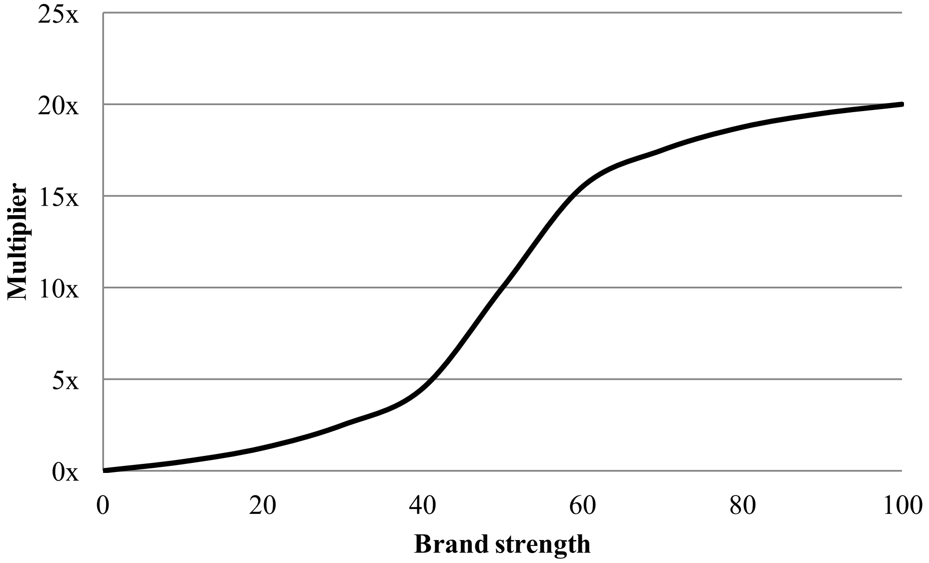


FIGURE 2. INTERBRAND'S VALUATION METHOD, S CURVE

The multiple can now be determined according to the S-curve. The rationale behind the S-shaped curve is that unknown or new brands are weak for a certain time until they become more well-known. After some time, once the brand is well-known, its awareness growth rate slows down. Then, brand value:

$$\mathrm{Bv} = \text{Brand differential earnings} * \text{Multiplier (brand strength)}$$

The main advantage of this method is that it takes into consideration the particularities of each brand through the strength score.

However, it is very subjective as it relies on very broad hypotheses when determining the brand strength and estimates the allowance for capital. Furthermore, it relies on the ability to find a relevant comparable generic product, which may be complex. Also, it seems hard to justify that the difference in EBIT can be attributed exclusively to brand factors; differences that may be unrelated to the brand perception, like efficient production processes, for example, may have a large impact on profitability.

Following Interbrand's valuation method, numerous brand valuation professionals have developed their own differential earnings approach. The main difference comes from the factors studied. For example, as explained by Salinas (2007), Motameni and Shahrokhi (1998) build a 13-factor model that define "customer base potency" metric, "competitive potency" and "global potency" for a brand.

2.2.5. SIMON & SULLIVAN (1993) BRAND EQUITY METHOD

Simon & Sullivan (1993) method for brand valuation proposes a very interesting framework to understand the value drivers of brands. Yet, the method is very complex to apply and relies on a very strong state of the efficient market hypothesis.

The method understands that the value of brand equity can be broken down in 2 main components: the value of the demand-enhancing component (*Vb1*) and the value of expected reductions in marketing costs resulting from having an established brand equity (*Vb2*). On top of these, they add the value of non-brand factors that give rise to cost advantages (*Vnbr*) and the value of anticompetitive structures (*Vind*). Value of intangibles:

$$Vi = Vb1 + Vb2 + Vnbr + Vind$$

The first dimension *Vb1* is influenced by factors enhancing the perceived value of brands, such as advertising and positive experiences with products. Returns on these investments translate into price premia over the prices of generic products in the market. To quantify the effect of this first dimension, Simon and Sullivan examine the contribution of current and past levels of advertising expenditures (*adv*) to intangible asset value. They also assume that the brand's age (*age*) is a proxy for the product quality investments generating loyalty and awareness. Value will be regressed against these two factors.

The second factor *Vb2* results from marketing costs advantages due to extensive brand awareness and favorable image. This component, along with the non-brand factors giving rise to cost advantages (*Vnbr*), affects a company's market share. The authors understand that the *Vb2* component is built through time, by expending more in advertising than competitors (market share of advertising, *advsh*), and by entering a market early (order of entry, *ord*). The other value component *Vnbr* is obtained by investing more in R&D than competitors (R&D market share, *rndsh*), which results in a higher share of patents (*patsh*).

Simon and Sullivan then extract the drivers behind the value of anticompetitive structures in order to isolate *Vind*. They use the four-firm concentration ratio (*CR4*) as a proxy to the latter, and a dummy variable capturing industry-specific regulatory barriers (*reg*). They then scale each factor by the firm's market value of tangible assets (*Vt*), and regress a large sample of firm values (*V**) against every factor. Since $V^* / Vt = Vi / Vt - 1$:

$$V^*/ Vt = \beta_0 + \beta_1 CR4 + \beta_2 reg + \beta_3 adv + \beta_4 age + \beta_5(\beta_{51} ord + \beta_{52} advsh) + \beta_6(\beta_{62} patsh + \beta_{63} rndsh)$$

As a result, the value of the brand as proportion of the firm's market value:

$$Vb \,/\, Vt = \beta_3 adv + \beta_4 age + \beta_5(\beta_{51} ord + \beta_{52} advsh)$$

2.3. INCOME-BASED METHODS

The income approach is a valuation exercise that tries to identify the future cash flows attributable to a brand and discount them to their present value; two main difficulties arise. Firstly, as previously mentioned, brand value is enclosed across assets and its cash flows are very hard to identify as a result. The quality of a product or a service is partly a consequence of the branding, as is the perception of that quality. Should the concept of brand therefore exclude or include the underlying products? The following methods offer different solutions to bridge this issue. Secondly, there is a whole discussion to be held around the discount factor. Brands value is more volatile than that of their owners, they are riskier. Brands take a very long time to be built, but can be very rapidly destroyed. For example, tech companies dominate all value rankings of top brands, a very different landscape than 20 years ago.

2.3.1. DISCUSSION AROUND THE DISCOUNT FACTOR FOR BRAND VALUATION

A common element to all income-based brand valuation methods is the discount factor. Indeed, this rate reflects the risk of a company or asset as perceived by the market. Like in any DCF valuation, this element will have a very large impact on the overall valuation. However, despite its importance, Salinas (2009) points to the fact that there is no consensus among brand valuation practitioners on how to estimate this discount factor appropriately. Nevertheless, there seems to be consensus around the fact that intangible assets carry more risk than tangible assets due, in part, to their illiquidity.

The WACC is the discount rate used for the cash flows generated by the whole company. Thus, if intangible assets carry a higher risk, it seems logical that they should be discounted at a higher rate. Smith and Parr (2005) suggested that the unlevered cost of equity could be a good proxy for intangible assets. Their assumption is that intangibles are hardly financed through debt and thus the cost of their financing is the cost of equity. However, they seem to ignore the fact that the unlevered cost of equity reflects the overall business risk of a fully equity-financed business. Therefore, just like the WACC, it is not capturing the extra risk of intangibles.

Stegink, Schauten and de Graff (2007) notice that the levered cost of capital is not a valid discount rate either because it would assume that the additional financial risk arising from debt funding is charged on to the intangible assets. However, they argue it could be a good proxy as it is higher than the unlevered cost of equity and thus, higher than the WACC.

Stegink, Schauten and de Graff (2007) propose a method based on the WARA (Weighted Average Return on Assets):

$$WACC = Ke\frac{E}{E+D} + Kd\frac{D}{E+D} = WARA = R_{MA}\frac{MA}{V} + R_{TFA}\frac{TFA}{V} + R_{IA}\frac{IA}{V} + R_{TS}\frac{TS}{V}$$

$$Thus,\ R_{IA} = \frac{WACC - R_{MA}\frac{MA}{V} - R_{TFA}\frac{TFA}{V} - R_{TS}\frac{TS}{V}}{\frac{IA}{V}}$$

Where *V* is the market value of the company, *E* is the market value of equity, *D* is the market value of debt, *MA* is the market value of monetary assets, *TFA* is the market value of tangible fixed assets, *IA* is the market value of intangible assets, *TS* is the value of the tax shield and *Ri* is the required rate of return for asset *i*.

Interbrand points out that strong brands should have lower discount rates than weak ones. This argument seems to make sense, assuming that the value of strong brands that have been around for a long time is necessarily less volatile than that of weak or new ones. Indeed, this variable risk is reflected on the S-shape of their multiples curve for their earnings differential method (refer to 2.4). Indeed, if we believe the method is accurate, then the inverse of the multiple can be a good proxy for the discount rate. As such:

$$Bv = Multiple * Brand\ differential\ earnings$$

$$\underset{f}{\Leftrightarrow} \frac{1}{Multiple} = \frac{Brand\ differential\ earnings}{Bv}$$

$$But, by\ definition, \qquad Bv = \frac{Brand\ earnings}{Discount\ factor - LT\ growth}$$

Therefore, if we believe that the brand differential earnings are a right proxy for the portion of earnings attributable to the brand, and we also believe in the robusteness of the brand strength method, the discount factor may be determined from Interbrand's method as:

$$Discount\ factor = \frac{1}{Multiple} + LT\ growth$$

The main issue with this is conceptual; if we trust the Interbrand's market based method enough to use it for estimating the discount factor, then why use the income-based methods to value the brand? This technique can be a good way of checking other estimates of the discount factor taking into consideration the relative strength of the brand, which will hardly be taken into account by the other mentioned methods.

2.3.2. PRICE PREMIUM

The price premium method estimates the brand's incremental profits against an equivalent generic product by comparing prices of the branded and unbranded products. The assumption behind this method is that perceived superior quality or brand awareness allow firms to charge a premium for their goods or services. The brand value is then calculated by estimating the present value of the after-tax cash flows generated by this price difference. This exercise requires taking into consideration that the maintenance of brand awareness comes at a cost (e.g. superior marketing expense, but also more expensive raw materials or personnel expenses to justify superior quality). As a result, the brand value:

$$Bv = \sum_{t=1}^{\infty} \frac{((p_{t,branded} - p_{t,generic})V_{t,branded} - Exp_t)(1 - tax\ rate)}{(1+r)^t}$$

Where *pt* is the price at time t; *Vt* is the volume at time t; *Expt* is the extra expenses incurred as a result of the brand at time t; and *r* is the discount factor.

The following is a simplified example of the application of this method:

In €m	2019	2020	2021	2022	2023	TV
Branded product price (€)	100.0	101.0	102.0	103.0	104.1	105.1
% inflation		*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Generic product price (€)	90.0	90.5	90.9	91.4	91.8	92.3
% inflation		*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
Difference in price	10.0	10.6	11.1	11.7	12.2	12.8
Branded volume (m units)	10.0	10.4	10.7	10.9	11.0	11.0
% growth		*4.0%*	*3.0%*	*2.0%*	*1.0%*	*0.0%*
Price premium effect	100	110	119	128	135	142
% growth		*9.7%*	*8.4%*	*7.2%*	*6.0%*	*4.7%*
Branded marketing expense	(30)	(30)	(31)	(31)	(31)	(32)
Superior R&D expense	(20)	(20)	(20)	(21)	(21)	(21)
Difference in raw material cost	(10)	(10)	(10)	(10)	(10)	(11)
Total difference in costs	(60)	(61)	(61)	(62)	(62)	(63)
% growth		*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Pre-tax premium price cash-flows	40	49	58	66	73	79
Tax expense *30%*	(12)	(15)	(17)	(20)	(22)	(24)
After-tax premium price cash-flows	28	34	40	46	51	55
Discount factor *10%*	0.91	0.83	0.75	0.68	0.62	0.62
Discounted cash-flows	25	28	30	31	32	34
Sum of discounted cash-flows	147					
Terminal value *1%*	379					
Brand value	**526**					

TABLE 6: PRICE PREMIUM, EXAMPLE OF APPLICATION

The main advantage of this method is that it is very easy to understand theoretically. However, it is difficult to apply because, most of the time, it will be hard to find equivalent products from non-branded companies. Moreover, there is a whole discussion to be held around whether the price premium can only be attributed to the brand effect and, if such, the premium price position can be maintained for an extended period of time. By merely focusing on price, the method ignores the cost dimension that may arise from the premium position of the branded company, in terms of scale, for example. Furthermore, even if the cost dimension is integrated, as it was in the previous example, it will largely rely on arbitrary and difficult-to-justify assumptions.

To solve this issue, the Sander's hedonic brand valuation method was developed. As reported by Salinas (2007), the hedonic price theory assumes a functional linear relationship between price and product characteristics. The price:

$$p = \sum_{i=1}^{n} \beta_i x_i$$

Sander's hedonic approach isolates the brand as one of these characteristics. Once the regression is built, the price differential can then be defined as the difference between the price equations including and excluding the factor. Authors have argued that the choice of factors as well as the assumption of linearity are rather an arbitrary process. Furthermore, for the regression to be significant, it requires to find a large number of comparable companies selling similar products.

2.3.3. GROSS MARGIN AND OPERATING PROFIT COMPARISON METHODS

The gross margin and operating profit comparison methods are similar in concept to the premium price method, but go further in the analysis, taking into account the cost consequences of owning the brand. They compare the gross margin and EBIT margin respectively to that of un-branded product firms, and draw the difference in after-tax cash flows from there. In case of the gross margin method, an assumption has to be made about the fixed-costs required to maintain the brand (R&D, marketing expense…). Brand values:

$$Bv = \sum_{t=1}^{\infty} \frac{(EBIT\ \%_{t,branded} - EBIT\ \%_{t,generic})Sales_{t,branded}(1 - tax\ rate)}{(1+r)^t}$$

$$Bv = \sum_{t=1}^{\infty} \frac{((Gross_{t,branded} - Gross_{t,generic})Sales_{t,branded} - Fix\ cost)(1 - tax\ rate)}{(1+r)^t}$$

The following is a simplified example of the application of both methods:

In €m		2019	2020	2021	2022	2023	TV
Branded company EBIT margin		*48.0%*	*47.0%*	*46.0%*	*45.0%*	*44.0%*	*43.0%*
Generic company EBIT margin		*30.0%*	*32.0%*	*34.0%*	*36.0%*	*38.0%*	*40.0%*
Difference in margins		*18.0%*	*15.0%*	*12.0%*	*9.0%*	*6.0%*	*3.0%*
Branded company sales		1,000	1,050	1,093	1,126	1,148	1,160
Pre-tax premium price cash-flows		180	158	131	101	69	35
Tax expense	*30%*	(54)	(47)	(39)	(30)	(21)	(10)
After-tax premium price cash-flows		126	110	92	71	48	24
Discount factor	*10%*	0.91	0.83	0.75	0.68	0.62	0.62
Discounted cash-flows		115	91	69	48	30	15
Sum of discounted cash-flows		353					
Terminal value	*1%*	168					
Brand value		**521**					

In €m	2019	2020	2021	2022	2023	TV
Branded company gross margin	*70.0%*	*69.0%*	*68.0%*	*67.0%*	*66.0%*	*65.0%*
Generic company gross margin	*50.0%*	*52.0%*	*54.0%*	*56.0%*	*58.0%*	*60.0%*
Difference in margins	*20.0%*	*17.0%*	*14.0%*	*11.0%*	*8.0%*	*5.0%*
Branded company sales	1,000	1,050	1,093	1,126	1,148	1,160
Premium gross profit	200	179	153	124	92	58
Superior R&D expenses	(24)	(20)	(16)	(12)	(8)	(4)
Superior marketing expenses	(36)	(30)	(24)	(18)	(12)	(6)
Pre-tax premium price cash-flows	140	129	113	94	72	48
Tax expense *30%*	(42)	(39)	(34)	(28)	(22)	(14)
After-tax premium price cash-flows	98	90	79	66	50	34
Discount factor *10%*	0.91	0.83	0.75	0.68	0.62	0.62
Discounted cash-flows	89	74	59	45	31	21
Sum of discounted cash-flows	299					
Terminal value *1%*	232					
Brand value	**531**					

TABLE 7: GROSS MARGIN AND OPERATING INCOME COMPARISON, EXAMPLE OF APPLICATION

Just like the price premium method, the margin comparison methods are very simple to understand. Moreover, as previously mentioned, by using margins these methods integrate the cost dimension of branding; there is no need to make estimations for the extra costs of maintaining brand awareness, which is hard to justify with reasonable assumptions.

However, these methods also present the issue of finding relevant generic products. Furthermore, it assumes that all differences in costs are brand-related, which ignores the fact that companies may have different production efficiencies, without necessarily having an impact on consumer perception and the value the brand. A solution to this issue can be to fine tune the research of generic comparables, looking not only at products, but also at productive processes, which may be very complex.

2.3.4. ROYALTY RELIEF

The approach of this method is to determine the fees, or royalties, that a company would have to pay to use the brand without actually owning it. Then, the value of the brand is calculated as the present value of these royalty cash flows.

The method requires to define a business plan for the company. In the licensing market, royalty rates are typically applied to sales, gross margin or operating profit. Depending on the choice of the type of rate to apply, the business plan will have to be more or less detailed.

Then, the royalty rate has to be determined. This may be the hardest and most subjective step of the method.

Salinas (2009) mentions two rules of thumb, “the 25% rule” and “the 5% rule”; the first is to be applied to operating profit and the latter to sales. According to Sarr (2003), the rules were developed by Mr. Goldschedier in the late 1950s from empirical evidence. The rules are actually broadly used, in particular in licensing and litigation settings.

This seems nevertheless a very simplistic approach that disregards the strength of the brand and sector, among other important parameters such as the license’s exclusivity, the parties’ negotiating power or the product’s life cycle. KPMG (2012) carried a study across 3,887 companies, comparing the royalty rate yield by “the 25% rule” for different margins against the average royalty rate of 7% reported by RoyaltySource®:

"The 25% rule" comparison	Gross margin	EBITDA margin	EBIT margin	3-yr avg gross margin	3-yr avg EBITDA margin	3-yr avg EBIT margin
Average profit margin	*46.5%*	*18.6%*	*13.7%*	*46.0%*	*17.7%*	*13.2%*
25% of the average profit mar	*11.6%*	*4.7%*	*3.4%*	*11.5%*	*4.4%*	*3.3%*
Reported average royalty rate	*7%*	*7%*	*7%*	*7%*	*7%*	*7%*
Error %	*66.1%*	*-33.6%*	*-51.1%*	*64.3%*	*-36.8%*	*-52.9%*

TABLE 8: ERROR IN THE 25% RULE, ROYALTYSOURCE

This preliminary analysis points to the fact that the mentioned rules of thumb can provide a quick estimate, but do not, unsurprisingly, converge with reality. An alternative to the rule of thumb is The Knoppe formula:

$$royalty\ rate = \frac{profit\ of\ licensed\ product * 100}{sales\ of\ licensed\ product * 3}$$

Equally criticized for being too generic, Salinas (2009) argues that this formula seems to be unused beyond a simple control check.

The best way to determine the royalty rate might be to find a comparable licensing agreement with public information. McDonalds, for example, charges in average a 4% of sales royalty fee. If no public information is available, industry expertise may be a good guideline as well. However, as previously mentioned, royalty rates depend significantly on the brand strength, so there may be large dispersion even within a determined sector. The following is a graph put together by Analysis Group, based on RoyaltySource® data, showing the average royalty rate across sectors:

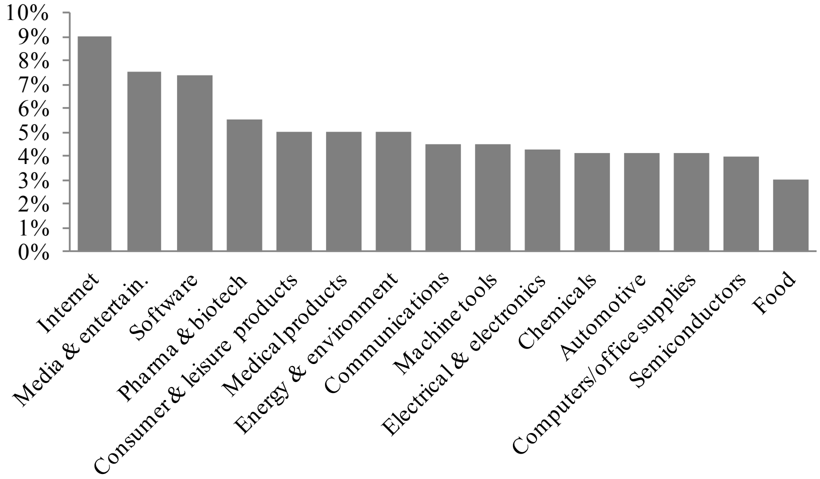


FIGURE 3: AVERAGE ROYALTY RATE ACROSS INDUSTRIES, ROYALTYSOURCE

It can be seen that the average royalty rate ranges from c. 3% to c. 9% and that most industry-average royalty rates are between 4% and 5%. Nevertheless, this guidelines must be used carefully, as the royalty rate can vary very significantly within a specific industry.

Once the royalty rate has been determined, the after-tax cash flows associated with royalty fees can be discounted, just as seen in previous methods. The brand value:

$$Bv = \sum_{t=1}^{n} \frac{Sales_t * RoyaltyRate * (1 - tax\ rate)}{(1 + discount\ rate)^t}$$

The following is a simplified example of the application of the method:

In €m		2019	2020	2021	2022	2023	TV
Branded product price (€)		100.0	101.0	102.0	103.0	104.1	105.1
% inflation			*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Branded volume (m units)		10.0	10.4	10.7	10.9	11.0	11.0
% growth			*4.0%*	*3.0%*	*2.0%*	*1.0%*	*0.0%*
Sales		1,000	1,050	1,093	1,126	1,148	1,160
% growth			*5.0%*	*4.0%*	*3.0%*	*2.0%*	*1.0%*
Royalty rate		*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Pre-tax royalty relief cash-flows		50	53	55	56	57	58
Tax expense	*30%*	(15)	(16)	(16)	(17)	(17)	(17)
After-tax royalty relief cash-flows		35	37	38	39	40	41
Discount factor	*10%*	0.91	0.83	0.75	0.68	0.62	0.62
Discounted cash-flows		32	30	29	27	25	25
Sum of discounted cash-flows		143					
Terminal value	*1%*	280					
Brand value		**423**					

TABLE 9: ROYALTY RELIEF METHOD, EXAMPLE OF APPLICATION

As mentioned by Salinas (2009), this method has been accepted by many fiscal authorities as a suitable model and is the most commonly used for valuation. The method is theoretically appealing because it removes the difficulty of estimating the differential costs associated to the brand. Its main advantage is that it provides a relatively simple solution to the issue of separating the cash flows attributable to the brand.

That said, the main pitfall comes from its dependence on the key hypothesis, the royalty rate. As mentioned, this rate can be very subjective and difficult to estimate. The main issue is that, even if licensing information is available, very few brands are actually comparable. Furthermore, the royalty rates include more than just the brand; contractually defined, these typically include the transfer of rights from the licensor to the licensee, in the form of providing raw materials, know-how or other services to ensure a quality standard. Similarly, some academics consider that the royalty relief method provides a floor of valuation, as it disregards the upside value of having full brand control.

2.3.5. BRAND STRENGTH ANALYSIS

According to Salinas (2009), the brand strength analysis method considers the effects of brand on the demand and supply functions. It aims at determining the influence of the brand in the buying decision-making process of the customer. Typically statistical, the ultimate objective is to establish what proportion of business is attributable to brand. Two main group of techniques have been developed for the implementation of this method; the absolute techniques and the relative techniques.

The first approach aims at determining what is the proportion of brand-related decision-making factors over the full range of factors driving the customer's decision-making. This exercise requires of deciding which factors should be attributed to brand and which factors should not, which is a fairly arbitrary process. A survey is then made, with customers answering which among the listed factors is the main reason for choosing a determined product. The sum of frequencies of brand-related factors establishes the proportion of business that may be attributed to brand. The following table is a simplified example of the result that could yield this approach:

Brand X, reasons for choosing product	*Frequency*	Category lower limit	Category upper limit
Brand quality	*15%*	Brand	Brand
Brand image	*25%*	Brand	Brand
Design, models and packaging	*35%*	Business	Brand
Track record and performance	*10%*	Business	Business
Other reasons	*20%*	Business	Business
Sum of brand frequencies		***40%***	***75%***

TABLE 10: EXAMPLE OF SURVEY RESULT FOR THE BRAND STRENGTH ANALYSIS

In this case, for example, the method establishes that between 40% and 75% of business can be explained by the brand strength.

The second approach understands the decision-making process as a function of the various factors defined. Some academics study the importance of the brand as an independent, separate factor that does not influence the others. Others treat the brand as an attribute that influences the perception of other attributes. The exercise consists not only in ranking the factors, but also determining the brand contribution for each factor. The following are simplified examples of the results that could yield this approach:

Brand X, relative importance, indexed	Importance
Client service	100
Technology	86
Brand reputation and image	**40**
Competitive prices	38
Advertisement	15
Recommendation by friend	10
Brand contribution	***14%***

Brand X, relative importance, indexed	Importance	*Brand contribution*
Client service	100	*20%*
Technology	86	*15%*
Competitive prices	38	*10%*
Advertisement	15	*30%*
Recommendation by friend	10	*50%*
Brand contribution		***19%***

TABLE 11: OTHER EXAMPLES OF SURVEY RESULTS, BRAND STRENGTH ANALYSIS

Both approaches result in percentages determining the brand contribution to business. These can then be applied to sales, EVA, profit, free cash flow, or other financial metrics which can then be translated to brand valuation, just like with the price premium and the margin comparison methods.

It is a very significant method from a marketing perspective, useful to determine the key drivers adding value for a company. Based on statistics, this method is intrinsic to every company or product, and thus does not require of benchmarking data against the market or other firms.

The main disadvantage of this method is the complexity of applying statistical regression techniques to determine the brand contribution; the interaction between the brand and other attributes can be very complex to determine, with every consumer associating the brand with specific characteristics, which can give unrealistic results.

2.3.6. EXCESS CASH FLOW

This method provides an original way for separating the cash flows attributable to brand from cash flows attributable to other assets. As mentioned by Fernández (2001), this method was developed by Houlihan Valuation Advisors. The approach starts by defining a Return on Capital Employed (ROCE) as follows:

$$ROCE = \frac{FCFF}{CE}$$

Where *FCFF* is the Free Cash Flow to the Firm (or all providers of capital) and *CE* is the Capital Employed by the firm.

We can then apply this same equation to the *n* assets (one of which will be the brand) conforming the Capital Employed. Then:

$$ROA_i = \frac{FCF_i}{A_i}\ , with\ FCFF = \sum_{i=1}^{n} FCF_i = \sum_{i=1}^{n} ROA_i * A_i$$

Where *Ai* is the book value of the *i*th asset and *FCFi* is the Free Cash Flow generated by this same asset. If we isolate the Free Cash Flow attributable to the brand:

$$FCF_{brand} = FCFF - \sum_{j=1}^{n-1} ROA_j * A_j$$

The present value of this Free Cash Flow attributable to the brand is the brand value:

$$Bv = \sum_{t=1}^{m} \frac{FCFF_t - \sum_{j=1}^{n-1} ROA_{j,t} * A_{j,t}}{(1 + discount\ rate)^t}$$

The first step of this method consists in building a business plan for the firm, owner of the brand. Then, the approach requires the definition of the returns of each individual group of assets. There does not seem to be any evidence in literacy of guidelines for this step. The categories of assets identified may vary for each company. That said, the most typical will be fixed tangible assets, operating working capital, fixed intangible assets and goodwill.

The following remarks may help on the definition of these returns. First-of-all, the overall return of the firm must be equal to the weighted average of the individual assets. Therefore:

$$\sum_{i=1}^{n} \frac{ROA_i * A_i}{CE} = ROCE$$

Furthermore, as discussed in 3.1, intangible assets should be considered riskier, and therefore assigned a higher discount rate than the average. The approach of the Weighted Average Return of Assets calculation may be useful here as well. The following is a simplified example of the application of this method:

In €m		2019	2020	2021	2022	2023	TV
Operating working capital	*3%*	100.0	102.0	104.0	106.1	108.2	110.4
Fixed tangible assets	*8%*	200.0	204.0	208.1	212.2	216.5	220.8
Fixed intangible assets	*13%*	80.0	81.6	83.2	84.9	86.6	88.3
Goodwill	*15%*	30.0	30.6	31.2	31.8	32.5	33.1
Capital employed		410.0	418.2	426.6	435.1	443.8	452.7
Sum of assets employed * rate of return		33.9	34.6	35.3	36.0	36.7	37.4
Free Cash Flow to the Firm		80.0	84.0	87.4	90.0	91.8	93.6
% growth			*5.0%*	*4.0%*	*3.0%*	*2.0%*	*2.0%*
FCFF attributable to the brand		46.1	49.4	52.1	54.0	55.1	56.2
Discount factor	*13%*	0.88	0.78	0.69	0.61	0.54	0.54
Discounted cash-flows		40.8	38.7	36.1	33.1	29.9	30.5
Sum of discounted cash-flows		179					
Terminal value	*1%*	254					
Brand value		**433**					

TABLE 12: EXCESS CASH-FLOW, EXAMPLE OF APPLICATION

The main advantage of this method is that it is fully intrinsic, as it does not rely on market data. As such, it solves the main issue of the price premium and margin comparison methods of having to find a generic, comparable product to implement it.

However, this method is very reliant on the definition of the individual assets rate of returns. As previously mentioned, there does not seem to be any guidelines in literacy, making this exercise abstract and hard to justify. Furthermore, some authors find this method hard to justify from a conceptual point of view: *"This method does not make much sense. It replaces the cash flow attributable to a generic product company with the assets employed by the branded company multiplied by the assets' required return. Can the reader find any justification for this?"* (Fernandez, 2001).

2.3.7. REAL OPTIONS

Financial options are contracts that convey the right to buy or sell an asset at a determined price over an agreed period of time. Applied to non-financial assets, real option methods consider the latter as a set of options that give right to determined cash flows in the future. Applied to brands, Fernández (2001) considers that these options provide the right for future growth:

- Geographical growth
- Growth through new distribution channels
- Growth through additional differentiation
- Growth through the use of new formats
- Growth through accessing new market segments

As such, the options provide the opportunity to delay investment decisions for growth, and there is value to be assigned to this right to delay the investment decision. For example, it provides the opportunity to test the market before making the definitive investment decision.

Thus, the growth opportunities provided by a brand can be valued as a portfolio of growth options. As a result, the total value of the brand can be determined by the value of this portfolio of growth options, on top of the brand value without growth. To calculate the latter, any of the previously defined methods can be used adjusted to reflect the no-growth component.

The payout of these growth options would be:

$$P = \max(0, -Investment + PV\ of\ growth\ opportunity)$$

Many methods have been developed to calculate the value of such options, with the Black & Scholes formula being the most widely used in the industry. The price of the growth option according to Black & Scholes:

$$C = S * \emptyset(d1) - E * e^{-r\tau} * \emptyset(d2)$$

$$d1 = \frac{\ln\left(\frac{S}{E}\right) + (r + \frac{\sigma^2}{2})\tau}{\sigma\sqrt{\tau}}$$

$$d2 = d1 - \sigma\sqrt{\tau}$$

$$\emptyset(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{\frac{-t^2}{2}} \, dt$$

The formula uses 5 inputs:

1. Spot price of the underlying asset
2. Strike price of the asset
3. Volatility of the underlying asset
4. Time to expiration of the option
5. Risk free rate

The following is a simplified example applied growth opportunity preceded by a smaller investment to test the market:

Inputs	Real		
S	PV of expected CFs	400.0	
E	Required investment	500.0	
Sigma	Volatility of expected CFs	40.0%	
Tau	Time to investment decision	3.00	*In years*
r	Risk-free rate	1.0%	
Parameters	Real		
d1		0.07	
d2		(0.63)	
Phi(d1)		0.53	
Phi(d2)		0.27	*Probability to exercise the option*
1-Phi(d2)		0.73	*Probability of not excercising it*
C	**Growth option value**	**81.8**	
PV value of investment to test the market		90.00	
Investment to test the market		100.00	
NPV of investment to test the market		(10.00)	
Adjusted NPV		**71.8**	

TABLE 13: BLACK&SCHOLES FORMULA APPLIED TO A GROWTH OPTION

Even if the NPV of the investment seems negative -100, there is value to be extracted from the time to investment decision and the volatility of cash-flows, which yields a positive

NPV of 71.8. Using a DCF to make the investment decision would yield a misleading result, as there is value in the opportunity to retract from the investment after testing the market.

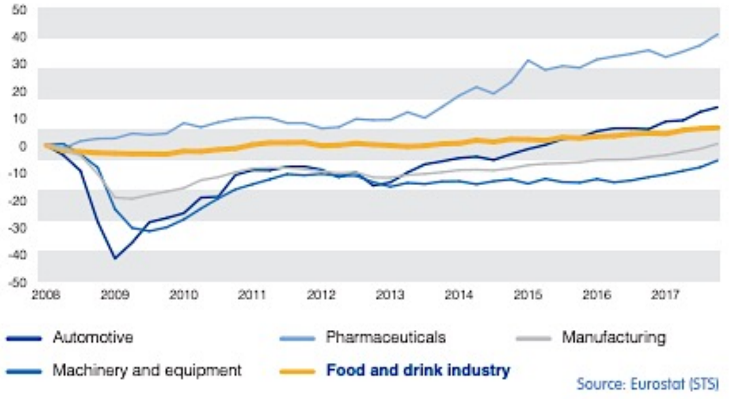
This method is especially useful for management to make investment decisions. By considering the value associated with the uncertainty of cash-flows and the flexibility in the investment decision, it provides a more adequate view over the value of the investment than a traditional DCF.

However, as mentioned by Salinas (2009), this method is hardly used in practice for brand valuation because of the complexity of calculating the parameters of the Black Scholes equation for intangible assets. Thus, while it is sound from a conceptual point of view, there will be a significant amount of subjectivity when determining the model inputs. Furthermore, it requires to identify all growth opportunities provided by the brand, defining theirs costs and expected future cash flows, which is undoubtedly a complex and time-consuming exercise. Finally, the method only yields the value of the growth opportunities of the brand, and another method must be implemented anyway to value the brand itself.

3. CASE STUDY: LINDT & SPRÜNGLI

3.1. MARKET OVERVIEW

The Food and Drink Industry (F&DI) is an important pillar of the global economy, representing the largest manufacturing sector in the EU in terms of employment, turnover – with c.€1,109 billion in 2016 – and value added. The industry shows attributes of a stable, resilient and robust sector – see Figure 4 below – ahead of other powerful sectors such as the automotive industry (CIAA, 2018). The F&DI ranks among the best manufacturing industries in most of the EU member states, with France, Germany, Italy, the UK and Spain as the largest producers by turnover.



Source: Eurostat (STS)

FIGURE 4. VOLUME OF PRODUCTION IN THE EU MANUFACTURING INDUSTRY

Another important aspect to note is that the F&D industry is a highly diversified and fragmented sector, having many different companies of distinct sizes. SMEs, indeed, account for 99.1% of food and drink companies – with almost 290,000 companies – and generate c.50% of the food and drink industry turnover and value added. Large companies, on the other hand, make up 0.9% but generate the other c.50% of the total turnover (CIAA, 2018).

Traditionally, the F&DI was characterized by a low degree of open innovations, driven by incremental innovations, low R&D intensity and protective mechanisms. Consumers used to be much more conservative, hence rejecting new and breakthrough products, and companies used trademarks and trade secrets to protect their innovations from the market and the competition. This fostered a low R&D expense towards open innovation.

Nevertheless, the sector seems to be experiencing a drastic change in the last decade, both in a competitive and technological standpoint. There is a strong tendency to include customers as a critical part of the innovative process of the manufactured products, promoting the so called co-creation practices. Furthermore, radical changes in the global landscape are causing big changes in the sector, driven by factors such as globalization of the retailers, rapid growth of the market, more cost-effective business models, shortened product life cycles and an increase of private label competition. Price war and the increase in competition is pushing the F&D industry into a spiral of cost-cutting processes that can only be avoided through R&D and quicker and more frequent innovation. On the technological side, information & communication technology and bioengineering are causing a strong impact on the sector, increasing the intensity of innovation and pushing again towards an open approach trend (Manzini et al. 2017).

More concretely, the chocolate industry in which Lindt & Sprüngli competes is highly developed in terms of consumption – especially in Europe. Hence, the market is not expected to experience high growth periods during these years nor in the future ones. For instance, taking Europe as an example, the 2.6% CAGR between 2010 and 2014 has decelerated to 2.4% CAGR from 2014 to 2019E in consumption terms – reaching c.$49 billions of chocolate confectionary market value (F&D EU, 2018). However, mainly in the developed countries, the premium chocolate sector has recently been seen as the primary area of growth in this industry, but not that much as to move the market out from the expected slow growth period.

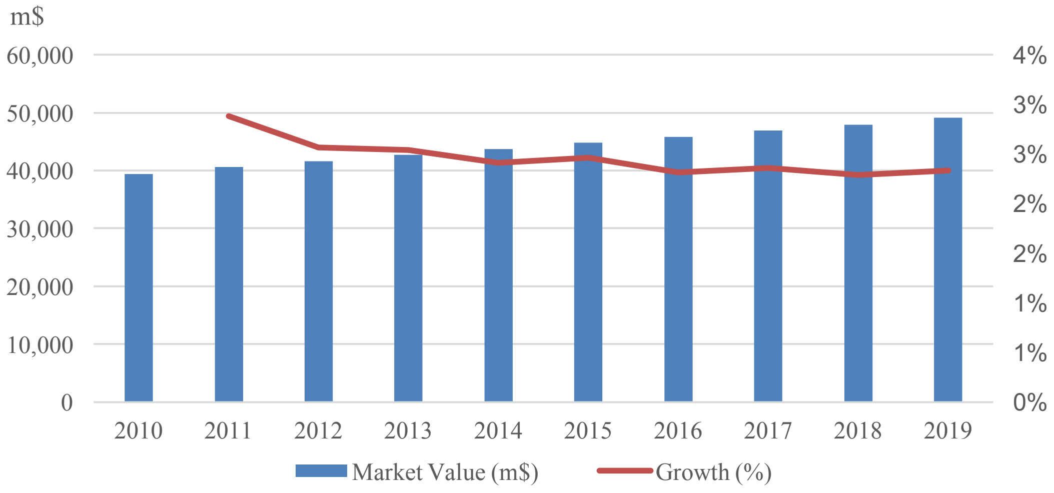


FIGURE 5. EUROPEAN COCOLATE CONFECTIONARY MARKET EVOLUTION

The confectionary chocolate market is quite concentrated, with the top four players accounting for more than 70% of the total market value – those firms are Mondelez, Mars, Ferrero and Nestle – see Figure 6 below for reference. Larger players having greater influence through economies of scale and purchasing power, along with little control over commodity prices from the manufacturers, makes competition fairly fierce. Moreover, competition in the chocolate sector is increasingly strong and aggressive, which makes more attractive to benefit from external sources of innovation and thus reduce internal R&D costs and time. As a result, similarly to the F&DI trends aforementioned, most companies seem to be adopting open innovation approaches in an open era – examples being Procter & Gamble and Heinz from the F&D industry and Mars from the chocolate sector (Lindt & Sprüngli 2017 company presentation).

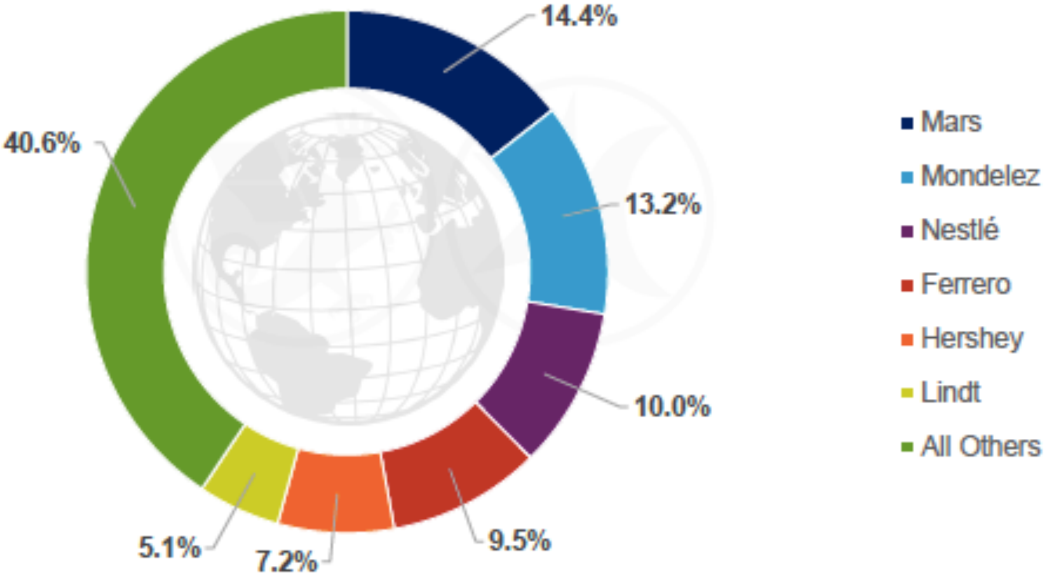


FIGURE 6. MARKET SHARE ON THE CHOCOLATE COMPETITIVE ENVIORNEMNT (2016-2017)

DESCRPITION OF LINDT & SPRÜNGLI

3.1.1. HISTORY OF LINDT & SPRÜNGLI

Lint & Sprüngli (hereinafter referred as “Lindt”) is a global company operating in the Food and Drink Industry (F&DI), well-known as one of the leading companies manufacturing, distributing and selling premium quality chocolate. It offers a large selection of products in more than 120 countries around the world, considered as an innovative and creative company with 175 years of experience.

The legacy established by Lindt started in 1845 with a small confectionary shop in a small town in Zurich by the Sprüngli family, being the firsts in Switzerland to manufacture chocolate in a solid form. From the foundation until 1899 they kept opening confectionary and refreshment rooms, factories and stores, acquiring a widespread reputation for the quality of their products and their expertise on this field. Then, they acquired a small but famous factory of the Lindt family in Berne, well-known as one of the best chocolate-makers of their days thanks to a new machine that enhanced flavor and melting quality.

While the Lindt & Sprüngli experienced significant growth in the expansion of the chocolate industry during the first decades of the 20th century, the firm faced many challenges from 1920 to 1945. Global protectionism and depressions led to the loss of foreign markets and import restrictions. However, the end of the war brought a demand explosion, first within the home market and later abroad. Lindt´s meteoric growth, reaching c.900 million Swiss Francs by early nineties, was fostered by the acquisitions and integrations as brand factories of many chocolate companies – Chocolat Grison, Nago Nährmittel AG and Gubor Schokoladefabrik. Additionally, the firm made a further step to become the leader in the premium quality chocolate segment by activating other sites in New York, France, Italy, and Austria, and acquiring the tradition-enriched chocolate manufacturer “Caffarel” (Italy, 1997) and Ghirardelli Chocolate Company (San Francisco, 1998). However, the most important strategic acquisition was in 2014 with the deal with Russell Stover Candies (USA), complementing the existing premium brands to become the 3rd North American chocolate manufacturer.

Today, Lindt benefits of 12 production facilities worldwide (Europe and USA), 370 shops, 24 subsidiaries and more than 100 distributors. The firm is a publicly held stock company trading on the Swiss stock exchange, which went public in 1988 after developing a global brand, having pursued a rapid international expansion and a top-line and bottom-line growth performance (Lindt 2019).

3.1.2. COMPANY OVERVIEW

With 12 production facilities, 370 shops worldwide, 24 subsidiaries, more than 13,500 employees and almost 100 distributors, Lindt has managed to establish best-in-class practices to increase penetration in Europe (c.45%), NAFTA (c.43%) and developing markets (c.12%) as shown in the following graph.

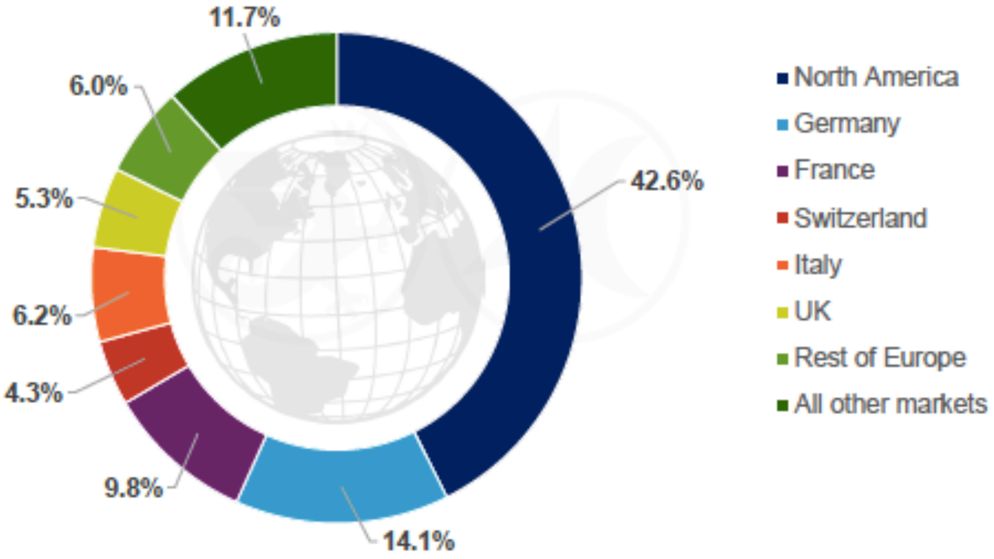


FIGURE 7. GLOBAL SALES DISTRIBUTION BY MARKETS

Despite the challenging international market environment aforementioned in the previous section, Lindt has increased its Group sales by 5.5% to a total of CHF4.3 billions, growing faster than the chocolate market and gaining market share. The firm achieved outstanding results in Europe – with organic growth of 5.6% and CHF2.1 billion sales – and in all other markets – 10.3% organic sales growth fueled by the market dynamics in Brazil, China and Japan. However, North America is experiencing structural changes and price pressure that has led to a lower 2.8% sales growth.

Lindt has reached all-time high sales, which is the result of long-term growth and progressive improvement – except for the economic crisis period after 2007-08. As shown in the Figure 8 below, Lindt has had an excellent growth of 7.4% CAGR from 1996 to 2018.

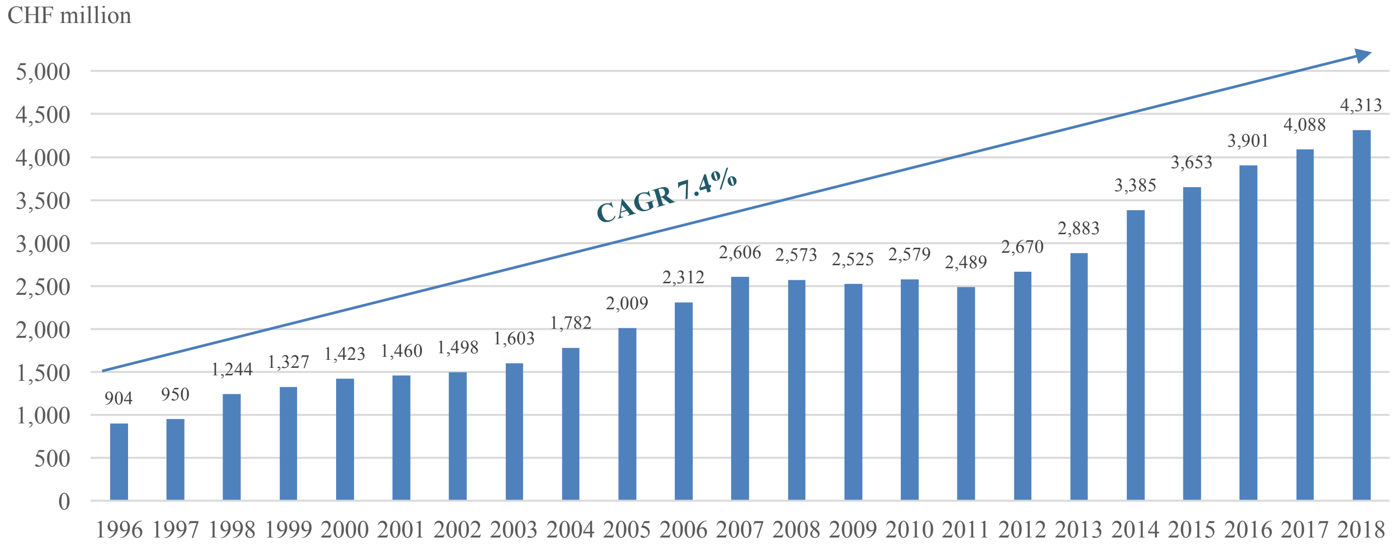


FIGURE 8. LONG-TERM SALES GROWTH

Lindt expects to keep growing at a 5-7% rate in the mid and long term, mainly supported by stronger position and growth in the North America region. Additionally, the firm expect to improve its operating margin – currently at c.15% - by 20-40 basis points (Annual Report 2018).

The Group maintains its position as number 1 in the premium segment and number 3 in the US chocolate market thanks to its reputation as top quality premium chocolate company. Such recognition is the perception attributable to its global brand Lindt, which accounts for c.76% of the Group sales and comprises key products such as Lindor, Excellence, Season and Pralines. Additionally, the company attributes c.22% of its sales to regional brands such as Ghirardelli, Russell Stover, Whitman's and Pangburn's of Texas. Finally, there are also local brands that account for the remaining c.3% of total sales, including Caffarel, Hofbauer Wien and Küfferle – as shown in the illustration below (Lindt & Sprüngli 2018 company presentation and Annual Report).

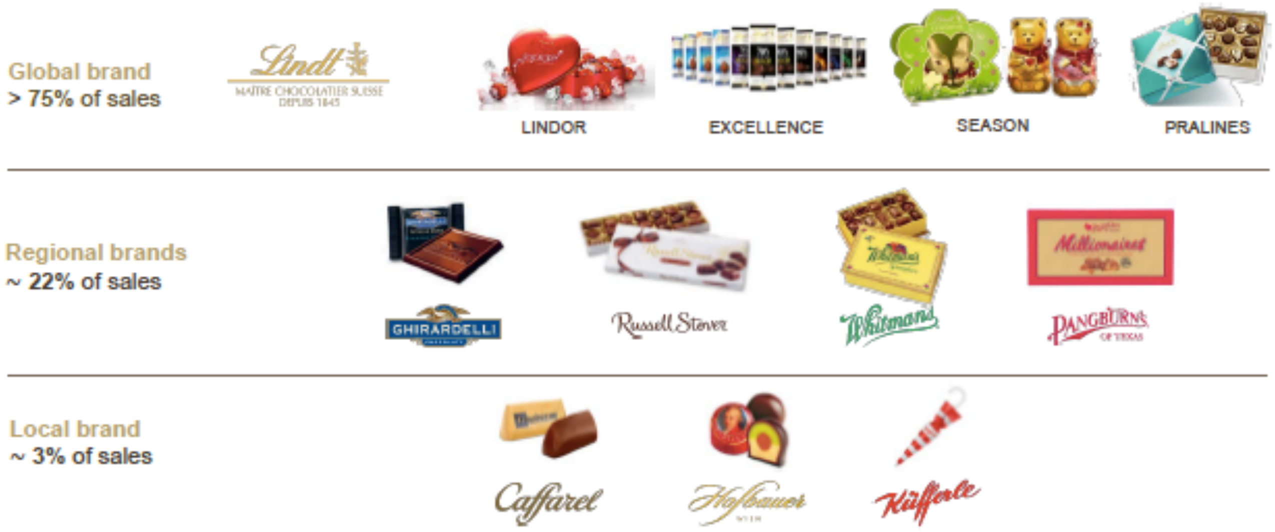

Global brand
> 75% of sales
Lindt
MAÎTRE CHOCOLATIER SUISSE
DEPUIS 1845
LINDOR
EXCELLENCE
SEASON
PRALINES
Regional brands
~ 22% of sales
GHIRARDELLI
Russell Stover
Whitman's
Millionaires
PANGBURN'S
OF TEXAS
Local brand
~ 3% of sales
Caffarel
Hofbauer
WIEN
Küfferle

FIGURE 9. LINDT & SPRÜNGLI BRAND PORTFOLIO

3.1.3. LINDT & SPRÜNGLI BUSINESS STRATEGY

Lindt is considered to be an innovative company with regard to products, production and packaging since its foundation. However, Lindt represents an example that is not in line with the aforementioned market trends for open innovation. The firm, indeed, has adopted a closed approach – contrary to the open innovation practices that most large companies and great part of the literature suggest – thus limiting the opening of its innovation process.

The firm is one of the few chocolate manufacturers worldwide that controls the entire chocolate supply chain, and innovation plays an essential role in every part of the production process – i.e. from raw materials to finished product. Lindt is aware that people and their competences are the critical success factor to maintain its strategy, transferring knowledge and expertise from one generation to another since 1845. Moreover, the group encourages their employees to actively contribute to innovation for a common benefit, coordinating up to eight R&D units in all the countries where a production plant is established. More concretely, the possible innovations Lindt works on are the following aspects:

- *Recipe*: driven by market reactions on current products and the need to vary.
- *Product*: new use of the product and target, trying to enhance desires and emotions.
- *Packaging*: the aim is to effectively communicate the company vision.

- *Machines*: changes in production machinery to respond to new products and concepts.

Those independent R&D units have the orders to be “as closed as possible, open only when the internal competencies and technologies are not able to support the development of a new (approved) product concept” (Dr. Patrizia Pirotta, head of the Italian R&D unit). Lindt considers to have unique know-how, inherited through more than 175 years of experience, and excellent competencies that make the open innovation approach unnecessary and even too risky for its interests. Moreover, in case Lindt needs to partially open its innovation process – whether it is in recipes, product, packaging or machines – all interactions and collaborations are guided to avoid uncontrolled flow of information (Manzini et al. 2017).

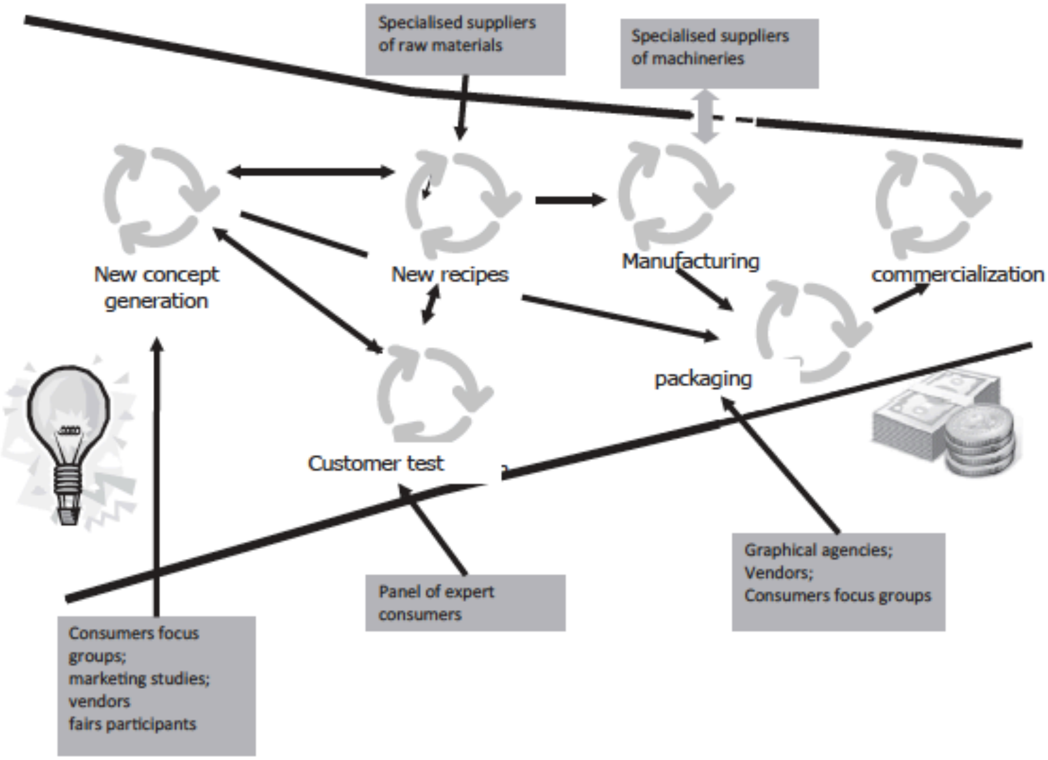

Specialised suppliers of raw materials
Specialised suppliers of machineries
New concept generation
New recipes
Manufacturing
commercialization
packaging
Customer test
Panel of expert consumers
Graphical agencies;
Vendors;
Consumers focus groups
Consumers focus groups;
marketing studies;
vendors
fairs participants

FIGURE 10. LINDT'S INNOVATION FUNNEL

Figure 10 above illustrates Lindt’s innovation approach. As suggested by Figure 10, the funnel is only really open in the first stage of the chocolate supply chain – i.e. the manufacturing phase – where internal people work closer with suppliers. Hence, the strategy is clear: be as closed as possible, dealing with external interactions only when internal competences are not strong enough to support the innovation process. Such low degree of openness seems to be working as an innovation strategy for Lindt, although recent trends in the market show contrary. This can also be explained by Lindt's rigid IP protectionist mechanisms such as trade secrets and NDAs (as opposed to flexible IP management in PepsiCo or new agreements to facilitate collaborations in Nestlé and P&G) and the fact that tradition remains a competitive strategy for Lindt, thus adopting less aggressive innovative approaches than the rest of the companies in the F&D industry (Dodgson et al., 2006; Traitler and Saguy, 2009). As a result, Lindt has no pressure to be pushed towards an open innovation strategy for the moment, showing that an unfashionable competitive strategy that limits open innovation can still work.

3.1.4. SWOT ANALYSIS

The analysis of Lindt's internal strengths and weaknesses, as well as the external opportunities and threats, is key to understand the strategic position of the Swiss chocolate group. This technique is laid below (MarketLine Lindt report and 2018 Annual Report):

Strengths

- *Diversified brand*: Well-diversified brand portfolio that enhances its brand value and top-line performance
- *Innovation*: Characterized by its creativity and innovative approaches that comprise unique designs, packaging and tastes
- *Global operations*: strong distribution network that enables the firm to gain operational synergies and serves its clients in an efficient manner
- *Global presence*: wide geographical reach (c.47% in Europe, c.40% NAFTA and c.13% all other countries) that limits risks associated to particular regions
- *Long established firm*: the company has an experience of 175 years in the chocolate manufacturing sector
- *Liquidity position*: higher liquidity – that strengthened in FY17 and FY18 – could put Lindt in an advantage position to gain any potential acquisition opportunities that might arise in the incoming years

Weaknesses

- *Reduction in NAFTA segment revenue*: steep decline in Lindt's premier markets in the USA. This could result in a reduction of investors' confidence in detriment of future expansion plans.

- *Debt*: High debt remains a concern for the Swiss company with CHF998.7 millions (as compared to CHF998.2 million and CHF748.9 million in FY17 and FY16, respectively). The increase in bonds and loans in the last two years could affect profitability given that the firm will incur higher future interest expenses.
- *Pricing*: there is a popular perception that Lindt is an expensive brand restricted to a premium target exclusively.

Opportunities

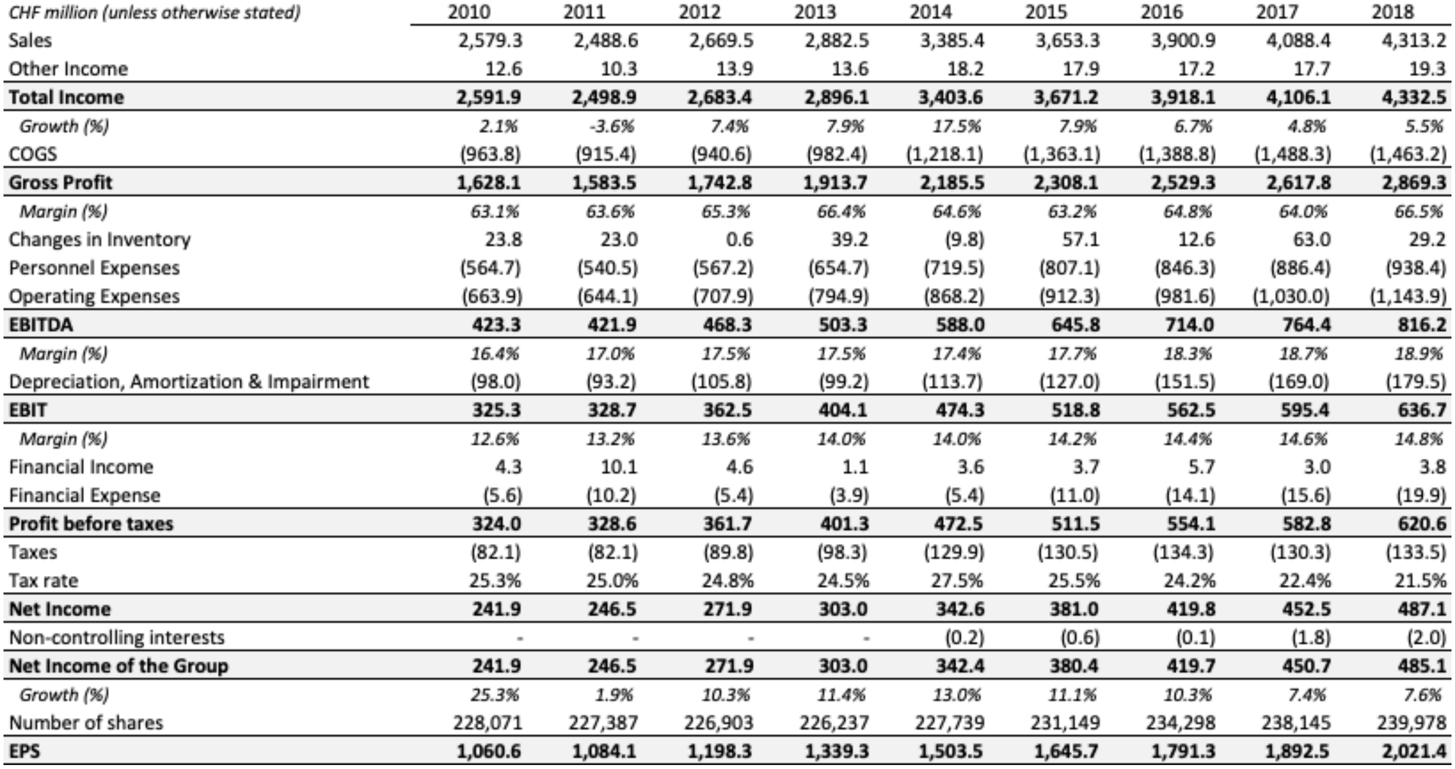
- *Growth initiatives across geography*: Lindt is entering several strategic growth initiatives to continue its sustainable growth trend, including production capacity expansion, new product launches and new markets opportunities such as Mexico, Central Eastern Europe and Asia – especially India, where chocolate is a fast-growing sector.
- *Global confectionary industry positive trends*: an expected growth of 4.4% CAGR from 2017 to 2022 in this sector could enhance Lindt's new business opportunities. Such growth potential is driven by an increasing urbanization, hectic lifestyles and rising disposable income in general terms.
- *Expansion initiatives*: plant expansion to strengthen operations, production capacity and increase returns. Additionally, the firm can develop less expensive products to expand the target base customers.
- *Digitalization*: increase availability of their products and introduce customized chocolate purchases.

Threats

- *Volatile raw material prices*: Lindt's products are manufactured with raw materials such as cocoa beans, vanilla, hazelnuts, among others, which are subject to strong price fluctuations. Depending on climatic, seasonal and market conditions, demand and supply will exert an impact on such prices and, as a result, on the costs and the financial performance of the firm.
- *Foreign exchange risks*: Lindt is exposed to volatility of the Swiss Franc against any other currency where the firm has operations and/or business. This threat can be mitigated by hedging its foreign exchange exposure through forward contracts.
- *Competition*: the chocolate industry is a highly fragmented and aggressive industry. Lindt's market share and bargaining power can not only be jeopardized by resourceful and good financial performant companies such as Mondelez, Nestle and Mars, but also by private label manufacturers and smaller high premium quality brands.
- *Health-conscious trends*: negative perceptions on sugar-related products and the fight against obesity can cause all-time low demand on such products.

3.1.5. FINANCIAL STATEMENTS ANALYSIS

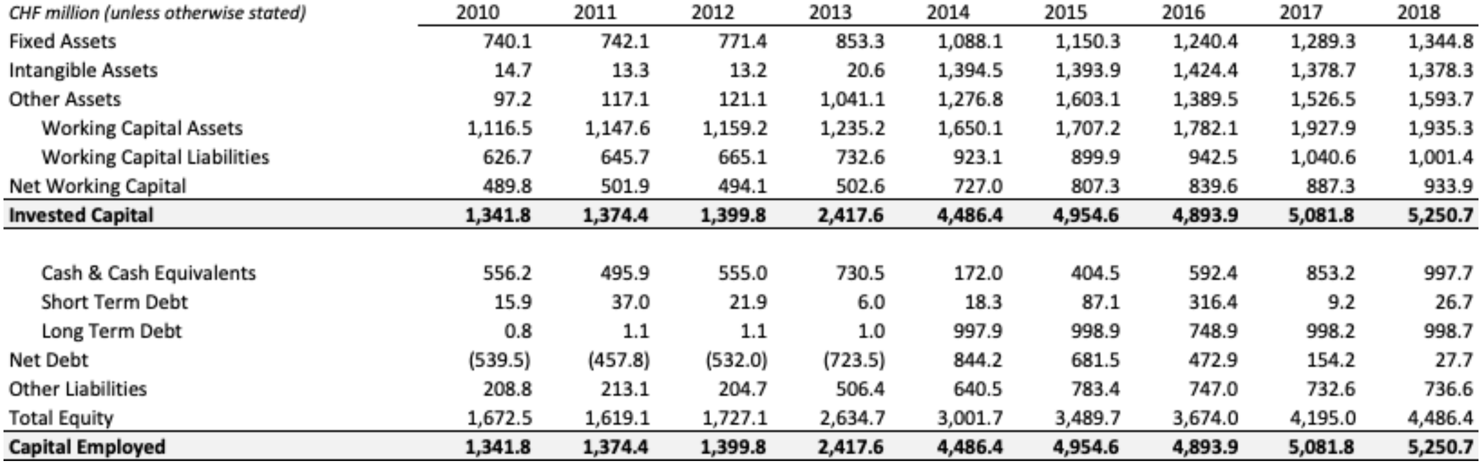
Consolidated Income Statement (Annual Reports)



CHF million (unless otherwise stated)	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sales	2,579.3	2,488.6	2,669.5	2,882.5	3,385.4	3,653.3	3,900.9	4,088.4	4,313.2
Other Income	12.6	10.3	13.9	13.6	18.2	17.9	17.2	17.7	19.3
Total Income	**2,591.9**	**2,498.9**	**2,683.4**	**2,896.1**	**3,403.6**	**3,671.2**	**3,918.1**	**4,106.1**	**4,332.5**
Growth (%)	*2.1%*	*-3.6%*	*7.4%*	*7.9%*	*17.5%*	*7.9%*	*6.7%*	*4.8%*	*5.5%*
COGS	(963.8)	(915.4)	(940.6)	(982.4)	(1,218.1)	(1,363.1)	(1,388.8)	(1,488.3)	(1,463.2)
Gross Profit	**1,628.1**	**1,583.5**	**1,742.8**	**1,913.7**	**2,185.5**	**2,308.1**	**2,529.3**	**2,617.8**	**2,869.3**
Margin (%)	*63.1%*	*63.6%*	*65.3%*	*66.4%*	*64.6%*	*63.2%*	*64.8%*	*64.0%*	*66.5%*
Changes in Inventory	23.8	23.0	0.6	39.2	(9.8)	57.1	12.6	63.0	29.2
Personnel Expenses	(564.7)	(540.5)	(567.2)	(654.7)	(719.5)	(807.1)	(846.3)	(886.4)	(938.4)
Operating Expenses	(663.9)	(644.1)	(707.9)	(794.9)	(868.2)	(912.3)	(981.6)	(1,030.0)	(1,143.9)
EBITDA	**423.3**	**421.9**	**468.3**	**503.3**	**588.0**	**645.8**	**714.0**	**764.4**	**816.2**
Margin (%)	*16.4%*	*17.0%*	*17.5%*	*17.5%*	*17.4%*	*17.7%*	*18.3%*	*18.7%*	*18.9%*
Depreciation, Amortization & Impairment	(98.0)	(93.2)	(105.8)	(99.2)	(113.7)	(127.0)	(151.5)	(169.0)	(179.5)
EBIT	**325.3**	**328.7**	**362.5**	**404.1**	**474.3**	**518.8**	**562.5**	**595.4**	**636.7**
Margin (%)	*12.6%*	*13.2%*	*13.6%*	*14.0%*	*14.0%*	*14.2%*	*14.4%*	*14.6%*	*14.8%*
Financial Income	4.3	10.1	4.6	1.1	3.6	3.7	5.7	3.0	3.8
Financial Expense	(5.6)	(10.2)	(5.4)	(3.9)	(5.4)	(11.0)	(14.1)	(15.6)	(19.9)
Profit before taxes	**324.0**	**328.6**	**361.7**	**401.3**	**472.5**	**511.5**	**554.1**	**582.8**	**620.6**
Taxes	(82.1)	(82.1)	(89.8)	(98.3)	(129.9)	(130.5)	(134.3)	(130.3)	(133.5)
Tax rate	25.3%	25.0%	24.8%	24.5%	27.5%	25.5%	24.2%	22.4%	21.5%
Net Income	**241.9**	**246.5**	**271.9**	**303.0**	**342.6**	**381.0**	**419.8**	**452.5**	**487.1**
Non-controlling interests	-	-	-	-	(0.2)	(0.6)	(0.1)	(1.8)	(2.0)
Net Income of the Group	**241.9**	**246.5**	**271.9**	**303.0**	**342.4**	**380.4**	**419.7**	**450.7**	**485.1**
Growth (%)	*25.3%*	*1.9%*	*10.3%*	*11.4%*	*13.0%*	*11.1%*	*10.3%*	*7.4%*	*7.6%*
Number of shares	228,071	227,387	226,903	226,237	227,739	231,149	234,298	238,145	239,978
EPS	**1,060.6**	**1,084.1**	**1,198.3**	**1,339.3**	**1,503.5**	**1,645.7**	**1,791.3**	**1,892.5**	**2,021.4**

TABLE 14. LINDT & SPRÜNGLI CONSOLIDATED INCOME STATEMENT

Consolidated Balance Statement – Economic View (Annual Reports and own calculations)



CHF million (unless otherwise stated)	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fixed Assets	740.1	742.1	771.4	853.3	1,088.1	1,150.3	1,240.4	1,289.3	1,344.8
Intangible Assets	14.7	13.3	13.2	20.6	1,394.5	1,393.9	1,424.4	1,378.7	1,378.3
Other Assets	97.2	117.1	121.1	1,041.1	1,276.8	1,603.1	1,389.5	1,526.5	1,593.7
Working Capital Assets	1,116.5	1,147.6	1,159.2	1,235.2	1,650.1	1,707.2	1,782.1	1,927.9	1,935.3
Working Capital Liabilities	626.7	645.7	665.1	732.6	923.1	899.9	942.5	1,040.6	1,001.4
Net Working Capital	489.8	501.9	494.1	502.6	727.0	807.3	839.6	887.3	933.9
Invested Capital	**1,341.8**	**1,374.4**	**1,399.8**	**2,417.6**	**4,486.4**	**4,954.6**	**4,893.9**	**5,081.8**	**5,250.7**
Cash & Cash Equivalents	556.2	495.9	555.0	730.5	172.0	404.5	592.4	853.2	997.7
Short Term Debt	15.9	37.0	21.9	6.0	18.3	87.1	316.4	9.2	26.7
Long Term Debt	0.8	1.1	1.1	1.0	997.9	998.9	748.9	998.2	998.7
Net Debt	(539.5)	(457.8)	(532.0)	(723.5)	844.2	681.5	472.9	154.2	27.7
Other Liabilities	208.8	213.1	204.7	506.4	640.5	783.4	747.0	732.6	736.6
Total Equity	1,672.5	1,619.1	1,727.1	2,634.7	3,001.7	3,489.7	3,674.0	4,195.0	4,486.4
Capital Employed	**1,341.8**	**1,374.4**	**1,399.8**	**2,417.6**	**4,486.4**	**4,954.6**	**4,893.9**	**5,081.8**	**5,250.7**

TABLE 15. LINDT & SPRÜNGLI CONSOLIDATED BALANCE SHEET - ECONOMIC VIEW

Lindt has managed to keep a progressive and constant year-to-year revenue growth in the 5%-8% range since 2011, when they last recorded a sales decrease – except for the significant increase of 17.5% in 2014 fueled by the decision to buy Russell Stover & Whitman back and the geographical expansion to North America. Moreover, the investments made by the Group have enhanced operational improvements, causing lower increases in COGS (even a decrease of 1.7% in 2018) and, consequently, an improvement in Gross Margin from 63% in 2010 to 66.5% in 2018. Those operational improvements, along with the constant monitoring of personnel and other operating expenses, have caused an increase in EBITDA margins from 16.4% in 2010 to 18.9% in 2018. However, it is important to note that solid income growth generated by Lindt in the last two years is lower than growth posted in 2015 and 2016 (7.9% and 6.7%, respectively), not fulfilling management expectations due to a challenging environment with saturated chocolate markets in Europe and an increasing price competition among USA competitors. As a result, the firm is focusing on other markets such as Japan, South Africa, Brazil and China, achieving double digit growth with growth potential for the future (Madison Darbyshire, The Financial Times Limited 2019). Similarly, the net profit of the Group has continued increasing but at slower rate (7.6% in 2018 compared to 11.4% and 13% in 2013 and 2014, respectively). Finally, Lindt has managed to almost double its earnings per share since 2010.

Debt has been significantly increasing in the last years from c.CHF16 millions in 2010 to c.CHF1,025 millions in 2018, which could bring profitability issues with higher interest expenses. Nevertheless, Lindt has a fairly small debt-to-equity ratio – with a maximum of 0.34x in the last 10 years – which suggests that the firm has not been aggressively financing its growth only with debt. In addition, the interest coverage ratio of c.32x (the lowest one since 2008) suggest that interest is amply covered. Hence, Lindt does not seem to have too much debt commitment. On top of this, its debt is also covered by operating cash, as the company has managed to generate c.CHF1,000 millions of cash in 2018, which can be interpreted as a measure of efficiency. It is also important to note that the Group has had a ROE between 11.5% and 10.7% in the last 5 years, in line with the c.11% of the F&D industry. The decrease from the 15%-16% levels before 2014 are due to the decrease of asset turnover, as profits did not increase as much as total assets (especially intangible asset with the goodwill paid to buy Russell Stover & Whitman back). The other factors influencing

Lindt's ROE as per Dupont formula are profitability, which has progressively been increasing, and financial leverage, fairly stable as the firm has not taken on excessive debt to boost its returns. Thus, Lindt could have room to grow its ROE in the future. However, the market trends aforementioned that could negatively affect profit margins, raw material prices increase and the significant premium at which Lindt is trading (c.37x share to earnings or P/E ratio) could be seen as negative future signs for the company's growth (Broker Report Credit Suisse 2017 and Annual Reports from 2010 to 2018) – please see Tables 50 and 51 in the Appendix for reference.

3.1.6. BRANDING

Lindt & Sprüngli brand is mainly built in the following factors:

- *Differentiation*: Lindt's strategy relies on value proposition, as the firm manufactures and sells the best-in-class premium Swiss chocolate, with high quality and at a higher cost. Hence, it is targeted to clients with a higher willingness to pay in order to experience the smooth melting texture contained within attractive packaging.
- *Innovation*: as a consumer-driven company, Lindt is well-known for being creative and constantly enhancing their recipe, products, production processes and packaging to meet the requirements of their clients.
- *Control*: despite being an innovative firm, Lindt is one of the few chocolate manufacturers to control the production chain to ensure the premium quality promised to their customers. Moreover, the company follows a low open innovation approach to avoid competitors to benefit from their findings and successes.
- *Tradition*: Lindt has the power of 175 years of experience and the Swiss tradition as a key brand value. Despite introducing product diversity and innovations, the company is consistent with its past and traditions.

3.2. COMPARABLE NON-BRANDED COMPANIES

3.2.1. NATRA

Natra is a Spanish multinational company responsible for the manufacturing and delivery of chocolate and cocoa solutions. The firm is considered as one of the leading companies in Europe specializing in chocolate products for the private label brand, leading retailers and branded manufacturers. Additionally, it is committed to expand its focus beyond the local market, especially in North America and China, which will increase its international presence. In order to serve its clients worldwide, the company has six specialized production centers in Spain, Belgium, France and Canada, and commercial presence in Europe, North America and Asia.

Natra was founded in 1943 in Valencia (Spain) when three young chemists invented a procedure for extracting theobromine, an alkaloid very similar to caffeine only found in the cocoa bean. Since the early beginning, the company has focused on high quality standards, both in a performance and product standpoints. Moreover, it also relies on constant innovation to create new solutions that will enable the firm to transform the organization, the market and the society.

Creativity and entrepreneurship being main core values for the Spanish company, Natra founded Natraceutical in 2002, which is specialized in the commercialization of natural nutritional supplements in Europe. Despite its obvious focus in the chocolate industry, Natra tried to find a place in the niche market of active elements for the food, pharmaceutical and cosmetics industry. However, the company's board of directors agreed for a significant divestment to redirect the business strategy towards the chocolate market, although it still has a controlling stake in the Spanish multinational Reig Jofre – former Natraceutical before its merger with a Spanish pharmaceutical laboratory company.

Since 1978, Natra has been trading on the Valencia outcry market and they started to trade on the Madrid stock exchange in 1991. However, it was not until 2004 when the Spanish firm started to experience significant growth – as shown in Figure 11 below. First, the acquisition of Zahor in 2004, which specialized in slabs and chocolates with presence in Spain and France, boost sales from c.€94m to c.€241m (i.e. c.156% YoY growth). Second, the acquisition fo Chocolaterie Jacali in 2005, which specialized in chocolates and gifting in Belgium, representing an increase of c.21% of turnover. Finally, Natra bought All Crump in 2007 (increasing its presence in Belgium) and new sales offices and factories opened in China, USA and Canada to expand into new markets and boost its international presence. As a result, the firm experienced an impressive growth of CAGR 34.2% between 2002 and 2008, mainly driven by its intense M&A and build-up activity, before the worldwide financial crisis hit in 2008. Once recovered from the negative impact of such event, Natra has been progressively growing at a slow pace until today. However, the company started a transformation plan in 2016-17 to become a customer-centric company, with a new organization management team, with the aim to continue its fast-growth trend from previous years (Natra's Annual Reports from 2003 to 2018) – please see Tables 52, 53, 54 and 55 in the Appendix for more financial analysis on Natra.

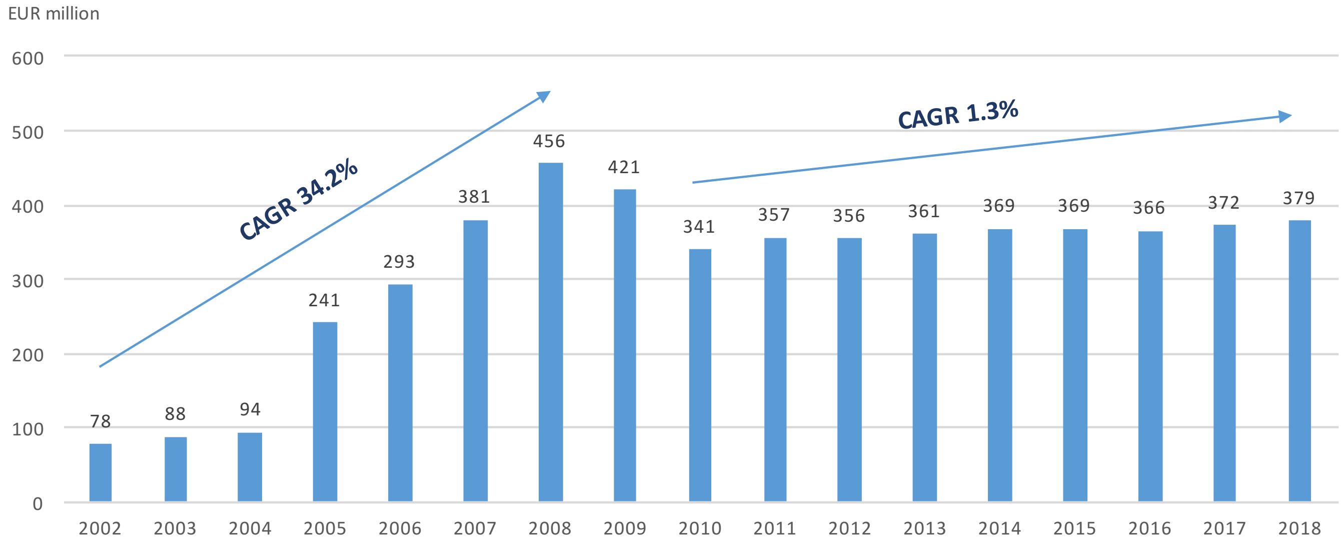


FIGURE 11. NATRA SALES EVOLUTION

To sum up, Natra can be considered as the unbranded comparable of Lindt & Sprüngli for the characteristics laid below:

1. Same industry – chocolate market
2. Same type of products – high quality chocolate products targeting premium clients

3. Listed in the stock exchange – Lindt in the Swiss Exchange and Natra in the Spanish Exchange
4. International expansion, growth and worldwide presence for both companies
5. Innovation and creativity as key value to enhance production, product, organization and recipe
6. Lindt is well-known and recognized, while Natra sells its products for private labeling

3.3. BRAND VALUATION

3.3.1. JUSTIFICATION OF THE CHOICE

Our thesis being based on publically available information and market indicators, the main criteria to decide the company to which we would assess its brand value was a function of the disclosed information. We needed such company to release historical financial information, business strategic moves and market data in order to perform the different valuation techniques studied with the minimum of arbitrary assumptions. The objective is to diminish as much as possible the objectivity of every brand valuation methodology.

A second essential factor when considering which company to choose was its general brand awareness. We preferred a well-known, reputedly company for which its brand value was somehow intuitive for the lector. The difference between our selected company's products and a non-branded firm from the same industry should have a significant difference in terms of prices, thus allowing to a relevant difference for premium brand-related factors.

To sum up, adding other important criteria, the factors that influenced our choice are the following:

- Brand owned by a listed company to have public available information, access to annual reports, share price, broker notes and other relevant information for the case study analysis
- Only brand owned by the company (or few brand recently acquired) to avoid having issued when isolating financial figures and brand awareness from one brand to another
- The company should be part of an active industry with recent acquisitions and mergers and industry information
- The brand should be part of a sector in which brand, image and reputations plays a significant role for consumer buying decision-making

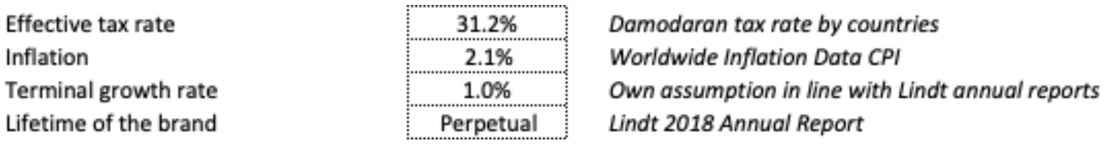
Hence, as chocolate lovers, we decided to select Lindt & Sprüngli to compute its fair brand value. We believed it was a suitable candidate that accomplished with all the aforementioned factors.

3.3.2. VALUATION COMMON ASSUMPTIONS

This section is aiming at introducing the major financial assumptions made for valuation purposes that are common in all the methodologies applied. Hypotheses such as discount factor, tax rate, inflation, perpetual growth and other important factors.

3.3.2.1. TAX RATE, INFLATION AND OTHER COMMON HYPOTHESES

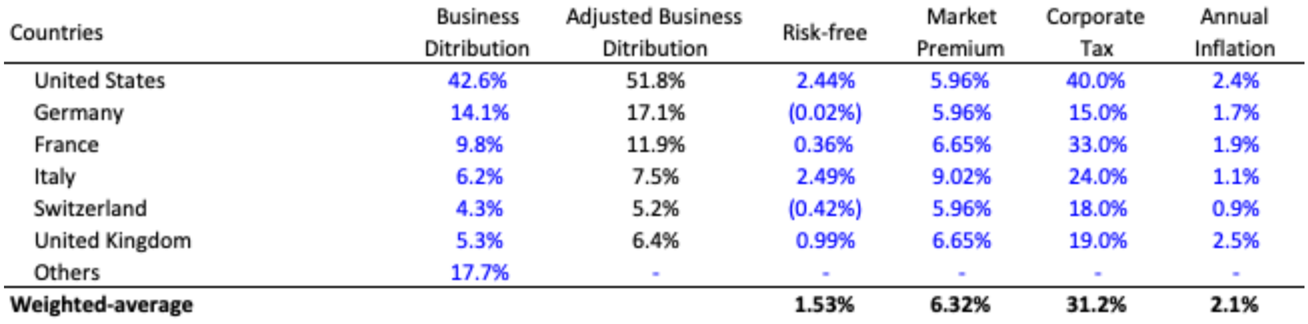
The main assumptions (except for discount factor, explained in next subsection) are laid below in Figure X:



Effective tax rate	31.2%	*Damodaran tax rate by countries*
Inflation	2.1%	*Worldwide Inflation Data CPI*
Terminal growth rate	1.0%	*Own assumption in line with Lindt annual reports*
Lifetime of the brand	Perpetual	*Lindt 2018 Annual Report*

FIGURE 12. HYPOTHESES COMMON TO ALL METHODOLOGIES

Effective tax rate was computed as a weighted average of Lindt's sales distribution and the tax rate of the countries if which the firm has made such sales. Hence, we have assumed that this distribution will be constant throughout the incoming years, as well as the country tax rate in 2018. The computations are shown in Table 16 below, with the results yielded for risk-free, market-premium and inflation, where we have followed the same approach.



Countries	Business Ditribution	Adjusted Business Ditribution	Risk-free	Market Premium	Corporate Tax	Annual Inflation
United States	42.6%	51.8%	2.44%	5.96%	40.0%	2.4%
Germany	14.1%	17.1%	(0.02%)	5.96%	15.0%	1.7%
France	9.8%	11.9%	0.36%	6.65%	33.0%	1.9%
Italy	6.2%	7.5%	2.49%	9.02%	24.0%	1.1%
Switzerland	4.3%	5.2%	(0.42%)	5.96%	18.0%	0.9%
United Kingdom	5.3%	6.4%	0.99%	6.65%	19.0%	2.5%
Others	17.7%	-	-	-	-	-
Weighted-average			**1.53%**	**6.32%**	**31.2%**	**2.1%**

TABLE 16. WEIGHTED-AVERAGE OF MARKET INDICATORS AND LINDT'S SALES DISTRIBUTION

The perpetual or terminal growth rate is the hypothesis took according to Lindt annual report in its impairment tests for brands and in line with the industry perpetual growth sales trends. To simplify, we have assumed a 1% terminal growth rate.

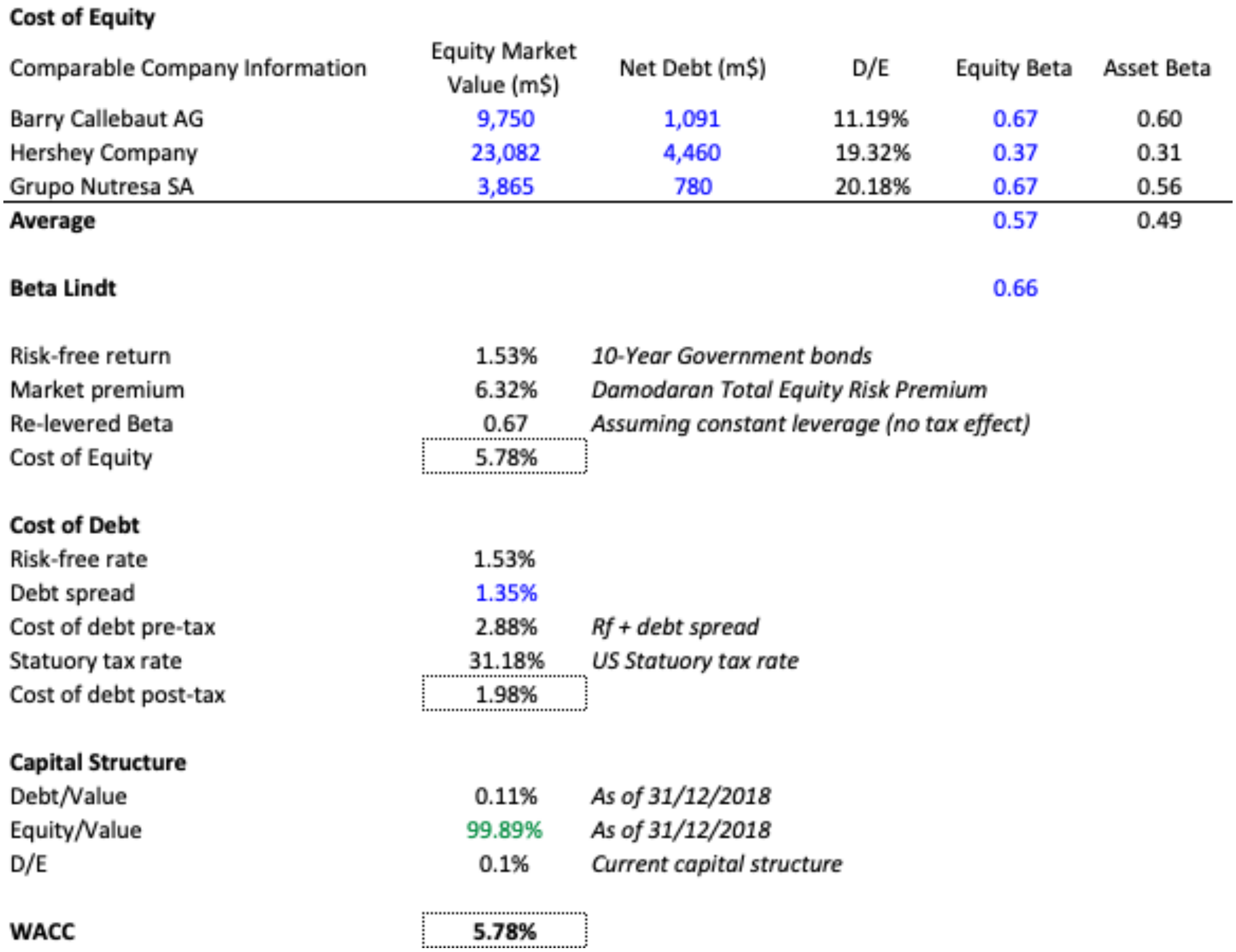
Finally, the brand lifetime was difficult to assess given that Lindt's brand exists since the company creation 175 years ago, and the firm is expected to survive much more years driven by its financial health, its business strategy and market positioning. Hence, we have assumed a perpetual lifetime to simplify our valuations.

3.3.2.2. DISCOUNT FACTOR COMPUTATION

Lindt's brand discount factor has been assessed by estimating the firm's WACC, using the assumptions laid below:

- **Risk-free rate**: weighted average of Lindt's sales distribution and the 10-year government bond rate for each country – assuming it is risk-free rate – extracted from Bloomberg. Hence, the risk of every country in which the company has exposure will be taking into consideration both through the risk-free rate and equity risk premium.
- **Equity-risk premium**: using Damodaran estimates, we have followed the same approach by calculating the weighted average of Lindt's sales distribution and the equity-risk premium yielded for every country where Lindt has exposure to (as shown in Table 17 above).
- **Beta**: extracted from Reuters.
- **Cost of debt**: risk-free rate adding a debt spread that we assumed to be 1.35% (following the industry and sector trends and benchmarks), in line with the cost of debt stated in Lindt's annual report.

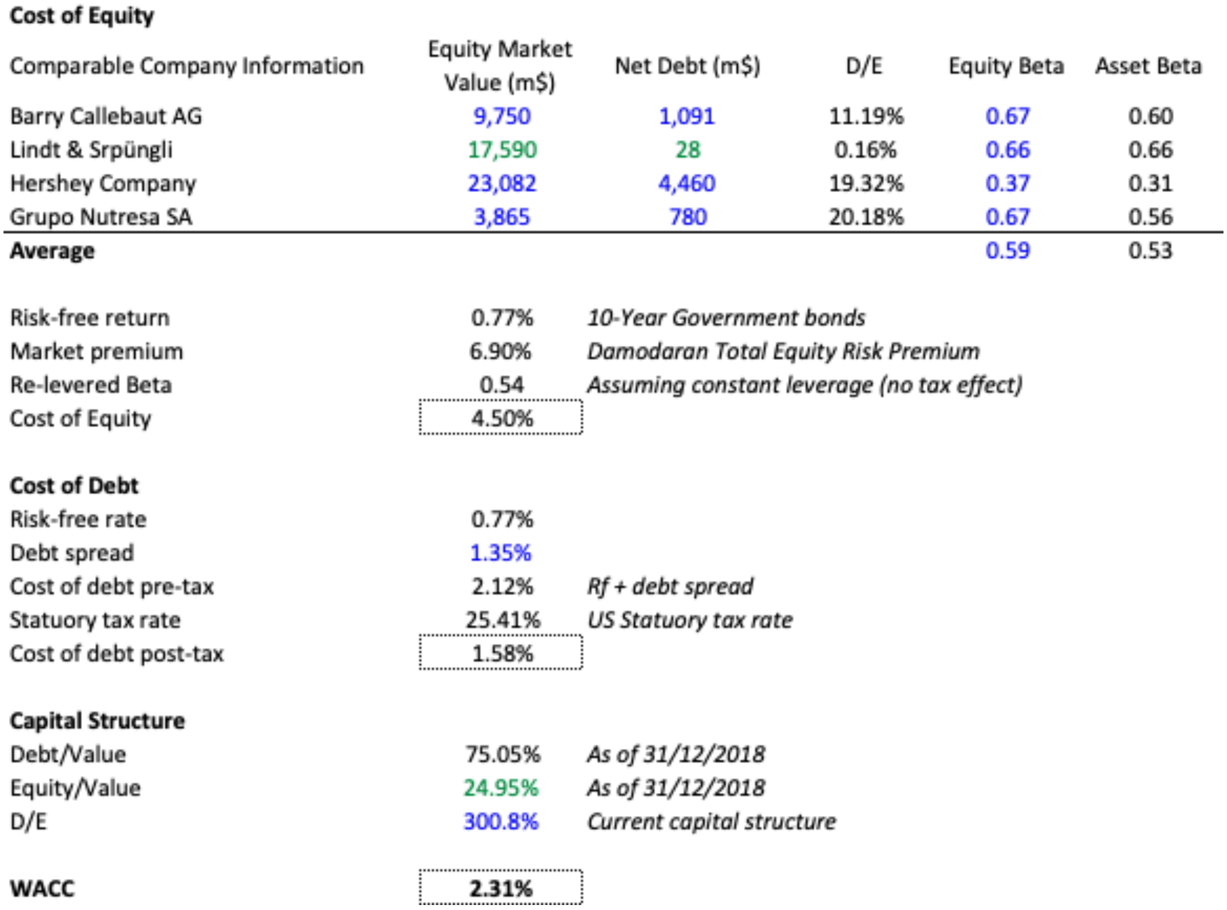
Having almost null net debt, it could be assumed it has a null gearing ratio. The final result is presented in Table 17 below. However, it is important to note that the discount factor used in all the brand valuation approaches studied is the cost of equity – which is, in this case, the same as the WACC (Schauten 2008).



Cost of Equity					
Comparable Company Information	Equity Market Value (m$)	Net Debt (m$)	D/E	Equity Beta	Asset Beta
Barry Callebaut AG	9,750	1,091	11.19%	0.67	0.60
Hershey Company	23,082	4,460	19.32%	0.37	0.31
Grupo Nutresa SA	3,865	780	20.18%	0.67	0.56
Average				0.57	0.49
Beta Lindt				0.66	
Risk-free return	1.53%	*10-Year Government bonds*			
Market premium	6.32%	*Damodaran Total Equity Risk Premium*			
Re-levered Beta	0.67	*Assuming constant leverage (no tax effect)*			
Cost of Equity	5.78%				
Cost of Debt					
Risk-free rate	1.53%				
Debt spread	1.35%				
Cost of debt pre-tax	2.88%	*Rf + debt spread*			
Statuory tax rate	31.18%	*US Statuory tax rate*			
Cost of debt post-tax	1.98%				
Capital Structure					
Debt/Value	0.11%	*As of 31/12/2018*			
Equity/Value	99.89%	*As of 31/12/2018*			
D/E	0.1%	*Current capital structure*			
WACC	**5.78%**				

TABLE 17. WACC CALCULATION FOR LINDT

Finally, there are some brand valuation methodologies that require the choice of a non-branded company selling similar products. Those techniques – mainly price-to-sales ratio, interbrand, price premium and margin comparison – require the computation of Natra's discount factor. Being a listed-company, despite its non-brand product nature, we could estimate the WACC based on available financial information from annual reports and market research. We have followed the same approach described above for Lindt's WACC calculations, calculating its Beta as an average of its peers' unlevered beta, and then re-levered using Natra's capital structure. Such peers are Barry Callebaut AG, Hershey Company, Grupo Nutresa SA and Lindt & Sprüngli due to similarity on mix product, business strategy, geographical exposure and growth trends. Such calculations are shown in Table 18 below:



Cost of Equity

Comparable Company Information	Equity Market Value (m$)	Net Debt (m$)	D/E	Equity Beta	Asset Beta
Barry Callebaut AG	9,750	1,091	11.19%	0.67	0.60
Lindt & Srpüngli	17,590	28	0.16%	0.66	0.66
Hershey Company	23,082	4,460	19.32%	0.37	0.31
Grupo Nutresa SA	3,865	780	20.18%	0.67	0.56
Average				0.59	0.53

Risk-free return	0.77%	*10-Year Government bonds*
Market premium	6.90%	*Damodaran Total Equity Risk Premium*
Re-levered Beta	0.54	*Assuming constant leverage (no tax effect)*
Cost of Equity	4.50%	
Cost of Debt		
Risk-free rate	0.77%	
Debt spread	1.35%	
Cost of debt pre-tax	2.12%	*Rf + debt spread*
Statuory tax rate	25.41%	*US Statuory tax rate*
Cost of debt post-tax	1.58%	
Capital Structure		
Debt/Value	75.05%	*As of 31/12/2018*
Equity/Value	24.95%	*As of 31/12/2018*
D/E	300.8%	*Current capital structure*
WACC	**2.31%**	

TABLE 18. WACC CALCULATION FOR NATRA

3.3.3. COST-BASED APPROACHES

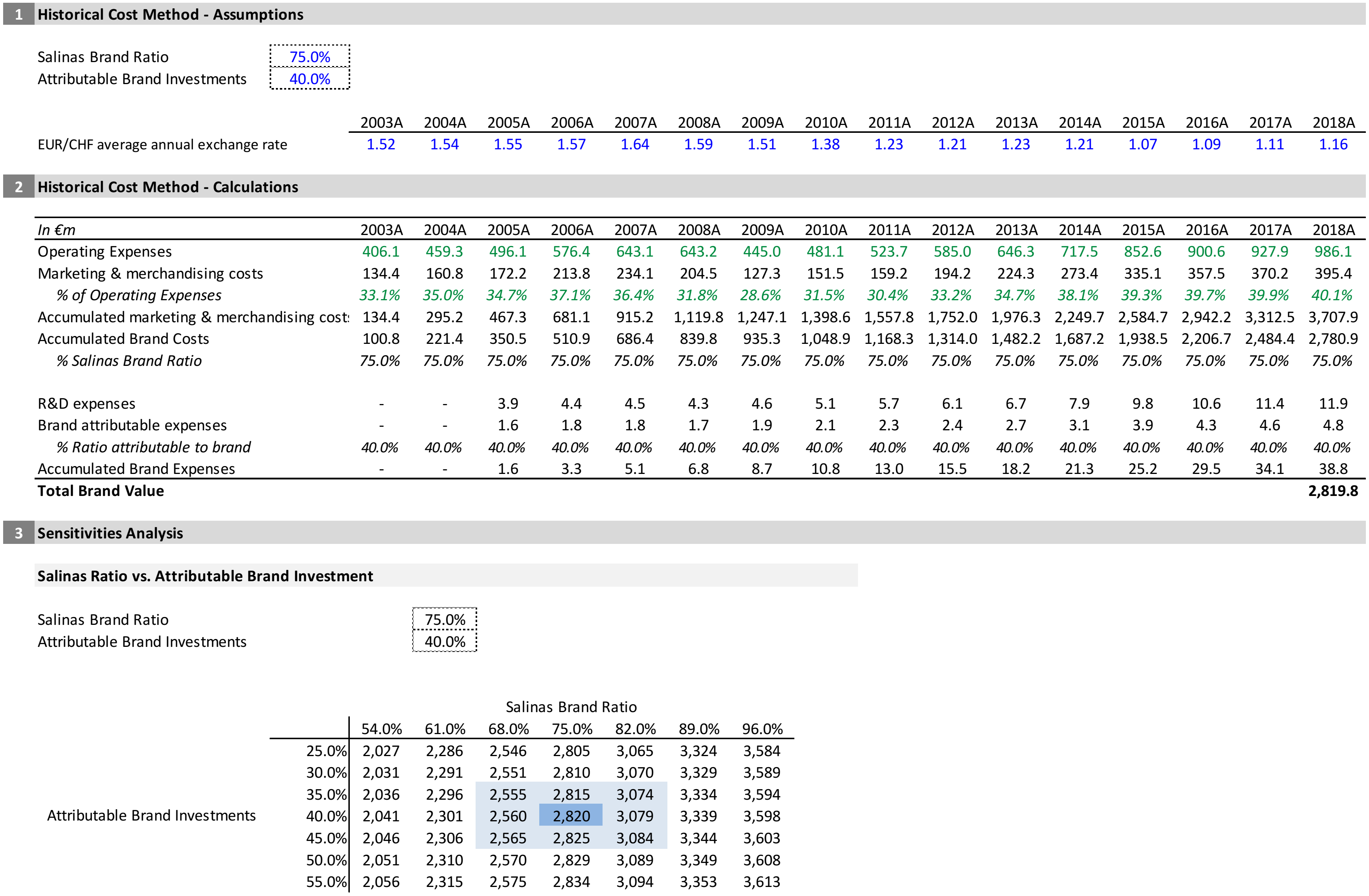
3.3.3.1. HISTORICAL COST OF CREATION METHOD

Historical cost of creation method relies on the accountability of all costs and expenses made by the firm attributable to the brand. As a result, it presents two main complications that could underestimate the final brand value – reason why it can be considered as a floor valuation value. First, there is a lack of data available that prevents us from considering all the historical accumulated and capitalized costs that should be considered as investments generating value for Lindt's brand. We have valued it with data from 2003 to 2018, as shown in the next page, gathering all the public financial information, assuming it could be a good proxy. Second, it is unknown how much of the investments made – mainly marketing, advertising and R&D expenses – are directly influencing the brand value. Hence, we have made some assumptions to determine such investment brand ratio.

Although this method does not rely in many assumptions, as it is based on capitalizing past costs incurred to create the brand, we needed a ratio to estimate the amount of investments and other costs that is attributable to the brand. Salinas (2009) recommends applying a ratio between 75% and 95% to marketing and brand-related expenses to identify the portion of brand costs. As such, we have decided using a ratio of 75%. Furthermore, we have used an arbitrary ratio of 40% to establish the brand-related portion of R&D expense.

Table 19 below presents the results of this method, which we have sensitized based on Salinas brand ratio and the brand-related portion of R&D expense. As previously mentioned, this method provides a floor for valuation. In the case of Lindt, it yields a total brand value of **€2,820m**. We can see that Salinas brand ratio is more sensible, probably due to the higher amount of advertising and brand-related expenses.

The impossibility to consider all historical costs, investments, acquisitions and any other brand-related cost, along with the difficulty that relies on determining the amount attributable to the brand value, force us to make assumptions that brings the method more subjective, hence less accurate. Therefore, we need to contrast with other brand valuation methodologies to estimate a final brand value for Lindt.



1 Historical Cost Method - Assumptions

Salinas Brand Ratio	75.0%
Attributable Brand Investments	40.0%

	2003A	2004A	2005A	2006A	2007A	2008A	2009A	2010A	2011A	2012A	2013A	2014A	2015A	2016A	2017A	2018A
EUR/CHF average annual exchange rate	1.52	1.54	1.55	1.57	1.64	1.59	1.51	1.38	1.23	1.21	1.23	1.21	1.07	1.09	1.11	1.16

2 Historical Cost Method - Calculations

In €m	2003A	2004A	2005A	2006A	2007A	2008A	2009A	2010A	2011A	2012A	2013A	2014A	2015A	2016A	2017A	2018A
Operating Expenses	406.1	459.3	496.1	576.4	643.1	643.2	445.0	481.1	523.7	585.0	646.3	717.5	852.6	900.6	927.9	986.1
Marketing & merchandising costs	134.4	160.8	172.2	213.8	234.1	204.5	127.3	151.5	159.2	194.2	224.3	273.4	335.1	357.5	370.2	395.4
% of Operating Expenses	*33.1%*	*35.0%*	*34.7%*	*37.1%*	*36.4%*	*31.8%*	*28.6%*	*31.5%*	*30.4%*	*33.2%*	*34.7%*	*38.1%*	*39.3%*	*39.7%*	*39.9%*	*40.1%*
Accumulated marketing & merchandising cost:	134.4	295.2	467.3	681.1	915.2	1,119.8	1,247.1	1,398.6	1,557.8	1,752.0	1,976.3	2,249.7	2,584.7	2,942.2	3,312.5	3,707.9
Accumulated Brand Costs	100.8	221.4	350.5	510.9	686.4	839.8	935.3	1,048.9	1,168.3	1,314.0	1,482.2	1,687.2	1,938.5	2,206.7	2,484.4	2,780.9
% Salinas Brand Ratio	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*
R&D expenses	-	-	3.9	4.4	4.5	4.3	4.6	5.1	5.7	6.1	6.7	7.9	9.8	10.6	11.4	11.9
Brand attributable expenses	-	-	1.6	1.8	1.8	1.7	1.9	2.1	2.3	2.4	2.7	3.1	3.9	4.3	4.6	4.8
% Ratio attributable to brand	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*
Accumulated Brand Expenses	-	-	1.6	3.3	5.1	6.8	8.7	10.8	13.0	15.5	18.2	21.3	25.2	29.5	34.1	38.8
Total Brand Value																**2,819.8**

3 Sensitivities Analysis

Salinas Ratio vs. Attributable Brand Investment

Salinas Brand Ratio	75.0%
Attributable Brand Investments	40.0%

		Salinas Brand Ratio						
		54.0%	61.0%	68.0%	75.0%	82.0%	89.0%	96.0%
	25.0%	2,027	2,286	2,546	2,805	3,065	3,324	3,584
	30.0%	2,031	2,291	2,551	2,810	3,070	3,329	3,589
	35.0%	2,036	2,296	2,555	2,815	3,074	3,334	3,594
Attributable Brand Investments	40.0%	2,041	2,301	2,560	2,820	3,079	3,339	3,598
	45.0%	2,046	2,306	2,565	2,825	3,084	3,344	3,603
	50.0%	2,051	2,310	2,570	2,829	3,089	3,349	3,608
	55.0%	2,056	2,315	2,575	2,834	3,094	3,353	3,613

TABLE 19. HISTORICAL COST METHOD - CALCULATIONS & SENSITIVITY ANALYSIS

3.3.3.2. REPLACEMENT COST METHOD

As previously discussed, this method is very similar to the cost of creation method. The main difference, which yields a significant difference in value, is that costs are capitalized at their present value by adjusting for inflation and actualizing at the discount rate. As a result, marketing expenses and R&D costs are at present value and under the appropriate rate of return intangible assets.

We have used the same assumptions as for the previous method (Salinas ratio of 75% and brand-related R&D ratio of 40%). For inflation, we have used the historical annual European average, assuming the company has its main operations and focus in Europe. Lindt, indeed, was predominantly European in the first decade of the century, so for simplicity we have neglected the inflation in other international markets where Lindt currently operates – mainly North America (more than 40% of market in 2018), China (where it has recently begun to expand) and other developing countries.

In the next page we illustrate all the calculations performed to obtain a final brand value of **€4,632m**. The difference in brand valuation with the historical cost method, which is more than 64%, is driven by the significant amount of investments done since 2003, hence the update impact to date is quite relevant.

Again, we have sensitized the method by the Salinas ratio and the brand-related R&D ratio, with very similar results than in the other cost method analyzed: (1) big impact of brand costs coming from marketing and advertising expenses, and, consequently, (2) the Salinas brand ratio has a significant effect in the final result. Such results can be seen in the Table 20 shown below:

1 Replacement Cost Method - Assumptions

Salinas Brand Ratio	75.0%
Attributable brand investments	30.0%
Lindt - Discount Factor	5.8%

	2003A	2004A	2005A	2006A	2007A	2008A	2009A	2010A	2011A	2012A	2013A	2014A	2015A	2016A	2017A	2018A
Inflation (Europe Average)	2.1%	2.2%	2.2%	2.2%	2.2%	3.4%	0.3%	1.6%	2.7%	2.5%	1.4%	0.4%	0.0%	0.2%	1.5%	1.8%
EUR/CHF average annual exchange rate	1.52	1.54	1.55	1.57	1.64	1.59	1.51	1.38	1.23	1.21	1.23	1.21	1.07	1.09	1.11	1.16

2 Replacement Cost Method - Calculations

In €m	2003A	2004A	2005A	2006A	2007A	2008A	2009A	2010A	2011A	2012A	2013A	2014A	2015A	2016A	2017A	2018A
Operating Expenses	406.1	459.3	496.1	576.4	643.1	643.2	445.0	481.1	523.7	585.0	646.3	717.5	852.6	900.6	927.9	986.1
Marketing & merchandising costs	134.4	160.8	172.2	213.8	234.1	204.5	127.3	151.5	159.2	194.2	224.3	273.4	335.1	357.5	370.2	395.4
% of Operating Expenses	*33.1%*	*35.0%*	*34.7%*	*37.1%*	*36.4%*	*31.8%*	*28.6%*	*31.5%*	*30.4%*	*33.2%*	*34.7%*	*38.1%*	*39.3%*	*39.7%*	*39.9%*	*40.1%*
Brand Costs	100.8	120.6	129.1	160.4	175.6	153.4	95.5	113.7	119.4	145.7	168.2	205.0	251.3	268.1	277.7	296.6
% Salinas Brand Ratio	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*	*75.0%*
Accumulated Brand Costs	100.8	221.4	350.5	510.9	686.4	839.8	935.3	1,048.9	1,168.3	1,314.0	1,482.2	1,687.2	1,938.5	2,206.7	2,484.4	2,780.9
R&D expenses	-	-	3.9	4.4	4.5	4.3	4.6	5.1	5.7	6.1	6.7	7.9	9.8	10.6	11.4	11.9
Brand attributable expenses	-	-	1.2	1.3	1.3	1.3	1.4	1.5	1.7	1.8	2.0	2.4	2.9	3.2	3.4	3.6
% Salinas Brand Ratio	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*
Accumulated Brand Expenses	-	-	1.2	2.5	3.8	5.1	6.5	8.1	9.8	11.6	13.6	16.0	18.9	22.1	25.6	29.1
Total Brand Expenses	**100.8**	**120.6**	**130.3**	**161.7**	**176.9**	**154.7**	**96.9**	**115.2**	**121.1**	**147.5**	**170.2**	**207.4**	**254.3**	**271.3**	**281.1**	**300.1**
Inflation	2.1%	2.2%	2.2%	2.2%	2.2%	3.4%	0.3%	1.6%	2.7%	2.5%	1.4%	0.4%	0.0%	0.2%	1.5%	1.8%
Inflation Factor	1.02	1.02	1.02	1.02	1.02	1.03	1.00	1.02	1.03	1.03	1.01	1.00	1.00	1.00	1.02	1.02
Cumulated Inflation Factor	1.302	1.275	1.248	1.221	1.195	1.170	1.132	1.128	1.110	1.081	1.054	1.040	1.036	1.036	1.033	1.018
Brand Expenses (PMV)	**131.3**	**153.8**	**162.6**	**197.5**	**211.4**	**180.9**	**109.6**	**130.0**	**134.4**	**159.4**	**179.5**	**215.8**	**263.4**	**281.0**	**290.4**	**305.4**
Discount factor	2.32	2.20	2.08	1.96	1.86	1.75	1.66	1.57	1.48	1.40	1.32	1.25	1.18	1.12	1.06	1.00
Brand Expenses (Capitalized)	305.0	337.7	337.6	387.6	392.2	317.4	181.7	203.7	199.2	223.4	237.7	270.1	311.8	314.4	307.2	305.4
Brand Value																**4,632.1**

3 Sensitivities Analysis

Salinas Ratio vs. Attributable Brand Investment

Salinas Brand Ratio	75.0%
Attributable brand investments	30.0%

		Salinas Brand Ratio						
		54.0%	61.0%	68.0%	75.0%	82.0%	89.0%	96.0%
	15.0%	3,326	3,754	4,182	4,610	5,039	5,467	5,895
	20.0%	3,333	3,761	4,189	4,618	5,046	5,474	5,902
	25.0%	3,340	3,768	4,197	4,625	5,053	5,481	5,910
Attributable brand investments	30.0%	3,347	3,776	4,204	4,632	5,060	5,489	5,917
	35.0%	3,354	3,783	4,211	4,639	5,068	5,496	5,924
	40.0%	3,362	3,790	4,218	4,647	5,075	5,503	5,931
	45.0%	3,369	3,797	4,226	4,654	5,082	5,510	5,939

TABLE 20. REPLACEMENT COST METHOD - CALCULATIONS & SENSITIVITY ANALYSIS

3.3.3.3. COST TO RECREATE METHOD

We have decided not to implement this method. As previously mentioned, it relies on the knowledge of experts to determine what would be the costs to recreate the brand today. We do not believe it is an interesting exercise, taking into account that it consists on a very similar approach to that of the historical cost of creation and the replacement costs methods.

3.3.4. MARKET-BASED APPROACHES

3.3.4.1. BRAND SALE METHOD

As mentioned in section 2.2.1. Brand sale, this valuation method presents some challenges that make it difficult to come up with a final brand value. Deals exclusively concerning brand acquisitions – or only intangible assets – are uncommon and, if existent, transaction data is kept confidential. Moreover, it is also difficult to find a solid comparable set of precedent transaction from the same industry, similar size of companies and similar geographical exposure.

However, we have managed to bypass those complexities by gathering some recent deals in the Food & Drinks Industry – concretely, sugar, confectionery and baked goods sector – from Merger Markets data source. We have considered its total deal value and estimated the value of the acquired brand as if it was calculated during the transaction process. Accounting standards, indeed, impose to recognize acquired brands at its book fair value at the time of the acquisition. As a result, for the listed companies with acquisition data available, we have been able to identify the brand value in their subsequent annual reports or financial interim notes.

The list of comparable transaction is presented in Table 21 below, where we can find direct competitors from Lindt such as Ferrero, Nestle, Mondelez and even the acquisition of Russell Stover brand by the Swiss chocolate manufacturer. Using the estimated aforementioned brand value, we have computed some relevant ratios (brand-to-sales and brand-to-EBITDA) of the targets in every selected transaction. The average of those ratios has yielded multiples of 0.96x and 6.13x respectively. Then, Lindt's brand value can be easily calculated using 2018 sales multiplied by the brand-to-sales ratio or 2018 EBITDA times the brand-to-EBITDA ratio. We have considered computing the average of the two brand values, which yields a final brand value of **€4,045m** – below other market-based approaches that will be shown in the next sections.

1 Market comparable transactions

Transaction details						Transaction financials					Brand Value			
Completion date	Target	Target Description	Bidder	Bidder Description	Deal Type	Deal Value ($m)	Target Sales ($m)	Target EBITDA	EV/Sales (x)	EV/EBITDA (x)	Estimated Target	Brand/Deal Value (%)	Brand/Sales (x)	Brand/EBITDA (x)
29/01/2019	Blommer Chocolate Company	US-based fully integrated chocolate and cocoa manufacturer	Fuji Oil Holdings Inc.	Listed Japan-based company engaged in the operation of its subsidiaries related in oil and fat, confectionery and baking, soy	100% acquired	750	907	56	0.8x	13.4x	94	12.5%	0.10x	1.68x
07/06/2018	Tate's Bake Shop, Inc.	US-based company that produces baking products and offers hospitality and food services	Mondelēz International, Inc.	Listed US-based manufacturer of chocolate, biscuits, gum, candy, coffee, and beverages	100% acquired	500	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
31/03/2018	Nestle S.A. (US confectionery)	Listed Switzerland-based company engaged in the nutrition, health and wellness business	Ferrero SpA	Italy-based manufacturer and distributor of chocolates and chocolate products, bakery products, snacks, etc.	100% acquired	2,800	848	127	3.3x	22.0x	1,348	48.1%	1.59x	10.59x
26/04/2016	Ripple Brand Collective, LLC	US-based company that produces snaking chocolates under the brand name of barkTHINS	The Hershey Company	Listed US-based manufacturer of confectionery, chocolates and snack products	100% acquired	285	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
17/08/2015	Thorntons Plc	Lsted UK-based chocolate retailer headquarterd in Derbyshire	Ferholding UK Ltd.	UK-based company owned by Ferrero Int.S.A. engaged in manufactures, retails, and distributes chocolates	100% acquired	207	379	24	0.6x	8.7x	n.a.	n.a.	n.a.	n.a.
14/07/2014	Russell Stover Candies, Inc	US-based chocolate and candy manufacturer	Lindt & Spruengli (International) AG	Switzerland-based company that manufactures chocolate and confectionery products	100% acquired	1,400	500	n.a.	2.8x	n.a.	459	32.8%	0.92x	n.a.
02/02/2010	Cadbury Plc	British multinational confectionery company	Mondelēz International, Inc.	Listed US-based manufacturer of chocolate, biscuits, gum, candy, coffee, and beverages	100% acquired	23,011	7,857	n.a.	2.6x	n.a.	9,611	41.8%	1.22x	n.a.
18/03/2008	Godiva Belgium BVBA	US based producer and marketer of chocolates and ice creams	Yildiz Holding AS	Turkey based food conglomerate and parent company of Ulker Group	100% acquired	850	500	n.a.	1.7x	n.a.	n.a.	n.a.	n.a.	n.a.
					AVERAGE	**3,725**	**1,832**	**69**	**2.0x**	**14.7x**	**2,878**	**33.8%**	**0.96x**	**6.13x**

Source: Merger Markets & Companies' Annual Reports

2 Brand Value (€m)

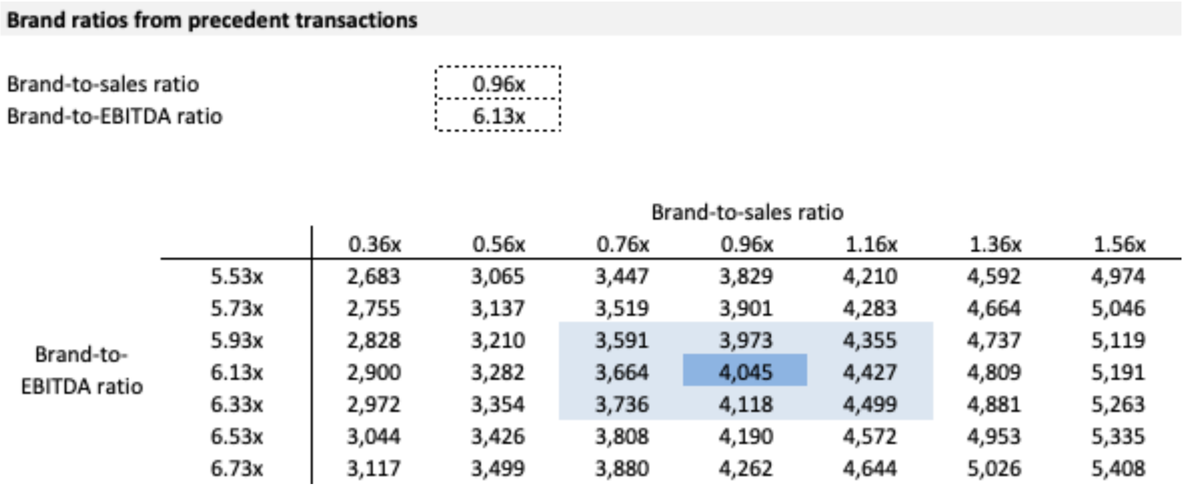
Lindt Sales 2018	3,818
Brand-to-sales ratio	0.96x
Brand Value	3,659

Lindt EBITDA 2018	722
Brand-to-EBITDA ratio	6.13x
Brand Value	4,432

Brand Value **4,045**

TABLE 21. BRAND SALE METHOD - CALCULATIONS

As we can see, brand ratios differ significantly from one transaction to another due to timing, geographical exposure and the fact that acquirers value the same brand in a different way. Consequently, this effect would result in a dispersion of the final brand value obtained. Hence, we have sensitized the ratios – both brand-to-sales and brand-to-EBITDA – shown in Table 22 below. This results in a fairer and more solid brand value range between **c.€3.5Bn and c.€4.5Bn**.



Brand ratios from precedent transactions

Brand-to-sales ratio	0.96x
Brand-to-EBITDA ratio	6.13x

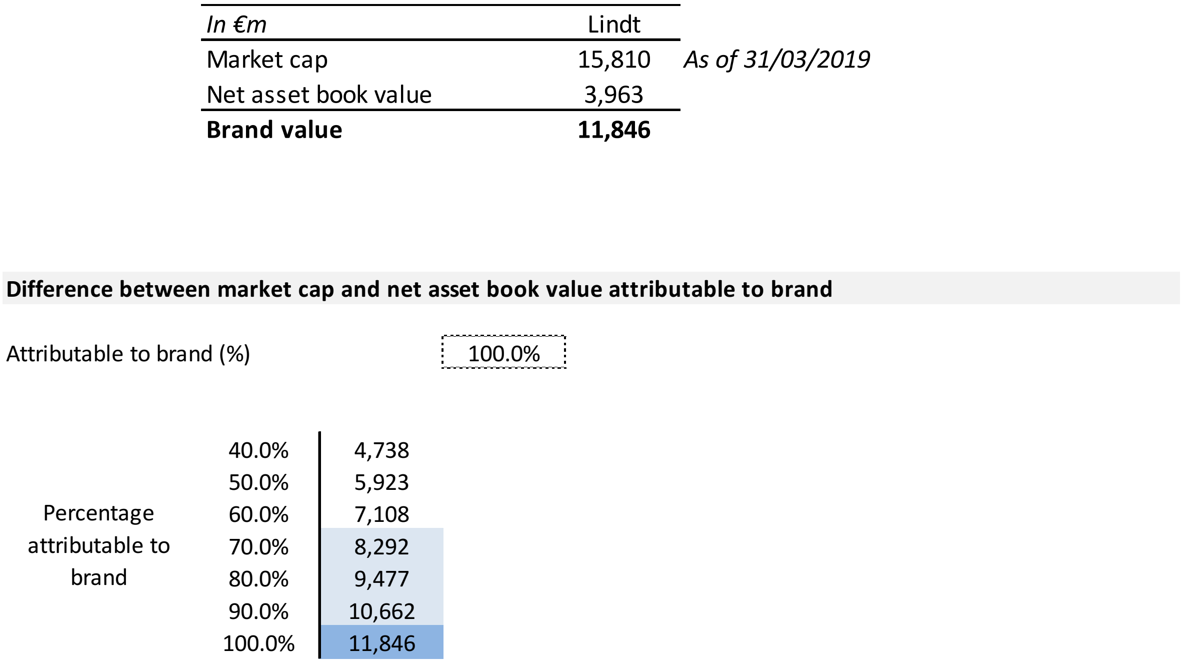
		Brand-to-sales ratio						
		0.36x	0.56x	0.76x	0.96x	1.16x	1.36x	1.56x
Brand-to-EBITDA ratio	5.53x	2,683	3,065	3,447	3,829	4,210	4,592	4,974
	5.73x	2,755	3,137	3,519	3,901	4,283	4,664	5,046
	5.93x	2,828	3,210	3,591	3,973	4,355	4,737	5,119
	6.13x	2,900	3,282	3,664	4,045	4,427	4,809	5,191
	6.33x	2,972	3,354	3,736	4,118	4,499	4,881	5,263
	6.53x	3,044	3,426	3,808	4,190	4,572	4,953	5,335
	6.73x	3,117	3,499	3,880	4,262	4,644	5,026	5,408

TABLE 22. BRAND SALE METHOD - SENSITIVITY ANALYSIS

3.3.4.2. RESIDUAL METHOD

The residual method assumes that the gap between market capitalization and the book net asset value can be attributed to intangibles, the most important of which is the brand. For this reason, we present a sensitivity table based on the percentage of the difference between market cap and the net asset book value that can be attributable to brand.

As discussed in the literary review, this method may be useful to provide a ceiling for valuation but is rather simplistic. The net asset value captures the difference between the historical cost of the book value of assets and liabilities, which may be far from their market values. Thus, it is not very sound from a conceptual point of view. The brand value yield by this method is **€11,846m**. Table 23 presents the results.



In €m	Lindt	
Market cap	15,810	*As of 31/03/2019*
Net asset book value	3,963	
Brand value	**11,846**	

Difference between market cap and net asset book value attributable to brand

Attributable to brand (%) 100.0%

Percentage attributable to brand	40.0%	4,738
	50.0%	5,923
	60.0%	7,108
	70.0%	8,292
	80.0%	9,477
	90.0%	10,662
	100.0%	11,846

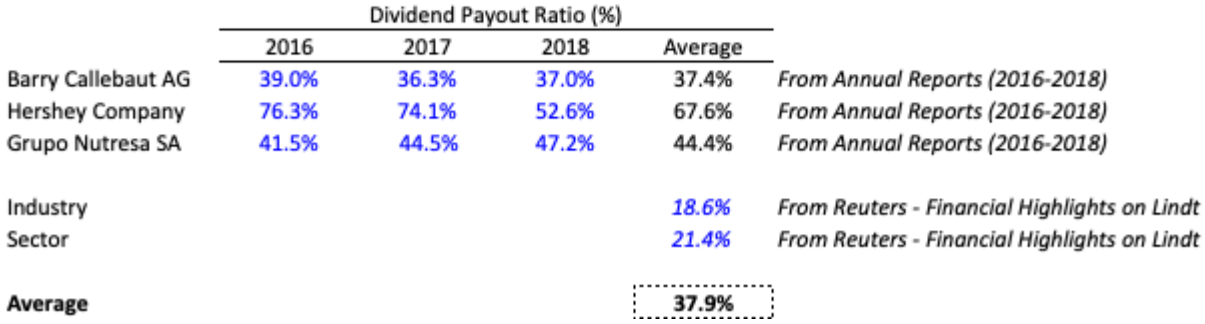
TABLE 23. RESIDUAL METHOD CALCULATIONS

3.3.4.3. PRICE TO SALE RATIO – DAMODARAN METHOD

This method is based on the model explained in section 2.2.3. Price to Sale Ratio – Damodaran. This brand valuation technique requires some assumptions that we need to clarify:

- Profit Margin: we have used the most recent available operating profit before taxes (EBIT 2018) from both Lindt and Natra, which are 14.8% and 6.6%, respectively.
- Current growth rate: we have considered using the most recent annual sales growth rate (again, for 2018) which are 5.5% for Lindt and 1.5% for Natra.
- Payout ratio: likewise, we have used the payout ratio announced in both companies' annual reports from 2018. Lindt distributes dividend with a payout ratio of 50%, while Natra has decided not to distribute dividends until all the items of R&D cost have been fully amortized (unless authorized by the majority of its creditors), hence having a payout ratio of 0%.

- Number of years before maturity: 5 years.
- Perpetual growth rate: we have considered using the same growth rate assumed for other forecasts: 2%, in line with inflation rates and being conservative.
- Perpetual payout ratio: we have computed the industry average and considered that, despite Natra currently having a stricter policy regarding dividend distributions, it will not last forever. Such average has been estimated with Lindt's peers – selected according to business model similarity, same product mix, geographies and comparable profit margin trends – computing the average payout ratio of the last three years. This has been compared to the industry (F&D) and sector (chocolate) dividend payout ratio extracted from Reuters, yielding a final payout ratio of c.38%.

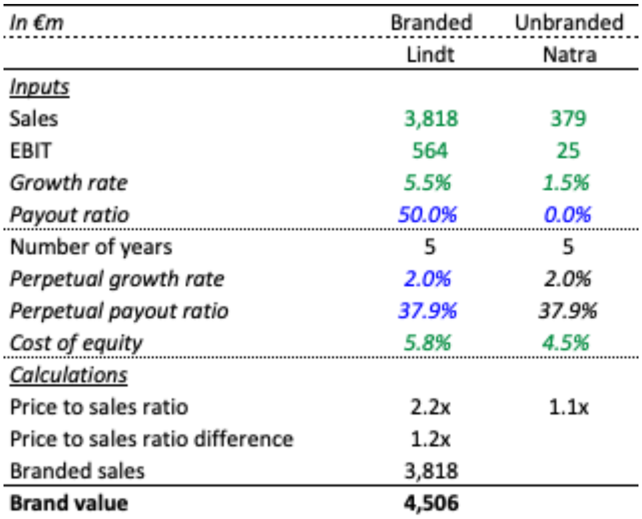


	Dividend Payout Ratio (%)				
	2016	2017	2018	Average	
Barry Callebaut AG	39.0%	36.3%	37.0%	37.4%	*From Annual Reports (2016-2018)*
Hershey Company	76.3%	74.1%	52.6%	67.6%	*From Annual Reports (2016-2018)*
Grupo Nutresa SA	41.5%	44.5%	47.2%	44.4%	*From Annual Reports (2016-2018)*
Industry				*18.6%*	*From Reuters - Financial Highlights on Lindt*
Sector				*21.4%*	*From Reuters - Financial Highlights on Lindt*
Average				**37.9%**	

TABLE 24. INDUSTRY DIVIEND PAY-OUT RATIO ANALYSIS

- Cost of equity: the same used and explained when calculating the discount rates for both Lindt and Natra, which yields a cost of equity of 4.7% and 4.5%, respectively.

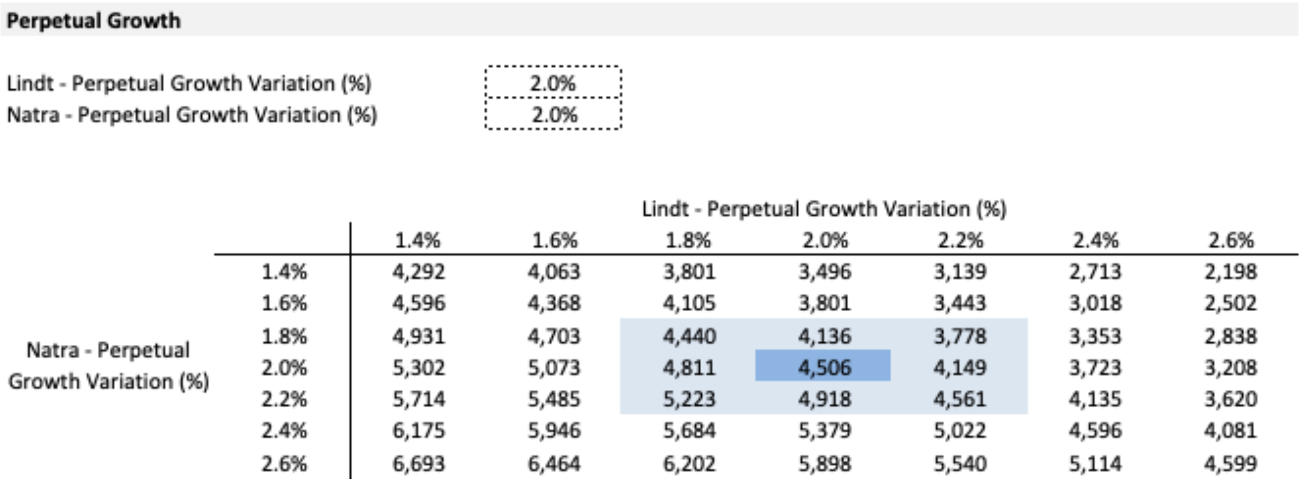
Once assumed the different factors laid above, we were in the position to compute the price to sale ratio for the two companies, branded and unbranded. The difference of both ratios times the total amount of Lindt's sales in 2018 will give us its brand equity. As shown in the Table 25 below, the aforementioned calculations yield a brand value of **€4,506m**.



In €m	Branded	Unbranded
	Lindt	Natra
Inputs		
Sales	3,818	379
EBIT	564	25
Growth rate	*5.5%*	*1.5%*
Payout ratio	*50.0%*	*0.0%*
Number of years	5	5
Perpetual growth rate	*2.0%*	*2.0%*
Perpetual payout ratio	*37.9%*	*37.9%*
Cost of equity	*5.8%*	*4.5%*
Calculations		
Price to sales ratio	2.2x	1.1x
Price to sales ratio difference	1.2x	
Branded sales	3,818	
Brand value	**4,506**	

TABLE 25. PRICE-TO-SALE RATIO CALCULATIONS

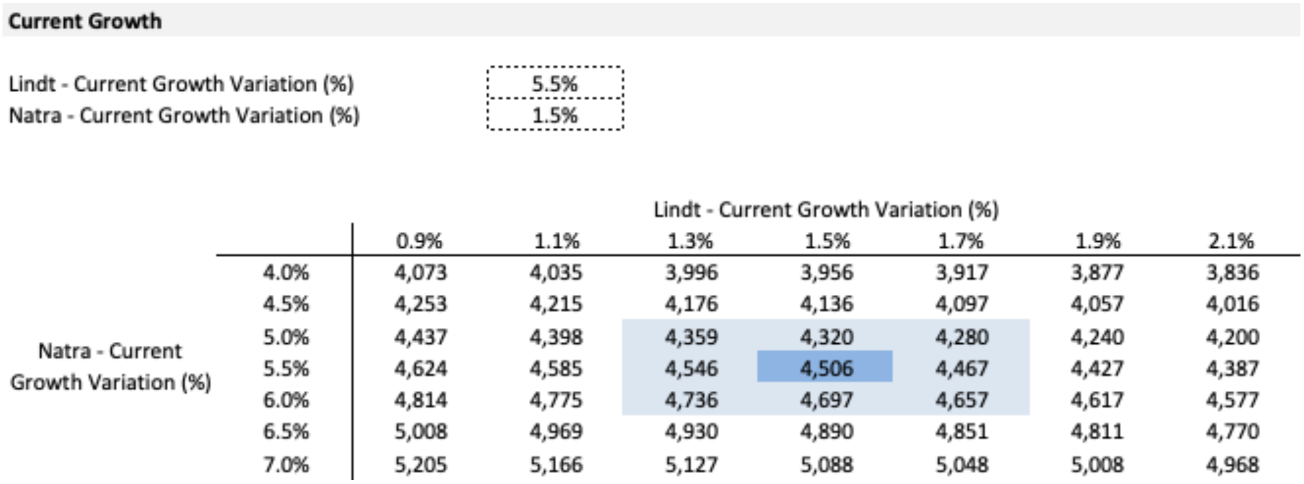
This method is quite sensitive to its inputs – such as growth rate, payout ratio, number of years before maturity, etc. – which are nothing but modelling assumptions we need to sensitize in order to find a comfortable brand value range. Hence, a complete sensitivity analysis is provided below comparing the crossed-effects between many of these factors: (1) perpetual growth of Lindt and Natra, (2) current growth of both firms, (3) payout ratio and years before maturity, (4) cost of equity of both companies and (5) price-to-sales ratio of both groups.



Perpetual Growth

Lindt - Perpetual Growth Variation (%)	2.0%
Natra - Perpetual Growth Variation (%)	2.0%

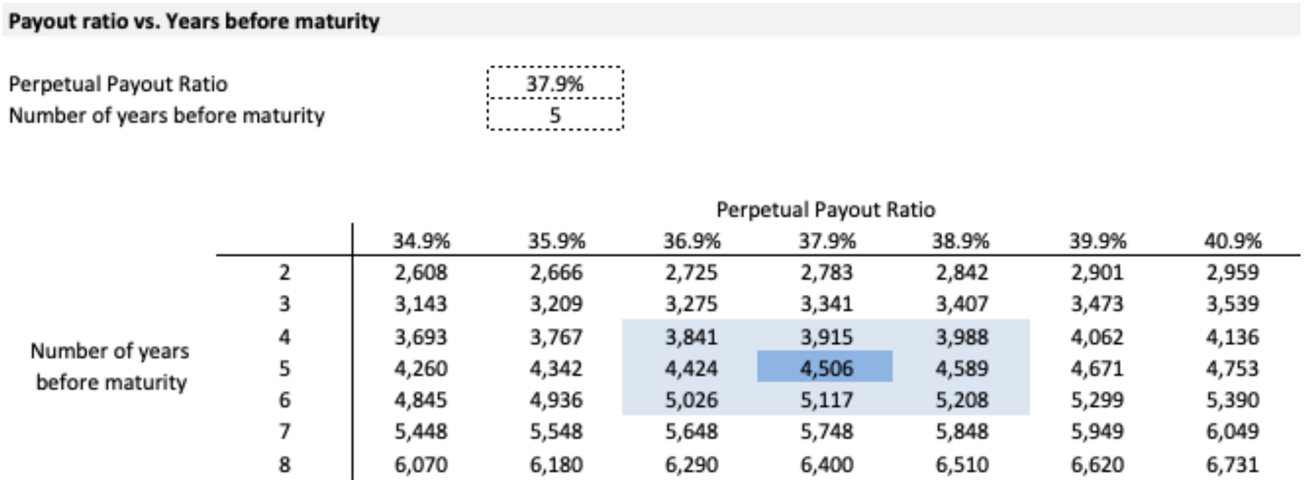
		Lindt - Perpetual Growth Variation (%)						
		1.4%	1.6%	1.8%	2.0%	2.2%	2.4%	2.6%
Natra - Perpetual Growth Variation (%)	1.4%	4,292	4,063	3,801	3,496	3,139	2,713	2,198
	1.6%	4,596	4,368	4,105	3,801	3,443	3,018	2,502
	1.8%	4,931	4,703	4,440	4,136	3,778	3,353	2,838
	2.0%	5,302	5,073	4,811	4,506	4,149	3,723	3,208
	2.2%	5,714	5,485	5,223	4,918	4,561	4,135	3,620
	2.4%	6,175	5,946	5,684	5,379	5,022	4,596	4,081
	2.6%	6,693	6,464	6,202	5,898	5,540	5,114	4,599



Current Growth

Lindt - Current Growth Variation (%)	5.5%
Natra - Current Growth Variation (%)	1.5%

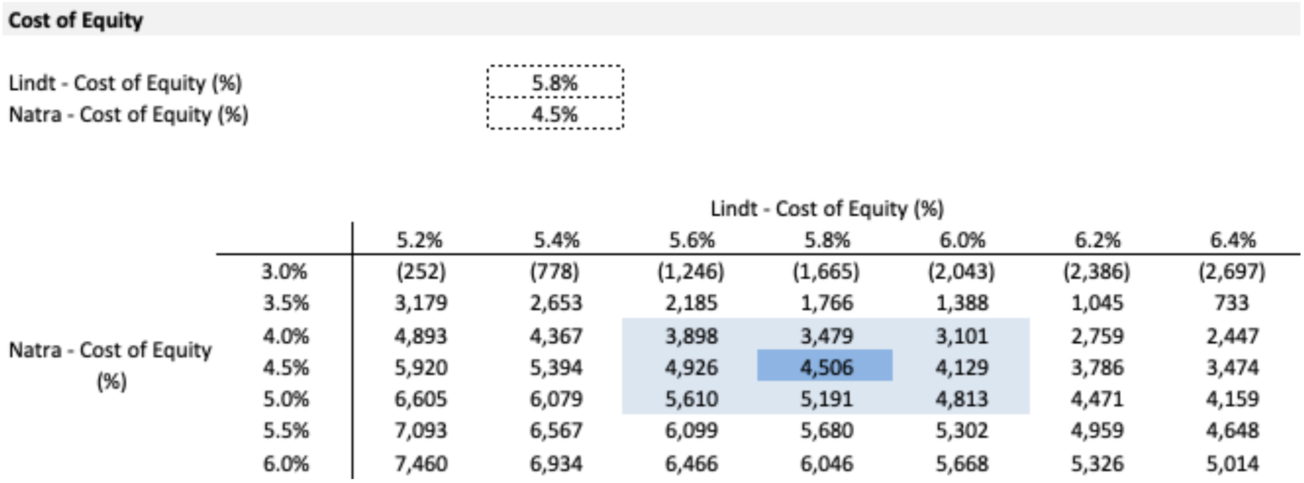
					Lindt - Current Growth Variation (%)			
		0.9%	1.1%	1.3%	1.5%	1.7%	1.9%	2.1%
Natra - Current Growth Variation (%)	4.0%	4,073	4,035	3,996	3,956	3,917	3,877	3,836
	4.5%	4,253	4,215	4,176	4,136	4,097	4,057	4,016
	5.0%	4,437	4,398	4,359	4,320	4,280	4,240	4,200
	5.5%	4,624	4,585	4,546	4,506	4,467	4,427	4,387
	6.0%	4,814	4,775	4,736	4,697	4,657	4,617	4,577
	6.5%	5,008	4,969	4,930	4,890	4,851	4,811	4,770
	7.0%	5,205	5,166	5,127	5,088	5,048	5,008	4,968



Payout ratio vs. Years before maturity

Perpetual Payout Ratio	37.9%
Number of years before maturity	5

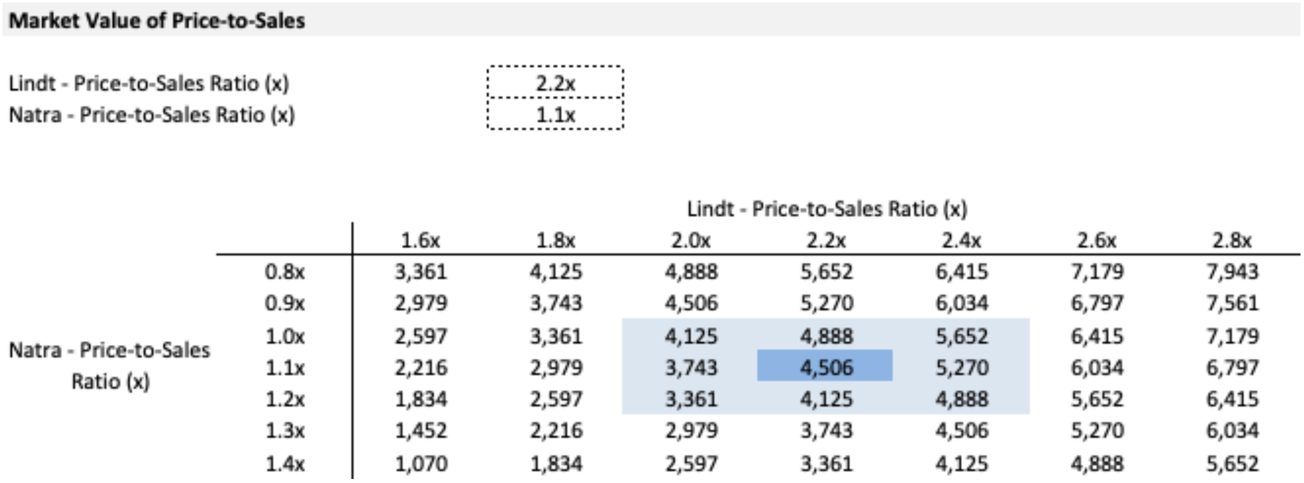
					Perpetual Payout Ratio			
		34.9%	35.9%	36.9%	37.9%	38.9%	39.9%	40.9%
Number of years before maturity	2	2,608	2,666	2,725	2,783	2,842	2,901	2,959
	3	3,143	3,209	3,275	3,341	3,407	3,473	3,539
	4	3,693	3,767	3,841	3,915	3,988	4,062	4,136
	5	4,260	4,342	4,424	4,506	4,589	4,671	4,753
	6	4,845	4,936	5,026	5,117	5,208	5,299	5,390
	7	5,448	5,548	5,648	5,748	5,848	5,949	6,049
	8	6,070	6,180	6,290	6,400	6,510	6,620	6,731



Cost of Equity

Lindt - Cost of Equity (%)	5.8%
Natra - Cost of Equity (%)	4.5%

					Lindt - Cost of Equity (%)			
		5.2%	5.4%	5.6%	5.8%	6.0%	6.2%	6.4%
Natra - Cost of Equity (%)	3.0%	(252)	(778)	(1,246)	(1,665)	(2,043)	(2,386)	(2,697)
	3.5%	3,179	2,653	2,185	1,766	1,388	1,045	733
	4.0%	4,893	4,367	3,898	3,479	3,101	2,759	2,447
	4.5%	5,920	5,394	4,926	4,506	4,129	3,786	3,474
	5.0%	6,605	6,079	5,610	5,191	4,813	4,471	4,159
	5.5%	7,093	6,567	6,099	5,680	5,302	4,959	4,648
	6.0%	7,460	6,934	6,466	6,046	5,668	5,326	5,014



Market Value of Price-to-Sales

Lindt - Price-to-Sales Ratio (x)	2.2x
Natra - Price-to-Sales Ratio (x)	1.1x

		Lindt - Price-to-Sales Ratio (x)						
		1.6x	1.8x	2.0x	2.2x	2.4x	2.6x	2.8x
Natra - Price-to-Sales Ratio (x)	0.8x	3,361	4,125	4,888	5,652	6,415	7,179	7,943
	0.9x	2,979	3,743	4,506	5,270	6,034	6,797	7,561
	1.0x	2,597	3,361	4,125	4,888	5,652	6,415	7,179
	1.1x	2,216	2,979	3,743	4,506	5,270	6,034	6,797
	1.2x	1,834	2,597	3,361	4,125	4,888	5,652	6,415
	1.3x	1,452	2,216	2,979	3,743	4,506	5,270	6,034
	1.4x	1,070	1,834	2,597	3,361	4,125	4,888	5,652

TABLE 26. DAMODARAN METHOD - SENSITIVITY ANALYSIS

As we can see, the inputs required for the price-to-sale ratio method (Damodaran model) cause a significant brand value variation that needs to be considered. Perpetual growth rate, which corresponds to an unknown value that can go from inflation levels to the industry GDP growth level, is responsible of a c.38% valuation difference in the blue light region of the sensitivity analysis. Conversely, current growth has lower impact in the brand valuation range (c.10% variations in the same table region), and its value is more accurate as we have recent references as sales growth in 2018. Moreover, payout ratio and years before maturity also yield a c.36% valuation difference (from €5.2bn to €3.8bn approximately), and those inputs are less comfortable assumptions. Finally, the cost of equity has the highest variation range of c.81%. Its calculation is far from objective, as the CAPM model relies significantly on its input assumptions. As a result, we consider a valid range would be between **€3,100m and €5,600m**.

3.3.4.4. INTERBRAND'S VALUATION METHOD – DIFFERENTIAL EARNINGS

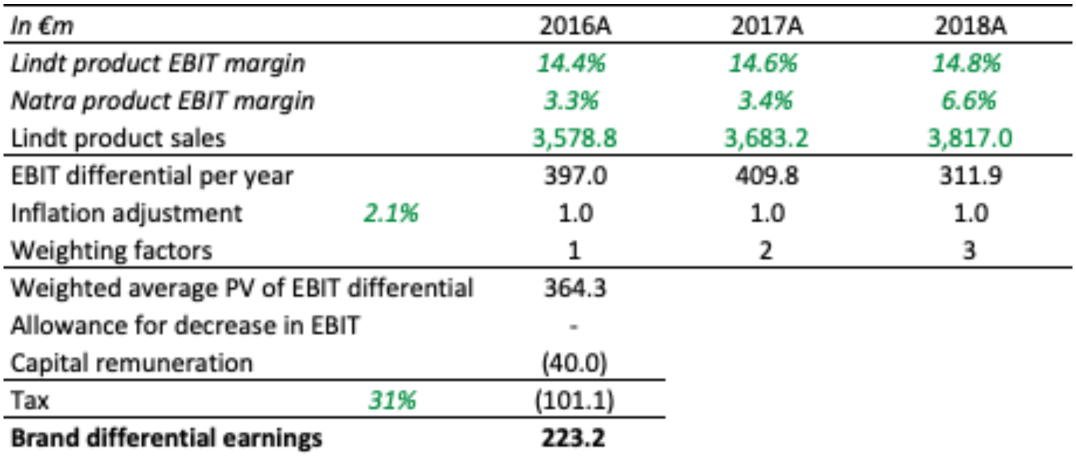
The Interbrand's Valuation Method estimates the brand value using the formula specified below:

$$Brand\ Value = Brand\ profits * multiplier$$

On the one hand, the brand profits are differential earnings driven by the operating profits margin difference between the branded company – i.e. Lindt – and the unbranded comparable – i.e. Natra. On the other hand, the multiplier is computed through the S-curve model that relates such multiplier variable with a subjective brand strength analysis.

3.3.4.4.1. BRAND DIFFERENTIAL EARNINGS

The applicable brand net profits are calculated as follows: First, we compute the difference between the EBIT margin of Lindt and Natra (branded vs. unbranded firm, respectively) to estimate the differential earnings of the last three years. Then, we compute the weighted average of the net profits where the weight corresponds to the importance given to the year (the more recent, the more relevant), correcting for inflation – which we have calculated as the weighted average of the Lindt's sales distribution geographically and the inflation rate for those countries, assuming it has maintained constant for the last three years. Finally, we have corrected the result for any allowance for decrease in the EBIT and capital remunerations, as shown in the Table 27 below.



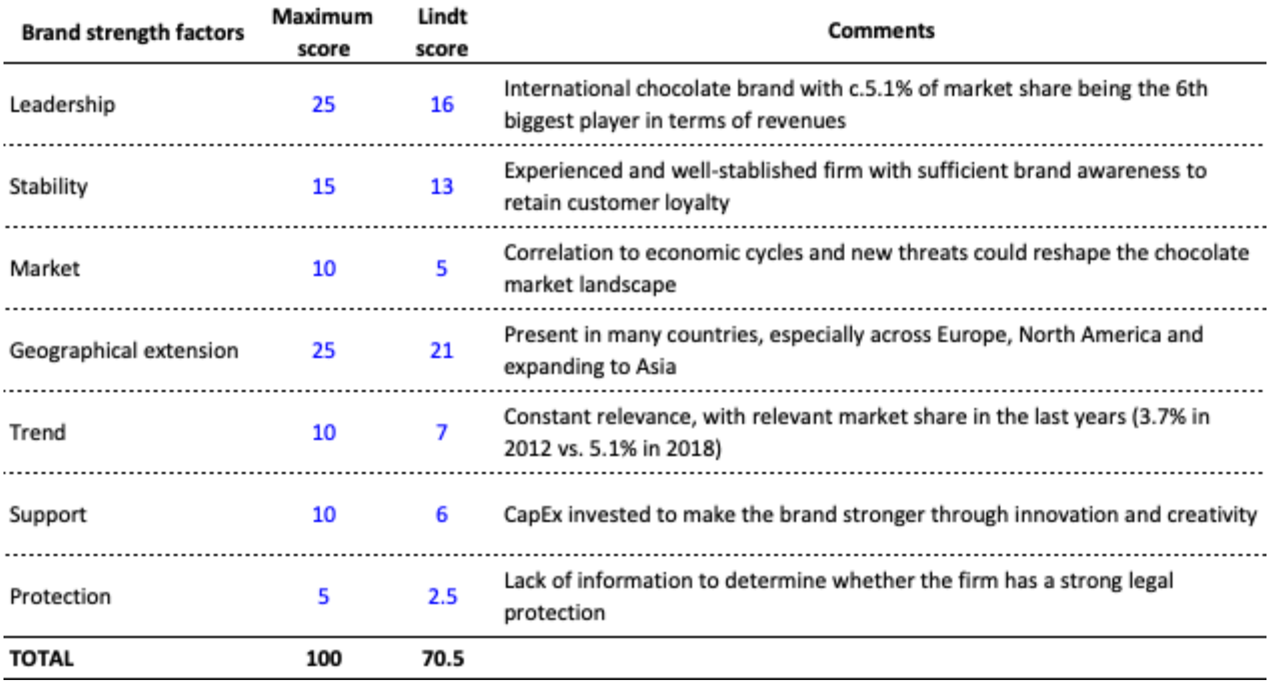
In €m		2016A	2017A	2018A
Lindt product EBIT margin		*14.4%*	*14.6%*	*14.8%*
Natra product EBIT margin		*3.3%*	*3.4%*	*6.6%*
Lindt product sales		3,578.8	3,683.2	3,817.0
EBIT differential per year		397.0	409.8	311.9
Inflation adjustment	*2.1%*	1.0	1.0	1.0
Weighting factors		1	2	3
Weighted average PV of EBIT differential		364.3		
Allowance for decrease in EBIT		-		
Capital remuneration		(40.0)		
Tax	*31%*	(101.1)		
Brand differential earnings		**223.2**		

TABLE 27. BRAND ATTRIBUTABLE EARNINGS CALCULATION

3.3.4.4.2. BRAND STRENGTH ANALYSIS

In order to apply the Interbrand Method, we need to estimate the multiplier with the S-curve relationship with the strength associated to the brand. Lindt's reputation, power and strength is based on seven weighted factors that need to be predefined and scored – as aforementioned in section 2.2.4.

Despite the subjective nature of this technique, we believe the best approach is to deeply analyze Lindt from each factor perspective, with the aim to find objective, quantitative and qualitative points to support the final score. The brand scores are laid in the Table 28 below, with a brief comment to support our views, followed by a more extensive explanation hereinafter.



Brand strength factors	Maximum score	Lindt score	Comments
Leadership	25	16	International chocolate brand with c.5.1% of market share being the 6th biggest player in terms of revenues
Stability	15	13	Experienced and well-stablished firm with sufficient brand awareness to retain customer loyalty
Market	10	5	Correlation to economic cycles and new threats could reshape the chocolate market landscape
Geographical extension	25	21	Present in many countries, especially across Europe, North America and expanding to Asia
Trend	10	7	Constant relevance, with relevant market share in the last years (3.7% in 2012 vs. 5.1% in 2018)
Support	10	6	CapEx invested to make the brand stronger through innovation and creativity
Protection	5	2.5	Lack of information to determine whether the firm has a strong legal protection
TOTAL	**100**	**70.5**	

TABLE 28. BRAND STRENGTH SCORE CALCULATION

1. Leadership (maximum score: 25):
   Lindt stands as a powerful international and global brand, with the power and market influence to establish prices as it is ranked in a premium target market. The firm enjoyed c.5.1% of market share in 2018, occupying the 6th place in the ranking among the biggest chocolate manufacturers and sellers in terms of revenues. As a result, we consider it has relevant leadership despite not being the first worldwide player. Final score of 16.

2. Stability (maximum score: 15):

   The Swiss Group has demonstrated to be a well-stablished firm empowered by its reputation and image in the long term. Its experience – with more than 175 years manufacturing and selling top quality chocolate – has enabled Lindt to benefit from a loyal customer base and brand awareness both to retain them and attract new ones. Hence, we consider it should get a high score of 13.

3. Market (maximum score: 10):

   We have relied on the industry analysis, Lindt's business strategy analysis and the SWOT analysis performed in the previous section to provide a final score to the market factor. The chocolate industry is a mature sector that has experienced a slowdown in terms of global growth, characterized by its fierce competition. Moreover, as part of the Food & Drinks Industry, it is quite correlated to the economic cycle and the threats of a potential downturn of the market. Nevertheless, Lindt's strategy of low open degree innovation and its focus on the premium target are relevant assets in an ever competitive sector. Thus, we give Lindt a score of 5.

4. Geographical extension (maximum score: 25):

   Lindt is well diversified geographically. It has an international presence that has been expanding progressively, starting in Europe – where it has more than 40% of operations and sales – and then entering North America – with c.43% of its revenue distribution. Recently the firm has started to expand to Asia and other new markets. Therefore, Lindt has a relevant international power that has allowed as to give a high score of 21.

5. Trend (maximum score: 10):

   Lindt has managed to maintain its brand image, power and reputation in the long term. The firm has constantly invested in innovation, productive process, recipe, among other business factors that are key to preserve the relevance of Lindt's brand. The firm, indeed, invests in its brand – in terms of marketing and R&D attributable to the brand – in similar levels to its main competitors, and above the industry average. As a result, the Group has managed to maintain and increase a significant market share, from c.3.7% in 2012 compared to the c.5.1% in 2018. Hence, our view is they merit a score of 7.

6. Support (maximum score: 10):
   Building on the analysis provided in the "Trend" factor, Lindt supports every step on the supply chain process through constant investments: recipe, product development, production process, packaging and designing, logistics, innovation, etc. The aim of those investments is to continue its progressive growth trend, maintain its leadership and gain market share. Given its premium quality focus, their strategy is clear: invest to enhance its brand power, credibility and reputation as the best manufacturer of premium quality chocolate. However, Lindt invested c.11% of 2018 revenues in advertising and R&D, which could represent c.8% attributable to the brand according to Salinas brand ratio. Such amount has been decreasing in the last years, with c.13% of sales invested in the first part of the century. Hence, we consider it should have a score of 6.

7. Protection (maximum score: 5):
   Due to the lack of information to determine whether Lindt has a strong brand protection, we have assigned a score of 2.5.

To sum up, the final score for Lindt is 70.5 out of 100, which seems to indicate the Swiss chocolate manufacturer has a strong brand according to the factors aforementioned.

3.3.4.4.3. BRAND PROFITS MULTIPLIER

The brand strength analysis will enable us to determine the brand profit multiplier, as he score previously estimated can be expressed as a multiple on an S-curve – which ranks from 0x to a maximum multiple of 20x as shown in Figure 13 below.

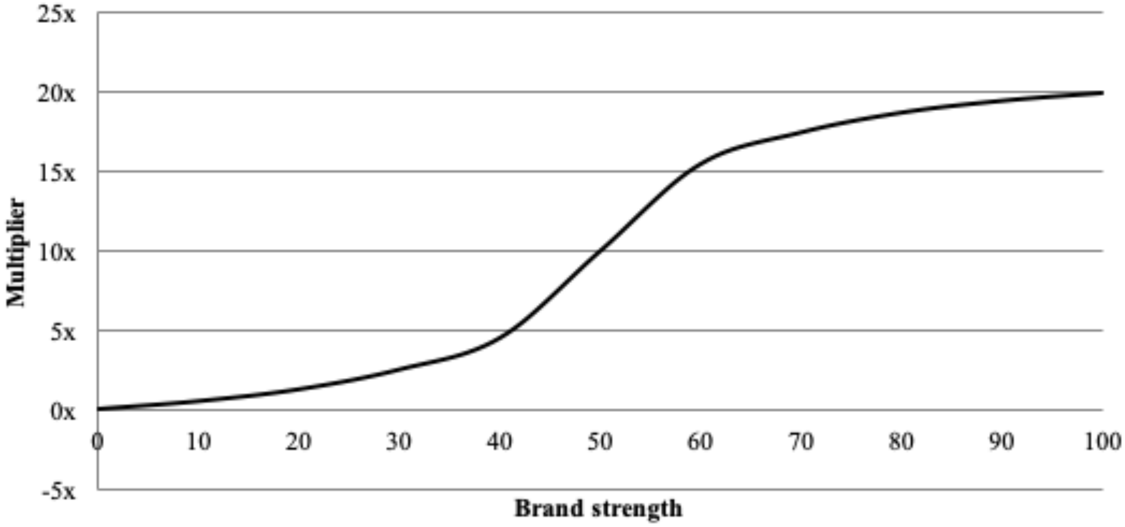


FIGURE 13. BRAND STRENGTH S-CURVE

Using a polynomial interpolation, we can determine quite accurately the empirical multiplier the S-curve model suggests. With a brand strength score of 70.5, the multiplier is 17.98x.

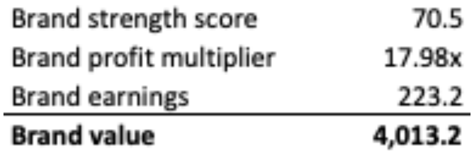
As discussed in point *2.3.1. Discussion around the discount factor*, Interbrand's multiplier can be assimilated to an equivalent discount rate through the following equation:

$$Discount\ rate = \frac{1}{Multiple} + LT\ growth$$

If we assume a long-term growth of 1%, consistent with market practice, the equivalent discount rate to a multiple of 17.98x would be 6.6%, which is not far from the discount rate of 5.8% calculated in *3.4.2. Discount rate calculation*.

3.3.4.4.4. BRAND VALUE & SENSITIVITIES

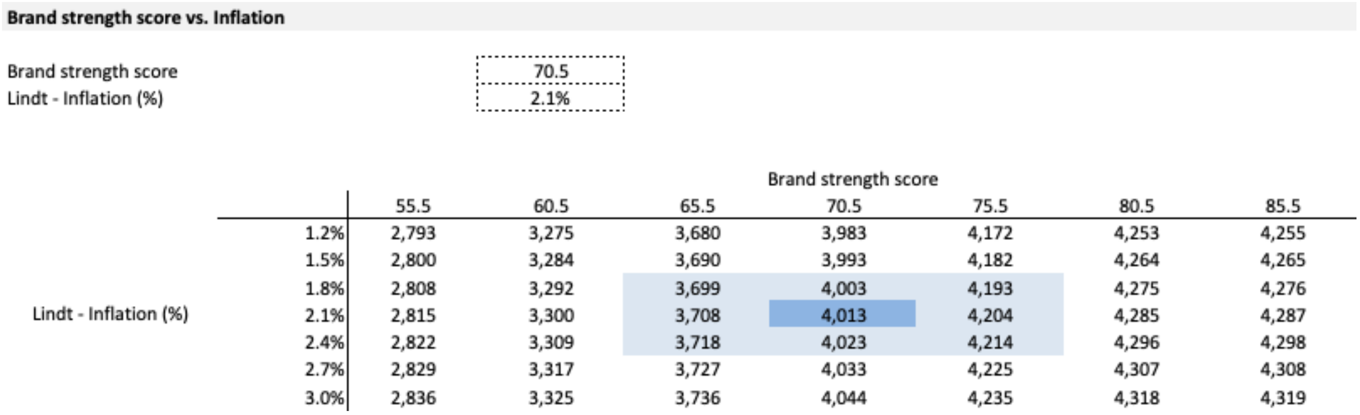
Applying the brand value formula laid above in section 3.4.4.4., the final brand obtained is **€4,013m** – calculations shown below.



Brand strength score	70.5
Brand profit multiplier	17.98x
Brand earnings	223.2
Brand value	**4,013.2**

TABLE 29. BRAND VALUE CALCULATION

A sensitivity analysis is provided below using the brand strength score – that directly affects the multiplier – and the inflation used to compute the weighted average differential profit earnings. We can infer that the score obtained from the brand strength analysis is a very sensible variable to the final brand value, which reinforces the idea that the Interbrand Method is quite subjective.



Brand strength score vs. Inflation

Brand strength score	70.5
Lindt - Inflation (%)	2.1%

		Brand strength score						
		55.5	60.5	65.5	70.5	75.5	80.5	85.5
	1.2%	2,793	3,275	3,680	3,983	4,172	4,253	4,255
	1.5%	2,800	3,284	3,690	3,993	4,182	4,264	4,265
	1.8%	2,808	3,292	3,699	4,003	4,193	4,275	4,276
Lindt - Inflation (%)	2.1%	2,815	3,300	3,708	4,013	4,204	4,285	4,287
	2.4%	2,822	3,309	3,718	4,023	4,214	4,296	4,298
	2.7%	2,829	3,317	3,727	4,033	4,225	4,307	4,308
	3.0%	2,836	3,325	3,736	4,044	4,235	4,318	4,319

TABLE 30. INTERBRAND SENSITIVITY ANALYSIS

3.3.4.5. SIMON & SULLIVAN (1993) BRAND EQUITY METHOD

This method has not been used to compute Lindt's brand value due to the complexity and impossibility to be applied in our case study.

First, as mentioned in section *2.2.5. Simon & Sullivan*, the brand equity method relies entirely on the assumption that markets are efficient, which does not hold in practice and prevents valuations in case of crisis, bubbles or other market inefficiencies.

Second, it is not industry specific. In other words, the whole stock market is considered when doing the regression and calculating its coefficients. If we wanted to recalculate the coefficients to restrict it to the F&D industry (or the chocolate sector, even more specific) the task would be too complicated and time consuming. Moreover, it will risk of statistical insignificance, which will prevent us from using the results obtained due to the lack of correlation with our company and the market.

Finally, this methodology implies that macroeconomic events directly affect the firm’s brand value driven by its stock price fluctuation. However, this is not always true, nor has been proved yet.

Therefore, Lindt’s brand value has not been calculated through the Simon & Sullivan Brand Equity Method.

3.3.5. INCOME-BASED APPROACHES

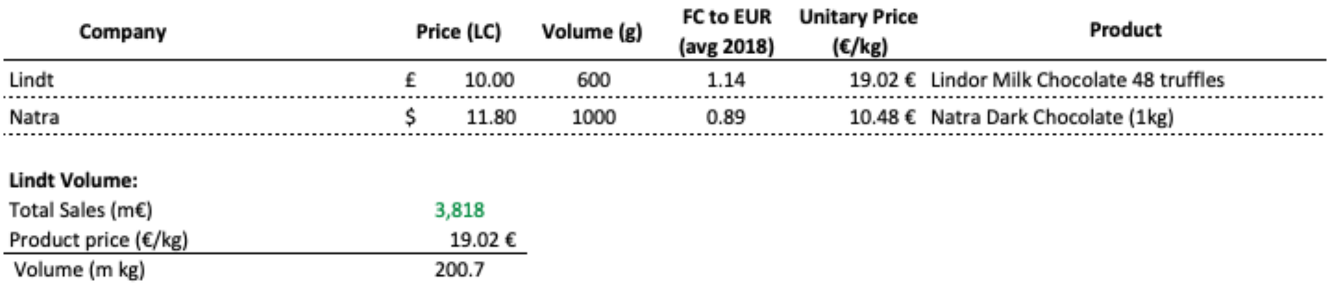
3.3.5.1. PRICE PREMIUM METHOD

This method estimates brand value assuming the perceived superior quality or brand awareness enable the branded firm to charge a premium in the price of their goods or services compared to a comparable generic firm. As a result, we need to estimate the incremental price between Lindt and Natra, determine the differential profits driven by the price increase – due to the premium charged – and estimate the cash flows generated by subtracting the superior expenses Lindt incurs.

3.3.5.1.1. LINDT & NATRA PRODUCT PRICES

The first step on the price premium valuation method is to determine the incremental profits between Lindt and Natra – branded and unbranded companies, respectively. Those firms present a big advantage compared to other examples: differential profits are directly and mainly driven by products sold, hence by its price. With similar business models, equivalent products and the same product mix, the comparison is straight forward.

We have considered that the best variable to be compared is the chocolate unitary price (i.e. €/kg of chocolate). Hence, we have gathered the different products they both have in terms of chocolate type, composition, additives and other factors to obtain the prices presented in the Table 31 below. Additionally, we have also calculated the proxy for volume of chocolate sold by Lindt back-engineered with the known amount of sales in 2018 coming from its products.



Company	Price (LC)	Volume (g)	FC to EUR (avg 2018)	Unitary Price (€/kg)	Product
Lindt	£ 10.00	600	1.14	19.02 €	Lindor Milk Chocolate 48 truffles
Natra	$ 11.80	1000	0.89	10.48 €	Natra Dark Chocolate (1kg)

Lindt Volume:	
Total Sales (m€)	3,818
Product price (€/kg)	19.02 €
Volume (m kg)	200.7

TABLE 31. PRICE AND VOLUME CALCULATIONS

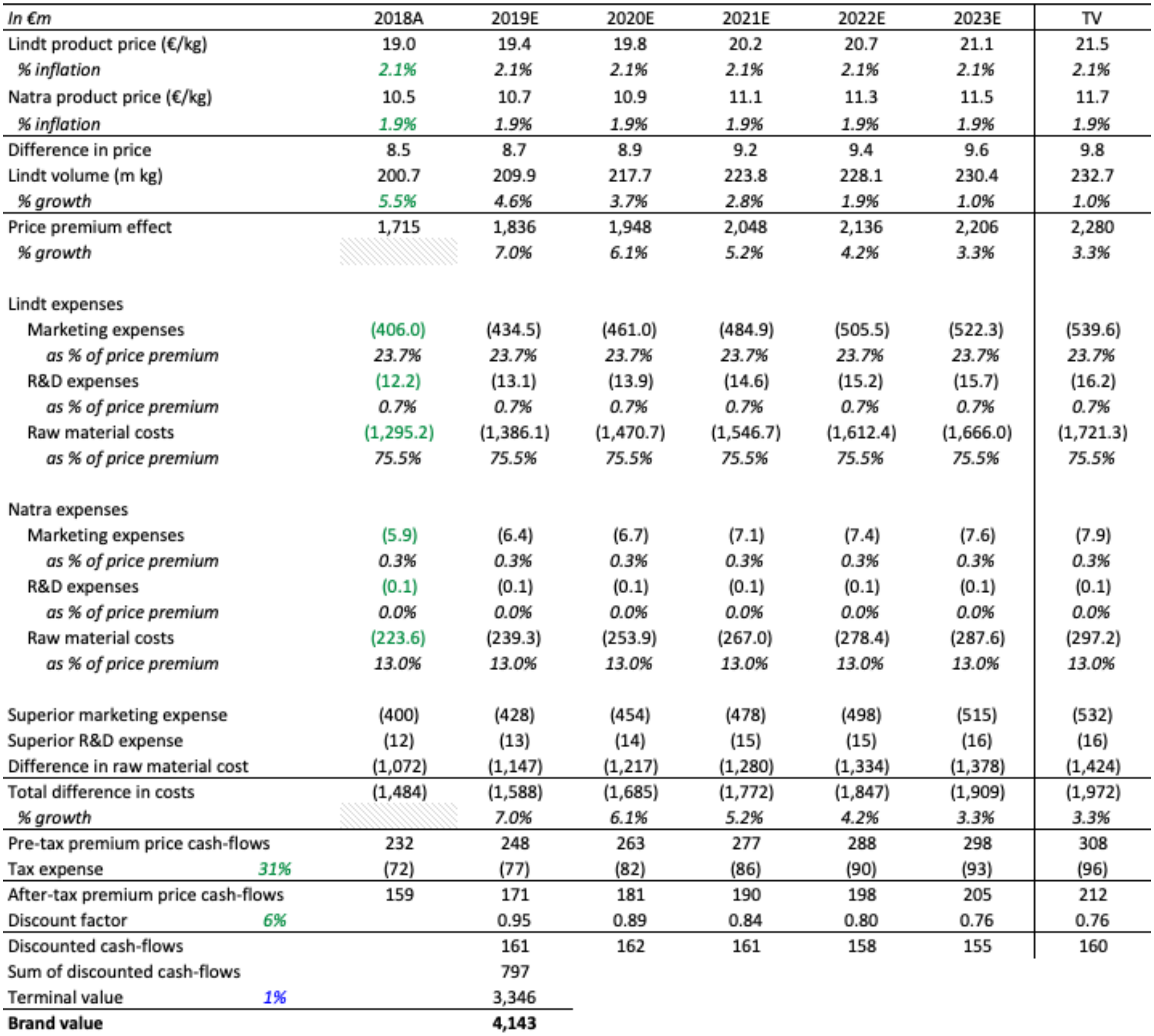
There is a significant difference between the unitary price of Lindt and Natra, which we assume to be due to Lindt's brand awareness, reputation and the inferred quality of its products. For instance, such brand image allows Lind to charge a significant premium of c.81% compared to Natra's chocolate price.

3.3.5.1.2. SUPERIOR CHARGES AND BRAND VALUE

Once obtained the companies' product prices, we have forecasted them according to the current inflation rate of each firm – calculated as the weighted average of the geographical sales distribution and the inflation rate of those same countries. We have assumed such inflation rate is constant over the forecasted years. As a result, we can also assume sales growth is mainly driven by the increase of volume products sold, hence forecasted conservatively as a function of 2018 sales growth, which decreases linearly until it reaches a stable 1% terminal growth. This yields a final price premium effect of each year.

In the same way Lindt charges a premium to its prices, it's brand requires higher investments and expenses that should be considered when performing the brand valuation. Such expenses are easily identifiable in the last annual report from both Lindt and Natra, but we need to make some assumptions to forecast them. We have decided to maintain constant the percentage of those different costs with respect to the price premium (i.e. the differential profit between both companies), which seems to be a coherent hypothesis given that an increase of the incremental prices in the next years will correspond to a similar effect on the increase of superior costs to the branded firm. Once obtained the total difference in costs, we can estimate the pre-tax premium price cash flows, subtract the corresponding taxes – which we assume to be constant all over the forecasted period – and discount them with Lindt's discount factor. Using the 1% terminal value (likewise all other models dependent on forecasts) we can obtain the final brand value.

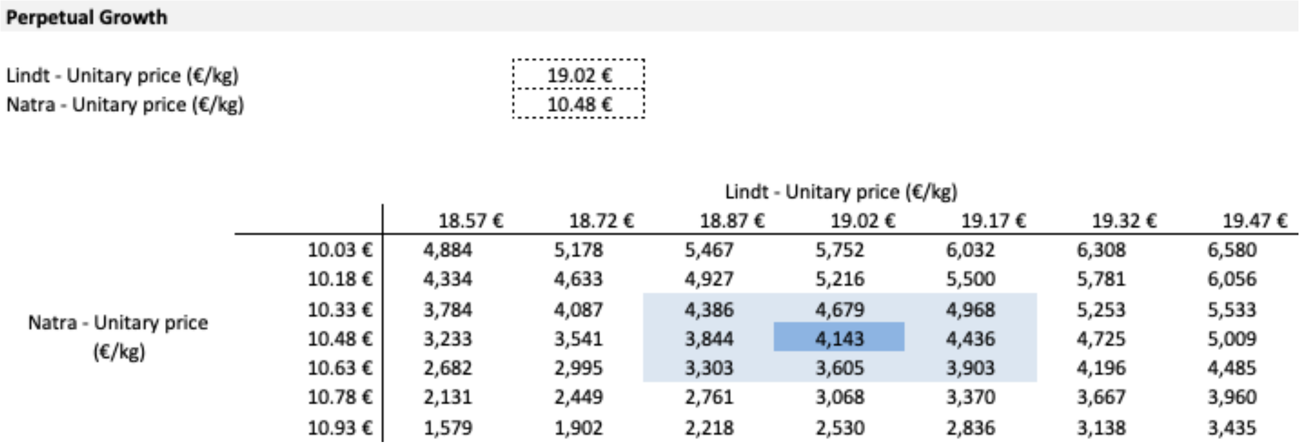
The superior charges calculation, the forecasted financials, cash-flows computations and the final brand calculation can be seen in the Table 32 below. This method yields a brand value of **€4,143m**.



In €m		2018A	2019E	2020E	2021E	2022E	2023E	TV
Lindt product price (€/kg)		19.0	19.4	19.8	20.2	20.7	21.1	21.5
% inflation		*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*
Natra product price (€/kg)		10.5	10.7	10.9	11.1	11.3	11.5	11.7
% inflation		*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*
Difference in price		8.5	8.7	8.9	9.2	9.4	9.6	9.8
Lindt volume (m kg)		200.7	209.9	217.7	223.8	228.1	230.4	232.7
% growth		*5.5%*	*4.6%*	*3.7%*	*2.8%*	*1.9%*	*1.0%*	*1.0%*
Price premium effect		1,715	1,836	1,948	2,048	2,136	2,206	2,280
% growth		▨	*7.0%*	*6.1%*	*5.2%*	*4.2%*	*3.3%*	*3.3%*
Lindt expenses								
Marketing expenses		(406.0)	(434.5)	(461.0)	(484.9)	(505.5)	(522.3)	(539.6)
as % of price premium		*23.7%*	*23.7%*	*23.7%*	*23.7%*	*23.7%*	*23.7%*	*23.7%*
R&D expenses		(12.2)	(13.1)	(13.9)	(14.6)	(15.2)	(15.7)	(16.2)
as % of price premium		*0.7%*	*0.7%*	*0.7%*	*0.7%*	*0.7%*	*0.7%*	*0.7%*
Raw material costs		(1,295.2)	(1,386.1)	(1,470.7)	(1,546.7)	(1,612.4)	(1,666.0)	(1,721.3)
as % of price premium		*75.5%*	*75.5%*	*75.5%*	*75.5%*	*75.5%*	*75.5%*	*75.5%*
Natra expenses								
Marketing expenses		(5.9)	(6.4)	(6.7)	(7.1)	(7.4)	(7.6)	(7.9)
as % of price premium		*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*
R&D expenses		(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
as % of price premium		*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Raw material costs		(223.6)	(239.3)	(253.9)	(267.0)	(278.4)	(287.6)	(297.2)
as % of price premium		*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*
Superior marketing expense		(400)	(428)	(454)	(478)	(498)	(515)	(532)
Superior R&D expense		(12)	(13)	(14)	(15)	(15)	(16)	(16)
Difference in raw material cost		(1,072)	(1,147)	(1,217)	(1,280)	(1,334)	(1,378)	(1,424)
Total difference in costs		(1,484)	(1,588)	(1,685)	(1,772)	(1,847)	(1,909)	(1,972)
% growth		▨	*7.0%*	*6.1%*	*5.2%*	*4.2%*	*3.3%*	*3.3%*
Pre-tax premium price cash-flows		232	248	263	277	288	298	308
Tax expense	*31%*	(72)	(77)	(82)	(86)	(90)	(93)	(96)
After-tax premium price cash-flows		159	171	181	190	198	205	212
Discount factor	*6%*		0.95	0.89	0.84	0.80	0.76	0.76
Discounted cash-flows			161	162	161	158	155	160
Sum of discounted cash-flows			797					
Terminal value	*1%*		3,346					
Brand value			**4,143**					

TABLE 32. PRICE PREMIUM METHOD CALCULATIONS

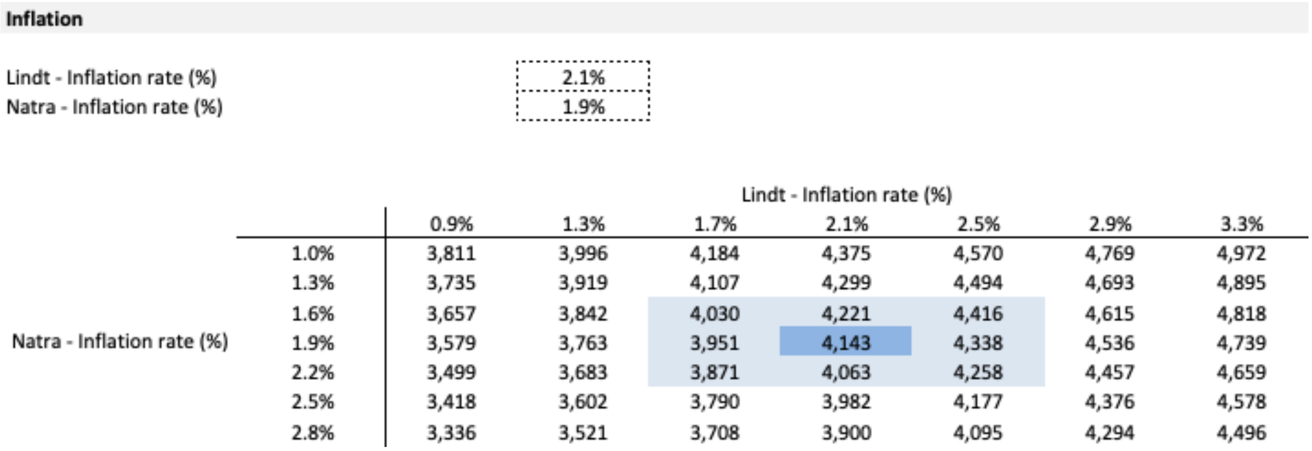
The value obtained seems to be more realistic than other outcomes from methods that have a more subjective nature. Nevertheless, we have sensitized the brand valuation method by the unitary prices empirically obtained, for the inflation rates used for Lindt and Natra and for the average exchange rate in 2018 for USD/EUR and GBP/EUR. As we can see, on the one hand, price variations between 0.15€/kg and 0.25€/kg result in significant brand value differences, which makes us conclude it is a very sensible variable that needs to be precise and well-monitored in order to trust the final result. On the other hand, inflation rate variances are not that much sensible in terms of the final brand value. Finally, the exchange rate used to calculate Lindt and Natra prices (both in Euros) in order to compare them is a sensible variable. Although it can be argued that this factor is accurately estimated using the average of monthly exchange rates during 2018, truth is other methodologies could be applies (e.g. using the end of period exchange rate or using a weighted average rate depending on the monthly sales distribution of both companies), hence yielding a different final brand value. As a result, we have considered relevant to sensitize Lindt's brand valuation for the exchange rates computed from monthly rates in X-rates. The sensitivity analysis yields a probable range between **€5.0bn and €3.3bn**.



Perpetual Growth

Lindt - Unitary price (€/kg)	19.02 €
Natra - Unitary price (€/kg)	10.48 €

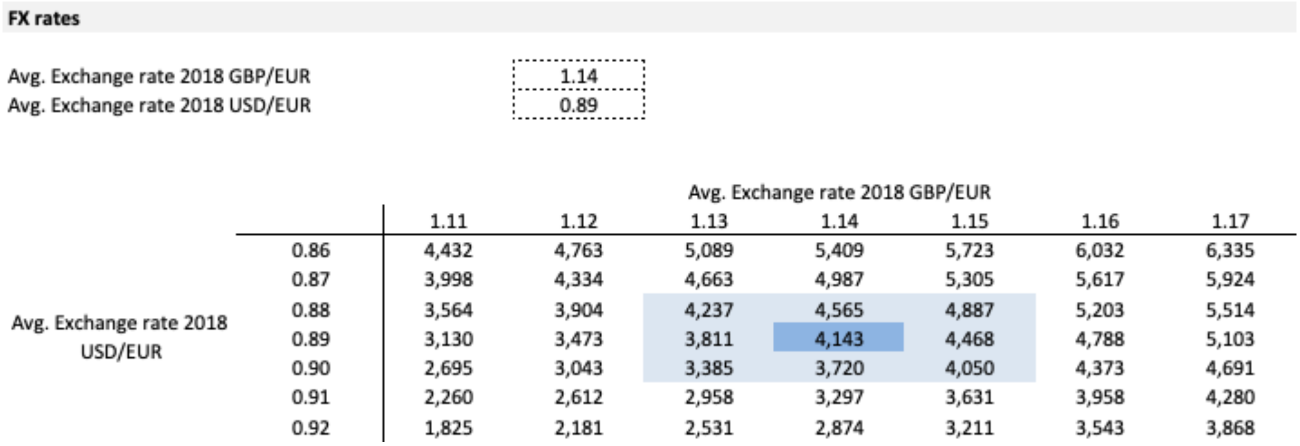
		Lindt - Unitary price (€/kg)						
		18.57 €	18.72 €	18.87 €	19.02 €	19.17 €	19.32 €	19.47 €
Natra - Unitary price (€/kg)	10.03 €	4,884	5,178	5,467	5,752	6,032	6,308	6,580
	10.18 €	4,334	4,633	4,927	5,216	5,500	5,781	6,056
	10.33 €	3,784	4,087	4,386	4,679	4,968	5,253	5,533
	10.48 €	3,233	3,541	3,844	4,143	4,436	4,725	5,009
	10.63 €	2,682	2,995	3,303	3,605	3,903	4,196	4,485
	10.78 €	2,131	2,449	2,761	3,068	3,370	3,667	3,960
	10.93 €	1,579	1,902	2,218	2,530	2,836	3,138	3,435



Inflation

Lindt - Inflation rate (%)	2.1%
Natra - Inflation rate (%)	1.9%

		Lindt - Inflation rate (%)						
		0.9%	1.3%	1.7%	2.1%	2.5%	2.9%	3.3%
Natra - Inflation rate (%)	1.0%	3,811	3,996	4,184	4,375	4,570	4,769	4,972
	1.3%	3,735	3,919	4,107	4,299	4,494	4,693	4,895
	1.6%	3,657	3,842	4,030	4,221	4,416	4,615	4,818
	1.9%	3,579	3,763	3,951	4,143	4,338	4,536	4,739
	2.2%	3,499	3,683	3,871	4,063	4,258	4,457	4,659
	2.5%	3,418	3,602	3,790	3,982	4,177	4,376	4,578
	2.8%	3,336	3,521	3,708	3,900	4,095	4,294	4,496



FX rates

Avg. Exchange rate 2018 GBP/EUR	1.14
Avg. Exchange rate 2018 USD/EUR	0.89

		Avg. Exchange rate 2018 GBP/EUR						
		1.11	1.12	1.13	1.14	1.15	1.16	1.17
Avg. Exchange rate 2018 USD/EUR	0.86	4,432	4,763	5,089	5,409	5,723	6,032	6,335
	0.87	3,998	4,334	4,663	4,987	5,305	5,617	5,924
	0.88	3,564	3,904	4,237	4,565	4,887	5,203	5,514
	0.89	3,130	3,473	3,811	4,143	4,468	4,788	5,103
	0.90	2,695	3,043	3,385	3,720	4,050	4,373	4,691
	0.91	2,260	2,612	2,958	3,297	3,631	3,958	4,280
	0.92	1,825	2,181	2,531	2,874	3,211	3,543	3,868

TABLE 33. PRICE PREMIUM SENSITIVITY ANALYSIS

3.3.5.2. GROSS MARGIN AND OPERATING PROFIT COMPARISON METHODS

Similar to the price premium method, the gross margin comparison method assumes that Lindt's superior brand perception should translate into a higher gross margin than that of a comparable generic firm. As such, we compare the gross margins between Lindt and Natra. We have forecasted that the gross margin of both companies remains constant in the future, which assumes that both companies have reached a steady state regarding their supply costs efficiency.

Furthermore, to obtain this superior brand perception, and the consequent higher gross margin, Lindt has necessarily to make superior brand investments than Natra. This investment differential, which appears in the P&L in the form of fixed costs, has to be subtracted from the differential in gross margin. We have forecasted that these fixed costs remain constant as a percentage of sales in the future. The assumption is that the cost of increasing the top line for both companies remains stable.

The calculation of the superior gross margin, the investment differential and the resulting cash flows has been presented in Table 34. The method yields a total brand value of **€9,060m**, which is significantly higher than the other implemented methods. Nevertheless, this is not a surprising result. As discussed in the literary review, this method assumes that the 100% of the gross margin differential is attributable to brand perception, which is a broad assumption.

In €m		2018A	2019E	2020E	2021E	2022E	2023E	TV
Branded company gross margin		*66.5%*	*66.5%*	*66.5%*	*66.5%*	*66.5%*	*66.5%*	*66.5%*
Generic company gross margin		*41.0%*	*41.0%*	*41.0%*	*41.0%*	*41.0%*	*41.0%*	*41.0%*
Difference in margins		*25.5%*	*25.5%*	*25.5%*	*25.5%*	*25.5%*	*25.5%*	*25.5%*
Branded company sales		3,818	4,000	4,160	4,296	4,404	4,482	4,527
Growth (%)		*5.5%*	*4.8%*	*4.0%*	*3.3%*	*2.5%*	*1.8%*	*1.0%*
Premium gross profit		974	1,021	1,062	1,096	1,124	1,144	1,155
Lindt expenses								
Marketing expenses		(406.0)	(425.4)	(442.5)	(456.9)	(468.4)	(476.6)	(481.5)
as % of sales		*10.6%*	*10.6%*	*10.6%*	*10.6%*	*10.6%*	*10.6%*	*10.6%*
R&D expenses		(12.2)	(12.8)	(13.3)	(13.7)	(14.1)	(14.3)	(14.5)
as % of sales		*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*
Natra expenses								
Marketing expenses		(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)
R&D expenses		(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Superior marketing expense		(400)	(419)	(437)	(451)	(462)	(471)	(476)
Superior R&D expense		(12)	(13)	(13)	(14)	(14)	(14)	(14)
Total difference in costs		(412)	(432)	(450)	(465)	(476)	(485)	(490)
% growth			*4.8%*	*4.1%*	*3.3%*	*2.5%*	*1.8%*	*1.0%*
Pre-tax premium price cash-flows		562	589	612	632	648	659	665
Tax expense	*31%*	(175)	(184)	(191)	(197)	(202)	(205)	(207)
After-tax premium price cash-flows		387	405	421	435	446	453	458
Discount factor	*6%*		0.95	0.89	0.84	0.80	0.76	0.76
Discounted cash-flows			383	376	367	356	342	346
Sum of discounted cash-flows			1,825					
Terminal value	*1%*		7,235					
Brand value			**9,060**					

TABLE 34. GROSS MARGIN AND OPERATING PROFIT COMPARISON METHODS – CALCULATIONS

For this reason, we have decided to sensitize the brand value yield by the method as a function of the percentage of gross margin differential that can be attributable to brand. The method is extremely volatile depending on this value. Additionally, we have sensitized the operating part of the method by assuming a margin expansion or contraction both for Lindt and Natra – as shown in table 35. Again, the method is significantly volatile when moving this variable.

Percentage of gross margin differential attributable to brand

Percentage gross margin attributable to brand	50%	1,196
	60%	2,769
	70%	4,341
	80%	5,914
	90%	7,487
	100%	9,060

Discount rate vs. Terminal Growth

Discount rate (%)	5.8%
Terminal Growth Value (%)	1.0%

		Discount rate (%)						
		4.3%	4.8%	5.3%	5.8%	6.3%	6.8%	7.3%
Terminal Growth Value (%)	0.4%	11,477	10,157	9,107	8,253	7,544	6,947	6,436
	0.6%	11,997	10,553	9,417	8,501	7,747	7,114	6,576
	0.8%	12,577	10,989	9,755	8,769	7,964	7,293	6,725
	1.0%	13,228	11,471	10,125	9,060	8,197	7,484	6,884
	1.2%	13,964	12,007	10,530	9,376	8,449	7,688	7,053
	1.4%	14,801	12,607	10,978	9,721	8,722	7,908	7,233
	1.6%	15,764	13,281	11,474	10,099	9,017	8,145	7,426

Company Gross Margin

Lindt - Gross Margin expansion / (contraction) p.a.	-
Natra - Gross Margin expansion / (contraction) p.a.	-

		Lindt - Gross Margin expansion / (contraction) p.a.						
		(1.2%)	(0.8%)	(0.4%)	-	0.4%	0.8%	1.2%
Natra - Gross Margin expansion / (contraction) p.a.	(1.2%)	9,060	10,388	11,715	13,043	14,370	15,698	17,025
	(0.8%)	7,733	9,060	10,388	11,715	13,043	14,370	15,698
	(0.4%)	6,405	7,733	9,060	10,388	11,715	13,043	14,370
	-	5,078	6,405	7,733	9,060	10,388	11,715	13,043
	0.4%	3,750	5,078	6,405	7,733	9,060	10,388	11,715
	0.8%	2,423	3,750	5,078	6,405	7,733	9,060	10,388
	1.2%	1,095	2,423	3,750	5,078	6,405	7,733	9,060

TABLE 35. GROSS MARGIN AND OPERATING PROFIT COMPARISON METHODS - SENSITIVITY ANALYSIS

3.3.5.3. ROYALTY RELIEF METHOD

As previously seen, the royalty relief method is one of the preferred brand valuation methodologies among practitioners. After all, it does not require of modelling costs associated with the brand nor finding a non-branded comparable company. Also, it is very connected to reality as it values the brand as a function of the licensing costs. However, it is very dependent on the royalty rate chosen, which can be a subjective process. We have followed the guidelines provided by literature to choose the royalty rate.

Considering the brand strength of Lindt and its awareness in the markets where it is present, we have decided to choose a 5% royalty rate for our base case scenario, which we then sensitize. This 5% value is consistent with the average for consumer and leisure products as computed by Analysis Group based on RoyaltySource data:

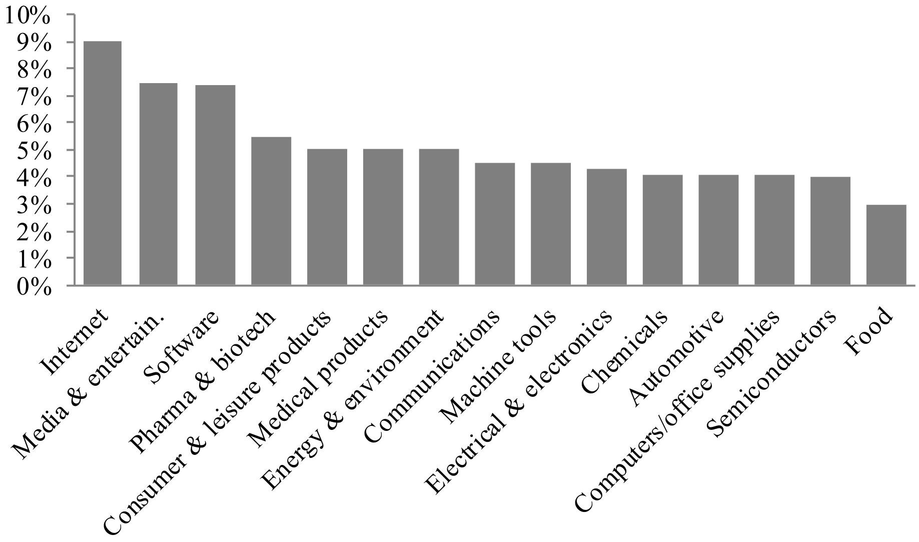


FIGURE 14. AVERAGE ROYALTY FOR CONSUMER & LEISURE PRODUCTS

From an operational standpoint, we have modelled Lindt prices to evolve in the future following current average inflation across its main markets of 2.1%. Its forecasted volume sold decreases linearly from its 2018 value of 5.5% to a terminal growth of 1%. Under these assumptions, the method yields a brand value of €3,444m. Table 36 presents the calculations and Table 37 the sensitivities of the model.

In €m	2018A	2019E	2020E	2021E	2022E	2023E	TV
Lindt product price (€/kg)	18.5	18.9	19.3	19.7	20.1	20.5	20.9
% inflation	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*
Lindt volume (m kg)	206.6	216.4	225.1	232.4	238.3	242.5	244.9
% growth	*5.5%*	*4.8%*	*4.0%*	*3.3%*	*2.5%*	*1.8%*	*1.0%*
Sales	3,818	4,083	4,335	4,569	4,782	4,967	5,121
% growth	▨	*6.9%*	*6.2%*	*5.4%*	*4.6%*	*3.9%*	*3.1%*
Royalty rate	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Pre-tax royalty relief cash-flows	191	204	217	228	239	248	256
Tax expense *31%*	(60)	(64)	(68)	(71)	(75)	(77)	(80)
After-tax royalty relief cash-flows	131	141	149	157	165	171	176
Discount factor *6%*		0.95	0.89	0.84	0.80	0.76	0.76
Discounted cash-flows		133	133	133	131	129	133
Sum of discounted cash-flows		659					
Terminal value *1%*		2,784					
Brand value		**3,444**					

TABLE 36. ROYALTY RELIEF METHOD - CALCULATIONS

Royalty rate vs. Discount rate

Royalty rate (%)	5.0%
Discount rate (%)	5.8%

		Royalty rate (%)						
		3.5%	4.0%	4.5%	5.0%	5.5%	6.0%	6.5%
Discount rate (%)	4.6%	3,233	3,694	4,156	4,618	5,080	5,542	6,003
	5.0%	2,903	3,318	3,733	4,148	4,562	4,977	5,392
	5.4%	2,634	3,011	3,387	3,763	4,140	4,516	4,892
	5.8%	2,410	2,755	3,099	3,444	3,788	4,132	4,477
	6.2%	2,221	2,538	2,856	3,173	3,490	3,808	4,125
	6.6%	2,059	2,353	2,647	2,942	3,236	3,530	3,824
	7.0%	1,919	2,193	2,467	2,741	3,015	3,289	3,563

Discount rate vs. Terminal Growth

Discount rate (%)	5.8%
Terminal Growth Value (%)	1.0%

		Discount rate (%)						
		4.3%	4.8%	5.3%	5.8%	6.3%	6.8%	7.3%
Terminal Growth Value (%)	0.4%	4,372	3,865	3,461	3,133	2,861	2,631	2,435
	0.6%	4,572	4,017	3,581	3,229	2,939	2,696	2,489
	0.8%	4,796	4,185	3,711	3,332	3,022	2,764	2,546
	1.0%	5,046	4,370	3,853	3,444	3,112	2,838	2,607
	1.2%	5,329	4,577	4,009	3,565	3,209	2,917	2,672
	1.4%	5,651	4,807	4,181	3,698	3,314	3,001	2,742
	1.6%	6,022	5,067	4,372	3,843	3,428	3,092	2,816

Inflation

Lindt - Inflation rate (%)	2.1%
Lindt - sales growth expansion/(contraction)	(0.8%)

		Lindt - Inflation rate (%)						
		0.9%	1.3%	1.7%	2.1%	2.5%	2.9%	3.3%
Lindt - sales growth expansion/(contraction)	(1.1%)	3,062	3,127	3,195	3,263	3,333	3,404	3,476
	(1.0%)	3,117	3,184	3,252	3,322	3,393	3,466	3,539
	(0.9%)	3,173	3,241	3,311	3,382	3,455	3,529	3,604
	(0.8%)	3,230	3,300	3,371	3,444	3,517	3,593	3,669
	(0.7%)	3,288	3,359	3,432	3,506	3,581	3,658	3,736
	(0.6%)	3,347	3,419	3,493	3,569	3,645	3,724	3,803
	(0.5%)	3,407	3,481	3,556	3,633	3,711	3,791	3,872

TABLE 37. ROYALTY RELIEF METHOD - SENSITIVITY ANALYSIS

The model does not seem to be very dependent on the operating assumptions of inflation and volume growth. However, as expected, it is significantly volatile when modifying the royalty rate and terminal growth.

3.3.5.4. BRAND STRENGTH ANALYSIS

This approach is based on the brand's influence in the consumer buying decision-making. In order to determine such impact, we need to analyze what are the demand drivers and strength attributes through a survey that will enable us to give quantitative values to the importance of qualitative market factors. The method yields the brand contribution as a percentage of how important customers rank brand awareness compared to other relevant variables.

3.3.5.4.1. SURVEY – BRAND'S INFLUENCE

The process to determine the brand importance is quite subjective and requires the composition of a survey. As laid above, the intention is to understand the main drivers behind the consumers' decision of acquiring Lindt chocolate. After some consumer and industry research, the main factors that affect this decision are:

i. **Prices**: product affordability and comparison to similar items from the industry; it is also an assessment of the value customers see on such good/service through their willingness to pay for it.
ii. **Quality of the product**: all features with the capacity to meet customer needs/desires to provide satisfaction, thus avoiding any deficiency or defect.
iii. **Brand awareness**: the relevance of the image, reputation and all the attributes that can be related to the product's brand.
iv. **Product availability**: the quantity of an item displayed in the store when the customer visits it, being crucial how visible they are on the shelves.
v. **Sales format**: this includes marketing factors in the design of the product, packaging and tapes, all of them with the aim to enhance the product's visual impact and its potential superior quality.

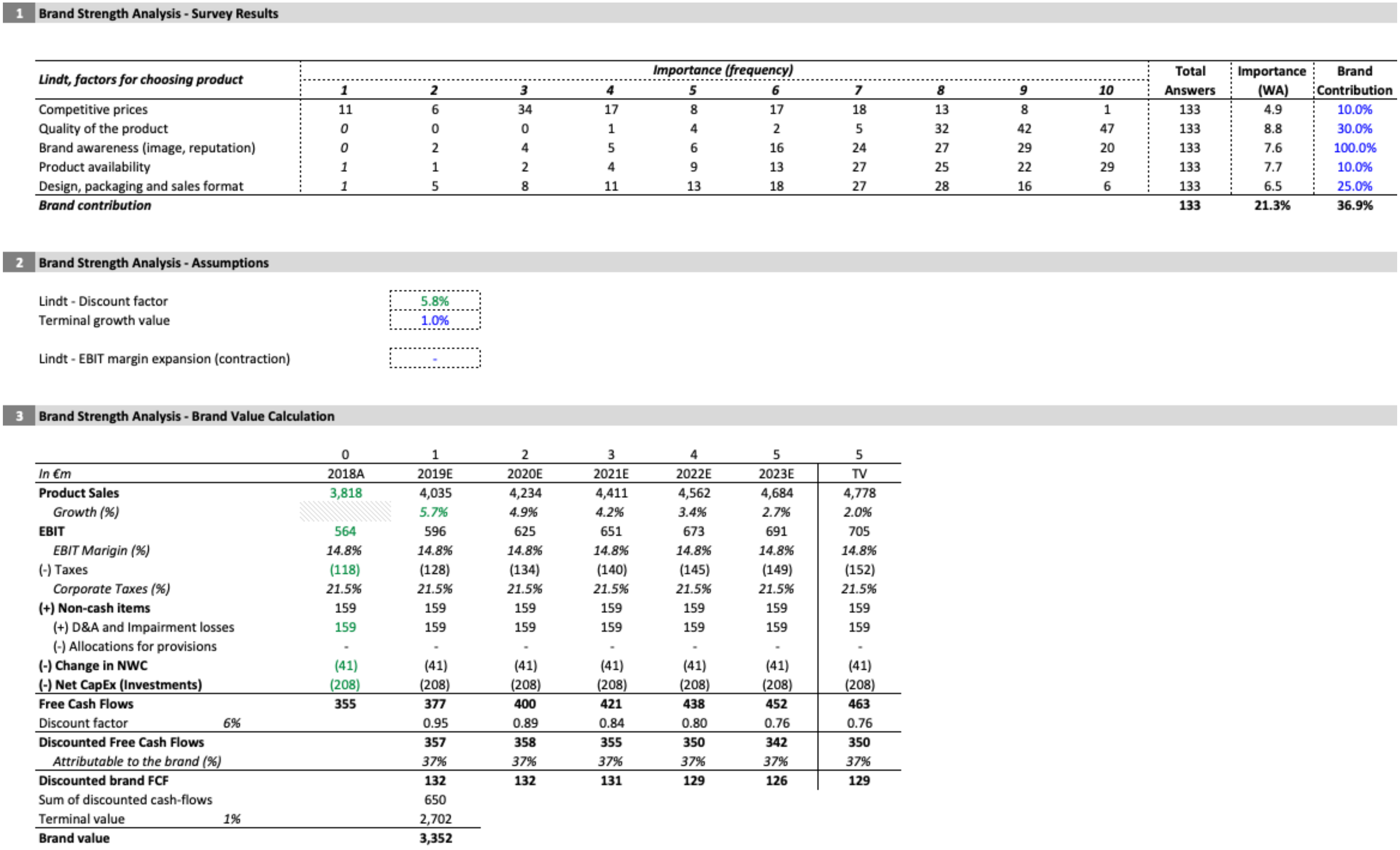
The survey has been sent to all HEC students, ensuring a heterogeneous sample with respect to gender and nationality. The questions and the survey composition is shown in the Appendix – see Figure 17 for reference – and the results yielded from the 133 responses are shown in Table 38 next page and in Figure 18 in the Appendix.

As we can see, customers seem to appreciate the quality of the Lindt's products over all other factors, closely followed by its brand awareness and the product availability on the stores. Sales format (design and packaging) seem to have less relevance than the three variables already mentioned. Finally, competitive prices are the least important factor – with a score below 5 out of 10 – which is reasonable considering that Lindt is openly recognized for its premium products, with higher quality and, thus, higher prices that do not compete in the classic price-war where other retailers (not only in the chocolate or F&D industry) find their market spot. If we compute the brand importance as a unique factor compared to the other ones analyzed, the brand contribution yielded is 21.3%.

However, we should also consider that there is a correlation between those variables. Truth is such correlation makes the statistical model much more complex than the one presented, thus this result is not significant nor statistically correct. However, with the aim to simplify the methodology and as a proxy for the true brand contribution, we have assumed the amount (as a percentage) that brand affects the other four decision-making factors. The quality of the product and its format sales are part of its brand power (30% and 25%, respectively), while price and product availability influence its reputation and image at a lower scale (assumed 10% both). We finally obtained a brand contribution of 36.9% that can be applied to Lindt's financial variables such as sales, costs or, as we have done in Table 38 next page, in its cash flows.

3.3.5.4.2. BRAND VALUE & SENSITIVITIES

Once determined the brand indexed relative importance, we have decided to apply its contribution to the FCF from a simple DCF valuation method, which would yield the FCF attributable to the brand and, thus, its brand value.



1 Brand Strength Analysis - Survey Results

Lindt, factors for choosing product	*Importance (frequency)* 1	2	3	4	5	6	7	8	9	10	Total Answers	Importance (WA)	Brand Contribution
Competitive prices	11	6	34	17	8	17	18	13	8	1	133	4.9	10.0%
Quality of the product	*0*	0	0	1	4	2	5	32	42	47	133	8.8	30.0%
Brand awareness (image, reputation)	*0*	2	4	5	6	16	24	27	29	20	133	7.6	100.0%
Product availability	*1*	1	2	4	9	13	27	25	22	29	133	7.7	10.0%
Design, packaging and sales format	*1*	5	8	11	13	18	27	28	16	6	133	6.5	25.0%
Brand contribution											**133**	**21.3%**	**36.9%**

2 Brand Strength Analysis - Assumptions

Lindt - Discount factor	5.8%
Terminal growth value	1.0%
Lindt - EBIT margin expansion (contraction)	-

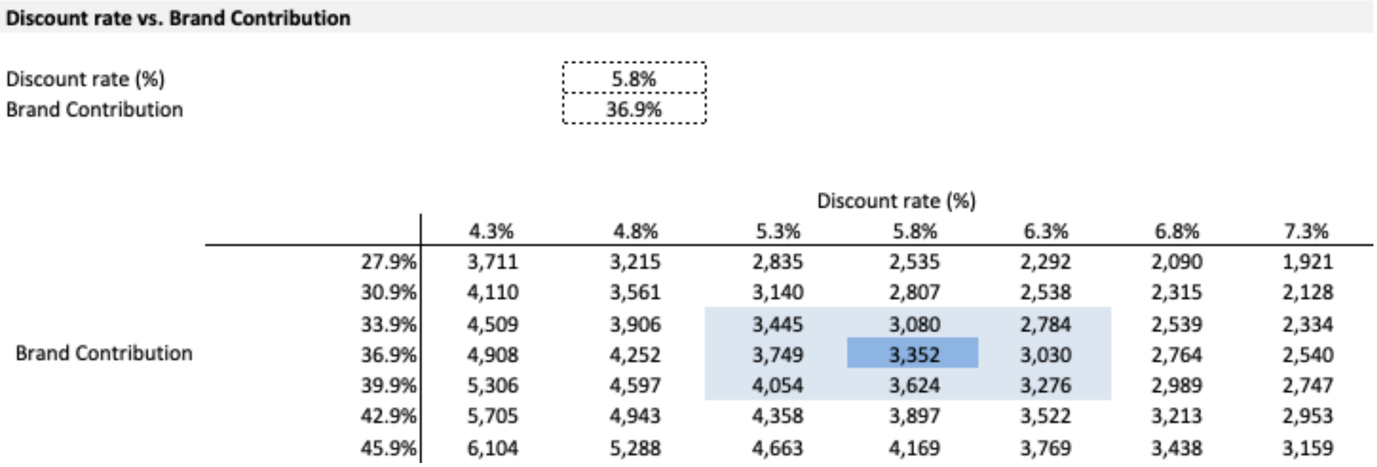
3 Brand Strength Analysis - Brand Value Calculation

		0	1	2	3	4	5	5
In €m		2018A	2019E	2020E	2021E	2022E	2023E	TV
Product Sales		3,818	4,035	4,234	4,411	4,562	4,684	4,778
Growth (%)			*5.7%*	*4.9%*	*4.2%*	*3.4%*	*2.7%*	*2.0%*
EBIT		564	596	625	651	673	691	705
EBIT Marigin (%)		*14.8%*	*14.8%*	*14.8%*	*14.8%*	*14.8%*	*14.8%*	*14.8%*
(-) Taxes		(118)	(128)	(134)	(140)	(145)	(149)	(152)
Corporate Taxes (%)		*21.5%*	*21.5%*	*21.5%*	*21.5%*	*21.5%*	*21.5%*	*21.5%*
(+) Non-cash items		159	159	159	159	159	159	159
(+) D&A and Impairment losses		159	159	159	159	159	159	159
(-) Allocations for provisions		-	-	-	-	-	-	-
(-) Change in NWC		(41)	(41)	(41)	(41)	(41)	(41)	(41)
(-) Net CapEx (Investments)		(208)	(208)	(208)	(208)	(208)	(208)	(208)
Free Cash Flows		355	**377**	**400**	**421**	**438**	**452**	**463**
Discount factor	*6%*		0.95	0.89	0.84	0.80	0.76	0.76
Discounted Free Cash Flows			**357**	**358**	**355**	**350**	**342**	**350**
Attributable to the brand (%)			*37%*	*37%*	*37%*	*37%*	*37%*	*37%*
Discounted brand FCF			**132**	**132**	**131**	**129**	**126**	**129**
Sum of discounted cash-flows			650					
Terminal value	*1%*		2,702					
Brand value			**3,352**					

TABLE 38. BRAND STENGTH ANALYSIS - SURVEY RESULTS AND BRAND VALUATION

The DCF applied is as simple and conservative as possible, considering 2018 financial results from Lindt's Annual Reports and forecasting sales, EBIT, taxes, non-cash items, Working Capital and CapEx accordingly. We have considered taking 2019 growth as an average of the growth experienced in the last three years – assuming similar trends for this year – and then decreasing the growth rate to reach a terminal sales growth of 2% (similar to other methods applied). We have assumed EBIT margins to remain constant, with no operational improvement or deterioration. Likewise, corporate tax rate has been maintained constant, as well as D&A and impairments, Changes in Net Working Capital and CapEx requirements. Applying Lindt's discounted factor and the percentage of the aforementioned brand contribution, this method yields a brand value of **€3,352m**.

However, as previously mentioned, the process of distinguishing the brand-related factors is subjective and the composition of the survey makes the model quite arbitrary. As a result, we have decided to sensitize the valuation method to have a more realistic view of the final brand value – changing discount factor, EBIT margin expansion or contraction and, obviously and more importantly, the weight of the brand importance compared all other attributes. This yields a range of c.€5.0Bn and c.2.8Bn as shown in the sensitivity analysis laid below.



Discount rate vs. Brand Contribution

Discount rate (%) 5.8%
Brand Contribution 36.9%

		Discount rate (%)						
		4.3%	4.8%	5.3%	5.8%	6.3%	6.8%	7.3%
	27.9%	3,711	3,215	2,835	2,535	2,292	2,090	1,921
	30.9%	4,110	3,561	3,140	2,807	2,538	2,315	2,128
	33.9%	4,509	3,906	3,445	3,080	2,784	2,539	2,334
Brand Contribution	36.9%	4,908	4,252	3,749	3,352	3,030	2,764	2,540
	39.9%	5,306	4,597	4,054	3,624	3,276	2,989	2,747
	42.9%	5,705	4,943	4,358	3,897	3,522	3,213	2,953
	45.9%	6,104	5,288	4,663	4,169	3,769	3,438	3,159

EBIT margin vs. Brand Contribution

Lindt - EBIT margin expansion (contraction)	-
Brand Contribution	36.9%

		Lindt - EBIT margin expansion (contraction)						
		(1.5%)	(1.0%)	(0.5%)	-	0.5%	1.0%	1.5%
Brand Contribution	27.9%	1,114	1,588	2,061	2,535	3,009	3,482	3,956
	30.9%	1,234	1,758	2,283	2,807	3,332	3,856	4,381
	33.9%	1,353	1,929	2,504	3,080	3,655	4,230	4,806
	36.9%	1,473	2,099	2,726	3,352	3,978	4,605	5,231
	39.9%	1,593	2,270	2,947	3,624	4,302	4,979	5,656
	42.9%	1,713	2,441	3,169	3,897	4,625	5,353	6,081
	45.9%	1,832	2,611	3,390	4,169	4,948	5,727	6,506

TABLE 39. BRAND STRENGTH ANALYSIS - SENSITIVITY ANALYSIS

3.3.5.5. EXCESS CASH FLOW METHOD

This method is based on the excess earnings calculated as the difference between the firm cash flows – generated by tangible assets – and the return from all other assets (both tangibles and intangibles). As a result, we will obtain the cash flows from intangible assets (other than goodwill) that constitutes the best proxy to the value attributable to the brand.

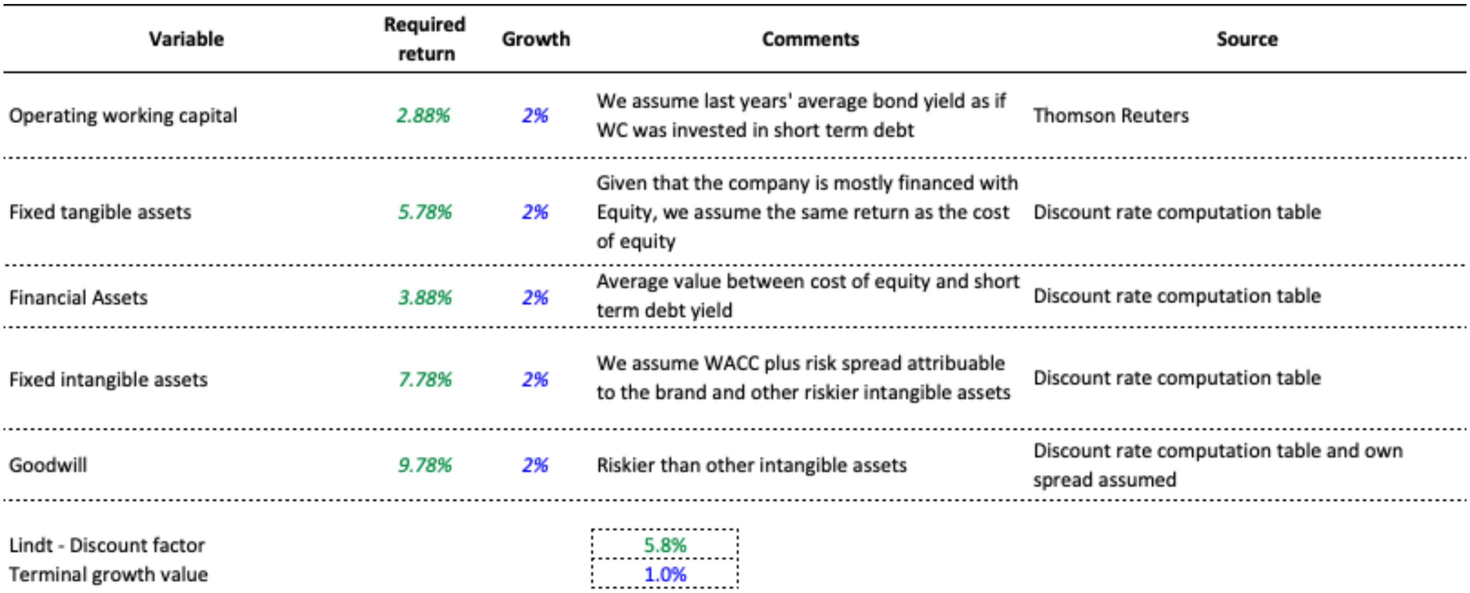
3.3.5.5.1. ASSUMPTIONS & REQUIRED RETURNS

One of the most challenging and sensible points in the Excess Cash Flow Method is the determination of the required rate of return of the different assets according to their nature, riskiness and constitution. Additionally, we also needed to assume the growth rate of Lindt's assets in order to project the cash flows for each one. Those are as follows:

- **Operating Working Capital**: we have considered 2018 bond yield, assuming the remaining Working Capital is invested in short term debt, at 2.88%. Growth rate of 2% being consistent with terminal growth rates previously used in other methodologies.
- **Fixed Tangible Assets**: taking into account that the company is mostly financed with equity, we have assumed the same return as its cost of equity, which is 5.78%. Likewise, we have considered a 2% growth rate y-o-y.

- **Financial Assets**: assuming it is both equity and debt, we have computed an average of the cost of equity and short term debt, which yields a 3.88% required return. Again, we have assumed 2% growth.
- **Fixed Intangible Assets**: we have assumed Lindt's discount rate (5.58%), and added a 2% spread attributed to the brand and other intangible assets with a riskier nature, which results in a 7.78% of return. Similarly, its growth rate is 2%.
- **Goodwill**: again, we have considered a 2% spread explained by the riskier nature compared with Fixed Intangible Assets, hence yielding a return of 9.78%. Again, 2% growth rate.

The assumptions are clearly illustrated in Table 40 below:



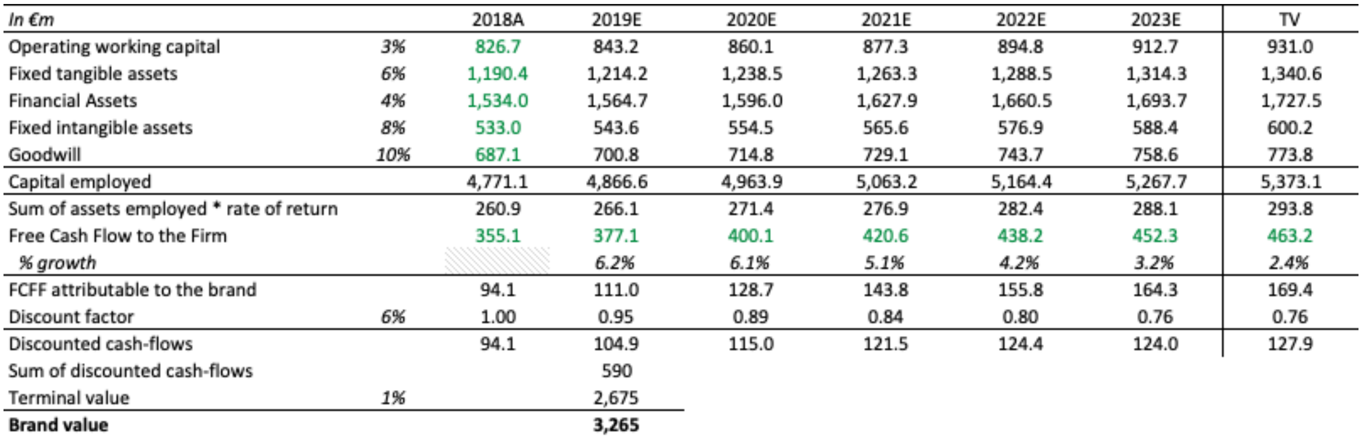
Variable	Required return	Growth	Comments	Source
Operating working capital	2.88%	2%	We assume last years' average bond yield as if WC was invested in short term debt	Thomson Reuters
Fixed tangible assets	5.78%	2%	Given that the company is mostly financed with Equity, we assume the same return as the cost of equity	Discount rate computation table
Financial Assets	3.88%	2%	Average value between cost of equity and short term debt yield	Discount rate computation table
Fixed intangible assets	7.78%	2%	We assume WACC plus risk spread attribuable to the brand and other riskier intangible assets	Discount rate computation table
Goodwill	9.78%	2%	Riskier than other intangible assets	Discount rate computation table and own spread assumed
Lindt - Discount factor			5.8%	
Terminal growth value			1.0%	

TABLE 40. EXCESS CASH FLOW METHOD - ASSUMPTIONS

Once determined the required returns for each asset class, the projected assets times the assumed return rate (assuming it remains constant) allow us to obtain the cash flows generated by each asset. This is key to determine the cash flows for the brand and, as a result, the brand value.

3.3.5.5.2. RESULTS & SENSITIVITY ANALYSIS

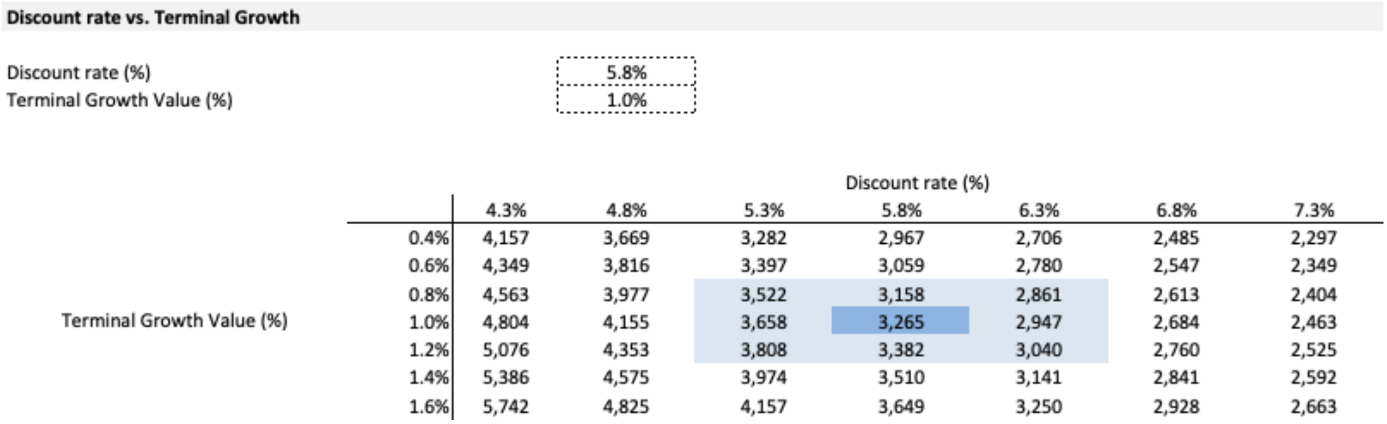
Considering the required returns for each asset and the firm free cash flows already calculated for other methods, the FCFF attributable to the firm can easily be estimated as shown in Table 41 below. Using Lindt's discount factor and the terminal value of 1% used in all other methodologies, this approach yields a final brand value of **€3,265m**.



In €m		2018A	2019E	2020E	2021E	2022E	2023E	TV
Operating working capital	*3%*	826.7	843.2	860.1	877.3	894.8	912.7	931.0
Fixed tangible assets	*6%*	1,190.4	1,214.2	1,238.5	1,263.3	1,288.5	1,314.3	1,340.6
Financial Assets	*4%*	1,534.0	1,564.7	1,596.0	1,627.9	1,660.5	1,693.7	1,727.5
Fixed intangible assets	*8%*	533.0	543.6	554.5	565.6	576.9	588.4	600.2
Goodwill	*10%*	687.1	700.8	714.8	729.1	743.7	758.6	773.8
Capital employed		4,771.1	4,866.6	4,963.9	5,063.2	5,164.4	5,267.7	5,373.1
Sum of assets employed * rate of return		260.9	266.1	271.4	276.9	282.4	288.1	293.8
Free Cash Flow to the Firm		355.1	377.1	400.1	420.6	438.2	452.3	463.2
% growth			*6.2%*	*6.1%*	*5.1%*	*4.2%*	*3.2%*	*2.4%*
FCFF attributable to the brand		94.1	111.0	128.7	143.8	155.8	164.3	169.4
Discount factor	*6%*	1.00	0.95	0.89	0.84	0.80	0.76	0.76
Discounted cash-flows		94.1	104.9	115.0	121.5	124.4	124.0	127.9
Sum of discounted cash-flows			590					
Terminal value	*1%*		2,675					
Brand value			**3,265**					

TABLE 41. EXCESS CASH FLOW METHOD - CALCULATIONS

Given the broad assumptions made to estimate the required return of all different asset types, it is important to sensitize the final results. As a result, we provide a sensitivity analysis in Table 42 below, comparing the effects of the discount rate, terminal growth and the four interrelated asset return rates (tangible vs. intangibles). This yields a range of **c.€3.8Bn and c.€2.8Bn** of Lindt's brand value.



Discount rate vs. Terminal Growth

Discount rate (%)	5.8%
Terminal Growth Value (%)	1.0%

		Discount rate (%)						
		4.3%	4.8%	5.3%	5.8%	6.3%	6.8%	7.3%
	0.4%	4,157	3,669	3,282	2,967	2,706	2,485	2,297
	0.6%	4,349	3,816	3,397	3,059	2,780	2,547	2,349
	0.8%	4,563	3,977	3,522	3,158	2,861	2,613	2,404
Terminal Growth Value (%)	1.0%	4,804	4,155	3,658	3,265	2,947	2,684	2,463
	1.2%	5,076	4,353	3,808	3,382	3,040	2,760	2,525
	1.4%	5,386	4,575	3,974	3,510	3,141	2,841	2,592
	1.6%	5,742	4,825	4,157	3,649	3,250	2,928	2,663

Required returns - Tangible Assets

Operating working capital	2.9%
Fixed tangible assets	5.8%

		Operating working capital						
		2.3%	2.5%	2.7%	2.9%	3.1%	3.3%	3.5%
	5.2%	3,535	3,498	3,461	3,424	3,388	3,351	3,314
	5.4%	3,482	3,445	3,408	3,371	3,335	3,298	3,261
	5.6%	3,429	3,392	3,355	3,318	3,281	3,245	3,208
Fixed tangible assets	5.8%	3,376	3,339	3,302	3,265	3,228	3,192	3,155
	6.0%	3,323	3,286	3,249	3,212	3,175	3,139	3,102
	6.2%	3,270	3,233	3,196	3,159	3,122	3,086	3,049
	6.4%	3,217	3,180	3,143	3,106	3,069	3,032	2,996

Required returns - Intangible Assets

Fixed intangible assets	7.8%
Goodwill	9.8%

		Fixed intangible assets						
		6.3%	6.8%	7.3%	7.8%	8.3%	8.8%	9.3%
	8.3%	3,673	3,614	3,554	3,495	3,436	3,376	3,317
	8.8%	3,596	3,537	3,478	3,418	3,359	3,300	3,240
	9.3%	3,520	3,461	3,401	3,342	3,282	3,223	3,164
Goodwill	9.8%	3,443	3,384	3,325	3,265	3,206	3,147	3,087
	10.3%	3,367	3,307	3,248	3,189	3,129	3,070	3,011
	10.8%	3,290	3,231	3,172	3,112	3,053	2,993	2,934
	11.3%	3,214	3,154	3,095	3,036	2,976	2,917	2,858

TABLE 42. EXCESS CASH FLOW METHOD - SENSITIVITY ANALYSIS

3.3.5.6. REAL OPTIONS

As mentioned in the literary review, the use of real options is not a brand valuation method per se but an approach to use on top of more classical methodologies. The objective is to start from one of those already studied brand valuations to take into consideration some selected growth opportunities.

3.3.5.6.1. LINDT BRAND VALUE WITH NO GROWTH

The first step consists on calculating Lindt's Brand Value assuming no growth, using the royalty relief method already analyzed with 0% growth rate from 2020 to 2023 – using 2018 growth and 2019 growth rate suggested by Credit Suisse Broker Report. The embedded assumption is that expansion investments will pay-off in 1-to-2 years, while maintenance CapEx will enable to sustain the 0% growth rate hypothesis. All other assumptions are consistent with the ones explained in the Royalty Relief Method – i.e. 5% royalty rate, using Lindt's discount factor of 5.8%, corporate tax rate of c.31% and, in this case, 0% perpetual terminal growth rate. The resulting brand value with no growth is **€3,495m**, as shown in Table 43 below.

In €m		2018A	2019E	2020E	2021E	2022E	2023E	TV
Sales		3,818	4,041	4,041	4,041	4,041	4,041	4,041
% growth			*5.8%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Royalty rate		*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Pre-tax royalty relief cash-flows		191	202	202	202	202	202	202
Tax expense	*31%*	-	-	-	-	-	-	-
After-tax royalty relief cash-flows		191	202	202	202	202	202	202
Discount factor	*6%*		0.95	0.89	0.84	0.80	0.76	0.76
Discounted cash-flows			191	181	171	161	153	153
Sum of discounted cash-flows			856					
Terminal value	*0%*		2,639					
Brand value			**3,495**					

TABLE 43. REAL OPTIONS - BRAND VALUE WITH NO GROWTH

3.3.5.6.2. FUTURE GROWTH OPTIONS

The second step is to identify Lindt's future expansion options and value them using the real options approach.

Based on Lindt's Annual Reports, Management Presentations and Strategic News Releases from the last two years, we have considered the following growth opportunities for the Swiss chocolate manufacturer: United States, Europe and China. On the one hand, the first two regions are consolidated markets where the Group is seeking to increase its market share and its predominant role as top 1 premium player. On the other hand, China is a recently new market where the firm is eager to further expand to increase market share and take advantage of the organic market growth (7.7% CAGR 10-23 compared to 1.9% and 2.2% in Europe and USA, respectively – Statista Dossier on the Confectionary Chocolate Industry).

It is important to note those opportunities are simplifications to perform a reasonable valuation, given that the company might be considering other options that has not disclosed (either publically or to their shareholders) and considering that Europe could be disaggregated into all the countries where Lindt has exposure. This is, indeed, one of the limitations of this methodology.

The options chosen – USA, Europe and China – will be valued separately using the Black & Scholes formula, which is:

$$d_1 = \frac{\ln\left(\frac{S}{K}\right) + \left(r + \frac{\sigma^2}{2}\right) * t}{\sigma * \sqrt{t}}$$

$$d_2 = d_1 - \sigma * \sqrt{t}$$

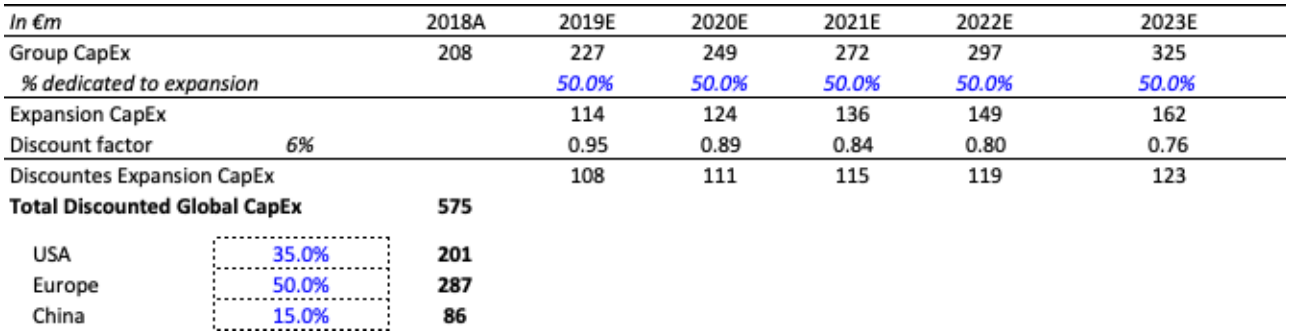
$$C = S * N(d_1) - K * e^{-r*t} * N(d_2)$$

Where:

- S is the stock price, in this case the present value of Lindt's 2023 expected cash flows from the specific region
- K is the strike price, in this case 2023 target investment by Lindt to expand into the specific geography
- r is the risk free rate, in this case the 10-year government bond from the country
- σ is the estimated volatility of the firm's cash flows

Lindt's strategic plan is obviously confidential, thus most of the information required to perform this valuation method is missing. As a result, our analysis includes several assumptions based on market data and own hypothesis.

First, we need to know how much investment is employed to every geographical zone. We have considered the CapEx from 2018 (Annual Report) and 2019 (Credit Suisse Broker Report) and estimated a similar trend for the incoming years until 2023. We have considered – in line with past years and market data – that 50% of the CapEx will be invested in expansion-related matters, while the rest is for maintenance purposes. Once discounted, the analysis yields a total discounted global expansion investment of c.€575m that Lindt plans to deploy. As shown in Table 44 below, we have assumed 50% of that amount is invested in Europe – given it is the firm's main market where they need to maintain their leadership and gain more market share – followed by 35% to the United States – in order to reverse the lack of traction in the last years – and 15% to China – the new expansion opportunity.



In €m		2018A	2019E	2020E	2021E	2022E	2023E
Group CapEx		208	227	249	272	297	325
% dedicated to expansion			*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*
Expansion CapEx			114	124	136	149	162
Discount factor	*6%*		0.95	0.89	0.84	0.80	0.76
Discountes Expansion CapEx			108	111	115	119	123
Total Discounted Global CapEx		**575**					
USA	35.0%	**201**					
Europe	50.0%	**287**					
China	15.0%	**86**					

TABLE 44. REAL OPTIONS - INVESTMENTS BY GEOGRAPHIES

Another assumption is the volatility of 2018 cash flows that we have set at 35% due to the uncertainty – which is consistent with the 25% share price volatility. As it can be seen later on the sensitivity analysis, volatility does not have a significant impact on the value of the expansion option. Finally, we have considered 2021 (T=2) as the investment decision pay-off date, i.e. the year in which Lindt has to decide whether or not to keep investing to reach 2023 market share targets of each expansion option set in 2019.

3.3.5.6.2.1. EXPANSION OPTION TO THE UNITED STATES

As illustrated in Table 45 next page, we have assumed an increase of 100 bps in market share in 2023, with the aim to pass Mondelez as the third largest chocolate player in the US (after Hershey and Mars, with 30% market share each). Moreover, the recent trend of slowing growth and unrealized expectations is forcing Lindt to make an extra effort to secure this important market. Using market data and forecasts from Statista, the calculated target investment and the discount factor for the North American country, we have been in the position to use the Black & Scholes formula to estimate a final expansion call option value of **€981m**.

Additionally, there is also a sensitivity analysis provided. As mentioned, volatility has low impact on the final result, while targeted market share for 2023 has much more impact when compared to the investment amount.

USA

Current 2018	
Market	
2018 Market Size (€m) *	24,112
Growth CAGR (2018-2023) *	1.80%
Lindt	
Product sales (€m) **	1,230
Market Share *	5.1%
2023 Traget Investment	201
PV of 2023 Expected Cash Flows	1,176
Discount factor	6.5%
Option Computation (Black-Scholes)	
S (PV 2023 CF)	1,176
K (2023 Investment)	201
T (decision delay)	2
r (risk-free rate)	1.53%
σ (estimated volatility)	35%
d1	3.877
d2	3.382
N(d1)	1.000
N(d2)	1.000
US expansion call option value	981

Source: * Statista dossier on the Chocolate Industry
Source: * 2018 Lindt Annual Report

Objective 2023	
Market	
2023 Market Size (€m) *	26,358
Lindt	
Product sales (€m)	1,608
Market Share	6.1%
Expected Cash Flows	1,608

WACC Computation		
Risk-free return	2.44%	*10-Year US Treasury Bond - Bloomberg*
Market premium	5.96%	*Damodaran Total Equity Risk Premium*
Re-levered Beta	0.67	*Assuming constant leverage (no tax effect)*
Cost of Equity	6.45%	
Cost of Debt		
Risk-free rate	2.44%	
Debt spread	1.35%	
Cost of debt pre-tax	3.79%	*Rf + debt spread*
Statuory tax rate	40.00%	*US Statuory tax rate*
Cost of debt post-tax	2.27%	
Capital Structure		
Gearing ratio	0.00%	*Close to inexistant net debt (conservative view)*
WACC	**6.45%**	

Sensitivity Analysis - Expansion in the USA

		2018 Cash Flow Volatility						
		20.0%	25.0%	30.0%	35.0%	40.0%	45.0%	50.0%
2018 Investment	126	1,054	1,054	1,054	1,054	1,054	1,054	1,054
	151	1,030	1,030	1,030	1,030	1,030	1,030	1,030
	176	1,005	1,005	1,005	1,005	1,005	1,005	1,006
	201	981	981	981	981	981	981	982
	226	957	957	957	957	957	957	958
	251	933	933	933	933	933	933	934
	276	908	908	908	908	909	909	911

		2023 Target Market Share						
		3.1%	4.1%	5.1%	6.1%	7.1%	8.1%	9.1%
2018 Investment	126	475	668	861	1,054	1,247	1,439	1,632
	151	451	644	837	1,030	1,222	1,415	1,608
	176	427	620	813	1,005	1,198	1,391	1,584
	201	403	596	788	981	1,174	1,367	1,560
	226	380	571	764	957	1,150	1,342	1,535
	251	357	548	740	933	1,125	1,318	1,511
	276	334	524	716	908	1,101	1,294	1,487

TABLE 45. REAL OPTIONS - USA EXPANSION OPTION

3.3.5.6.2.2. EXPANSION OPTION TO EUROPE

Europe represents Lindt's origins and essence. It is the market where the firm has more exposure and sales distribution, despite the North American market is getting closer year after year. The firm has already made public its intentions to open in 2019 new subsidiaries and shops in the Netherlands, Portugal and Germany, among other undisclosed European countries. This trend is expected to continue for the next years in order to enhance its powerful position – with 6.4% market share in Europe – that we assume it could increase in 50 bps from 2019 to 2023.

The Confectionary Chocolate Industry data extracted from Statista, Euromonitor forecasts and the potential investments previously computed have allowed us to determine the stock price and strike price required to use the Black & Scholes formula. The application of such model has yielded a final expansion call option of **€1,670m** – as shown in Table 46 laid in next page.

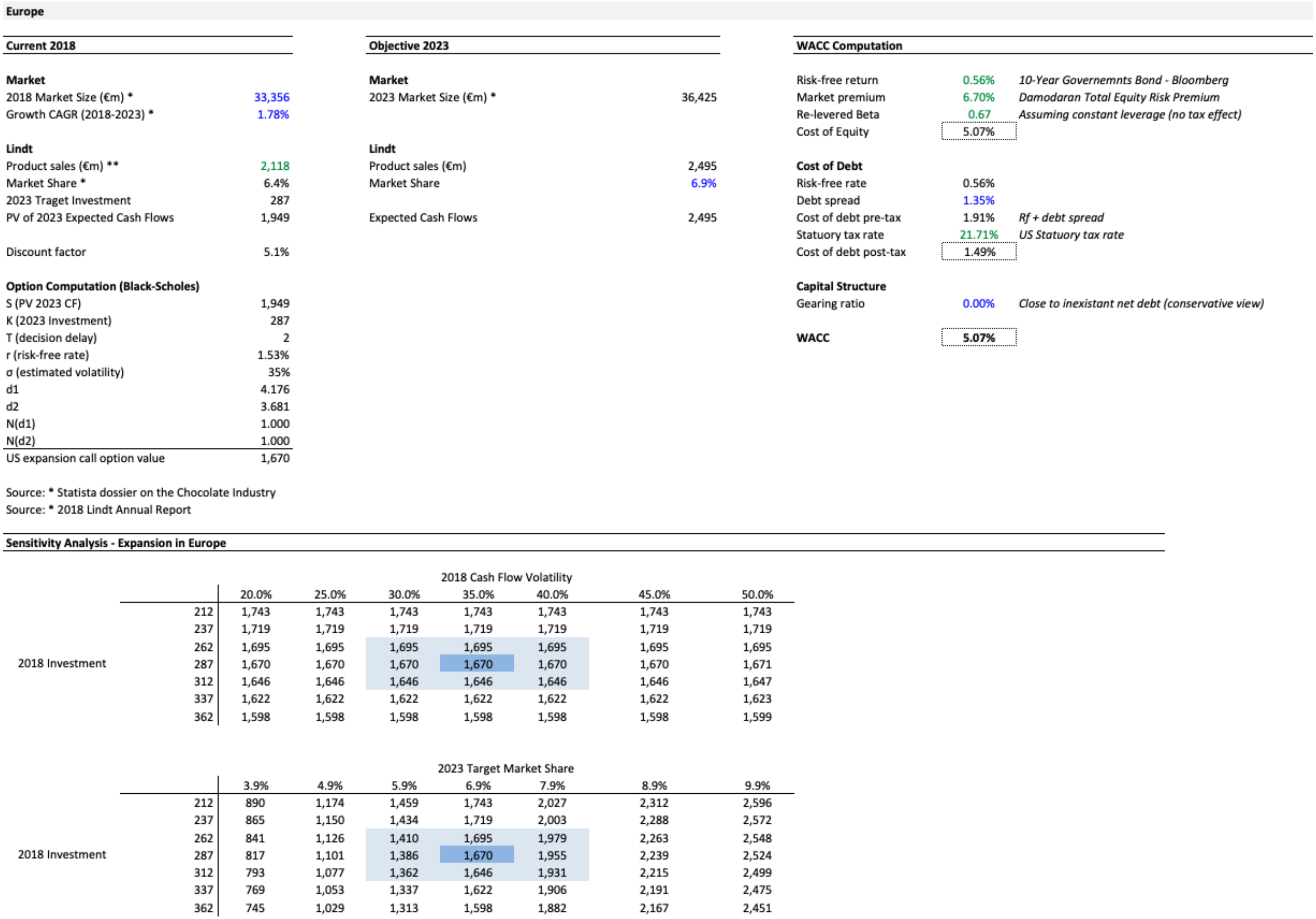
Again, we have sensitized the valuation, with similar results. Volatility has almost no impact on the final result, while targeted market share for 2023 is a very sensible variable one should try to forecast as accurately as possible.

3.3.5.6.2.3. EXPANSION OPTION TO CHINA

Finally, China is the third and last expansion option assumed for the real options approach. Lindt started expanding to the Asian region several years ago, experiencing an outstanding double-digit sales growth (38.2% in 2018) and taking advantage of the organic growth present in such market. As a result, Lindt will continue investing progressively in China to exploit the new opportunities offered. With a current 1.8% market share, we have assumed Lindt will manage to enhance its importance in the region, achieving 5.5% market share in 2023.

Likewise, we have used the Black & Scholes formula with the data extracted from Statista and Euromonitor to obtain that the expansion call option is valued at **€571m**.

The sensitivity analysis is also provided in Table 46 and 47 in the next pages.



Europe

Current 2018	
Market	
2018 Market Size (€m) *	33,356
Growth CAGR (2018-2023) *	1.78%
Lindt	
Product sales (€m) **	2,118
Market Share *	6.4%
2023 Traget Investment	287
PV of 2023 Expected Cash Flows	1,949
Discount factor	5.1%
Option Computation (Black-Scholes)	
S (PV 2023 CF)	1,949
K (2023 Investment)	287
T (decision delay)	2
r (risk-free rate)	1.53%
σ (estimated volatility)	35%
d1	4.176
d2	3.681
N(d1)	1.000
N(d2)	1.000
US expansion call option value	1,670

Source: * Statista dossier on the Chocolate Industry
Source: * 2018 Lindt Annual Report

Objective 2023	
Market	
2023 Market Size (€m) *	36,425
Lindt	
Product sales (€m)	2,495
Market Share	6.9%
Expected Cash Flows	2,495

WACC Computation		
Risk-free return	0.56%	*10-Year Governemnts Bond - Bloomberg*
Market premium	6.70%	*Damodaran Total Equity Risk Premium*
Re-levered Beta	0.67	*Assuming constant leverage (no tax effect)*
Cost of Equity	5.07%	
Cost of Debt		
Risk-free rate	0.56%	
Debt spread	1.35%	
Cost of debt pre-tax	1.91%	*Rf + debt spread*
Statuory tax rate	21.71%	*US Statuory tax rate*
Cost of debt post-tax	1.49%	
Capital Structure		
Gearing ratio	0.00%	*Close to inexistant net debt (conservative view)*
WACC	**5.07%**	

Sensitivity Analysis - Expansion in Europe

		2018 Cash Flow Volatility						
		20.0%	25.0%	30.0%	35.0%	40.0%	45.0%	50.0%
2018 Investment	212	1,743	1,743	1,743	1,743	1,743	1,743	1,743
	237	1,719	1,719	1,719	1,719	1,719	1,719	1,719
	262	1,695	1,695	1,695	1,695	1,695	1,695	1,695
	287	1,670	1,670	1,670	1,670	1,670	1,670	1,671
	312	1,646	1,646	1,646	1,646	1,646	1,646	1,647
	337	1,622	1,622	1,622	1,622	1,622	1,622	1,623
	362	1,598	1,598	1,598	1,598	1,598	1,598	1,599

		2023 Target Market Share						
		3.9%	4.9%	5.9%	6.9%	7.9%	8.9%	9.9%
2018 Investment	212	890	1,174	1,459	1,743	2,027	2,312	2,596
	237	865	1,150	1,434	1,719	2,003	2,288	2,572
	262	841	1,126	1,410	1,695	1,979	2,263	2,548
	287	817	1,101	1,386	1,670	1,955	2,239	2,524
	312	793	1,077	1,362	1,646	1,931	2,215	2,499
	337	769	1,053	1,337	1,622	1,906	2,191	2,475
	362	745	1,029	1,313	1,598	1,882	2,167	2,451

TABLE 46. REAL OPTIONS - EUROPE EXPANSION OPTION

China

Current 2018

Market	
2018 Market Size (€m) *	12,803
Growth CAGR (2018-2023) *	4.47%
Lindt	
Product sales (€m) **	237
Market Share *	1.8%
2023 Traget Investment	86
PV of 2023 Expected Cash Flows	655
Discount factor	6.2%
Option Computation (Black-Scholes)	
S (PV 2023 CF)	655
K (2023 Investment)	86
T (decision delay)	2
r (risk-free rate)	1.53%
σ (estimated volatility)	35%
d1	4.405
d2	3.910
N(d1)	1.000
N(d2)	1.000
US expansion call option value	571

Source: * Statista dossier on the Chocolate Industry
Source: * 2018 Lindt Annual Report

Objective 2023

Market	
2023 Market Size (€m) *	15,934
Lindt	
Product sales (€m)	883
Market Share	5.5%
Expected Cash Flows	883

WACC Computation

Risk-free return	1.50%	*10-Year US Treasury Bond - Bloomberg*
Market premium	6.94%	*Damodaran Total Equity Risk Premium*
Re-levered Beta	0.67	*Assuming constant leverage (no tax effect)*
Cost of Equity	6.17%	
Cost of Debt		
Risk-free rate	1.50%	
Debt spread	1.35%	
Cost of debt pre-tax	2.85%	*Rf + debt spread*
Statuory tax rate	25.00%	*US Statuory tax rate*
Cost of debt post-tax	2.14%	
Capital Structure		
Gearing ratio	0.00%	*Close to inexistant net debt (conservative view)*
WACC	6.17%	

Sensitivity Analysis - Expansion in China

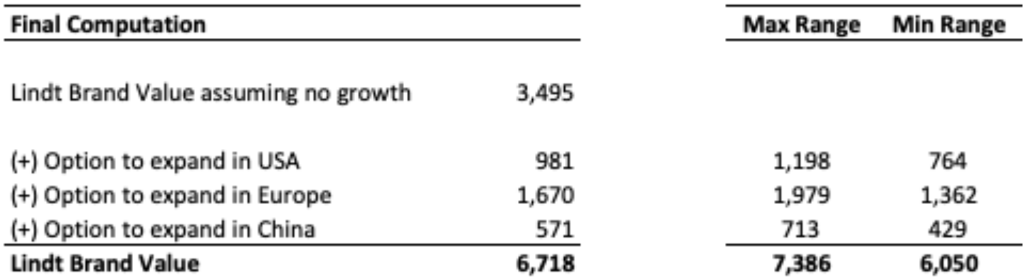
		2018 Cash Flow Volatility						
		20.0%	25.0%	30.0%	35.0%	40.0%	45.0%	50.0%
2018 Investment	11	644	644	644	644	644	644	644
	36	619	619	619	619	619	619	619
	61	595	595	595	595	595	595	595
	86	571	571	571	571	571	571	571
	111	547	547	547	547	547	547	547
	136	522	522	522	523	523	523	523
	161	498	498	498	498	499	499	500

		2023 Target Market Share						
		2.5%	3.5%	4.5%	5.5%	6.5%	7.5%	8.5%
2018 Investment	11	289	407	526	644	762	880	998
	36	265	383	501	619	738	856	974
	61	241	359	477	595	713	831	950
	86	217	335	453	571	689	807	925
	111	193	311	429	547	665	783	901
	136	170	287	404	523	641	759	877
	161	149	263	380	498	616	734	853

TABLE 47. REAL OPTIONS - CHINA EXPANSION OPTION

3.3.5.6.3. FINAL BRAND VALUE

The final value of Lindt's brand is the combination of the brand value calculated assuming no growth and the three expansion options – United States, Europe and China – laid above. The final brand value obtained is **€6,781m**, as shown in Table 48 below. As expected, the value yielded from this method is above almost all other methodologies, given that real options are building on top of other approaches such as the royalty relief method. However, it is important to note that there are new opportunities missing that have not been disclosed or neglected in order to simplify the analysis. Moreover, Lindt also develops other product categories and sub-brands that are not taken into consideration, again, for simplification purposes and due to a substantial lack of public data. This, indeed, could explain the reason why there is another brand valuation approach that yields a higher brand value such us the residual method.



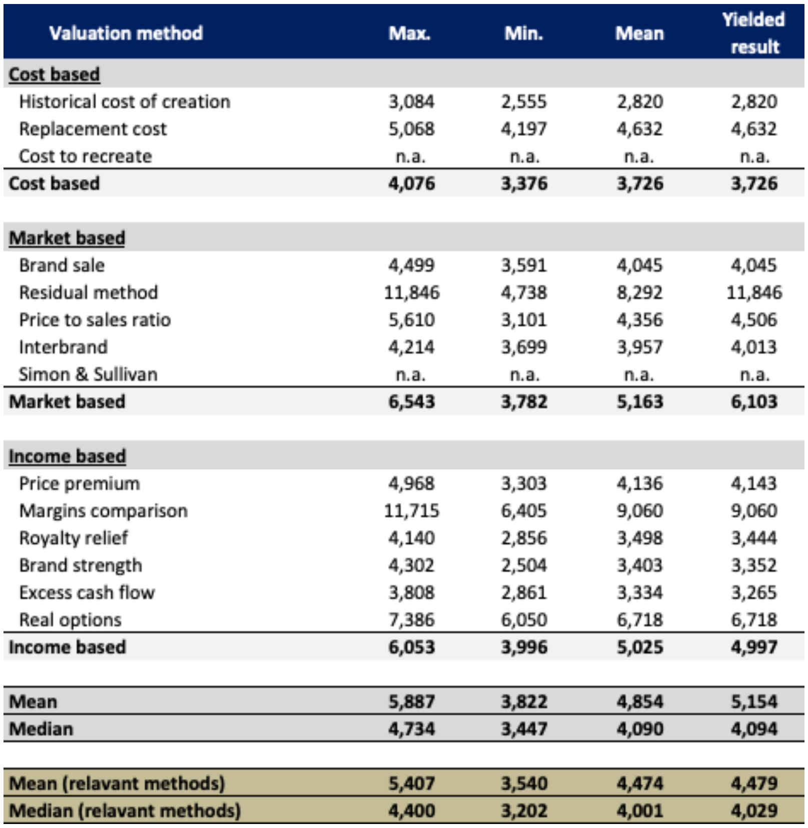
Final Computation		**Max Range**	**Min Range**
Lindt Brand Value assuming no growth	3,495		
(+) Option to expand in USA	981	1,198	764
(+) Option to expand in Europe	1,670	1,979	1,362
(+) Option to expand in China	571	713	429
Lindt Brand Value	**6,718**	**7,386**	**6,050**

TABLE 48. REAL OPTIONS - FINAL BRAND VALUE

3.4. RESULTS SUMMARY

The objective of analyzing and putting into practice as many brand valuation approaches as possible is to have the necessary analytical tools to evaluate the reliability of each method and assess a final brand value for Lind. Moreover, this will allow us to extract some conclusions and recommendations about the broad topic of brand valuation, focusing on each technique used (as described in next section), and yielding a final fair brand value for the Swiss chocolate manufacturer.

Having considered the potential applicable brand valuation methodologies, we have gathered the results from each one in Table 49 below. We have shown not only the brand value yielded in each case, but also the maximum and minimum value from a brand value range estimated in the sensitivity analysis of each valuation method. Additionally, we have provided the mean and median from the most relevant techniques (not considering cost-based methods, residual method and real options, as we will explain later).



Valuation method	Max.	Min.	Mean	Yielded result
Cost based				
Historical cost of creation	3,084	2,555	2,820	2,820
Replacement cost	5,068	4,197	4,632	4,632
Cost to recreate	n.a.	n.a.	n.a.	n.a.
Cost based	**4,076**	**3,376**	**3,726**	**3,726**
Market based				
Brand sale	4,499	3,591	4,045	4,045
Residual method	11,846	4,738	8,292	11,846
Price to sales ratio	5,610	3,101	4,356	4,506
Interbrand	4,214	3,699	3,957	4,013
Simon & Sullivan	n.a.	n.a.	n.a.	n.a.
Market based	**6,543**	**3,782**	**5,163**	**6,103**
Income based				
Price premium	4,968	3,303	4,136	4,143
Margins comparison	11,715	6,405	9,060	9,060
Royalty relief	4,140	2,856	3,498	3,444
Brand strength	4,302	2,504	3,403	3,352
Excess cash flow	3,808	2,861	3,334	3,265
Real options	7,386	6,050	6,718	6,718
Income based	**6,053**	**3,996**	**5,025**	**4,997**
Mean	**5,887**	**3,822**	**4,854**	**5,154**
Median	**4,734**	**3,447**	**4,090**	**4,094**
Mean (relavant methods)	**5,407**	**3,540**	**4,474**	**4,479**
Median (relavant methods)	**4,400**	**3,202**	**4,001**	**4,029**

TABLE 49. BRAND VALUATION METHODS - SUMMARY

As illustrated above, the brand value yielded as an average and median of all methods considered is **€5,154m** and **€4,094m**, respectively. However, if we exclude cost-based methods (not appropriated, nor used in practice, only useful to provide floor valuation indicators), residual method (ceiling valuation, as it considers that 100% of the difference between market capitalization and net assets value is attributable to the brand value) and real options (as a separate case that starts from another valuation technique, assuming no growth, and valuing growth opportunities as options to expand) the final fair brand value we obtain is **€4,479m** for the average and **€4,029m** for median value – note these explanations and conclusions will be further developed in next section.

It can also be seen in Table 49 that there exist some discrepancies between the different approaches used to provide a brand valuation from Lindt. Dispersion is one of the issues with brand valuation techniques, as pinpointed during the report and in Salinas (2009). This is driven by the nature of each methodology, the assumptions undertaken and the data publically available. With a final range (excluding the less relevant methods) between c.€3.5bn and c.€5.4bn, the c.€4.5bn correspond to a 28.8% of Lindt's total market capitalization (€15.57bn) in line with the c.30% brand value vs. market cap ratio from the industry – considering other branded well-known players such as Mars, Nestle, Mondelez or Ferrero.

We have mapped these results in a football field to provide a clearer view on the brand value yielded by each valuation approach, taking into account its sensitivities through a maximum and minimum value. The distribution, organized depending on the valuation technique – i.e. cost-based (red), market-based (green) or income-based (blue) – is shown in Figure 15 below. Additionally, there is a grey zone that represents the Lindt's faire brand value range yielded from the exclusion analysis aforementioned, calculated as an average of the most relevant methodologies once applied the sensitivity analysis for each and every case, from **€3,540m to €5,407m**.

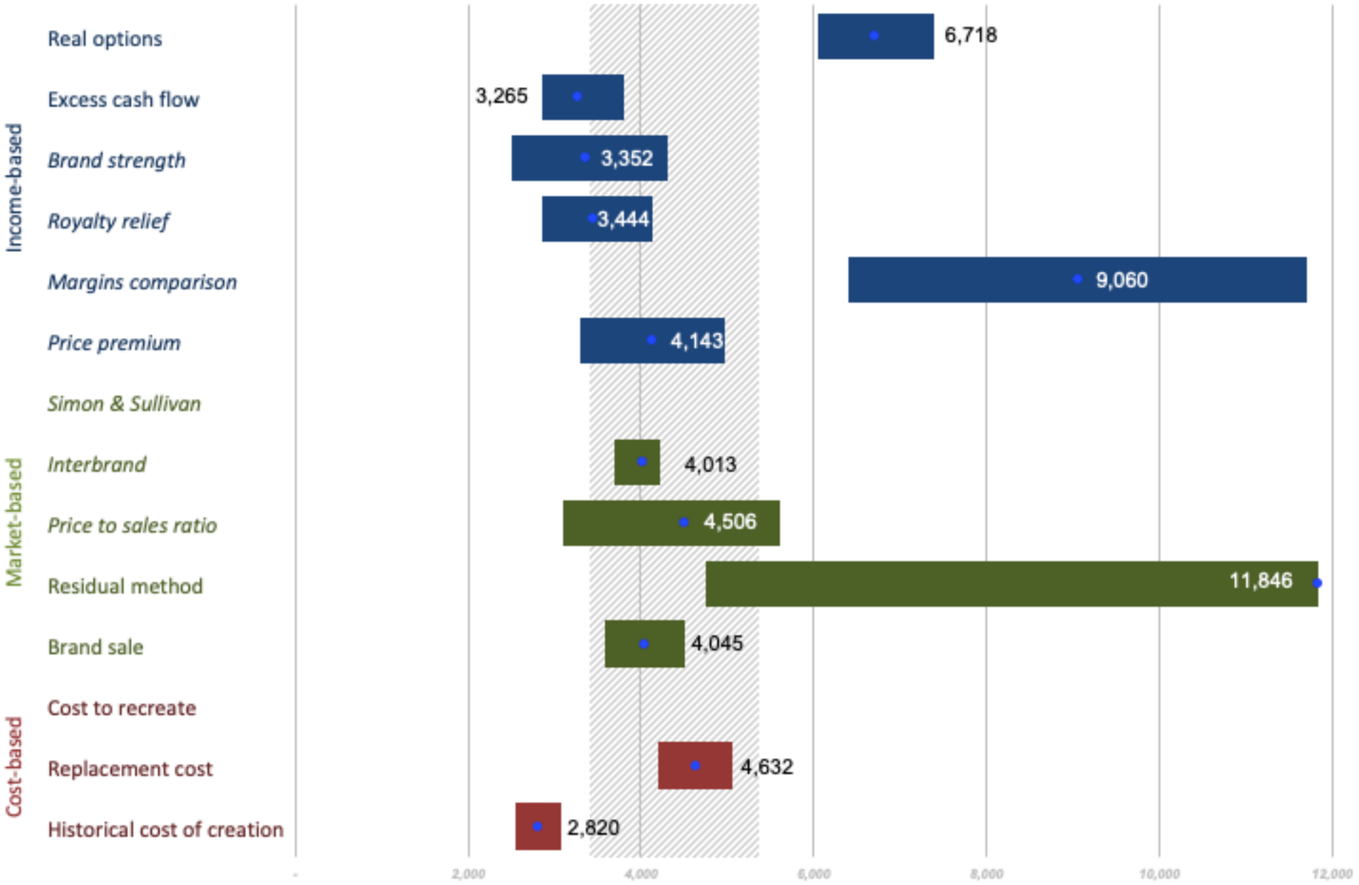


FIGURE 15. BRAND VALUATION ANALYSIS - FOOTBALL FIELD

4. OWN VIEWS AND RECOMMENDATION

The range of methods described and implemented does not intend to be exhaustive, but rather focus on the most relevant from a conceptual point or view. Most of the other methods used by the industry are combinations of the ones laid out.

In general terms, cost methods seem to be the least useful ones. Salinas (2007) harshly criticizes them, pointing out that they are not appropriated, nor used in practice, for brand valuation. Indeed, their conceptual approach is flawed, as the historical cost of developing a brand can hardly be assimilated to its value, which should be only dependent on future economic benefits. Nevertheless, as it has been seen in the case study, these methods can provide a floor to brand valuation and are relatively precise, as they depend on historical data only. The historical cost of creation method is notably simple; once the relevant costs for brand development have been identified, the capitalization exercise is relatively straight forward. While there is a discussion around the Salinas ratio, the subjectivity behind this method is relatively limited. However, the replacement cost method is based on a more complex approach, in which costs are compounded at the company's discount rate to be brought to the current date. Applying it to Lindt was relatively complex and the method relied on several assumptions regarding the discount rate. As such, we do not deem this method to be useful; despite the compounding exercise, it is still conceptually flawed, and we thus believe that it does not make much sense to implement it. Hence, among the cost methods, the historical cost of creation is the preferred approach as it provides a floor to valuation that may be useful to frame the other methods' results. However, it has no use if implemented alone.

The income approach is much sounder from a conceptual point of view. Moreover, compared to market-based valuation methods, it includes an intrinsic dimension of brands that captures their own particularities. However, as seen in the case study, all methods are reliant in a big number of assumptions, some of which are hard to defend and seem arbitrary. For example, the royalty relief method depends almost exclusively on the royalty rate chosen, for which there is no consensus on how to determine it; a 1% change on the royalty rate had a valuation impact of 25% of brand value. Similarly, the brand strength method relies on the findings from surveys about the brand, which are subject to respondents' biases. Furthermore, there is an ongoing discussion between academics on how to best estimate the discount rate for brands, key element on all income-based valuation methods as could be seen. Therefore, these methods are very interesting in practice because they capture the specifics of each brand, although their reliance on assumptions makes them very subjective. We believe that in order to get a proper understanding behind the elements driving the brand's value, the whole set of income-based methods should be implemented, seeing as a result what financial dimensions impact the value the most; what is truly interesting about these methods is their sensitivity analysis rather the specific brand values yielded.

Market-based methods seem to be the preferred method by academics. After all, they are the most connected to actual market valuations. Furthermore, they require a small-to-none number of hypothesis making them less subjective than income-based methods. The difficulty here, and specially for the brand sale method, is to find appropriate comparables, as could be seen in the case study. In terms of transactions, these tend to be scarce because there is hardly a market for pure brand M&A in most sectors. As a result, we thought at first that the task was going to be impossible, but we managed to find some relevant transactions in the end. Fortunately, companies are compelled to recognize the value of acquired brands as a separate item on their balance sheets. After a long research, we found 4 transactions in which financials and capitalized brand value were disclosed. Therefore, the method was relatively complex to apply but, at least for our relevant industry, it was not impossible. There is obviously a question to be asked about whether such limited number of transactions hurts the relevance of the method. However, the method resulted in a brand valuation which was not far from other methods. Moreover, Damodaran's Price to Sales ratio method is very interesting, as it integrates a market view on brand value with operational assumptions, making it very compelling. Nevertheless, it is very reliant on its assumptions, which can be very subjective. As such, more than providing a specific number, we believe it is a very interesting method to hold a discussion around what range of brand valuation makes sense. After all, its assumptions are relatively basic and can be easily compared to historical data. By challenging the method assumptions, it can be checked whether other methods are yielding unrealistic valuations; for example, if exorbitant terminal growth rates and payout ratios are required to obtain a similar valuation than with another method, it would point towards a mistake in the latter. Overall, we found the market-based approach to be very useful and interesting for valuation. Nevertheless, we believe that this might not be the case for every industry, since the methods depend significantly on the ability of finding relevant comparables (either branded or non-branded).

Finally, the real options method is a separate case of its own. Salinas (2009) finds it hardly relevant to value intangible assets. Indeed, the Black & Scholes model relies on very subjective assumptions in the case of intangible assets. Furthermore, the method on its own values expansion opportunities, and not the brand itself. It therefore requires to be accompanied by another method. After understanding its limitations by applying the method to Lindt's brand, we believe that it is not appropriate to value brands. Nevertheless, it can be a very interesting approach for managers to understand the true value behind different expansion options.

The following matrix intends to summarize what has been observed for the different methods, showing levels of subjectivity and conceptual soundness along with ease of application; we believe these three dimensions provide a good summary of the advantages and limitations of every method.

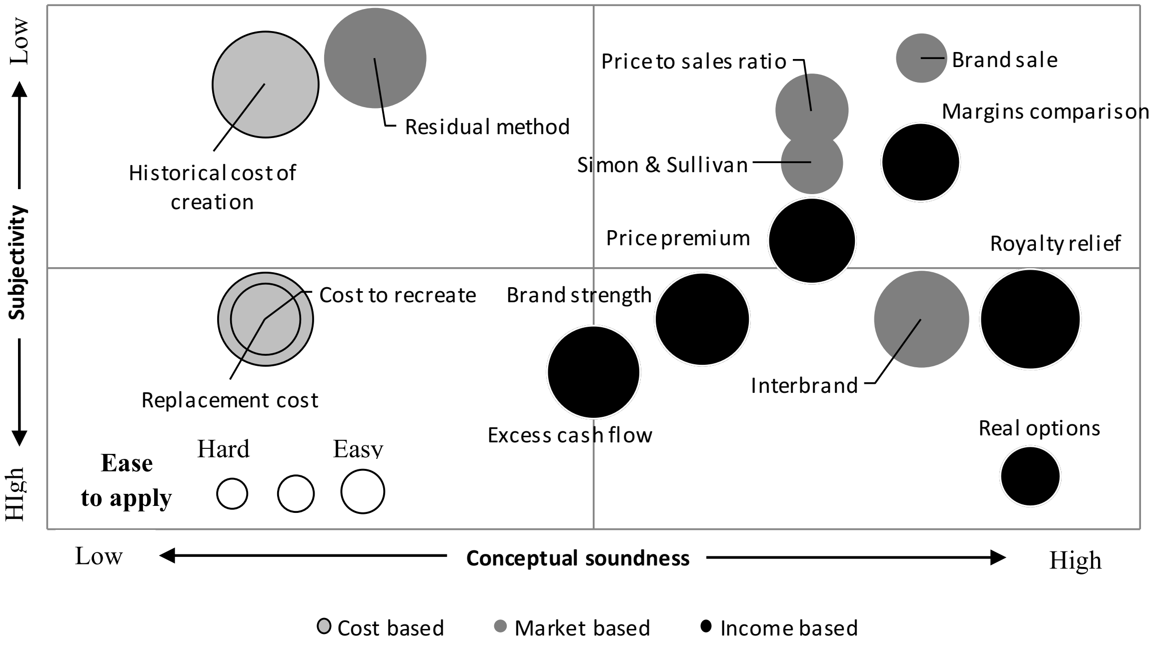
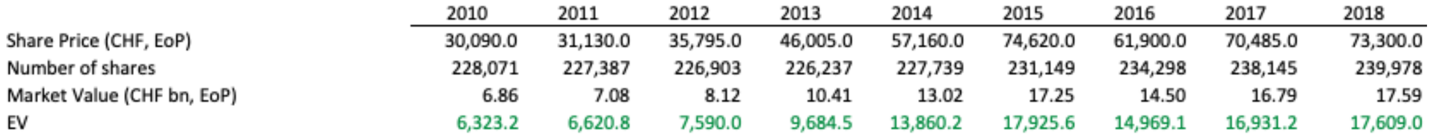


FIGURE 16. BRAND VALUATION METHODS - SUMMARY MATRIX

5. APPENDIX

5.1. LINDT & SPRÜNGLI FINANCIAL STATEMENT ANALYSIS

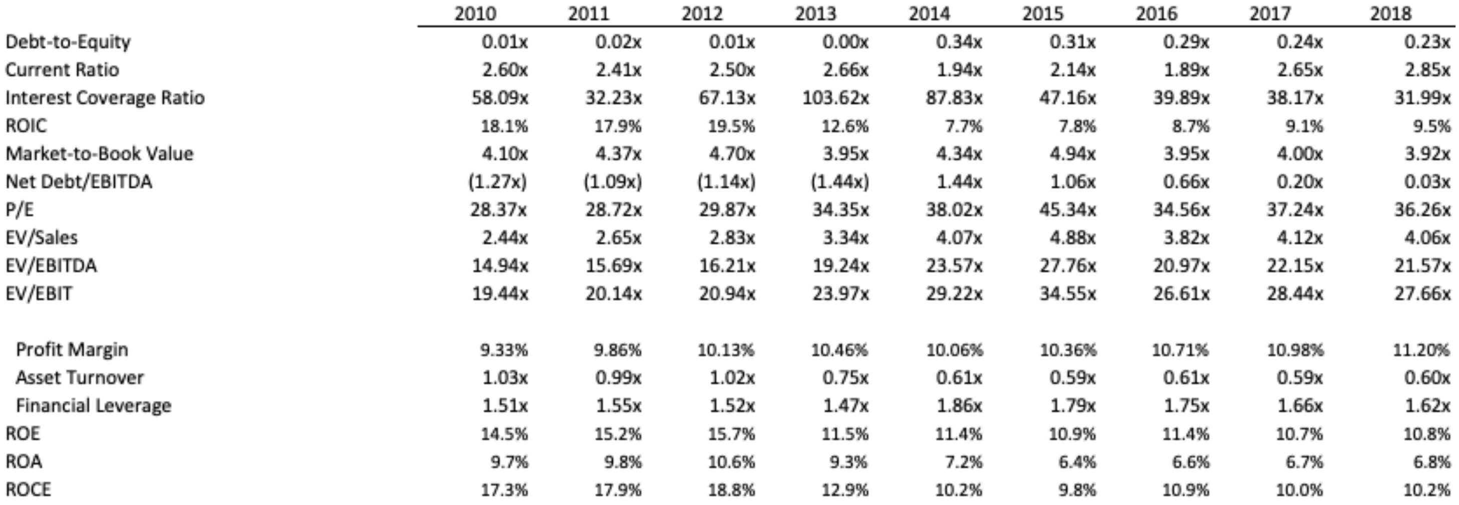
Share Price Analysis (Annual Reports, Bloomberg and own calculations)



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Share Price (CHF, EoP)	30,090.0	31,130.0	35,795.0	46,005.0	57,160.0	74,620.0	61,900.0	70,485.0	73,300.0
Number of shares	228,071	227,387	226,903	226,237	227,739	231,149	234,298	238,145	239,978
Market Value (CHF bn, EoP)	6.86	7.08	8.12	10.41	13.02	17.25	14.50	16.79	17.59
EV	6,323.2	6,620.8	7,590.0	9,684.5	13,860.2	17,925.6	14,969.1	16,931.2	17,609.0

TABLE 50. LINDT SHARE PRICE ANALYSIS

Financial Ratio Analysis (Annual Reports and own calculations)



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Debt-to-Equity	0.01x	0.02x	0.01x	0.00x	0.34x	0.31x	0.29x	0.24x	0.23x
Current Ratio	2.60x	2.41x	2.50x	2.66x	1.94x	2.14x	1.89x	2.65x	2.85x
Interest Coverage Ratio	58.09x	32.23x	67.13x	103.62x	87.83x	47.16x	39.89x	38.17x	31.99x
ROIC	18.1%	17.9%	19.5%	12.6%	7.7%	7.8%	8.7%	9.1%	9.5%
Market-to-Book Value	4.10x	4.37x	4.70x	3.95x	4.34x	4.94x	3.95x	4.00x	3.92x
Net Debt/EBITDA	(1.27x)	(1.09x)	(1.14x)	(1.44x)	1.44x	1.06x	0.66x	0.20x	0.03x
P/E	28.37x	28.72x	29.87x	34.35x	38.02x	45.34x	34.56x	37.24x	36.26x
EV/Sales	2.44x	2.65x	2.83x	3.34x	4.07x	4.88x	3.82x	4.12x	4.06x
EV/EBITDA	14.94x	15.69x	16.21x	19.24x	23.57x	27.76x	20.97x	22.15x	21.57x
EV/EBIT	19.44x	20.14x	20.94x	23.97x	29.22x	34.55x	26.61x	28.44x	27.66x
Profit Margin	9.33%	9.86%	10.13%	10.46%	10.06%	10.36%	10.71%	10.98%	11.20%
Asset Turnover	1.03x	0.99x	1.02x	0.75x	0.61x	0.59x	0.61x	0.59x	0.60x
Financial Leverage	1.51x	1.55x	1.52x	1.47x	1.86x	1.79x	1.75x	1.66x	1.62x
ROE	14.5%	15.2%	15.7%	11.5%	11.4%	10.9%	11.4%	10.7%	10.8%
ROA	9.7%	9.8%	10.6%	9.3%	7.2%	6.4%	6.6%	6.7%	6.8%
ROCE	17.3%	17.9%	18.8%	12.9%	10.2%	9.8%	10.9%	10.0%	10.2%

TABLE 51. LINDT FINANCIAL RATIO ANALYSIS

5.2. NATRA FINANCIAL STATEMENT ANALYSIS

Consolidated Income Statement (Annual Reports)

EUR thousands (unless otherwise stated)	2010	2011	2012	2013	2014	2015	2016	2017	2018
Revenue	340,501	356,541	355,540	360,996	368,920	368,708	365,868	372,469	379,010
Other operating income	1,228	2,502	1,227	2,797	1,197	936	1,130	1,032	-
Total Income	**341,729**	**359,043**	**356,767**	**363,793**	**370,117**	**369,644**	**366,998**	**373,501**	**379,010**
Growth (%)	*-19.4%*	*5.1%*	*-0.6%*	*2.0%*	*1.7%*	*-0.1%*	*-0.7%*	*1.8%*	*1.5%*
COGS	(205,443)	(214,157)	(205,560)	(222,670)	(241,918)	(251,058)	(247,606)	(244,813)	(223,605)
Growth (%)	*-15.2%*	*4.2%*	*-4.0%*	*8.3%*	*8.6%*	*3.8%*	*-1.4%*	*-1.1%*	*-8.7%*
Gross Profit	**136,286**	**144,886**	**151,207**	**141,123**	**128,199**	**118,586**	**119,392**	**128,688**	**155,405**
Margin (%)	*40.0%*	*40.6%*	*42.5%*	*39.1%*	*34.7%*	*32.2%*	*32.6%*	*34.5%*	*41.0%*
Changes in Inventory	(2,275)	(1,039)	(5,184)	1,076	1,429	4,280	(2,598)	1,217	-
Employee benefits expense	(54,333)	(60,411)	(56,831)	(53,874)	(56,688)	(49,504)	(46,371)	(52,866)	(55,860)
Other operating expenses	(70,915)	(64,060)	(59,743)	(61,607)	(62,349)	(52,267)	(47,891)	(54,325)	(65,287)
o.w. Advertising & Publicity	(15,509)	(11,714)	(8,163)	(9,312)	(9,936)	(5,449)	(3,566)	(4,790)	(5,935)
o.w. R&D expenses	(49)	(101)	(111)	(206)	(149)	(31)	(63)	(47)	(73)
EBITDA	**8,763**	**19,376**	**29,449**	**26,718**	**10,591**	**21,095**	**22,532**	**22,714**	**34,258**
Margin (%)	*2.6%*	*5.4%*	*8.3%*	*7.4%*	*2.9%*	*5.7%*	*6.2%*	*6.1%*	*9.0%*
Depreciation/amortisation expense	(14,301)	(13,103)	(11,639)	(11,811)	(12,709)	(11,207)	(10,356)	(9,911)	(9,276)
EBIT	**(5,538)**	**6,273**	**17,810**	**14,907**	**(2,118)**	**9,888**	**12,176**	**12,803**	**24,982**
Margin (%)	*-1.6%*	*1.8%*	*5.0%*	*4.1%*	*-0.6%*	*2.7%*	*3.3%*	*3.4%*	*6.6%*
Financial Income	2,593	1,509	287	406	218	23,396	66	319	-
Financial Expense	(18,496)	(16,763)	(15,948)	(11,959)	(14,526)	(22,937)	(13,595)	(13,176)	(11,761)
Gain/(loss) on exchange differences	709	(31)	792	(835)	310	(192)	243	(529)	(477)
Gain/(loss) on disposals of NCA	(492)	56	68	114	(1)	(4)	(2)	(31)	(2,127)
Impairment of financial instruments	(503)	8,762	3,353	(56)	(8,129)	(817)	(5,298)	(5,937)	-
Impairment of NCA	(10,726)	(11,262)	-	-	(27,093)	-	(88)	-	-
Changes in fair value of financial assets	-	23,287	-	-	-	-	-	-	-
Investment in associates	5,583	5,782	-	-	-	1,062	-	-	-
Profit before taxes	**(26,870)**	**17,613**	**6,362**	**2,577**	**(51,339)**	**10,396**	**(6,498)**	**(6,551)**	**10,617**
Income tax expense	(3,742)	(1,553)	(1,941)	(3,110)	(3,140)	(5,932)	(5,751)	(3,338)	(424)
Tax rate	-13.9%	8.8%	30.5%	120.7%	-6.1%	57.1%	-88.5%	-51.0%	4.0%
Net Income on continuing operations	**(30,612)**	**16,060**	**4,421**	**(533)**	**(54,479)**	**4,464**	**(12,249)**	**(9,889)**	**10,193**
Profit for discontinued operations	(4,204)	(142)	(287)	(66)	(53)	-	-	-	-
Net income	**(34,816)**	**15,918**	**4,134**	**(599)**	**(54,532)**	**4,464**	**(12,249)**	**(9,889)**	**10,193**
Non-controlling interests	11,940	(8,556)	3	(471)	55	-	-	-	-
Net income of the Group	**(22,876)**	**7,362**	**4,137**	**(1,070)**	**(54,477)**	**4,464**	**(12,249)**	**(9,889)**	**10,193**
Growth (%)	*-53.4%*	*-145.7%*	*-74.0%*	*-114.5%*	*9003.8%*	*-108.2%*	*-374.4%*	*-19.3%*	*-203.1%*
Number of shares	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280
EPS	**(0.73)**	**0.34**	**0.09**	**(0.01)**	**(1.15)**	**0.09**	**(0.26)**	**(0.21)**	**0.21**

TABLE 52. NATRA CONSOLIDATED INCOME STATEMENT

Consolidated Balance Statement – Economic View (Annual Reports and own calculations)

CHF million (unless otherwise stated)	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fixed Assets	66,404	64,267	60,525	66,663	66,487	60,877	58,391	56,825	53,372
Intangible Assets	156,993	144,421	144,296	145,822	58,501	58,044	58,049	58,453	58,462
Other Assets	119,554	24,500	23,922	22,536	42,884	35,848	9,908	9,987	39,953
Working Capital Assets	123,455	201,632	119,057	100,061	86,321	89,479	113,394	112,762	109,683
Working Capital Liabilities	76,244	69,374	52,762	59,758	51,736	55,028	49,198	63,097	67,099
Net Working Capital	47,211	132,258	66,295	40,303	34,585	34,451	64,196	49,665	42,584
Invested Capital	**390,162**	**365,446**	**295,038**	**275,324**	**202,457**	**189,220**	**190,544**	**174,930**	**194,371**
Cash & Cash Equivalents	6,061	2,542	5,150	10,779	6,627	5,079	6,450	11,882	10,209
Short Term Debt	255,048	70,174	16,513	7,688	148,947	17,661	11,893	13,822	12,873
Long Term Debt	5,955	152,076	135,131	137,639	6,552	122,274	135,173	130,961	123,007
Net Debt	254,942	219,708	146,494	134,548	148,872	134,856	140,616	132,901	125,671
Other Liabilities	15,072	15,162	20,534	18,711	22,308	18,823	21,511	22,670	22,849
Total Equity	120,148	130,576	128,010	122,065	31,277	35,541	28,417	19,359	45,851
Capital Employed	**390,162**	**365,446**	**295,038**	**275,324**	**202,457**	**189,220**	**190,544**	**174,930**	**194,371**

TABLE 53. NATRA CONSOLIDATED BALANCE SHEET

Share Price Analysis (Annual Reports, Bloomberg and own calculations)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Share Price (EUR, EoP)	2.0	0.9	1.3	2.2	1.0	0.4	0.8	0.4	0.9
Number of shares	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280	47,478,280
Market Value (EUR k, EoP)	96,856	42,730	63,621	104,452	46,529	16,617	36,558	20,416	41,781
EV (EUR k, EoP)	305,158.7	208,748.5	166,944.9	201,332.2	195,400.7	151,473.4	177,174.3	153,316.7	167,451.9

TABLE 54. NATRA SHARE PRICE ANALYSIS

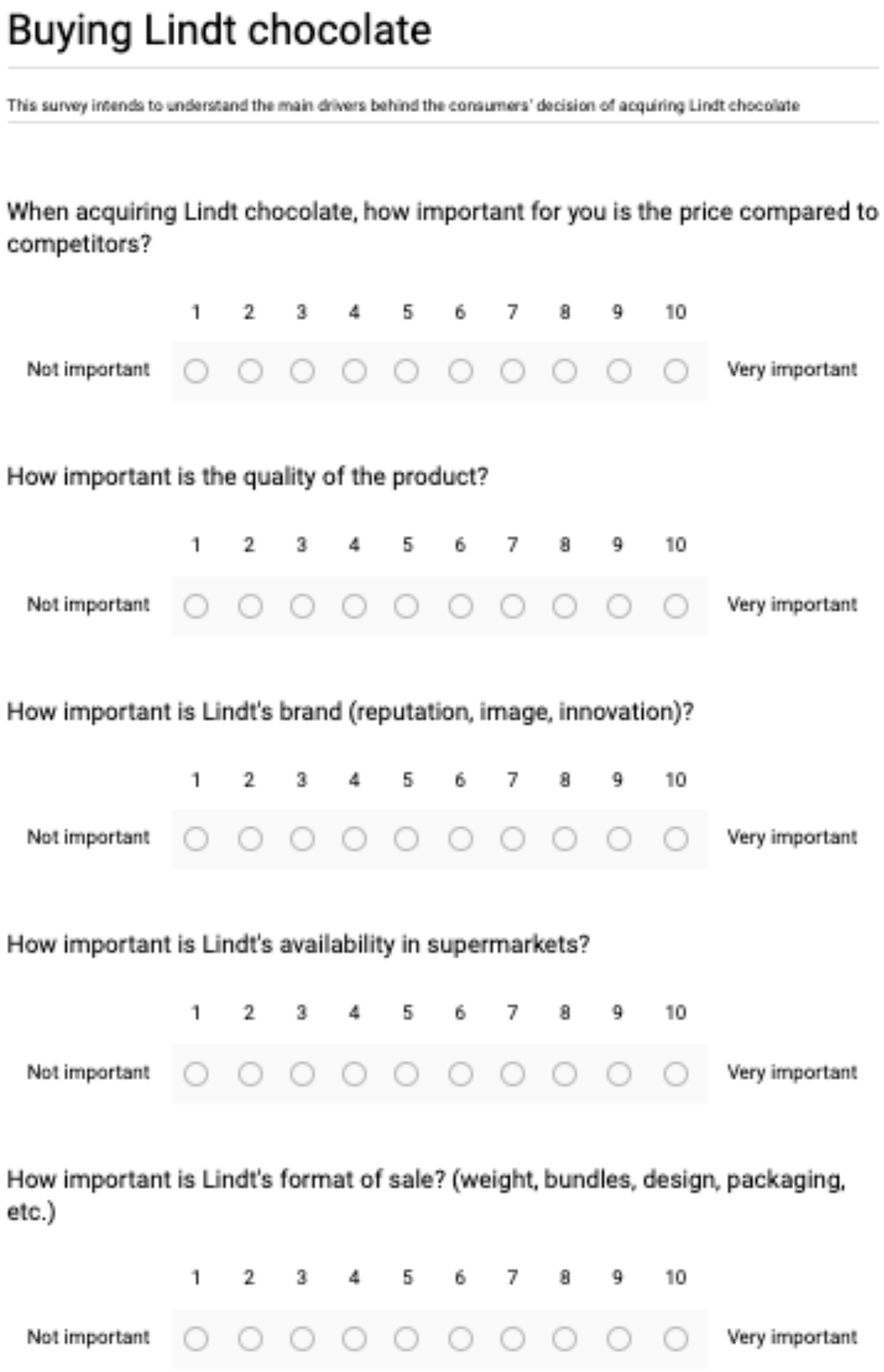
Financial Ratio Analysis (Annual Reports and own calculations)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Debt-to-Equity	2.17x	1.70x	1.18x	1.19x	4.97x	3.94x	5.18x	7.48x	2.96x
Current Ratio	0.39x	1.46x	1.79x	1.64x	0.46x	1.30x	1.96x	1.62x	1.50x
Interest Coverage Ratio	(0.30x)	0.37x	1.12x	1.25x	(0.15x)	0.43x	0.90x	0.97x	2.12x
ROIC	-1.6%	1.6%	4.2%	-1.1%	-1.1%	2.2%	12.0%	11.0%	12.3%
Market-to-Book Value	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Net Debt/EBITDA	29.09x	11.34x	4.97x	5.04x	14.06x	6.39x	6.24x	5.85x	3.67x
P/E	(2.78x)	2.68x	15.39x	n.m.	(0.85x)	3.72x	(2.98x)	(2.06x)	4.10x
EV/Sales	0.89x	0.58x	0.47x	0.55x	0.53x	0.41x	0.48x	0.41x	0.44x
EV/EBITDA	34.82x	10.77x	5.67x	7.54x	18.45x	7.18x	7.86x	6.75x	4.89x
EV/EBIT	n.m.	33.28x	9.37x	13.51x	n.m.	15.32x	14.55x	11.98x	6.70x
Profit Margin	n.m.	4.4%	1.2%	(0.2%)	n.m.	1.2%	(3.3%)	(2.6%)	2.7%
Asset Turnover	0.72x	0.82x	1.01x	1.05x	1.42x	1.48x	1.49x	1.49x	1.40x
Financial Leverage	3.93x	3.35x	2.76x	2.83x	8.34x	7.02x	8.66x	12.91x	5.93x
ROE	n.m.	12.2%	3.2%	n.m.	n.m.	12.6%	n.m.	n.m.	22.2%
ROA	(7.4%)	3.6%	1.2%	(0.2%)	(20.9%)	1.8%	(5.0%)	(4.0%)	3.8%
ROCE	(3.9%)	2.1%	6.3%	5.4%	(3.5%)	5.6%	6.6%	7.4%	13.0%

TABLE 55. NATRA FINANCIAL RATIO ANALYSIS

5.3. BRAND STRENGTH ANALYSIS – SURVEY & RESULTS

The survey designed to estimate the relevance of the factors contributing to value Lindt's brand strength is the following one:



Buying Lindt chocolate

This survey intends to understand the main drivers behind the consumers' decision of acquiring Lindt chocolate

When acquiring Lindt chocolate, how important for you is the price compared to competitors?

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

How important is the quality of the product?

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

How important is Lindt's brand (reputation, image, innovation)?

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

How important is Lindt's availability in supermarkets?

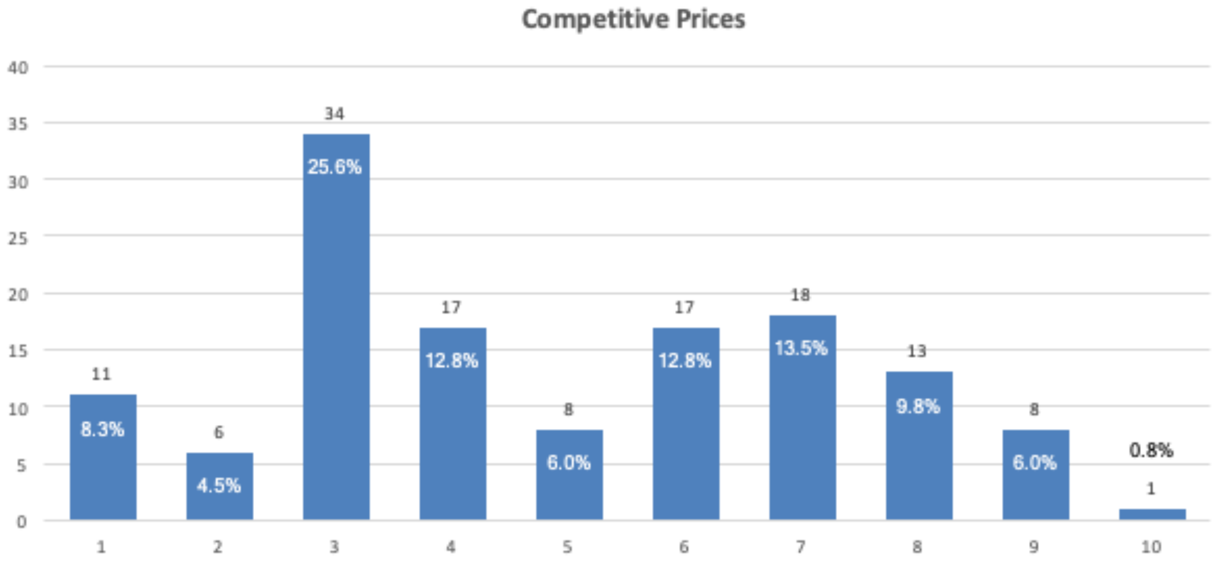
	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

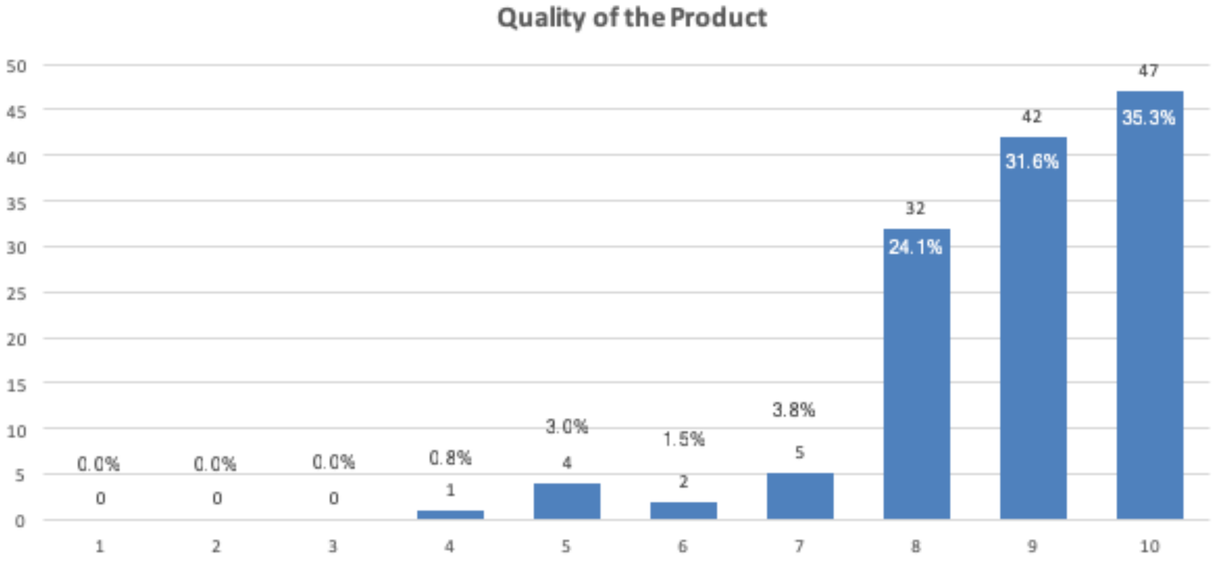
How important is Lindt's format of sale? (weight, bundles, design, packaging, etc.)

	1	2	3	4	5	6	7	8	9	10	
Not important	○	○	○	○	○	○	○	○	○	○	Very important

FIGURE 17. SURVEY ON LINDT'S BRAND STRENGTH ANALYSIS

The survey had 133 respondents (all HEC students, ensuring a heterogeneous sample with respect to gender and nationality). The results obtained are shown in the column graphs below, showing the number of answers people gave regarding the importance – from 1 to 10, being 1 the lowest and 10 the highest – of 5 factors: (1) prices, (2) quality, (3) brand, (4) availability and (5) design.





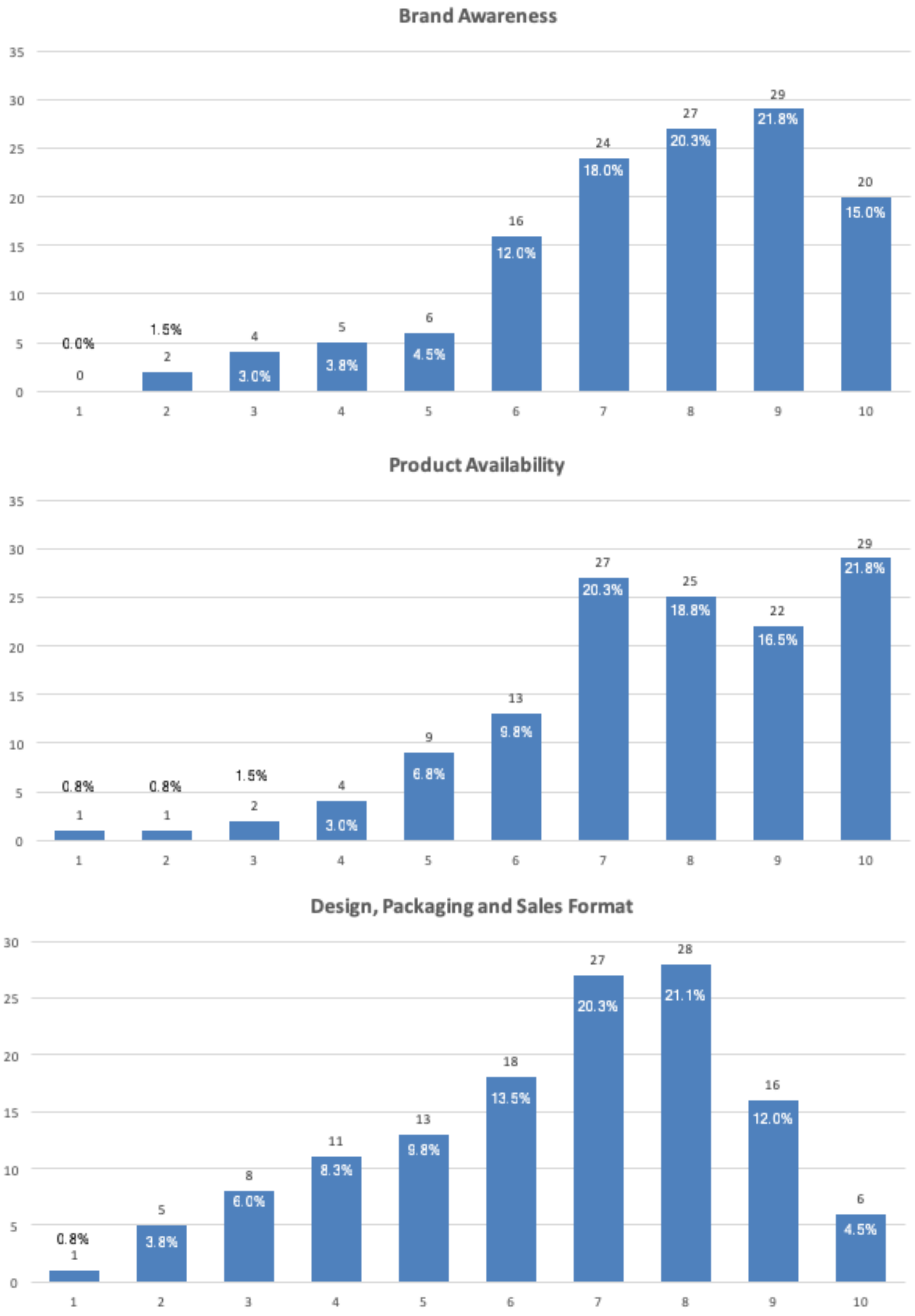


FIGURE 18. SURVEY RESULTS

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