

How to value brands correctly?

A case study on adidas



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Abstract

Brands are both seen as the most strategic assets of many firms, and the least identifiable when looking at financial statements, due to their absence from balance sheet (in case of non-acquisition). The main reason for that is that their valuation leads to high discrepancies depending on the valuator, the method used and the valuation date.

The objective of this study is to gather and classify the main brand valuation methods used by both academics and practitioners, before applying them to the practical case of adidas in order to isolate the one leading to apparently most accurate results compared to benchmark valuations from third parties.

Based on the study of adidas, we noted that even if the methods lead to very diverse results, the determination of a valuation range is still feasible to get a first idea of brand value. The methods leading to the most consensual results for the adidas case were the royalty relief approach and the demand driver approach, which are the ones mostly used by practitioners as stated by Salinas (2009). The attributes of methods leading to reasonable values seem to be having a mixed approach (both market-based and income-based), and being simple i.e. requiring neither many hypotheses nor deep delving into details. Nevertheless, the attribution of a precise figure is still difficult to rationalise, and mostly based on negotiation features or valuator's perception of the brand.

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Introduction

“Intangible assets are recognized as highly valued properties. Arguably the most valuable but least understood intangible assets are brands”, states the ISO 10668 standard (2010) in its introduction.

Brands are often seen as the most strategic intangible assets owned by a firm. What would Louis Vuitton bags be worth without the Louis Vuitton logo embroidered on them? Why are Starbucks coffees or Subway sandwiches so specific compared to simple basic coffees or sandwiches? Intuitively, anybody can perceive the value of a brand through its presence on TV screen, the story it tells, its innovations or its geographical presence.

Nevertheless, companies’ financial statements do not reflect at all this status: the most valuable brand according to Interbrand’s 2013 ranking¹, Apple, valued at \$m 98 316, has total intangible assets on balance sheet² (September 28th 2013) of around \$m 5 700. What is more, only few books cover this topic in deep detail; the major part of literature only tackling briefly the issue, presenting theoretical methods without delving into the problems raised by their application to real cases. Why do companies avoid valuing properly their brand in their financial statements? Why don’t analysts and markets ask for it, considering the high strategic aspect of this asset type?

A preliminary answer to these questions could be that brand valuation is too subjective to be called “valuation”. When looking at 2013 brand rankings by major third parties, the results speak for themselves: Apple is valued at \$m 87 304 by BrandFinance, but at \$m 185 071 by Millward Brown. McDonald’s is attributed a value of \$m 90 256 by Millward Brown, and of \$m 21 642 by BrandFinance. Valuing brands would thus seem to be arbitrary and results not reliable.

Taking into account the above considerations, the aim of this study is to review and classify the main existing brand valuation approaches, before applying them practically to the specific case of adidas. The objective is to highlight their limits in term of necessary inputs and result discrepancies; and to determine which methods seem to be the most accurate to value brands practically, based on public information.

¹ <http://www.interbrand.com/fr/>

² Apple consolidated balance sheet - http://files.shareholder.com/downloads/AAPL/3030957356x0x701402/a406ad58-6bde-4190-96a1-4cc2d0d67986/AAPL_FY13_10K_10.30.13.pdf

I – A first step

1. Definition of the scope of analysis

Brands are part of our everyday life and may often be confused with the object or service they are attached to: who never used the term Kleenex for a tissue, Iphone for a phone?

From a financial point of view, brands are part of intangible assets, as opposed to tangible ones, which mainly include real estate, production and technical equipment. Within the intangible assets side, they have to be distinguished from patents, buy-sell agreements, customer lists, specific rights (distribution rights, airport slots, domain rights), loans portfolios, permits, trade secrets etc. as shown in table 1.

Intangible assets	Goodwill	Licensing contracts
	Contrats-based	Leasing agreements
	Marketing related	Broadcasting rights
		Brands
	Artistic related	Internet domain name
Technology based	...	
Tangible assets		Plays, books, pictures
		Patents
		Softwares
		Databases
		Secret formulas/ processes

Source: OECD study – Valuation of intangibles under IFRS 3R, IAS 36 and IAS 38, Jim Eales (2011)

Table 1 - Locating brands in a balance sheet

The ISO 10668 standard (2010)³, defines brands as “*marketing-related intangible assets including, but not limited to, names, terms, signs, symbols, logos, designs, or a combination of these, intended to identify goods, services and/or entities creating distinctive image and associations in the minds of stakeholders, generating economic benefits/values*”. The English law⁴ adds to this definition the “*promise of an experience*”, encompassing the quality, service and/or specific design the customer is expecting at buying the underlying asset. It adds that brands are above all “*reputational*” assets, based mainly on the beliefs of customers. Brands are thus not to be confused with possible other intangibles they support (e.g. patents in the case of a medicine brand like Doliprane). Salinas (2009) proposes three different scopes for brands definition:

- Name, logo and other visual elements;
- Name, logo, other visual and verbal elements and associated intellectual property rights;

³ ISO standards website - http://www.iso.org/iso/fr/home/store/catalogue_tc/catalogue_detail.htm?csnumber=46032

⁴ UK Intellectual Property Office - <http://www.ipo.gov.uk/types/tm/t-about/t-what-is/t-brands.htm>

- Organisational brand: this is the broader definition, referring to the organisational aspects of the brand and to what we will call later branded companies or businesses.

Only the first two scopes will be considered for the rest of the study.

Valuing brands correctly would thus mean putting a number on a marketing object with no material existence and more specifically on the future economic performance it is expected to generate. It thus has to be noted that the objective of this study is to discuss the valuation of brands as assets, and not the valuation of branded businesses as a whole, or of other assets possibly attached to but different from the concerned brands.

By *valuing correctly*, we mean:

- Estimating a fair value for the brand. Fair value is defined by IFRS 13 standard as the price that would be paid should the asset valued be transferred from an entity to another in a transaction. It is thus considered as the objective price for an asset, and may not coincide with the market price, which can sometimes include discounts or premiums. As for the ISO 10668 standard, it implies estimating the value of future economic advantages unlocked by the ownership of the brand, for its estimated lifetime. Consequently, we will only consider valuation methods allowing the estimation of an absolute monetary value for the brands, excluding thus methods estimating brands values relatively to one another.
- Appraising the best methods to be used and the way to apply them to reach the first point, among the existing methods, for the specific case chosen.

2. Why to value brands?

In financial statements, low or no information is given on the economic value of brands. Book value often misrepresents it. Indeed, according to IFRS 38⁵, brands developed internally should not be registered in balance sheet. Only brands acquired externally are to be registered at cost of acquisition and impaired once a year if needed. The example of Apple given in introduction shows the gap between the estimated fair value of the brand and its book value.

As explained by Rita Chraïbi in *La Revue des Marques*⁶, market capitalisation and its variations reflect, behind the market value of shares, the value of the firms underlying intangible assets. If we consider that the market capitalisation is a reliable measure of a firm's equity value, the difference between market capitalisation and equity book value should capture a significant part of the value of intangible assets not properly registered in the books. Nevertheless, these intangible assets do not correspond exclusively to brands, they can refer to patents, human capital, growth perspectives, knowledge or any other intangible asset booked at a value lower than fair value or not booked at all. Simply looking at the stock price of a company cannot thus lead to a perfect brand valuation, but only to a ceiling value.

However, being able to compute the fair value of a brand is useful in many situations faced by a company. A firm needs to be able to put a number on the name for the following purposes (not exhaustive):

- To buy or sell a brand (Unilever selling Lipton for example),
- To license or franchise it to a tier company (Subway, McDonalds),
- When involved in a litigation, for tax purposes,
- For accounting compliance (impairment tests, purchase price allocation),

⁵ www.focusifrs.com

⁶ La Revue des Marques – n°77, January 2012 – *Valeur comptable, valeur réelle, juste valeur*

- For managerial purposes, to better understand the drivers of its success and adapt its marketing strategy.

To be able to do so, we will review in the second part of the thesis the main brand valuation methods developed by the existing literature.

II – Review of the main existing methods of brand valuation

« Adding a 30% premium to the value estimate of Coca Cola is not a sensible way of capturing the value of a brand name »

The uValue companion, Stern NYU School of Business⁷

A brand has no minimal value. As it is intangible, it cannot be liquidated and its value is thus very volatile. During any valuation attempt, one should keep in mind that brand value arise from the power it gives to a company to sell products at higher prices, in larger quantities, or to decrease operating costs.

According to the ISO 10668 standard, a correct brand valuation should include the analysis of marketing and legal parameters, on top of financial parameters.

Across the literature reviewed, three main types of approaches can be distinguished:

- Methods based on income generated by the brand,
- Methods based on cost supporting the brand development,
- Methods based on market views.

The fourth point presents an additional method used on top of previous methods: real options.

In order to make easier the understanding of the computation process of each method, we applied theoretically the methods to a simplified case: company Alpha, selling luxury shoes. Alpha basic financial information is the following:

Hypotheses	
Tax rate	30%
WACC	10%
Brand earnings discount rate	15%
Perpetual growth	2%

Table 2 - Alpha hypotheses

⁷ <http://people.stern.nyu.edu/adamodar/pdfiles/uValue/uValuebook.pdf>

Income statement												
€m	ACTUAL		FORECAST			EXTRAPOLATION						
	2012A	2013A	2014F	2015F	2016F	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Revenues	10 694	11 683	12 307	12 588	12 884	13 088	13 415	13 751	14 094	14 447	14 808	15 178
COGS	(1 500)	(1 639)	(1 726)	(1 766)	(1 807)	(1 836)	(1 882)	(1 929)	(1 977)	(2 026)	(2 077)	(2 129)
Marketing	(500)	(546)	(575)	(589)	(602)	(612)	(627)	(643)	(659)	(675)	(692)	(710)
Distribution	(800)	(874)	(921)	(942)	(964)	(979)	(1 004)	(1 029)	(1 054)	(1 081)	(1 108)	(1 135)
R&D	(250)	(266)	(274)	(278)	(282)	(285)	(292)	(299)	(306)	(314)	(322)	(330)
Personnel	(900)	(983)	(1 036)	(1 059)	(1 084)	(1 101)	(1 129)	(1 157)	(1 186)	(1 216)	(1 246)	(1 277)
Other	(377)	(607)	(807)	(878)	(974)	(1 027)	(1 053)	(1 079)	(1 106)	(1 134)	(1 162)	(1 191)
Operating Costs	(4 327)	(4 915)	(5 339)	(5 511)	(5 713)	(5 840)	(5 986)	(6 136)	(6 289)	(6 446)	(6 607)	(6 773)
EBITDA	6 367	6 768	6 968	7 077	7 171	7 248	7 429	7 615	7 805	8 000	8 200	8 405
Depreciation	(926)	(931)	(1 060)	(1 064)	(1 062)	(1 054)	(1 092)	(1 145)	(1 200)	(1 259)	(1 323)	(1 511)
Amortisation	(7)	(251)	(333)	(336)	(344)	(351)	(359)	(367)	(375)	(383)	(392)	(402)
EBIT	5 434	5 586	5 575	5 677	5 765	5 843	5 978	6 104	6 231	6 358	6 485	6 492
Net Interest (Expense)/Income	0	0	0	0	0	0	0	0	0	0	0	0
Associates	0	0	0	0	0	0	0	0	0	0	0	0
Exceptionals	(201)	(200)	0	0	0	0	0	0	0	0	0	0
EBT	5 233	5 386	5 575	5 677	5 765	5 843	5 978	6 104	6 231	6 358	6 485	6 492
Taxes	(1 570)	(1 616)	(1 673)	(1 703)	(1 729)	(1 753)	(1 794)	(1 831)	(1 869)	(1 907)	(1 946)	(1 948)
Net Income	3 663	3 770	3 903	3 974	4 035	4 090	4 185	4 273	4 362	4 451	4 540	4 545
Average # Shares Outstanding (in '0 000)	8 667	8 675	8 675	8 675	8 675	8 675	8 675	8 675	8 675	8 675	8 675	8 675
EPS (EUR)	42,26	43,46	44,99	45,81	46,52	47,15	48,24	49,25	50,28	51,30	52,33	52,39
GROWTH												
Revenues		9,2%	5,3%	2,3%	2,4%	1,6%	2,5%	2,5%	2,5%	2,5%	2,5%	2,5%
EBITDA		6,3%	3,0%	1,6%	1,3%	1,1%	2,5%	2,5%	2,5%	2,5%	2,5%	2,5%
EBIT		2,8%	(0,2%)	1,8%	1,5%	1,4%	2,3%	2,1%	2,1%	2,0%	2,0%	0,1%
Adj. Net Income												
MARGINS												
EBITDA	59,5%	57,9%	56,6%	56,2%	55,7%	55,4%	55,4%	55,4%	55,4%	55,4%	55,4%	55,4%
EBIT	50,8%	47,8%	45,3%	45,1%	44,7%	44,6%	44,6%	44,4%	44,2%	44,0%	43,8%	42,8%
EBT	48,9%	46,1%	45,3%	45,1%	44,7%	44,6%	44,6%	44,4%	44,2%	44,0%	43,8%	42,8%
Net Income	34,3%	32,3%	31,7%	31,6%	31,3%	31,3%	31,2%	31,1%	30,9%	30,8%	30,7%	29,9%

Source: Inspired by Naillon HEC Class

Table 3 - Alpha Income statement

Balance sheet												
€m	ACTUAL		FORECAST			EXTRAPOLATION						
	2012A	2013A	2014F	2015F	2016F	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Goodwill	3 189	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989
Other Intangibles	4 165	4 004	3 758	3 503	3 237	2 959	2 685	2 415	2 150	1 890	1 635	1 385
PP&E	3 996	4 323	4 582	4 737	4 850	4 893	5 545	6 119	6 682	7 228	7 756	8 142
Financial Assets	5	5	5	5	5	5	5	5	5	5	5	5
Total Fixed Assets	11 355	11 321	11 334	11 234	11 081	10 846	11 224	11 529	11 826	12 112	12 385	12 521
Inventory	84	87	94	98	102	104	107	109	112	115	118	121
Accounts Receivable	943	1 060	1 143	1 192	1 239	1 271	1 303	1 335	1 369	1 403	1 438	1 474
Other Current Assets	0	0	0	0	0	0	0	0	0	0	0	0
Cash & Equivalents	1 016	4 198	7 453	10 860	14 390	18 060	21 232	24 550	27 951	31 438	35 013	38 716
Total Current Assets	2 043	2 333	8 690	12 150	15 731	19 435	22 642	25 995	29 432	32 955	36 569	40 311
Total Assets	13 398	13 654	20 024	23 384	26 812	30 282	33 866	37 524	41 258	45 068	48 954	52 832
Share Capital	11 086	11 086	11 086	11 086	11 086	11 086	11 086	11 086	11 086	11 086	11 086	11 086
Retained Earnings	387	3 608	6 945	10 334	13 773	17 258	20 829	24 474	28 195	31 991	35 863	39 727
Shareholders' Equity	10 094	10 330	18 031	21 420	24 859	28 344	31 915	35 560	39 281	43 077	46 949	50 813
Minority Interests	0	0	0	0	0	0	0	0	0	0	0	0
Provisions & Other Long-Term Liabilities	298	298	298	298	298	298	298	298	298	298	298	298
Financial Debt	0	0	0	0	0	0	0	0	0	0	0	0
Accounts Payable	497	544	565	536	525	510	523	536	549	563	577	591
Other Current Liabilities	1 130	1 130	1 130	1 130	1 130	1 130	1 130	1 130	1 130	1 130	1 130	1 130
Total Liabilities	3 304	3 324	1 993	1 964	1 953	1 938	1 951	1 964	1 977	1 991	2 005	2 019
Total Equity and Liabilities	13 398	13 654	20 024	23 384	26 812	30 282	33 866	37 524	41 258	45 068	48 954	52 832

Source: Inspired by Naillon HEC Class

Table 4 - Alpha Balance Sheet

Cash flow statement												
€m	ACTUAL		FORECAST			EXTRAPOLATION						
	2012A	2013A	2014F	2015F	2016F	2017E	2018E	2019E	2020E	2021E	2022E	2023E
EBITDA	6 367	6 768	6 968	7 077	7 171	7 248	7 429	7 615	7 805	8 000	8 200	8 405
Cash Taxes	(1 570)	(1 616)	(1 673)	(1 703)	(1 729)	(1 753)	(1 794)	(1 831)	(1 869)	(1 907)	(1 946)	(1 948)
Net Interest (Expense)/Income	0	0	0	0	0	0	0	0	0	0	0	0
Intangibles Capex	(85)	(90)	(87)	(81)	(78)	(73)	(85)	(97)	(110)	(123)	(137)	(152)
PP&E Capex	(1 035)	(1 258)	(1 319)	(1 218)	(1 176)	(1 097)	(1 744)	(1 719)	(1 762)	(1 806)	(1 851)	(1 897)
Change in NWC	92	(73)	(69)	(82)	(62)	(49)	(22)	(22)	(23)	(23)	(24)	(24)
Dividends from Associates / (to Minorities)	0	0	0	0	0	0	0	0	0	0	0	0
Other Cash Flow Items	0	0	0	0	0	0	0	0	0	0	0	0
Equity Free Cash Flow	3 769	3 731	3 820	3 993	4 126	4 276	3 785	3 946	4 042	4 141	4 243	4 384
Dividends	0	(549)	(566)	(585)	(596)	(605)	(614)	(628)	(641)	(654)	(668)	(681)
Change in Cash	3 769	3 182	3 255	3 407	3 530	3 671	3 172	3 318	3 401	3 487	3 575	3 703

Source: Inspired by Naillon HEC Class

Table 5 - Alpha Cash flow statement

1. Income-based / contribution methods – DCF-based approaches

The following table sums up the characteristics of the methods presented in this section.

Method	Comparative	Intrinsic	Ideal brand characteristics	To be noted
Royalty relief method	✓	✓	Licensed or liquid market	Most used approach
Price/volume premium	✓		Single brand on simple products	Requires deep details within the companies figures
Margin comparison	✓		Single brand on simple products	Macro but potentially wrong view on the brand value creation
Excess cash flow		✓	In a company with few other intangible assets	Valuation by difference

Table 6 - Income-based approaches summary

1.1. How to choose the discount rate and the lifetime length of the DCF performed?

Discount rate

The valuation methods presented in this section all use a DCF approach, by discounting to present value the cash flows or earnings assumed generated by the brand. Taking into account the brand specific risk and making the right assumption on the discount rate and lifetime length of the brand is thus necessary to avoid a significant under or overvaluation of the asset. We gather these two topics, common to the methods studied below, in this first point.

Despite the importance of choosing the right rate to use in such a valuation approach, this issue is not much covered in literature in the case of brands, and more broadly in the case of intangible assets.

BrandFinance® suggests to use an adjusted WACC to discount brand-related cash flows, computed as following:

$$Adj. WACC = K_e * (1 - P_D) + (R_f + B_r) * (1 - tax\ rate) * P_D$$

Where P_D is the debt proportion in the whole business, R_f the risk-free rate, K_e the cost of equity and B_r the “brand risk premium”. This adjusted WACC is to be computed regionally to take into account the difference in risk-free rate among countries and averaged to obtain the final adjusted WACC. Nevertheless, this approach seems approximate, particularly since the key point lies in how to determine B_r . It thus seems to shift the issue on another variable, from the rate of return to the risk premium.

Getting deeper into this topic, Schauten (2008) examines several suggestions in *Valuation, capital structure decisions and the cost of capital* and recommends:

- Not to take the WACC to discount intangible cash flows: indeed, the risk of intangibles is, in the majority of cases, higher than the risk of the entire business;
- Not to take either the unlevered cost of equity as suggested by Smith and Parr. Even if intangibles are usually fund by equity only, this rate reflects as well the risk of the business as a whole and gives thus a wrong estimate of the required rate of return of intangible assets;

- Avoid using the levered cost of equity, which charges the risk of debt on the intangible assets despite the fact that the debt was not raised to fund them. Nevertheless, he admits that the levered cost of equity being higher than the above two, it may be a better proxy of the required return on intangibles since the risk of these assets is, in many cases, higher than the risk of the company as a whole.

To solve the issue, Schauten recommends using the WARA method.

His whole model relies on the assumption that the weighted average cost of capital (WACC) is necessarily equal to the weighted average return on assets (WARA).

We thus have:

$$WACC = WARA$$

$$\Leftrightarrow WACC = R_{WCR} * \frac{WCR}{D + E} + R_{ta} * \frac{TA}{D + E} + R_{ia} * \frac{IA}{D + E} + R_{ts} * \frac{TS}{D + E}$$

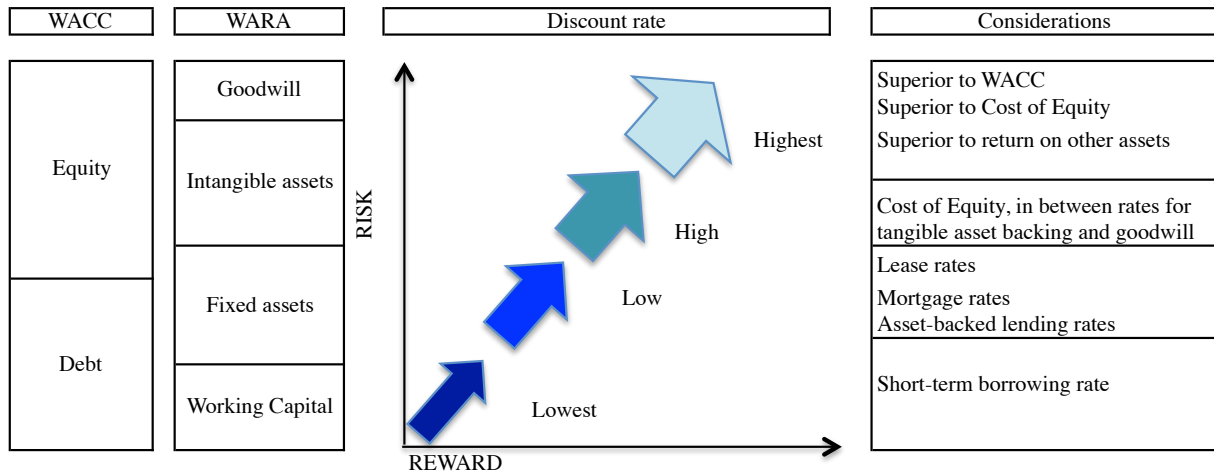
$$\Leftrightarrow R_{ia} = \frac{WACC - (R_{WCR} * \frac{WCR}{D + E} + R_{ta} * \frac{TA}{D + E} + R_{ts} * \frac{TS}{D + E})}{\frac{IA}{D + E}}$$

Where:

- The WACC is computed as the weighted average of the cost of equity and the cost of debt before tax;
- WCR means Working Capital Requirement and R_{WCR} is the return on WCR;
- TA means Tangible Assets and R_{ta} is the return on tangible assets;
- IA means Intangible Assets and R_{ia} is the return on intangible assets;
- TS means the present value of the tax Shield (i.e. the marginal tax rate multiplied by the value of debt) and R_{ts} is the return on the tax shield (assumed equal as the cost of debt);
- Enterprise value = Equity value (E) + Debt value (D).
- The value of intangible assets IA is determined by difference between the market value of equity plus debt, and the other assets as booked in the financial statements (at market value if possible, at book value if not).

The rates of return on each asset class (WCR, tangible assets) may be either computed from internal data provided by the company owning the brand, or approximated using indexes (e.g. real estate index or leasing rate for tangible assets). The Canadian Institute of Chartered Business Valuators ⁸ sets boundaries on this issue, presenting the following diagram:

⁸ OECD TP WP6: Illustrative Example of Intangible Asset Valuation



Source: The Canadian Institute of Chartered Business Valuators - OECD TP WP6: Illustrative Example of Intangible Asset Valuation

Table 7 - How to choose required rate of returns

Note that Schauten’s method is based on Smith and Parr (2005) work, with an adjustment though: Smith and Parr use the WACC after corporate tax and do not formalize the tax shield as a separate asset, agglomerating it within intangibles, which, according to Schauten, leads to an underestimation of the required rate of return on intangibles.

Returning to brands, we think that the required rate of return on intangibles as above computed can be applied as a proxy for the required return on the brand studied. Theoretically, the split in asset classes done to compute this rate could be further investigated within the intangible assets, but finding rates of return for specific intangible assets other than the brand in order to compute the rate we are looking for by difference may become complicated (relying on many hypotheses) and unjustified.

On this topic, Salinas (2009) observe that the choice of the discount rate of brand earnings is one of the greater sources of conflict in brands valuation. Some practitioners use the related company’s WACC, others argue that the brands risk is lower than their sector’s risk. In the end, she notes that the discount rate is above all a matter of opinion; hence the diverse rates practically used and supposed to reflect the perceived brand’s risk.

To get an idea on how practically branded companies perceive their brand risk, one can approximate the discount rate to be used by the discount rate these companies report in their annual financial statements to impair goodwill and intangible assets. Hermès, for example, impairs its intangible assets using a rate of 10.5% in 2012, while stating in the same annual report a WACC of 10.14% considering thus the risk of its intangible assets as slightly higher than its WACC. On the contrary, Club Med in its 2013 annual reports does goodwill and intangibles impairments on the basis of its WACC (potentially to limit necessary impairment). These results illustrate the point of Salinas (2009): determining the right discount rate is “*more an art than a science*”.

Lifetime period

This question is a more subsidiary one since most brands are considered by practitioners to have an infinite lifetime. Nevertheless, some points highlighted by Salinas (2009) have to be taken into account.

The lifetime length of the brand to be taken into account in the DCF-based method should be its economic useful life, i.e. the time during which it creates value for the company

owning it. The following factors⁹ are thus to be analysed for any brand before concluding to an indefinite useful life:

- *Life cycle of the product*: fashion does not last forever;
- *Functional obsolescence*: it concerns particularly brands attached to lifestyle (slogans developed for short-term situations, product brands (i.e. Ipod, compared to Apple));
- *Event obsolescence*: failure of a company (e.g. Enron);
- *Technological obsolescence*: it concerns brands attached to technological innovations that may disappear following a disruptive entrance (e.g. well-known medicine);
- *Cultural obsolescence*: this factor may affect brands with non-politically correct names or concepts.

Once the discount rate and lifetime length discussed, one can tackle the remaining issues. The following subsections introduce the main income-based valuation methods, using the method presented here to compute the cash flows discount rate.

1.2. Royalty relief approach

Sources: Salinas (2009); Salinas and Ambler (2009); Brandfinance® (2013); PwC research (2013), Husson and Philippe (*Décideurs: Stratégie Finance droit n°92/93*); Salinas (2009); Jucaityte and Virvilaite (2007)

1.2.1. General case

The royalty relief approach is the most commonly used for a technical valuation approach, according to Salinas and Ambler (2009)¹⁰. Nevertheless, according to a PwC research¹¹, it is used for intangibles of “*second significance*”. The general idea is to determine the brand-related cash flows by computing the fees a tier company would have to pay to use the brand without owning it. These fees are usually estimated as a percentage of the future sales of the licensor. The future estimated brand-related cash flows are then discounted to present value to get the brand value.

Deriving from the above definition, the main steps are the following:

(1) Create a business plan for the whole company

As for any DCF valuation, the method is based on estimation of future firm’s revenues, relying on historical trends, market growth expectations and market share evolution. This step is supposed to partly embed the effects of the marketing strength of the brand.

(2) Determine the royalty rate to be applied

This is the key point of the method and potentially the most subjective.

According to Salinas (2009), it must be a function of the estimated brand strength, the duration of the brand (lifetime of agreements), the degree of exclusivity, the negotiating power of the firm in its industry, the product lifecycle, the firm’s local market environment (achievable margins), and the level of operating margins of the branded firm.

Several techniques are usually encountered:

⁹ Salinas (2009) – *The International Brand Valuation Manual*

¹⁰ Gabriella Salinas and Tim Ambler - *A taxonomy on brand valuation practice: methodologies and purposes* – April 2009

¹¹ *Brands : What’s in the name ?* PwC, March 2013

If the brand is already licensed, the access to the contractual agreement gives access to the real royalty fees invoiced. Nevertheless, these fees may not be composed only of the mere brand use rights but also of transfers of knowledge, material, and services enabling the licensee to comply with a certain level of quality expected by the customers for the concerned brand. In this case the main difficulty is to isolate the brand component.

If the brand is not licensed yet, we have to determine the would-be royalty rate from scratch, using peer tables. The royalty rate is determined based on a comparable approach, depending on the perceived strength of the brand, which includes both market positioning and intellectual protection. Within this method, authors make different recommendations. Brandfinance® (2013), in particular, recommends to choose comparable brands on criteria of similarities in margins and value drivers, to set an average value and a range of values (minimum and maximum) corresponding to the sector values, and to finally apply a multiplier (a percentage from 1% to 100% reflecting where the brand stands within the minimum-maximum range) to this rate, highlighting the brand specificities and strength¹². Others give less detail on how to select the right royalty rate, leaving more space to experience and judgement (e.g. average of comparable royalty rate, adjusted average). The Knoppe formula, as presented by Salinas (2009), gives guidelines and possibility to check the obtained result: it states that the royalty rate should be around 1/3 of the licensed product income divided by its sales.

(3) Determine the cash-flow discount rate and lifetime of the brand

This point is developed in 1.1.

In the case of an infinite lifetime of the brand, we will need to determine a perpetual growth rate to compute the DCF terminal value. The literature reviewed does not give insights on how to choose this perpetual growth rate and thus lives this choice to the experience and judgment of the valuator. In this method we suggest the perpetual growth rate applied to be in line with the perpetual growth rate estimated for revenues in the business plan. Indeed, here, the brand cash flow growth is directly linked to the sales growth. The case of decreasing royalties over time is reviewed below in the Kern (1962) model. Perpetually increasing royalties, implying thus a perpetual growth rate of brand-related cash flows superior to the sales growth rate, are not credible over the long run since the brand necessarily reaches maturity at some point.

(4) Apply the following formula:

$$Brand\ value = \sum_{t=1}^n \frac{Revenues_t * Royalty\ rate * (1 - tax\ rate)}{(1 + discount\ rate)^t}$$

1.2.2. A specific case: the Kern x-times model (1962)

This model was initially developed by Kern (1962). As cited by Salinas (2009)¹³, and Jucaityte and Virvilaite (2007)¹⁴, the underlying valuation mechanism is the same as for the general royalty relief model, with the estimation of future

¹² This method, despite clearly using a royalty relief approach, may also be classified in the demand driver/brand strength analysis paragraph

¹³ *The International brand valuation manual* – Gabriela Salinas - 2009

¹⁴ *Integrated model of brand valuation* - Indre Jucaityte and Regina Virvilaite - 2007

revenues related to the ownership of the brand, discounted to present value. Additionally, Kern assumes that:

- The royalty revenues will increase in line with revenues but in a decelerating curve (hence the square root function in the formula below): the sales directly triggered by the brand will erode with the ageing of the brand,
- Brands have finite lifetime.

After some time, brands strength and royalty rates tend to decrease following a certain obsolescence of the brand.

The formula used is the following:

$$\text{Brand value} = \sqrt[3]{R^2} * L * \frac{q^{n-1}}{q^{n*(q-1)}} \quad \text{with } q = 1 + \frac{p}{100} \quad \text{and,}$$

R: average expected annual revenues,

L: Normal royalty rate in the industry,

n: brand lifetime horizon,

q: annuity present value factor,

p: country interest rate.

$c = \frac{q^{n-1}}{q^{n*(q-1)}}$ is called the capitalisation factor.

Nevertheless, according to Zimmermann et al. (2001) as cited by Salinas (2009), no empirical study demonstrated the functional relationship chosen by Kern (i.e. the use of a root function) and the determination of n often remains arbitrary and subjective.

What is more, the finite lifetime of brand model cannot be applied to all types of brands: some brands having already existed for centuries, it may be complicated to choose the year in which they will stop existing, or to estimate what “indefinite” would mean for a brand (e.g. 100 years, 600 years).

The following table gives an example on how to apply the royalty relief method and the difference in results that can be obtained with the Kern model.

Hypotheses	
Royalty rate	7%
Discount rate	15%
Tax rate	30%
Perpetual growth rate	2%
Lifetime of the brand	Perpetual

Classic method											
<i>m€</i>	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Year	0	1	2	3	4	5	6	7	8	9	10
Sales	11 683	12 307	12 588	12 884	13 088	13 415	13 751	14 094	14 447	14 808	15 178
Pretax royalty income	818	861	881	902	916	939	963	987	1 011	1 037	1 062
Taxes	(245)	(258)	(264)	(271)	(275)	(282)	(289)	(296)	(303)	(311)	(319)
After taxes royalty income	572	603	617	631	641	657	674	691	708	726	744
Discount factor	0,933	0,811	0,705	0,613	0,533	0,464	0,403	0,351	0,305	0,265	0,231
Present value of royalty income	534	489	435	387	342	305	272	242	216	192	171
Sum of discounted royalty income (2013-2023)	3 585										
Terminal value	1 345										
Brand value (classic method)	4 930										

Adaptation: Kern model	
Complementary hypotheses	
Lifetime of the brand (in years)	150
Country risk-free rate	2,5%
Computation	
Annuity present value factor	1,0003
Capitalisation factor	147
Average expected annual revenue (13-23)	13 477
Brand value (Kern method)	5 835

Table 8 - Royalty relief method application example

1.2.3. Pros, cons and key hypotheses in using this technique

Pros

The royalty relief technique and its derived methods allow for an obvious separation between the brand itself and its underlying asset (the rest of the company) through the definition of a rate rewarding only the extra profit generated by the brand. Through the royalty rate estimate, it also takes into account the industry environment in which the brand evolves, the target royalty rates being very different from one industry to another (from 1% to 10% according to Husson and Philippe).

This method is widely accepted by authorities since cited in the ISO 10668 standard¹⁵, and can mostly be performed on publicly available information.

What is more, this approach reflects the commercial aspect of brands through a type of “renting” cost and recognizes the fact that a brand can be valuable in itself, even it is attached to a non-performing business (margins are indeed not taken into account). It also takes into account marketing and legal aspects on top of financial aspects, as recommended by the ISO standards.

Its subjectivity is a more discussed topic and depends on the information available:

- If the brand is already licensed, the access to the fair royalty rate (with the necessary analysis of its components) should be relatively easy,
- If the brand is not licensed, the estimation of the royalty rate is mainly based on comparable agreements appraisal and judgment, which is inherently more subjective.

¹⁵ Edouard Chastenet (April 2012) - Revue Française de comptabilité N°453 - Une norme internationale sur l'évaluation financière des marques: utilité pour les préparateurs et les utilisateurs des états financiers

Nevertheless, compared to other methods, it remains more objective since based on third parties agreements.

Cons

At the root of the method in itself, depending on the sector, it may be difficult to find any comparable licensing agreement or the comparable range may be too wide to be able to conclude wisely. Indeed, brands are, by definition, unique assets and are thus inherently difficult to compare with one another.

What is more, royalty rates used either directly or in a comparative way may:

- Include components other than the mere right to use the brand. In this case, a further analysis of the split of the royalty rate between each underlying component (know-how, material) may be needed, but not necessarily feasible for each comparable chosen.
- Exclude certain rights on the brand, not transferred from the owner to the licensee but that should be taken into account in the brand valuation.

Finally, a risk of undervaluation remains: when a company accepts to pay to license a brand on a specific or indefinite period for a given royalty rate, this company is expecting to make a higher profit than the expenses incurred to use the brand. The market royalty rate may thus be slightly under its fair value.

Key hypotheses

The royalty relief method is sensitive to the following hypotheses:

- Royalty rate,
- The discount rate and lifetime period (the Kern model is highly sensitive to the latter),
- The perpetual growth rate (if needed).

The other hypotheses needed are the following:

- The tax rate used (the effective tax rate paid by the company),
- The future revenues of the firm over a sufficient period of time (usually 5 to 10 years).

1.3. Price/volume premium approach

Sources: Salinas and Ambler (2009), Fernández (2001), Husson and Philippe (*Décideurs: Stratégie Finance droit n°92/93*), Tollington (1999)

1.3.1 General case

This method relies on the observation that for a similar product, a branded product sells more in volume and at a higher price than a non-branded product. The extra price paid and additional volume sold over the lifetime of the brand would thus represent the brand value added.

Deriving from the above definition, the main steps to determine the brand value are the following:

(1) Find a similar unbranded product.

(2) Compute the price difference between the branded product and the non-branded similar product and estimate how it will evolve over time.

If the branded company is selling only one branded product, the calculus is easily done as a simple subtraction. Nevertheless, it does not represent the majority of branded companies. In the most common case, the price difference has to be estimated statistically, e.g. as an average of the price differences for all the products sold. The initial price premium

has then to be derived in the future, depending on estimates on inflation, market share evolution, market growth, product mix etc.

- (3) Apply this price difference on the volume of branded product sold over the future period studied.

The main difficulty here is to estimate future volumes as for a business plan, over a sufficient period of time, relying on historical trends, market growth expectations, and market share evolution. At this step, one could observe that the brand also triggers additional volumes compared to the situation in which the product sold would not be branded. In this case, the present value of the volume premium will be computed separately and added to the present value of the price premium to obtain the brand value (see below).

- (4) Deduct from the above result the expenses related to the brand maintenance.

These expenses should include marketing expenses, but could also reflect the additional costs e.g. in raw material (highlighting difference in quality) or in personnel costs (showing for example handmade premium, or specific choice in production place).

- (5) Determine the rate at which to discount the excess profit computed.

This point is developed in 1.1.

In the case of an infinite lifetime of the brand, we will need to determine a perpetual growth rate to compute the DCF terminal value. The literature reviewed does not give insights on how to choose this perpetual growth rate and thus leaves this choice to the experience and judgment of the valuator. As for the royalty relief method, the expected perpetual growth rate on the company's sales may serve as a proxy.

- (6) Apply the following formula to obtain the present value of the estimated excess profit generated by the brand:

$$\text{Brand value} = \sum_{t=1}^n \frac{((\text{branded } p_t - \text{non branded } p_t) * V_t - E) * (1 - r_{tax})}{(1 + \text{discount rate})^t}$$

$$\text{Brand value} = PV(\text{price premium})$$

Where

p: price

V: volume sold

E: expenses related to brand maintenance

r_{tax} : branded company's effective tax rate

n: brand lifetime horizon

PV: present value.

If a volume premium is identified, i.e. if the brand allows the owning firm to sell more products, it has to be estimated and added to the price premium present value. In this case:

$BV = PV(\text{price premium}) + PV(\text{volume premium}) - PV(\text{additional expenses})$, where PV(price premium), PV(volume premium) and PV(additional expenses) are computed as following:

$$PV(p \text{ premium}) = \sum_{t=1}^n \frac{((\text{branded } p_t - \text{non branded } p_t) * \text{non branded } V_t) * (1 - r_{tax})}{(1 + \text{discount rate})^t}$$

$$PV(V \text{ premium}) = \sum_{t=1}^n \frac{((\text{branded } V_t - \text{non branded } V_t) * \text{branded } p_t) * (1 - r_{tax})}{(1 + \text{discount rate})^t}$$

$$PV(E) = \sum_{t=1}^n \frac{E_t * (1 - r_{tax})}{(1 + \text{discount rate})^t}$$

The objective in separating the additional expenses present value is to not double count them both in the price premium and in the volume premium.

This method is usually presented including only the price premium or only the volume premium, excluding the additional expenses effect. The more complete method presented here is the one described by Fernández (2001) as the “*most correct method, from a conceptual point of view*”.

The following table gives an example of how to apply this method practically in a simple way. In the example taken, we assumed for the terminal value computation a perpetual growth rate of 1% on brand earnings, which is equal to the assumed inflation on branded product prices, and close to current economy inflation.

Hypotheses											
Inflation on branded product mix prices	1,0%										
Inflation on non-branded product mix prices	0,7%										
Non-branded product volume growth rate	1,0%										
Branded product volume growth rate	1,0%										
Tax rate	30%										
Discount rate	15%										
Perpetual brand earnings growth rate	2,0%										
Lifetime of the brand	Perpetual										
m€	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Year	0	1	2	3	4	5	6	7	8	9	10
Branded product average price	10,0	10,1	10,2	10,3	10,4	10,5	10,6	10,7	10,8	10,9	11,0
Non-branded product average price	7,0	7,0	7,1	7,1	7,2	7,2	7,3	7,4	7,4	7,5	7,5
Price difference	3,0	3,1	3,1	3,2	3,2	3,3	3,3	3,4	3,4	3,5	3,5
Non branded product average volume sold	1 269	1 282	1 295	1 307	1 321	1 334	1 347	1 361	1 374	1 388	1 402
Price premium cash flows before tax	3 807	3 910	4 016	4 125	4 236	4 350	4 467	4 586	4 709	4 834	4 963
Taxes	(1 142)	(1 173)	(1 205)	(1 237)	(1 271)	(1 305)	(1 340)	(1 376)	(1 413)	(1 450)	(1 489)
Price premium cash flows after tax	2 665	2 737	2 811	2 887	2 965	3 045	3 127	3 211	3 296	3 384	3 474
Branded product mix average volume	1 168	1 180	1 192	1 204	1 216	1 228	1 240	1 253	1 265	1 278	1 291
Non branded product average volume sold	1 269	1 282	1 295	1 307	1 321	1 334	1 347	1 361	1 374	1 388	1 402
Volume difference	(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	(109)	(110)	(111)
Branded product average price	10,0	10,1	10,2	10,3	10,4	10,5	10,6	10,7	10,8	10,9	11,0
Volume premium cash flows before tax	(1 007)	(1 027)	(1 048)	(1 069)	(1 090)	(1 112)	(1 135)	(1 158)	(1 181)	(1 205)	(1 229)
Taxes	302	308	314	321	327	334	340	347	354	361	369
Volume premium cash flows after tax	(705)	(719)	(734)	(748)	(763)	(779)	(794)	(810)	(827)	(843)	(860)
Specific branded product marketing, distribution, R&D expenses	(1 686)	(1 770)	(1 808)	(1 848)	(1 876)	(1 923)	(1 971)	(2 020)	(2 070)	(2 122)	(2 175)
Difference in personnel cost	(200)	(202)	(204)	(206)	(208)	(210)	(212)	(214)	(217)	(219)	(221)
Difference in raw material expenses	(225)	(230)	(234)	(239)	(244)	(248)	(253)	(258)	(264)	(269)	(274)
Expenses related to brand management	(2 111)	(2 201)	(2 246)	(2 293)	(2 327)	(2 381)	(2 436)	(2 493)	(2 551)	(2 610)	(2 670)
Taxes	633	660	674	688	698	714	731	748	765	783	801
Brand expenses cash flows after tax	(1 478)	(1 541)	(1 572)	(1 605)	(1 629)	(1 667)	(1 705)	(1 745)	(1 785)	(1 827)	(1 869)
Brand earnings	482	477	506	534	573	600	627	655	684	714	745
Discount factor	0,933	0,811	0,705	0,613	0,533	0,464	0,403	0,351	0,305	0,265	0,231
Present value of brand earnings	450	387	357	328	305	278	253	230	209	189	172
Sum of discounted royalty income (2013-2020)	3 157										
Terminal value	1 347										
Brand value	4 504										

Table 9 - Price-volume premium method application example

1.3.2. Pros, cons and key hypotheses in using this technique

Pros

This method is seen as “*theoretically attractive*”¹⁶ because easily understood intuitively. What is more, the price differential computation tends to remove subjectivity.

Cons

Nevertheless, from a practical point of view, it is difficult to find strictly similar unbranded products, except for some very simple products or raw material (e.g. sugar, coffee). In the other cases, the price difference may include slight differences not directly due to the brand (e.g. packaging, quality), which are difficult to isolate.

What is more, the price difference may not be homogeneous for every branded product sold under the same brand: for example, Burberry sells clothes but also bags, glasses etc.: how to fairly take this diversity into account? Estimating future products prices and mix over 5 or 10 years may be out of reach. It may also be complicated to justify and estimate the sustainability of the premium computed.

Additionally, differences in volume may be biased by the company’s size or recentness.

Finally, estimating the expenses directly related to the brand may be arduous since these expenses are not capitalised and are often drown in general expenses such as marketing etc. along decades. What is more estimating additional expenses related to quality or production place playing a role in brand strength requires a deep analysis of the company operations, not necessarily available to the public.

This method is thus complicated to apply correctly without relying on simplifying or unjustified hypotheses.

Key hypotheses

This method is sensitive to the following hypotheses:

- Comparable non-branded product chosen and thus estimated price and volume difference computed,
- The discount rate and lifetime period chosen,
- The perpetual growth rate (if needed).

The tax rate used is the effective tax rate paid by the company.

1.4. Margins comparison

Sources: Salinas and Ambler (2009); Salinas (2009)

1.4.1. General case

This method is close from the price/volume excess premium but takes into account more extensively cost advantages or disadvantages of owning the brand (e.g. economies of scale). It consists in comparing the margins of the branded company with either (1) the one of an unbranded business selling a similar product, (2) an average of the ones of selected competitors. The margins compared can be either the gross margin or the EBIT margin.

The steps are the same as in the price/volume method but the idea here is to apply the margin differential to the branded product forecasted revenues for the brand lifetime defined. The formula used will thus be the following:

¹⁶ Salinas and Ambler (2009)

$$\text{Brand value} = \sum_{t=1}^n \frac{((\text{branded margin}\%_t - \text{non branded margin}\%_t) * R_t) * (1 - r_{tax})}{(1 + \text{discount rate})^t}$$

We applied the two methods to Alpha:

Hypotheses

Non-branded product company margin growth (13-20)	0,3%
Tax rate	30%
Discount rate (WARA)	15%
Perpetual brand earnings growth rate	2,0%
Lifetime of the brand	Perpetual

(1) Comparison with an un-branded product company

m€	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Year	0	1	2	3	4	5	6	7	8	9	10
Branded product company EBIT margin	47,8%	45,3%	45,1%	44,7%	44,6%	44,6%	44,4%	44,2%	44,0%	43,8%	42,8%
Non-branded product company EBIT margin	37,0%	37,1%	37,2%	37,3%	37,4%	37,6%	37,7%	37,8%	37,9%	38,0%	38,1%
EBIT margin difference	10,8%	8,2%	7,9%	7,4%	7,2%	7,0%	6,7%	6,4%	6,1%	5,8%	4,6%
Branded product company sales	11 683	12 307	12 588	12 884	13 088	13 415	13 751	14 094	14 447	14 808	15 178
EBIT margin premium cash flows before tax	1 263	1 008	992	954	942	940	924	905	883	857	706
Taxes	(379)	(302)	(297)	(286)	(283)	(282)	(277)	(272)	(265)	(257)	(212)
Margin premium cash flows after tax	884	706	694	668	659	658	647	634	618	600	494
Discount factor	0,933	0,811	0,705	0,613	0,533	0,464	0,403	0,351	0,305	0,265	0,231
Present value of brand earnings	825	572	489	410	352	305	261	222	188	159	114
Sum of discounted royalty income (2013-2023)	3 897										
Terminal value	893										
Brand value	4 790										

(2) Comparison with a set of competitors

m€	2013	2014	2015	2016	2017	2018	2019	2020	2020	2020	2020
Year	0	1	2	3	4	5	6	7	8	9	10
Branded product company EBIT margin	47,8%	45,3%	45,1%	44,7%	44,6%	44,6%	44,4%	44,2%	44,0%	43,8%	42,8%
Competitor 1 EBIT Margin	39,0%	39,4%	39,8%	40,2%	40,6%	41,0%	41,4%	41,8%	42,2%	42,7%	43,1%
Competitor 2 EBIT Margin	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%	50,0%
Competitor 3 EBIT Margin	48,0%	47,0%	46,1%	45,2%	44,3%	43,4%	42,5%	41,7%	40,8%	40,0%	39,2%
Competitor 4 EBIT Margin	30,0%	30,6%	31,2%	31,8%	32,5%	33,1%	33,8%	34,5%	35,1%	35,9%	36,6%
Competitor 5 EBIT Margin	25,0%	30,0%	36,0%	39,6%	43,6%	43,6%	43,6%	43,6%	43,6%	43,6%	43,6%
Average competitors EBIT margin	38,4%	39,4%	40,6%	41,4%	42,2%	42,2%	42,3%	42,3%	42,4%	42,4%	42,5%
EBIT margin difference	9,4%	5,9%	4,5%	3,4%	2,5%	2,4%	2,1%	1,9%	1,7%	1,4%	0,3%
Branded product company sales	11 683	12 307	12 588	12 884	13 088	13 415	13 751	14 094	14 447	14 808	15 178
EBIT margin premium cash flows before tax	1 100	726	564	436	323	316	294	269	239	204	44
Taxes	(330)	(218)	(169)	(131)	(97)	(95)	(88)	(81)	(72)	(61)	(13)
Margin premium cash flows after tax	770	508	395	305	226	221	206	188	167	143	31
Discount factor	0,933	0,811	0,705	0,613	0,533	0,464	0,403	0,351	0,305	0,265	0,231
Present value of brand earnings	718	412	278	187	120	102	83	66	51	38	7
Sum of discounted royalty income (2013-2023)	2 063										
Terminal value	55										
Brand value	2 118										

Table 10 - Margins comparison method application example (using the EBIT margin)

1.4.2. A derived case: marginal cash-flow comparison

This third approach is directly derived from the margins comparison but computing and discounting this time the difference between the free cash flows of a branded company and a non-branded company selling similar products.

1.4.3. Pros, cons and key hypotheses in using this technique

Pros

These three methods take more widely into account costs associated to the brand and are more easily applicable from publicly available information than the price/volume

premium approach developed above, which requires more detailed financial and operational information.

Compared to the price/volume premium approach, it seems to solve the product mix problem by considering blended margins / free cash flows.

Cons

A side effect of the advantage above described is that the EBIT margin and free cash flow include expenses not related to the brand ownership, which leads to undervaluation of the brand. On the contrary, gross margin may exclude some expenses directly related to the brand and lead to overvaluation. Looking at the brand from a more macroeconomic point of view is thus easier but necessarily leads to errors.

What is more, as for the price/volume premium approach, from a practical point of view, it may be difficult to find strictly similar unbranded products, except for some very simple products or raw material (e.g. sugar, coffee). This method adds difficulties if the company is selling products under different brands: the valuator has to analyse more deeply the product mix to create a representative blended margin. The alternative method suggesting to use competitors' margins does not really isolate the brand but values the brand studied relatively to the brands of the competitors. It thus does not lead an absolute value. The example computed shows indeed that the second method leads to a much lower brand value, explained by the fact that it is the brand value on top of the value of average competitors brands.

Finally, it may be complicated to justify and estimate the sustainability of the margins/free cash flow computed.

These derived methods are thus complicated to apply correctly.

Key hypotheses

These methods are highly sensitive to the comparable non-branded company chosen and thus estimated forecasted gross margin/EBIT margins/free cash flow.

The following hypotheses also affect the final brand value:

- The discount rate and the lifetime period (see 1.1.);
- The perpetual growth rate (if needed).

The tax rate used is the effective tax rate paid by the branded company.

1.5. Excess cash flow method

Sources: Salinas and Ambler (2009), Fernández (2001), The Canadian Institute Chartered Business Valuator (OECD TP WP6)

1.5.1 General case

This approach is still a DCF approach but the free cash flows attributable to the brand are computed here as the estimated free cash flows to firm from which are deducted for each year the estimated return of other assets not corresponding to the brand, i.e. the “*assets employed multiplied by the required return*”¹⁷. The table below, adapted from Fernández paper (2001) gives a practical example.

¹⁷ Fernández (2001)

Hypotheses

Discount rate	15%
Perpetual growth rate	2%
Lifetime of the brand	Perpetual

m€	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Year	0	1	2	3	4	5	6	7	8	9	10	
Company free cash flow	3 731	3 820	3 993	4 126	4 276	3 785	3 946	4 042	4 141	4 243	4 384	
	<i>Required return</i>											
Working capital requirements	6%	603	672	754	816	865	887	909	932	955	979	1 003
Tangible assets	10%	4 323	4 582	4 737	4 850	4 893	5 545	6 119	6 682	7 228	7 756	8 142
Intangible assets	15%	4 004	3 758	3 503	3 237	2 959	2 685	2 415	2 150	1 890	1 635	1 385
Goodwill	20%	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989	2 989
Financial assets	10%	5	5	5	5	5	5	5	5	5	5	5
Assets employed x required return	1 667	1 661	1 643	1 618	1 583	1 609	1 627	1 645	1 662	1 678	1 680	
Free cash flow attributable to the brand	2 064	2 160	2 350	2 508	2 693	2 177	2 319	2 397	2 479	2 565	2 704	
Discount factor	0,933	0,811	0,705	0,613	0,533	0,464	0,403	0,351	0,305	0,265	0,231	
Present value of royalty income	1 925	1 751	1 657	1 538	1 436	1 009	935	840	756	680	623	
Sum of discounted royalty income (2013-2023)	9 315											
Terminal value	4 890											
Brand value	14 205											

Source: Adapted from Fernández (2001) citing Houlihan Valuation Advisors

Table 11 - Brand valuation computation example from excess cash flow method

In this method, company free cash flow and assets employed are estimated based on a business plan considering historical trends, market growth expectations, market share evolution etc. Neither Fernández (2001) nor Salinas and Ambler (2009) give insights on how to fairly estimate the required return on each asset employed type. The WARA method developed in 1.1 may be applied to partly solve this issue.

This approach is in fact very similar to the marginal cash flow comparison method, but replaces the cash flows from a non-branded product company by the cash flows supposed to be dedicated to serving the assets employed different from the brand, the remaining cash flows being supposed to be related to the brand earnings.

1.5.2. Pros, cons and key hypotheses in using this technique

Pros

The issue of relying on comparable non-branded products disappears here since the method is totally concentrated on the company owning the valued brand.

Cons

The reliability of the whole method relies on the possibility to fairly estimate assets employed required returns excluding the brand, which shifts the issue of brand valuation to the issue of analysing the other company's assets. The valuation is thus done by eliminating what composes the company's value, without really focussing on the brand in itself. As a consequence, it is practically applicable only for companies owning a single brand. What is more, since this approach calculates the brand value by difference, there is a risk of overvaluation or undervaluation by wrongly attributing by omission some revenues or expenses to the brand. Excess in cash flow may not necessarily be due to the brand but to wrongly estimated required returns on the other assets identified, or to an unidentified asset.

Applying the same required returns for each asset class along the business plan may not reflect the reality of the business evolution. On the contrary, estimating the evolution of each category return would require an additional level of judgment, and would bring up the issue of how to choose the level of return to apply in the terminal value.

Finally, this method does not take at all into account marketing or legal aspects of the brand since it values it entirely from internal information.

Key hypotheses

This method is highly sensitive to the following hypotheses:

- Estimated forecasted free cash flow and assets employed (split and numerical estimates);
- Required returns on each type of asset employed.

The following hypothesis also affects the final brand value:

- The discount rate (see 1.1.) and the lifetime period of the brand;
- The perpetual growth rate (if needed).

2. Costs based methods

Sources: The Canadian Institute Chartered Business Valuator (OECD TP WP6), Husson and Philippe (*Décideurs: Stratégie Finance droit n°92/93*), Tollington (1999), Anson, Noble and Samala (2014), Salinas and Ambler (2009)

“The value of an object or piece of intellectual property is no greater than the cost to acquire that asset elsewhere, whether the cost of obtaining the asset is measured by purchasing it today or replacing it with a substitute asset of equal strength and utility”.¹⁸

The underlying idea of the methods presented below is thus that an external acquirer would not pay more than what it would cost him or her to recreate or find a substitute to the brand.

The following table sums up the characteristics of the methods presented in this section.

Method	Comparative	Intrinsic	Ideal brand characteristics	To be noted
Historical costs		✓	Embryonic brand	Gives a floor value
Replacement costs		✓	Embryonic brand	More sound but more subjective and freely applied

Table 12 - Cost-based approaches summary

2.1. Historical costs of creation

2.1.1 General case

This method suggests that the value of a brand is the sum of the costs that have been incurred by the owning company to create the asset.

Three types of costs have to be taken into account:

- “*Hard costs*¹⁹”, which include any material or asset needed to build the brand;
- “*Soft costs*²⁰”, designating intellectual work related to the brand such as time for design or engineering;
- “*Market costs*²¹”, including all marketing and communication costs for advertising and more generally building the brand strength in its market.

To these accounting costs have to be added any opportunity costs such as a delay in entrance on market; and withdrawn any obsolescence factors (e.g. if the brand has a finite lifetime, the years already spent have to be taken into account) or restriction factors (e.g. due to the legal environment in which the brand is developed). The Canadian Institute Chartered

¹⁸ Anson, Noble and Samala (2014)

¹⁹ Anson, Noble and Samala (2014)

²⁰ Anson, Noble and Samala (2014)

²¹ Anson, Noble and Samala (2014)

Business Valuator²² suggests that taxes and tax shield also have to be taken into account in the cost aggregation, in order to reflect more accurately the cost of owning and operating the brand. These taxes would include any fees paid for brand protection but also country specific taxes. It should also take into account (if the brand is capitalised and amortised) the related deferred tax assets. On the contrary, we don't think that additional income taxes paid each year due to the higher sales registered should be taken into account: it would lead to estimating twice the value of the brand, using this time a price/volume premium approach in addition to the historical cost approach.

To simplify the approach of costs split, Salinas (2009) presents a method taking into account the branded firm categories of expenses related to the brand (e.g. marketing, communication, design) and applying a 75% ratio on the sum of those costs to separate the brand-related investments to other asset-related expenses. Nevertheless, she highlights the fact that using such a ratio is problematic since it assumes that the business expenses can be linearly split between brand and non-brand related investment. Once more, the split is thus left at the valuator discretion depending on the brand business.

The following table gives a simplified example on how to practically apply this technique, using the 75% rule.

Hypotheses

Percentage of Costs due to brand 75%

m€	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Personnel expenses	49	62	77	97	121	151	189	236	295	369	461	576	720	900	983
Marketing & communication expenses	27	34	43	54	67	84	105	131	164	205	256	320	400	500	546
Distribution & commissions expenses	8	11	16	23	32	46	66	94	134	192	274	392	560	800	874
Legal expenses (protection fees)	100	100	20	10	10	10	10	10	10	10	10	10	10	10	10
Total incurred expenses	185	207	156	183	230	291	369	471	603	776	1 001	1 298	1 690	2 210	2 413
Total attributable to the brand	139	155	117	137	173	218	277	353	452	582	751	974	1 268	1 658	1 810
Brand value	9 063														

Table 13 - Historical costs method application example

2.1.2. Pros, cons and key hypotheses in using this technique

Pros

This technique requires no assumption. What is more, according to Anson, Noble and Samala (2014), it often allows to compute a “*floor value*” for the brand since it does not include the upward opportunities, and is appropriate for young brands, “*embryonic*” assets where no market application is yet identified.

Cons

This method nevertheless bears significant disadvantages. It firstly ignores inflation and changes in the value of money. For old brands, this point may be an issue.

Then, it may be complicated to isolate the costs specific to the brand itself (hence the high output in our example, based on basic information). In some countries where the brands built internally are not booked in balance sheet, it may require both to look at years of P&L and to be able to split within the marketing and related expenses which ones are related to the brand concerned. What is more, some expenses are here only to maintain the brand value (e.g. communication campaign, without which the brand strength would run out of steam) and not particularly develop it, why should they then increase artificially our valuation if they are already taken into account once? Implementing this technique for old brands is thus complicated.

²² OECD TP WP6

Finally, by taking into account past expenditures only, it ignores future potential (which is what a buyer would be interested in), and it does not take into account the efficiency of the expenditures: as explained by Tollington (1999), some brands like Rolls Royce have low marketing expenses, combined with an intuitively high brand value. What is more, aggregating the costs does not take into account the positioning of the brand nor its failures or successes, which however make the core value of a brand.

Key hypotheses

No assumption is theoretically necessary in using this method, except potentially a percentage of brand expenses within the brand-related expenses.

2.2. Replacement costs

2.1.1 General case

This method is a derivative of the historical costs method. It suggests that the value of a brand is nothing but the cost that would be incurred should the owning company have to recreate or purchase a brand with similar functionalities at time of valuation. It would imply, as for the above method, isolating the costs necessary to build the brand, excluding value lost by management during the life of the brand, and actualising those costs at current prices.

We propose a simple example of application in the following table:

Hypotheses																	
Percentage of Costs due to brand		75%															
Brand discount rate		15%															
(I) Using past costs																	
<i>m€</i>		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Year		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Inflation		2%	2%	2%	3%	3%	3%	3%	3%	3%	2%	1%	1%	1%	1%	1%	
Inflation factor		1,02	1,02	1,02	1,03	1,03	1,03	1,03	1,03	1,03	1,02	1,01	1,01	1,01	1,01	1,01	
Cumulated inflation		1,36	1,33	1,31	1,28	1,24	1,21	1,17	1,14	1,10	1,07	1,05	1,04	1,03	1,02	1,01	
Historical expenses																	
Personnel expenses		49	62	77	97	121	151	189	236	295	369	461	576	720	900	983	
Marketing & communication expenses		27	34	43	54	67	84	105	131	164	205	256	320	400	500	546	
Distribution & commissions expenses		8	11	16	23	32	46	66	94	134	192	274	392	560	800	874	
Legal expenses (protection fees)		100	100	20	10	10	10	10	10	10	10	10	10	10	10	10	
Total incurred expenses		185	207	156	183	230	291	369	471	603	776	1 001	1 298	1 690	2 210	2 413	
Total attributable to the brand		139	155	117	137	173	218	277	353	452	582	751	974	1 268	1 658	1 810	
Total brand expenses in present money value		188	207	153	176	215	263	325	402	500	624	789	1 013	1 306	1 691	1 828	
Brand value																9 678	
(I) Using current costs																	
<i>m€</i>		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Year		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Estimated actual costs																	
Personnel costs	Price factor	1,4	69	87	108	135	169	211	264	330	413	516	645	806	1 008	1 260	1 377
Marketing & communication	1,4	38	48	60	75	94	117	147	184	229	287	358	448	560	700	765	
Distribution & commissions	1,5	12	17	24	34	48	69	99	141	202	288	412	588	840	1 200	1 311	
Legal expenses	1,2	120	120	24	12	12	12	12	12	12	12	12	12	12	12	12	
Total expected expenses		239	271	216	256	323	410	522	667	856	1 103	1 427	1 854	2 420	3 172	3 464	
Total attributable to the brand		180	203	162	192	243	308	391	500	642	827	1 070	1 391	1 815	2 379	2 598	
Discount factor		0,93	0,81	0,71	0,61	0,53	0,46	0,40	0,35	0,30	0,27	0,23	0,20	0,17	0,15	0,13	
Expected expenses discounted to present		167	165	114	118	129	143	158	175	196	219	247	279	316	361	342	
Brand value																3 129	

The second case allows also to take into account different evolution of prices depending on the categories of costs. These two applications are only examples, the cost methods may be applied very differently depending on the case studied.

Table 14 - Replacement costs method application example

2.1.2. Pros, cons and key hypotheses in using this technique

Pros

This derived method eliminates the issue of change in the value of money over time and risk taken at investing, on top of the other advantages inherent to the historical costs approach.

Cons

Nevertheless, except for the point on inflation and risk, it bears the same disadvantages as historical cost approach and is considered “*not a good future indicator*”²³. What is more, identifying the management failures, the cost and time spent that could have been avoided along the development of the brand is in most cases out of reach, particularly for mature brands.

It is also more subjective in its application: should we discount or not the costs to present value or simply sum it as recommended in the historical costs method?

Key hypotheses

As for the historical costs method, it theoretically does not require any assumption, except maybe on the split of costs between brand-related and non-brand related costs and on the inflation and discount rates to be applied on those costs.

Nevertheless, it can be applied in very diverse manners and assumptions can be added in some cases (e.g. price evolution factors).

3. Market based methods

The methods presented in this section are based on market related aggregates. The following table sums them up to give you a first global insight before diving into their technical details.

Method	Comparative	Intrinsic	Ideal brand characteristics	To be noted
Transaction multiples	✓		Liquid and active market, single brand businesses	More sound approach but often non-aplicable
Demand drivers	✓	✓	Any	Try to take into account both marketing and financial characteristics. Very subjective
Price to sale ratio	✓		Single brand on simple products	Stick to the brand value creation definition
Stock price movements	✓	✓	Classic	Entirely forward looking and takes into account the whole markets perceptions. Link brand value to stock prices

Table 15 - Market-based approaches summary

3.1. Transaction multiples

Sources: Husson and Philippe (*Décideurs: Stratégie Finance droit n°92/93*), Tollington (1999), Anson, Noble and Samala (2014)

3.1.1. General case

This method is the most used and the easier to apply within this subsection. The underlying idea is that the fair value of a brand is better approximated when estimating the price that would be paid for that brand on an open market.

²³ Salinas and Ambler (2009)

The steps to be performed are the following:

- (1) Find transactions involving a comparable brand. By comparable we mean similar in terms of industry, strength, positioning, value drivers etc.

The transactions considered may concern only a brand - this is the easier case, nevertheless, as underlined by Anson, Noble and Samala (2014), these transactions are often buried below confidential agreements; but also branded-companies. In the latter case, the number of transactions for which data is available should be higher but the approach is complicated by the need to estimate the part of the price paid for the whole company directly related to the brand which shift the issue of brand value from the brand to be valued to the comparable brand used in the valuation.

- (2) Choose the right multiple to use

Many multiples can be used in a comparable approach, including Sales, EBIT, EBITDA, net income multiples. The idea is to resize the transaction price used as a comparable to the monetary economic benefits generated by the brand to be valued.

- (3) Apply the multiple using the following formulae (e.g. for a sale multiple):

$$\text{Brand A value} = \frac{B \text{ transaction price}}{B \text{ related company sales}} * A \text{ related company sales}$$

Note that the multiple obtained can be adjusted, e.g. in case a significant premium is identified in the transaction.

The following table shows a simple application example:

	Transaction characteristics	Transaction price	Estimated % attributable to brand	Company's year X sales	Multiple
Transaction A	Luxury shoe brand operating in France	2 000	100%	4 000	0,50
Transaction B	Sport shoe brand operating in the US	10 000	100%	30 560	0,33
Transaction C	Luxury apparel brand operating in Italy	5 700	100%	17 000	0,34
Transaction D	Shoe company operating in Europe	28 000	50%	14 000	1,00
Average multiple					0,54
Alpha 2013 sales					11 683
Estimated L brand value					6 316

Table 16 - Transaction multiples method application example

3.1.2. Pros, cons and key hypotheses in using this technique

Pros

This method relies already on a would-be “fair” value comparison, i.e. as defined in part I.

Cons

To be reliable, the market on which transactions are extracted needs to be sufficiently liquid, which is far from being the case to date for brand-only transactions. For branded-company transactions comparable, how to identify reliably the part of price related to the brand in the transaction? More generally, transaction prices are usually publicized with few details, which complicate the practical application of this method. What is more, as underlined by Tollington (1999), a comparable is “*almost impossible to determine simply because the market for brands is, at best, thin and volatile. Where the brand is being sold, willingly or otherwise, the realisable value is dependent on the circumstances of the sale*”.

Premiums or discounts may be included in the transaction prices and remain unnoticed. Tollington adds that brand prices are usually estimated on the price it would cost for the buyer to recreate the brand should the transaction not be successful, and this cost is by definition a mere assumption.

This method also bears the disadvantages of comparative approaches: since a brand is by definition a unique asset, it may be arduous or at least subjective to find comparable assets.

Finally, the choice of the multiple has its importance on the result obtained.

Key hypotheses

This method is highly sensitive to the following hypotheses:

- The chosen comparable transactions,
- The estimate of the percentage of transaction price related to the brand bought (if necessary),

The multiple aggregate chosen also impacts the final valuation.

3.2. Demand driver/brand strength analysis

Sources: Fernández (2001), Motameni and Shahrokhi (1998), Tollington (1999)

3.2.1. General case (Fernández (2001))

The method presented here is an example of the demand driver methods. It is one of the methods used by Interbrand²⁴ as reported by Fernández (2001).

The general idea is to determine the brand-specific operational profit by computing the difference between the branded product EBIT and an unbranded comparable product EBIT. Estimated taxes and capital remuneration are subtracted from the EBIT differential to get the brand-specific estimated earnings. A price/earnings multiplier computed based on brand strength estimation and a “*S-shaped curve*²⁵” is then applied to the brand earnings to obtain the brand monetary value.

The detailed steps are the following:

EBIT differential computation

- (1) Find a comparable non-branded product;
- (2) Compute the difference in EBIT between your branded product and the comparable non-branded product for the last three years and the forecasted year after;
- (3) Adjust the last three year results by an inflation multiplier;
- (4) Compute the present values of the last three years EBIT difference using a discount rate to be estimated;
- (5) Compute a weighted average of the last three years present values of EBIT differences.

Fernández (2001) suggests applying a weighting factor of 1 to year-2 figure, of 2 for year-1 figure, and of 3 for year 0 figures, in order to give more importance to present results. Nevertheless, these factors may be adjusted, for example, if one year is not representative of a normative EBIT difference. If the weighted average EBIT difference obtained is significantly higher than the forecasted year+1 EBIT difference, you may adjust it downwards to take this into account.

²⁴ www.interbrand.com

²⁵ Fernández (2001)

(6) Withdraw from the weighted average EBIT difference an estimate of the capital remuneration

To do so, Salinas and Ambler (2009) suggest taking a 5% ROCE and an estimated employed capital corresponding to the sector median or “the return on capital that would have been used for the production of a private label”.²⁶

(7) Withdraw taxes from the above result

The company effective tax rate is applied to the above result (weighted average EBIT difference – capital remuneration). This step gives you the “brand’s differential earnings²⁷”, to which the multiplier computed below will be applied.

Hypotheses

Discount rate	15%
Perpetual growth rate	2%
Tax rate	30%
Lifetime of the brand	Perpetual

\$m	year-2	year-1	year 0	year+1
Branded-product EBIT	5 278	5 430	5 586	5 575
- non-branded product EBIT	(3 971)	(4 180)	(4 400)	(4 620)
Brand EBIT differential	1 307	1 250	1 186	955
Inflation adjustment	1,10	1,05	1,00	
Brand EBIT differential inflation adjusted	1 438	1 312	1 186	
Present value of the brand's differential EBIT	1 901	1 509	1 186	
Weighting factor	1	2	3	
Brand's weighted financial EBIT			1 413	
Allowance for future reduction of EBIT			(100)	
Capital remuneration			(212)	
Brand's differential earnings before tax			1 101	
Tax			(330)	
Brand's differential earnings			771	

Source: Adapted from Fernández (2001)

Table 17 - Computation of brand earnings differential according to Interbrand as reported by Fernández (2001)

Multiplier computation

(8) Estimate the “brand strength”

Seven factors are used by Interbrand to appraise it:

- “Leadership” (x/25): it brings more value per percentage of market share due to market influence and control,
- “Stability”(x/15): long period of consolidation and high consumer loyalty provide high stability,
- “Market”(x/10): protected, stable, growing market, with preference given to high barriers to entry provide a high market score,
- “Internationality”(x/25): cross cultural brands are considered more valuable,
- “Trend”(x/10): it measures the ability to stay ahead of fashion,
- “Support”(x/10): it evaluates the ability to receive dedicated investment,
- “Protection”(x/5): it measures the quality of the legal intellectual protection of the brand.

The total factors levels give a score x/100.

²⁶ Salinas (2009)

²⁷ Fernández (2001)

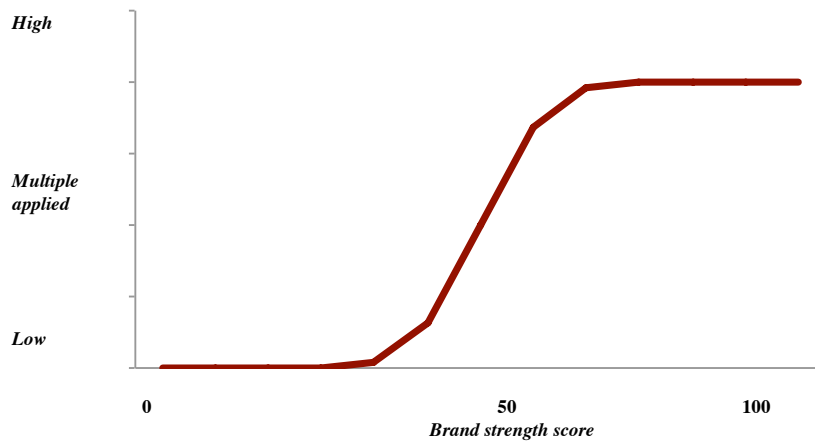
<i>Strength factor</i>	<i>Maximum score</i>	<i>Alpha brand</i>
Leadership	25	19
Stability	15	12
Market	10	7
Internationality	25	18
Trend	10	7
Support	10	8
Protection	5	5
Brand strength	100	76

Source: Adapted from Fernández (2001)

Table 18 - Estimating brand strength score according to Interbrand as reported by Fernández (2001)

(9) Determine the curve to be applied to get the multiple

This part of the analysis is both subjective and decisive to the final result. For Fernández (2001), the multiple minimum and maximum values are determined depending on the market P/E for the concerned industry. Interbrand suggests that ‘*the highest multiple on the brand strength scale should be clearly above the average P/E of the industry which the company operates in*²⁸’, leaving room to the valuator’s judgement. Salinas (2009) explains the use of this type of curve by the fact that “*unknown or new brands are weak for a certain period of time until their awareness increases and their market position improves. The brand value is positively affected as the brand grows stronger, and once it reaches a dominant position, the rate of growth will slow.*” A S-curve is then designed as shown in table 15.



	<i>Brand A</i>
Strength score	76
Multiple	13
Brand's differential earnings	771
Brand value (\$m)	10 019

Source: Adapted from Fernández (2001)

Table 19 - S-curve use and brand valuation according to Interbrand as reported by Fernández (2001)

(10) Report the score obtained on the calibration S-curve above designed to get the multiple to be applied

(11) Compute the estimated brand value by multiplying the multiple obtained with the “brand’s differential” earnings computed.

3.2.2. A derived case (Tollington (1999))

²⁸ Fernández (2001)

Tollington describes a similar approach in his *Journal of product and brand management*, vol.8 no.3: instead of using a comparable unbranded product to compute the brand earnings, he suggests to subtract from the branded company's earnings the earnings attributed to other unbranded products or assets. This technique is similar to the one described in paragraph 1.5. A P/E multiple or another multiplier reflecting strength to be defined (e.g. using the Interbrand method) is then applied to the brand earnings obtained.

3.2.3. Pros, cons and key hypotheses in using this technique

Pros

This method takes into account both the marketing perception of the brand strength, its legal aspects (under the “*protection*” score) and its financial and economic results, standalone and compared to other brands. It may help to determine what key drivers may be improved to better leverage on brand value.

What is more, as stated by Motameni and Shahrokhi (1998), considering a weighted average of three years of brand earnings avoid taking into account short-term “*swings in the economy*”, not necessarily related to a brand change in value.

Cons and key hypotheses

This method relies partly on historical data, which does not necessarily reflect estimates for the future brand earnings.

What is more, it is highly subjective since it requires at the same time to:

- Find a comparable un-branded product and estimate the EBIT related to this product;
- Assume both an inflation rate and a discount rate;
- Choose the years weighting factors;
- Estimate both ROCE and capital employed from industry comparison;
- Rate each of the seven factors;
- Determine the minimum and maximum of the S-curve: a slight change in the multiple may lead to high variations in the final value due to the shape of the curve.

Thus, the feeling we have is that each step can be easily manipulated, leading to an opaque result. The rating of each factor is dependent on who is valuing the brand: the perception of strength can vary geographically and thus lead to different results.

What is more, the use of a S-curve implies the presence of an underlying mathematical function, which still has to be statistically demonstrated.

Finally, as underlined by Tollington (1999), ending up using a P/E multiple to value a brand assumes that brands “*profits can be valued in the same way as the business as a whole*”: this hypothesis still remains unjustified empirically.

3.3. Differential of price to sales ratios

Sources: Fernández (2001), Damodaran notes

3.3.1. General case

This method follows the idea of existence of a price premium, suggesting that the value of a brand is entirely reflected in the higher price the owning company is able to charge per sale, which generate higher profit and thus higher “*price-to-sales*²⁹” ratio. A brand not leading to higher pricing has no value.

²⁹ Damoradan - <http://people.stern.nyu.edu/adamodar/pdfiles/brand.pdf>

The value of the brand could thus be computed using the following formula:

$Brand\ value = \left(\left(\frac{V}{S} \right)_b - \left(\frac{V}{S} \right)_g \right) * S_b$, where $\left(\frac{V}{S} \right)_b$ is the value of firm per sales ratio for a branded company; $\left(\frac{V}{S} \right)_g$ is the value of firm per sales ratio for a non-branded company selling a similar product; and S_b represents the sales of the branded company.

The value of the companies are calculated based on a simplified DCF: an hypothesis of free cash flow in year 1, on which two growth rates (a growth rate from year 1 to year n, and a growth rate from year n+1 to perpetuity), and WACC hypotheses are applied. The exact formula used to compute price to sale ratios is the following:

$$\frac{V}{S} = Profit\ margin * \left(\frac{p * (1 + g) * \left(1 - \frac{(1 + g)^n}{(1 + r)^n} \right)}{r - g} + \frac{p_n * (1 + g)^n * (1 + g_n)}{(r_n - g_n) * (1 + r)^n} \right)$$

where p and p_n are payout ratios.

The following table presents a simple application model of this method:

Hypotheses / Data

Branded company hypotheses

EBIT margin	48%
Sales	11 683
Current payout ratio	15%
Perpetual payout ratio	17%
Current growth rate	5%
Perpetual growth rate	2%
Current discount rate	10%
Perpetual discount rate	10%

Unbranded company hypotheses

EBIT margin	37%
Sales	8 883
Current payout ratio	10%
Perpetual payout ratio	17%
Current growth rate	4%
Perpetual growth rate	2%
Current discount rate	14%
Perpetual discount rate	10%

n 5

Computations

Branded company price to sale ratio	1,15
Unbranded company price to sale ratio	0,65
P/S ratios difference	0,50
Brand value	5 863

Table 20 - Price to Sales ratio method application example

3.3.2. Pros, cons and key hypotheses in using this technique

Pros

This approach doesn't go deep into the details of the company's costs; it can thus be easily performed from public information to obtain a first order of magnitude of brand value. What is more, as for the price premium approach, it is conceptually easy to understand.

Cons

As for the valuation methods based on comparisons with unbranded products companies, the choice of the comparable has a significant influence on the final result.

Fernández (2001) shows that the brand value is highly sensitive to any change in growth and profit margin assumption on the generic product.

What is more, this method assumes that the difference obtained is entirely due to the brand value, which can lead to overvaluation if other assets should be considered (e.g. better delivery service can lead to price increase not directly related to the brand).

Growth hypotheses taken in this model are rigid and do not necessarily correspond to the case studied. Nevertheless, the user of the model can compute the EV of the two companies based a method of his or her choice.

Key hypotheses

This method is sensitive to the following hypotheses:

- The chosen non-branded company,
- The EV computation parameters (thus particularly NOPAT, growth rate and WACC used),
- The year of comparison, particularly for cyclical companies and the year from which perpetuity hypotheses are applied.

3.4. Stock price movements

Source: Simon and Sullivan (1993)

3.4.1. General case

This theory is based on the efficient markets hypothesis, suggesting that markets being efficient, they reflect at any time the best estimate of the future cash flows to be generated by a company and thus its best value approximation. Basing a valuation method on market data would thus mean staying one step ahead of methods based on accounting historical or forecasted figures, not able to incorporate the latest news (e.g. the launch of new marketing campaigns).

According to Simon and Sullivan (1993), brand value has two main components:

- A first component understood as a function of factors taking into account brand perceived quality: empirically, the authors use advertising expenses (past and current) and the brand's age as proxy to value the capacity to generate loyalty and brand awareness;
- A second component understood as a function of factors affecting market share.

A market share equation is first estimated by regression on four variables:

- o The order of market entry (*ord*);
- o The advertising expenses relative to competitors (*adshr*);
- o The firm's share of patents relative to competitors (*patshr*) and;
- o The firm's share of R&D expenses (*rndshr*).

Authors then consider that only part of the market share is brand-related, the rest being linked to the action of other intangibles owned. The brand related market share part is computed by splitting the market share regression as following:

$$S_{brand} = b_1 * adshr_t + b_2 * adshr_{t-1} + b_3 * ord + \varepsilon$$

The rest is considered related to other intangible assets:

$$S_{non\ brand} = b_4 * patshr + b_5 * rndshr + \varepsilon$$

In parallel, the value of each company is considered to be composed of:

- Common shares market value;
- Preferred shares market value;
- Market value of long-term debt;

- Market value of short-term debt.

The company value is supposed equal to the sum of the value of tangible (replacement cost) and intangible assets. The value of intangible assets is computed by difference between the value of firm and the value of tangible assets.

Then, a regression of the value of intangible assets is done on the following factors:

- A four-firm concentration ratio (CR4);
- A variable indicating presence of absence of regulation (reg);
- The first brand component factors above described:
 - o Advertising expenditures (adv);
 - o The company age (age);
- The market share factors computed beforehand:
 - o S_{brand} ;
 - o $S_{non\ brand}$.

We thus obtain the following type of relationship:

$$V_{intgbl} = \alpha + b_1 * adv_t + b_2 * adv_{t-1} + b_3 * age + b_4 * S_{brand} + b_5 * CR4 + b_6 * S_{non\ brand} + \varepsilon$$

Eventually, the brand value is considered as part of the intangible value related to the following variables:

$BV = b_1 * adv_t + b_2 * adv_{t-1} + b_3 * age + b_4 * S_{brand} + \varepsilon$ where the b_i coefficient are the coefficient obtained by regression of value of intangible on the above described variables.

The results presented by Simon and Sullivan (1993) in terms of coefficient are based on 638 firms with aggregates from year 1985 data. Regression coefficients computed are thus general across the all stock market.

Nevertheless, Simon and Sullivan also transformed the final equation to obtain the brand value as a percentage of tangible assets value er industry and provide the following results, enabling a valuator to compute a range of his or her studied brand value:

Industry	Brand value as a % of Firm Replacement Value	Intangible asset value as a % of Firm Replacement Value
Food products	37	45
Tobacco	46	30
Textile Mills	9	20
Apparel	61	73
Lumber and Wood Prodi	20	18
Furniture and Fixtures	11	15
Papier and Allied Produ	-3	5
Printing and Publishing	58	63
Chemicals	34	81
Petroleum and Coal	-3	-18
Rubber and Misc. Plasti	26	39
Leather	28	30
Stone, Glass and Clay	0	-5
Primary Metals	1	11
Fabricated Metals	-1	7
Nonelectric Machinery	17	40
Electric Machinery	22	47
Transportation Equipme	20	28
Measure, Photo Equipm	39	84
Miscellaneous	26	38

Source: Simon and Sullivan (1993)

Table 21 - Brand value percentage of tangible assets value by industry

3.4.2. Pros, cons and key hypotheses in using this technique

Pros

This method takes into account both market views and firm specific aggregates. No hypothesis is necessary except the belief in market efficiency and the choice of variables used.

What is more, the Simon and Sullivan approach is entirely forward looking and takes into account any new information through the companies market price, which is necessary to correctly value a brand and impossible through models using only accounting figures.

Cons

The first main disadvantage is that this method relies entirely on the assumption that markets are efficient, which can be contradicted and prevent valuations in case of suspicion of bubbles (e.g. tech' bubble).

This method is not differentiated by industry; the coefficients computed by regression take into account the whole stock market and are not industry specific. What is more, re-computing the coefficient by industry may be time-consuming, arduous; and overall not statistically significant due to the potentially low number of market participants in each sector. Applying this method specifically to one company may thus lead to unrelated results. What is more, simply using the figures obtained by the authors would give wrong estimates as well, the regressions being based on aggregates from 1985, at times when markets were underdeveloped compared to nowadays situation.

This method is also restricted to value brands from single-brand companies, using only four factors, which may seem restrictive.

Finally, this approach implies that macroeconomic events would affect brand value³⁰ (e.g. oil shock, wars) through the stock price fluctuation, which is not intuitive since they should not directly affect brand image, and still remains to be demonstrated.

Key hypotheses

The belief in market efficiency is the only underlying hypothesis to be made.

4. Real options approach

We created a separate point for the real option approach, since it is not self-sufficient and can only be applied on top of another brand valuation method.

Sources: Fernández (2001); González Londoño, Zuluaga Carmona and Maya Ochoa (2012); Baldi and Trigeorgis (fma.org)

4.1. General case

This relatively recent approach is aimed at taking into account growth opportunities embedded in the brands and not taken into account in classic valuation methods. By growth opportunities we mean:

- Opportunities to expand in new markets, new geographies (“*brand expansion*³¹”);

³⁰ As mentioned by Justin Anderson in the *Journal of Business Administration Online Vol.10, n.1* (2011)

³¹ Baldi and Trigeorgis (fma.org)

- Opportunities to expand in the domestic market by launching new products under the same brand (“*brand extension*³²”);
- Opportunities to invest or delay investment in customer relationship and customer retention.

The flexibility embedded in these opportunities creates value for the brand and this added value, not reflected in the projected cash flows of the brand studied in part 1, has to be taken into account.

As explained on one hand by González Londoño, Zuluaga Carmona and Maya Ochoa (2012), and by Baldi and Trigeorgis on the other hand, brand marketing can be viewed as a series of growth options, each option representing a development stage of the brand and depending on the exercise of the preceding one. The payoff of each option is $\max(-I+e*V;0)$ where I is the investment needed to exercise the option, e is the expansion factor applied to the underlying asset V (i.e. the multiplicative coefficient on brand value if the investment is done), V representing the present value of the existing brand earnings, i.e. brand value. Thus, at each option expiration, management can choose between exercising it, i.e. investing to expand the brand and thus supposedly increase its value, or ignoring it i.e. keeping the brand at the same development stage and value.

The first step in applying such a method is thus to identify the successive steps of development the brand studied is expected to face in the following years, depending on its current level of development. The classic stages start with brand launch, and then involve strengthening of the brand in its current market, expansion to new markets or extension in brand underlying products sold, and finishes usually with the brand “*abandonment*³³”, this final option being chosen when any additional extension or expansion may dilute the brand strength and decrease its value.

In both papers, the option portfolio is valued using a binomial model of Cox-Ross-Rubinstein (1979) considering consecutive call options (European options for González Londoño, Zuluaga Carmona and Maya Ochoa (2012), American options for Baldi and Trigeorgis in order to take into account the possibility to early exercise the option). The advantage of the CCR model is that it allows for taking into account many more situations than the Black & Scholes model (e.g. the early exercise in the American options). The main difference between the two papers studied on that topic is that González Londoño, Zuluaga Carmona and Maya Ochoa (2012) consider the options as successive, meaning that the non exercise of one options stops the process; while in their example of Starbucks valuation, Baldi and Trigeorgis consider the options as potentially parallel, meaning that non exercising an option does not prevent from exercising another growth opportunity option considered as non related (e.g. non expanding in the US would not prevent a company from investing in Latin America).

The brand value would then be the sum of the existing brand value with no assumption of growth plus the value of the embedded portfolio of growth options.

At this point, the brand value excluding growth is estimated using other classic valuation methods presented in the subsections above. Baldi and Trigeorgis use a royalty relief method to determine the brand value with no growth opportunity and add the value of the option portfolio identified, while González Londoño, Zuluaga Carmona and Maya Ochoa (2012) compute it using a comparative approach with a company selling a generic product:

³² Baldi and Trigeorgis (fma.org)

³³ Baldi and Trigeorgis (fma.org)

$Brand\ value = Branded\ EV_{no\ additional\ growth} - Non\ branded\ EV + Options\ values$

To compute the branded EV assuming no growth (i.e. the passive EV), they use a DCF approach considering a 0% growth to perpetuity and no further investment to strengthen the brand since they will be included in the option part of the final value. Slightly differently, to compute the passive brand value, Baldi and Trigeorgis consider in their royalty relief DCF only the investments needed to maintain the current level of the brand, and growth linked to the current operations of the company (which is equivalent to assuming no growth but simply a stable level).

The following table, from González Londoño, Zuluaga Carmona and Maya Ochoa (2012), presents a simple example of application of real options to brand valuation in the case of consecutive options:

Passive DCF **146 704**

Investments	Cost	Decision time	Expansion factor
Brand launch	2 000	0	-
Positioning	3 000	4	1.2
Expansion 1	10 000	7	1.5
Expansion 2	30 000	10	2

σ	37%
r	4.57%
u	145%
d	69%
p	47%

Values of the underlying asset evolution (following determined volatility)

0	1	2	3	4	5	6	7	8	9	10
Brand launch				Positioning			Expansion 1			Expansion 2
146 704	212 388	307 482	445 153	644 463	933 011	1 350 752	1 955 531	2 831 090	4 098 666	5 933 781
	101 333	146 704	212 388	307 482	445 153	644 463	933 011	1 350 752	1 955 531	2 831 090
		69 995	101 333	146 704	212 388	307 482	445 153	644 463	933 011	1 350 752
			48 348	69 995	101 333	146 704	212 388	307 482	445 153	644 463
				33 395	48 348	69 995	101 333	146 704	212 388	307 482
					23 067	33 395	48 348	69 995	101 333	146 704
						15 933	23 067	33 395	48 348	69 995
							11 006	15 933	23 067	33 395
								7 602	11 006	15 933
									5 251	7 602
										3 627

Values of each consecutive option

0	1	2	3	4	5	6	7	8	9	10
										Expansion 2
275 210	405 187	594 211	868 518	1 266 120	1 842 150	2 676 516	3 884 905	5 634 800	8 168 673	11 837 563
	184 099	273 120	403 110	592 159	866 433	1 263 937	1 839 865	2 674 125	3 882 402	5 632 179
		121 308	181 813	270 839	400 905	589 976	864 149	1 261 546	1 837 362	2 671 505
			78 294	118 818	179 262	268 420	398 620	587 585	861 645	1 258 925
				49 224	75 639	115 923	176 510	266 028	396 117	584 964
					30 117	46 547	72 361	112 609	174 007	263 408
						18 187	27 735	43 013	68 035	109 989
							11 314	16 619	24 593	36 791
								7 602	11 006	15 933
									5 251	7 602
										3 627

$=MAX(5\ 933\ 781*2;30\ 000;5\ 933\ 781)$

0	1	2	3	4	5	6	7	8	9	10
										Expansion 1
405 590	600 178	883 360	1 294 448	1 890 461	2 754 099	4 005 221	5 817 358	8 384 905	11 837 563	16 834 905
	268 619	401 723	596 335	879 519	1 290 523	1 886 353	2 749 798	4 005 221	5 817 358	8 384 905
		174 149	264 391	397 539	592 231	875 411	1 286 223	1 886 353	2 749 798	4 005 221
			109 396	169 508	259 766	393 077	587 931	875 411	1 286 223	1 886 353
				65 680	104 331	164 332	254 766	393 077	587 931	875 411
					37 160	60 267	98 542	148 809	223 203	334 805
						19 924	31 603	48 404	72 606	110 909
							11 314	16 619	24 593	36 791

$=MAX(3\ 884\ 905*1.5;10\ 000;3\ 884\ 905)$

	0	1	2	3	4	5	6	7	8	9	10
	484 209	717 598	1 057 294	1 550 472	2 265 553	=MAX(1 890 461*1,2-3 000;1 890 461)					
		319 727	479 330	712 736	1 052 423						
			206 241	314 403	474 047						
				128 410	200 410						
					75 817						
Brand launch	482 209	=484 209-2 000									
Brand value	335 505	=Consecutive options value - passive DCF value									

Source: González Londoño, Zuluaga Carmona and Maya Ochoa (2012)

Table 22 - Computing consecutive growth options and resulting brand value

Note that the value of options can be computed using as well the Black & Scholes formula. The following table presents the valuation of a growth option using B&S:

B&S example to value one growth option

The company studied has the option to expand its brand in Argentina, in order to invest in 5 years in the whole South American market

Investment price in Argentina	100
PV of expected cash flows in Argentina	90
Investment in the rest of South America	1000
PV of expected cash flows in South America	800
Investment decision delay (in years)	5
Risk-free rate (discrete)	2,00%
Risk-free rate (continuous)	1,98%
Estimated volatility of the second investment cash flows	40%
<i>Black & Scholes example</i>	
S : PV of the investment expected cash flows	800
E : Required investment	1000
d ₁	0,308
d ₂	-0,586
Φ(d ₁)	0,621
Φ(d ₂)	0,279
Option value	244

Source: Levyne HEC Real Options class (2014)

Table 23 - Computing a single growth option growth

4.2. Pros, cons and key hypotheses in using this technique

Pros

This method sees brands as dynamic assets, for which value can be actively managed, and isolate the strategic opportunities triggered by the brand (i.e. the future potential added value related to the brand).

What is more, it requires very detailed assumptions, which make the model easily challengeable, particularly on the strategic growth options chosen.

Cons

The real option methods require identifying the different future growth opportunities of the brand and costing every underlying investment opportunity, cash flows expected from the investments and the volatility of the underlying asset. Such an amount of information is hardly ever available to the valuator except in case of detailed strategic planning. Some options may also be forgotten or not even identified at time of valuation, indeed, it is difficult to embrace all options since some future options (e.g. the possibility to apply brand X to product Y) may clearly exist but not be yet even considered.

What is more, this method relies on the use of another approach to value the passive brand value excluding growth opportunities (either royalty relief or a brand premium approach), which adds a level of subjectivity in both the method used and its own assumptions. The fact of assuming no growth opportunity in the brand base valuation is also subjective as seen by the difference in method used by the two papers studied. We think that no growth and no investment at all is theoretical since as suggested by Baldi and Trigeorgis, some investment to sustain the level of development of the brand are needed at least to avoid destroying value. The key difficulty lies here in how to determine the maintenance growth and investment, separated from the growth opportunities options.

Key hypotheses

Additionally to the assumptions needed to value the passive part of the brand, which depend to the chosen method, the real option approach requires the following hypotheses for each option identified;

- Required investments;
- Volatility of the expected cash flow;
- Maturity of the investment opportunity;
- Expansion factor;
- Risk-free rate.

5. Choosing the best method to use – a synthesis on the methods reviewed

Based on the different methods above reviewed, and the advantages and disadvantages identified for each of them, we constructed the following table, trying to rank them according to five criteria: subjectivity, number of parameters, level of detail needed (macroeconomic information versus precise firm detailed information), perceived ease of application and perceived accuracy.

Method	Income based	Cost based	Market based	Other	Comparative	Intrinsic	Subjectivity	Number of parameters	Level of detail needed	Ease of application	Estimated accuracy
Royalty relief method	✓				✓	✓	2	Medium	Medium	High	High
Price/volume premium	✓				✓		4	High	High	Low	Medium
Margin comparison	✓				✓		3	High	Medium	Medium	Medium
Excess cash flow	✓					✓	3	High	High	Medium	Low
Historical costs		✓				✓	1	Low	High	Medium	Low
Replacement costs		✓				✓	2	Low	High	Medium	Low
Transaction multiples			✓		✓		3	Low	Low	High	High
Demand drivers			✓		✓	✓	5	High	Medium	Medium	Low
Price to sale ratio			✓		✓		3	Low	Low	Medium	Medium
Stock price movements			✓		✓	✓	1	High	Low	Low	Low
Real options	✓			✓	✓	✓	3	High	High	Medium	High

Table 24 - Brand valuation methods synthesis

The main trends emerging from our table is that costs methods seem to be the less rewarding ones to use due to the combined high level of detail needed and low estimated accuracy, despite of being among the less subjective. Salinas and Ambler (2009) underline that they are not used in practice.

Income approaches require a high number of hypotheses (hence medium subjectivity rate), but reach fair level of accuracy for an average medium ease of application. The most rewarding method among them seem to be the royalty relief, which according to Salinas and Ambler is also the most used in practice for technical valuations (i.e. transactions, accounting, litigation costs). Nevertheless, they also argue that for managerial valuations, i.e. valuation targeting at better understanding the brand drivers, the methods implying a demand strength analysis are the most used (82% of cases), despite their perceived high subjectivity.

Markets methods reach very diverse results, with the best trade being the transaction multiple approach, which is easy to apply, requires a low number of hypotheses and detail for a high estimated accuracy. According to Salinas and Ambler (2009), “*the most reliable method of valuation would be based on comparisons with actual brand sales or transactions. [...] The difficulty here is that there are too few examples of such sales, and even when they occur, the necessary data remains private*”, hence their absence in the authors’ most used methods in practise ranking³⁴.

As reported by Salinas and Ambler (2009), within 79 German companies surveyed by Gunther and Kreigbaum-Kling³⁵, 40% stated that they did not value their brand due to the lack of reliable method to be used. The authors reach the conclusion that no method is perfect in any case and that it is still to be demonstrated that one method could be sufficient for a designated purpose. After reviewing 23 methods, they consider that many of them are not used in practice because the data needed to apply them is out of reach, and that some practically used are not sound academically but widely accepted.

What is more, on top of the choice of method to be used, according to Fernández (2001)³⁶, determining why and for whom the valuation is done is also of primary importance and directly affects brands value. Indeed, a brand would have a different value if owned by the company which grew it, or bought by one of its competitors. As highlighted by PwC research (2013), some assets called “*defensive assets*” have value not because their owner will use them, but through the additional profit generated by their withdrawal from market.

In the end, the choice of a best suitable method to value brands correctly may be out of reach in a general case and should be studied for specific examples of brands, industries and contexts.

In part III, we chose to concentrate on one brand, in order to analyse the outcomes of the application of the valuation methods above developed (except the stock price movement one, seen as inapplicable practically and not enough specific to target one brand), and to refine the observation developed in this sub-part. Is valuing a specific brand so subjective and out of reach as this second part tends to make us think?

³⁴ Salinas and Ambler (2009) p. 57, figure 8

³⁵ *Brand valuation and control : An empirical study* (2001)

³⁶ p.5

III – A case study on Adidas – one brand, one value?

Disclaimer: The objective of this part is not to reach a fair value of the Adidas brand, but to value it using the usual methods presented in part II, and information and indicators publicly available. The objective being to compare the methods, the outcomes should thus not be considered as carrying any investment recommendation.

1. Why the choice of Adidas?

Our thesis being based only on publicly available information and indicators, the key issue in choosing a brand to study was thus to choose a brand owned by a company disclosing enough information for the valuations to be performed with a minimum of arbitrary hypotheses. A second objective was to choose a brand for which value was intuitive for the lector: the brand should thus be applied to simple products and allow a significant premium on price. Consumer goods sector was thus an ideal sector for such a review.

The main criteria of choice were the following:

- The chosen brand should be owned by a listed company: such a statement allows the access to annual reports, share price, broker notes and thus to a significant amount of information.
- Either the chosen brand should be the only brand owned by the company, or the company concerned should only own few brands recently acquired. Indeed, valuing an LVMH brand would have been complicated by the fact that brands figures are drown within group figures. If the company owns recently acquired brands, their value can easily be isolated since these brands were necessarily booked at fair value (and thus valued) at time of acquisition.
- The brand should be part of an active sector: acquisitions impose information disclosure.
- The chosen brand should be part of a sector in which brands highly impact prices.
- The chosen brand should be part of a third party brand ranking (Interbrand, BrandFinance, Millward Brown), in order to get valuation benchmarks.

Adidas, which made the headline recently due to the impairment of its sister brand, Reebok, fulfils all the above criteria.

Note that we considered Adidas brand on a continuing basis (e.g. for reporting purposes).

2. Business highlights - Brand history and strategy

Key information

Adidas is a sportswear brand, selling sports apparel, footwear and hardware (e.g. balls). It positions itself as premium, technical and performance oriented (through partnerships with global sports events like the Olympic games or FIFA World Cup), but also as a fashion brand for sports-oriented people. It particularly targets football, basketball,

running, training and outdoors activities in general, while its key geographic markets according to 2013 annual report are North America, Russia and China.

Adidas brand is the main brand of the portfolio of Adidas AG, a German-based group, created in 1949 and considered as the leading sportswear manufacturer in the World. Adidas brand represents 76,3% of the group sales in 2013. The other brands are presented in the table below:

Adidas AG brands portfolio		
€m	As a % of	
	2013 Sales	Group sales
Adidas	11 059	76,3%
Reebok	1 599	11,0%
TaylorMade-adidas Golf	1 285	8,9%
Rockport	289	2,0%
Reebok-CCM Hockey	260	1,8%
Group sales	14 492	100%

Source: Adidas AG 2013 Annual report

Table 25 - Adidas AG brands portfolio

The second main brand of Adidas AG is Reebok, positioned on the fitness market. It was acquired, and thus valued, in 2006, and booked in intangible assets. The adidas brand having been developed internally, it does not appear at all in balance sheet. The third one, TaylorMade, is considered as separate from adidas in our study. It was as well developed internally and does not appear in balance sheet.

The adidas Group is divided both in brands divisions (which facilitate the access to brand figures), and according to distribution channels. The adidas brand is present in two channels, Wholesale and Retail. In 2013, the Group owned 1 353 adidas stores in the world, and 762 factory outlets. Geographically, the group performs the major parts of its sales in Western Europe and North America, while producing quasi entirely its products in Asia, as shown by the figures below:

Adidas AG production geographic split			
€m	Asia	Europe	America
Apparel	84%	10%	6%
Footwear	98%	1%	3%
Hardware	98%	2%	0%

Source: Adidas AG 2013 Annual report

Table 27 - Adidas AG production geographic split

Adidas main competitors are Nike, Amer Sports Corporation (e.g. Salomon, Wilson brands), Puma (owned by Kering), Deckers Outdoor Corporation (e.g. Teva, UGG).

Adidas AG key competitors	
	Headquarters
Amer Sports Corporation	Finland
Callaway Golf Company	US
Deckers Outdoor Corporation	US
Nike, Inc.	US
Peak Sports Products Co. Ltd	China
Puma AG	Germany

Source: Global data report, March 2014

Table 28 - Adidas AG key competitors

Market penetration

Adidas brand division targets geographical expansion areas are Russia, China and North America, as stated in its 2013 annual report.

According to the Crédit Suisse Research Institute in a survey on emerging consumers published on February 10th, 2014:

- More than 70% of emerging markets consumers plan to purchase Western sporting goods;
- In China, 17% of consumers of sports shoes and wear plan to buy from adidas (equal position with Nike), and 30% think adidas is “*worth paying more for*” (first ranking position above Nike with 28%). Nevertheless, adidas is at the fourth place in terms of brand momentum behind Li Ning, Xtep (local brands) and Converse;
- In Russia, 38% of consumers of sports shoes and wear plan to buy from adidas (first ranking place above Nike with 30%), and 46% think adidas is “*worth paying more for*” (first ranking position above Nike with 32%). Nevertheless, adidas is in second place in terms of brand momentum, far behind Nike.

The adidas brand is thus well positioned to conquer the growing emerging markets it targets.

Nevertheless, in terms of products sold, note that a constant renewal is necessary to maintain sales since, as reported in adidas AG 2013 annual report, 74% of adidas sales are related to products launched during the course of the year.

Adidas brand SWOT analysis

Based on Global Data study³⁷ and on own researches, adidas SWOT analysis would be as following:

Strength

Adidas brand benefits from a wide product portfolio both:

- Across its subdivisions (adidas Sports Performance – targeting athletes, adidas Originals – targeting street sportswear, and adidas Sport Style – targeting young fashionable teens);
- Across its categories of products (footwear, apparel, hardware/accessories).

The brand can also rely on its wide international presence, both geographically and through its different distribution channels (wholesale, retail, e-commerce).

Finally, being part of adidas AG allows it to benefit from the positive cash position of the group (*see table 29 below for net debt forecasts*) and thus from its flexibility and ability to easily finance investments.

Weaknesses

The brand is highly dependent on China and more broadly Asia, both in terms of growth opportunities and sourcing: more than 90% of its products are produced in Asia, 26.6% of its 2013 sales come from Asia, and China is targeted as one of the main market to develop with the next five years³⁸.

Opportunities

Adidas develops many strategic partnerships with sporting events, reinforcing its brand positioning and image, and fostering future sales. Therefore, in 2014, adidas is the official sponsor of the NBA Game Europe, the Boston Marathon, the FIFA World Cup, UEFA Champions League Final etc.

³⁷ adidas AG (ADS) - Financial and Strategic SWOT Analysis Review, March 2014

³⁸ According to 2013 adidas AG Annual report

What is more, market prospects are optimistic on the retail sporting goods sector: Euromonitor forecasts a 3.5% growth CAGR between 2013 and 2018. The position of adidas as one of the major brands in sportswear and sports life-style should allow it to benefit widely from this expected growth.

Threats

The company is at risk due to the following trends:

- *The rising costs of raw material and labour:* rubber, which is the main raw material used for footwear production, is derived from oil, which prices are very volatile and keep on increasing.
- *Counterfeiting:* the rise of counterfeit products in volume around the globe could both decrease the company's sales and hurt the brand image due to the low price and quality of the products sold.
- *Competition:* the sporting goods market is a very competitive one, with the constant rise of new private labels and the consolidation movement in the 2000's. To survive, the adidas brand should be able to constantly renew its products and distinguish itself from its competitors.

Adidas AG financial elements

The two following tables present adidas Group financial statements, in order to get a better view of what the adidas group is about from a financial point of view, and of how the above-developed strategic points are reflected financially in 2013 figures and in brokers' forecasts.

Adidas AG Balance sheet - economic view				
	2013	2014	2015	2016
Accounts receivable	1 809	1 865	1 965	2 072
Inventories	2 634	2 689	2 849	3 020
Accounts payable	(1 825)	(1 881)	(1 982)	(2 090)
Income tax receivables	86	86	86	86
Other current assets	689	689	689	689
Other current liabilities	(389)	(389)	(389)	(389)
Working capital	3 004	3 059	3 218	3 388
Property, plant and equipment	1 238	1 379	1 523	1 660
Goodwill	1 204	1 204	1 204	1 204
Trademarks	1 419	1 469	1 519	1 569
Other intangible assets	164	164	164	164
Deferred tax assets	486	486	486	486
Deferred tax liabilities	(338)	(338)	(338)	(338)
Other non-current assets	111	161	176	191
Long-term financial assets	120	120	120	120
Fixed assets	4 404	4 645	4 854	5 056
Cash and cash equivalents	(1 587)	(1 142)	(1 442)	(1 821)
Short-term financial assets	(41)	(41)	(41)	(41)
Short-term borrowings	681	100	100	100
Long-term borrowings	653	500	400	300
Assets classified as held for sale	(11)	(11)	(11)	(11)
Liabilities classified as held for sale	-	-	-	-
Income taxes	240	240	240	240
Net Debt	(65)	(354)	(754)	(1 233)
Pensions and similar obligations	255	260	265	270
Accrued liabilities and provisions	1 597	1 597	1 597	1 597
Non-current accrued liabilities and provisions	89	89	89	89
Other non-current liabilities	51	51	51	51
Pensions, provisions and other liabilities	1 992	1 997	2 002	2 007
Share capital	209	209	209	209
Reserves	321	321	321	321
Retained earnings	4 959	5 539	6 302	7 148
Minority interests	(8)	(8)	(8)	(8)
Equity	5 481	6 061	6 824	7 670
<i>Capital invested</i>	<i>7 408</i>	<i>7 704</i>	<i>8 072</i>	<i>8 444</i>
<i>Capital employed</i>	<i>7 408</i>	<i>7 704</i>	<i>8 072</i>	<i>8 444</i>

Source: Data from Deutsche bank Equity Research Adidas Report (March 5th 2014)

Table 29 - Adidas AG Balance sheet forecast - Economic view

Adidas AG Income Statement				
€m	2013	2014	2015	2016
Sales revenue	14 492	14 938	15 741	16 596
<i>Growth rate</i>	<i>n.a.</i>	<i>3%</i>	<i>5%</i>	<i>5%</i>
Gross profit	7 140	7 442	7 930	8 438
<i>as a % of sales</i>	<i>49%</i>	<i>50%</i>	<i>50%</i>	<i>51%</i>
EBITDA	1 548	1 591	1 886	2 127
<i>as a % of sales</i>	<i>11%</i>	<i>11%</i>	<i>12%</i>	<i>13%</i>
Depreciation	(346)	(308)	(315)	(332)
Amortisation	-	-	-	-
EBIT	1 202	1 283	1 571	1 795
<i>as a % of sales</i>	<i>8%</i>	<i>9%</i>	<i>10%</i>	<i>11%</i>
Net interest income/expenses	(68)	(32)	(6)	1
Associates/affiliates	-	-	-	-
Exceptionals/extraordinary	-	-	-	-
Other pre-tax income/expenses	-	-	-	-
Profit before taxes	1 134	1 251	1 565	1 796
Income tax expense	(344)	(354)	(443)	(508)
Minorities	(3)	3	3	-
Net income	787	900	1 125	1 288
<i>as a % of sales</i>	<i>5%</i>	<i>6%</i>	<i>7%</i>	<i>8%</i>

Source: Data from Deutsche bank Equity Research Adidas Report (March 5th 2014)

Table 30 - Adidas AG Income statement forecast

The striking points are the following:

- Net Debt is negative and cash is expected to increase over the years, which leaves significant flexibility to invest in growing emerging markets or in sub-lines further launches;
- Adidas AG is still a growing company, with sales expected to increase by 3% between 2013 and 2014, and accelerating to 5% for 2015 and 2016, following the market growth in emerging countries;

- Gross margin is already significant (49% in 2013) and all margins are expected to increase as well at least until 2016, due to favourable pricing, regional sales mix and distribution mix (retail margins are higher)³⁹.

3. Valuation preliminary analyses

Having now an insight on what the adidas brand exactly is, this paragraph is aiming at introducing the major financial trends used for valuation, and the hypotheses taken in common for all the methods used below. Note that since our valuations are based only on public information, some points highlighted in part II as necessary are not applied here due to the lack of available details.

Common hypotheses

The common hypotheses took in all valuations (when necessary are the following):

Perpetual brand earnings growth rate	1,7%	Adidas AG 2013 Annual Report p.200
Brand earnings discount rate	7,8%	Based on Adidas AG 2013 Annual Report p.200, own hypothesis
Effective tax rate	31,2%	Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average
Lifetime of the brand	Perpetual	Adidas AG 2013 Annual Report p.199

Table 31 - Hypotheses common to all methods

The perpetual brand earnings growth rate is the hypothesis took by adidas AG in the 2013 annual report in its impairment tests for brands (mainly the Reebok brand)⁴⁰. We chose to extend it to the adidas brand due to their similarities.

In its brands impairment tests, Adidas AG chose a discount rate “between 6.8% and 8.8%⁴¹”. This discount rate is above the WACC (see computation below) we computed for the firm and thus satisfies our minimum criteria (see part II-1.1). Brands are indeed considered as riskier than the average firm’s assets. Nevertheless, we think that adidas is not the riskiest brand of the adidas AG portfolio (smaller brands may be riskier due to their instable reputation still to be consolidated). We thus chose a discount rate of 7.8%, within the range suggested by the firm and above adidas AG WACC.

Effective tax rate was computed as an average of the last 10 years adidas AG effective tax rate as provided in the 2013 annual report and shown in the following table.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Effective tax rate	36,7%	33,7%	31,4%	31,8%	28,8%	31,5%	29,5%	30,0%	29,3%	29,0%
10Y average (04-14)										31,2%

Source: (Data) Adidas AG 2013 Annual report p 246

Table 32 - Average effective tax rate computation

Finally, the brand lifetime was difficult to assess since adidas brand exists since the firm creation (1949) and is expected to exist for quite a while from now, due to its positioning and financial health. We thus chose to consider a perpetual lifetime in our models.

³⁹ According to Deutsche Bank Equity Research Report (March 2014)

⁴⁰ See appendix 2 for extract from Annual Report

⁴¹ Adidas AG 2013 annual report, p.200, See appendix 2 for extract from Annual Report

Company forecasts and WACC computation

In order to assess our brand discount rate, we estimated a WACC for adidas AG, using the following hypotheses:

- *Risk-free rate*: since adidas AG is a German-based company, we chose to use the 10-year German government bond rate as risk-free rate, extracted from Bloomberg. We consider that the risk of the countries in which it operates will be taken into account through the equity risk premium. What is more, half of the sales are performed in low-risk-free-rate countries (Western Europe and North America).
- *Beta* was extracted from Reuters.
- *Equity risk premium*: we used the Damodaran estimates and weighted the relevant figures by the adidas sales percentage of each geographical area. The results are presented in the table below.

€m	2013 Sales	% of Group sales	Damodaran ERP estimates
Adidas AG (Group)	14 420	100%	-
Western Europe	3 743	26%	6,29%
Emerging Europe	1 887	13%	7,96%
North America	3 410	24%	5,00%
Greater China	1 653	11%	6,31%
Other Asian markets	2 155	15%	6,51%
Latin America	1 570	11%	8,62%
Weighted average equity risk premium			6,49%

Sources: Damodaran website, Baader Bank Group Equity Research paper (Retail & Consumer, February 2014)

Table 33 - Equity Risk Premium computation

- *The cost of debt* considered is the Group weighted average interest rate, as stated in the 2013 annual report. We applied to it our tax rate assumption presented above.
- We conservatively assumed a null *gearing*: adidas AG currently has a negative net debt and is expected to stay in this situation at list until 2016.

Our WACC result is presented in the following table:

Adidas AG WACC computation		
Risk-free rate	1,51%	10Y German government bond, Bloomberg as of 21th April 2014
Adidas AG β	0,77	Reuters
Equity risk premium	6,49%	Based on Damodaran estimates, see appendices for detailed computation
Cost of equity	6,51%	
Cost of debt	3,80%	Group Weighted average interest rate / Adidas AG 2013 Annual Report p.138
Effective tax rate	31,17%	Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average
Gearing ratio	0	Negative current and forecasted gearing - conservative view
Estimated WACC	6,51%	

Table 34 - Adidas AG WACC computation

As above stated, our WACC estimate (6.51%) is below the range of discount rates for brands earnings suggested by adidas AG in its annual report, which is consistent with the WARA theory presented in part II.

What is more, several valuation methods require financial forecasts.

For the Group forecasts (mainly for net debt and free cash flows), we used the Deutsche bank Equity research forecasts, presented in appendix 1 and 4, and table 29 and 30. Concerning adidas brand forecasts, we had to recreate adidas brand financials based on the available split (according to distribution channels) of forecasts presented by several brokers⁴².

⁴² Deutsche Bank Equity Research Adidas report, 5th march 2014, Baader Bank Group, equity research sector report "Retail & consumer" 7th February 2014

This detailed split was not available below gross margin. Our estimates obtained are presented in the following table.

€m	2008	2009	2010	2011	2012	2013	Brokers's view			Softlanding			
							2014	2015	2016	2017	2018	2019	2020
Sales	7 743	7 506	8 677	9 821	11 270	11 059	11 466	12 151	12 502	12 826	13 120	13 382	13 610
growth rate		(3,1%)	15,6%	13,2%	14,8%	(1,9%)	3,7%	6,0%	2,9%	2,6%	2,3%	2,0%	1,7%
Gross margin	3 809	3 582	4 162	4 644	5 271	5 332	5 651	6 114	6 360	6 525	6 675	6 808	6 924
as a % of sales	49,2%	47,7%	48,0%	47,3%	46,8%	48,2%	49,3%	50,3%	50,9%	50,9%	50,9%	50,9%	50,9%

Source: Deutsche Bank Equity Research Adidas report, March 5th, 2014; Baader Bank equity research report "Retail & consumer" February 7th, 2014

Table 35 - Adidas brand division forecasts

The years 2008-2013 figures correspond to historical figures, 2014-2016 figures correspond to an average of brokers' forecasts. For the 2017-2020, we soft-landed 2016 forecasts assuming:

- A constant gross margin as a percentage of sales: adidas brand division gross margin is already above its direct competitors gross margin (44.33% for Nike in 2013, 46.48% for Puma) and has already improved significantly since 2012. Our view may be conservative but sensitivities will be performed later on this point.
- A 1.7% sales growth rate in 2020: as stated above, this is our hypothesis for perpetual adidas brand earnings growth; we extend it to the whole adidas sales. Sensitivities are performed on this point as well in the below valuations.

Comparable "non-branded" firm

Finally, price premium, margin comparison, demand driver and price-to-sales difference valuation methods require the choice of a company selling similar but non-branded products.

Since specific data for "non-branded" products were not available (they tend to be drown in companies' figures e.g. Carrefour), we chose to turn toward estimated low-value brands, or brands owned by distributors. Such a shift would necessarily lead to a limited undervaluation of the adidas brand (since the product to which it would be compared is branded as well) but we decided to take the risk.

We first thought about comparing adidas to Domyos or Kalenji, both owned by Oxyane, the Decathlon mother company. Nevertheless, this company being private, we had no access to the necessary data (brand margin, volume sold).

As a result, we understood that our target "non-branded" firm should:

- Be part of the adidas sector (sportswear / sports-lifestyle and fashion);
- Be listed or at least publish enough data for the valuations to be performed;
- Not be part of a conglomerate owning many brands (to avoid the dilution of our "non-brand" figures with other brands);
- Be mainly "unknown" from consumers, i.e. carrying neither positive nor negative feelings (this point being quasi incompatible with the second one).

We finally chose to study the Ultrasonic brand, owned by Ultrasonic AG, a German-based company financially comparable to Adidas AG⁴³.

Ultrasonic sells urban footwear, sandals, slippers and rubber shoe soles in China, both under its brands and to other companies (mainly soles). It is still a small company compared to Adidas AG, with €m 149 of sales in 2012⁴⁴ but growing and expanding in adidas target market.

⁴³ See GoogleFinance

⁴⁴ 2013 annual report was not available at time of valuation

4. Adidas brand valuations

4.1. Benchmark valuations

Before going deeper into details, this part sets benchmark values for the adidas brand, without using the valuation methods presented in part II, in order to get a first gross ideas of the results markets or third parties are thinking about.

<i>€m</i>	
Benchmark 1: Market goodwill approach	2013
Share price as of April 21th, 2014 (€)	75,57
Number of shares (millions) (common stock)	209,22
Adidas Group Market capitalisation	15 810
Adidas Group Equity book value (excl. Non controlling interests)	5 489
Market goodwill (Adidas brand ceiling value)	10 321
Goodwill	(1 204)
Reebok brand book value	(1 123)
Other intangible assets (book value)	(460)
Adidas brand goodwill	7 534
Benchmark 2: Interband ranking value	
Adidas 2013 brand value	7 535
Benchmark 3: BrandFinance ranking value	
Adidas 2014 brand value	7 776
Benchmark 4: Crédit Suisse Research estimate	
Adidas 2013 brand value	14 400

Table 36 - Brand value gross computation - Setting benchmarks

Our first benchmark is based on the goodwill markets are willing to pay for the brand. This benchmark is a gross valuation of the adidas brand, leading voluntarily to not to an accurate result but to a gross approximation.

We computed first the goodwill markets are estimating above the Adidas AG equity value. This goodwill should represent the value of intangible assets not booked in balance sheet. These intangible assets include both the Reebok brand (difference between fair and book values), other small brands goodwills and growth expectations. From the obtained results, which would be an approximate value of all the brands of the Adidas AG portfolio, we subtracted in book value the value related to brand divisions other than adidas.

Note that according to the 2013 annual report, the goodwill booked in balance sheet mainly concerns the Reebok brand growth expectations (hence its subtraction from our result) and was impaired in 2013 (hence, we can assume that its book value in December 2013 corresponds to its fair value). Reebok brand was acquired in 2006 and thus booked at fair value in balance sheet in 2006.

Our three following benchmarks are valuations of the adidas brand for 2013 or 2014 years (depending on availability) by third parties: Interbrand, BrandFinance, within their annual rankings; and Crédit Suisse Research, in a report on Adidas AG.

A first comment on those four valuations, done by four different people, is that they are very different from one-another, ranging from low to high by a factor of almost two. We know that BrandFinance and Interbrand are using models approaching our demand driver approach, while Crédit Suisse used both a market approach similar to our benchmark 1, and a

cost-based approach. Such first views support the statements of companies surveyed by Gunther and Kreigbaum-Kling, (*see part II*) not valuing their brand due to the lack of reliable method. It also suggests that brand valuation may not be as accurate as company valuations due to the intangible aspect of brands, but also to their “*dream*” part, which by definition retrieve objectivity from the valuation.

A second observation is that our gross valuation result is very close to the Interbrand valuation, not far from the BrandFinance one. Are the simplest methods the most reliable in the end?

The following subparts present the results we get in applying the different approaches to adidas.

4.2. Royalty relief method

The key hypothesis of this method is the royalty rate to be used to compute the brand earnings from the brand division’s sales. To do so, we reviewed licensing agreements from the RoyaltySource database that concerned brands from the sportswear industry, and elected the one we estimated could be compared to adidas in terms of products or in terms of reputation, knowing that no comparison is perfect. Our benchmark study is presented in the following table:

Licensee	Licensor	Low range	High range	Average	Restricted territory	Restricted products	Licensing perimeters details
Yanahihara	Cadillac Motor car division of General motors	5,0	10,0	7,5	✓	✓	A line of men's and women's shoes for sale in Japan
THOM MCAN SHOE CO	EQUILINK LICENSING CORP (SUBSIDIARY MACGREGOR SPORTING GOODS INC)	3,0	4,0	3,5	✓	✓	Sneakers and athletic shoes, excluding street, dress, casual or golf shoes, limited to the United States of America, including Puerto Rico and the United States Virgin Islands
RENAISSANCE GOLF PRODUCTS INC	FILA SPORT	5,0	6,0	5,5		✓	Production, advertising and sale of certain golf products
NIKE INC	MICHAEL JORDAN	5,0	5,0	5,0		✓	Air Jordans (sneakers)
CLASSIC GOLF OF AMERICA INC	THE BEN HOGAN CO	3,0	5,0	4,0	✓		Sell men's and women's golf apparel and golf shoes under the labels Hogan, Ben Hogan Tour and Legends in the United States options to expand the licensed territory to Canada and Europe
Adidas	Indiana University	10,0	10,0	10,0			All goods manufactured and resold that display the university's trademark or logo
EXECUTE SPORTS INC	EAGLERIDER INC	12,0	12,0	12,0			Manufacture, advertising, distribution and sale of Licensed Articles Worldwide
NASCO PRODUCTS INTERNATIONAL INC	NBA EUROPE S.A.	12,0	13,0	12,5	✓	✓	Nonexclusive right and license to use the Marks of the Member Teams, the silhouetted dribbler logo (the "NBA Logo") and Marks of the NBA, NBA All-Star Weekend and NBA Playoffs and Finals (collectively, the "Licensed Marks") solely in connection with the manufacture, distribution, advertisement, promotion and sale of the products listed. Austria, Belgium, Denmark, Finland, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom
CHARTREUSE ET MONT BLANC LLC	QUIKSILVER INC	5,0	5,0	5,0		✓	Use the Roxy trademark and trade names in connection with the manufacture, distribution and sale of snow skis, snow ski boots, snow ski bindings and snow ski poles
NA PALI	QUIKSILVER INC	4,5	4,5	4,5	✓		License the Quiksilver name to a Mexican company; distributes casual sportswear, swimwear, activewear, snowboardwear and related accessories primarily for young men, boys, young women and girls
Average		6,45	7,45	6,95			
Royalty rate chosen for Adidas				7,45			

Source: RoyaltySource database

Table 37 - Royalty rate comparables

Each licensing agreement reviewed presented a low and a high range of royalty rate, but was also restricted, either in terms of geographical territory for the license to be applied,

or in terms of products on which it could be applied. One could note that the stricter the agreement in terms of scope, the lower the royalty rate.

Since adidas is a global brand (implying no restriction on territories) and a brand owning a very diversified portfolio of products (current or event opportunities), we should compare it to the two licensing agreement imposing no restriction. Nevertheless, we considered such a sample to be too small, and excluding licensed brands significantly more similar to adidas in terms of reputation and consumer experience (e.g. Quiksilver, Roxy). On the other side, a simple average of the entire sample of royalty rates would not take the large geographical and products scope into account. To compensate, we decided to use the high-range average royalty rate: 7.45%.

The other hypotheses were presented in the preliminary analyses.

Applying the model presented in part II, we obtained the following results:

Hypotheses								
Royalty rate	7,5% Based on RoyaltySource database, own hypothesis see above table							
Discount rate	7,8% Based on Adidas AG 2013 Annual Report p.200, own hypothesis							
Tax rate	31,2% Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average							
Perpetual growth rate	1,7% Adidas AG 2013 Annual Report p.200							
Lifetime of the brand	Perpetual Adidas AG 2013 Annual Report p.199							

Computations								
m€	2013	Brokers' view				Softlanding		
		2014	2015	2016	2017	2018	2019	2020
Year	0	1	2	3	4	5	6	7
Sales	11 059	11 466	12 151	12 502	12 826	13 120	13 382	13 610
% growth	n.a.	3,7%	6,0%	2,9%	2,6%	2,3%	2,0%	1,7%
Pretax royalty income	824	854	905	931	956	977	997	1 014
Taxes	(257)	(266)	(282)	(290)	(298)	(305)	(311)	(316)
After taxes royalty income	567	588	623	641	658	673	686	698
Discount factor	0,963	0,893	0,829	0,769	0,713	0,662	0,614	0,569
Present value of royalty income	546	525	516	493	469	445	421	397
Sum of discounted royalty income (2013-2020)	3 813							
Terminal value	6 624							
Brand value (classic method)	10 438							

Sensitivities									
		Royalty rate							
	10 438	4,5%	5,5%	6,5%	7,5%	8,5%	9,5%	10,5%	11,5%
Discount rate	4,8%	12 160	14 892	17 625	20 357	23 090	25 822	28 555	31 288
	5,8%	9 221	11 293	13 365	15 437	17 510	19 582	21 654	23 726
	6,8%	7 435	9 106	10 776	12 447	14 118	15 789	17 460	19 130
	7,8%	6 235	7 636	9 037	10 438	11 839	13 240	14 641	16 042
	8,8%	5 373	6 580	7 787	8 994	10 202	11 409	12 616	13 824
	9,8%	4 723	5 785	6 846	7 908	8 969	10 031	11 092	12 154
	10,8%	4 217	5 165	6 112	7 060	8 008	8 955	9 903	10 851
			Royalty rate						
	10 438	4,5%	5,5%	6,5%	7,5%	8,5%	9,5%	10,5%	11,5%
Perpetual growth rate	1,1%	5 799	7 103	8 406	9 709	11 012	12 315	13 619	14 922
	1,3%	5 936	7 269	8 603	9 937	11 271	12 605	13 938	15 272
	1,5%	6 080	7 447	8 813	10 179	11 546	12 912	14 279	15 645
	1,7%	6 235	7 636	9 037	10 438	11 839	13 240	14 641	16 042
	1,9%	6 399	7 837	9 275	10 713	12 152	13 590	15 028	16 466
	2,1%	6 576	8 053	9 531	11 009	12 486	13 964	15 442	16 919
	2,3%	6 765	8 285	9 805	11 325	12 845	14 365	15 886	17 406

Table 38 - Adidas brand value using the royalty relief method

According to this method, the adidas brand would thus be worth €m 10 438.

4.3. Price premium method

This method is the first one we apply using a comparison to Ultrasonic. It is also the method requiring the more significant assumptions in terms of number and in terms of detail of information.

As explained in part II.1.3, this method could include an analysis of the volume premium of the branded company over the “non-branded” one. Nevertheless, we decided not to apply it to the comparison between adidas and Ultrasonic. Indeed, since Ultrasonic is a much smaller company in terms of volume sold, due to its more recent creation (1998) and to its more restricted target in terms of number of consumers (only the Chinese domestic market). The method would have highly overvalued the adidas brand.

The hypotheses we took to apply the price premium method were the following:

- *Inflation on prices*: Ultrasonic is selling its products on the Chinese market only, we thus decided to increase its prices each year following the Chinese market inflation. On the contrary, adidas is selling products worldwide, half in developed countries (Western Europe and North America). Since prices in global companies are usually the same worldwide (taking into account exchange rates and local taxes), we estimated that adidas prices would follow the developed countries inflation. We took the German inflation as reference. Data was extracted from the World Bank database for 2013.
- *Adidas products volume growth rate*: due to its positioning, we estimated that adidas growth in volume should at least follow market growth. We took the Euromonitor growth rate of the sportswear market for 13-18 as reference.
- *2013 adidas volume sold*: we considered the volume sold as reported by the annual report for the whole group and applied a 76,3% (part of adidas brand in the Group sales) to the result, in order to obtain an estimate of the adidas brand sales in volume.
- *2013 prices per unit*: for both adidas and Ultrasonic brand, we reviewed e-shops to estimate an average price per unit, this data not being published by the companies.
- *Expenses related to brand management as a percentage of sales*: the marketing, distribution and R&D expenses as a percentage of sales being stable across history for adidas (*see historical costs methods inputs*), we assumed they would stay at the 2013 percentage of 10%. For Ultrasonic, the brand being currently building itself, the current growth percentage is very high and we don't think that they would reach stability before 2020. Thus, we decided to estimate these expenses based on the 2013 annual growth rate that we soft-landed to 2020 to reach a 5% growth rate.

Our hypotheses, results and sensitivities are presented in the following tables.

Hypotheses		
Non-branded company chosen	Ultrasonic	
Inflation on branded product mix prices	1,5%	German inflation (09-13) according to the World Bank
Inflation on non-branded product mix prices	1,8%	Chinese inflation (09-13) according to the World Bank
Adidas product volume growth rate	3,5%	Market growth 13/18 CAGR according to Euromonitor
Tax rate	31,2%	Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average
Discount rate	7,8%	Based on Adidas AG 2013 Annual Report p.200, own hypothesis
Perpetual brand earnings growth rate	1,7%	Adidas AG 2013 Annual Report p.200
Lifetime of the brand	Perpetual	Adidas AG 2013 Annual Report p.199

2013 Branded product mix volume production (million units/pairs) and sale price

	Units	Average price	
Group footwear	257	70	Adidas AG 2013 Annual Report p.97/ own estimate based on adidas e-shop review
Group apparel	341	40	Adidas AG 2013 Annual Report p.98 / own estimate based on adidas e-shop review
Group hardware	54	30	Adidas AG 2013 Annual Report p.98 / own estimate based on adidas e-shop review
Group production volume / weighted average price	652	51	
adidas % of sales	76%		Based on Baader Bank Group Equity Research paper (Retail & Consumer, Feb.2014)
adidas 2013 production volume	498	51	

2013 Non-Branded sale price

Average price (RMB)	300	Ultrasonic e-shop http://suoli.tmall.com/ - own estimate
Exchange rate to EUR	0,1160	on April 23rd, 2014
Ultrasonic average sale price (€)	35	

Computations								
m€	2013	2014	2015	2016	2017	2018	2019	2020
Year	0	1	2	3	4	5	6	7
adidas products average price	51,0	51,8	52,5	53,3	54,1	54,9	55,8	56,6
Ultrasonic product average price	34,8	35,4	36,1	36,7	37,4	38,1	38,7	39,4
Price difference	16,2	16,3	16,5	16,6	16,7	16,9	17,0	17,2
Adidas products average volume sold	498	515	533	552	571	591	612	633
Price premium cash flows before tax	8 056	8 410	8 778	9 162	9 562	9 979	10 413	10 865
Taxes	(2 511)	(2 621)	(2 736)	(2 856)	(2 980)	(3 110)	(3 246)	(3 387)
Price premium cash flows after tax	5 545	5 788	6 042	6 306	6 581	6 868	7 167	7 479
Ultrasonic marketing, distribution & R&D expenses	(2,1)	(3,1)	(4,3)	(5,8)	(7,3)	(8,7)	(9,8)	(10,3)
Estimated growth	54,5%	47,5%	40,4%	33,3%	26,2%	19,2%	12,1%	5,0%
adidas marketing, distribution & R&D expenses	(1 102)	(1 142)	(1 211)	(1 246)	(1 278)	(1 307)	(1 333)	(1 356)
as a % of sales	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%
Expenses related to brand management	(1 100)	(1 139)	(1 206)	(1 240)	(1 270)	(1 298)	(1 323)	(1 346)
Taxes	343	355	376	386	396	405	413	419
Brand expenses cash flows after tax	(757)	(784)	(830)	(853)	(874)	(894)	(911)	(926)
Brand earnings	4 788	5 004	5 212	5 453	5 707	5 975	6 256	6 552
Discount factor	0,963	0,893	0,829	0,769	0,713	0,662	0,614	0,569
Present value of brand earnings	4 612	4 471	4 319	4 192	4 070	3 953	3 840	3 730
Sum of discounted royalty income (13-20)	33 188							
Terminal value	62 195							
Brand value	95 383							

Sensitivities

		Ultrasonic average price							
		95 383	20	25	30	35	45	55	65
Adidas average price	36	97 182	61 558	25 934	(9 691)	(80 940)	(152 188)	(223 437)	
	41	132 207	96 583	60 958	25 334	(45 915)	(117 164)	(188 412)	
	46	167 231	131 607	95 983	60 358	(10 890)	(82 139)	(153 388)	
	51	202 256	166 632	131 007	95 383	24 134	(47 115)	(118 363)	
	61	272 305	236 681	201 056	165 432	94 183	22 934	(48 314)	
	71	342 354	306 730	271 105	235 481	164 232	92 984	21 735	
	81	412 403	376 779	341 155	305 530	234 281	163 033	91 784	
		Ultrasonic price inflation							
		95 383	0,3%	0,8%	1,3%	1,8%	2,8%	3,8%	4,8%
Adidas price inflation	0,9%	103 649	97 100	90 367	83 446	69 022	53 791	37 714	
	1,1%	107 585	101 035	94 302	87 381	72 957	57 726	41 650	
	1,3%	111 564	105 014	98 281	91 360	76 936	61 705	45 629	
	1,5%	115 586	109 037	102 304	95 383	80 959	65 728	49 651	
	1,7%	119 654	113 104	106 371	99 450	85 026	69 795	53 719	
	1,9%	123 766	117 217	110 484	103 563	89 139	73 908	57 831	
	2,1%	127 924	121 374	114 641	107 720	93 296	78 065	61 989	

Table 39 - Adidas brand value using the royalty relief method

		Adidas sales division perpetual growth rate								
Discount rate (WARA)	32 489	1,1%	1,3%	1,5%	1,7%	1,9%	2,1%	2,3%		
	4,8%	63 202	63 466	63 731	63 997	64 264	64 532	64 801		
	5,8%	47 795	47 985	48 175	48 366	48 558	48 750	48 943		
	6,8%	38 433	38 578	38 723	38 869	39 016	39 162	39 310		
	7,8%	32 142	32 258	32 373	32 489	32 605	32 722	32 839		
	8,8%	27 625	27 720	27 814	27 909	28 004	28 099	28 195		
	9,8%	24 225	24 304	24 382	24 461	24 541	24 620	24 700		
	10,8%	21 573	21 640	21 707	21 774	21 841	21 908	21 976		
			Ultrasonic margin growth (17-20)							
	Adidas AG margin growth (17-20)	32 489	(0,4%)	(0,3%)	(0,2%)	(0,1%)	0,2%	0,4%	0,6%	
(0,9%)		30 961	30 850	30 738	30 626	30 288	30 061	29 833		
(0,6%)		31 577	31 465	31 354	31 242	30 904	30 677	30 448		
(0,3%)		32 198	32 086	31 975	31 863	31 525	31 298	31 069		
0,0%		32 824	32 713	32 601	32 489	32 151	31 924	31 696		
0,3%		33 456	33 345	33 233	33 121	32 783	32 556	32 327		
0,6%		34 093	33 982	33 870	33 758	33 420	33 193	32 965		
0,9%		34 736	34 624	34 513	34 401	34 063	33 836	33 607		

Table 40 - Adidas brand value using the gross margin comparison method

According to this method, the adidas brand would thus be worth €m 32 489.

4.5. Excess cash flow method

As stated in the II.4.5 part, this method considers the adidas brand versus the other assets of adidas AG and indirectly computes the brand value by subtracting to free cash flows the returns attributed to assets other than the studied brand.

In addition to the common hypotheses, we needed assumptions on the required returns on each asset types. We applied the following:

- *On Working Capital Requirement*: since it is mainly financed by short-term debt, and in line with the table 3 guidelines, we used the adidas short-term borrowing rate, extracted from Thomson One. It corresponds to Euribor 1year + 40 basis points, and leads at date of valuation to a 1% required return.
- *On tangible fixed assets*: the leasing rates of adidas AG being undisclosed and the company being mainly financed by equity, we considered tangible required return to be equal to the cost of equity (which according to our null gearing assumption is also the WACC).
- *On Financial assets*: they mainly correspond to deferred tax assets and liabilities (financial investment in other companies – mainly FC Bayern München AG - were considered as included in tangible assets). We used the Group weighted average cost of borrowing as required return.
- *On brands and other intangible assets*, we used the 7.8% required rate of return presented in common assumptions.
- *On Goodwill*, we computed the average of the rates used for goodwill impairments as released in the 2013 annual report, i.e 8.7%.

Adidas AG free-cash flow estimates are based on Deutsche Bank Equity Research forecasts (see appendix 4).

Our hypotheses, results and sensitivities are presented in the following tables.

Hypotheses									
Discount rate	7,8%	See Common hypotheses							
Perpetual growth rate	1,7%	See Common hypotheses							
Lifetime of the brand	Perpetual	See Common hypotheses							
Computations									
m€		Brokers's view				Softlanding			
		2013	2014	2015	2016	2017	2018	2019	2020
Year		0	1	2	3	4	5	6	7
Company free cash flow		1 145	741	1 040	1 212				
Required return									
Working capital requirements	1,0%	3004	3059	3218	3388				
Tangible fixed assets	6,5%	1349	1540	1699	1851				
Financial assets	3,8%	268	268	268	268				
Brands & other intangible assets	7,8%	1583	1633	1683	1733				
Goodwill	8,7%	1204	1204	1204	1204				
Assets employed x required return		357	373	389	405				
Free-cash flow attributable to the brand		789	368	651	808	957	1080	1159	1179
FCF growth rate		n.a.	(53%)	77%	24%	18,5%	12,9%	7,3%	1,7%
Discount factor (mid-year convention)		0,963	0,893	0,829	0,769	0,713	0,662	0,614	0,569
Present value of royalty income		760	328	540	621	682	715	711	671
Sum of discounted royalty income (2013-2020)		3 646							
Terminal value		11 188							
Brand value		14 834							

Sensitivities										
		Perpetual growth rate								
		14 834	-1,3%	-0,3%	0,7%	1,7%	2,2%	2,7%	3,2%	3,7%
Discount rate		4,8%	17 265	20 368	24 998	32 633	38 662	47 569	62 051	89 714
		5,8%	14 304	16 411	19 354	23 745	26 861	30 987	36 704	45 152
		6,8%	12 103	13 602	15 601	18 393	20 248	22 559	25 515	29 429
		7,8%	10 408	11 513	12 937	14 834	16 039	17 483	19 244	21 437
		8,8%	9 066	9 904	10 954	12 305	13 136	14 106	15 250	16 621
		9,8%	7 981	8 630	9 426	10 423	11 021	11 706	12 495	13 415
		10,8%	7 087	7 599	8 215	8 971	9 417	9 918	10 487	11 136
				WCR required return						
		14 834	0,4%	0,6%	0,8%	1,0%	2,0%	3,0%	4,0%	5,0%
Tangible fixed assets required return		3,5%	15 975	15 876	15 778	15 679	15 187	14 698	14 212	13 731
		4,5%	15 692	15 594	15 495	15 397	14 906	14 418	13 935	13 456
		5,5%	15 410	15 311	15 213	15 115	14 625	14 139	13 658	13 181
		6,5%	15 128	15 030	14 932	14 834	14 346	13 861	13 382	12 908
		7,5%	14 847	14 749	14 651	14 553	14 066	13 584	13 107	12 635
		8,5%	14 566	14 468	14 370	14 273	13 788	13 308	12 833	12 365
		9,5%	14 285	14 188	14 091	13 994	13 511	13 033	12 561	12 096
				Intangible assets required return						
		14 834	4,8%	5,8%	6,8%	7,8%	8,3%	8,8%	9,3%	9,8%
Goodwill required return		5,7%	16 046	15 801	15 556	15 313	15 191	15 070	14 949	14 828
		6,7%	15 884	15 639	15 395	15 152	15 031	14 910	14 790	14 670
		7,7%	15 722	15 478	15 235	14 993	14 872	14 752	14 631	14 512
		8,7%	15 560	15 317	15 075	14 834	14 713	14 593	14 474	14 355
		9,7%	15 400	15 157	14 916	14 675	14 556	14 436	14 317	14 198
		10,7%	15 239	14 998	14 757	14 518	14 399	14 280	14 161	14 043
		11,7%	15 080	14 839	14 600	14 361	14 243	14 124	14 006	13 889

Table 41 - Adidas brand value using the excess cash flow method

According to this method, the adidas brand would thus be worth €m 14 834.

4.6. Historical costs method

This method is the first one of the cost-based methods and requires no assumption, except the Salinas (2009) 75% ratio of brand expenses within the brand-related costs (*see part II*).

We took into account the following costs:

- *Marketing working costs (excluding overheads)*: it is considered to be the costs of launching and maintaining the brands;
- *Distribution working budget costs (excluding overheads)*: it is the day-to-day costs of selling the products;
- *R&D costs*: according to annual report, all R&D costs are expenses. They are related to the performance research and development for new products.

The costs used are based on Adidas AG annual reports from 1999 to 2013. Please note that before 2008, marketing and sales expenses were not differentiated.

The expenses published being related to the whole Group, we applied to it the adidas brand division percentage of Group sales, computed as well based on annual reports from 1999 to 2013.

Our results are presented in the following table:

Computations															
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<i>€m</i>															
Group Sales	5 354	5 835	6 112	6 523	6 267	5 860	6 636	10 084	10 299	10 799	10 381	11 990	13 322	14 883	14 492
R&D	77	91	86	85	86	59	63	98	84	81	86	102	115	128	128
as a % of sales	1,4%	1,6%	1,4%	1,3%	1,4%	1,01%	0,95%	0,97%	0,82%	0,75%	0,83%	0,85%	0,86%	0,86%	0,88%
Marketing (working budget, excl. Overheads)	723	799	733	822	808	832	942	1 301	1 380	1 134	1 028	1 283	1 359	1 503	1 464
as a % of sales	13,5%	13,7%	12,0%	12,6%	12,9%	14,2%	14,2%	12,9%	13,4%	10,5%	9,9%	10,7%	10,2%	10,1%	10,1%
Sales (working budget for e.g. advertising, promotion)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	292	239	312	333	298	333
as a % of sales	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2,70%	2,30%	2,60%	2,50%	2,00%	2,30%
Total Group expenses	800	890	819	907	894	891	1 005	1 399	1 464	1 506	1 352	1 697	1 807	1 929	1 925
Adidas brand sales	4 427	4 672	4 825	5 105	4 950	5 174	5 861	6 626	7 113	7 821	7 520	8 714	9 867	11 344	11 059
Adidas as a % of Group sales	82,7%	80,1%	78,9%	78,3%	79,0%	88,3%	88,3%	65,7%	69,1%	72,4%	72,4%	72,7%	74,1%	76,2%	76,3%
Salinas (2009) 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%
Adidas brand-related expenses	496	535	485	532	530	590	666	689	758	818	735	925	1 004	1 103	1 102
Adidas estimated brand value															10 968

Source: Adidas AG annual reports from 1999 to 2013

Table 42 - Adidas brand value using the historical costs method

According to this method, the adidas brand would thus be worth €m 10 968.

4.7. Replacement costs method

This method is the derived method of the historical costs one, supposed to take into account the time value of money and the current costs of goods (inflation).

Thus, we used the same categories of costs as for the above method, adding the following hypotheses:

- *Inflation*: data per year are extracted from the World Bank, for Germany. As explained in the price premium method, despite of the brand selling products worldwide, prices are supposed to be the same in all countries (taking into account exchange rates and local taxes). What is more we can suppose that the headquarters being based in Germany, a significant part of the costs are located there (R&D and marketing at least).
- *Discount rate*: we used the 7.8% discount rate related to brand risk as explained in common hypotheses.

Our results are presented in the following table:

Hypotheses															
German inflation (%) <i>World bank data</i>	0,570	1,471	1,984	1,421	1,034	1,666	1,547	1,577	2,298	2,628	0,313	1,104	2,075	2,008	1,429
Brand discount rate <i>See common hypotheses</i>	7,8%														
Salinas (2009) ratio	75,0%														
Computations															
Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
€m	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
<i>Group Sales</i>	5 354	5 835	6 112	6 523	6 267	5 860	6 636	10 084	10 299	10 799	10 381	11 990	13 322	14 883	14 492
R&D	77	91	86	85	86	59	63	98	84	81	86	102	115	128	128
<i>as a % of sales</i>	1,4%	1,6%	1,4%	1,3%	1,4%	1,01%	0,95%	0,97%	0,82%	0,75%	0,83%	0,85%	0,86%	0,86%	0,88%
Marketing (working budget, excl. Overheads)	723	799	733	822	808	832	942	1 301	1 380	1 134	1 028	1 283	1 359	1 503	1 464
<i>as a % of sales</i>	13,5%	13,7%	12,0%	12,6%	12,9%	14,2%	14,2%	12,9%	13,4%	10,5%	9,9%	10,7%	10,2%	10,1%	10,1%
Sales (advertising, promotion)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	292	239	312	333	298	333
<i>as a % of sales</i>	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2,70%	2,30%	2,60%	2,50%	2,00%	2,30%
Total Group expenses	800	890	819	907	894	891	1 005	1 399	1 464	1 506	1 352	1 697	1 807	1 929	1 925
Adidas brand sales	4 427	4 672	4 825	5 105	4 950	5 174	5 861	6 626	7 113	7 821	7 520	8 714	9 867	11 344	11 059
Adidas as a % of Group sales	89,7%	82,3%	78,5%	73,6%	76,6%	81,9%	72,3%	47,6%	46,6%	44,4%	46,2%	40,0%	36,0%	32,3%	33,1%
Salinas (2009) 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%
Adidas brand-related expenses	538	549	483	501	514	547	545	499	512	502	469	509	488	467	478
Inflation factor	1,006	1,015	1,020	1,014	1,010	1,017	1,015	1,016	1,023	1,026	1,003	1,011	1,021	1,020	1,014
Cumulated inflation factor	1,258	1,251	1,232	1,208	1,191	1,179	1,160	1,142	1,125	1,099	1,071	1,068	1,056	1,035	1,014
Adidas brand expenses in present money value	676	687	595	605	612	646	633	570	576	552	502	544	516	483	485
Discount factor (mid-year convention)	2,76	2,56	2,37	2,20	2,04	1,89	1,76	1,63	1,51	1,40	1,30	1,21	1,12	1,04	0,96
Adidas present value of brand expenses	1 864	1 757	1 411	1 331	1 250	1 222	1 111	929	870	774	653	656	577	501	467
Adidas estimated brand value															15 374
Sensitivities															
		Salinas ratio of brand expenses within brand related expenses													
	15 374	45%	55%	65%	75%	85%	95%	100%							
	4%	6 832	8 350	9 869	11 387	12 905	14 423	15 183							
	5%	7 355	8 990	10 624	12 259	13 893	15 528	16 345							
	6%	7 926	9 687	11 448	13 209	14 971	16 732	17 612							
	7%	8 547	10 447	12 346	14 245	16 145	18 044	18 994							
	8%	9 225	11 275	13 324	15 374	17 424	19 474	20 499							
	9%	9 963	12 177	14 391	16 605	18 819	21 033	22 140							
	10%	10 768	13 161	15 553	17 946	20 339	22 732	23 928							
	11%	11 645	14 232	16 820	19 408	21 995	24 583	25 877							

Source: Adidas AG annual reports from 1999 to 2013

Table 43 - Adidas brand value using the Replacement costs method

According to this method, the adidas brand would thus be worth €m 15 374. This result is unsurprisingly higher than the historical costs method one, since spending more at the same time costs more in terms of time value of money and of risk taken, and due to the inflation effect.

4.8. Transaction multiple method

To apply this method, we considered four transactions, data being extracted from the Thomson Deals database.

As stated in part II.3.1, transactions concerning only intangible assets like brands are very rare and data is usually kept confidential. To bypass this difficulty, we considered company transactions and estimated the value of the concerned brand as it was estimated during the transaction process. Indeed, the accounting standards impose to book acquired brands at fair value at time of acquisition. We were thus able to find the brand transaction value in the transaction year annual report of each acquirer. What is more, the branded companies acquired in the comparable transactions selected were single-brand companies. The brand-related sales were thus simply the company's sales at time of transaction, as stated in the targets' annual reports.

The branded-company targets selected are for two of them direct brand competitors of the adidas brand (Reebok and Puma, despite the fact that Reebok is now also owned by the Group). Salomon is a ski brand, selling both ski material and sportswear. Five Ten USA is a

similar sportswear brand (now owned by the Group) selling footwear, apparel and hardware as well but targeting mainly biking and mountain-related sports.

The results obtained are presented in the following table:

Computations										
€m	Target	Acquiror	Date of transaction	Transaction price (million)	Currency	Transaction scope	Brand price at transaction time	Estimated % attributable to brand	Target sales at acquisition (€m)	Impled Multiple
A	adidas-Salomon AG-Salomon	Amer Sports Oyj	10/20/05	485	EUR	100 % Equity	63	13%	692	0,09
B	Reebok International Ltd	adidas-Salomon AG	01/31/06	3 466	EUR	100 % Equity	1 454	42%	3 237	0,45
C	PUMA AG Rudolf Dassler Sport	PPR SA	04/10/07	1 450	EUR	27,01% Equity	945	65%	1 791	0,53
D	Five Ten USA	adidas AG	11/11/11	18	EUR	100 % Equity	8	44%	16	0,50
Average multiple (B, C, D)										0,49
Adidas brand 2013 sales										11 059
Estimated Adidas brand value										5 445

Transaction A, B, D brand value at time of acquisition estimate

Based on acquiror annual report of the related year: brands acquired have to be registered at fair value at time of acquisition

Transaction C - brand value estimate

Puma brand book value 3 500 *Kering 2007 annual report p.161*

Acquisition stake 27,0% *Thomson One*

Brand value estimation 945

Sensitivities

	5 445	
	0,34	3 786
	0,39	4 339
	0,44	4 892
	0,49	5 445
	0,54	5 998
	0,59	6 551
	0,64	7 104

Sources: Thomson One, Reuters, Acquirors annual reports for transaction years

Table 44 - Adidas brand value using the transaction multiples method

Due to the fact that Salomon is more different than the other brands from adidas, and to the extreme multiple obtained for this transaction, we decided to exclude it from the valuation multiple.

According to this method, the adidas brand would thus be worth €m 5 445, which is far below the results obtained from the income-based valuations based on forecasts.

4.9. Demand driver approach

This approach and its derivatives is the one commonly used by firms making annual brand rankings (e.g. Interbrand). We applied exactly the one developed in part II.3.2.

It is divided into four steps.

(1) Brand earnings differential part

The hypotheses and data used in the computation of adidas brand earnings are the following:

- adidas AG EBIT forecasts were extracted from Deutsche Bank Equity research report (March 5th, 2014), adidas brand division as a percentage of Group sales was computed based on adidas AG annual reports;
- Ultrasonic EBIT was extracted from (1) annual reports for years 2011 and 2012; (2) Bank M equity research report (December 2013) for years 2013 and 2014 forecasts;
- Inflation was taken from the World Bank database, for Germany as above explained;
- According to Salinas (2009), the discount rate to use here is “*the return on capital that would have been used for the production of a private label*”⁴⁶. We thus used our brand discount rate hypothesis of 7.8% to compute capital remuneration.

Our results are presented in the table below:

Hypotheses				
Tax rate	31.2%	See Common hypotheses		
Discount rate (WARA)	7.8%	See Common hypotheses		
Computations				
(1) Adidas brand earnings differential				
€m	2011	2012	2013	2014
Adidas AG EBIT	1 011	920	1 202	1 283
Adidas brand division as a % of sales	74%	76%	76%	76%
Adidas division EBIT	749	701	917	979
Ultrasonic EBIT	33	42	42	44
Brand EBIT differential	716	659	875	935
Inflation adjustment	1,06	1,03	1,01	
Brand EBIT differential inflation adjusted	756	682	887	
Weighting factor	1	2	3	
Brand's weighted financial EBIT				753
Allowance for future reduction of EBIT				-
Capital remuneration				(59)
Brand's differential earnings before tax				694
Tax				(216)
Brand's differential earnings				478

Table 45 - Adidas brand value using the demand driver method - Brand earnings differential

(2) Adidas brand strength score computation

As discussed in part II, this part is very subjective. We base our below assessment on own market research (*see paragraph above*), Global data SWOT analysis⁴⁷, and Crédit Suisse emerging markets survey⁴⁸. The objective is to give scores for the adidas brands for the 5 axis of strength analysis.

Leadership

As mentioned in our market penetration subsection and as presented by Euromonitor in its sportswear dashboard, adidas is considered as a leading brand in the sportswear sector, first or second (behind Nike) in terms of market share depending on countries⁴⁹. We can thus infer that adidas has a good resistance to competition and a significant ability to set prices for its products, meaning a high leadership. This ability is reinforced by the fact that the major part of its yearly sales comes from products launched during the course of the year, meaning that adidas leadership ability is tested and renewed every year by its customers. We gave it a 21/25 score.

⁴⁶ p. 217

⁴⁷ GlobalData March 2014 - adidas AG (ADS) - Financial and Strategic SWOT Analysis Review

⁴⁸ Crédit Suisse Equity Research, March 2014, Adidas AG

⁴⁹ See appendix 3

Stability

The brand exists since 1949 and has developed itself along time, launching sub-brands and sub-segments to enlarge its customer base (the last one being the NEO brand targeting fashionable teenagers). We gave a score of 12/15 for this point.

Market

The sportswear market in which adidas operates is a growing one (3.5% CAGR from 2013 to 2018 according to Euromonitor), following the growth of emerging countries like China (5.7% growth CAGR 13-18) and Russia (5.8% growth CAGR 13-18).

Entry barriers used to be relatively low since producing apparel and footwear does not require significant investments and technology development. Nevertheless, by sponsoring events and athletes and by spending significant amounts on marketing and communication, the biggest brands try to raise barriers to entry, avoiding new brands to be too visible. We gave a score of 7/10 to adidas.

Internationality

Adidas is obviously an international brand as shown in table 22. Nevertheless, half of its sales are still focused on North America and Western Europe, while the growing markets are located in emerging countries. What is more, it is not present on all continents (e.g. Africa). We gave a score of 20/25 to adidas for this point.

Trend

As stated in 2013 annual report, 74% of adidas sales are related to products launched during the course of the year. What is more the results of the Crédit Suisse survey presented in part II.2 show that adidas is successful at keeping up to date with the trends and satisfying its target customers, making them willing to buy and happy to pay more for its products. We gave a score of 8/10 for this axis.

Support

The brand is owned by the adidas AG conglomerate (owning as well other top brands like Reebok), which has negative net debt and significant cash in balance sheet. The group has the ability to invest in its brand and does it through its significant yearly marketing, distribution and R&D budget, which, as seen in part II.4.6, is more or less stable in terms of percentage of sales every year. Support from the mother company is thus not volatile at all and unconditional even in times of crises (2008 and 2009 years were not affected by significant decreases in marketing, distribution and R&D expenses). We gave a score of 8/10 to adidas.

Protection

Data on this topic are kept confidential but we obviously think that the adidas brand is legally well protected. Nevertheless, the risk of counterfeited products affecting brand image is high: adidas produces most of its products in Asia. According to the UN Office on Drugs and Crime⁵⁰, from 2008 to 2010, 70% of seized counterfeited products came from China.

We gave a score of 3/5 to adidas.

Overall, the adidas brand gets a 80/100 score. Results are summarized in the following table.

⁵⁰ <http://www.businessinsider.com/most-counterfeit-goods-are-from-china-2013-6>

(2) Adidas brand strength score

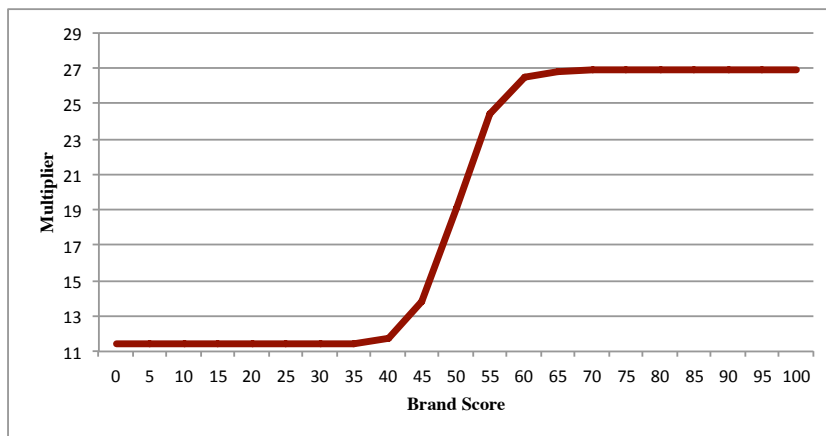
<i>Strength factor</i>	<i>Maximum score</i>	<i>Adidas brand</i>
Leadership	25	21
Stability	15	12
Market	10	7
Internationality	25	20
Trend	10	9
Support	10	8
Protection	5	3
Brand strength	100	80

Table 46 - Adidas brand value using the demand driver method - Brand strength score

(3) S-curve construction

We used Reuters' figures on adidas industry to construct the S-curve. The lower and the higher P/E bounds in our curve are the 5Y lower and higher industry average. We then used a normal distribution and obtained the following mapping:

(3) S-curve construction



Sector P/E ratios

High	26,87
Low	11,42
Average	19,15

Brand score	Multiplier
0	11,42
5	11,42
10	11,42
15	11,42
20	11,42
25	11,42
30	11,42
35	11,44
40	11,77
45	13,87
50	19,15
55	24,42
60	26,52
65	26,85
70	26,87
75	26,87
80	26,87
85	26,87
90	26,87
95	26,87
100	26,87

Table 47 - Adidas brand value using the demand driver method - S-curve construction

The implied multiple for a score of 80 is thus a P/E ratio of 26.87 (for information, adidas AG P/E ratio was 20.33 at time of valuation). Note that for high-strength-score brand,

the multiple obtained does not vary significantly, leaving the main responsibility of valuation to the brand's differential earnings computation.

(4) Final result

From the adidas brand earnings and multiple computed, we get the following result:

(4) Final result								
Strength score		80						
Multiple		26,87						
Brand's differential earnings		478						
Adidas brand value (€m)		12 843						
Sensitivities								
		Strength score						
	12 843	65	70	75	80	85	90	95
Brand earnings	268	7 195	7 200	7 201	7 201	7 201	7 201	7 201
	338	9 074	9 081	9 081	9 081	9 081	9 081	9 081
	408	10 954	10 962	10 962	10 962	10 962	10 962	10 962
	478	12 833	12 843	12 843	12 843	12 843	12 843	12 843
	548	14 713	14 724	14 724	14 724	14 724	14 724	14 724
	618	16 592	16 605	16 605	16 605	16 605	16 605	16 605
	688	18 472	18 486	18 486	18 486	18 486	18 486	18 486
		12 843	4,8%	5,8%	6,8%	7,8%	8,8%	9,8%
Brand earnings	268	7 201	7 201	7 201	7 201	7 201	7 201	7 201
	338	9 081	9 081	9 081	9 081	9 081	9 081	9 081
	408	10 962	10 962	10 962	10 962	10 962	10 962	10 962
	478	12 843	12 843	12 843	12 843	12 843	12 843	12 843
	548	14 724	14 724	14 724	14 724	14 724	14 724	14 724
	618	16 605	16 605	16 605	16 605	16 605	16 605	16 605
	688	18 486	18 486	18 486	18 486	18 486	18 486	18 486
		12 843	11,87	16,87	21,87	26,87	31,87	36,87
Brand earnings	268	3 181	4 521	5 861	7 201	8 540	9 880	11 220
	338	4 012	5 702	7 392	9 081	10 771	12 461	14 151
	408	4 843	6 883	8 922	10 962	13 002	15 042	17 082
	478	5 674	8 063	10 453	12 843	15 233	17 623	20 013
	548	6 505	9 244	11 984	14 724	17 464	20 204	22 944
	618	7 335	10 425	13 515	16 605	19 695	22 785	25 875
	688	8 166	11 606	15 046	18 486	21 926	25 366	28 806

Table 48 - Adidas brand value using the demand driver method - final results and sensitivities

According to this method, the adidas brand would thus be worth €m 12 843.

4.10. Price-to-sales difference ratio

As presented in II.3.3, this method compares the price-to-sale ratio of a branded company (here adidas) to a “non-branded” company (here Ultrasonic), estimating that the brand value is nothing else but the ability of the company to charge a higher price for the same products, leading to higher margins and thus to a higher price-to-sale ratio.

We used here two methods:

- The formula proposed by Damodaran who launched this valuation method,
- A full-market view based on price-to-sales ratio extracted from Reuters.

For the Damodaran formula-based application, we used the following hypotheses:

- *Perpetual pay-out ratios*: we assume that pay-out ratios of companies will tend to converge to the industry average pay-out ratio when it is below, but stay constant when it is above (indeed, we assume that it is difficult and seen as a negative sign to decrease pay-out ratios, since it generally (but not in all cases) decreases as well dividends).
- We considered that *free cash flow would grow* at the same pace as sales for Adidas and took the Reuters 5Y sales growth estimate. Nevertheless, for Ultrasonic, as above seen,

Bank M estimates that margins will decrease at least until 2016, while Reuters forecasts a 0% sales growth. We took the assumption of a 1% decrease per year on FCF.

- We aligned both *perpetual growth rates* on a conservative assumption of 2%, which corresponds to usual assumption on the perpetual growth rate of global economy.
- The discount rates to be applied are the WACC of both companies (since the purpose in the formula is to value the company, not directly the brand).
 - o For adidas, we thus used the WACC computed above, both as current and perpetual discount rate, adidas AG being already a quite mature company.
 - o For Ultrasonic, we computed a current WACC using the same type of assumptions as for adidas (*see table below for computations and sources*). Nevertheless, considering that Ultrasonic is still a recent company and that its WACC is extremely low, mainly due to a volatile assumption (its low beta), we assumed a 1% higher WACC as perpetual discount rate, in order to bridge the gap with the adidas group when Ultrasonic will become bigger, supposing that its beta will increase to approach the market beta.

Ultrasonic WACC computation		
Beta	0,28	<i>boerse-frankfurt April, 23rd 2014</i>
risk-free rate	2,71%	<i>HK 10Y government bond, Bloomberg</i>
ERP	6,31%	<i>Damodaran estimate of China ERP</i>
Cost of debt	6,60%	<i>2012 Ultrasonic annual report</i>
Tax rate	25%	<i>According to 2012 Ultrasonic annual report</i>
Gearing	0	<i>Negative current and forcecasted gearing - conservative view</i>
Cost of equity	4,48%	@
Cost of debt after taxes	4,95%	@
WACC	4,48%	

Table 49 - Ultrasonic WACC computation

- The variable n represents the year from which perpetual assumptions are applied. We considered 15 years as a fair assumption before a stable low-growth state is reached for both companies.

Our other hypotheses (and sources), results and sensitivities are presented in the table below, along with the result of the full-market valuation approach.

Hypotheses		Ultrasonic	
Non-branded company chosen			
Adidas AG hypotheses			
EBIT		8,7%	<i>Adidas AG 2013 Annual report</i>
Sales		14 492	<i>Adidas AG 2013 Annual report</i>
Current payout ratio		37,4%	<i>Adidas AG 2013 Annual report</i>
Perpetual payout ratio		37,4%	<i>Max(industry estimate, firm estimate), based on Reuters figures</i>
Current growth rate		6,1%	<i>Reuters 5Y estimate</i>
Perpetual growth rate		2%	<i>Own estimate</i>
Current discount rate (WACC)		6,5%	<i>WACC, own computation</i>
Perpetual discount rate (WACC)		6,5%	<i>WACC, own computation</i>
Ultrasonic hypotheses			
EBIT		26%	<i>Bank M reseach note, December 11th, 2013</i>
Sales		163	<i>Bank M reseach note, December 11th, 2013</i>
Current payout ratio		0%	<i>Reuters</i>
Perpetual payout ratio		17%	<i>Max(industry estimate, firm estimate), based on Reuters figures</i>
Current growth rate		(1%)	<i>Own assumption</i>
Perpetual growth rate		2%	<i>Own estimate</i>
Current discount rate (WACC)		4,5%	<i>Ultrasonic WACC (own computation)</i>
Perpetual discount rate (WACC)		5,5%	<i>Own hypothesis</i>
n		15	<i>Own estimate</i>

Computations n°1 (Damodaran way)		
Adidas price to sale ratio	1,16	@
Ultrasonic price to sale ratio	0,59	@
P/S ratios difference	0,58	
Adidas AG brands value	8 349	
Other brands value	(1 583)	<i>Adidas AG 2013 Annual report - mainly Reebok</i>
Adidas brand value	6 766	

Computations n°2 (100% market view (Reuters))		
Adidas Share price to sale ratio	1,09	<i>Reuters estimate</i>
Ultrasonic Share price to sale ratio	0,56	<i>Reuters estimate</i>
P/S ratios difference	0,53	
Adidas AG brands value	7 681	
Other brands value	(1 583)	<i>Adidas AG 2013 Annual report - mainly Reebok</i>
Adidas brand value	6 098	

Sensitivities									
		Number of years before perpetuity considerations (n)							
		6 766	0	5	10	15	20	25	30
Perpetual growth rate	0,5%	(6 842)	(1 576)	2 913	6 798	10 213	13 258	16 012	
	1,0%	(7 620)	(2 006)	2 744	6 826	10 387	13 541	16 376	
	1,5%	(8 630)	(2 582)	2 496	6 824	10 569	13 860	16 796	
	2,0%	(9 988)	(3 381)	2 120	6 766	10 750	14 218	17 285	
	2,5%	(11 894)	(4 538)	1 529	6 601	10 904	14 611	17 854	
	3,0%	(14 727)	(6 318)	545	6 218	10 972	15 016	18 509	
	3,5%	(19 284)	(9 287)	(1 222)	5 358	10 796	15 352	19 226	
Ultrasonic brand current discount rate	6 766	3,5%	4,5%	5,5%	6,5%	7,5%	8,5%	9,5%	
	1,5%	(40 346)	(16 017)	(10 190)	(7 807)	(6 550)	(5 780)	(5 257)	
	2,5%	13 015	3 716	697	(654)	(1 366)	(1 779)	(2 033)	
	3,5%	30 016	13 089	6 852	3 805	2 073	992	272	
	4,5%	38 099	18 393	10 692	6 766	4 458	2 974	1 960	
	5,5%	42 675	21 706	13 246	8 822	6 167	4 429	3 221	
	6,5%	45 537	23 911	15 020	10 296	7 421	5 517	4 180	
	7,5%	47 443	25 444	16 294	11 380	8 361	6 344	4 917	
Ultrasonic brand perpetual discount rate	6 766	3,5%	4,5%	5,5%	6,5%	7,5%	8,5%	9,5%	
	2,5%	(25 113)	(37 045)	(42 176)	(45 030)	(46 848)	(48 107)	(49 031)	
	3,5%	15 287	3 355	(1 776)	(4 630)	(6 448)	(7 707)	(8 631)	
	4,5%	23 271	11 339	6 208	3 354	1 536	277	(647)	
	5,5%	26 683	14 751	9 620	6 766	4 948	3 689	2 765	
	6,5%	28 576	16 644	11 513	8 659	6 841	5 582	4 658	
	7,5%	29 780	17 847	12 717	9 863	8 045	6 785	5 862	
	8,5%	30 613	18 680	13 550	10 696	8 878	7 618	6 695	

Table 50 - Adidas brand value using the price to sale ratio method

According to the Damodaran approach, the adidas brand would thus be worth €m 6 766, compared to €m 6 098 considering the full-market approach.

4.11. And what about considering real options?

As stated in part II, the use of real options in brand valuation is not a method per se but a method to use on top of a more classical one, in order to take into account selected growth opportunities.

The first step is to value the adidas brand assuming no growth. To do so, we used the Baldi and Trigeorgis approach and computed the brand valuation assuming no growth through a royalty relief method, assuming a 0% growth from 2016 onwards. The embedded assumptions are that the expansion investments done in the last few years will pay-off in the two following years due to inertia (until 2015 where, as you will see below, decision to pursue

investments will have to be done), while maintenance investments will allow keeping up with a 0% growth rate (instead of a decreasing one). The other hypotheses and computations are identical with the one presented in the royalty relief method application. The results are the following:

Hypotheses	
Royalty rate	7,5% Based on RoyaltySource report, own hypothesis
Discount rate	7,8% Based on Adidas AG 2013 Annual Report p.200, own hypothesis
Tax rate	31,2% Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average
Perpetual growth rate	0,0%
Lifetime of the brand	Perpetual Adidas AG 2013 Annual Report p.199

Computations									
m€	Year	Brokers's view				Softlanding			
		2013	2014	2015	2016	2017	2018	2019	2020
		0	1	2	3	4	5	6	7
Sales		11 059	11 466	12 151	12 151	12 151	12 151	12 151	12 151
% growth		n.a.	3,7%	6,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Pretax royalty income		824	854	905	905	905	905	905	905
Taxes		(257)	(266)	(282)	(282)	(282)	(282)	(282)	(282)
After taxes royalty income		567	588	623	623	623	623	623	623
Discount factor		0,963	0,893	0,829	0,769	0,713	0,662	0,614	0,569
Present value of royalty income		546	525	516	479	444	412	382	355
Sum of discounted royalty income (2013-2020)		3 661							
Terminal value		4 548							
Brand value (classic method)		8 209							

Table 51 - Adidas brand "no-growth" value using the royalty relief method

The second step is to identify and value future growth options.

Based on the 2013 adidas AG annual report, we identified the main growth opportunities contemplated by management i.e. further expansion to China, the US and Russia. Note that these three options are obviously not the only growth opportunities adidas could decide to follow but only the ones they decided to mention to shareholders. This is one of the limits of using the real options approach.

The options we chose being clearly separate, not compounded as in the example computed in part II (indeed, failing to expand further in China will a priori not prevent a further expansion in the US or Russia), we used the Black & Scholes formula to value each option separately. Due to the lack of information available on a clear adidas strategic plan (obviously confidential), our option valuations include many assumptions.

The strategic plan adidas mentions in its annual report is targeting at years 2013 to 2015, we thus chose to put year 2015 as our next decision milestone. On the other hand, Euromonitor providing market data until 2018, we chose to put year 2018 as the 2015 investment decision pay-off date. Each option is constructed as a growth option in terms of market share in the target country. Such a construction means that adidas started to expand in the target country in 2013 or before and has to decide in 2015 whether or not its keeps on investing to reach the market share target set for 2018.

In terms of necessary investment, we need to know how much money will be invested between 2015 and 2018 in each geographical zone to reach the 2018 targets. We know from 2013 annual report that, in 2013, roughly 46% of capex are dedicated to investing in expanding in the three geographical zones studied here. Based of Thomson capex forecasts for 2015 to 2017, we estimated the part to be attributed to adidas for each year (considering that it is equivalent to the part adidas represents in 2013 sales, i.e. 76%). We then discounted the cash invested to have its value in 2015, at investment decision. The discount rate used here is adidas AG WACC.

Finally, we estimated the split that would be done between each country, based on 2013 annual report distribution. Our assumptions are the following:

€m		2015	2016	2017
Group capex forecasts		513	531	528
Dedicated to expansion	46%	236	244	243
Adidas part		76%	76%	76%
Capex to expense for one year		180	186	185
Capex value in 2015 (discounted at WACC)	6,51%	180	175	163
Target Investment costs		518		
China	13%	146		
Russia	17%	192		
US	16%	180		
Total investment		518		

Source: Thomson estimates; adidas AG 2013 annual report, own estimates

Table 52 - Investments for growth options

- For China, the growth assumption made here is that adidas will catch up with Nike in terms of market shares in value in 2018 (Nike market share in China is 13.6% according to Euromonitor⁵¹). Note that, in 2013, around 40% of the market share is performed by small companies, and that this number has kept on decreasing⁵². We thus expect this trend to continue, favouring adidas. Assuming a linear increase of market share between 2013 and 2018, we computed 2015 results for information purposes.
- In the United States, adidas market share has been decreasing in the last five years. The objective we set is to return back to the 2008 market share by 2015, and to increase it by 2% by 2018, given that more than 50% of the market share is owned by small companies⁵³.
- In Russia, Euromonitor figures show that the Adidas group has been increasing market shares by 8% in the last 5 years. We assume adidas brand (which represents 76% of adidas AG in terms of sales) will keep growing at such a pace at least until 2018. As for the Chinese market, we assume that the market share growth will be linear and computed the 2015 situation for information purposes. Note that in 2013, small companies represent 57.4% market share, this part having decreased significantly since 2008 (See appendix 3).

Let us study first the case of expansion to China.

From 2013 Euromonitor forecasts on both market and the adidas Group, we infer:

- 2013 adidas sales and market share in China (based on the part of adidas brand division in global sales);
- Market size in value in 2015 and 2018.

The growth assumption made here is that adidas will catch up with Nike in terms of market shares in value in 2018. From this figure, we can infer adidas brand sales in 2018 in China. The expected investment cash flow is then computed as the difference between the sales performed taking into account the Nike catch up in 2018, and the sales that would be performed should adidas market share stay constant across the years. These cash flows are discounted at adidas Group Chinese WACC, as computed in the table below. Note that we do not discount them at our brand risk rate since these cash flows do not concern brand earnings but simply earnings from operations in the selected country.

Then, in the Black & Scholes formula:

- Risk-free rate used is the 10Y government bond yield of the concerned country (here China) extracted from Bloomberg;

⁵¹ See appendix 3

⁵² Euromonitor data

⁵³ Euromonitor data

- We set volatility of 2018 cash flows at 35%, due to uncertainty related to them and having as a benchmark an average annual share price volatility of around 20%. As you can see in the sensitivity analysis, the impact of volatility here is very low.

The computations and results are presented in the table below:

Current 2013	2015 objective	2018 objective	
China			
Market			
2013 Market size (€m) *	16 999	Market size 18 992	Market size 22 429
Growth CAGR (13-18) *	5,7%	Estimated adidas market share 11%	Estimated adidas market share 14%
Market per capita (€) *	12,6	Adidas brand sales 2 172	Adidas brand sales 3 050
Group			
	Estimated sales (no market share growth)	1 899	Estimated sales (no market share growth) 2 242
Adidas Group sales *	2 231	Expected cash flow 274	Expected cash flow 808
Market share *	13,1%		
Point change * (last 5 years)	1,5%		
Adidas			
Adidas brand in % of sales	76%		
Estimated Adidas brand sales	1 703		
Estimated adidas market share	10,0%		
Option computation		Discount rate computation	
2018 target investment	146	Risk-free rate	2,14% <i>HK 10Y government bond - Bloomberg</i>
PV of 2018 expected cash flows	576	Adidas AG β	0,77 <i>Reuters estimate</i>
Investment decision delay (in years)	2	Equity risk premium	6,31% <i>Damodaran estimate on China ERP</i>
Risk-free rate (discrete)	2,14%	Cost of equity	7,00%
Risk-free rate (continuous)	2,12%	Cost of debt	3,80% <i>Group Weighted average interest rate / Adidas AG 2013 Annual Report p.138</i>
		Effective tax rate	31,17% <i>Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average</i>
Estimated volatility of the 2018 investment cash flows	35%	Gearing ratio	0 <i>Negative current and forcecasted gearing - conservative view</i>
		Estimated WACC	7,00%
S	576		
E	146		
d ₁	3,100		
d ₂	2,605		
$\Phi(d_1)$	0,999		
$\Phi(d_2)$	0,995		
China expansion call option value	436		

Source: * Sportswear market forecasts from Euromonitor

Table 53 - Option to expand further in China valuation

Sensitivities - expansion in China									
		2018 cash flow volatility							
		25%	30%	35%	40%	45%	50%	55%	
2018 investment	436	508	508	508	508	508	508	508	
	71	484	484	484	484	484	484	484	
	96	460	460	460	460	460	461	461	
	121	436	436	436	436	437	437	439	
	146	340	341	343	345	348	352	357	
	246	346	248	252	258	265	273	281	290
	446	168	178	189	201	212	224	236	
	546	106	121	136	150	165	180	194	
			2018 market share						
		11%	12%	13%	14%	16%	18%	20%	
2018 investment	436	34	188	348	508	828	1 147	1 467	
	71	21	164	324	484	804	1 123	1 443	
	96	12	142	300	460	780	1 100	1 419	
	121	7	121	277	436	756	1 076	1 395	
	146	1	59	190	343	660	980	1 300	
	246	0	27	123	258	566	884	1 204	
	446	0	13	77	189	477	790	1 108	
	546	0	6	48	136	396	699	1 014	

Table 54 - Option to expand further in China valuation - sensitivities

The mechanism is the same for the further expansion to the US option (except that the 2018 cash flows are computed compared to the estimated sales should the market share keep on decreasing by 0.5% every 5 years), and for the further expansion to Russia option. Hypotheses, computations and results are presented in the below tables:

Current 2013	2015 objective		2018 objective		
US					
Market					
2013 Market size (€m)*	61 420	Market size	64 908	Market size	70 514
Growth CAGR (13-18)*	2.8%	Estimated adidas market share	5%	Estimated adidas market share	7%
Market per capita (€)*	194,1	Adidas brand sales	2 972	Adidas brand sales	4 639
Group		Estimated sales (decreasing market share)	2 669	Estimated sales (decreasing market share)	2 891
Adidas Group sales*	3 343	Expected cash flow	303	Expected cash flow	1 748
Market share*	5,40%				
Point change (last 5 years)*	-0,50%				
Adidas					
Adidas brand in % of sales	76%				
Estimated Adidas brand sales	2 551				
Estimated adidas market share	4,1%				
Option computation		Discount rate computation			
2018 target investment	192	Risk-free rate	2,67%	US 10Y government bond - Bloomberg	
PV of 2018 expected cash flows	1274	Adidas AG β	0,77	Reuters	
Investment decision delay (in years)	2	Equity risk premium	5,00%	Damodaran estimate on the US ERP	
Risk-free rate (discrete)	2,67%	Cost of equity	6,52%		
Risk-free rate (continuous)	2,63%	Cost of debt	3,80%	Group Weighted average interest rate / Adidas AG 2013 Annual Report p.138	
		Effective tax rate	31,17%	Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average	
Estimated volatility of the 2018 investment cash flows	35%	Gearing ratio	0	Negative current and forecasted gearing - conservative view	
		Estimated WACC	6,52%		
S	1 274				
E	192				
d ₁	4,183				
d ₂	3,688				
Φ(d ₁)	1,000				
Φ(d ₂)	1,000				
US expansion call option value	1 093				

Source: * Sportswear market forecasts from Euromonitor

Table 55 - Option to expand further in the US valuation

Sensitivities - expansion in the US								
2018 investment	1 093	2018 cash flow volatility						
		25%	30%	35%	40%	45%	50%	55%
	117	1 164	1 164	1 164	1 164	1 164	1 164	1 164
	142	1 140	1 140	1 140	1 140	1 140	1 140	1 140
	167	1 116	1 116	1 116	1 116	1 116	1 117	1 117
	192	1 093	1 093	1 093	1 093	1 093	1 093	1 093
	292	998	998	998	998	999	1 000	1 002
	392	903	903	904	905	907	911	915
	492	808	809	811	814	820	826	834
	592	714	717	722	728	737	748	760
2018 investment	1 093	2018 market share						
		4,2%	5%	6%	7%	9%	11%	13%
	117	1	137	650	1 164	2 192	3 221	4 249
	142	0	116	626	1 140	2 169	3 197	4 225
	167	0	98	602	1 116	2 145	3 173	4 202
	192	0	81	579	1 093	2 121	3 149	4 178
	292	0	37	485	998	2 026	3 055	4 083
	392	0	17	397	904	1 931	2 960	3 988
	492	0	8	319	811	1 837	2 865	3 893
	592	0	4	252	722	1 742	2 770	3 798

Table 56 - Option to expand further in the US valuation - sensitivities

Current 2013	2015 objective	2018 objective	
Russia			
Market			
2013 Market size (€m) *	6 068	Market size 6 792	Market size 8 043
Growth CAGR (13-18) *	5,8%	Estimated adidas market share 20%	Estimated adidas market share 25%
Market per capita (€) *	42,3	Adidas brand sales 1 378	Adidas brand sales 2 018
Group			
		Estimated sales (no market share growth) 1 161	Estimated sales (no market share growth) 1 375
Adidas Group sales *	1 360	Expected cash flow 217	Expected cash flow 643
Market share *	22,40%		
Point change (last 5 years) *	8%		
Adidas			
Adidas brand in % of sales	76%		
Estimated Adidas brand sales	1 038		
Estimated adidas market share	17%		
Option computation			Discount rate computation
2018 target investment	180	Risk-free rate 9,17%	Russia 10Y government bond - Bloomberg
PV of 2018 expected cash flows	319	Adidas AG β 0,77	Reuters
Investment decision delay (in years)	2	Equity risk premium 7,63%	Damodaran estimate on Russia ERP
Risk-free rate (discrete)	9,17%	Cost of equity 15,05%	
Risk-free rate (continuous)	8,77%	Cost of debt 3,80%	Group Weighted average interest rate / Adidas AG 2013 Annual Report p.138
		Effective tax rate 31,17%	Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average
Estimated volatility of the 2018 investment cash flows	35%	Gearing ratio 0,00%	Negative current and forcecasted gearing - conservative view
		Estimated WACC 15,05%	
S	319		
E	180		
d ₁	1,757		
d ₂	1,262		
Φ(d ₁)	0,961		
Φ(d ₂)	0,897		
Russia expansion call option value 171			

Source: * Sportswear market forecasts from Euromonitor

Table 57 - Option to expand further in Russia valuation

Sensitivities - expansion in Russia

		2018 cash flow volatility							
		171	25%	30%	35%	40%	45%	50%	55%
2018 investment	105	231	231	231	231	232	233	234	
	130	210	210	210	211	212	214	215	
	155	189	190	190	192	194	196	198	
	180	169	169	171	173	176	179	183	
	280	94	100	106	112	119	125	132	
	380	45	54	63	71	80	88	97	
	480	19	28	36	45	54	63	72	
	580	8	14	21	29	37	46	55	
			2018 market share						
		171	18%	20%	25%	30%	35%	40%	45%
2018 investment	105	1	40	231	431	630	830	1 029	
	130	0	28	210	410	609	809	1 008	
	155	0	20	190	389	588	788	987	
	180	0	14	171	368	567	767	966	
	280	0	3	106	288	484	683	882	
	380	0	1	63	217	404	600	799	
	480	0	0	36	159	331	521	717	
	580	0	0	21	115	267	446	638	

Table 58 - Option to expand further in Russia valuation - sensitivities

The final value of the adidas brand is then the combination of the growth options values and the brand value without growth:

Final Computation	
Adidas brand assuming no growth	8 209
Expansion in China option	436
Expansion in the US option	1 093
Expansion in Russia option	171
Adidas brand value (€m)	9 908

Table 59 - Adidas brand value taking into account growth opportunities via Real options

Considering only these three growth options, the adidas brand would be worth €m 9 908. The interesting point is that this value is below the valuation we get from the common royalty relief method. Such a situation may be explained first by our assumptions (maybe not as ambitious as the one embedded in the company's perpetual growth rate assumption), but also by the restriction to three growth directions made in the options computations, while we know that adidas is also developing sub-brands and other product categories such as the NEO line, not taken into account at all here for simplification purposes, and due to the lack of disclosed information on this topic.

5. Result comparisons and comments

Results summary

The results from each valuation method are gathered in the following table:

Final Computation	Low	Result	High
€m			
Royalty relief	7 636	10 438	13 240
Price premium *	(47 115)	95 383	236 681
Gross margin comparison	27 720	32 489	39 162
Excess cash flow	9 904	14 834	22 559
Historical costs	10 968	10 968	10 968
Replacement costs	13 324	15 374	17 424
Transaction multiples	4 892	5 445	5 998
Demand driver	10 962	12 843	14 724
Price-to-sale difference ratio (Damodaran way)	(2 582)	6 766	14 611
Price-to-sale difference ratio (full market view)	n.a.	6 098	n.a.
Real options	n.a.	9 908	n.a.
Gross approach - benchmark 1	n.a.	7 534	n.a.
Interbrand - benchmark 2	n.a.	7 535	n.a.
BrandFinance - benchmark 3	n.a.	7 776	n.a.
Crédit Suisse - benchmark 4	n.a.	14 400	n.a.
Mean		11 601	
Median		10 173	
Methods valuations mean		12 516	34%
Benchmarks mean		9 311	
Methods valuations median		10 703	40%
Benchmarks median		7 656	
Income approaches mean		38 286	
Income approaches mean (exclu. Price premium)		19 253	
Cost approaches mean		13 171	
Market approaches mean		7 788	
Income approaches median		23 661	
Income approaches median (exclu. Price premium)		14 834	
Cost approaches median		13 171	
Market approaches median		6 432	

* excluded from statistics

Table 60 - Adidas brand value - valuations summary

We mapped these results in a football field to get a better view on their distribution, taking into account sensitivities. In order for the graph to be clearer, we intentionally excluded the price premium approach result, which leads to extremely high values.

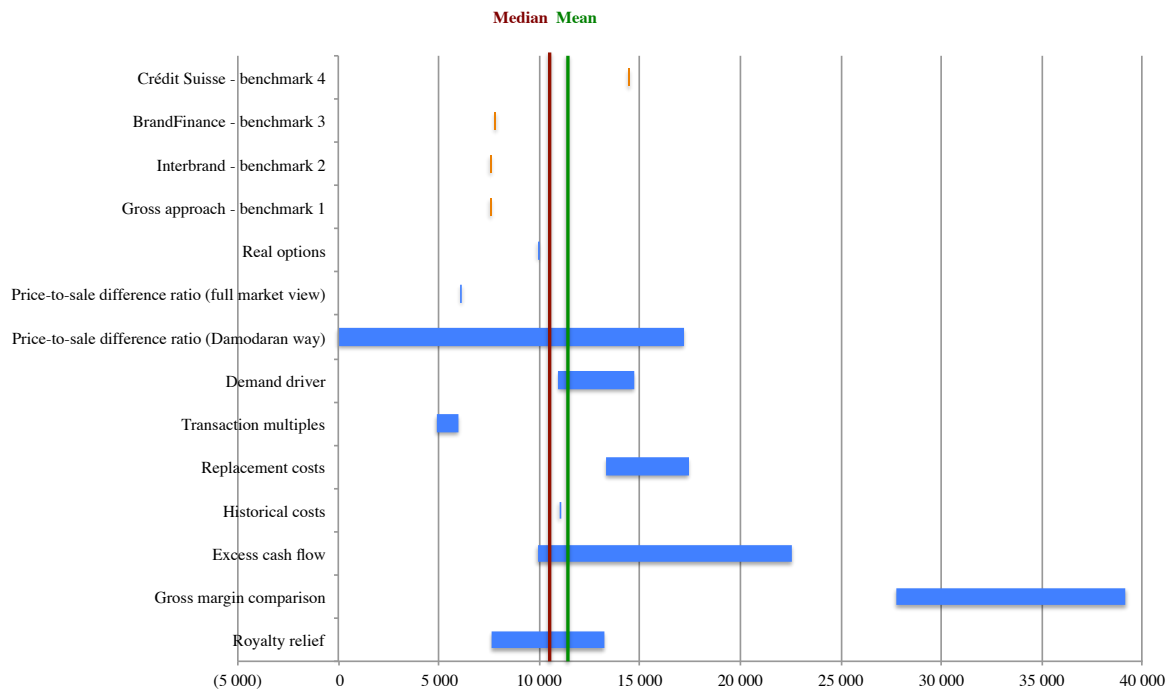


Table 61 - Adidas brand value - valuations summary - football field

We finally mapped the exact results we got and benchmarks, according to the approach they use. We obtained the following results:

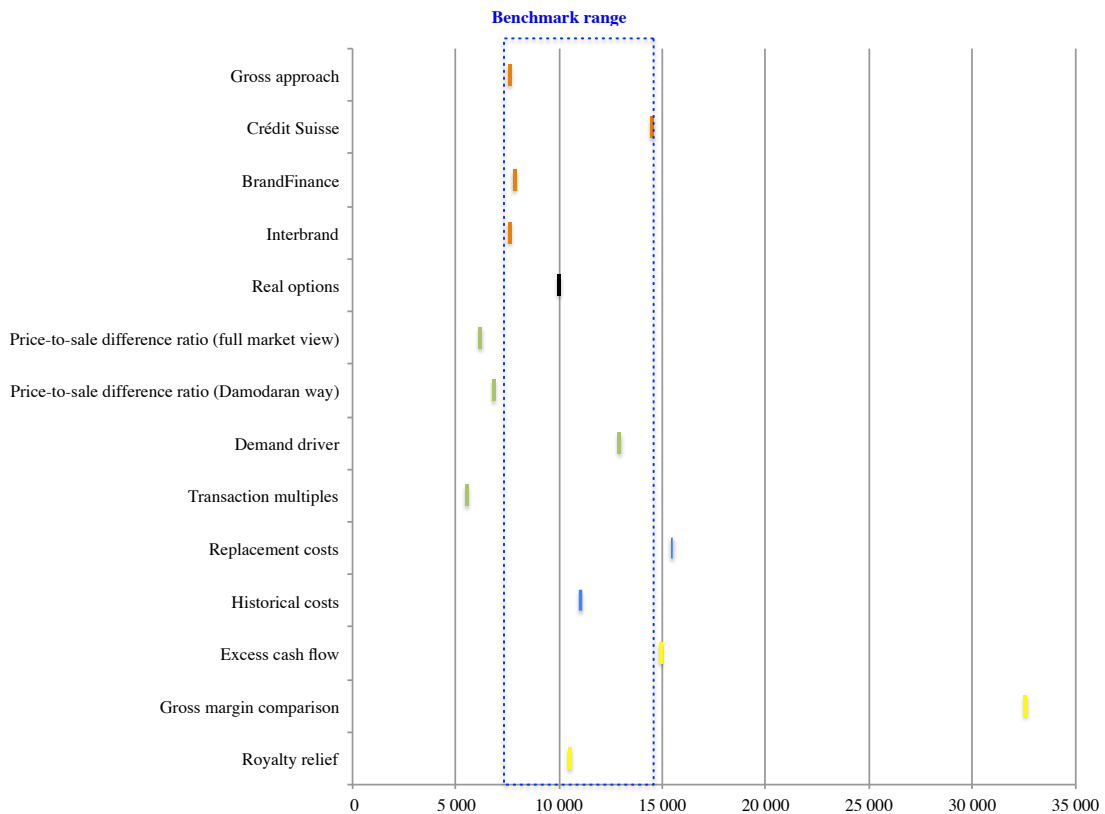


Table 62 - Adidas brand value - valuations summary - distribution versus benchmarks

Observed trends and comments

Our first observation is that the results we get are very dispersed, from €m 5 445 using the transaction multiple approach, to €m 95 383 using the price premium approach. If the range is spectacular, dispersion between results is one of the issues in brand valuations as pinpointed in our benchmark part and in Salinas (2009)⁵⁴. What is more, depending on approaches, some methods lead to results highly sensitive to assumptions (e.g. gross margin comparison approach, excess cash flow and Damodaran version of the price-to-sales difference ratio). Nevertheless, excluding extreme results, most of the valuation approaches lead to results within or not far from the benchmarks range.

- Compared to benchmarks

As explained in part III.4.1, we took as benchmarks third parties valuations from Interbrand, BrandFinance and Crédit Suisse Research, and our gross valuation. The benchmarks thus range from €m 7 535 (Interbrand, equal with our gross valuation benchmark) to €m 14 400 from Crédit Suisse Research.

If we now look at the distribution of our valuation results, we observe that four methods lead to results within the benchmark range (royalty relief, demand driver approach, the real option approach and historical costs approach). Four methods results fall not far from the benchmark range:

- Excess cash flow approach, 3% higher than Crédit Suisse approach (which is the upper-bound of our benchmark range);
- Replacement cost approach, 7% higher than Crédit Suisse benchmark;
- Both price-to-sales difference approaches, leading to results 10% and 22% lower than the benchmark range lower bound (€m 6 766 and €m 6 098).

On the other hand, three approaches lead to extreme results:

- The price premium approach leads to a result of €m 95 383, 562% higher than the Crédit Suisse benchmark (upper limit of the benchmark range);
- The gross margin comparison approach, leading to a result of €m 32 489, 126% higher than the benchmark upper limit;
- The transaction multiple approach, valuing adidas at €m 5 443, 28% lower than the Interbrand value (representing the range lower bound).

Interestingly, among the methods leading to values within the benchmark range are the two methods highlighted by Salinas and Ambler (2009) as preferred by practitioners (see part II.5): the royalty relief and the demand driver ones. The place of the demand driver one may seem in contradiction with its attributes (high level of subjectivity and high number of hypotheses). Nevertheless, looking at how it is computed and to the S-curve, one could see that for very stable and established brands like the one we valued, the strength score (which is the most subjective part of the valuation) has a low impact on the multiplier and thus on the final value, leaving most of the valuation job to the brand earnings differential. The presence of the real options approach within the benchmark range is partly due to its 82% reliance on a royalty relief approach. The most surprising one within the range is the historical cost approach, supposed to lead to floor values according to literature but leading here to a mid-range valuation.

⁵⁴ page 402.

In terms of mean and median, both indicators are slightly higher for our valuations than for the benchmarks:

- Our sample mean is of €m 12 516 while the benchmarks one is of €m 9 311;
- Our sample median amounts to €m 10 703 while the benchmark sample median is of €m 7 656.

- By type of valuation approach

The following graph highlights the valuation distribution by type of approach:

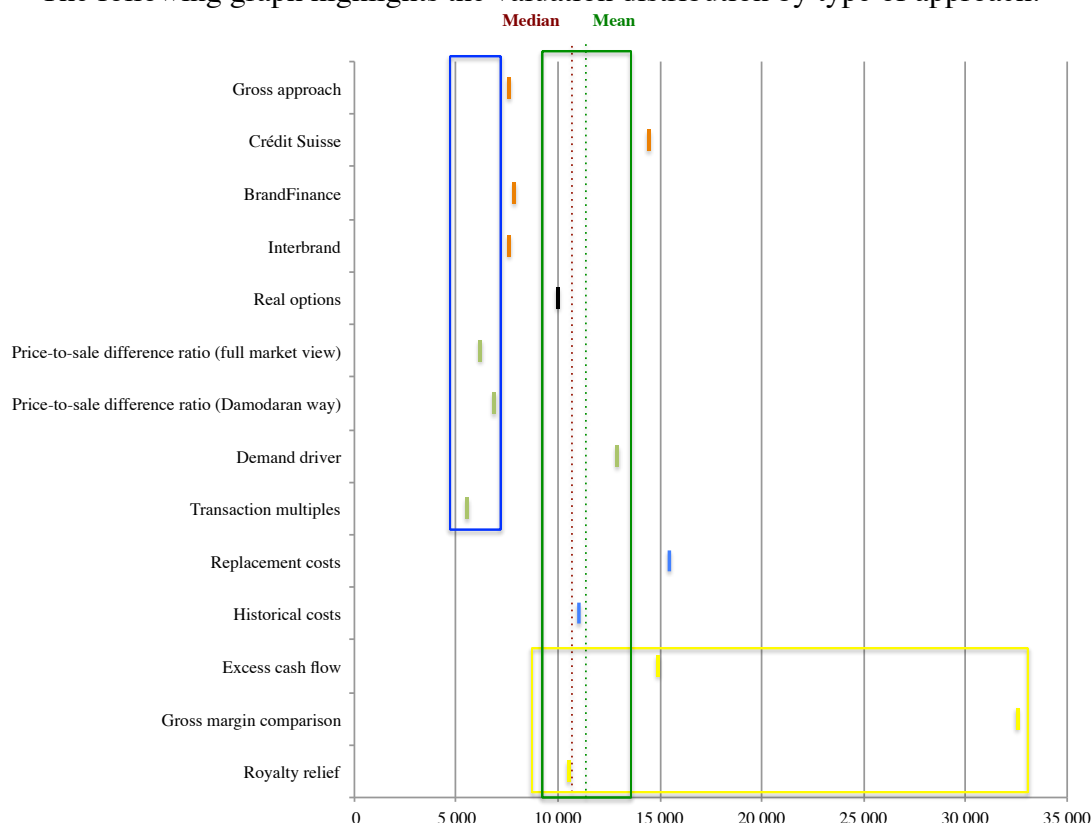


Table 63 - Adidas brand value - valuations summary - distribution by approach

At first sight, trends depending on the valuation approach seem obvious, but are not necessarily in the direction we expected them.

Indeed, according to the literature review, we expected cost approaches to represent floor values for the adidas brand. On the contrary in our results, they lead to mid-range or upper bound valuations, both above our sample median, despite the fact that we started to take costs into account long after the brand creation (1949, versus 1999). This could be explained by the facts that:

- Both methods do not take into account the amortisation of costs: indeed, some marketing campaigns aim at constructing the brand further, stretching it, while other are only maintenance ones, which need to be repeated every year and are aimed at maintaining the current value of the brand without expanding it. Ideally, those latter costs should not be taken into account but distinguishing them based on annual reports is impossible;
- The brand construction is not linear, some costs may have led to failures as we explained in part II, nevertheless as for the above point, isolating those costs is difficult;

- The 75% chosen may be too high for adidas and should be reduced, nevertheless the necessary information to do so is unfortunately not available, hence our reliance on literature suggestions.

Turning now toward income-based approaches, we observe that their results are very dispersed. Both comparisons with a “non-branded” company lead to extreme results (gross margin comparison and price premium approaches). Interestingly these two methods are also the ones requiring more in-depth analysis of operations. An explanation to that could be that in the end, the value of the brand is not linear with the number of products sold and with the price of products (e.g. luxury brands may sell products at prices similar with premium brands but have a much higher brand value). What is more, comparing a multinational with a young company is not necessarily relevant despite their comparability in terms of products. The size of the company should also be taken into account and adidas AG is not a multinational company only because of its brand management but also because of its history, its management and people, the business opportunities it had in the past. These later elements are wrongly taken into account in the valuation as relating to the brand value. What is more these methods highly depend on the company to which we compare. Ultrasonic, despite its quality in terms of information and comparability, may not be the best choice. Contrary to what we thought in part II, these methods would thus be the least relevant despite of being intuitive.

On the other hand, excess cash flow and royalty relief approaches lead to results more in line with our benchmarks. Note as well that the royalty relief method leads to results in the low range of income-based approaches and in the high-range of market-based approaches, while it is also a method that could be considered in both categories. Indeed, the royalty rate taken is estimated based on comparable transactions. The same observation applies to the demand driver approach, classified in our paper in as market-based but having also characteristics of the income-based approaches, and to the real options one.

Looking at market-based approaches, excluding the demand driver approach, which result ranges in the middle between income-based results and other market-based methods due to its dual approach, we observe that the results from these methods are concentrated in the lower bound of our valuations, in line with our gross approach (which is as well market based). Does it imply that markets are valuing the brand at a lower price than management or brokers, being unable to really understand and reflect its upward potential? Does it reflect prudence from markets toward intangible assets in general?

In the end, from the above observations, we could infer that for adidas, market-based approaches would tend to undervalue the brand compared to our benchmarks, while income-based and cost-based approaches would tend to lead, in some cases, to significant overvaluation. In a way, markets seem to misunderstand the adidas brand value and thus not consider it as they should, while methods based on internal information (from annual reports or brokers notes - notes being often based on management forecasts) seem to overestimate the brand importance, and thus its value. Reasons for market-based method undervaluation may be the following:

- adidas is part of a Group in which it is the best performing brand. As explained by Deutsche Bank Equity Research, investors historically apply a discount (around 25%) to adidas Group value, in order to reflect the burden of non-performing brands in the portfolio (Salomon until 2005, Reebok from 2006 to 2009). The price-to-sales ratio considering first the whole group before restricting to the brand thus takes this discount into account.
- The brands used as comparable in the transaction multiples approach where all acquired at some point, meaning that they were not performing well (e.g. Salomon), or at least that

there were some room for improvement by the acquirer to justify acquisition, hence again a potential discount on the multiple applied to adidas brand sales.

Mixed approaches (royalty relief, demand driver, real options) seem to lead to more credible results.

- **By details needed and number of parameters**

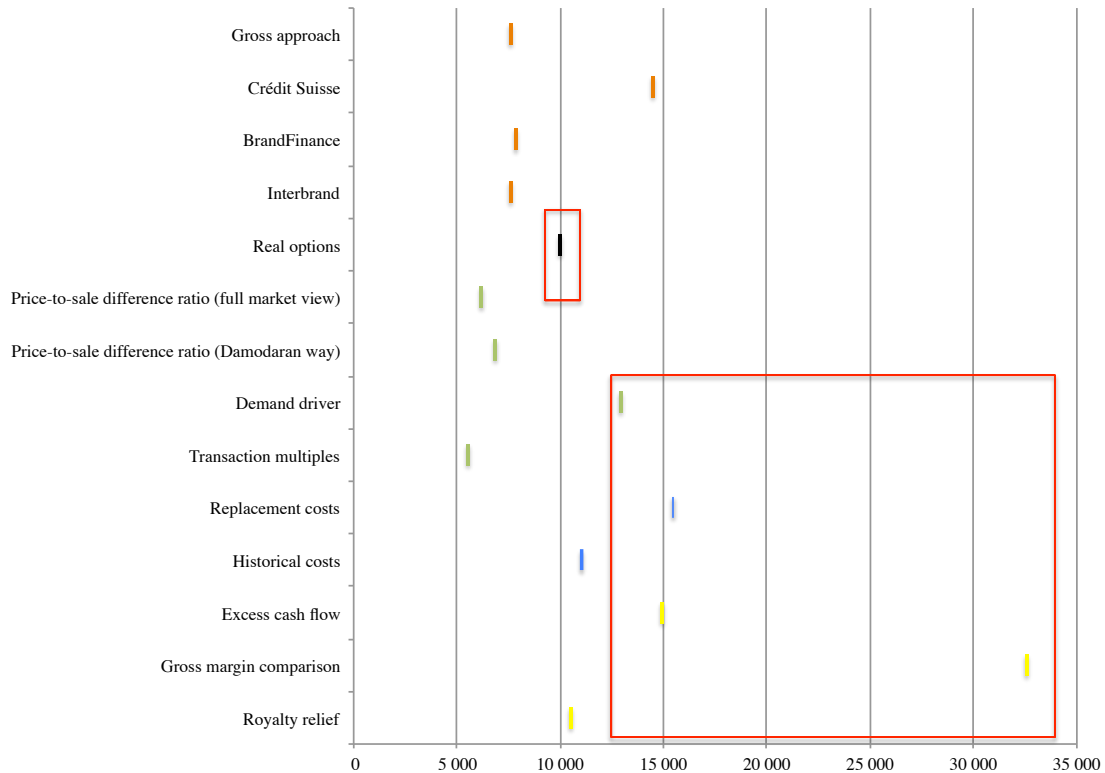


Table 64 - Adidas brand value - valuations summary - distribution according to required level of detail

Interestingly, methods pinpointed in part II.5. to be requiring a high number of assumptions and in-depth research within detailed indicators (e.g. volume sold, unit price) are also the ones leading to the highest valuations. The only exception to this rule seems to be the real option approach. Nevertheless, this method is 82% based on a royalty relief approach, which may explain its more credible output.

Thus, in the case of adidas, the more simple the approach used, the more reasonable and accurate the valuation result seems to be, when compared to a benchmark. The comparison between our gross valuation approach result (€m 7 534) and the Interbrand benchmark (€m 7 535) speaks for itself.

Attributes for a method to value brands correctly

Based on our observations above, to value the adidas brand correctly, the selected method should:

- Be a mixed approach between market-based and income-based approaches;
- Be simple, require neither many hypotheses nor a high level of detail.

Based on these criteria and on the distribution of results we got from the methods application, our study on adidas confirms the choice of practitioners and the conclusion of

Salinas and Ambler (2009): the two best methods to value brands as fairly as possible, despite their multiple disadvantages stated in part II and the approximation in their application due to the restrictions embedded in public information, would be the royalty relief and the demand driver approaches. Methods related to the above two also lead to similar results (real option approach). The only surprise here is the presence of the historical costs method in the mid-range valuations, but we think this is not a frequent result and is due to the difficulty we had to isolate properly costs. We do not retain this method as one of the bests due to the above-mentioned reasons and following its significant disadvantages (among all its backward looking approach) and lack of recognition in both the academic and practitioners' world (see II.5.).

In the end, a supposedly fair valuation range for the adidas brand, narrower than the benchmark range, could be defined as between the royalty relief approach and the demand driver one, i.e. from €m 10 438 to €m 12 843 (note that this range includes both sample median and mean).

6. Brand valuation: “An Art, not a science”?

As above stated, our conclusion is based on our study of the adidas brand value and on the distribution obtained depending on the methods. Nevertheless, as pointed by Salinas (2009), the royalty relief and demand driver methods are the most used in a commercial approach⁵⁵. Our benchmarks being all practitioners (as opposed to academics), our observations are necessarily biased in this direction. Salinas (2009) highlights that academics tend to criticize those two methods, preferring a price-to-sales difference approach or a stock price movement approach. In the end, the lack of consensus may be due to the recentness of the subject, and to the difficult balance to find between time-consumption / sophistication and relevance of the methods.

Despite the large range of output values, the use of several methods has the advantage to, at least, provide us with a range of values to attribute to the brand, after exclusion of extreme results. In our case, despite the disadvantages of each method pinpointed in part II, and the additional level of subjectivity embedded in their application in part III, due to the lack of available information, we managed to get results not so dispersed but concentrated around our benchmarks. While rational methods allow the range estimate, the choice of an exact number is still nebulous and more related to subjective ideas or negotiation features. Putting a number on a brand may thus be far from a “fair value” as accounting would require it, and the output should probably not be booked in balance sheet as currently claimed by many due to the volatility and uncertainty it would create in financial statements, that should be viewed as cautious and certain.

Nevertheless, if we return to the definition of fair value we gave at the beginning of the thesis⁵⁶, the fair value estimate necessarily bears a part of subjectivity depending on who is considering the brand and to the negotiation ability of the parties in the transaction. Such attributes are not in contradiction with the above paragraph. Brand valuation would thus be based in its first step on “science”, but on “art” for its final output, after restriction of the possible values. However, these characteristics are inherent to any asset valuation.

⁵⁵ page 342

⁵⁶ “The price that would be paid should the asset valued be transferred from an entity to another in a transaction. It is thus considered as the objective price for an asset, and may not coincide with the market price, which can sometimes include discounts or premiums.”

Conclusion

The objective of this study was to gather and classify the main existing approaches to brand valuation, and apply them to a practical case, adidas, to isolate the most accurate methods to be applied. In the second part, we pinpointed the advantages and disadvantages of each method as reported by authors and suggested a classification based on their estimated accuracy and difficulty of application. The third part objective was to validate and refine the second part's findings for the specific case of the adidas brand.

As a result, we understood why brand valuation is perceived as nebulous and subjective, based on the diversified results we got for adidas. Many of the points highlighted as important steps to look at in part II were in the end not feasible from public information (e.g. the split within royalty rates). The intuitively most accurate approaches were finally the ones leading to the most extreme results; the supposed lower-bound approaches finally resulted in mid to high range outputs. Nevertheless, we were still able to determine a reasonable valuation range for the adidas brand since many values tended still to be concentrated around our initial benchmarks. The approaches apparently leading to the best valuations were the royalty relief one (and its derivatives) and the demand driver one, which are already the two methods most praised by practitioners as stated by Salinas (2009). From our results observations, we derived that the attributes of methods leading to reasonable and consensual values in the case of adidas seem to be having a mixed approach (both market-based and income-based), taking into account both management and market views, marketing, financial and legal views, and being simple i.e. requiring neither many hypotheses nor deep delving into details.

Nevertheless, the two methods highlighted above still lead to results with 23% difference. Finding a range of values seems thus to be perfectly achievable from public information, but finding the right figure, the exact fair value of the brand that reflects it correctly in monetary terms still relies on even more subjective features like negotiation and valuator's experience of the brand. If finding the valuation range has become sufficiently rational, finding the exact value may still be considered as "art", particularly due to valuation ranges much larger than for any asset (e.g. companies).

As a conclusion, brand valuation is still an under research topic and if more advanced models will probably be designed in the following years, the main challenge is still to design models both supported by academics and applicable by practitioners to be interesting in terms accuracy versus time-consumption.

Rationalising completely a dream, an experience and thus valuing brands will probably always remain a controversial issue.

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Appendices

Appendix 1 – Adidas AG balance sheet – accounting view

Adidas AG Balance sheet - accounting view				
€m	2013	2014	2015	2016
Cash and cash equivalents	1 587	1 142	1 442	1 821
Short-term financial assets	41	41	41	41
Accounts receivable	1 809	1 865	1 965	2 072
Inventories	2 634	2 689	2 849	3 020
Income tax receivables	86	86	86	86
Other current assets	689	689	689	689
Assets classified as held for sale	11	11	11	11
Total current assets	6 857	6 523	7 083	7 740
Property, plant and equipment	1 238	1 379	1 523	1 660
Goodwill	1 204	1 204	1 204	1 204
Trademarks	1 419	1 469	1 519	1 569
Other intangible assets	164	164	164	164
Long-term financial assets	120	120	120	120
Deferred tax assets	486	486	486	486
Other non-current assets	111	161	176	191
Total non-current assets	4 742	4 983	5 192	5 394
Total assets	11 599	11 506	12 275	13 134
Short-term borrowings	681	100	100	100
Accounts payable	1 825	1 881	1 982	2 090
Income taxes	240	240	240	240
Accrued liabilities and provisions	1 597	1 597	1 597	1 597
Other current liabilities	389	389	389	389
Liabilities classified as held for sale	-	-	-	-
Total current liabilities	4 732	4 207	4 308	4 416
Long-term borrowings	653	500	400	300
Pensions and similar obligations	255	260	265	270
Deferred tax liabilities	338	338	338	338
Non-current accrued liabilities and provisions	89	89	89	89
Other non-current liabilities	51	51	51	51
Total non-current liabilities	1 386	1 238	1 143	1 048
Share capital	209	209	209	209
Reserves	321	321	321	321
Retained earnings	4 959	5 539	6 302	7 148
Shareholders' equity	5 489	6 069	6 832	7 678
Minority interests	(8)	(8)	(8)	(8)
Total equity	5 481	6 061	6 824	7 670
Total liabilities and equity	11 599	11 506	12 275	13 134

Source: Deutsche bank Equity Research Adidas Report (March 5th 2014)

Table 65 - Adidas AG Balance sheet forecast - Accounting view

Appendix 2 – Adidas AG 2013 Annual report – impairment on intangible assets

Intangible assets (except goodwill)

Intangible assets are valued at amortised cost less accumulated amortisation (except for assets with indefinite useful lives) and impairment losses. Amortisation is calculated on a straight-line basis taking into account any potential residual value.

Expenditures during the development phase of internally generated intangible assets are capitalised as incurred if they qualify for recognition under IAS 38 "Intangible Assets".

Estimated useful lives are as follows:

Estimated useful lives of intangible assets

	Years
Trademarks	indefinite
Software	5 – 7
Patents, trademarks and concessions	5 – 15

The adidas Group determined that there was no impairment necessary for any of its trademarks with indefinite useful lives in the years ending December 31, 2013 and 2012. In addition, an increase in the discount rate of up to approximately 1.5% or a reduction of cash inflows of up to approximately 20% would not result in any impairment requirement.

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The recoverable amount is determined on the basis of fair value less costs to sell (costs to sell are calculated with 1% of the fair value). The fair value is determined in discounting notional royalty savings after tax and adding a tax amortisation benefit, resulting from the amortisation of the acquired asset ("relief-from-royalty method"). These calculations use projections of net sales related royalty savings, based on financial planning which covers a period of four years in total. The level of the applied royalty rate for the determination of the royalty savings is based on contractual agreements between the adidas Group and external licensees as well as publicly available royalty rate agreements for similar assets. Notional royalty savings beyond this period are extrapolated using steady growth rates of 1.7% (2012: 1.7%). The growth rates do not exceed the long-term average growth rate of the business to which the trademarks are allocated.

The discount rate is based on a weighted average cost of capital calculation derived using a five-year average market-weighted debt/equity structure and financing costs referencing the Group's major competitors. The discount rate used is an after-tax rate and reflects the specific equity and country risk. The applied discount rate depends on the respective intangible asset being valued and ranges between 6.8% and 8.8% (2012: between 6.5% and 8.4%).

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Appendix 3 – Market shares by geography

World sportswear market - Company Shares (by Global Brand Owner)						
<i>In %</i>	2008	2009	2010	2011	2012	2013
Nike Inc	13,4	14,0	13,4	13,7	14,5	15,0
adidas Group	10,4	9,9	10,1	10,5	10,7	10,8
VF Corp	1,6	1,7	1,8	2,9	3,0	3,1
Kering SA	-	-	-	-	-	2,1
Asics Corp	1,1	1,3	1,4	1,6	1,6	1,5
Columbia Sportswear Co	1,0	1,0	1,1	1,2	1,3	1,2
Under Armour Inc	0,4	0,5	0,6	0,7	0,9	1,1
Mizuno Corp	0,8	0,8	1,0	1,0	1,0	1,0
Skechers USA Inc	0,9	0,9	1,2	0,8	0,8	0,9
Hanesbrands Inc	0,7	0,7	0,7	0,7	0,7	0,7
New Balance Athletic Shoe Inc	0,7	0,7	0,6	0,6	0,6	0,6
Fila Holding SpA	0,4	0,5	0,6	0,6	0,6	0,5
Lululemon Athletica Inc	0,1	0,1	0,2	0,3	0,5	0,5
Anta (China) Co Ltd	0,4	0,5	0,6	0,7	0,6	0,5
Wolverine World Wide Inc	0,5	0,4	0,5	0,5	0,5	0,5
Oxylane Group	0,3	0,3	0,3	0,3	0,3	0,4
Li Ning Co Ltd	0,5	0,7	0,7	0,6	0,5	0,4
Xtep International Holdings Ltd	0,2	0,3	0,3	0,4	0,4	0,3
Descente Ltd	0,4	0,4	0,4	0,4	0,4	0,3
361 Degrees International Ltd	0,2	0,3	0,4	0,5	0,4	0,3
Geox SpA	0,4	0,4	0,3	0,3	0,3	0,3
Peak Sport Products Co Ltd	0,2	0,3	0,3	0,4	0,2	0,2
Pentland Group Plc	0,1	0,2	0,2	0,2	0,2	0,2
Beijing Tread Outdoor Products Co Ltd	0,0	0,0	0,0	0,1	0,1	0,2
Vulcabrás azaléia SA	-	-	-	0,3	0,3	0,2
Kolon Group	0,1	0,1	0,1	0,1	0,2	0,2
Russell Corp	0,2	0,2	0,2	0,2	0,2	0,2
Mr Price Group Ltd	0,1	0,1	0,2	0,2	0,2	0,2
Quiksilver Inc	0,2	0,2	0,2	0,2	0,2	0,2
Exceed Co Ltd	0,2	0,2	0,3	0,3	0,2	0,2
Sportmaster Group	0,0	0,1	0,1	0,1	0,1	0,1
Arena Holding SpA	0,1	0,1	0,1	0,1	0,1	0,1
Jack Wolfskin Ausrüstung für Draußen GmbH & Co KGaA	0,1	0,1	0,1	0,1	0,1	0,1
Iconix Brand Group Inc	-	-	-	-	0,1	0,1
Hongxing Erke Group	0,2	0,2	0,2	0,2	0,1	0,1
PVH Corp	-	-	0,0	0,0	0,1	0,1
Deckers Outdoor Corp	0,1	0,1	0,1	0,1	0,1	0,1
H&M Hennes & Mauritz AB	0,1	0,1	0,1	0,1	0,1	0,1
LS Group	0,1	0,1	0,1	0,1	0,1	0,1
Aigle Sarl	0,1	0,1	0,1	0,1	0,1	0,1
BasicNet SpA	0,2	0,3	0,3	0,2	0,1	0,1
Achilles Corp	0,1	0,1	0,1	0,1	0,1	0,1
China Sports International Ltd	0,2	0,2	0,1	0,1	0,1	0,1
K Swiss Inc	0,1	0,1	0,1	0,1	0,0	0,0
PPR SA	1,8	2,3	2,3	2,3	2,2	-
Warnaco Group Inc	0,1	0,1	0,1	0,1	-	-
Timberland Co, The	0,9	0,9	1,0	-	-	-
Vulcabrás SA	0,4	0,4	0,5	-	-	-
Decathlon SA	-	-	-	-	-	-
Others	60,0	58,1	56,9	55,9	55,1	55,0
Total	100,0	100,0	100,0	100,0	100,0	100,0

Source: © Euromonitor International (Apparel and Footwear: Euromonitor from trade sources/national statistics)

Table 66 - Sportswear World market share split

Chinese sportswear market - Company Shares (by Global Brand Owner)						
<i>In %</i>	2008	2009	2010	2011	2012	2013
Nike Inc	13,0	11,7	11,2	12,4	13,9	13,6
adidas Group	11,6	8,7	8,5	9,6	11,9	13,1
Anta (China) Co Ltd	5,3	6,1	6,8	7,4	6,5	5,7
Li Ning Co Ltd	7,2	8,0	8,0	6,9	5,2	4,1
Xtep International Holdings Ltd	2,9	3,4	3,8	4,6	4,4	3,8
361 Degrees International Ltd	2,7	3,6	4,4	5,1	4,6	3,6
Peak Sport Products Co Ltd	2,2	3,1	3,8	4,0	2,5	2,4
Asics Corp	-	-	-	2,0	2,1	2,2
VF Corp	0,4	0,5	0,7	1,2	1,7	2,1
Beijing Tread Outdoor Products Co Ltd	0,3	0,3	0,5	0,9	1,3	2,1
Exceed Co Ltd	2,8	2,8	3,2	3,6	2,7	1,7
Columbia Sportswear Co	0,3	0,4	0,5	0,9	1,2	1,4
Hongxing Erke Group	2,5	2,5	2,2	1,8	1,4	1,1
BasicNet SpA	3,3	3,5	3,3	2,0	1,2	0,8
Jack Wolfskin Ausrüstung für Draußen GmbH & Co KGaA	0,1	0,1	0,2	0,3	0,6	0,8
Hosa International Ltd	0,3	0,3	0,3	0,6	0,7	0,8
Kering SA	-	-	-	-	-	0,7
China Sports International Ltd	2,2	2,4	1,3	0,9	0,8	0,6
Under Armour Inc	-	-	0,2	0,2	0,3	0,3
PPR SA	0,6	0,6	0,7	0,7	0,7	-
Timberland Co, The	0,1	0,1	0,2	-	-	-
Others	42,3	42,1	40,4	34,8	36,4	39,1
Total	100,0	100,0	100,0	100,0	100,0	100,0

Source: © Euromonitor International (Apparel and Footwear: Euromonitor from trade sources/national statistics)

Table 67 - Chinese Sportswear market share split

US sportswear market - Company Shares (by Global Brand Owner)						
<i>In %</i>	2008	2009	2010	2011	2012	2013
Nike Inc	16,2	17,7	17,0	17,4	18,8	20,2
VF Corp	3,1	3,0	3,4	5,9	5,9	5,9
adidas Group	6,0	5,4	6,0	6,3	5,6	5,4
Under Armour Inc	1,2	1,5	1,7	2,1	2,5	2,9
Skechers USA Inc	2,3	2,4	3,3	2,0	1,9	2,3
Hanesbrands Inc	2,1	2,2	2,2	2,1	2,2	2,1
Columbia Sportswear Co	1,5	1,5	1,8	1,8	1,7	1,6
Wolverine World Wide Inc	1,4	1,3	1,5	1,5	1,5	1,4
New Balance Athletic Shoe Inc	1,4	1,5	1,4	1,4	1,4	1,4
Kering SA	-	-	-	-	-	1,2
Lululemon Athletica Inc	0,1	0,2	0,4	0,7	1,0	1,1
Asics Corp	0,7	0,8	0,9	0,9	0,9	0,9
Russell Corp	0,6	0,6	0,6	0,5	0,5	0,5
Deckers Outdoor Corp	0,2	0,2	0,2	0,2	0,3	0,3
PVH Corp	-	-	-	-	0,3	0,3
Fila Holding SpA	0,1	0,2	0,2	0,3	0,2	0,3
Iconix Brand Group Inc	-	-	-	-	0,2	0,2
Gap Inc, The	-	-	0,0	0,1	0,1	0,1
Brooks Sports Inc	0,1	0,1	0,1	0,1	0,1	0,1
K Swiss Inc	0,3	0,3	0,2	0,3	0,1	0,1
PPR SA	1,3	1,3	1,4	1,5	1,4	-
Warnaco Group Inc	0,3	0,3	0,3	0,3	-	-
Timberland Co, The	2,2	2,1	2,3	-	-	-
Others	58,6	57,4	55,0	54,6	53,4	51,5
Total	100,0	100,0	100,0	100,0	100,0	100,0

Source: © Euromonitor International (Apparel and Footwear: Euromonitor from trade sources/national statistics)

Table 68 - US Sportswear market share split

Russian sportswear market - Company Shares (by Global Brand Owner)						
<i>In %</i>	2008	2009	2010	2011	2012	2013
adidas Group	14,4	19,5	20,2	21,1	22,2	22,4
Nike Inc	5,7	6,7	6,4	6,3	6,0	5,9
Sportmaster Group	1,4	2,7	3,4	4,0	4,2	4,5
Columbia Sportswear Co	3,1	3,9	3,7	3,8	3,8	3,3
Oxylane Group	0,7	1,4	2,1	2,3	2,7	3,0
Kering SA	-	-	-	-	-	1,5
Bosco Di Ciliegi Group	0,3	0,6	0,6	0,7	0,6	0,7
Asics Corp	0,1	0,2	0,4	0,4	0,4	0,4
Iconix Brand Group Inc	-	-	-	-	0,4	0,4
Intersport International Corp (IIC)	0,3	0,3	0,4	0,3	0,3	0,3
VF Corp	-	-	-	0,2	0,2	0,2
PPR SA	1,4	1,6	1,7	1,6	1,5	-
Others	72,5	63,1	61,2	59,3	57,7	57,4
Total	100,0	100,0	100,0	100,0	100,0	100,0

Source: © Euromonitor International (Apparel and Footwear: Euromonitor from trade sources/national statistics)

Table 69 - Russian Sportswear market share split

Appendix 4 – Adidas AG Free cash flow forecast

Hypotheses				
Effective tax rate	31,2%	<i>Adidas AG 2013 Annual Report p.247 / Last 10Y effective rate average</i>		
Computations				
	2013	2014	2015	2016
EBIT	1 202	1 283	1 571	1 795
Taxes on EBIT	(375)	(400)	(490)	(560)
Change in WCR	446	55	159	170
D&A	346	308	315	332
Net Capex	(474)	(505)	(515)	(525)
Free cash-flow	1 145	741	1 040	1 212

Source: Data from Deutsche bank Equity Research Adidas Report (March 5th 2014), own computation

Table 70 - Adidas AG Free cash-flow forecast