

BEIERSDORF AG

PERSONAL CARE AND SELF-ADHESIVE/ SEALANT

STUDENT: CONSTANTIN FELIX WAGNER

COMPANY REPORT

3 JANUARY 2018

27217@novasbe.pt

Stable and solid growth

Achieving growth through two distinct businesses

- We recommend holding Beiersdorf AG given our FY price target of EUR 91.35 per share that corresponds to an overall downside potential of -6.69% against the current price level of EUR 97.90 as of 2nd January 2017.
- Dividends attributable to shareholders resulted to EUR 1.49, what is derived by a payout ratio of 39.4% in FY 2018. This in return led to a net shareholder return of EUR 92.84, what represents a downside potential of -5.17%.
- Beiersdorf relevant operating markets will experience modest growth, although the European market showed low growth rates of 2.1% and 3.5% for the personal care and self-adhesive and sealant market respectively. China is expected to continue to be the most growing market for the adhesive and sealants industry.
- The worldwide personal e-commerce segment revenue is expected to increase by a CAGR of 19.5% from FY 2017 until FY 2022. Especially China is anticipated to be the largest e-commerce market by FY 2022.
- Leverage of Beiersdorf is expected to be low (0.48% D/E in market values) and will stay at this level. Although Capex is expected to increase, no significant higher debt will be added and EPS are projected to increase by a CAGR of 10%.

Company description

Beiersdorf AG is a German DAX listed company that operates in the personal skin care and self-adhesive market worldwide. It manufactures and distributes a range of several products both for the B2C and the B2B market. It is operating worldwide with a focus on the European market

Recommendation: HOLD

Vs Previous Recommendation HOLD

Price Target FY18: 91.35 €

Vs Previous Price Target NAE

Price (as of 3-Jan-18) 97.90 €

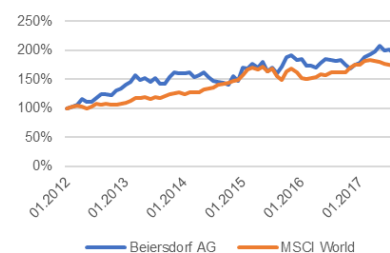
Reuters: Bloomberg:

52-week range (€) 83.95-91.03

Market Cap (€m) 24,671

Outstanding Shares (m) 252

Source: Bloomberg



Source: Bloomberg

(Values in € millions)	2017	2018E	2019F
Revenues	7,056	7,347	7,649
EBITDA	1,279	1,394	1,516
Net Profit	796	882	974
EPS	3.42	3.79	4.19
P/E	26.6	24.0	21.8
EV/Sales	3.31	3.18	3.06
EV/EBITDA	18.2	16.7	15.4
EV/EBIT	21.3	19.6	18.1
ROIC	35.1%	36.1%	38.0%

Source: Bloomberg, Company Reports

THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY CONSTANTIN FELIX WAGNER, A MASTERS IN FINANCE STUDENT OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS. THE REPORT WAS SUPERVISED BY A NOVA SBE FACULTY MEMBER, ACTING IN A MERE ACADEMIC CAPACITY, WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

Table of Contents

EXECUTIVE SUMMARY	3
VALUATION	4
COMPANY OVERVIEW	4
COMPANY DESCRIPTION	4
SHAREHOLDER STRUCTURE	6
THE SECTOR.....	7
GLOBAL SKINCARE MARKET – THE MAIN BUSINESS	7
▪ <i>Rising e-commerce trend</i>	10
▪ <i>European skincare market</i>	11
▪ <i>Asian skincare market</i>	11
GLOBAL SELF-ADHESIVE MARKET.....	12
▪ <i>European adhesives market</i>	14
▪ <i>Asian adhesives market</i>	14
MARKET POSITIONING OF BEIERSDORF	15
FINANCIALS PROJECTION	17
KEY FINANCIAL FIGURES.....	17
VALUATION AND CAPITAL STRUCTURE.....	20
▪ <i>Discounted Cash-Flow</i>	20
▪ <i>Cost of Capital</i>	20
▪ <i>Trading Multiples - Sum of the Parts valuation</i>	22
▪ <i>Capital Structure – a very atypical debt to equity ratio</i>	22
SCENARIO ANALYSIS	23
▪ <i>Collapse of consumer growth</i>	23
▪ <i>Collapse of tesa growth</i>	24
▪ <i>Final Valuation Considerations</i>	25
APPENDIX	26
INCOME STATEMENT	26
BALANCE SHEET	27
CHANGES OF EQUITY STATEMENT	28
SOTP SUMMARY	28
REPORT RECOMMENDATIONS	29

Executive summary

Purpose of the report

This report shows a current valuation and recommendation of the personal skin care and self-adhesive company Beiersdorf. For this matter, the author developed a model that projects the revenues of the skincare (consumer) business and the self-adhesives (tesa) business, splitted up in geographical and segmental contribution. Further on, two approaches were conducted, namely to forecast revenues through market share, penetration rates and growth rates of the respective markets.

Forecast valuation

These forecast outputs were then used to perform a DCF valuation that resulted to a share price of EUR 91.35 that represents a downside of -6.69% against the current share price of EUR 97.90 as of 2nd January 2018. We further on implemented a scenario analysis that comprises the effect of a collapse of the Asian market for the consumer and the tesa business.

Relevant markets

As Beiersdorf is operating in two separated markets, we show trends that represent value driver for the company. Increasing aging, demand for beauty and ecommerce growth is the main driver for the skincare market. The tesa business derives its main value growth from the demand in the construction, building and packaging industry. We assume that the company is able to decrease its total expenses margin from 44% in FY 2016 to 40.9% in FY 2022. To stay competitive, the company invests more than 80% of its total expenses in R&D and marketing activities for the forecast period.

Benchmarking

To assess Beiersdorf markets position in the market, we performed a peer analysis and reflected critical financial key ratios such as ROIC, COGS, EBIT margin, capital expenditure and net working capital. In comparison to Beiersdorf closest peers such as L'Oreal, P&G, Unilever and Reckitt Benckiser, the company lacks scale in sales (P&G sales in FY 2016 were EUR 65bn against Beiersdorf FY 2016 sales figures of EUR 6.7bn). Beiersdorf's return on invested capital (ROIC) is above the average of the industry that we calculated to be roughly 25% (Beiersdorf ROIC ranges above 30% in the historical and projected period).

Valuation

The share price valuation of EUR 91.35 in this report represents a downside potential of -6.69% against the share price of EUR 97.90 of 2nd January 2018. We projected that the free cash flow will decrease to 559m in FY 2017 from 652m in FY 2016 but is then projected to increase for the forecast period to EUR 861m in FY 2022. Through a top-down approach we calculated a weighted average cost of capital of 4.9% for Beiersdorf that comprises a beta of 0.78. In order to show a sensitivity of the share price, we conducted two scenarios that show the impact of a decrease in growth in the emerging markets, what led to a weighted share price of EUR 90.89. We calculated a final implied exit EBITDA multiple of 12.1x for FY 2022 against the FY 2018 EBITDA multiple of 16.7x.

Additionally, a multiple sum of the parts valuation was performed that resulted to a share price of EUR 79.22 for Beiersdorf that sets the recommendation to SELL.

Company overview

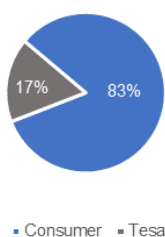


Figure 1 revenue split in FY 2016

Source: Annual report 2016

Beiersdorf AG is a German DAX-listed personal care company, manufacturing personal skin-care products and pressure-sensitive-adhesive products. The consumer business segment manufactures and distributes personal skin care products in Europe, the Americas, Africa, Asia and Australia and contributes to about 83% of total revenues. The self-adhesive and sealants (tesa) business segment contributes to about 17% of total revenues, manufacturing more than 7,000 products for several industries, craftsmanship and the consumer business worldwide. Beiersdorf strongest brand is Nivea, that was first launched in 1911 and belongs to the leading brands in this market. The company is based in Hamburg/ Germany with currently 18,000 employees operating worldwide.

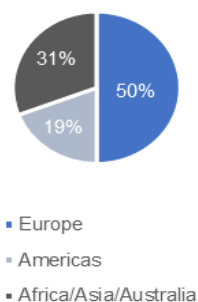


Figure 2 consumer geographical revenue split in FY 2016

Source: Annual report 2016

Company description

Beiersdorf consumer brand portfolio consists of Nivea, La Prairie, Eucerin, Hansaplast, Labello, Hidrofugal, Florena, 8x4, arix and Slek (China). Nivea, La Prairie and Eucerin are Beiersdorf leading brands in the personal skin care market segment, which products are being distributed worldwide. In FY 2016, the consumer business contributed to about 83% to overall revenues, whereas the tesa business revenue contribution was 17%, resulting in EUR 6,75bn in total sales. In terms of geographical revenue contribution, Europe is Beiersdorf main target market for the consumer business (50%) and the tesa business (58%).

Graph 1 shows the historical and our projected revenue figures for the tesa and the consumer business from FY 2012 until FY 2022.

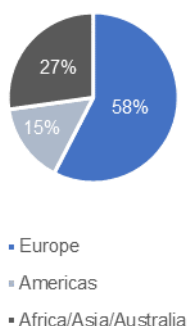
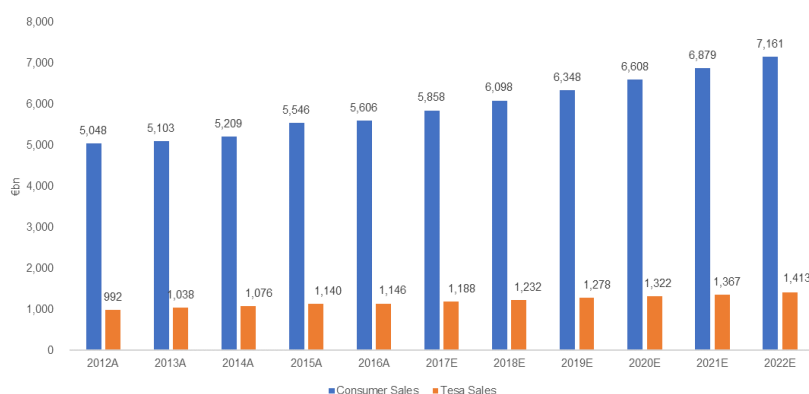


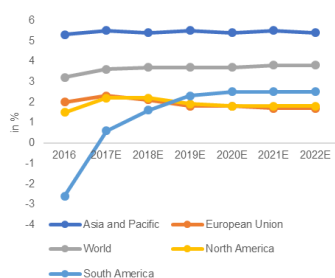
Figure 3 tesa geographical revenue split in FY 2016

Source: Annual report



Graph 1 historical and projected sales figures

Source: Annual reports and Analyst estimates



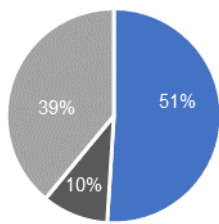
Graph 2 real GDP growth rate

Source: OECD data

During the first nine months of FY 2017, the consumer business segment recorded organic sales growth of 3.9%. Strong growth rates were recorded in Europe (2.3%), the Americas (4.8%) and particularly in the Africa/ Asia/ Australia region with 5.6% in nominal sales growth. The first nine months total sales in FY 2017 amounted to EUR 4.34bn versus EUR 4.18bn in FY 2016. All core brands contributed to this total sales growth of 3.9%. Nivea sales rose by 3.7%, Eucerin sales climbed by 2.4%, Hansaplast increased by 2.7% and La Prairie had the strongest sales performance of 13.5% in its sales growth. This sales growth development is also projected to stay constant over the next years until FY 2022. The growth rate for Beiersdorf sales forecast is orientated on the real GDP growth rate from the core operating regions, where Beiersdorf is operating in. As clearly seen in graph 2, the Asian region expects to generate the highest growth rates in the forecast period.

The tesa business recorded double-digit growth rates in nominal sales of 10.6% for the first nine months sales, resulting to EUR 945m in FY 2017 versus EUR 855m in FY 2016. The direct industries segment and the trade market segment, that includes tesa's consumer business and sales to specialist dealers, both contributed to the upward sales trend. Sales in the Americas and Asia region were considerably higher than in the prior-year period. Especially in the Africa/ Asia/ Australia region, tesa sales grew by 20% in the first nine months of FY 2017, resulting to EUR 274m.

Shareholder structure



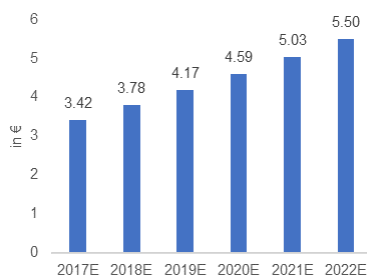
■ maxingvest AG
■ Treasury
■ Free float

Figure 4 shareholder structure

Source: MarketLine

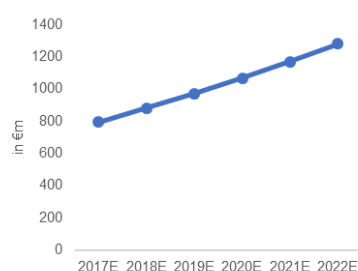
Beiersdorf AG shareholder structure is basically threefold segmented. Majority shareholder of Beiersdorf is the Mxingvest group that holds 51% of all outstanding shares, followed by 39% free float and 10% of treasury stock.

Mxingvest AG, formerly known as Tchibo Holding AG, is a holding company that manufactures and markets roasted coffee and produces skin care products respectively. Since Mxingvest AG holds more than 50% share capital, Beiersdorf is a dependent company within the meaning of §312 (1) sentence 1 in conjunction with §17 (2) AktG. Beiersdorf free float is subdivided by international shareholders (82%) and German shareholders (18%). The biggest stakes are being held by Artisan Partners LP (1.10%), MFS International Singapore Pte. Ltd. (0.97%) and the Vanguard Group (0.97%). Overall, Beiersdorf has a total of 252m shares outstanding. EPS for FY 2016 amounted to EUR 3.13 and is projected to result to EUR 3.42 for the FY 2017. Until FY 2022, EPS are projected to increase to EUR 5.50 that represent on average an annual EPS of EUR 4.24. The basis for this calculation is the profit after tax, excluding profit attributable to non-controlling interests divided by the total shares attributable to equity holders. As Beiersdorf AG holds 25,181,016 treasury shares, these were deducted from the total amount of shares, resulting to 226,818,984 shares attributable to equity holders.



Graph 3 EPS forecast

Source: Analyst estimates



Graph 4 net income forecast

Source: Analyst estimates

Since Beiersdorf is operating worldwide, we showed Beiersdorf share price development in comparison with the MSCI World Index, where Beiersdorf shares considerably outperformed the MSCI World Index during the first nine months in FY 2017 and approached the EUR 100-per-share mark with an intraday high of EUR 98.49. The implementation of the Blue Agenda strategy was viewed very positively by investors and analysts and especially the growth focus on Eucerin, La Prairie and plaster brands attracted great attention. The Blue Agenda strategy sets long term targets for the company of becoming the leading skin care company in Beiersdorf's relevant markets and categories in terms of innovation and satisfying customer's needs. Additionally, the Agenda sets the goal to reduce CO2 emissions per product manufactured by 70% until FY 2025 and to switch to renewable electricity for all Beiersdorf production plants worldwide by FY 2020.

The Sector

The global skincare and self-adhesive market sector are projected to increase by a CAGR of 6.2% for the skincare market and 3.8% for the self-adhesive market sector from FY 2016 until FY 2022. What is necessary to mention is that consumer price indices were quite stable over the period from FY 2010 until FY 2017 for the European market with growth rates not higher than 1.4% year-over-year (Eastern Europe faced a CAGR of 1.41%). Emerging markets overall also did not experience high growth rates in its consumer price indices resulting in a CAGR not higher than 1.3% for the period between FY 2010 until FY 2016. Price changes did not affect the sector significantly and were not the main reason for growth in this sector. L`Oreal is the leading player in the global skincare market, capturing 13% market share. Beiersdorf AG accounts for approximately 6% of the global market in FY 2016. Beiersdorf was able to increase its EBIT and EBITDA margin during the historical period from 12% to 15% and from 14% to 17% respectively. Consumer EBIT and EBITDA grew with a CAGR of 9.9% and 8.2% respectively in the historical analysis and it is anticipated to keep those figures constant for the forecast period with a CAGR of 8.5% for consumer EBIT and 8.3% for the consumer EBITDA. The same forecast CAGR apply for the tesa business.

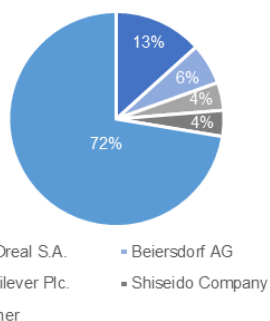
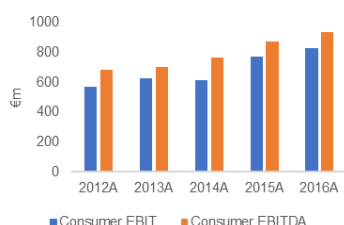


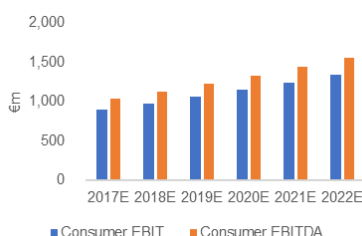
Figure 5 market share of selected peers in FY 2015

Source: MarketLine



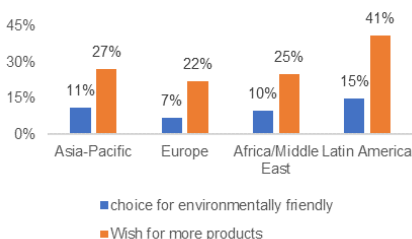
Graph 5 EBIT/ EBITDA figures

Source: Annual report



Graph 6 EBIT/ EBITDA figures

Source: Analyst estimates

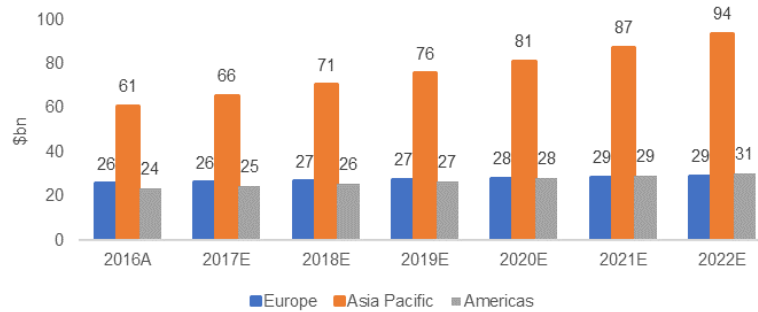


Graph 7 environmentally conscious consumer demand in FY 2016

Source: Statista

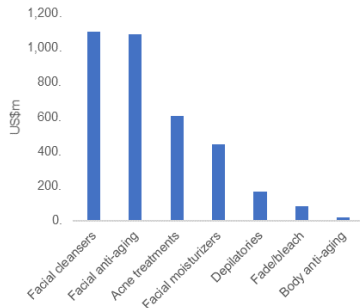
Global Skincare market – the main business

The skincare market growth has been historically stable and was not much affected by any overall economic conditions. This statement can be proven by the beta of selected peers in this industry what results to an average beta of 0.83 that shows a low correlation with the market. Further comments on beta calculations will be shown in the later section of this report. The skincare market consists of the retail sale of facial care, body care, depilatories and make-up remover products. For Beiersdorf, we clustered its product range in sun care, skin care, grooming, deodorants and hair care products. The global skincare market is projected to reach a market value of US\$ 153,250m in FY 2022 representing a compound annual growth rate of 6.2% in the period between FY 2016 and FY 2022. The market is mainly driven by the rising demand for natural active ingredients based cosmetics that are finding favour among health and environment conscious consumers. In the upcoming future, the skin care market will be fuelled by continuous innovation and development of more effective



Graph 8 global skin care market value

Source: Statista and BusinessWire

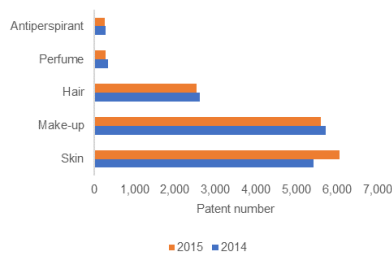


Graph 9 US skin care sales by segment in FY 2016

Source: Statista

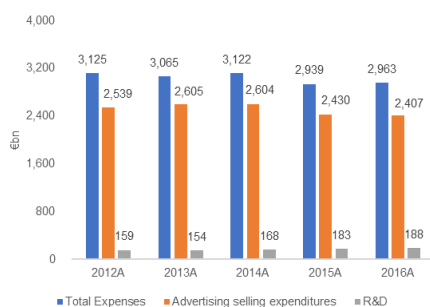
beauty products that are environmentally friendly. Graph 7 explains this statement by showing that consumers wish to buy more products that are environmentally friendly and by what percentage consumers selected environmentally friendly produced products among normal produced products in FY 2016 worldwide. In FY 2016, the company managed to reduce CO2 emissions by 41% per product sold compared to FY 2005. By using new and lighter tube caps for Nivea, Atrix and Florena products, Beiersdorf wants to satisfy the consumer demand for more sustainable products.

The increasing aging and therefore anti-aging desire of the population is rising the current demand for cosmetic skin care products and for the future. Growth is driven by the young and aspirational population who wants to invest in grooming and maintaining their beauty. Facial cleansers and facial anti-aging products are the most sold products in the US as graph 9 shows. We assume that these products are also the main growth driver in other developed countries. As seen on graph 11, the overall aesthetic medical and surgery market was increasing in most developing and emerging markets. We assume that this trend in the aesthetic medical and surgery market is also reflected in the personal skin care market that provides consumers with products to maintain their beauty.



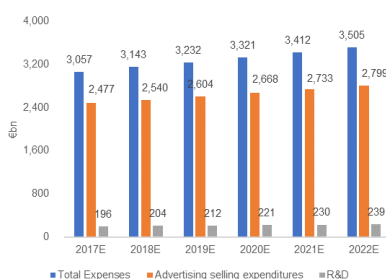
Graph 10 global number of innovative patents in the cosmetics industry

Source: Statista



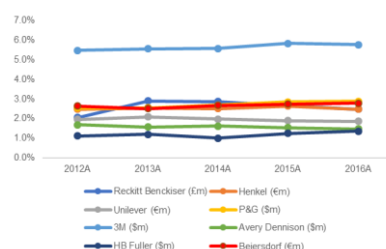
Graph 12 historical R&D and advertising expenses of totales expenses

Source: Annual report



Graph 13 projected R&D and advertising expenses of total expenses

Source: Annual report



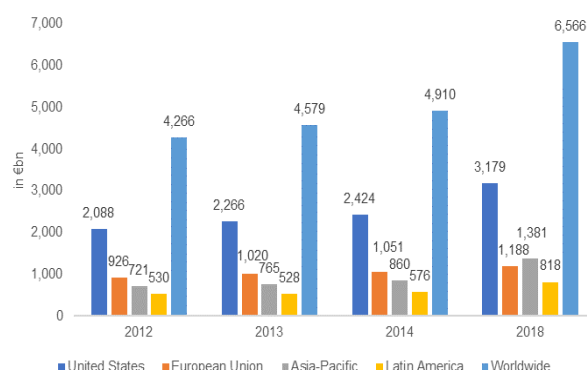
Graph 14 R&D in % of sales

Source: Annual reports



Figure 6 drivers of degree of rivalry in the global skin care market in FY 2015

Source: MarketLine



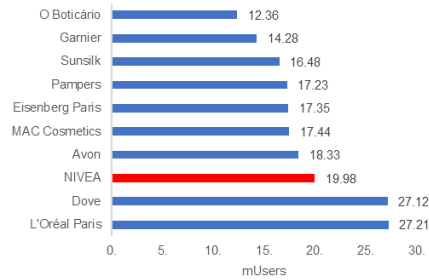
Graph 11 global aesthetic medical and surgery market by region

Source: Statista

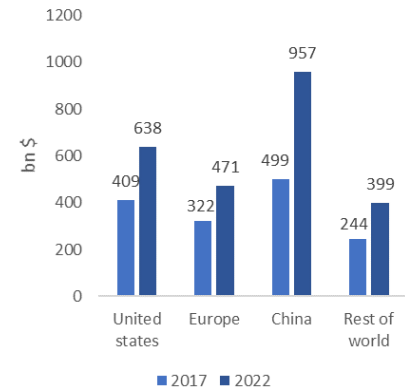
We carefully assume that this trend behaviour is expected to be seen in other developing markets and emerging markets that do orientate themselves by developing market trends. Skin and make-up products do represent the most registered patents in the cosmetics market showing that these products are well protected by their manufacturers and more development costs are spent for these product category (graph 10). We assume that these expenditures for R&D are also reflected in Beiersdorf R&D expenses (graph 12 and 13). Beiersdorf filed 47 new innovations in FY 2016 (previous year 61).

There are many competitors in the anti-aging industry, but the majority of the market is dominated by key players such as L'Oreal, P&G, Beiersdorf, Unilever and Henkel. To hold the position of being one of the market players, Beiersdorf spent on average 80% of its total expenses in advertising, selling and R&D activities. R&D expenditures are comparatively low in contrast to advertising and selling expenditures. Beiersdorf products are continuously being improved through development and innovation serving clients with leading products (Nivea and Eucerin). Graph 14 shows that Beiersdorf R&D expenditure in percentage of revenues ranges in the middle of the company's peers and is in line with the average of this sector.

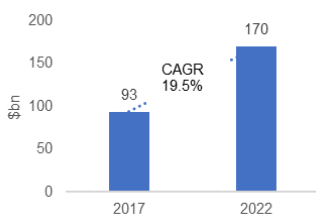
The threat of new competitors in this market is not seen very high, since established market players are determining the market share in this sector. Figure 6 shows the different drivers of rivalry in this market that are then weighted by the degree of competition, whereas 4 represents a very strong driver and 0 a weak driver. Market players tend to be large and proportionate diversified and in recent years market growth has alleviated pressure. Many market players offer a broad product portfolio ranging beyond the skincare market what further alleviates rivalry by reducing the company's dependence on success in this



Graph 15 facebook follower number of leading beauty brands in May FY 2017
 Source: Statista

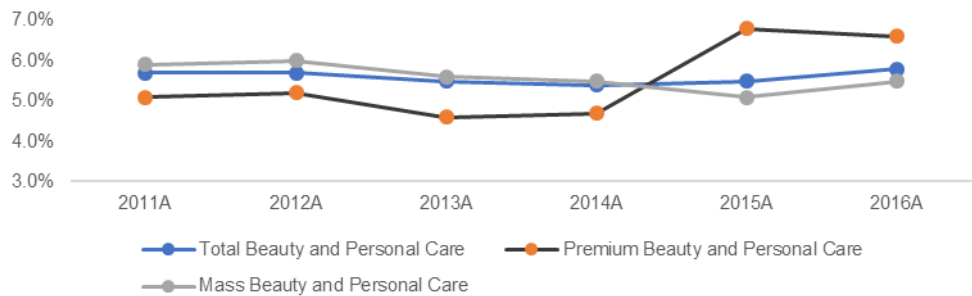


Graph 17 total e-commerce revenue
 Source: Statista



Graph 18 personal care e-commerce segment size forecast
 Source: Euromonitor

sector. As market players need to operate large product scales, high operating and exit costs are dominating this market. As seen in graph 12 and 13, selling and marketing expenses have the highest proportion on total expenses. Beiersdorf has a marketing and selling expenses to revenues ratio of 40% on average in the historical analysis and 34% for the projected period until FY 2022. R&D expenditures to sales margin are in the range of Beiersdorf peers (c.3%) as seen on graph 14.



Graph 16 personal beauty care and retail growth value
 Source: Euromonitor

According to graph 16, the premium beauty and personal care market experienced a higher retail value growth (c.6.5%) than the mass beauty and personal care market (c.4.8%). This can also be seen by Beiersdorf brand La Prairie, what is allocated to its premium brand portfolio, reaching a 13.5% rise in sales during the first nine months in FY 2017. We consider that premium brand products in this sector will increase further on in the forecast period until FY 2022. Demand for luxury products and evolving consumer lifestyles are the key drivers behind the premium beauty market. Consumers are increasingly motivated by “green consumption” and seek to purchase products that are sustainable and environmentally friendly. According to one Euromonitor international study about the beauty and personal care market, the premium beauty segment will generate US\$ 20bn extra value until FY 2021 and 54% of total premium beauty revenues in FY 2021 will be generated by the US and China.

▪ Rising e-commerce trend

Another trend that affects the personal care market and that was mentioned before is that the e-commerce grocery market for fast moving consumer goods (FMCG) was increasing in the past and is projected to increase for the upcoming future. Nivea for example has about 19.88m followers on Facebook, ranking it

behind L’Oreal and Dove in terms of brand awareness among its consumers according to graph 15. In FY 2022, China is expected to be the biggest ecommerce market with revenues of c. US\$ 957bn. Beiersdorf promoted digitalization across the company and offered customers the possibility to purchase Nivea products through its own homepage in more than 20 countries by the end of FY 2016. For Beiersdorf, online retail channels are getting more important since digitalization could cut retail selling expenses. As mentioned earlier, we believe that Beiersdorf expenditures of marketing and selling activities will decrease over the projected period since cost-effective online retail channels are being more used for purchases. Due to this trend we believe that Beiersdorf is able to decrease its advertising and selling cost margin from 35.1% in FY 2017 to 32.6% in FY 2022 what is illustrated later in this report. As mentioned earlier, consumer prices rose moderate and were stable in the historical period, so it is assumed that Beiersdorf might realize its cost cutting potential regarding marketing and selling activities.

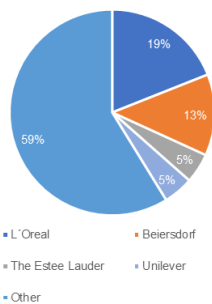
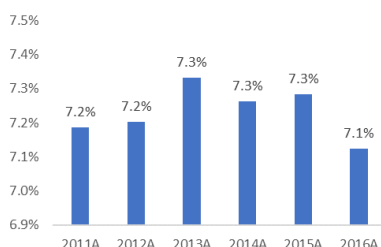


Figure 7 european skin care market share in FY 2015

Source: MarketLine



Graph 19 Asian Pacific market share of Beiersdorf

Source: Bloomberg

▪ European skincare market

The European skincare market saw only modest growth between the historical period of FY 2012 until FY 2016 of 2.2%. The market is expected to increase to a market value of US\$ 29.3bn in FY 2020 with an anticipated CAGR of 2.2%. The growth development of the European market can be seen in the previous section on Graph 8. L’Oreal has in this market the highest market share of about 19%, followed by Beiersdorf with 12.8% in FY 2015. Though Europe is not the biggest market in market value, Beiersdorf will continue to generate most of its consumer income from this market, although it is projected that the Asian market will increase its contribution to overall revenues in FY 2022 of about 37%. This in return will decrease the European revenue contribution to 44% stake of consumer sales in FY 2022. This trend is mostly due to market saturation and the increasing demand of personal care products in Asia.

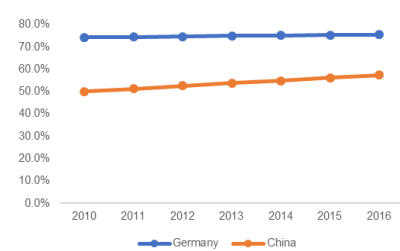
▪ Asian skincare market

Beiersdorf has a market share in the developing countries of about 7.12% of the total market in FY 2016 according to Bloomberg. Since the Asian market grew with a CAGR of 7% during the historical period, we believe that this increase will continue for the forecast period until FY 2022. Several factors have contributed to the strong growth rate in the emerging markets such as increasing middle class sizes and disposable income that drove the demand for skincare products,

especially in China and India. We believe that the company will grow with the market growth rate and presumably will not grow faster than the market. Since the Asian market is fragmented into several competitors it will be hard for the company to significantly increase its market share, so we assume that Beiersdorf will hold its market share of 7.12% for the forecast period. Given the historical data for Beiersdorf Asian market share, it is noticeable that the company stagnated through the historical period and could not significantly increase market share.

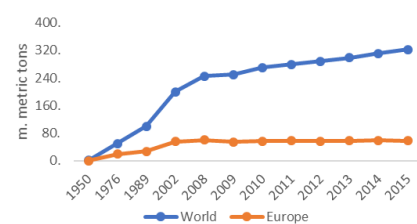
Global Self-Adhesive market

The global world adhesives and sealants market is expected to reach a market volume of approximately \$66.6bn in FY 2022, growing by an annual growth rate of 3.8% from FY 2016 to FY 2022. In geographical terms the European region, the Asia Pacific and the Americas region represent roughly each one third of the market, while growth in the Asian region has outperformed the market in the historical analysis and is projected to have the strongest market growth of an anticipated CAGR of 4.5% from FY 2016 to FY 2022.



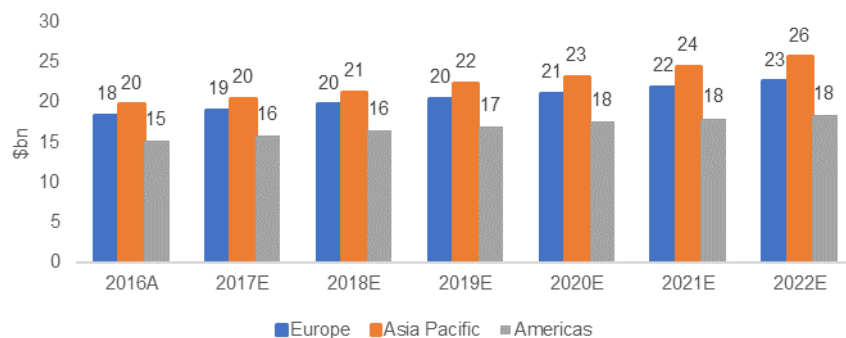
Graph 20 historical urbanization rate

Source: Statista



Graph 22 global lightweight plastic production

Source: Statista

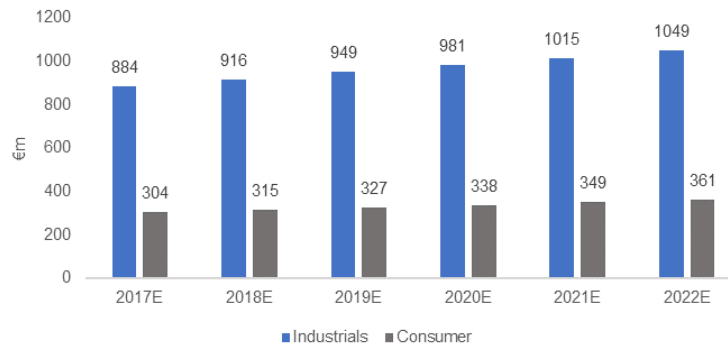


Graph 21 geographical forecast split of the global adhesive and sealants market

Source: Businesswire

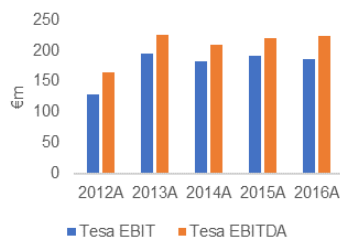
Factors driving the overall sealants and adhesives market are primarily the increasing automobile production and surging demand for packaging material. To increase fuel efficiency, automobile manufacturers are gradually replacing welding activities of engine parts assembly with adhesives and sealants products in order to reduce weight (graph 22). Demand for further housing space does also increase infrastructure activity and drives the growth for sealants and adhesives products due to growing population. Accelerated urbanization (graph 20) and population growth in emerging markets in combination with construction activities in developed markets such as Europe and the US is boosting the

demand for adhesive products. What could restrain the growth of the market are new stringent regulations on volatile organic chemical (VOC) emissions, since solvent-based adhesives (vinyl acetate, resins, rubber and others) can lead to respiratory problems when they react with nitrogen oxides. This shifts the demand from traditional solvent-based products to environmental friendly products like water-based adhesives.



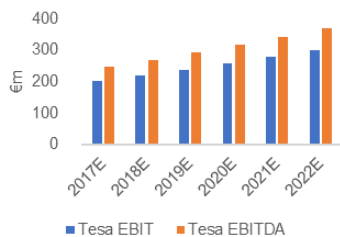
Graph 23 tesa business split

Source: Annual report



Graph 24 historical EBIT/EBITDA figures

Source: Annual report

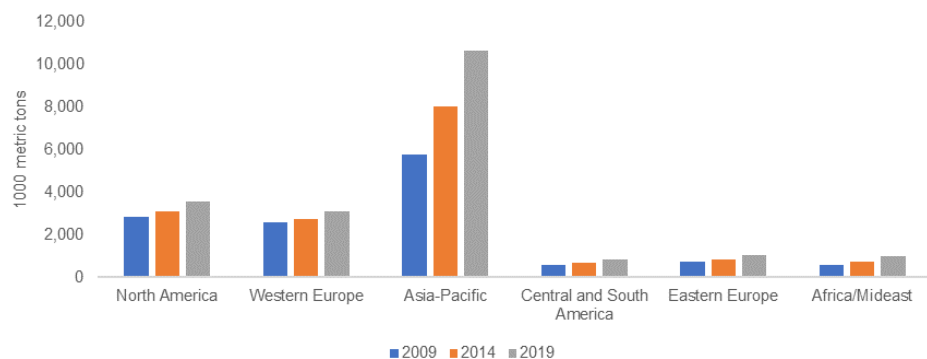


Graph 25 projected EBIT/EBITDA figures

Source: Analyst estimates

Tesa's EBIT and EBITDA figures fluctuated throughout the historical analysis but generated a CAGR of 9.6% and 8.2% respectively. For the projected period EBIT and EBITDA figures are expected to increase with a CAGR of 8.3% and 8.5% until FY 2022 respectively. Depreciation did not have a major impact and did not increase significantly during the historical period, what is then also being assumed to stay stable for the forecast period.

As seen in Graph 26, the worldwide adhesives and sealants demand faced the



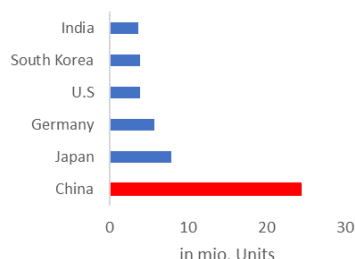
Graph 26 adhesive and sealant worldwide demand

Source: Statista

biggest increase in the Asia-Pacific region. This can be also seen through the increasing growth rates in the Asia region that will be shown in the following sections.

▪ European adhesives market

Similar to the overall global adhesives market, the European market is projected to grow by an annual growth rate of 3.5%, whereas the Eastern part of Europe has a higher demand for construction and building materials. Demand for specialty silicas is projected to advance at below average rates until FY 2020. Reasons for this manner are sluggish manufacturing growth and market maturity that will constrain advances for specialty silicas in many applications according to a market research by the managing director Andreas Hinz of the investment bank Grace Matthews. Overall, demand for sealants and adhesives in Europe has been decreasing due to a more challenging economic backdrop regarding VOC emissions and economic slowdown in Europe.

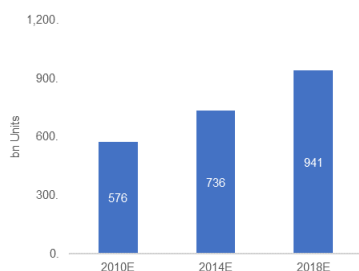


Graph 27 passenger car production in FY 2016

Source: Statista

▪ Asian adhesives market

Overall the Asia-Pacific market is expected to continue its lead in the market until FY 2022, followed by Europe contributing together two-third of the world's sealant and adhesives revenue. Globally, the Asian market dominates the building and construction, packaging and automotive production, where adhesive products are majorly applicable. Throughout the forecast period, this trend is predicted to be stable. The market will grow with an anticipated CAGR of 4.1% from FY 2016 until FY 2022. Overall, emerging markets represent a major growth opportunity for formulators what is derived by increasing levels of industrialization and consumption.



Graph 28 number of packaging units used in China

Source: Statista

Beiersdorf industrial tesa business will benefit from these growth trends and is projected to grow by a CAGR of 3.5% from FY 2017 until FY 2022 with EUR 1,4bn of sales volume in FY 2022. As most of tesa's revenue derives from the industrial business segment (74% in FY 2016) that is its main growth driver, the projected revenue target in FY 2022 is presumably being reached. Especially the Asian market, and China particular, kept being the driving force for the worldwide car production and therefore increase for adhesive products.

On the other hand side, the tesa consumer business contributed about 26% of tesa's overall revenue in FY 2016 and makes an important contribution to total sales. In its historical analysis, the consumer business increased its share of total tesa sales from 23% to 26% in FY 2016. For the forecast period it is expected that this increase will not further continue since the industrial business represents higher growth rates, especially through the higher demand of adhesive products in the car manufacturing segment. The slightly decreasing trend in the consumer electronics segment in FY 2016 is expected to continue for the forecast period.

due to price competition with Chinese producers that operate at lower production costs.

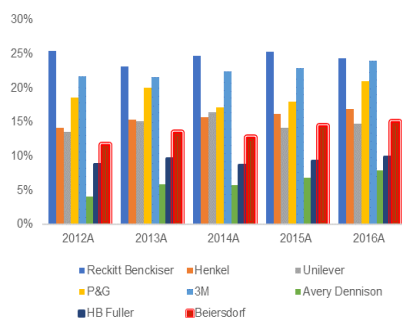
Overall however, the tesa business was able to generate a nominal increase of 10.6% for the first nine months in FY 2017, due to the strong demand for adhesive products in the automotive and electronics industry, especially in the Americas and Asia.

Market positioning of Beiersdorf

In comparison to skincare competitors like L'Oréal, P&G and Unilever, Beiersdorf is relatively small (L'Oréal sales in FY 2016 amounted to EUR 25.8bn in comparison to Beiersdorf FY 2016 sales of EUR 6.75bn). Further on, Beiersdorf generates more than 50% of its consumer revenues from Europe, whereas its competitor's geographical operations are more diversified. For example, P&G recorded in FY 2016 44% of its revenues from North America, 23% of Europe, 9% from Asia Pacific and 8% respectively from Latin America, the Asian market and Africa.

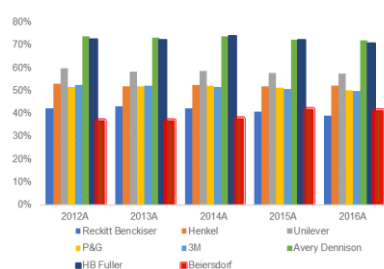
As seen from Graph 29, Beiersdorf is in the average of its peer's EBIT margin in the historical analysis and could improve it throughout the period from 12% to 15% in FY 2016. Reasons for this trend could be found in Beiersdorf reduction in total expenses that decreased from an expenses margin from 52% in FY 2012 to 44% in FY 2016. Reckitt Benckiser, P&G and 3M had the highest EBIT margin, what shows their advantage in using resources more efficiently than Beiersdorf. Beiersdorf COGS margin is in comparison to its peers on a lower level and therefore presumably more effective than its peers. On the historical average, Beiersdorf and Reckitt Benckiser had the lowest COGS margin of 39% and 42% respectively. In terms of efficiency, Beiersdorf was able to decrease its cash conversion cycle (CCC) from 15 days in FY 2012 to 3 days in FY 2016. This indicates that the company seems to be managed well, since inventory can quickly be converted into cash. In comparison to its peers, Beiersdorf generates a lower CCC, and only Reckitt Benckiser and Unilever show a significant negative CCC.

Beiersdorf has a portfolio of diversified and complementary brands in the cosmetics, personal care and adhesive tapes categories to penetrate and capture market share. We believe that the penetration rate of Beiersdorf products, especially in the consumer market segment, will slightly increase year on year. In the Asian market it is expected that the penetration rate will increase by annual 1% from 21% FY 2017 to 25% in FY 2022. Competitors however,



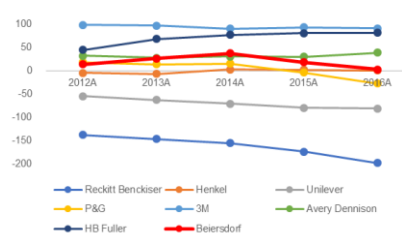
Graph 29 EBIT margin of selected peers

Source: Annual reports



Graph 30 COGS margin of selected peers

Source: Annual reports

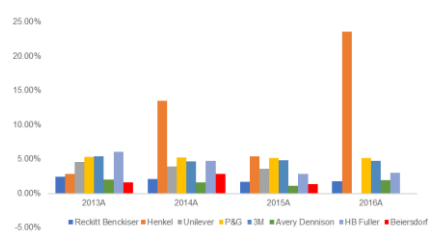


Graph 31 cash conversion cycle of selected peers

Source: Annual report

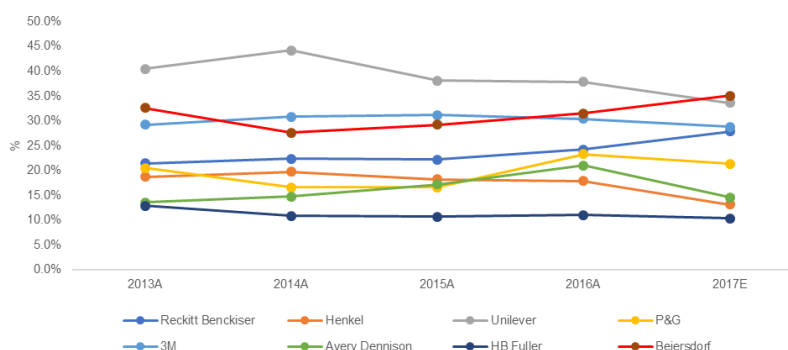
managed to have a much bigger portfolio of brands, for example like P&G that is superior in its scale and product range portfolio than Beiersdorf.

Beiersdorf has achieved to generate on average a return on invested capital (ROIC) of about 30.2% from FY 2012 until FY 2016, what is expected to increase to 35.8% on average during FY 2017 until FY 2022. This increase in ROIC is driven by the operating income after tax CAGR of 8.4%, that is 30 basis points higher than the company's invested capital CAGR for the forecast period. Due to the historical ROIC analysis, we believe that this trend will continue and



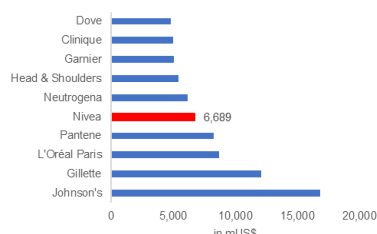
Graph 32 CAPEX margin of selected peers

Source: Annual report



Graph 33 ROIC development of selected peers

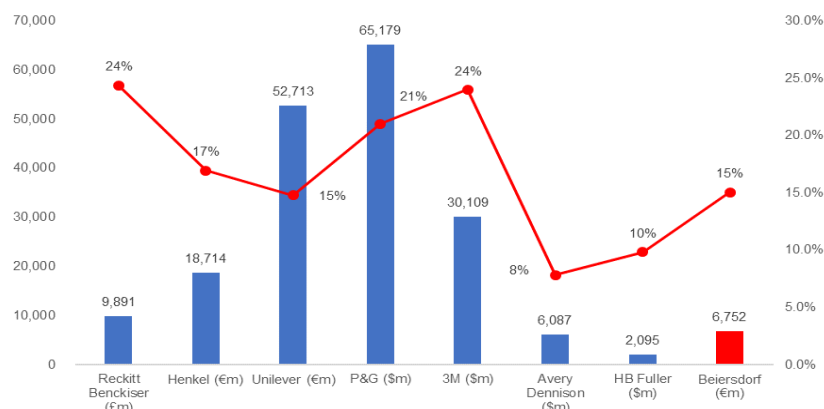
Source: Annual reports



Graph 34 brand value of leading brands worldwide in FY 2017

Source: Statista

Beiersdorf's ROIC will further increase year over year to a final ROIC of 40.7% in FY 2022. Beiersdorf Asset turnover was on average 1.0 in the historical analysis, that could only be outperformed by Avery Dennison with an average asset turnover of 1.4. Capital employed, which was used for Beiersdorf ROIC's calculation, increased by an average of 7% each year until FY 2017. The industry seems to have quite low CAPEX to sales margins (graph 32) ranging mostly between 3%-5%. Only Henkel reported high CAPEX due to many company acquisitions. Beiersdorf brand portfolio has one outstanding product that is Nivea, having a brand value of approximately \$6.8bn for FY 2017, ranking it behind Johnsons, Gillette, L'Oréal and Pantene in the personal care brand market. Nivea is determined to meet customer needs, as they regularly launch new products for the consumer business segment. As Beiersdorf mentioned in their annual report FY 2016, the company is determined to strengthen its brands, foremost Nivea, what can lead to continued revenue growth. The brand exists now for over 100 years so it developed a very strong brand identity among its customers. As seen in Graph 35, Beiersdorf did not reach to the sales size of Unilever or P&G, but generated an EBIT margin in the range of its peers.



Graph 35 sales and EBIT margin of selected peers in FY 2016

Source: Annual reports

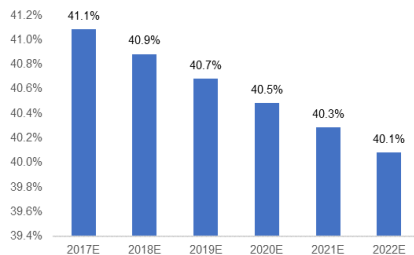
Financials Projection

Key financial figures

Total revenues for Beiersdorf are expected to increase by a CAGR of 4% from FY 2017 until FY 2022. First, revenues are projected by the growth rate of the specific markets and secondly with the market share and market penetration in the respective markets. We assessed the terminal growth rate by the annual ECB inflation rate target of 2% and assume that the company will slightly grow stronger, what leads to the final growth value of 2.2%

In the consumer business we assume that Beiersdorf will grow with the anticipated market growth rates in each specific region. This leads to CAGRs of 2.2% in the European region, 7.5% in the Asian market and 4.3% in the Americas market for the period from FY 2016 until FY 2022. In the historical analysis, Beiersdorf had roughly the same growth rates as the market growth rates. We believe that this trend is expected to continue. Especially in its core European markets, such as Germany, France and the UK, Beiersdorf will not reach higher annual growth rates of 1.5% because the market is mature and increased with stable low growth rates.

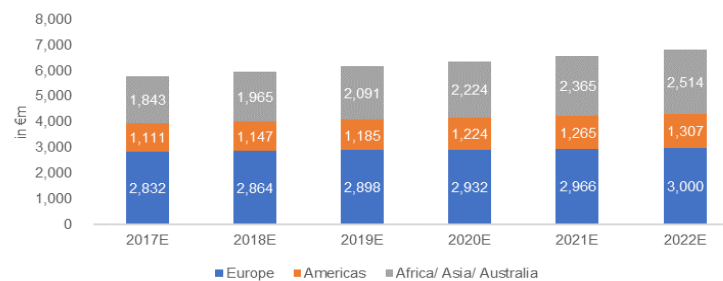
Revenue forecast



Graph 36 projected COGS margin Beiersdorf

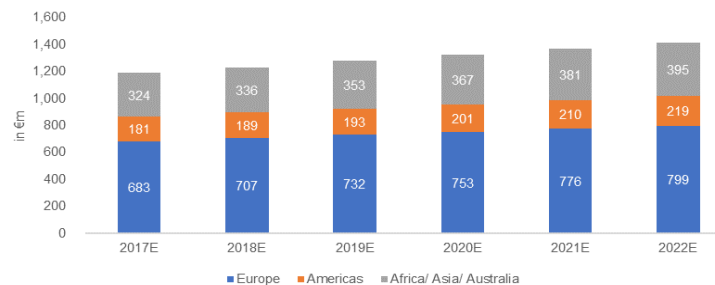
Source: Analyst estimates

The second approach for the revenue forecast is assessed through Beiersdorf market share and penetration rates in the European, Asian and Americas market. The penetration rate for the European market was roughly 40% in FY 2016 and is expected to increase slightly by annual 0.1% over the forecast period. The same growth rate applies for the Americas market segment, although its penetration rate in FY 2016 amounted to 57% of the market. The Asian market has a lower rate (20%), although it is projected that the rate will increase by 1% each year due to increasing wealth of the middle-class population. The Asian consumer spending is expected to reach a level that is currently seen in the European region, according to Economist Intelligence Units. As mentioned earlier, we do not think that Beiersdorf will increase its market share in the Asian market over the projected region, wherefore we kept its current market share flat for the forecast period. We assume that this will also be seen in the Americas market. However, as the European market is Beiersdorf's core market, we think that due to cost cutting circumstances like the growing ecommerce market and the Blue Agenda strategy targets, the company is likely to increase its market share by conservative 0.1% year over year. We project that Beiersdorf will continue its effort in developing digitalization, what improves Beiersdorf brand awareness among consumers and therefore aggressively attacking its peers. It is assumed that this will mostly happen in developed countries where Beiersdorf has already a strong brand image. These two revenue forecast approaches are then



Graph 37 geographical consumer sales split

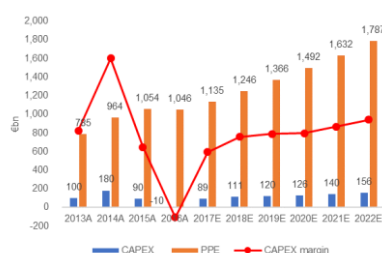
Source: Annual report



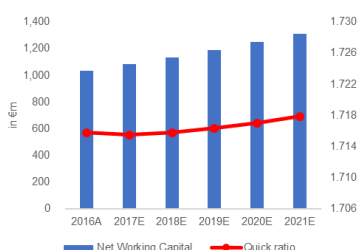
Graph 38 geographical tesa sales split

Source: Annual report

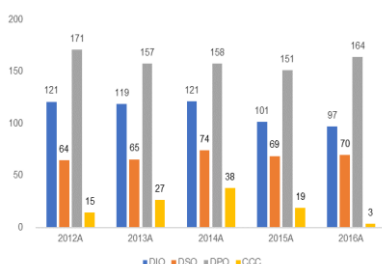
weighted by 50% each and together summing up to total revenues.

**Graph 39 CAPEX and PPE**

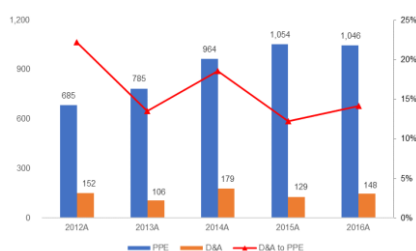
Source: Annual report and Analyst estimates

**Graph 40 NWC development**

Source: Analyst estimates

**Graph 41 NWC management**

Source: Annual report

**Graph 42 historical PPE and D&A**

Source: Annual report

Overall cost of goods sold (COGS) are being expected to decrease over time due to efficiency methods such as purchasing and logistics measures that enables significant cost saving (graph 36). We believe that during the forecast period, COGS will decrease in percentage of total revenues from 41.1% to 40.1%. To have a closer look on the distribution of the COGS respectively, we projected consumer and tesa COGS. As the company is mainly driven by its consumer sales, it is expected that COGS in the consumer segment will overall increase by 0.5% year on year. Support of this assumption is derived by the forecasted sales CAGR of 4%, that is higher than the historical sales CAGR of 2.8%.

Major capital expenditures (CAPEX) during the past were the establishment of new tesa and consumer plants in FY 2015. During FY 2016, only replacements and rationalization were major capital expenditures. In order to hold the expected revenue forecasts, the company is aligned to continuously spend more of its cash in property, plant and equipment (PPE). The company will keep its ratio of CAPEX to revenues for the next years not only constant but also slightly increase it from 1.3% in FY 2017 to 1.8% in FY 2022. Although the trend in the personal skin care market tends to consolidation, there were not any major M&A activity of Beiersdorf been reported in the historical period. We believe that there may be some opportunities, but to stay more conservative we do not consider that Beiersdorf will enhance its an-organic growth for the forecast period, since no major increase in current assets were reported. Over the historical period Beiersdorf's quick ratio fluctuated but then remained stable at a level of 1.73 in FY 2016. We believe that the quick ratio will slightly decrease to 1.72 in FY 2017, and then will stay at this level. This is also reflected in the increasing net working capital amount of Beiersdorf that is going to increase slightly by 3% to 5% each year in the forecast period from FY 2017 to FY 2022. The company was able to lower its CCC from 38 days FY 2014 to 3 days in FY 2016, what is then expected to stay at this level for the forecast period. Reasons were the more efficient management of inventory and reduction of inventory days outstanding.

Overall, Beiersdorf is expected to invest about EUR 2.5bn in FY 2017 for advertising and selling activities (see graph 13). Research and development expenses amounted to EUR 188m in FY 2016 and are expected to increase to EUR 196m FY 2017. We believe that Beiersdorf will further on hold its market share, since innovation and development investments of Beiersdorf skincare products are the main driver of their long-term product lifecycle success. Nevertheless, advertising activities are expected to decline in percentage of revenues due to increasing demand for online platforms, that will lower retail costs for Beiersdorf products. In FY 2017, advertising expenses will amount to 35.1% of total revenues but will decrease to 32.6% in FY 2022. In FY 2016, the

company conducted about 1,900 studies involving around 45,000 participants in order to capture consumer needs in all stages of product development. Additionally, the company has an international research network comprising of over 500 research partnerships with universities, research institutions and start-ups across the world to ensure further product innovation.

Depreciation and amortization (D&A) fluctuated slightly over the historical period and amounted to a ratio of 14% of D&A to property, plant and equipment (PPE) in FY 2016 (graph 42). For the projected period, we assume to keep this ratio at a constant level of 16.1% from FY 2017 until FY 2022.

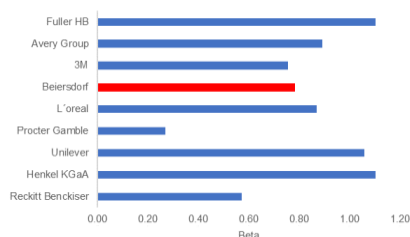
Valuation and capital structure

As a result of our analysis, we are valuing Beiersdorf share price at EUR 91.35, which represents a downside of -6.69% against its share price of 97.90. Consequently our final recommendation for Beiersdorf is a “HOLD” since our valuation seems to set be in line with the current market valuation.

Figure 8 wacc calculation

Source: based on calculations

Shares outstanding (million)	252
Share price (EUR)	98
MCAP (EURbn)	24,671
Riskfree Rate rf	0.44%
Beta	0.78
Risk Premium rm	5.7%
Cost of Equity	4.9%
Cost of Debt	1.85%
Statutory Tax Rate	30%
Debt	109
MCAP (EURbn)	24,671
D/E	0.44%
Target D/E	0.4%
D/(E+D)	0.4%
E/(E+D)	99.6%
WACC	4.9%



Discounted Cash-Flow

In order to assess the value of Beiersdorf we decided to use the Discounted Cash-Flow (DCF) methodology. Within this approach we discounted all Free Cash-Flows (FCF) of the company, during the forecasted period (FY 2017 until FY 2022), to an appropriate weighted average cost of capital (WACC), which in this case was 4.9%.

To finalize our valuation of Beiersdorf we computed the termination value, that was based on a growth rate of 2.2%, that represents our prospects for the future of the company by the end of the forecast period in FY 2022. At the end, all non-equity claims are being subtracted and non-core assets are being added that leads to the final equity value of EUR 23.02bn against the current market value of EUR 24.67bn.

Cost of Capital

We discounted our FCF with the weighted average cost of capital that we calculated in two different ways through a top-down approach and a bottom-up approach.

We used the capital asset pricing model (CAPM) to result to an appropriate cost of equity for Beiersdorf that resulted in 4.88% (graph 44 shows a sensitivity analysis for the cost of equity). For the risk-free rate, we used the current yield of

Risk free rate 0.44%

Beta	cost of equity
0.28	2.03%
0.38	2.60%
0.58	3.74%
0.78	4.88%
0.98	6.02%
1.18	7.15%
1.28	7.72%

Graph 44 cost of equity sensitivity analysis

Source: Analyst estimates

a 10Y German government bond that is 0.44%. We have calculated a levered beta of 0.78, that was calculated through the regression of the monthly returns of Beiersdorf share price and the MSCI world index in Euro. Through a regression, we calculated the lower and upper 95% confidence interval that ranges between 0.433 and 1.134 for Beiersdorf. This calculated beta represents the personal care market very accurate, since this market is relatively low affected by market fluctuations. Considering Beiersdorf very low D/E level of 0.48%, we believe that Beiersdorf is aiming to keep its structure for the forecast period since no significant new debt has been added in the historical analysis. We used a risk premium of 5.7% that reflects the current return for Germany and for mature markets. Since Beiersdorf generates over 50% of its returns in European countries, we believe that 5.7% reflects the company's equity risk premium the best.

For the cost of debt, we used the company's current probability of default 0.34% and a recovery rate of 0.855 for AAA rated companies. Since Beiersdorf does not has any bonds outstanding, we conducted a peer analysis. In this analysis, we took the average yield of all currently outstanding bonds of peers. This led to an average yield to maturity of 1.55% what results to a cost of debt of 1.85%. Taking then in account the respective statutory tax rates and Beiersdorf capital structure, we derived then to a cost of capital of 4.9% (top- down) and 5.0% (bottom-up). In the bottom-up analysis, we performed a peer analysis and weighted the respective consumer and adhesive beta with their revenue contribution and derived to a wacc of 5.0%. We decided to use the top-down approach since the peer analysis does not has a significant different result and confirms our top-down approach.

		growth rate						
wacc	91.35	0.7%	1.2%	1.7%	2.2%	2.3%	2.5%	2.8%
	3.9%	84.48	98.45	118.76	151.02	155.33	181.44	218.92
	4.4%	71.46	81.22	94.59	114.05	116.49	130.64	149.07
	4.9%	61.63	68.75	78.10	91.35	92.46	101.16	111.89
	5.2%	57.57	63.74	71.69	82.33	83.60	90.65	99.17
	5.4%	53.97	59.34	66.17	75.12	76.18	81.98	88.88

Figure 9 share price sensitivity analysis

Source: Analyst estimates

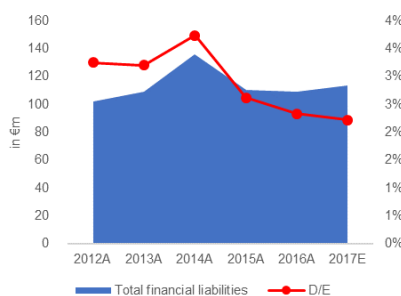
To better understand how the enterprise value changes by setting the wacc and the growth rate as variables, we performed a sensitivity analysis that can be seen in figure 9. As seen above, Beiersdorf share price increases if we are decreasing the discount rate and increase the growth rate. Our current Enterprise valuation resulted to EUR 23.32bn for the FY 2018.

▪ Trading Multiples - Sum of the Parts valuation

To generate a more diversified valuation we implemented a peer multiple sum of the parts (SOTP) valuation where we included Reckitt Benckiser, Henkel, P&G, Unilever, L’Oreal, 3M, Avery Dennison and HB Fuller.

We performed a EV/EBITDA and EV/EBIT valuation for the consumer and the adhesive sector. We allocated Reckitt Benckiser, Henkel, P&G, Unilever and L’Oreal to the consumer business and 3M, Avery Dennison and HB Fuller to the adhesive business. We calculated for both sectors the share price and added them together resulting to an average share price of EUR 79.22 for Beiersdorf. By means of this SOTP, we recommend, to sell the company as this results to an overvaluation of the market against the multiple valuation.

This share price of EUR 79.22 shows a downside potential of -19.1% against the current market share price. Our DCF valuation recommends a HOLD position but the SOTP valuation results in an even more conservative valuation and therefore suggests to sell the company. Reasons for these different valuations are based on our assumptions that Beiersdorf has cost cutting potentials in its COGS and can decrease its advertising expenses and further on will grow with the market growth rate. These assumptions are not being considered in the peer valuation. We believe that this multiple recommendation can be recognized, but should not affect our final DCF valuation which sets the company on HOLD. A SOTP summary can be seen in the Appendix.



Graph 45 Beiersdorf total debt and D/E (book value)

Source: Annual report

▪ Capital Structure – a very atypical debt to equity ratio

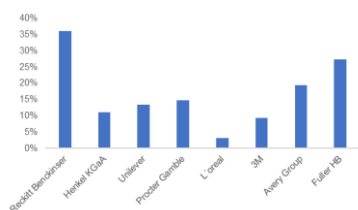
Beiersdorf has a very low D/E ratio, since the company has little debt outstanding, currently resulting in a 0.48% D/E ratio based on market values (graph 45 shows book value). We expect that the company will keep this structure also for the future since the company did not take on much debt in the historical analysis. Through a peer analysis we calculated that the average D/E level for this market is c.17%. Beiersdorf clearly falls below this average D/E level. Additionally, the D/E ratio tends to be lower for conglomerates such as Beiersdorf since it is operating in two different businesses. Reasons for this low D/E level, might be found in the shareholder structure, since the Maxingvest Holding AG is owned by the German family Herz that controls over 50% of all Beiersdorf shares.

Graph 46 shows the D/E ratio of selected peers, where L’Oreal has the lowest ratio among its peers. One could mention that given these ratios, Beiersdorf

should lift up its D/E since its peers do all have a higher ratio than Beiersdorf. In our assumption although, we do not think that Beiersdorf is aiming to lift its leverage since historical data do not show any significant leverage of Beiersdorf capital structure.

We assume that Beiersdorf optimal D/E ratio will then be 0.48% for the upcoming future and stay at this level for our valuation.

Scenario Analysis



Graph 46 D/E ratio of selected peers in FY 2016 (market value)

Source: Annual reports

As stated in our valuation summary, we have included in our model a scenario analysis, in order to account for two potential scenarios that could occur. The two scenarios describe what would happen if the economic market growth of emerging markets will collapse for the tesa and consumer market. Although Beiersdorf experienced high growth rates in these markets, this would not harm the business significantly due to Beiersdorf high dependence on the European market.

▪ Collapse of consumer growth

As stated previously, the Asian personal skin care market is characterised by competitors that produce at lower costs as foreign competitors. We expect the market to increase by a CAGR of 7% for the forecast period, which is mainly due to the rising income in developing markets and increasing female spending power derived from women's extended career life. Their desire for flawless skin and fear for the widespread haze and smog led them to grow as "self-educating" consumers, believing in product efficacy and efforts invested in skin care.

Our first scenario included that Beiersdorf will only increase its consumer revenues by 4% in the Asian market for the projected period. Given this scenario, Beiersdorf share price will fall to EUR 88.70 instead of the projected EUR 91.35, what lowers our valuation. Within this scenario, we then have a downside scenario of -10.93% that sets our recommendation to "SELL".

Despite the fact, that the largest markets in Asia like India, Vietnam, Indonesia and China are expected to grow by CAGR of 8% up to 11% until FY 2022, we need to consider that the market will not grow with the anticipated growth rate of 7% during the forecast period. We assessed a probability for the likelihood that this scenario might happen. As we do not want to alter our valuation too much, we assumed a probability of 15% that this scenario will happen.

▪ Collapse of tesa growth

Although the tesa business is not the main revenue driver of Beiersdorf business, we conducted another scenario analysis that shows the event of a market growth break down in the Asian adhesives and sealants market.

As mentioned previously, the Asian market will further grow of about 3.4% for the tesa business segment. Main value driver is the expected increase in further building material, packaging and construction demand. China alone contributed to around 20% of the worlds adhesives and sealants market in FY 2015. Although it is expected that this growth will continue, Beiersdorf could be attacked by several governmental laws that will interfere the adhesive revenue growth for the company. We decided to set a growth of 1.5% in this market that will lead to a slightly lower valuation of EUR 90.72 instead of EUR 91.35 if this scenario will happen. Due to the fact that the tesa business contributes about 17% to total sales of Beiersdorf and that this contribution is likely to stay flat, this scenario does not have a significant impact on our final valuation. It is unlikely to happen, but we include this scenario in our valuation nonetheless. We assume a probability of 10% that this scenario will happen due to the following reasons.

The industrial tesa business is expected to increase its contribution to total tesa sales, due to increasing packaging and construction demand, especially in the Asian market. As stated previously, China contributed to about 20% of the worlds adhesives and sealants market in FY 2015. We do not think that a collapse of the Asian market is likely to occur, since growth of this market in the fundamental analysis has been stable.

Figure 11 shows the summary of our scenario analysis, in particular the downside scenario for the consumer and tesa business and the combined and weighted share price of EUR 90.89 that represents a downside potential of - 7.16% against the current share price of EUR 97.90.

We further on performed a scenario analysis that shows the potential increase and decrease of the skincare and the self-adhesive markets in all relevant regions. Our base case is our share price of EUR 91.35 that represents our DCF valuation. As seen in figure 12, an increase of 1% in the skincare and the self-adhesive market leads automatically to a higher share price of EUR 94.24. The opposite applies to a potential decrease of the market growth what figure 12 presents.

Share Price Scenario calculation			
	share price	Weight	Weighted price
DCF valuation	91.35	0.75	68.5125
Consumer scenario (4%)	88.7	0.15	13.305
Tesa scenario (1.5%)	90.72	0.1	9.072
Total		1	
Final Share price			90.89

Figure 11 scenario analysis

Source: Analyst estimates

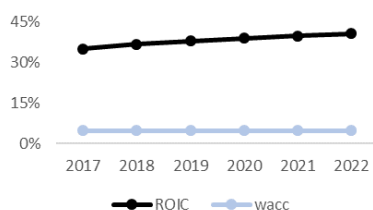
		Skincare						
Self Adhesives	91.35	-6.0%	-4.0%	-2.0%	0.0%	1.0%	2.0%	3.0%
	-2.0%	78.26	82.06	86.19	90.67	93.04	95.52	98.08
	-1.0%	78.62	82.42	86.55	91.03	93.41	95.88	98.45
	0.0%	79.02	82.82	86.95	91.35	93.80	96.27	98.84
	1.0%	79.45	83.26	87.39	91.86	94.24	96.71	99.28
	2.0%	79.93	83.73	87.86	92.34	94.71	97.18	99.75

Figure 12 market growth sensitivity analysis for skincare and self-adhesive business

Source: Analyst estimates

Final Valuation Considerations

As mentioned in the previous section, we performed a scenario analysis and weighted each scenario based on our assessed probability. This in return led to a final share price valuation of EUR 90.89 against our DCF valuation of EUR 91.35 what represents a downside of -6.69%. Within these both approaches we come to the conclusion that the market is overvaluing the company, but the valuation is still below the 10% range what sets our final recommendation to HOLD. It is crucial to assess whether the company is able to generate value or not. For this reason, we need to look at ROIC and wacc figures, where it is clearly seen that ROIC is higher as wacc. It is important for the company to have a high ROIC, since this will lead to value creation for Beiersdorf. Operating margin (after taxes) is expected to increase by a CAGR of 10%, what is higher than the rise of capital employed that increases by 7.1%. As seen in graph 47, ROIC is slightly increasing, being greater than wacc over time. We do believe that this is a realistic scenario, since growth rates are steadily increasing for the relevant markets and Beiersdorf was able to increase its performance year over year.



Graph 47 ROIC and wacc forecasts

Source: Analyst estimates

Appendix

Income statement

Net Income Statement FY as of 31.12		Forecasts					
	2016A	2017E	2018E	2019E	2020E	2021E	2022E
Operating Sales	6,752	7,046	7,330	7,627	7,930	8,246	8,574
Growth Rate	1%	4.4%	4.0%	4.0%	4.0%	4.0%	4.0%
Consumer Sales	5,606	5,858	6,098	6,348	6,608	6,879	7,161
in percentage of revenues	83%	83.1%	83.2%	83.2%	83.3%	83.3%	83.3%
Tesa Sales	1,146	1,188	1,232	1,278	1,322	1,367	1,413
in percentage of revenues	17%	16.9%	16.8%	16.8%	16.7%	16.6%	16.5%
Total COGS	-2,774	-2,895	-2,997	-3,103	-3,210	-3,322	-3,437
in percentage of revenues	41%	41.1%	40.9%	40.7%	40.5%	40.3%	40.1%
COGS Consumer	-2,172	-2,266	-2,346	-2,445	-2,546	-2,650	-2,760
in percentage of Total COGS	78%	78.3%	78.3%	78.8%	79.3%	79.8%	80.3%
COGS Tesa	-602.1	-628	-650	-658	-665	-671	-677
in percentage of Total COGS	22%	21.7%	21.7%	21.2%	20.7%	20.2%	19.7%
Total Gross Profit	3,978	4,151	4,333	4,524	4,720	4,924	5,137
Gross Profit margin	59%	58.9%	59.1%	59.3%	59.5%	59.7%	59.9%
Consumer Gross Profit	3,434	3,591	3,752	3,903	4,062	4,228	4,401
Consumer Gross Profit margin	51%	51.0%	51.2%	51.2%	51.2%	51.3%	51.3%
Tesa Gross Profit	544	560	581	620	657	696	736
Tesa Gross Profit margin	8%	7.9%	7.9%	8.1%	8.3%	8.4%	8.6%
Total Expenses	-2,963	-3,057	-3,143	-3,232	-3,321	-3,412	-3,505
in percentage of revenues	44%	43.4%	42.9%	42.4%	41.9%	41.4%	40.9%
Administrative expenses	-364	-380	-395	-411	-427	-445	-462
in percentage of revenues	5%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%
Advertising expenses	-2,407	-2,477	-2,540	-2,604	-2,668	-2,733	-2,799
in percentage of revenues	36%	35.1%	34.6%	34.1%	33.6%	33.1%	32.6%
Operating expense/ R&D	-188	-196	-204	-212	-221	-230	-239
in percentage of revenues	3%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Other expense/ income	-4	-4	-4	-5	-5	-5	-5
in percentage of revenues	0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
EBIT	1,015	1,094	1,190	1,291	1,398	1,512	1,632
EBIT margin	15%	15.5%	16.2%	16.9%	17.6%	18.3%	19.0%
Consumer EBIT	829	893	971	1,054	1,142	1,234	1,332
in percentage of operating income	82%	81.6%	81.6%	81.6%	81.6%	81.6%	81.6%
Tesa EBIT	186	201	218	237	257	278	300
in percentage of operating income	18%	18.4%	18.4%	18.4%	18.4%	18.4%	18.4%
Taxes	321	335	348	362	377	392	407
in percentage of revenues	5%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
Operating income from sales (after tax)	695	760	842	929	1,021	1,120	1,225
in percentage of revenues	10%	10.8%	11.5%	12.2%	12.9%	13.6%	14.3%
Depreciation	148	183	201	220	241	263	288
in percentage of PPE	14%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%
EBITDA	1,163	1,277	1,391	1,512	1,639	1,775	1,920
EBITDA margin	17%	18.1%	19.0%	19.8%	20.7%	21.5%	22.4%
Consumer EBITDA	939	1,031	1,123	1,220	1,323	1,432	1,550
in percentage of EBITDA	81%	80.7%	80.7%	80.7%	80.7%	80.7%	80.7%
Tesa EBITDA	224	246	268	292	316	342	370
in percentage of EBITDA	19%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%
Operational result	613	678	742	809	871	970	1,075
Other comprehensive income	-82	-82	-100	-120	-150	-150	-150
Interest income	30	33	36	39	43	47	51
in percentage of revenues	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Interest expense	-4	-4	-4	-5	-5	-5	-5
in percentage of debt	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Net pension result	-13	-14	-14	-15	-15	-16	-17
in percentage of revenues	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
Other financial result	12	13	13	14	14	15	15
in percentage of revenues	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Net financial result before taxes	25	27	30	34	37	41	45
in percentage of revenues	0.37%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%
Tax shield	8	8	8	9	9	10	10
in percentage of taxes	2.44%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
Financial result	33	36	39	42	46	50	55
in percentage of revenues	0%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%
Comprehensive result	645	713	780	851	918	1,020	1,129
in percentage of revenues	10%	10.1%	10.6%	11.2%	11.6%	12.4%	13.2%

Balance sheet

Balance sheet FY as of 31.12	2016A	2017E	2018E	2019E	2020E	2021E	2022E
Forecasts							
Sales	6,752	7,046	7,330	7,627	7,930	8,246	8,574
Operating Assets							
Working Cash	34	35	37	38	40	41	43
in percentage of revenues	1%	1%	1%	1%	1%	1%	1%
Accounts receivable	1,293	1,349	1,418	1,490	1,565	1,643	1,726
Days receivable outstanding	70	70	71	71	72	73	73
Income tax receivable	108	102	106	110	114	119	124
in percentage of revenues	1.6%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Inventories	739	771	806	843	881	921	962
Days inventories outstanding	97	97	98	99	100	101	102
Other current assets	163	167	171	175	179	183	188
in percentage of revenues	2.4%	2%	2%	2%	2%	2%	2%
PPE	1,046	1,135	1,246	1,366	1,492	1,632	1,787
Growth rate	-0.8%	9%	10%	10%	9%	9%	10%
Intangible assets	119	120	121	122	124	125	127
in percentage of revenues	2%	2%	2%	2%	2%	2%	1%
Deferred income taxes	212	221	230	239	249	259	269
in percentage of revenues	3.1%	3%	3%	3%	3%	3%	3%
Other non-current assets	1	1	1	1	1	1	1
in percentage of revenues	0.0%	0%	0%	0%	0%	0%	0%
Total operating assets	3,715	3,901	4,136	4,385	4,645	4,924	5,227
Growth rate	0.5%	5%	6%	6%	6%	6%	6%
Operating liabilities							
Accounts payable	1,244	1,298	1,357	1,419	1,483	1,550	1,620
Days payable outstanding	164	164	165	167	169	170	172
Other current liabilities	100	104	109	113	117	122	127
in percentage of revenues	1%	1%	1%	1%	1%	1%	1%
Income taxes payable	146	152	158	165	171	178	185
in percentage of revenues	2%	2%	2%	2%	2%	2%	2%
Deferred income taxes and other liabilities	55	57	60	62	65	67	70
in percentage of revenues	1%	1%	1%	1%	1%	1%	1%
Provisions	706	737	766	797	829	862	897
in percentage of revenues	10%	10%	10%	10%	10%	10%	10%
Other provisions	536	558	581	612	638	665	694
in percentage of revenues	8%	8%	8%	8%	8%	8%	8%
Total operating liabilities	2,787	2,907	3,032	3,169	3,304	3,445	3,593
Net operating assets	928	995	1,104	1,217	1,341	1,479	1,634
Growth Rate	-18%						
Financial assets							
Cash equivalents (Excess of cash)	838	1,091	1,260	1,438	1,618	1,809	2,008
in percentage of revenues	12%	15%	17%	19%	20%	22%	23%
Short-term investments	143	149	155	162	168	175	182
in percentage of revenues	2%	2%	2%	2%	2%	2%	2%
Debt securities	958	1,000	1,040	1,082	1,125	1,170	1,217
in percentage of revenues	14%	14%	14%	14%	14%	14%	14%
Long-term investments	1,919	2,003	2,157	2,320	2,492	2,673	2,866
in percentage of revenues	28%	28%	29%	30%	31%	32%	33%
Total financial assets	3,858	4,243	4,611	5,002	5,403	5,826	6,272
Growth rate	21.5%	10%	9%	8%	8%	8%	8%
Financial liabilities							
Other non-current financial liabilities	1	1	1	1	1	1	1
in percentage of revenues	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Current financial liabilities	108	113	117	122	127	132	137
in percentage of revenues	2%	2%	2%	2%	2%	2%	2%
Total financial liabilities	109	114	118	123	128	133	138
Net financial assets	3,749	4,129	4,493	4,879	5,275	5,693	6,133
Common shareholders equity	4,677	5,124	5,597	6,096	6,615	7,173	7,767
Total Assets	7,573	8,144	8,747	9,387	10,047	10,751	11,498
Total Liabilities and Equities	7,573	8,144	8,747	9,387	10,047	10,751	11,498

Changes of Equity statement

Historical Information FY as of 31.12	2016A	2017E	2018E	2019E	Forecasts		
					2020E	2021E	2022E
Beginning Balance	4,201	4,677	5,124	5,597	6,096	6,615	7,173
Transaction with Shareholders							
Stock issued for stock options	0	0	0	0	0	0	0
in percentage of Equity	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Stock issued to employees	0	0	0	0	0	0	0
in percentage of Equity	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Dividends of Beiersdorf AG	-159	-159	-159	-159	-159	-159	-159
in percentage of Equity	3.8%	3.4%	3.1%	2.8%	2.6%	2.4%	2.2%
Repurchase of common stock	0	0	0	0	0	0	0
in percentage of Equity	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Dividends of non-controlling interests	-10	-10	-11	-11	-12	-13	-14
in percentage of Equity	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Total Transactions with Shareholders	-169	-267	-307	-352	-398	-463	-535

SOTP summary

Multiple Valuation SOTP

Adhesive peers		EV/EBIT	Consumer peers		EV/EBIT	Total multiple valuation Output	
3M		18	Reckitt Benckiser		24	Multiple EBITDA	20,084
Avery Dennison		15	Henkel KGaA		15	Multiple EBIT	20,373
HB Fuller		15	P&G		18	Average	20,228
Average		16	Unilever		16	Equity value	19,964
tesa EBIT		201	L'Oreal		22	Share price	79.22
Enterprise value		3300	Average		19		
			Consumer EBIT		893		
			Enterprise Value		17073		
Adhesives peers		EV/EBITDA	Consumer peers		EV/EBITDA		
3M		15	Reckitt Benckiser		23		
Avery Dennison		12	Henkel KGaA		13		
HB Fuller		11	P&G		15		
Average		13	Unilever		14		
tesa EBITDA		246	L'Oreal		18		
Enterprise value		3154	Average		16		
			Consumer EBITDA		1,031		
			Enterprise Value		16930		

Disclosures and Disclaimers

Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

This report was prepared by [Constantin Felix Wagner], a Master in Finance's student of Nova School of Business & Economics ("Nova SBE"), within the context of the Field Lab – Equity Research.

This report is issued and published exclusively for academic purposes, namely for academic evaluation and masters graduation purposes, within the context of said Field Lab – Equity Research. It is not to be construed as an offer or a solicitation of an offer to buy or sell any security or financial instrument.

This report was supervised by a Nova SBE faculty member, acting merely in an academic capacity, who revised the valuation methodology and the financial model.

Given the exclusive academic purpose of the reports produced by Nova SBE students, it is Nova SBE understanding that Nova SBE, the author, the present report and its publishing, are excluded from the persons and activities requiring previous registration from local regulatory authorities. As such, Nova SBE, its faculty and the author of this report have not sought or obtained registration with or certification as financial analyst by any local regulator, in any jurisdiction. In Portugal, the author of this report is not registered with or qualified under COMISSÃO DO MERCADO DE VALORES MOBILIÁRIOS ("CMVM", the Portuguese Securities Market Authority) as a financial analyst. Rosário André - as the academic supervisor of the author - is registered as a financial analyst with CMVM. No approval for publication or distribution of this report was required and/or obtained from any local authority, given the exclusive academic nature of the report.

The additional disclaimers also apply:

USA: Pursuant to Section 202 (a) (11) of the Investment Advisers Act of 1940, neither Nova SBE nor the author of this report are to be qualified as an investment adviser and, thus, registration with the Securities and Exchange Commission ("SEC", United States of America's securities market authority) is not necessary. Neither the Author nor Nova SBE receive any compensation of any kind for the preparation of the Reports.

Germany: Pursuant to §34c of the WpHG (*Wertpapierhandelsgesetz*, i.e., the German Securities Trading Act), this entity is not required to register with or otherwise notify the *Bundesanstalt für Finanzdienstleistungsaufsicht* (“BaFin”, the German Federal Financial Supervisory Authority). It should be noted that Nova SBE is a fully-owned state university and there is no relation between the student’s equity reports and any fund raising programme.

UK: Pursuant to section 22 of the Financial Services and Markets Act 2000 (the “FSMA”), for an activity to be a regulated activity, it must be carried on “by way of business”. All regulated activities are subject to prior authorization by the Financial Conduct Authority (“FCA”). However, this Report serves an exclusively academic purpose and, as such, was not prepared by way of business. The author - a Masters’ student - is the **sole and exclusive responsible** for the information, estimates and forecasts contained herein, and for the opinions expressed, which exclusively reflect his/her own judgment at the date of the report. Nova SBE and its faculty have no single and formal position in relation to the most appropriate valuation method, estimates or projections used in the report and may not be held liable by the author’s choice of the latter.

The information contained in this report was compiled by students from public sources believed to be reliable, but Nova SBE, its faculty, or the students make no representation that it is accurate or complete, and accept no liability whatsoever for any direct or indirect loss resulting from the use of this report or of its content.

Students are free to choose the target companies of the reports. Therefore, Nova SBE may start covering and/or suspend the coverage of any listed company, at any time, without prior notice. The students or Nova SBE are not responsible for updating this report, and the opinions and recommendations expressed herein may change without further notice.

The target company or security of this report may be simultaneously covered by more than one student. Because each student is free to choose the valuation method, and make his/her own assumptions and estimates, the resulting projections, price target and recommendations may differ widely, even when referring to the same security. Moreover, changing market conditions and/or changing subjective opinions may lead to significantly different valuation results. Other students’ opinions, estimates and recommendations, as well as the advisor and other faculty members’ opinions may be inconsistent with the views expressed in this report. Any recipient of this report should understand that statements regarding future prospects and performance are, by nature, subjective, and may be fallible.

This report does not necessarily mention and/or analyze all possible risks arising from the investment in the target company and/or security, namely the possible exchange rate risk resulting from the security being denominated in a currency either than the investor’s currency, among many other risks.

The purpose of publishing this report is merely academic and it is not intended for distribution among private investors. The information and opinions expressed in this report are not intended to be available to any person other than Portuguese natural or legal persons or persons domiciled in Portugal. While preparing this report, students did not have in consideration the specific investment objectives, financial situation or

particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in any security, namely in the security covered by this report.

The author hereby certifies that the views expressed in this report accurately reflect his/her personal opinion about the target company and its securities. He/ She has not received or been promised any direct or indirect compensation for expressing the opinions or recommendation included in this report.

[If applicable, it shall be added: *“While preparing the report, the author may have performed an internship (remunerated or not) in [insert the Company’s name]. This Company may have or have had an interest in the covered company or security”* and/ or *“A draft of the reports have been shown to the covered company’s officials (Investors Relations Officer or other), mainly for the purpose of correcting inaccuracies, and later modified, prior to its publication.”*]

The content of each report have been shown or made public to restricted parties prior to its publication in Nova SBE’s website or in Bloomberg Professional, for academic purposes such as its distribution among faculty members for students’ academic evaluation.

Nova SBE is a state-owned university, mainly financed by state subsidies, students tuition fees and companies, through donations, or indirectly by hiring educational programs, among other possibilities. Thus, Nova SBE may have received compensation from the target company during the last 12 months, related to its fund raising programs, or indirectly through the sale of educational, consulting or research services. Nevertheless, no compensation eventually received by Nova SBE is in any way related to or dependent on the opinions expressed in this report. The Nova School of Business & Economics does not deal for or otherwise offer any investment or intermediation services to market counterparties, private or intermediate customers.

This report may not be reproduced, distributed or published, in whole or in part, without the explicit previous consent of its author, unless when used by Nova SBE for academic purposes only. At any time, Nova SBE may decide to suspend this report reproduction or distribution without further notice. Neither this document nor any copy of it may be taken, transmitted or distributed, directly or indirectly, in any country either than Portugal or to any resident outside this country. The dissemination of this document other than in Portugal or to Portuguese citizens is therefore prohibited and unlawful.