

EQUITY VALUATION: NESTLÉ S.A.

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Project submitted as partial requirement for the conferral of
Master in Finance

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September 2017

Abstract

Equity investment decisions are partially based on expected share price increases. Other factors may influence an investment decision, such as risk, expected dividends and portfolio diversification. In this perspective, one must establish an opinion regarding the value (or expected value) of the issuer.

According to Damodaran (2012), three approaches can be used to value a company: option pricing models, discounted cash flow models and relative valuation. Within each approach, different models can be used.

Most models include parameters that carry some subjectivity, such as cash flow forecasting, growth rates, market conditions and several others. This means that, even though valuation models are quantitative, valuation is subjective. “If a business is complex and subject to constant change, we’re not smart enough to predict future cash flows” – Warren Buffett.

In this study we analyze and value Nestlé, the number one consumer goods company in the world in terms of sales. We then compare our valuation with the market’s and conclude whether the company is under or overvalued (under the scope of our assumptions).

To do so we use the following valuation methods: Free Cash Flow to the Firm (FCFF) and Relative Valuation through peer group multiples. We then compare our research to an investment bank’s to understand whether the valuation (based on the assumptions we make) is realistic.

Our results indicate that Nestlé shares were priced below their true value as at 31-12-2016. Therefore, we would have recommended buying the stock at that time.

Keywords: Nestlé; Valuation; Free Cash Flow to the Firm; Equity investment

JEL Classification: G32 – Value of Firms
O22 – Project Analysis

Resumo

As decisões de investimento em acções são parcialmente baseadas em expectativas de incremento no preço das mesmas. Há outros factores que também podem influenciar esta decisão, tais como o risco, os dividendos esperados e a diversificação da carteira de investimento. Nesta perspectiva, deve-se estabelecer uma opinião relativamente ao valor (ou valor esperado) da empresa emitente.

Damodaran (2012) sugere três abordagens que podem ser utilizadas para valorizar uma empresa: modelos de avaliação por opções, modelos de cash flows descontados e avaliação relativa. Em cada abordagem diferentes modelos podem ser empregues.

A maioria dos modelos inclui parâmetros cuja estimativa é subjectiva, tais como previsões de cash flows, taxas de crescimento, condições de mercado, entre outros. Isto significa que, apesar de os modelos de avaliação serem quantitativos, a avaliação é subjectiva. “Se um negócio é complexo e está sujeito a mudanças constantes, não temos inteligência suficiente para prever cash flows futuros” – Warren Buffett.

Nesta dissertação procedemos à análise e avaliação da Nestlé, a maior empresa de bens de consumo actualmente (em termos de vendas). Seguidamente comparamos a nossa avaliação com o preço de mercado das acções da empresa e concluímos se a empresa está sobre ou subvalorizada.

Para o fazermos utilizamos os seguintes modelos de avaliação: Free Cash Flow to the Firm (FCFF) e avaliação por comparáveis através de múltiplos. Seguidamente realizamos uma análise comparativa com um relatório de avaliação do Deutsche Bank de forma a verificar se a avaliação (baseada nos nossos pressupostos) é realista.

Os nossos resultados indicam que as acções da Nestlé estão subvalorizadas no mercado à data de 31-12-2016, pelo que a nossa recomendação seria de COMPRA a essa data.

Acknowledgements

I would like to use this opportunity to express my profound gratitude to everyone who supported me throughout my academic years at ISCTE-IUL, from my family and friends to the teachers and support staff.

Regarding this dissertation, I wish to express my gratefulness to Professor Pedro Leite Inácio, my tutor and supervisor of this project, for the mentorship, availability and feedback; to my parents, for giving me the opportunity to invest in my future and for always standing by my side, pushing me to be better; to Jorge Frade for helping me by sharing both market and technical knowledge which improved my research; and to my colleagues and friends, who supported and kept me motivated throughout, namely Gonçalo Mendes, Catarina Ramos, João Castro, Tomás Romeiro, João Martins, Pedro Pereira, Gonçalo Nascimento, João Pires, Gonçalo Couto, Joana Teixeira, Marta Brás, Fausto Moura, Catarina Castro, Leonor Paiva and Manuel Gamito.

I wish to dedicate this work to my grandparents, Beatriz and José, for all the love, care and support, for always believing and making me believe in myself.

Agradecimentos

Gostaria de aproveitar a oportunidade para expressar a minha profunda gratidão para com todos aqueles que me apoiaram ao longo do meu percurso académico no ISCTE-IUL, desde a minha família e amigos aos professores e pessoal de apoio.

Relativamente a esta dissertação, quero agradecer ao Professor Pedro Leite Inácio, orientador e supervisor deste projecto, pela tutoria, disponibilidade e feedback; aos meus pais, por me facultarem a oportunidade de investir no meu futuro e pelo apoio incondicional, incentivando-me sempre a superar-me; ao Jorge Frade por me ajudar partilhando os seus conhecimentos técnicos e de mercado, que contribuíram para a melhoria deste estudo; e aos meus colegas e amigos, que me apoiaram e me mantiveram motivado ao longo de todo o processo, nomeadamente Gonçalo Mendes, Catarina Ramos, João Castro, Tomás Romeiro, João Martins, Pedro Pereira, Gonçalo Nascimento, João Pires, Gonçalo Couto, Joana Teixeira, Marta Brás, Fausto Moura, Catarina Castro, Leonor Paiva e Manuel Gamito.

Quero dedicar esta dissertação aos meus avós, Beatriz e José, por todo o amor, carinho e apoio, e por sempre acreditarem em mim e fazerem-me acreditar em mim próprio.

Glossary of Terms

APV	Adjusted Present Value	LLC	Limited Liability Corporation
AUD	Australian Dollar	NOK	Norway Krone
BC	Bankruptcy Costs	NOPLAT	Net Operating Profit Less Adjusted Taxes
CAD	Canadian Dollar	NZD	New Zealand Dollar
CAGR	Compounded Annual Growth Rate	P&L	Profit and Loss
CAPEX	Capital Expenditures	P/B	Price-to-book
CAPM	Capital Asset Pricing Model	P/E	Price-to-earnings
CEO	Chief Executive Officer	P20xx	Projected values
CHF	Swiss Franc	PP&E	Property, Plant and Equipment
CoCo	Comparable Company	PPS	Price per share
COGS	Cost of Goods Sold	PV	Present Value
D	Value of debt	QE	Quantitative Easing
D&A	Depreciation and Amortization	R&D	Research and Development
D/E	Debt-to-Equity ratio	r_{Debt}	Cost of debt
DCF	Discounted Cash Flow	r_{Equity}	Cost of equity
DDM	Dividend Discount Model	rf	Risk-free rate
DPS	Dividends per share	r_M	Market risk rate
E	Value of Equity	ROA	Return on Assets
EBIT	Earnings Before Interests and Taxes	ROAA	Return on Average Assets
EBITDA	Earnings Before Interests, Taxes, Depreciations and Amortizations	ROAE	Return on Average Equity
EC	European Commission	ROE	Return on Equity
EPS	Earnings per share	ROIC	Return on Invested Capital
ERP	Equity Risk Premium	r_U	Required return on assets unlevered
EV	Enterprise Value	RV	Residual Value
EVA	Economic Value Added	SGR	Sustainable Growth Rate
FCF	Free Cash Flow	SMI	Swiss Market Index
FCFE	Free Cash Flow to Equity	SWOT	Strengths, Weaknesses, Opportunities and Threats
FCFF	Free Cash Flow to the Firm	t	Effective tax rate
FED	Federal Reserve System	T_c	Marginal tax rate
FMCG	Fast-moving consumer goods	TS	Tax Shield
g	Perpetuity growth rate	TV	Terminal Value
GBP	Great Britain Pound	UK	United Kingdom
GDP	Gross Domestic Product	USA	United States of America
H20xx	Historic values	USD	United States Dollar
HKD	Hong Kong Dollar	VU	Value Unlevered
IC	Invested Capital	WACC	Weighted Average Cost of Capital
IMF	International Monetary Fund	WC	Working Capital
JPY	Japanese Yen	YTM	Yield to maturity
KPI	Key Performance Indicators		

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1. Introduction

This dissertation is a case study which is carried out under the scope of the Master's Degree in Finance at ISCTE-IUL.

It consists in analyzing and valuing the largest consumer goods firm today: Nestlé. The main goal with this thesis is to understand whether the market is fairly valuing the company, and making a recommendation (buy, hold or sell) based on that analysis.

We will be valuing Nestlé using a Discounted Cash Flow Model (Free Cash Flow to the Firm), cross-checking the results with relative valuation (multiples) and comparing our projections with an investment bank research report. We chose to validate our results through multiples valuation due to the fact that many of the inputs of our cash flow model need to be estimated and carry a strong degree of subjectivity.

Nestlé is a company that operates worldwide and has different business segments (seven in total). In order to obtain more realistic results, one must make a detailed research. With that in mind, there are two alternatives. An analysis based on the business segments (with different growth rates, market betas, etc.) or an analysis based on the geographic areas in which the company operates. We have decided to make our valuation based on business segments. This will also allow us to conduct a study on the profitability of each individual sector and its contribution for the overall performance of the firm, by projecting sales for each individual business segment based on the company's strategy and industry outlook.

A key aspect that has been shaping the company's focus and performance is the shift in strategy towards Nutrition, Health and Wellness. This allied with market outlooks and Nestlé's recent efforts to increase operational efficiency entail the basis for our model assumptions and forecasts.

2. Literature Review

There is not a consensus as to which approach or methodology is the most accurate to value a company, as different firms have different key drivers on which their value is based. Due to the fact that there are many aspects of the business and its industry sector that must be taken into consideration, there are different models that analyze different aspects of the firm.

Bottom line, there is no valuation method perfect for all situations. However, one does not have to be limited to using just one method. Oftentimes investors use more than one model to value a business, get a range of possible valuations and proceed from there by selecting one model that they believe to be the closest to reflect the company's true value or average all the valuations into one.

In this section we will present the different methodologies that can be applicable to the valuation of Nestlé, pointing out their unique characteristics, as well as their strengths and weaknesses. After such appraisal is done it will be easier to select the best combination of models to conduct Nestlé's valuation.

2.1. Discounted Cash Flows

In Discounted Cash Flows (DCF) models we need to estimate the future free cash flows of the company and discount them to obtain a present value estimate. Usually the discount rate that is applied is the Weighted Average Cost of Capital (WACC). The DCF formula is as follows:

$$\text{Net Present Value} = \frac{FCF_1}{(1+WACC)^1} + \frac{FCF_2}{(1+WACC)^2} + \dots + \frac{FCF_n}{(1+WACC)^n} + \frac{TV_n}{(1+WACC)^n} \quad (1)$$

Where:

FCF – Free Cash Flow

The analyst must choose the forecast period (n), after which he will set a fixed growth rate and calculate the Terminal Value at time n (TV_n). The Terminal Value is calculated as follows:

$$\text{Terminal Value} = \frac{FCF_{n+1}}{(WACC-g)}, \text{ where } FCF_{n+1} = FCF_n \cdot (1+g) \text{ and } g \text{ is the growth rate}$$

Relatively to the period of the forecast, there isn't a defined number of years that fits every company. Periods from 5 to 10 years are the most commonly used, but it varies. What one must ensure here is that the forecast goes until the company reaches a steady growth level. Additionally, one must also be aware that this constant growth rate is lower than (or equal to) the growth rate of the economy where the firm is operating (otherwise we would be assuming that the company would "grow to be bigger than the economy", which makes no sense). One other aspect to which the analyst must pay attention, and to which Fernandez and Bilan (2015) advert, is that $FCF_{n+1} = FCF_n \cdot (1+g)$ only if CAPEX expenses exceed depreciation and amortization expenses; otherwise this would imply that the firm would register negative non-financial assets in the future, which is not possible. As such, in perpetuity, these expenses should be assumed to be equal according to Kaplan and Ruback (1995).

As previously mentioned, the most commonly used discount rate is the WACC, and that's the rate we will compute and apply when valuing Nestlé. The formula is presented below.

$$WACC = \frac{\text{Debt}}{\text{Debt}+\text{Equity}} * r_{\text{Debt}} * (1 - t) + \frac{\text{Equity}}{\text{Debt}+\text{Equity}} * r_{\text{Equity}} \quad (2)$$

In the formula above, r_{Debt} represents the average cost of Debt and r_{Equity} the average cost of Equity; also, debt and equity refer to market values. By observing the formula one can see that the WACC includes the tax shield effect (an advantage of having debt, since higher debt means a higher tax shield). The WACC is not without drawbacks though; it is criticized by only being useful in companies which have a constant capital structure (Luehrman – 1997). The existence of exotic instruments within a company's capital structure can also lead to a reduction in the reliability of this model. However, it is still considered by most the best one in terms of simplicity vs reliability.

Cash Flows based Valuation methods demand the use of an asset pricing model so that the analyst obtains a discount factor (cost of capital). The most used pricing model is the Capital Asset Pricing Model (CAPM). There are other models that are considered "extensions" to the CAPM such as the Fama and French three factor model (1993), which adds size and value factors in addition to CAPM's market risk factor, by considering that value and small cap stocks often outperform the market. However, since the CAPM is still the most used model when trying to

value a company, it is the one we are going to apply to estimate the cost of capital of Nestlé. The formula for the CAPM model is the following:

$$r_E = r_f + \beta (r_M - r_f) \quad (3)$$

CAPM's general idea is that investors must be compensated due to two factors: time value of money, represented by r_f (the risk-free rate) thus compensating the investor for placing an investment over a period of time, and risk, which is represented in the other half of the formula. The latter is calculated by multiplying β (a risk measure – beta – that provides the company's correlation with the market) by the market risk premium. According to Fernández (2004) and Koller et al (2005), the risk-free rate used in the model must be the government bond interest rate in the same currency of the cash-flows. The market risk premium can be computed as the historical or the geometric average of the difference between market returns and risk-free government bond returns. We will be using the historical average, as it is the most commonly used. The market return must be the return of a stock market which accurately reflects the scope of business the company engages in. To estimate the company's beta we will perform a regression of the firm's returns with the market returns, as Damodaran suggests.

The Discounted Cash Flows model demands a deep understanding of the firm's drivers, as well as of the industry in which it operates. Forecasting the firm's cash flows demands an intensive study on the company's operations and market conditions. Such study is also good for managers to realize which segments of their firm are less efficient / profitable.

We will be using two approaches, forecasting Free Cash-Flows to the Firm (FCFF) and Free Cash-Flows to Equity (FCFE). These two approaches must yield the same results if performed under the same assumptions, but they differ in nature. The FCFF, as the name suggests, analyses the free cash-flows that the firm will have available to all investors, both equity and debt holders, and is discounted by the WACC. The FCFE is the cash available to equity holders and is discounted by the cost of equity (r_E). The latter can be derived from the first:

$$FCFE = FCFF - \text{Interest} * (1 - t) + \Delta \text{Net debt} \quad (4)$$

As we can see, FCFE equals FCFF deducted from the interest net of taxes plus any cash from taking on debt (variation of net debt).

Although the DCF method is one of the most used approaches by professionals, it has some shortcomings. It is not suitable for companies such as start-ups, as it is nearly impossible to estimate future cash-flows, and to do so would require long term forecasts until reaching a period of stable growth; also to account for investments that will only generate cash-flows in the medium / long term, long term forecasts would be required. Additionally, as previously mentioned, it is not suitable for companies that have a lot of changes in their capital structure (CAPM). Another big drawback is the inherent assumption in the model that, after dividends, all the cash-flow is invested in projects that have the same returns as the discount rate being applied.

2.2. Dividend Discount Model

The Dividend Discount Model (DDM) was introduced in Gordon, et al (1956) and it is a very straight-forward and easy to understand model. According to this valuation method, the company is as valuable as the present value of the future dividends it will pay to its shareholders. This model has some variations, and obviously isn't applicable to companies that do not pay dividends. In fact, it is only accurate if the dividend is stable and predictable. Mature blue-chip companies in well-developed and mature industries are the ones that typically pay stable and predictable dividends: Nestlé is inserted in these categories and, as such, we will be using this model in our analysis. If, historically, the earnings per share have been growing at a constant average rate and the payout ratio has remained consistent, this is probably both the easiest and most accurate model to estimate the value of a company. The formula is presented below.

$$\text{Stock value} = \frac{DPS}{r_E - g} \quad (5)$$

Where:

DPS – Dividends per share

g – Perpetual growth rate

If that is not the case, one can use variations of the model, such as the supernormal dividend growth model, which considers two periods: a first period of high growth followed by a lower and constant growth period.

2.3. Adjusted Present Value

The Adjusted Present Value (APV) Model was introduced by Meyers (1974) with the purpose of management teams being able to assess the relation between financing and investment decisions. This model values financial events independently and bulks their value to the company value. As such, by computing the APV, a manager can get a better perception regarding the different components of the business, their respective challenges or areas of improvement, and their contribution to the company's profitability (Luehrman – 1997).

This model was made popular due to the shortcomings and limitations of the Discounted Cash Flow models that we have referred before. The fundamental difference between APV and DCF models, as stated by Damodaran (2006), is that the latter include the effects of debt financing in the computed discount rate, while the APV model estimates the costs (and benefits) of debt financing independently. Therefore, the Enterprise Value (both equity and debt) is estimated using the following formula:

$$\text{Enterprise Value} = V_U + PV_{TS} - \text{Expected Bankruptcy Costs} \quad (6)$$

Where:

V_U – Value of the Firm unlevered

PV_{TS} – Present Value of Interest Tax Shields

Ergo, this model discounts the cash flows at the cost of equity (estimating the value of the firm unlevered) and adds the effects of debt financing to the company structure separately. It is important to note that the cost of equity of the company unlevered is lower than the cost of equity of the company with debt, since the shareholders don't have to bear the additional risks inherent to having debt in the capital structure. The formula used to estimate the value of the firm unlevered is:

$$V_U = \frac{FCFF_1}{(1+r_U)^1} + \frac{FCFF_2}{(1+r_U)^2} + (\dots) + \frac{FCFF_N + RV_N}{(1+r_U)^N} \quad (7)$$

Where:

$FCFF_N$ – Free Cash Flow to the Firm in period N

RV_N – Residual Value of the company in year N

r_U – Required return on assets (unlevered)

The Present Value of interest tax shields reflects the savings that the company would have by contracting a certain amount of debt. There has been much debate on which is the most appropriate way to compute the present value of interest tax shields. Modigliani and Miller (1963) suggested that it can be calculated simply by multiplying the value of debt by the marginal tax rate:

$$PV_{TS} = \frac{D \times r_D \times T_C}{r_D} = D \times T_C \quad (8)$$

Where:

D – Value of debt
T_C – Marginal tax rate
r_D – Cost of debt

This framework was adopted by Meyers when he introduced the APV model, and assumes that the cash flows are all subject to the risk that is represented by the cost of debt. Fernández (2004) argues, however, that this formula is only valid if the firm maintains its capital structure. Since there is no consensus regarding the best formula / approach to adopt, analysts use the one that best fits their methodologies and conditions.

Companies with a high level of leverage have a higher probability of losing investment opportunities, employees, customers and suppliers, as stated by Koller et al. (2010). Considering that these events result in the decrease of firm value, one can argue that bringing debt into a company's capital structure generates higher costs (due to the higher implied risks previously mentioned), known as bankruptcy costs. According to Damodaran (2006), the expected bankruptcy costs can be estimated by weighting the present value of bankruptcy costs with the probability of bankruptcy, as illustrated in the following formula:

$$\text{Expected Bankruptcy Costs} = PV_{BC} \times P_{\text{Bankruptcy}} \quad (9)$$

Where:

PV_{BC} – Present Value of bankruptcy costs
P_{Bankruptcy} – Probability of bankruptcy

Computing the Expected Bankruptcy costs is the most challenging and less direct step of the APV model, as referred by Damodaran (2002). The likelihood of a company going bankrupt obviously cannot be estimated without a margin for error, but it is computed taking into consideration two factors: operating cash flows net of debt obligations cash flows and the variance

of cash flows. One methodology commonly used is the estimation of a bond rating for each debt level, and for each rating a default probability is computed based on empirical data.

There are two types of bankruptcy costs: direct and indirect. According to Welch (2009), direct bankruptcy costs are “costs that the company bears at the time of bankruptcy, being it legal and administrative costs or time spent by the stakeholders in the process”. According to Weiss (1990) and Warner (1977), these costs represent between 3.1% and 5.3% of firm value (respectively). Indirect bankruptcy costs, according to Damodaran (2001), are the result of the perception that the company is in financial distress, resulting in the increase of working capital requirements (due to the loss of customers and shorter terms demanded by the suppliers, who then view the firm as riskier) and decreased FCFE, also due to the difficulty to get funding and, thus, finance new projects.

The APV model is not used for simple analysis, such as the assessment of whether a project has a positive NPV, as it is more complex than discounted cash flow models based on the WACC and produces similar results. Nonetheless, if the analysis is regarding the implementation of a new business unit and its monitoring, the APV is probably the best option because it enables the financier to assess the impact of each business decision, as it was mentioned above.

2.4. Economic Value Added

This model was developed by the management consulting firm Stern Stewart and it is a performance metric that calculates the remaining profits for shareholders after deducting the costs of its capital (both debt and equity) from its operating profit. The line of thought here is simple: true profit should account for the cost of capital (shareholders' expected return). On this note, the Economic Value Added (EVA) of a company is calculated by deducting the WACC times the total invested capital (minimum amount of return expected by the shareholders) to the Net Operating Profit After Tax (NOPLAT): $EVA = NOPLAT - WACC * IC$

A new version of this model is presented by Koller et al (2005) and derives from the Discounted Cash-Flows model; it should produce the similar results as long as the assumptions are constant: Invested Capital and ROIC have to be calculated accordingly, Invested Capital is the last year's, and a constant WACC. The formula is as follows:

$$V_{firm} = IC_0 + \sum_{n=1}^{\infty} \left(\frac{IC_{n-1} * (ROIC_n - WACC)}{(1+WACC)^n} \right) \quad (10)$$

As we have seen, this method is based on profitability. Looking at the formula we can conclude that the value of the firm is equal to the book value of the invested capital plus the present value of future economic profit the company will generate to its shareholders (additional to their minimum required return). We can also conclude from analyzing the formula that the company only generates economic value if the ROIC is higher than its cost of capital, and if they are the same, the value of the firm is equal to the invested capital.

2.5. Multiples Valuation

This method consists on comparing some of the company's financial indicators with those of similar companies in the market (that have similar capital structure, operate in the same industry and that are similar in size). It is very straightforward and simple, which is probably why it is such a popular valuation method. However, this is not commonly used as “the” method for valuing a company; it is most often used to compare its valuation with other methods’.

We can use Equity or Enterprise Multiples, which should be selected depending on the industry in which the company operates. Some examples are the price-to-earnings ratio (P/E), the price-to-book ratio (P/B), Enterprise value to Sales, Enterprise value to EBIT, Enterprise value to EBITDA, Enterprise value to FCF, and others.

3. Company Presentation

3.1. Company History

The company has its roots in 1866, when the Anglo-Swiss Condensed Milk Company was founded. In 1867, Henri Nestlé started an infant food company, which he later merged with the Anglo-Swiss, in 1905, forming what is now known as the Nestlé Group. In this period the industrial development allowed for a reduction in commodity costs, which boosted the international trade of consumer goods. In 1905, Nestlé went international and started using overseas branches to secure a sales network in all continents. Before World War One Nestlé was already a global dairy company.

The war started in 1914 and led to an increase in demand for chocolate and condensed milk; this imposed both an opportunity and a challenge for Nestlé. The challenge was the shortage of raw materials, allied with the limits on cross-border trade. To solve this issue the company invested in processing facilities in the US and Australia; by the end of the war, Nestlé had a total of 40 factories.

Nestlé went through two major crisis, with the decline of the military demand (in 1921) and the Wall Street Crash in 1929. In order to survive them the company became more efficient, with a professionalized management, centralized research and pioneering products being presented to the market, such as Nescafé.

The World War Two in 1939 affected every business segment, but Nestlé continued to operate despite the difficult circumstances. In 1947, the company added Maggi soups and seasonings to its product range, and adopted the name Nestlé Alimentana.

After the war there was a period of prosperity both in the US and Europe, characterized by a change in consuming habits: people started buying refrigerators, freezers and products alike, and favoring convenience food. Nestlé met these needs with the launch of new products, such as Nesquik and Maggi ready meals.

Nestlé grew its business through acquisitions rather than organic growth; this enabled it to enter fast-growing areas such as frozen foods, as well as develop its traditional businesses in

canned food, milk and coffee. The company entered into the cosmetics and pharmaceuticals in the 1970s and got heavily criticized by activist groups, claiming its marketing of infant food was unethical.

The following years Nestlé presented a new ambition, ‘Nutrition, Health and Wellness’. Accordingly, it disposed of unprofitable brands and promoted those that met the needs of increasingly health conscious consumers. The company expanded in Asia, Eastern Europe and the US, also targeting leadership in the water, ice cream and animal food segments.

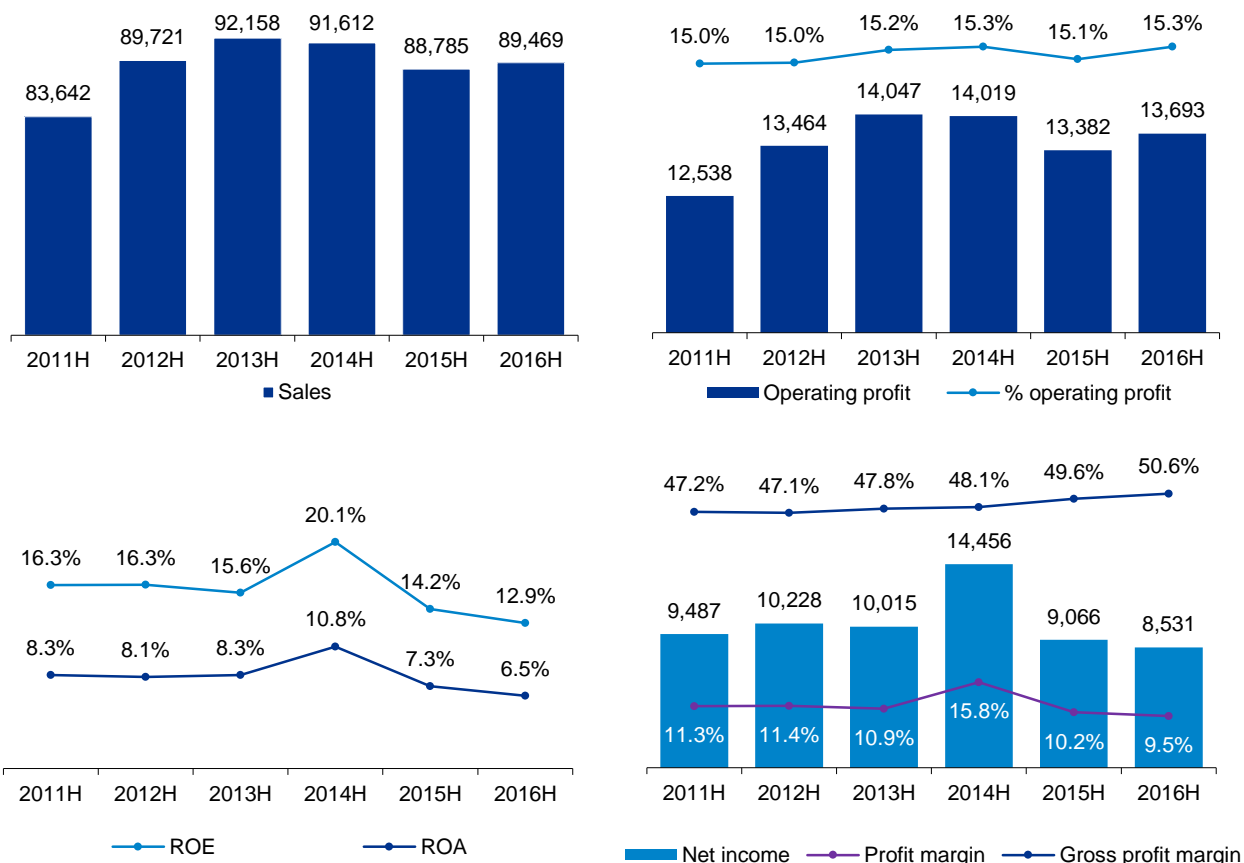
In 2006 Nestlé launched its Nestlé Cocoa Plan and Nescafé Plan, as a part of its new approach, ‘Creating Shared Value’, the central premise being that the competitiveness of the company and the health of the community around it are mutually dependent. The Nestlé Cocoa Plan and Nescafé Plan were launched to develop the company’s sustainable supply chains in cocoa and coffee, improve social conditions in farming communities, and ensure their profitability.

In line with this new focus on healthcare and sustainability, Nestlé established Nestlé Health Science and the Nestlé Institute of Health Sciences in 2011, with the goal of researching science-based nutritional products to prevent and treat chronic medical conditions. In 2014 it took full control of the Galderma dermatology joint venture it had with L’Oréal since 1981. In the past years Nestlé has made it its mission to “enhance lives with science-based nutrition and health solutions for all stages of life, helping consumers care for themselves and their families”.

3.2. Recent Performance

To assess Nestlé’s recent performance we will interpret the company’s key performance indicators (KPI’s). There are a number of indicators one can take into consideration to measure performance (dividend payout ratio, earnings per share, profit margin, price-to-earnings ratio, return on assets, return on equity), activity (total assets, asset turnover, inventory turnover), financing (debt ratio, debt-to-equity ratio) and liquidity (acid-test ratio, current ratio, working capital). In some instances, a peer analysis may be necessary to conclude on the indicators’ interpretation.

Graph 1 Nestlé performance indicators



Source: Nestlé, S.A

The company's sales have increased in the period under analysis, having displayed some volatility mainly due to divestments and acquisitions in line with its strategy and stated ambition, as well as foreign exchange rates volatility (the sales are presented in million CHF; however, most of Nestlé's sales are in foreign currency). The company has also been focusing in increasing its efficiency. Its operating profit as a percentage of total sales increased slightly, and its gross profit margin also increased in the period under analysis. Its profit margin, however, decreased, mainly to an increase in marketing and R&D expenditures, as the company has been repositioning itself under the "Nutrition, Health and Wellness" concept. The spike in net income (and, consequently, in profitability) registered in 2014 was due to an extraordinary gain with associates and joint ventures: 4.6 billion CHF profit on partial disposal of L'Oréal shares and a 2.8 billion CHF revaluation gain on the 50% position already held in Galderma. Return on Equity and Return on Assets have decreased in this period due to a decrease in net income in the past two years and a constant increase of the asset and equity base.

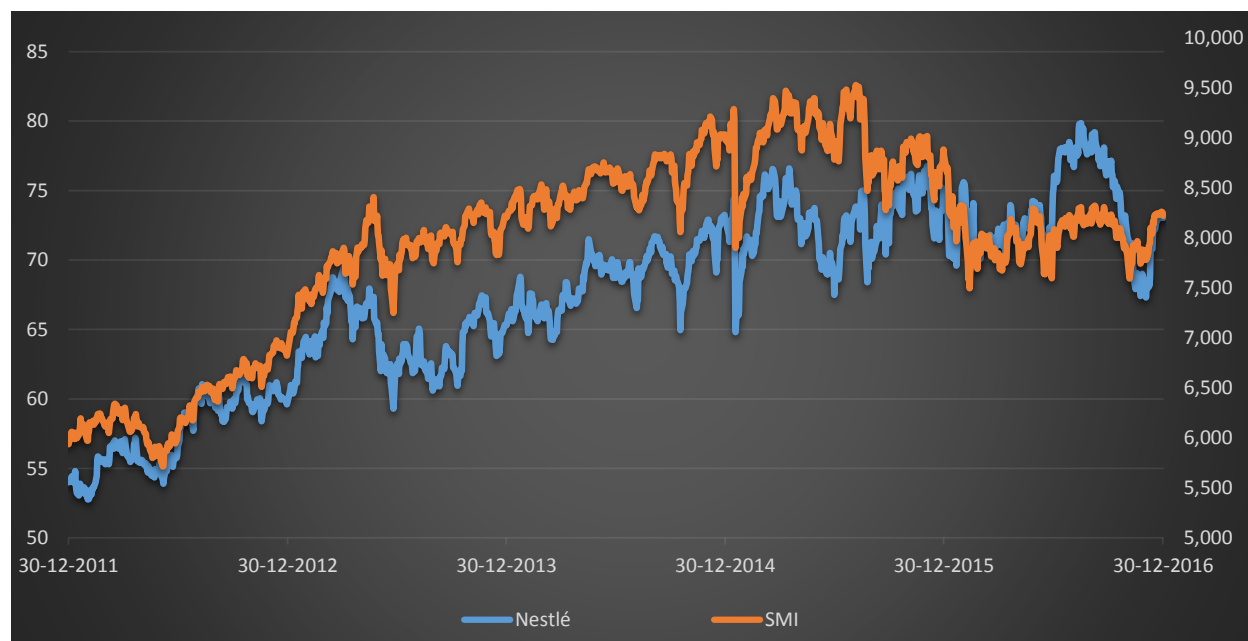
Table 1 Other Key Performance Indicators

CHF million	2011H	2012H	2013H	2014H	2015H	2016H
Total assets	114,091	125,877	120,442	133,450	123,992	131,901
Total equity	58,274	62,664	64,139	71,884	63,986	65,981
Market capitalization	171,287	190,038	208,279	231,136	229,947	226,310
Asset turnover	0.73x	0.71x	0.77x	0.69x	0.72x	0.68x
Inventory turnover	9.0x	10.0x	11.0x	10.0x	10.9x	10.6x
PPS	54.00	59.60	65.30	72.95	74.55	73.05
EPS	2.97	3.21	3.14	4.53	2.90	2.76
DPS	1.95	2.05	2.15	2.20	2.25	2.30
Dividend payout ratio	65.7%	63.9%	68.5%	48.5%	77.7%	83.3%
Price-to-earnings ratio	18.2x	18.6x	20.8x	16.1x	25.7x	26.5x
Debt ratio	19.6%	21.8%	18.1%	15.9%	17.1%	17.6%
Debt-to-Equity ratio	48.9%	50.2%	46.7%	46.1%	48.4%	50.0%
Acid-Test ratio	0.61x	0.58x	0.59x	0.68x	0.54x	0.58x
Current ratio	0.95x	0.88x	0.91x	1.03x	0.88x	0.85x
Working capital	(1,908)	(4,577)	(2,851)	1,066	(3,887)	(5,475)

Source: Nestlé, S.A

In the period under analysis, total asset turnover (calculated as sales/total assets) has decreased and inventory turnover (calculated as sales/inventories) has increased. As previously mentioned, the asset base increased between 2011 and 2016. This was mainly due to an increase in the carrying amount of intangible assets, more specifically brands and intellectual property rights, which increased almost 10 billion CHF between 2011 and 2016. Therefore, the fact that the asset turnover decreased doesn't mean the company is less efficient. In fact, in this period there was an increase in inventory turnover and in gross profit margin.

Graph 2 Nestlé and Swiss Market Index performance



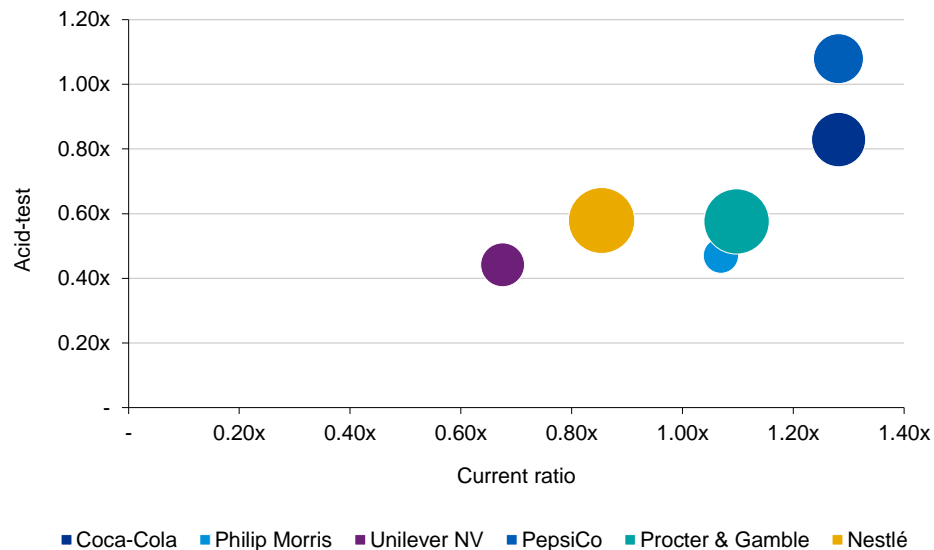
Source: Reuters

As noticeable in Graph 2 Nestlé's stock price is highly correlated to the market (specifically, to the Swiss Market Index). In the period under analysis the company's stock has appreciated significantly, especially considering it is a blue-chip stock. However, earnings per share fell significantly in the last two years, standing at a lower amount in 2016 than in 2011; dividends per share, however, have been steadily increasing, with the payout ratio rising to 83.3% in 2016. This may indicate the company is confident regarding its future earnings; Nestlé may also be concerned about decreasing (or not increasing) the dividends due to the negative message that could send to the markets. Due to the increasing dividends in a scenario of slightly decreasing earnings, the price-to-earnings ratio has increased in this period.

The company's debt ratio (calculated as Nestlé's total financial debt carrying amount divided by total assets) has decreased in the period under analysis, while the debt-to-equity ratio has remained relatively constant. The acid-test ratio is a liquidity measure, and is a strong indicator of whether a firm has sufficient liquid assets to cover its immediate liabilities. Theoretically companies with an acid-test ratio lower than 1 do not have readily available funds to pay their current liabilities, and should be treated with caution; however, this depends highly on business

models and the industry in which the company operates. In this case, a peer analysis is appropriate to assess Nestlé's liquidity situation in relation to its competitors.

Graph 3 Acid-test ratio and current ratio – peer analysis (2016)



Source: Annual reports and own calculations

Analyzing Graph 3 we can see that PepsiCo and Coca-Cola have higher, Philip Morris and Unilever NV have lower and Procter & Gamble has a similar acid-test ratio when compared to Nestlé. However, Nestlé presents a current ratio of 0.85, which is the fifth lowest in this peer group of six comparable companies. Finally, Nestlé's working capital has deteriorated in the past two years, standing at (5.5) billion CHF. Taking this into consideration, we conclude that Nestlé must adopt measures in order to improve its liquidity.

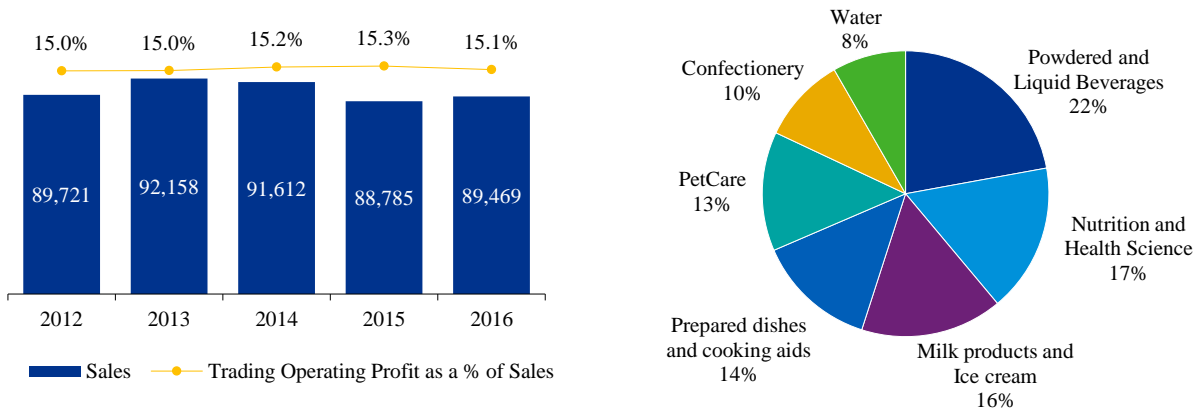
3.3. Nestlé Today

Nowadays Nestlé SA is the largest consumer goods company in the world, with more than two thousand brands and sales of almost 90 billion CHF in 2016. Its headquarters are located in Vevey, Switzerland, and employed approximately 328 thousand people in 2016. Currently Nestlé operates in 189 countries and benefits from its decentralized structure, which allows key decisions to be made as close as possible to its customers, accordingly to their specific needs.

3.3.1. Business Segments

Nestlé’s activity can be divided into 7 business segments, which we will analyze in detail: Powdered and Liquid Beverages, Water, Milk Products and Ice Cream, Nutrition and Health Science, Prepared Dishes and Cooking Aids, Confectionery and Pet Care. The main brands within each business segment are presented in Appendix 1.

Graph 4 Sales evolution and segment’s weight



Source: Nestlé, S.A.

3.3.1.1. Powdered and Liquid Beverages

The Powdered and Liquid beverages is the highest selling segment in Nestlé. The big majority of this segments’ revenue derives from coffee, mainly through Nescafé, the worlds’ number one selling coffee brand, and Nespresso, Nestlé’s innovative and premium coffee brand.

In an attempt to make the Nescafé brand more appealing to younger customers, Nescafé started a repositioning campaign called ‘REDvolution’ in June 2014. Under the repositioning campaign, all the products that were sold under the Nescafé brand would share the same visual identity, communication, and digital strategy, which continues to build brand equity. The brand growth is also supported by the success of Nescafé Dolce Gusto system, now present in 84 countries worldwide, which has seen a new manufacturing facility making Nescafé Dolce Gusto capsules open in Brazil, in 2015 (demonstrating Nestlé’s continued investment in emerging economies). Two other important factors for this brand’s success is the Nescafé Plan, an initiative that supports

responsible farming, production and supply of coffee, improving its sustainability, and the constant innovations, meeting customers' demands, like the new flagship coffee houses Nescafé Harajuku in Tokyo and Nescafé Itaewon in Seoul, that offer interactive displays and new coffee creations inspired by the local trendsetting communities, thus appealing to younger customers in particular.

Nespresso is, ironically, a competitor to Nescafé, and symbolizes the changing trend in the industry that is causing Nescafé's sales to gradually decrease: a consumer shift from instant coffee to a higher perceived quality and premium coffee. This obviously depends on the perceptions about instant coffee, which are different in different parts of the world: in Asia, for example, instant coffee is seen as a luxury product. Nespresso has been reporting strong performances, mainly due to the above-mentioned shift in consumer tastes, and has inaugurated a new factory in Switzerland in 2016 to satisfy the growing demand for its capsules and provide support to its expansion plans in North America through its VertuoLine system (high-quality, long-cup freshly brewed coffee). Keeping up with the company's innovative spirit, Nespresso has opened in Austria the first Nespresso Café, a premium coffee shop with takeaway service that uses robotic technology to prepare customers' orders. Nespresso's constant innovation and its positioning in boutiques, e-commerce and call centers help build consumer intimacy and accelerates its sales growth.

3.3.1.2. Water

Water is a key segment for Nestlé's Nutrition, Health and Wellness strategy. Nestlé Waters has a portfolio of 52 brands. Through Nestlé Pure Life, Nestlé's largest bottled water brand, this segment has been growing particularly in emerging markets. Nestlé Pure Life became the world's top selling water brand in 2014. It comprises local water brands in different countries, as well as premium international mineral waters Perrier and S. Pellegrino (thus being inserted in the premiumisation growth driver).

More than half of Nestlé's Water sales are in North America, where the tendency and research show that bottled water will become the top selling beverage by the end of the decade, to the detriment of carbonated sugary drinks. This is mainly due to the shift of consumer habits to healthier drink alternatives. Emerging markets have also registered solid growth rates, boosted by

growing urbanization and the increase of purchase power of the middle class in many parts of the world.

3.3.1.3. Milk Products and Ice Cream

In this segment we have two different markets: the dairy products market and the ice cream market. For one, dairy products are considered to be essential for good health in most cultures, and often represent children's first experience of a Nestlé product. In the other hand, Nestlé has been divesting in the ice cream segment overall, making an effort to enhance the nutritional labelling and focusing on its premium brands, Haggen-Dazs and Movenpick.

Nestlé's dairy products have a wide range of varieties, providing products targeting all segments of the population. The product portfolio provides micronutrients specific to account for the specificities of the area where it is commercialized. For example, Nido Golden Start was launched in Mexico and it is designed for children who skip breakfast because they are in a rush, providing proteins, calcium, vitamin C and fiber. Other examples include Nestlé Milo Nutri G, a ready-to-drink whole grains blend aimed at young adults, launched in Malaysia, and Nesfit, launched in Brazil and designed for people watching their weight to stay motivated.

Regarding the ice cream business, Nestlé has been focusing on improving the nutritional profile and health benefits of its product range, in line with its Wellness, Health and Nutrition ambition. It is important to note, however, that Nestlé has been showing a tendency of divestment in this market, having sold some of its mass-market ice cream operations, for example, in South Africa and in the United Kingdom to R&R Ice Cream, which makes sense, as analysts suggest that Nestlé doesn't want to expand its unhealthy ice cream businesses due to its afore-mentioned ambition, being leader in Wellness, Health and Nutrition. That allied with the premiumisation strategy adjacent to all segments leads analysts to believe that Nestlé will focus on its premium ice cream brands, Haggen-Dazs and Movenpick.

3.3.1.4. Nutrition and Health Science

This segment must also be split and analyzed taking into consideration the specificities of Nutrition, for one, and Health Science. Nestlé's nutrition business targets mainly mothers and infants, while the health science category is divided into two subsidiaries, Nestlé Health Science, which started operating in 2011, and Nestlé Skin Health, which started operating in 2014.

Nestlé Nutrition acts on different fronts. It provides breast-milk substitutes for situations in which breastfeeding is not possible, solutions for infants with specific medical needs, who are unable to absorb, digest or metabolize standard infant formulas, and also provides a range of complementary foods such as growing-up milks, infant cereals and meals and drinks. Nestlé Nutrition launched an interactive, science-based education program designed to help parents provide adequate nutrition in the 1000 first days of life, entitled "Start Healthy Stay Healthy", which is now present in 25 countries. Also, the BabyNes system, available in 4 countries and expected to grow, which provides age specific, single-serve formulas for infants up to 3 years of age.

Nestlé Health Science's portfolio is focused on three pillars: how to age healthily, how to maintain brain health and gastrointestinal health, and how to support those born with inborn errors of metabolism. Its business is organized into three main areas: consumer care, medical nutrition and novel therapeutic nutrition. Consumer care focuses on products people pay for themselves in a pharmacy, a retail outlet or via websites; the two main brands are Boost and Meritene. Medical nutrition, Nestlé Health Science's largest business, covers products recommended by healthcare professionals and mainly reimbursed by insurers or served in institutions; its key focus targets are older people suffering from disease-related malnutrition and people who suffer from food allergy and intolerances. Novel Therapeutic Nutrition is a new segment, focused on gastrointestinal health and brain health.

Nestlé Skin Health's products focus on providing solutions for the health of skin, hair and nails. Its main business is Galderma, a pharmaceutical subsidiary specializing in the research, development and marketing of dermatological treatments; formed in 1981 as a joint venture between Nestlé and L'Oréal, Nestlé acquired L'Oréal's stake in 2014. Other brands in this segment include Restylane, Cetaphil and Daylong.

3.3.1.5. Prepared Dishes and Cooking Aids

This segment's strategy is in line with the company's new ambition, 'Nutrition, Health and Wellness', as it has been actively focusing its food portfolio to meet the demand of increasingly health conscious consumers. By divesting in brands that are perceived as being unhealthy and investing in brands that contribute to a healthy diet, the company's driver is to reduce the amount of salt, sugar and saturated fats in its products and removing trans fats.

As per this new strategy, Lean Cuisine (one of this segment's most important brands) has been through a brand renovation and has reintroduced itself as a modern eating brand. To keep up with the change of consumer habits, the brand is no longer focused on diet and currently focuses in offering modern benefits such as organic ingredients, high-protein, gluten free options, and others.

Also, the Stouffer's Fit Kitchen range is primarily aimed at men and has been primarily developed due to a research which indicated that most men felt there were not enough nutritious and tasty meals in the frozen food segment. Varieties offering protein, complex carbohydrates and vegetables have been successfully introduced in the market.

This segment's most important brand is Maggi, which has also introduced a new mix of products to support the company's strategy. Through this particular brand, the company is leveraging what it calls the 'Kitchen Cupboard' approach, renovating its portfolio with the purpose of using recognizable and familiar ingredients by the consumer such as spices and herbs, while removing artificial additives. This also contributes to the company's efforts in building trust with the consumers, providing transparency in regards to product composition. Also, in emerging markets, fortified products like Maggi soups and bouillon cubes play a significant role in the company's stated responsibility of addressing the problems of under-nutrition by countering the effects of micronutrient deficiencies. Finally, in developed countries with high rates of obesity, Maggi provides a range of balanced low-fat meals in order to address problems caused by over-nutrition.

All these initiatives helped Nestlé become the number 1 food company in Fortune magazine's list of 'Companies that Change the World' in 2016.

3.3.1.6. Confectionery

Nestlé's confectionery segment is divided into three categories: chocolate (74%), biscuits (15%) and sugar (11%). This segment is also being the target of significant changes regarding strategy and product lines in order to respond to consumers' demands.

One good example of this shift in strategy is this segment's most significant brand, KitKat. In 2016, after a study showed costumers wanted personalized and interactive experiences, Nestlé opened KitKat Chocolatory boutiques, a concept which offers people the opportunity to create their own personalized KitKat chocolate with a wide range of possible combinations. In 2017 new boutiques will continue to open globally, according to Nestlé's Annual Review 2016.

Chocolate is a highly attractive category for the company, with growth increasingly fuelled by premiumisation. Recently, Nestlé has launched internationally its premium Swiss chocolate brand Cailler, with a special focus on China and the United States. A significant investment in the internationalization of Baci Perugina, a famous Italian premium chocolate brand, is also underway.

Nestlé's commitment to enhance people's lives by delivering healthier food options has also influenced this segment, with the replacement of artificial colours and flavours for natural ingredients. In 2014 Nestlé stopped marketing confectionery to children under the age of 12 years. Another recent example in 2016 of this strategy was the improvement to the recipes of several brands for children, such as Passatempo, Baton and Milkybar, increasing their milk content and reducing added sugar. According to the company, this focus on providing healthier treats will continue in 2017, including KitKat.

3.3.1.7. Pet Care

The pet care segment is a strong growth driver for Nestlé. The company's ambition regarding nutrition, health and wellness also applies to pets, and it expects to continue presenting sustainable growth through its Purina portfolio and with the introduction of new premium brands such as Merrick Backcountry, in 2016.

Purina includes many top of mind brands of dog and cat food. Since 2015 its portfolio has gone through a process of innovation and renovation. In the US the Purina Pro Plan Bright Mind was launched, with a new diet that promotes healthy aging and healthy cognition in senior dogs. In Europe, the Purina Pro Plan brand presented new formulas to address the changing nutritional needs of dogs in different life-stages, from building a growing puppy's natural defenses to helping adult dogs maintain a healthy weight. These and other initiatives, such as educational programs promoted in schools, Petfinder, a searchable web database of pets in need of adoption, and the donation of \$8 million to pet-related causes and community organizations and civic groups across America in 2016, contribute to the development of a recognizable and respected brand, and are achieved due to a constant investment in R&D.

This segment includes other recognizable brands such as Felix and Friskies. Felix cat food has been expanding its business, recently launching in Japan and growing in Australia. Its production facilities in Europe have been enlarged and now include more efficient, sustainable technology. Friskies is a global brand of cat food and treats, and has launched in 2016 Friskies Pull 'n Play in the US, the first ever tender, edible strings for cats, as a new way for pet owners to treat and play with their cats.

The investment in premium brands is also expected to continue with the increase in demand due to the ongoing trend of "pet humanization". This will provide the company with an opportunity to increase both its market share and its margins, while staying in line with its mission and overall company strategy.

3.3.2 Company Strategy

Nestlé's "objective is to be the leader in Nutrition, Health and Wellness, and the industry reference for financial performance, trusted by stakeholders". This has shaped the company's focus and performance, as it has been shifting its operations to offer products and services that help people live healthier lives.

For Nestlé to maintain and consolidate its position in the market, it is crucial to keep up with market trends and consumer preferences, which are changing at a fast pace, as digital disruption is

reshaping the industry. It is important for the company to invest in R&D and to take advantage of the new opportunities provided by the advances in science and technology. On the other hand, in recent years Nestlé has also attributed increasing importance to maximizing resources by means of cost control, and plans to increase its effectiveness in the future.

The graph below defines the set of priorities Nestlé has defined in order to reach the above-mentioned ambition of being a leader in Nutrition, Health and Wellness, while in a fast-changing environment. The items in orange are the company's operational pillars, in blue are its growth drivers and in green are its competitive advantages.

Figure 1 Nestlé Strategic Roadmap

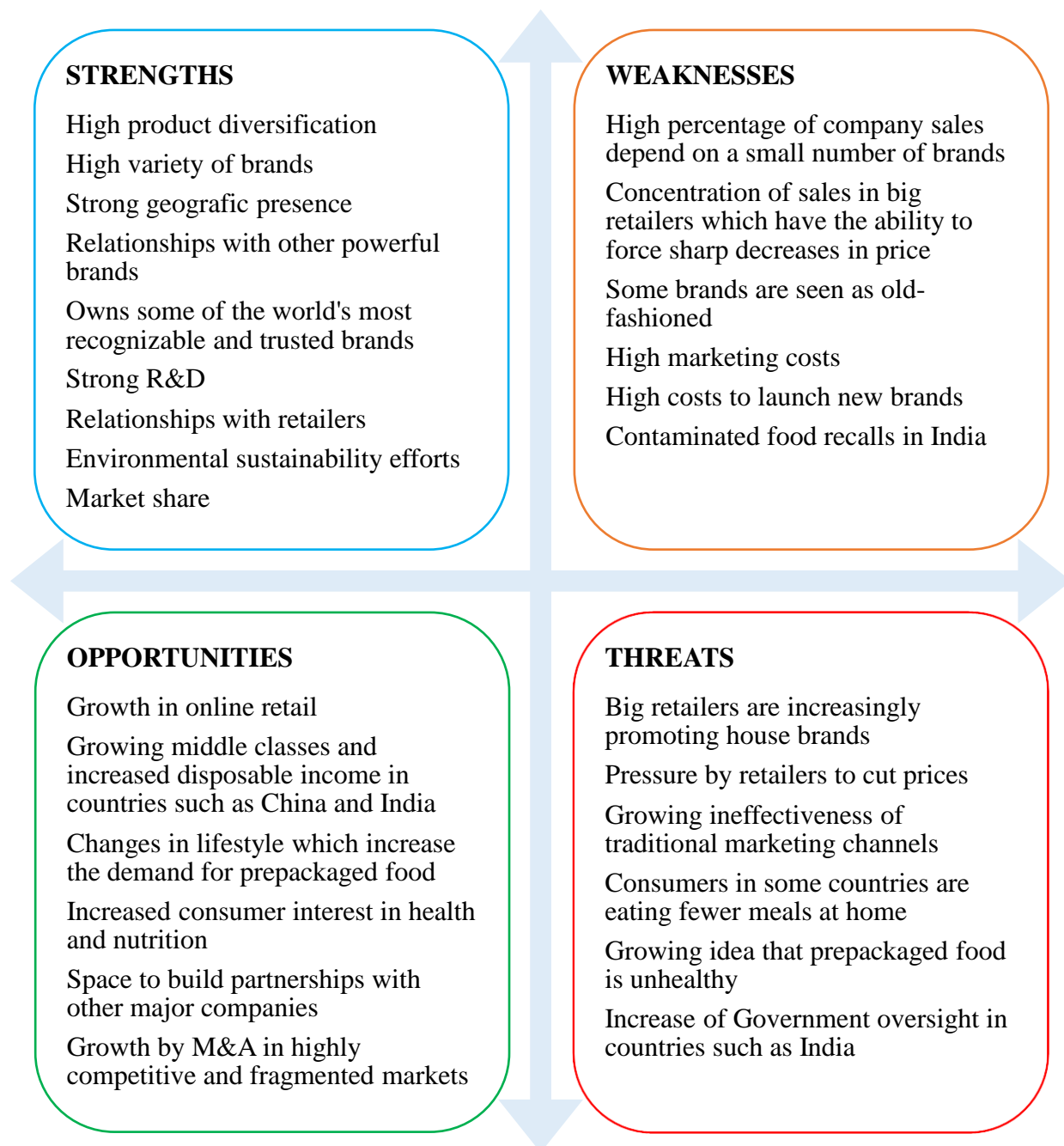


Source: Nestlé, S.A

3.3.3 SWOT Analysis

The following graph shows a comprehensive SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis for Nestlé.

Figure 2 Nestlé SWOT analysis



Source: own analysis

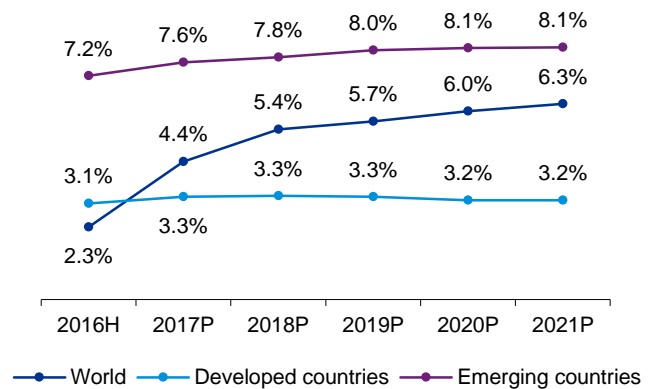
4. Industry Overview

4.1. Macroeconomic Outlook

According to the IMF, in 2017 the global growth (represented by the increase in global gross domestic product) is projected to be higher than in 2016, with a gradual increase in the following years (as shown on Graph 5). The last years have presented low growth rates due to the financial crisis of 2008. High uncertainty and price volatility marked the global economy in the past decade, which negatively affected economies around the globe. Central banks and governments were forced to intervene with measures to prevent the collapse of the financial system, such as the Quantitative Easing (also known as Large Scale Assets Purchases) to lower interest rates and control inflation, and austerity measures as to reduce deficits and avoid a debt crisis in specific countries. This depression affected both emerging markets and developed countries; however, according to IMF, emerging markets growth is expected to steadily increase in the next years.

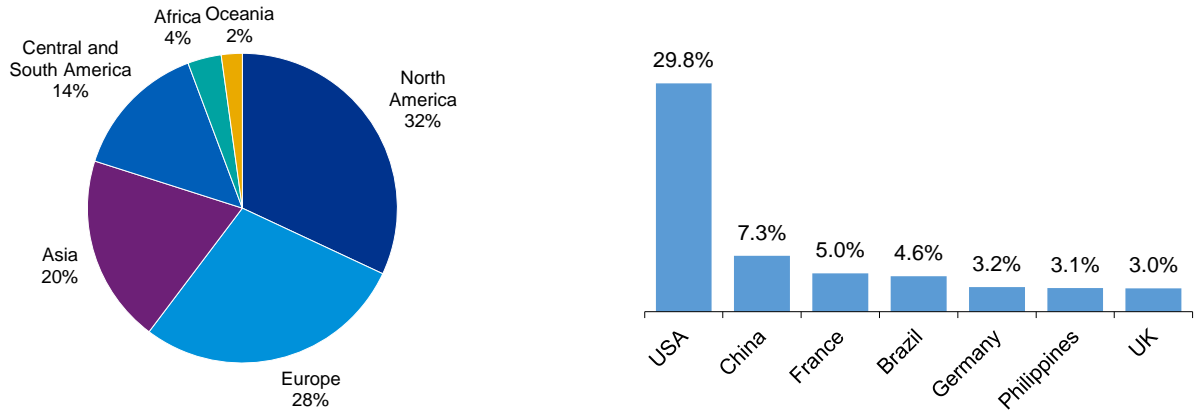
As a global player, Nestlé faces exposure to different risks in different countries. It is important to analyze the global economic outlook, while taking into consideration the countries in which Nestlé has the highest exposure (in this case, we will consider sales per geographic region).

Graph 5 GDP growth rates



Source: IMF World Economic Outlook

Graph 6 Nestlé’s main markets by continent and by country in 2016



Source: Nestlé, S.A

Graph 6 shows that the United States are, by far, the most relevant market to Nestlé in terms of sales, accounting for almost 30% of the company’s revenue in 2016. One can also conclude that 5 markets (USA, China, France, Brazil and Germany) make up 50% of Nestlé’s total revenue sources. Taking into consideration the impact of Donald Trump’s policies, the IMF forecasts a 2.2% and 2.1% increase in real GDP growth in the United States in 2017 and 2018, respectively. Inflation is expected to increase, forecasted to stand at 1.6% in 2017 and 2.0% in 2018. The Federal Reserve System (“Fed”) expects to raise the fed funds rate to 1.5% by the end of 2017; it will normalize it at 2.0% in 2018 and raise it to 3.0% in 2019. This is the result of the end of the Quantitative Easing program in the United States, which terminated in 2014. As a result, long-term and fixed interest rates will rise in the coming years. The unemployment rate is expected to decrease to 4.2% in 2018, considerably lower than the Fed’s 6.7% target (however, a lot of works are part-time and overall job growth is in low-paying industries, meaning structural unemployment may actually increase).

According to the European Commission, the European economy has entered its fifth year of recovery, and it is expected to keep increasing its growth rates steadily in the next two years. The EC’s Spring 2017 Economic Forecast refers a GDP growth (in real terms) of 1.9% in the European Union for each of the next two years, and inflation of 1.6% and 1.3% in 2017 and 2018. Private consumption has been the main growth driver in the past years and is expected to moderately slow due to inflation partly eroding gains in family purchasing power. Unemployment is expected to keep falling, investment to remain steady and the state of public finances to improve. There is,

however, a high level of uncertainty regarding this region's economic stability due to external risks, such as the future US economic and trade policies, and China's economic adjustment efforts; also, in Europe, the health of the banking sector and the Brexit negotiations pose threats to Europe's financial and economic stability.

The economy in the Asia Pacific region is expected to keep presenting solid growth rates in the next years. According to the World Bank, the outlook for developing East Asia is expected to remain positive in the next three years, fueled by an increase in demand and moderate recovery in commodity prices. China is the second most relevant market for Nestlé in terms of sales, and its economy is forecasted to grow 6.5% and 6.3% in 2017 and 2018, respectively, as the government adjusts toward services and consumption. Growth is expected to stand at 5.0% and 5.1% in the rest of the region (including the large economies in Southeast Asia), in 2017 and 2018. Poverty in the region will decrease, private investment will increase and a strengthening in regulation is expected. Risks include inflation hikes, environmental regulation and public debt levels.

4.2. Fast-Moving Consumer Goods

Fast-moving consumer goods (FMCG) are typically products that have a short shelf life, high volumes, relatively low prices, frequent purchase and rapid consumption. This industry is often categorized into 4 segments: Household care, Personal care, Food and beverages and Health care.

The FMCG industry is mature, which means that high growth rates in sales are not forecasted for this market. However, in general it has low income elasticity, which means that it is very resilient to recession, as most companies in the sector were able to overcome the recent financial crisis. Also, this industry is highly concentrated, displaying high market saturation and low consumer switching costs, making it highly competitive.

Regarding market trends, this industry is a fast-changing one and it tends to follow major global trends. McKinsey & Co. identifies the five dominant forces that will drive changes in consumer landscape over the next 15 years as follows:

Table 2 Five dominant forces that will drive changes in consumer landscape

Changing face of the consumer	Evolving geopolitical dynamics	New patterns of personal consumption	Technological advancements	Structural industry shifts
<ul style="list-style-type: none"> • Middle-class explosion • Aging population • Women in the workplace • Urbanization • Rich becoming richer • Millennials taking over • Shrinking household size 	<ul style="list-style-type: none"> • Rising labor and commodity costs • Economic power shifts • Economic interconnectedness • Climate change 	<ul style="list-style-type: none"> • Increase in convenience • Focus on health and wellness • Demand for personalization • Shift in discretionary spending • Sharing economy • Focus on shopping experience • Demand for customization • Buying local • Simplification of choice 	<ul style="list-style-type: none"> • Mobile world • Big data for operations • Digital profiles • 3-D printing • Advanced robotics • Autonomous vehicles • Advanced analytics for marketing • Ubiquitous Internet • Social-media-driven consumption • Artificial intelligence • Internet of Things • Virtual reality • Wearables 	<ul style="list-style-type: none"> • Activist investors • Direct-to-consumer models • Continued consolidation • Talent shift / drought
<p>Globally, middle-class spending will almost triple by 2030.</p>	<p>China’s real GDP could exceed US real GDP within 10 years.</p>	<p>The size of the sharing economy could exceed \$300 billion by 2025.</p>	<p>By 2030, ~3 out of 4 people will own a connected mobile device.</p>	<p>More than 300 companies faced activist demands in 2014 alone.</p>

Source: “Trends that will shape the consumer goods industry” – McKinsey & Company

Analyzing the above table we can conclude that consumption by middle-class individuals is expected to grow rapidly while the population keeps aging, which will lead to an increase in labor costs. Also, individual consumers will require a higher level of convenience and focus on their

shopping experience, not just the quality of the final product. Finally, more consumers will own connected mobile devices and use them to manage everyday chores, including shopping.

Since Mr. Brabeck-Lemanthe became Nestlé's CEO in 1998, the company shifted its focus and mission, becoming a self-proclaimed Nutrition, Health and Wellness company. It is difficult to choose a specific category in which Nestlé operates due to its diverse portfolio; however, more than 85% of its business is food and beverage. Nestlé is not only ranked as the number one food company in the world, but also the largest consumer goods company (in terms of net sales), followed by Procter & Gamble and PepsiCo (refer to Appendix 2).

4.3. Segments

4.3.1. Powdered and Liquid Beverages

As previously mentioned, the biggest contributors to this segment's revenues are Nescafé and Nespresso, both inserted in the coffee industry; with that in mind, we will be analyzing the coffee industry in this segment.

The outlook for global coffee consumption is not good. The growth registered in 2015 – 1.3% - was the slowest in the last 6 years, according to the Economist Intelligence Unit, which expects global consumption growth to decrease further, to 0.7% in 2016, and picking up to 1.2% in 2017. The growth in this segment has been fueled by the expansion of the middle class in emerging markets; however, the underlying economic growth in these markets has been slowing down, thus promoting a shift of consumption away from coffee and in favor of cheaper beverages.

Brazil is the world's second largest coffee consumer, and the deep recession it faces is reducing coffee consumption, having a big impact in the overall global coffee consumption. Asian markets (notably China), on the other hand, have been presenting higher consumption growth rates; however, not only is the pace of the growth expected to slow down, but it will also come from a significantly low base, meaning it will not be sufficient to fuel a stronger consumption growth in the period under analysis.

Coffee habits are shifting around the world. Consumption trends have been, and are expected to continue changing in both the home and the out-of-home sectors. In the latter, the expansion of

coffee-shop chains will continue. Increasing demand for “on the go” beverages is changing the store configuration, resulting in a larger number of smaller stores. This trend is affecting store format: in some markets, including the United States and China, many large coffee chains are moving towards pre-payment through mobile-phone apps, thus eliminating queues. These technological advances are likely to help the out-of-home sector defend its market share against the home sector at a time when an increasing number of coffee consumers have coffee capsule machines at home.

Regarding the home sector, a shift away from the consumption of instant coffee granules is in progress. The increase in sales of single-serve coffee-capsule machines will help to drive growth and support consumption in the home sector, namely in developed western economies, which have registered especially strong sales growth of machines and capsules. Nestlé, through its Nespresso machines, has seen its sales double in Western Europe in the past 4 years, when global coffee consumption had stagnated. Nestlé has been focusing on the United States and Europe, where sales have performed strongly. By contrast, the share of single-serve coffee machine owners in emerging countries is significantly lower – roughly 1% of households in Brazil – with coffee capsules accounting for a mere 1.7% of the total coffee consumption in these markets.

4.3.2. Water

According to a report by the Transparency Market Research, the global bottled water market is expected to rise at a CAGR of 8.7% from 2014 to 2020. According to this study, the expected growth is motivated by an increase in consumer concern for health and wellness, and the only restraints are governmental regulations and the availability of low-cost tap water, with companies having to adapt their strategies to earn revenues in cost-sensitive markets in emerging economies.

In terms of products, the still water segment held the largest share in the overall market, accounting for nearly 65%. Notwithstanding that, analysts predict that the demand for flavored and functional bottled water will increase in the coming years, surpassing still water in the medium run, as consumers try to work towards better fitness and overall well-being. On the other hand, the carbonated bottled water segment was the second largest in the overall market, accounting for 24%

of the total revenue of the market in 2014; this segment, however, is expected to lose its stand as consumers will increasingly prefer healthier products for hydration.

Over the last years there has been a global shift in consumption, as the bottled waters gain market share against soft drinks. This has led analysts to predict that, within the next 10 to 15 years, bottled water will overtake soda in many relevant markets, such as the US, which accounts for more than half of Nestlé's water sales.

Nestlé's main competitors in the global bottled water market are Mountain Valley Spring Company, LLC., The Coca-Cola Company, Hangzhou Wahaha Group Co. Ltd., Groupe Danone, PepsiCo Inc., and Icelandic Water Holdings.

4.3.3. Milk Products and Ice Cream

Regarding the global dairy industry, analysts projected a CAGR of 4.3% between 2015 and 2020 (according to McKinsey & Company). Similarly to the bottled water segment, the main growth driver for this market is the increasing consumer awareness regarding healthy products. Also, emerging markets represent a big opportunity for existing players (and new entrants) due to changing consumer dietary patterns and increase in demand.

With the shift in consumer demand towards healthier products being the driver of growth in this market, companies must be willing to make bold changes in their product portfolio to keep up with the changing demand. For instance, the markets for fluid milk and commodity cheese has had a stagnant and sometimes negative growth in recent years; in order to access higher growth segments that are outside their historic wheelhouse, dairy manufacturers must start thinking of ways to redefine their identities as more than just traditional dairy processors. This poses both a threat and an opportunity for players in this segment.

The top players in this segment are Nestlé, Dairy Farmers of America, Fonterra, Groupe Lactalis, Unilever, Dean Foods and Danone.

When analyzing the ice cream market, one concludes that it is predominantly dominated by two brands, Nestlé and Unilever, accounting for more than one third of the market. According to Reuters, changing consumer preferences and distribution challenges in emerging markets are

creating new opportunities, as consumers are turning to premium and niche brands, with unusual or healthier ingredients. According to the same paper, the market is expected to grow at an average rate of 6%, similarly to recent years.

4.3.4. Nutrition and Health Science

We will also be analyzing this segment taking into consideration two different markets: infant nutrition, for one, and health care.

The main market driver in the infant nutrition segment is the increase in working mother's population. This has been a key factor in the growth of the infant nutrition market as these working mothers are very dependent on processed infant nutrition products (because most of them return to their jobs shortly after giving birth). On the other hand, declining birth rates in many countries around the world have posed a market barrier for the infant clinical nutritional sector, significantly affecting its market growth. According to Mordor Intelligence, the global infant nutrition market is estimated to reach USD 50.2 billion by the end of 2016. Considering the current status, growth indicators and expected trends, the market is further estimated to reach USD 70 billion by 2021, growing at a CAGR of 6.9% during the forecast period of 2016 to 2021.

According to Deloitte, global health care spending is forecasted to grow at a CAGR of 4.3% until 2019. The expected drivers of growth are the rising health, associated with the lengthening of life expectancy, population growth and aging, easier access to health products and the increase of chronic diseases; the expected constraints to growth in this market include price and value-based care, economic and political uncertainty and cost pressures. This is leading to the formation of large health systems, leveraging economies of scale, risk-sharing, innovation and collaborations (sector defragmentation). As such, companies in this sector are expected to adopt cost reduction strategies and take advantage of synergies while, at the same time, proceeding with R&D to keep up with consumer trends and needs.

4.3.5. Prepared Dishes and Cooking Aids

In this segment we will be analyzing the ready meals market, which includes frozen, chilled, canned and dried ready meals, which are mainly distributed through supermarkets, hypermarkets, independent retailers and convenience stores. The frozen segment accounted for approximately 52% of the ready meals market in 2016. The main reason supporting this segment's growth is the increase in desire for convenience associated with the rise in sedentary lifestyles; also, frozen ready meals are perceived as healthier when compared to other ready meals as they do not contain preservatives.

According to Technavio, the growing demand for convenient food products is one of the key growth factors for the global ready meals market. In recent years there has been a shift in consumption towards packaged and ready-to-eat foods. Due to the sedentary lifestyles and hectic life schedules people are moving toward packaged foods for their convenience. Other factors such as the significant growth in the middle-class population, the rise in urbanization and the increase in the number of working women will also continue to contribute to the growth of this market.

In addition to the above-mentioned increasing demand for convenient food products, the demand for healthy, natural and organic food products is shaping the supply of the market, and is another key factor to boost its growth. Consumers are increasingly preferring quick and organic meals to meet their time constraints without compromising the nutrients, as they become aware of the effects of eating fast food, such as obesity. Market research analysts at Technavio forecast that this market will grow steadily over the next years, at a CAGR of 4.8% until 2021.

The ready meals market is highly fragmented and competitive; vendor differentiation is based on price, preparation time, inclusion of fortified ingredients, product and packaging innovation, promotion and brand image. The main players in this market are Nestlé, 2 Sisters Food Group, Conagra Brands, The Kraft Heinz Company (formed by the merger of Kraft Foods Group and Heinz in 2015) and Unilever.

4.3.6. Confectionery

Given that chocolate represents 74% of the Confectionery segment (in terms of total revenue) in Nestlé, and its weight within the segment is expected to increase, we will be analyzing the global chocolate market.

According to KPMG, this market is changing, and the analysis can be done with regards to two track markets: developed and developing. In the first, referring to markets such as the US and Western Europe, chocolate is relatively inelastic to recession but there is high competition. Ergo, “there needs to be a lot more innovation to maintain market share or grow” – John Morris, European head of consumer markets at KPMG. Regarding developing countries, such as the BRIC countries, Morris argues that manufacturers need to address to the specific consumer preferences of each market to foster growth, adding that upcoming health regulations can pose a challenge and will mold this market’s future.

Regarding developed markets, the analysis by KPMG predicts companies in this sector will need to find innovative ways to appeal to customers, and the way to do that would be to introduce new and wild flavours, as well as to allow consumers to create personalized treats and investing in premiumisation. Creating brand awareness through marketing campaigns which promote sustainable sourcing is also a strategy that industry leaders are and will continue to pursue, as consumers attribute increasing importance to these matters in developed countries.

On the other hand, tapping into growth in developing markets requires a different strategy: a global set of local operations. Each market has its own needs and demands for specific characteristics. In China there has been reportedly a widespread lactose intolerance which slowed down growth in this market, but premium products sold well. In Asia-Pacific many companies gained market share by introducing spices into their chocolates.

According to Technavio, the leading vendors in the market are Ferrero, Hershey's, Mars, Mondelēz and Nestlé, and is a highly concentrated and dynamic market due to the presence of a large number of both regional and global players, with many players supplying differentiated products and portfolios at competitive prices. The global chocolate market is expected to grow at a CAGR of 4.9% between 2016 and 2020.

4.3.7. Pet Care

The pet care market is mainly comprised of pet food and pet health care, but there has been a sturdy growth in pet trackers and monitoring in recent years, and this trend is expected to continue in the future. New trends and innovations apart from the usual pet care products include services such as pet training and pet day care, which have also been growing in the last years in developed countries.

According to Technavio, this market is divided into 3 segments: pet food, pet accessories and pet grooming, with the pet food segment dominating the market and forecasted to occupy 87% of total market share during the forecast period (2016-2021). Within the pet food segment, dry foods account for the highest market share as they are easy to store and affordable.

Pet owners show preference for natural and organic pet food products as they are safer, more nutritive and overall healthier choices. The rising trend towards customized pet food products creates a big opportunity for companies to gain market share and is expected to have a significant impact in this market's growth perspectives for the forecast period. To meet consumer demands, several pet food manufacturers are including natural pet food options in their product lines. Also, pet owners are increasingly demanding premium food products and grooming services to care for their pets, which has considerably raised the average spending limit of pet owners in the industry. This is mainly due to the fact that pet owners are accepting their pets as part of their families (humanization). In addition to that, the escalating disposable income of middle class pet owners forecasted for the near future, aligned with the rising trend of nuclear family are expected to be key drivers of this market.

Currently having the lowest birth rate in the world, analysts predict that China will boost the global pet care market, as people choose to spend more on their pets rather than having children. India, however, tops the Asia Pacific market in terms of healthy growth, and North America will be the highest revenue-generating region in the pet care market, as it is anticipated to concentrate more than 40% of total market share.

The pet care market is extremely competitive, as several companies compete in terms of product differentiation, price, quality and product portfolios. Many vendors are extending their businesses to developing markets. The intense competition in the market is expected to lead to supplier

consolidation in the coming years. Currently, the main players in the market are Ancol Pet Products, Beaphar, Mars, Nestlé and JM Smucker. According to Technavio's market research analysts, the global pet care market is forecasted to grow at a CAGR of 4.9% between 2016 and 2020.

5. Valuation

5.1. Sales Growth

Forecasting sales growth must not be made considering the company as a whole; that would be a simplification that most likely would not result in a well-founded valuation. The underlying assumptions to estimate sales growth will take into consideration the 7 segments in which Nestlé operates, analyzing each segment individually. The weight each segment has to Nestlé's total sales must be taken into consideration; also, each segment has its specificities, presenting different growth rates and performances, given the different strategies that each brand follows, as well as the countries in which they operate.

In this assessment one must also bear in mind that Nestlé is a multinational corporation and, as such, is exposed to different risk factors that have to be reflected. Such risk factors include exchange rates volatility, global inflation, growth prospects of developed, under developed and emerging markets, and others.

Exchange rates can have a big impact in a company like Nestlé, which presents its results in Swiss francs (CHF), but only a fraction of its revenues / costs are in this currency (only 1.7% of Nestlé's total sales in 2015 were denominated in Swiss francs). This poses a major foreign-exchange risk for the company. More so after the Swiss franc unpegged from euro in January 2015, after which there was a period of high market volatility.

Referring to growth prospects of different countries, Nestlé's sales in 2015 derived mostly from developed markets (which accounted for 53% of total sales). However, the company is investing and expanding in emerging markets, and these are poised to increase their weight in Nestlé's total sales (as they have been in recent years), making this factor a major growth driver.

Nestlé is focusing also in premiumisation across many segments of its portfolio (beverages, chocolates, prepared dishes, coffee, confectioneries and milk). As stated by Nestlé India's chairman, Antonio Helio Waszyk, "we may need bold changes, swift adaptation, and tough decisions, especially for evolving to a product portfolio that is more focused on premium ranges". This strategy is contributing to higher margins, with the company withdrawing low-margin and low-growth products in its portfolio and including high-margin premium products.

This poses another issue that impacts sales: the impact of acquisitions and divestures. An example illustrative of this situation can be the sale of Alcon, a medical company specialized on eye-care products, in 2010 (Novartis exercised its call option to acquire the remaining 52% of Alcon outstanding capital from Nestlé). For valuation purposes, we assume the negative impact of divestures in sales is offset by the proceeds received, meaning the future discounted cash flows from the divested operations are equal to the proceeds received, thus having a null impact on valuation.

Since Nestlé has such a diversified portfolio of brands, and even though it is considered to be a mature and stable company, different segments have specific levels of maturity and stability (also affected by all the above-mentioned factors). We will be assuming that stable segments will reach the steady state on the second year, with one bridge year, while the high growth segments will reach steady state on the fifth year.

5.1.1. Powdered and Liquid Beverages

This segment is the highest contributor to Nestlé's total sales, registering CHF 19.8 billion in 2016 (22.1% of total revenue). However, this segment has reported continuously lower growth rates in recent years, having inclusively decreased its revenues in 2014 and 2015. This reduction is mainly due to the decrease of sales of Nescafé, the main contributor to this segment's sales.

Nescafé is the worlds' best-selling coffee. Nestlé estimates that it has approximately a 20% market share. Curiously, as it was mentioned previously in this paper, one of its competitors is Nespresso, seen as a more exclusive and premium brand, which is also owned by Nestlé. New investments and innovative initiatives regarding Nescafé, such as the Nescafé 'REDvolution', new manufacturing facilities in emerging countries, new flagship coffee houses that offer interactive

displays and new coffee creations inspired by local trends, the opening of the first Nespresso Café, and others, lead experts to believe that sales will continue to recover similarly to 2016 and continue to register positive growth in the next years.

Taking these factors into consideration, we forecast a 0.5% nominal growth rate in 2016 (which implies a forecasted negative 3.1% real growth rate), and a gradual increase per year until 2021, where it reaches its steady growth rate, at 3.5% (nominal). Since the forecasted inflation rate is approximately 3.5% from 2020 onward, we are assuming that the sales of this segment will grow at the same pace as the global inflation, which means that this segment is not expected to grow in perpetuity, in real terms.

5.1.2. Water

Water is the least representative segment in terms of sales, accounting for 8.3% of Nestlé's total revenue in 2016. However, it has been registering solid growth rates in the past years (an average of 5.2% in the past 5 years if we remove the negative impact of foreign exchange rates, according to Nestlé).

Due to the previously mentioned market conditions (the growing global health awareness and the increase in consumer purchasing power) and the increasing market share of Nestlé in this segment (which tends to keep gradually increasing with the entry into new markets), led by Nestlé Pure Life, it is reasonable to expect higher growth rates for this segment.

Consequently, we assume a steady increase in sales per year, starting with a growth rate of 1.25% in 2017, reaching steady state in 2021 at a growth rate of 5%. This will be the rate for this segment in perpetuity as this segment is expected to grow at a higher pace than inflation and below the forecasted global GDP growth rate (6.3%).

5.1.3. Milk Products and Ice Cream

This segment is composed of two different markets, with the milk products accounting for approximately 75% of the segment's total sales and the ice cream accounts for the remaining 25%. This segment has registered negative growth in the past years, mainly due to the divestment in the

ice cream segment. For everything we have analyzed in terms of operations and market, we assume the dairy products will assume a higher weight in this segment, standing at 85% in perpetuity.

Given the divestments of the company in the ice cream business, we assume this strategy will continue in the provisional period, and assume a negative growth in the first three years, and a convergence to a growth rate equal to zero in perpetuity.

Regarding the dairy segment, as it was previously mentioned the forecasted growth rate for the milk products industry is 4.3% between 2015 and 2016, and the main driver for this growth is the shift in consumer preferences towards healthier products. Nestlé is positioning itself as a leader in Nutrition, Health and Wellness, with a stated mission to “enhance lives with science-based nutrition and health solutions for all stages of life, helping consumers care for themselves and their families”, which is coherent with the growth driver of this segment. Taking this into consideration, coupled with Nestlé’s market presence (on the upside) and the intense competition in this sector (on the downside), we forecast a steady recovery in the milk products segment which will lead to a growth similar to the market in perpetuity, as presented in the table below.

Table 3 Milk products and ice cream sales projections

	P2017	P2018	P2019	P2020	P2021
Milk products (85%)	0.5%	1.5%	2.4%	3.4%	4.3%
Ice cream (15%)	(10.0%)	(7.5%)	(5.0%)	(2.5%)	0.0%
Nominal growth rate	(1.1%)	0.1%	1.3%	2.5%	3.7%

Source: Own projections

5.1.4. Nutrition and Health Science

In 2016, this segment’s sales derived roughly 70% from Nutrition and 30% from Health Science. This segment is essential for the company to achieve its ambition of becoming the leader in Nutrition, Health and Wellness; that allied with the fact that it presented, by far, the highest growth in sales in the past years, with an average growth rate of 9.4% and a CAGR of 9.1% between 2011 and 2016, and that the company has no intentions to stop investing in its expansion, leads us to believe it will become the most relevant segment in terms of revenue in the medium term.

Nestlé's sales growth on the nutrition market has been increasing every year, with the main driver being the strong performance on infant nutrition, which has been growing on a double-digit basis in emerging markets. This growth has been driven by continuous strong sales of NAN, Cerelac and its premium brands.

Nestlé Health Science has been delivering high growth rates, mainly in Europe and North America, and it's not expected to slow down given its plans to keep expanding the business. As a result, last year, its presence got stronger in China as well. Nestlé Skin Health, in its first two years, delivered double-digit growth with strong performances in all geographies. This growth was further strengthened by the acquisition of the full rights to commercialize several key aesthetic dermatology products in the United States and Canada.

It's assumed, then, that in 2017 this segment will present a growth equal to last 3-year average (8.4%, as sales growth slowed down in 2016), slowing down, with the growth rate decreasing steadily until 2021 as the Health Science category is getting more mature. We also assume that, in 2021, which is representative of the steady state, the growth rate will remain at 6.3% (forecasted GDP growth rate).

5.1.5. Prepared Dishes and Cooking Aids

In the past years this segment has registered the lowest sales growth - CAGR of (2.7%) between 2011 and 2016 - due to a variety of factors. In 2016, prepared dishes and cooking aids accounted for 13.6% of Nestlé's total revenue. As previously mentioned, the ready meals market outlook is positive: a CAGR of 4.8% is expected until 2021; however, it is a highly concentrated and competitive market, in which companies have been forced to invest in innovation and rebranding in order to keep up with the changes in consumer preferences for healthier food.

The year in which this segment suffered the highest decrease in sales was 2015. Contributing to this year's weak performance was a situation in the Indian market. In June of 2015 the Indian government ordered Nestlé to remove its nine varieties of Maggi noodles after tests to 29 samples found that 15 had levels of lead above permissible limits. Even though the company disputed this in court, it had to withdraw its noodles from the Indian market. The decrease in sales came not only from the impediment of selling noodles, but mainly due to the negative impact this had on

the company's reputation. By November Maggi noodles were already back in the market, and Nestlé has been investing in marketing for this brand to regain consumer confidence.

Another key factor that contributed to the decrease of sales in this segment is the brand repositioning, focusing its food portfolio to meet the demand of increasingly health conscious consumers by divesting in brands that are perceived as being unhealthy and investing in brands that contribute to a healthy diet. This divestment results in immediate sales decrease, while the investment in new brands and repositioning of existing brands takes longer to reflect higher sales.

With the positive outlook for the market and Nestlé's repositioning, we assume the company will be able to gradually attain positive growth in this segment and follow the impact of global inflation in steady state.

5.1.6. Confectionery

This segment has produced negative growth rates in terms of sales in the last years, registering a CAGR of (0.9%) between 2011 and 2016. One key factor for this decrease was Nestlé's decision to stop marketing confectionery to children under the age of 12 years in 2014 (in 2014 and 2015 this segment's sales decreased by 5.0% and 9.2% respectively), related with its commitment to contribute to healthier food options for its consumers.

Nestlé's overall strategy for this segment seems to be in line with market analyst's expectations for the changes in approach that companies must present in order to capture market share created by consumer demands shift. Investing in innovation and premiumisation for developed markets and coming up with individualized strategies for developing markets is expected to contribute to a steady recovery in sales.

Currently Nestlé is the fifth key player in this market, after losing market share in the past years, and stands behind Mars Inc, Ferrero, Hershey's and Mondelēz. By taking advantage of its positioning in the market, Nestlé has the opportunity to increase once again its market share namely through developing markets, in which the habit of chocolate consumption is growing.

Based on these factors, we expect that this segment's sales will slowly and gradually increase in the upcoming years, reaching a steady growth in 2021 similar to the impact of global inflation.

5.1.7. Pet Care

In 2016 pet care was the fourth most relevant segment in terms of sales for Nestlé; however, in the past 5 years it is the second segment with the highest CAGR at 4.3%, and thus represents a strong growth driver for the company.

Nestlé's strategy in this market meets consumer demands and the shift in consumer preferences that has been shaping the market, and is forecasted to continue. The inclusion of natural ingredients in pet foods, the addition of premium food products in Nestlé's product line and the supply of healthier snacks are examples of the renovation in the company's portfolio in order to keep up with the above-mentioned shift in demand.

One other important factor to determine this segment's growth prospects relates to the increasing average expenditures pet owners are having with their pets. As previously mentioned, this relates to the fact that pet owners are accepting their pets as part of their families, as middle class consumers benefit from increasing disposable income as a result of economic recovery. This creates new market opportunities for Nestlé to develop premium goods and services, which it has been doing.

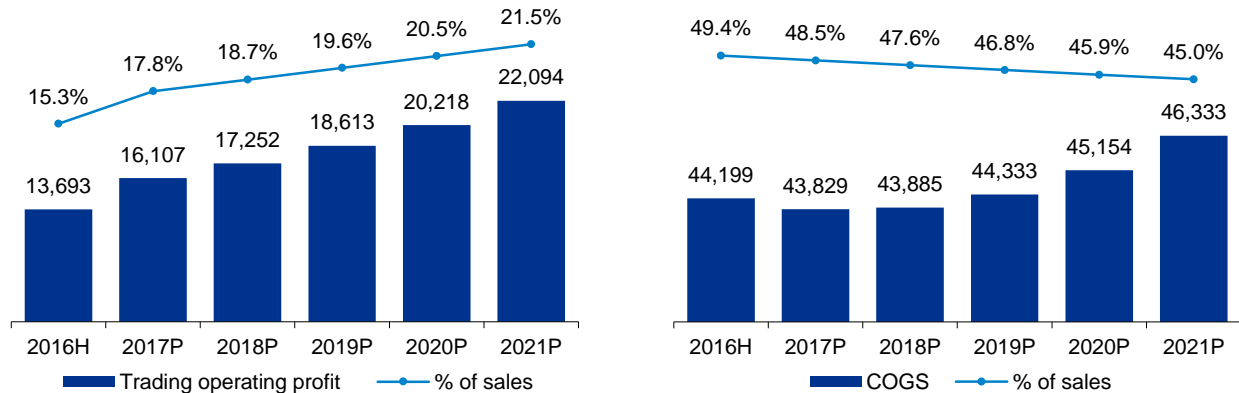
Finally, even though this is a highly competitive market, the expected consolidation of market participants (suppliers) in the next years also poses an opportunity for Nestlé to increase its market share and take advantage of the expected growth for this market simultaneously. Taking all these factors into consideration, we expect that this segment will continue to present a solid growth rate in 2017, similar to the previous 3-year average, and will increase in the following years as to converge with the global economic growth rate in perpetuity.

5.2. Cost Efficiency

We have forecasted operating expenses under the assumption that the company's operating margins would increase, based on two fundamental factors: Nestlé's efforts to increase efficiency according to the Nestlé Business Excellence program (please refer to Appendix IV) and the already mentioned shift towards premium products and services in certain segments, which have higher

gross margins. This leads to a decrease of COGS as a percentage of sales, which is an important growth driver and a key assumption in this valuation.

Graph 7 Trading Operating Profit and Cost of Goods Sold as a percentage of sales



Source: Nestlé S.A. and own projections

The company’s increase in efficiency will result in an increase in profitability: with COGS as a percentage of sales decreasing 5.6 percentage points between 2016 and 2021, this constitutes (coupled with the increase in sales) the main reason for an increase of 6.2 percentage points in the company’s trading operating profit as a percentage of sales in the same period. We consider that Nestlé will be able to reduce structural and operational costs by making use of its size and creating synergies between segments.

Regarding the company’s expense with research and development (R&D) and with marketing, a different assumption was made. The company must continue to invest in innovation to stay ahead of its competitors; also, a continued investment in marketing is necessary to promote the company’s positioning and new lines of products in a fast-changing industry. Ergo, we assumed these costs would increase in the same percentage as the increases projected for the company’s total revenue, thus maintaining a fixed percentage relative to sales in this period.

5.3. Depreciation and Amortization

In order to project Nestlé's depreciation and amortization, we must first refer to the company's Gross Property, Plant and Equipment and Intangible assets. We have forecasted these balance sheet items as follows:

Table 4 Projected Gross PP&E and Intangible assets

CHF million	2016H	2017P	2018P	2019P	2020P	2021P
Land and buildings	17,380	16,761	16,814	17,019	17,369	17,860
Machinery and equipment	30,166	29,828	29,922	30,286	30,909	31,782
Tools, furniture and other equipment	7,653	8,084	8,109	8,208	8,377	8,613
Vehicles	731	889	892	903	922	948
PP&E	55,930	55,562	55,737	56,415	57,577	59,203
% of sales	62.5%	61.5%	60.5%	59.5%	58.5%	57.5%
Intangible Assets	24,781	24,080	23,599	23,303	23,167	23,166
% of sales	27.7%	26.7%	25.6%	24.6%	23.5%	22.5%

Source: Nestlé S.A. and own projections

Property, Plant and Equipment includes land and buildings, machinery and equipment, tools furniture and other equipment and vehicles. We have used sales as a forecast driver for this item, and assumed that, as mentioned above, as the company is expected to increase its efficiency, it will need less tangible assets to grow its sales (higher asset turnover). As such, we project a target Gross PP&E as a percentage of sales for 2021 of 57.5%; as at 2016, this percentage stood at 62.5%, so we project a constant decrease (approximately 1 percentage point per year) during the forecast period until it reaches its target. The same principle applies to intangible assets, with a target of 22.5% in 2021.

Table 5 Projected Depreciation and Amortization

CHF million	2016H	2017P	2018P	2019P	2020P	2021P
Depreciation	2,795	2,777	2,785	2,819	2,877	2,959
% of gross PP&E	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Amortization	337	327	321	317	315	315
% of gross Intangible Assets	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Total D&A	3,132	3,104	3,106	3,136	3,192	3,274

Source: Nestlé S.A. and own projections

Our assumption to forecast depreciations and amortizations is based on historic values. We assumed that the depreciations as a percentage of gross property, plant and equipment for 2016, which stood at 5.0%, would remain constant throughout the forecast period; similarly, we assumed that the amortizations as a percentage of intangible assets for 2016, which stood at 1.4%, would also remain constant in the following years.

5.4. CAPEX

A company's Capital Expenditures (CAPEX) include all investments in fixed assets with the purpose of expanding activity or replacing equipment. In our valuation we linked Nestlé's CAPEX to its total depreciations and amortizations (which in turn, as discussed above, are linked to the company's total revenue).

Table 6 Projected CAPEX

CHF million	2016H	2017P	2018P	2019P	2020P	2021P
CAPEX	4,010	3,808	3,644	3,510	3,402	3,313
% of D&A	128.0%	122.7%	117.3%	111.9%	106.6%	101.2%

Source: Nestlé S.A. and own projections

In 2016 total CAPEX represented 128.0% of depreciations and amortizations. Since 2021 is representative of the steady state (which will be applied to perpetuity calculations), we assumed that the target CAPEX as a percentage of depreciations and amortizations is 101.2%, and linearly decreased this percentage throughout the forecast period. The reason for converging capital expenditures with depreciations and amortizations in perpetuity is quite intuitive: if CAPEX is much higher than D&A the company is expanding into infinity, as its asset base is infinitely growing faster than it is being depreciated; on the other hand, if CAPEX is lower D&A, the company's asset base will go to zero since we would be depreciating more than growing. In this case, since we project perpetual growth above 0%, that must be sustained by growth in CAPEX, which is why in 2021 (our year that represents the steady state), our CAPEX is slightly above Depreciations and Amortizations, as observable in Table 6.

5.5. Investment in Working Capital

Working Capital (WC) is obtained by subtracting a company's short-term liabilities to its current assets. It can be a measure of both a company's short-term financial health and its efficiency. A negative working capital may indicate the company will have difficulties paying back creditors in the short term (with the worst-case scenario being bankruptcy). It can also be analyzed to assess a company's operational efficiency. Proceeds owed by customers and money tied up in inventory cannot be used to pay the company's immediate obligations (and they represent an increase in working capital). So a high working capital amount may not always be a good indicator. One must understand the company's operations and industry in order to assess whether its working capital is appropriate.

Table 7 Investment in Working Capital

CHF million	2016H	2017P	2018P	2019P	2020P	2021P
Current Assets	32,042	32,918	33,818	35,310	37,179	39,472
Current Liabilities	37,517	37,134	36,738	36,972	37,553	38,467
WC	(5,475)	(4,216)	(2,919)	(1,661)	(374)	1,005
Investment in WC	(1,588)	1,259	1,296	1,258	1,288	1,379

Source: Nestlé S.A. and own projections

As discussed previously, as at 2016 Nestlé presents a negative working capital of approximately 5.5 million CHF, which indicates a relatively high liquidity risk (please refer to section 3.2 of this document regarding recent performance). As such, we believe Nestlé will address this issue in the upcoming years and present a positive working capital balance by 2021.

5.6. Effective Tax Rate

Nestlé operates in many different countries, with different tax legislations. Changes in tax legislations, prior year tax adjustments and deferred tax charges can make the effective tax rate vary from one year to the next. In fact, in 2015 the company's effective tax rate was 28.0% and in 2016 it increased to 35.2%.

According to Nestlé, "The increase in 2016 is mainly due to prior year taxes and a one-time deferred tax charge related to the reduction of corporate tax rate in the Canton of Vaud, Switzerland

(where we have our worldwide Headquarters and our main Swiss companies), which was enacted in 2016 and will be effective as from January 2019. Excluding exceptional items, the underlying effective tax rate in 2016 is in line with our tax rate in 2015 and previous years”.

With these factors in mind, and since the last historic effective tax rate did not represent a good proxy for the projection period, we assumed that the tax rate would be equal to the average effective tax rate in our historic period (2011-2016). Therefore, for the projection period and for perpetuity, our effective tax rate is 29.0%.

5.7. WACC

As previously mentioned in the literature review, to compute a company’s weighted average cost of capital (WACC) one must obtain the debt and equity weights in the company’s capital structure, as well as their costs, and apply the following formula:

$$WACC = \frac{Debt}{Debt+Equity} * r_{Debt} * (1 - t) + \frac{Equity}{Debt+Equity} * r_{Equity} \quad (2)$$

All the data we have used in the computation of Nestlé’s WACC is from 31st December 2016, the reference date for this dissertation.

5.7.1. Market Value of Equity

In order to compute the weights of equity and debt in the company’s capital structure, one must use their market values. The market value of equity is straight forward: as it represents the market value of the company’s total outstanding shares, one must multiply the company’s stock price by the number of outstanding shares (which corresponds to the company’s market capitalization). As at 31-12-2016, Nestlé’s market value of Equity is 226,310 million CHF.

5.7.2. Market Value of Debt

To obtain the market value of Debt we must consider the market value of bonds outstanding, bank debt and commercial paper. This is more difficult to calculate since not all of Nestlé's debt is publicly traded.

Regarding the market value of the company's outstanding bonds, it is important to note that most of them are denominated in foreign currency. So our first step was to convert all of Nestlé's bond exposure to Swiss francs at the exchange rates as at 31-12-2016 (please refer to Appendix V). After that, we multiplied the bonds' outstanding balances in Swiss francs by their last quote (market price), and reached a market value of 11,339 million CHF (please refer to Appendix VI).

To compute the market value of a company's bank debt it is necessary to calculate the present value of the company's outstanding loans by discounting them at their yield-to-maturity (YTM). Since we did not have access to this information, we assumed the YTM of each bond would be equal to the correspondent YTM of a bond with the same maturity and denominated in the same currency. We then discounted the facility amounts by the weighted average YTM of the 6 loans and reached a market value of bank loans of 17,813 million CHF, as shown in Table 8.

Table 8 Market value of bank loans

Facility Type	Issue date	Maturity Date	Maturity (years)	Amount (million CHF)	Currency	Yield	Weight	Market value (million CHF)
Line of Credit (>1Y)	01-10-2013	30-09-2018	2	2,194	EUR	(0.138%)	12.0%	2,160
Line of Credit (>1Y)	01-10-2013	30-09-2018	2	3,835	EUR	(0.138%)	21.0%	3,776
Line of Credit (>1Y)	19-10-2016	19-10-2019	3	2,822	EUR	(0.138%)	15.4%	2,756
Line of Credit (>1Y)	19-10-2016	19-10-2019	3	4,169	USD	1.971%	22.8%	4,072
Line of Credit (>1Y)	19-10-2016	19-10-2021	5	2,231	EUR	0.043%	12.2%	2,145
Line of Credit (>1Y)	19-10-2016	19-10-2021	5	3,019	USD	2.411%	16.5%	2,903
Average yield						0.787%		
Market value								17,813

Source: Reuters and own calculations

Commercial paper is an unsecured short-term debt instrument issued mostly by highly-rated companies and must also be considered in the calculation of the company's total market value of debt. These instruments are registered in the Balance Sheet at fair value, which is a good proxy to their actual market value. Since we have no further information regarding these debt instruments, we assumed their carrying amount is representative of their fair value. As at December 2016, Nestlé's commercial paper amounted to 7,171 million CHF.

Finally, by adding the market values of Nestlé's bonds outstanding, bank debt and commercial paper we reach the company's market value of Debt: 36,323 million CHF.

5.7.3. Cost of Equity

To compute a company's cost of equity we need to consider three variables: the risk-free rate, the company beta and the market risk premium. After computing these three parameters, we must apply the formula mentioned in the literature review, which is as follows:

$$r_E = r_f + \beta (r_M - r_f)$$

5.7.3.1. Risk-Free Rate

The risk-free rate used in the calculation of the cost of equity must be consistent with the theoretical rate of return for an investment that comes with no or very little risk. Since Nestlé S.A. shares are traded in the SIX Swiss Exchange and are denominated in Swiss francs, we assumed the most reasonable proxy for this input would be the 10-year Swiss Government Bond rate.

However, the demand for high-quality in detriment of high-yield instruments due to the deep recession and European debt crisis has put downward pressure on interest rates in countries deemed as safest, such as Germany and Switzerland. This means investors are willing to pay to invest in securities they perceive as safe. Consequently, as at 31-12-2016 the 10-year Swiss Government Bond rate stands at negative 0.206%. Since negative interest rates are not expected to persist in the medium / long term, for the purpose of this valuation we assumed a risk-free rate of 0.0% for the computation of the cost of Equity.

5.7.3.2. Beta

Beta is a measure of a security's systematic risk. It represents the tendency of a security's returns to respond to market (index) fluctuations: it is also used as a volatility indicator. A beta of 1 indicates that the security's price moves with the market. A beta lower than 1 means that the security is less volatile than the market. A beta higher than 1 means that the security is more volatile than the market (all of this is theoretically accurate).

Since the Nestlé S.A. shares are traded in the SIX Swiss Exchange we used that Index as a benchmark for the market. In order to compute beta we performed a linear regression in which the independent variable is the Swiss market quote daily variation and the dependent variable is the Nestlé's stock daily variation, with a time span of 5 years (between 31-12-2011 and 31-12-2016).

The raw beta corresponds to the slope of the linear equation: 0.801339 (please refer to Appendix VII). Since statistically, over time betas may exhibit mean reverting properties (especially as extended periods significantly above 1 may eventually decline and betas below one may revert toward 1), we applied a smooth factor of 1/3 (also known as the Blume method, which brings the beta a third closer to 1) in order to compute the adjusted beta, using the following formula:

$$\text{Adjusted beta} = 2/3 * \text{Regression beta} + 1/3 * 1$$

By applying the formula, we reach an adjusted beta of 0.867559.

5.7.3.3. Market Risk Premium

In order to compute the company's market risk premium it is important to assess its presence in foreign markets. As previously mentioned, Nestlé is present in 189 countries worldwide. We calculated the weighted average market premium by considering each country's individual risk premium (according to Damodaran) and Nestlé's total sales in each geography. These computations can be observed in Table 9.

Table 9 Market risk premium

Country	Sales	% Sales	ERP	Weighted ERP
United States	26,704	29.8%	5.7%	1.7%
China	6,536	7.3%	6.6%	0.5%
France	4,478	5.0%	6.4%	0.3%
Brazil	4,120	4.6%	10.0%	0.5%
Germany	2,874	3.2%	5.7%	0.2%
Philippines	2,741	3.1%	8.4%	0.3%
United Kingdom	2,725	3.0%	6.3%	0.2%
Mexico	2,596	2.9%	7.4%	0.2%
Canada	1,893	2.1%	5.7%	0.1%
Italy	1,861	2.1%	8.4%	0.2%
Japan	1,747	2.0%	6.7%	0.1%
Spain	1,690	1.9%	8.4%	0.2%
Australia	1,519	1.7%	5.7%	0.1%
Switzerland	1,475	1.6%	5.7%	0.1%
Russia	1,400	1.6%	9.2%	0.1%
Rest of the world	25,110	28.1%	11.6%	3.2%
Total	89,469	100.0%		8.0%

Source: Nestlé S.A., Damodaran and own calculations

By doing these calculations we reach a market risk premium of 8.0%. In this model it is common to include a country risk premium in the cost of equity computation. However, since Nestlé has a highly diversified portfolio (both in terms of product line and geographic presence), we assume that risk to be zero. In Table 9 we computed the equity risk premium of the “Rest of the world” as an average of the remaining countries’ risk premiums.

After computing all the parameters in the cost of equity formula mentioned previously, we are able to derive the cost of equity as follows:

$$r_E = 0.0\% + 0.867559 * 8.0\% = 6.915\%$$

5.7.4. Cost of Debt

Nestlé’s debt structure is mostly comprised of bonds. Since Nestlé’s long term debt is rated AA (investment grade) by the three main rating agencies (Standard & Poors, Fitch and Moody’s), we used the proxy defined by Koller et al (2005), which states that the cost of debt can be calculated using the yield-to-maturity of the bonds outstanding. This proxy is computed by adding a risk-free rate to a credit spread.

5.7.4.1. Risk-Free Rate

The risk-free rate used in the computation of a company's cost of debt must be consistent with the company's outstanding bond maturities, as well as the currency in which it reports its earnings. Nestlé's weighted average outstanding bonds maturity is 3.8 years (please refer to Table 10). Ergo, in Nestlé's case, we considered a 4-year Swiss Government bond.

However, due to the factors already described in section 5.7.3.1 of this paper, as at 31-12-2016, the yield on a 4-year Swiss Government bond stands at negative 0.803%. Similarly to our premise when calculating the cost of equity, as we forecast that negative interest rates will not persist in the medium / long term, for the purpose of this valuation we also assumed a risk-free rate of 0.0% for the computation of the cost of Debt.

5.7.4.2. Credit Spread

According to Reuters, as at 31-12-2016 Nestlé has 31 bond issues outstanding denominated in 6 different currencies: CHF, EUR, USD, GBP, AUD and NOK. Our first step was to calculate the credit spread of each individual bond (which we obtained by subtracting the bonds' yields by the respective risk-free rates). The risk-free rates we assumed were Government bonds' yields from the respective countries where the bonds were issued, according to their currency (for the EUR we assumed German bunds were the best proxy) and maturity. This calculation adds the different risks that bonds issued in different currencies entail.

Table 10 Credit Spread computation

Company	Issue Date	Maturity Date	Years to maturity	Amount (million CHF)	Currency	Closing Yield	Risk free	Spread
Nestle Holdings Inc	13-07-2012	13-10-2017	0.8	146,032,000	AUD	2.492%	1.735%	0.757%
Nestle Holdings Inc	20-11-2012	20-11-2017	0.9	119,314,657	NOK	1.303%	0.556%	0.747%
Nestle Holdings Inc	11-12-2013	11-12-2017	0.9	314,110,000	GBP	0.367%	0.006%	0.361%
Nestle Holdings Inc	16-10-2012	16-01-2018	1.0	508,550,000	USD	1.349%	0.818%	0.531%
Nestle Holdings Inc	18-01-2013	18-01-2018	1.0	127,778,000	AUD	2.485%	1.735%	0.750%
Nestle Holdings Inc	14-02-2007	14-02-2018	1.1	250,000,000	CHF	(0.377%)	(0.970%)	0.593%
Nestle Holdings Inc	19-03-2013	19-07-2018	1.5	146,032,000	AUD	2.539%	1.913%	0.626%
Nestle Holdings Inc	24-01-2013	24-07-2018	1.6	406,840,000	USD	1.549%	1.198%	0.351%
Nestle Holdings Inc	06-12-2013	06-12-2018	1.9	292,064,000	AUD	2.615%	1.913%	0.702%
Nestle Holdings Inc	12-09-2013	12-03-2019	2.2	508,550,000	USD	1.809%	1.198%	0.611%
Nestle Finance Int. Ltd	19-07-2012	19-07-2019	2.5	535,710,000	EUR	(0.138%)	(0.754%)	0.616%
Nestle Holdings Inc	02-12-2014	30-09-2019	2.7	406,840,000	USD	1.971%	1.459%	0.512%
Nestle Holdings Inc	11-06-2013	11-12-2019	2.9	508,550,000	USD	1.881%	1.459%	0.422%
Nestle Holdings Inc	14-05-2014	14-01-2020	3.0	661,115,000	USD	2.051%	1.459%	0.592%
Nestle Holdings Inc	18-03-2014	18-03-2020	3.2	182,540,000	AUD	2.924%	2.015%	0.909%
Nestle Holdings Inc	15-04-2014	15-04-2020	3.3	119,314,657	NOK	1.512%	1.103%	0.409%
Nestle Finance Int. Ltd	02-05-2013	04-05-2020	3.3	535,710,000	EUR	(0.108%)	(0.754%)	0.646%
Nestle Holdings Inc	03-11-2014	03-11-2020	3.8	127,778,000	AUD	3.056%	2.110%	0.946%
Nestle Holdings Inc	09-12-2015	09-12-2020	3.9	628,220,000	GBP	0.706%	0.325%	0.381%
Nestle Holdings Inc	09-03-2016	09-03-2021	4.2	559,405,000	USD	2.321%	1.682%	0.639%
Nestle Purina PetCare Co	09-05-1991	01-05-2021	4.3	64,087,471	USD	3.225%	1.682%	1.543%
Nestle Holdings Inc	13-07-2016	13-07-2021	4.5	610,260,000	USD	2.411%	1.934%	0.477%
Nestle Finance Int. Ltd	12-09-2013	10-09-2021	4.7	535,710,000	EUR	0.029%	(0.536%)	0.565%
Nestle Finance Int. Ltd	07-11-2014	08-11-2021	4.9	535,710,000	EUR	0.043%	(0.536%)	0.579%
Nestle Purina PetCare Co	18-02-1992	15-02-2022	5.1	80,313,267	USD	3.405%	1.934%	1.471%
Nestle Finance Int. Ltd	12-09-2012	12-09-2022	5.7	910,707,000	EUR	0.212%	(0.335%)	0.547%
Nestle Purina PetCare Co	02-02-1993	01-02-2023	6.1	44,678,152	USD	3.780%	2.252%	1.528%
Nestle Finance Int. Ltd	16-11-2015	16-05-2023	6.4	535,710,000	EUR	0.233%	(0.335%)	0.568%
Nestle Finance Int. Ltd	30-11-2012	30-11-2023	6.9	502,576,000	GBP	1.284%	0.799%	0.485%
Nestle Purina PetCare Co	15-06-1995	15-06-2025	8.5	52,038,904	USD	3.690%	2.446%	1.244%
Nestle Finance Int. Ltd	13-06-2016	13-07-2106	89.6	33,564,300	USD	Invalid RIC.	2.446%	0.000%
Weighted Average Spread								0.563%
Average bond maturity			3.8					

Source: Reuters and own calculations

After calculating the spreads for each bond issue outstanding, we calculated the weighted average spread (weighted by amount outstanding). As we can see in Table 10, the bond credit spread stands at 0.563%.

The final step to compute Nestlé's cost of debt is, as previously mentioned, to add the credit spread to the risk-free rate. Since we assumed the risk-free rate would be 0.0%, we can conclude that, for the purpose of this valuation, Nestlé's cost of debt is 0.563%.

$$\text{WACC} = \frac{36,323}{262,633} * 0.563\% * (1 - 29.0\%) + \frac{226,310}{262,633} * 6.915\%$$

Having calculated all the necessary inputs, we reach a WACC of 6.014%.

5.8. Perpetual Growth Rate (g)

An important component of this valuation is the perpetual growth rate: the estimated average rate at which we believe the company's cash flows are going to grow in perpetuity. Discounted Cash Flow valuations are extremely sensitive to changes in this input (please refer to section 5.11 of this report), so a reasonable estimation is key for a realistic valuation.

We started by calculating the sustainable growth rate (SGR), as we assume the firm's financial structure will not change (the sustainable growth rate is the maximum rate of growth that a company can sustain without having to obtain external funding). To compute it we multiplied the company's Return on average Equity (ROAE), which stood at 19.3%, by the retention ratio, which we projected to be 25%. We reached an SGR of 4.813%.

However, Nestlé operates in a highly competitive market, with fast-changing consumer preferences. Also, Nestlé has an established vision of giving back to the community and becoming a Health and Wellness company, while creating shareholder value. These factors lead us to believe that Nestlé will not be able to grow at its SGR; for that reason, we added a smooth factor and the assumption that Nestlé's growth would be limited to 60% of its SGR. Ergo, our estimate for Nestlé's perpetual growth rate is 2.888%.

5.9. FCFF Valuation

The Free Cash Flow for the Firm (FCFF) expresses the net amount of cash that a firm generates after expenses, changes in net working capital, investments in fixed capital and taxes. FCFF can also be defined as the cash available to bondholders and stockholders after the company has paid off its business costs. Having computed all the necessary inputs, we begin by calculating the firm's enterprise value.

5.9.1. Enterprise Value

Nestlé's Enterprise Value is computed as follows.

Table 11 Nestlé's Enterprise Value

CHF million	2016H	2017P	2018P	2019P	2020P	2021P
EBIT	13,163	15,156	16,282	17,615	19,182	21,010
- Taxes	(4,413)	(4,389)	(4,716)	(5,102)	(5,555)	(6,085)
+ D&A	3,132	3,104	3,106	3,136	3,192	3,274
- CAPEX	(4,010)	(3,808)	(3,644)	(3,510)	(3,402)	(3,313)
- Investment in WC	1,588	(1,259)	(1,296)	(1,258)	(1,288)	(1,379)
FCFF	9,460	8,804	9,733	10,881	12,129	13,507
WACC	6.014%					
PVFCFF		8,304	8,660	9,133	9,603	10,087
Terminal Value	331,989					
PV Terminal Value	247,920					
Enterprise Value	293,707					

Source: Nestlé S.A. and own projections

As demonstrated in Table 11, the FCFF can be determined using the company's operating profit (EBIT), by deducting taxes, capital expenditures and investment in working capital, and by adding back depreciations and amortizations. Afterwards we discount the respective cash flows at the WACC to obtain their respective present value. Then we compute the Terminal Value by applying a perpetuity with embedded growth to the FCFF of year 2021; after discounting the Terminal Value at the WACC and adding the PVFCFF, we reach an Enterprise Value of 293,707 million CHF.

5.9.2. Equity Value

In order to reach Nestlé's price per share valuation, the final step is to compute the Equity Value. In order to do so, we must deduct net debt, non-controlling interests and unfunded pensions from the company's Enterprise Value.

The firm's net debt is derived by deducting excess cash and marketable securities to its gross debt. Gross debt comprises the market value of all interest bearing liabilities, and amounts to 36,323 million CHF, as previously mentioned. Marketable securities are highly liquid assets which

can be converted to cash in a short time horizon and at their fair price (with virtually no losses); in Nestlé's case this includes commercial paper with maturities up to 6 months, and amounts to 1,821 million CHF. As at 31-12-2016 the firm's excess cash was 7,990 million CHF; therefore, Nestlé's total net debt amounts to 26,513 million CHF.

For the purpose of this valuation we used the book value of non-controlling interests and unfunded pensions, which corresponds to the present value of unfunded obligations. Having all the necessary inputs for the computation of Nestlé's Equity Value, and given the 3,098 million shares outstanding, we reach a price per share valuation of 84.90 CHF, as shown in Table 12:

Table 12 Nestlé's PPS valuation

Enterprise Value	293,707
- Net Debt	26,513
- Non-controlling interests	1,391
- Unfunded pensions	2,796
Equity Value	263,007
# shares outstanding	3,098
Valuation Price Target	84.90

Source: Own calculations

Taking into consideration that, as at 31-12-2016, Nestlé's price per share stands at 73.05 CHF, and our valuation suggests that the stock's fair value (84.90 CHF) is higher than its market value, these results constitute a buy recommendation.

5.10. Relative Valuation

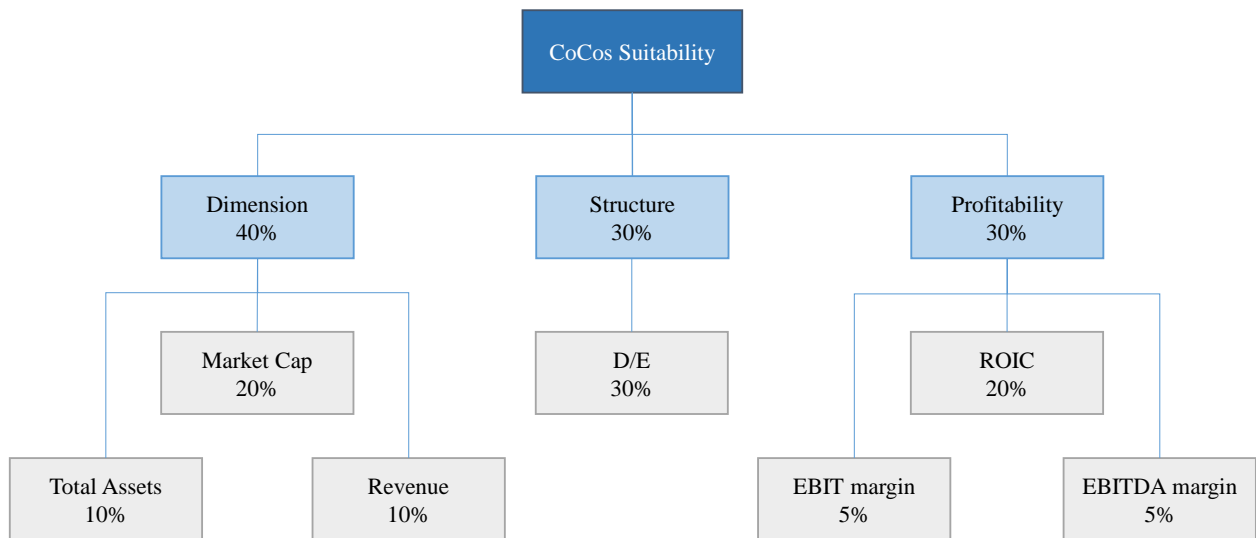
Relative valuation uses multiples from a benchmark of Comparable Companies (CoCos) to determine firm value. Despite most authors considering the DCF method the most accurate one, when applicable, relative valuation is considered to be a useful supplement to assess the model's consistency and accuracy. The aim of this section is to estimate the value of Nestlé's price per share through indicators from an appropriate peer group of comparable companies.

5.10.1. Peer Group Selection

For the multiples valuation to be performed, the first step is to select a peer group. A peer group is a group of companies which operate in the same or in similar sectors and with a similar size and structure. The end goal is to compare operating metrics and valuation multiples and reach a value for a target company.

In order to find the most suitable CoCos, we first selected the 3 main variables to take into consideration in this process: the firm’s dimension, its capital structure and profitability. We then attributed weights to these factors based on which variables we deemed more relevant, as can be observed in Figure 3.

Figure 3 CoCo’s variable weight factors



Source: Own calculations

After attributing the weights to the different indicators we selected 15 companies that operate in similar industries as Nestle and set up a score model which attributed a classification of 1, 2 or 3 depending on whether the indicator was considered 1) similar, 2) neutral or 3) far from similar. The table below shows us the initial list of 15 comparable companies, some of which appointed by Reuters and others added by us.

Table 13 List of Comparable Companies

Company Name	Market Cap	Total Assets	Revenue	EBITDA	EBITDA margin	EBIT	EBIT margin	ROIC	D/E
Nestlé SA	226,310	131,901	89,469	16,295	19.4%	13,163	15.9%	12.2%	35.9%
Johnson & Johnson	323,789	143,910	73,266	25,977	35.5%	22,151	30.2%	18.6%	38.5%
Procter & Gamble	213,404	112,935	61,021	16,419	26.9%	13,774	22.6%	11.7%	57.2%
Coca-Cola	176,735	88,940	42,664	11,361	26.6%	9,540	22.4%	17.6%	198.2%
Philip Morris	161,367	37,556	27,196	11,779	43.3%	11,022	40.5%	38.8%	-
Unilever NV	158,671	60,459	56,478	9,664	17.1%	8,096	14.3%	20.0%	100.3%
PepsiCo Inc	146,899	74,896	64,001	12,624	19.7%	10,211	16.0%	18.9%	333.0%
L'Oreal SA	107,110	38,175	26,696	5,918	22.2%	4,816	18.0%	20.4%	5.2%
Kraft Heinz	89,010	122,785	26,994	8,684	32.2%	7,321	27.1%	7.0%	56.5%
Diageo PLC	75,267	35,243	14,721	4,883	33.2%	4,442	30.2%	13.6%	89.5%
Colgate-Palmolive	57,126	12,355	15,486	4,503	29.1%	4,051	26.2%	40.4%	-
Mondelez	55,273	62,716	26,419	5,437	20.6%	4,598	17.4%	7.9%	68.4%
Danone SA	48,212	47,088	23,511	4,041	17.2%	3,234	13.8%	10.1%	156.8%
Kimberly-Clark	38,389	14,881	18,550	4,060	21.9%	3,342	18.0%	26.1%	-
General Mills	28,704	20,900	14,966	3,267	21.8%	2,689	18.0%	15.0%	219.1%
Kellogg	21,157	15,400	13,263	2,557	19.3%	2,030	15.3%	15.8%	406.6%

Source: Reuters

We then attributed the classifications and arrived to a weighted average score for each comparable company. We chose the 5 companies with the lowest score (closest to Nestlé's indicators), which were Johnson & Johnson, Procter & Gamble, Coca-Cola, Unilever and PepsiCo (please refer to Appendix III).

5.10.2. Multiples

Considering the valuation multiples EV/Sales, EV/EBITDA, EV/EBIT, price-to-earnings and price-to-book, we applied the peer group's averages for the same reference date (December 2016) and obtained the price targets presented in Table 14.

Table 14 Nestlé multiples valuation

	EV/Sales	EV/EBITDA	EV/EBIT	PER	P/B
Johnson & Johnson	4.19	11.65	14.04	20.21	4.31
Procter & Gamble	3.73	13.74	16.99	23.79	3.85
Coca-Cola	4.72	18.04	20.06	25.13	6.86
Unilever NV	2.47	13.79	18.27	22.64	7.67
PepsiCo	2.76	13.74	17.21	22.93	11.92
CoCos average	3.58	14.19	17.32	22.94	6.92
Nestlé Input	89,469	16,295	13,163	8,531	65,981
Enterprise Value	319,878	231,299	227,930		
- Net Debt	26,513	26,513	26,513		
- Non-controlling interests	1,391	1,391	1,391		
- Unfunded pensions	2,796	2,796	2,796		
Equity Value	289,178	200,599	197,230	195,684	456,686
Shares Outstanding	3,098	3,098	3,098	3,098	3,098
Share price	93.34	64.75	63.66	63.16	147.41

Average share price

86.47

Source: Reuters and own calculations

There is a significant discrepancy in the valuation in different multiples. It is clear that the market values Nestlé for its low risk due to high market share (EV/Sales) and solvency situation (price-to-book, driven by a very low level of D/E for industry standards); with the level of earnings the company presented in 2016 the market appears to be overvaluing the company in relation to its peers (in a CETERIS PARIBUS comparison). This may be a consequence of the markets' underestimation of Nestlé's growth and increased profitability potential; divestures and increased R&D targeting portfolio optimization may also explain this difference between operational and structural multiples. However, as we can see the average share price of 86.47 CHF is similar to the one obtained in our DCF model (84.90 CHF).

5.11. Sensitivity Analysis

The discounted cash flow model we used is highly dependent on some key assumptions that, if modified, can produce a significant change in the model's output. Ergo, it is important that these assumptions are realistic; however, it is also beneficial to consider the impact of variations in those key assumptions in the company's valuation, by building optimistic and pessimistic scenarios.

Therefore, the aim of this sensitivity analysis is to measure the impact on the price per share obtained in our FCFF model by modifying the values of crucial variables. This also allows the reader to assess the target price of Nestlé according to his own estimates of the variables, should they be different from the ones considered in our valuation. Due to their impact on the price per share, we selected the company's WACC, the perpetual growth rate (g), return on equity (ROE) and the payout ratio, obtaining the values in the following tables.

Table 15 Sensitivity Analysis: WACC vs Perpetual growth rate

		WACC						
		5.2%	5.5%	5.7%	6.0%	6.3%	6.6%	6.9%
g	2.5%	103.98	93.90	84.61	76.03	68.44	62.01	56.48
	2.6%	108.42	97.57	87.64	78.51	70.49	63.71	57.92
	2.8%	113.76	101.94	91.21	81.42	72.88	65.70	59.59
	2.9%	120.28	107.24	95.51	84.90	75.71	68.04	61.55
	3.0%	128.02	113.45	100.49	88.89	78.93	70.69	63.75
	3.2%	136.84	120.44	106.04	93.29	82.45	73.56	66.13
	3.3%	147.00	128.37	112.25	98.16	86.32	76.68	68.69

Source: own calculations

The values in bold represent the exact estimations in our model. Each line or column represents a 5%, 10% or 15% increase or decrease in the parameter. Obviously, when the cost of capital (WACC) increases, the target price decreases, and when the growth rate (g) increases the target price increases as well. As we can see in Table 15, for a given WACC of 6.0%, an increase of 5% in g (2.9% to 3.0%) leads to a similar price increase of 4.7% (from 84.90 CHF to 88.89 CHF). However, with a similar 5% decrease in WACC (from 6.0% to 5.7%), holding the g constant at 2.9%, we register a price increase of 12.5% (from 84.90 CHF to 95.51 CHF). Also, if both the WACC and the g increase by 5%, the price target would be 78.93 CHF. Ergo, we can conclude that the share price is significantly more sensitive to WACC variations.

In conclusion, a 5% variation of these 2 key valuation indicators reflects a price range of 75.71 CHF to 95.51. Given that, as at 31-12-2016, Nestlé stock is valued at 73.05, we maintain our buy recommendation.

5.12. Comparison with Deutsche Bank Report

Different analysts can have differing opinions regarding the valuation of a stock price, which is why the stock market is dynamic and not static: heterogeneous expectations account for market swings. We believe it is important to include a section in this dissertation where we compare our projections with an investment bank report; for this, we will consider Deutsche Bank's research report, dated 20-04-2017.

Table 16 Key analysis indicators

	Dissertation	Deutsche Bank
Valuation method	DCF	DCF
Estimation period	2017-2021	2017-2019
WACC	6.0%	7.0%
CAGR sales estimation period	2.8%	3.2%
CAGR net profit estimation period	12.0%	18.0%
g	2.9%	2.0%
Valuation date	31-12-2016	20-04-2017
PPS at valuation date	73.05	75.20
Price target (CHF)	84.90	85.00

Source: Deutsche Bank April Analyst Report and Dissertation

Table 16 displays key indicators in Deutsche Bank's analysis, compared with ours. As we can see, the price target is very similar, despite the WACC being lower in our dissertation and the g being higher. This must mean that a higher percentage of our value is attributed to the perpetuity factor, whereas Deutsche Bank attributes a higher weight to next years' earnings. The main reason for the difference in the WACC is the assumed risk-free rate in the computation of both the cost of debt and the cost of equity. As previously mentioned, we used Swiss Government Bonds as a proxy to the risk-free; since the rates were negative, we assumed a 0.0% risk-free rate, while Deutsche Bank used a 0.5% benchmark. Regarding the growth rate, we used a company-specific approach while Deutsche Bank used a market approach.

Another difference present in Table 16 that must be taken into consideration is the estimation period. While we deemed appropriate a 5-year estimation period, Deutsche Bank used a 3-year period. In general, for a mature company such as Nestlé, 2 or 3-year projection periods are usually preferred by analysts; however, since Nestlé is redefining its strategy and is undergoing operational changes (both at process – increased cost efficiency - and product line levels – focus on health and

wellness and premium products to boost profitability), we believe a longer year span is adjusted for the provisional period.

Table 17 Main valuation forecasts comparison

	2017	2018	2019
Revenue - Dissertation	90,329	92,116	94,807
Revenue - Deutsche Bank	91,721	94,854	98,327
Gross profit - Dissertation	46,820	48,557	50,811
Gross profit - Deutsche Bank	47,425	49,758	52,291
Net profit - Dissertation	10,727	11,584	12,565
Net profit - Deutsche Bank	11,231	12,546	14,012
FCFF - Dissertation	8,804	9,733	10,881
FCFF - Deutsche Bank	9,502	10,874	12,524

Source: Deutsche Bank April Analyst Report and Dissertation

As mentioned above, Deutsche Bank attributes a higher growth rate in its provisional period, as can be observed in Table 17, assuming a lower growth in perpetuity. Both reports project a significant increase in sales, gross profit, net income and FCFF, with Deutsche Bank being more optimistic in regards to these values in the next 3 years. Deutsche Bank also refers Nestlé's cost structure improvements and premiumisation as an earnings growth driver, as well as improvement in market conditions. They limit further margin upside due to risks regarding M&A and the high level of competition in the industries in which Nestlé operates.

Finally, it is important to note one last key difference between the dissertation and the analyst report. We assume that a good percentage of the proceeds will be used to restore Nestlé's liquidity situation, namely through an investment in short term securities, thus increasing the company's total assets (please refer to Appendix IX to compare the financial statements of both reports); conversely, the Deutsche Bank assumes a relatively stable working capital in the provisional period, and the proceeds will be used to fund a higher growth in the short run.

In conclusion, this dissertation is more pessimistic than Deutsche Bank in the short-term. That is almost perfectly compensated by a higher perpetual growth perspective and a lower cost of capital estimation. This result, similarly to ours, constitutes a buy recommendation.

6. Conclusions

This project's goal was to reach a reliable target price for Nestlé's shares at the end of 2016. Admittedly, our initial course of action was to obtain further information in order to perform a sum of the parts valuation, since Nestlé has 7 heterogeneous segments. Unfortunately that was not possible, we applied a Discounted Cash Flow method, specifically the Free Cash Flow to the Firm. To complement our analysis, we performed Relative Valuation, establishing a set of comparable companies and calculating their average multiples. Finally, since the inputs to this model are fairly discretionary, to assess the impact of estimation errors on 2 key variables (WACC and perpetual g), we conducted a Sensitivity Analysis.

Our choice for the FCFF valuation approach is based on the fact that Nestlé S.A. is a mature company with a stable capital structure. We did not value the company using the DDM because, even though Nestlé distributes dividends every year, the dividends are not directly tied to company performance (as proven by varying dividend yields and payout ratios over time).

Our inputs to this valuations were somewhat limited, as we tried to obtain more information than what was publicly available by contacting broker research analysts and the Financial Department of Nestlé in Vevey, Switzerland, and were not provided with additional inputs to our model, thus limiting to some extent the analysis that was performed.

A presentation and an analysis of each of the firm's 7 segments was conducted, as well as to their respective markets, considering each industry's specific features. As the basis for our forecasts were the company's sales; we performed extensive research in order to reach the most reliable forecasts for this P&L item. Our projected sales growth rates reflect both historical and forecasted market conditions, as well as Nestlé's strategy for each business unit.

We projected all the P&L and Balance Sheet items and presented them in the same structure as Nestlé. Our estimation period was 5 years (2017-2021), and we assumed the company would reach its steady state by the end of 2021. We then estimated the company's FCFF and WACC. In regards to the latter, our main assumption was that the risk free rate would be 0.0% due to the fact that our proxy (Switzerland Government bond's yields) was negative, and we assumed negative interest rates will not subsist in the long term.

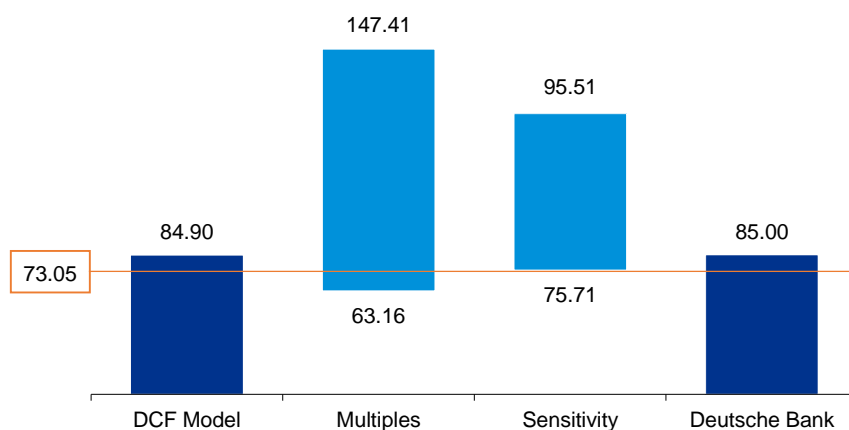
Having done that, we reached an Enterprise Value of 293,707 million CHF, which translated into an Equity Value of 263,007 million CHF, which we divided by the number of shares outstanding and reached a target price of 84.90 CHF for Nestlé's shares as at 31-12-2016.

Subsequently we performed a multiples valuation, wherein we selected a set of 5 comparable companies (peers) based on 3 fundamental factors: dimension, capital structure and profitability. The relative valuation, in which we used the multiples EV/Sales, EV/EBITDA, EV/EBIT, price-to-earnings ratio and price-to-book ratio, produced an unadjusted price range of 63.16 CHF - 147.41 CHF, and an average share price of 86.47 CHF.

We also included a sensitivity analysis, which can mitigate the above-mentioned limitations of our model by providing different valuations for the company had we been more conservative / optimistic in certain key variables. We conclude that, by varying those key parameters 5% in a stand-alone basis, we reach a price range of 75.71 CHF - 95.51 CHF.

Finally, we compared our research with a Deutsch Bank valuation report of Nestlé and commented on the main similarities and differences. By that comparison we concluded that Deutsch Bank was more optimistic regarding the company's near future and more conservative regarding its cost of capital and future growth prospects. These two effects canceled each other almost perfectly, as Deutsch Bank reached a target price of 85.00 CHF, just 0.10 CHF higher than ours.

Graph 8 Price targets from different analysis



Source: Dissertation and Deutsche Bank April Analyst Report

Graph 8 shows the price targets, in CHF, of each analysis we conducted in this dissertation, comparing them with the market price of Nestlé shares at the reference date, 31-12-2016. As we can see, both the DCF Model we presented and the Deutsche Bank's model present higher target prices than the price observed on the market. The stand-alone sensitivity price range is also above the market price. The multiples valuation provides a wider gap, and its lower bound is below the market price; however, we can see that the price range provides a much higher upside potential than downside, with the upper bound standing at 147.41 CHF. Taking all these factors into account, we reach a strong buy recommendation for Nestlé shares, as our opinion is that they appear to be undervalued in the market.

Future equity research on Nestlé must bear in mind the firm's strategy shift, focusing on Nutrition, Health and Wellness. It would be interesting to obtain further details on the company's financials that would enable the analyst to perform a sum of the parts valuation, as we believe it could yield more realistic results. Moreover, we believe that a multi-factor model to try to forecast share price fluctuations based on key external factors could be an interesting add-on to this research.

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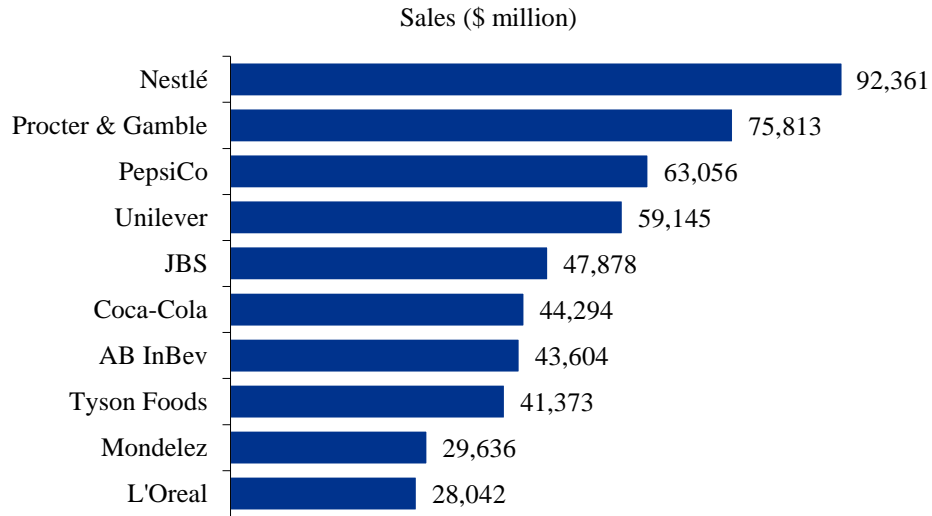
8. Appendixes

Appendix I – Main Nestlé Brands

Powdered and Liquid Beverages					
					
Milk products and Ice cream					
					
					
Prepared dishes and cooking aids					
					
Nestlé Nutrition					
					
PetCare					
					
Confectionery					
Water					

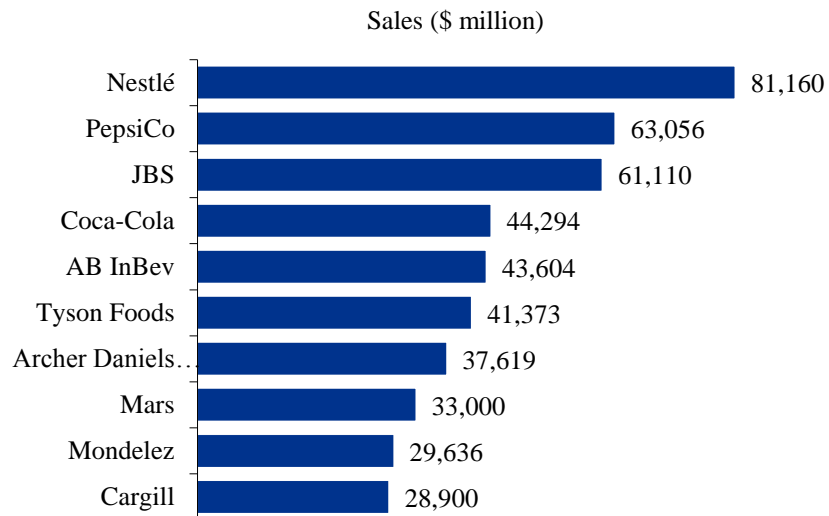
Appendix II – Top 10 FMCG companies worldwide

Graph 9 Biggest FMCG companies of the world in terms of total sales (2015)



Source: Statista

Graph 10 Biggest Food and Beverage companies of the world in terms of F&B sales (2015)



Source: Forbes

Appendix III – Peer group selection

In order to choose our comparable companies we applied a score model, in which the lowest score indicated the highest level of similarity between companies. After we applied the model, we chose the companies with a final score below 2.0 to be our comparable companies, as shown in Table 18.

Table 18 Comparable Companies score board

Company Name	Market Cap	Total Assets	Revenue	EBITDA margin	EBIT margin	ROIC	D/E	Final Score
Johnson & Johnson	1	1	1	1	1	1	1	1.0
Procter & Gamble	1	1	1	1	1	1	1	1.0
Coca-Cola	1	1	3	1	1	1	3	1.8
Philip Morris	1	3	3	3	3	3	3	2.6
Unilever NV	1	3	2	1	1	1	3	1.9
PepsiCo	1	2	1	1	1	1	3	1.7
L'Oreal SA	3	3	3	1	1	1	3	2.4
Kraft Heinz	3	1	3	1	1	3	1	2.0
Diageo PLC	3	3	3	1	1	1	3	2.4
Colgate-Palmolive	3	3	3	1	1	3	3	2.8
Mondelez	3	3	3	1	1	2	1	2.0
Danone SA	3	3	3	1	1	1	3	2.4
Kimberly-Clark	3	3	3	1	1	3	3	2.8
General Mills	3	3	3	1	1	1	3	2.4
Kellogg	3	3	3	1	1	1	3	2.4
Weights	20%	10%	10%	5%	5%	20%	30%	

Source: own calculations

Appendix IV – Nestlé Business Excellence

In 2014 the Nestlé Business Excellence model was approved by the Board with the main goal of capitalizing on the company's scale and decreasing structural and operational costs. By employing more efforts in innovation (both in processes and in product line) and promoting organizational flexibility, the company expects to free up resources to invest in its brands and support growth in a more efficient manner.

According to Paul Bulcke, Nestlé's CEO, this strategic action was designed for Nestlé to "make better use of its size by driving efficiency and effectiveness within the organization".

This new model allows the firm to shift its focus to fast-growing geographic locations by improving its relationships with suppliers, customers and employees, which have different specific dynamics in each location. Markets such as the Middle East, North East Africa and South America all provide new growth opportunities for Nestlé.

Overall, Nestlé has chosen to build the foundations for future growth through the guidelines defined in the Nestlé Business Excellence program. This reflects the company's efforts to become more efficient and is the reason behind our assumption that Nestlé's operational expenses will gradually decrease in the future. This will be accomplished through synergies between business segments and geographies, economies of scale and a better time management through less bureaucracy.

Appendix V – Exchange rates as at 31-12-2016

Table 19 Swiss Franc exchange rates

	CHF
SEK	0.1121
NOK	0.1193
HKD	0.1326
NZD	0.7044
AUD	0.7302
CAD	0.7573
GBP	1.2564
JPY	0.0087
EUR	1.0714
USD	1.0171

Source: Reuters

Appendix VI – Market value of outstanding bonds computation**Table 20** Market value of outstanding bonds

Company	Issue Date	Maturity Date	Amount Outstanding	Currency	Conversion rate	CHF Amount Outstanding	Closing Price	Market value
Nestle Holdings Inc	13-07-2012	13-10-2017	200	AUD	0.7302	146	100.199	146
Nestle Holdings Inc	20-11-2012	20-11-2017	1,000	NOK	0.1193	119	100.269	120
Nestle Holdings Inc	11-12-2013	11-12-2017	250	GBP	1.2564	314	100.293	315
Nestle Holdings Inc	16-10-2012	16-01-2018	500	USD	1.0171	509	99.869	508
Nestle Holdings Inc	18-01-2013	18-01-2018	175	AUD	0.7302	128	100.502	128
Nestle Holdings Inc	14-02-2007	14-02-2018	250	CHF	1.0000	250	101.349	253
Nestle Holdings Inc	19-03-2013	19-07-2018	200	AUD	0.7302	146	101.466	148
Nestle Holdings Inc	24-01-2013	24-07-2018	400	USD	1.0171	407	99.875	406
Nestle Holdings Inc	06-12-2013	06-12-2018	400	AUD	0.7302	292	102.177	298
Nestle Holdings Inc	12-09-2013	12-03-2019	500	USD	1.0171	509	100.988	514
Nestle Finance Int.	19-07-2012	19-07-2019	500	EUR	1.0714	536	103.368	554
Nestle Holdings Inc	02-12-2014	30-09-2019	400	USD	1.0171	407	100.599	409
Nestle Holdings Inc	11-06-2013	11-12-2019	500	USD	1.0171	509	100.608	512
Nestle Holdings Inc	14-05-2014	14-01-2020	650	USD	1.0171	661	100.969	668
Nestle Holdings Inc	18-03-2014	18-03-2020	250	AUD	0.7302	183	104.380	191
Nestle Holdings Inc	15-04-2014	15-04-2020	1,000	NOK	0.1193	119	104.795	125
Nestle Finance Int.	02-05-2013	04-05-2020	500	EUR	1.0714	536	103.861	556
Nestle Holdings Inc	03-11-2014	03-11-2020	175	AUD	0.7302	128	103.370	132
Nestle Holdings Inc	09-12-2015	09-12-2020	500	GBP	1.2564	628	103.543	650
Nestle Holdings Inc	09-03-2016	09-03-2021	550	USD	1.0171	559	100.214	561
Nestle Purina PetCare Co	09-05-1991	01-05-2021	63	USD	1.0171	64	122.619	79
Nestle Holdings Inc	13-07-2016	13-07-2021	600	USD	1.0171	610	98.211	599
Nestle Finance Int.	12-09-2013	10-09-2021	500	EUR	1.0714	536	108.703	582
Nestle Finance Int.	07-11-2014	08-11-2021	500	EUR	1.0714	536	103.302	553
Nestle Purina PetCare Co	18-02-1992	15-02-2022	79	USD	1.0171	80	124.468	100
Nestle Finance Int.	12-09-2012	12-09-2022	850	EUR	1.0714	911	108.253	986
Nestle Purina PetCare Co	02-02-1993	01-02-2023	44	USD	1.0171	45	126.148	56
Nestle Finance Int.	16-11-2015	16-05-2023	500	EUR	1.0714	536	102.925	551
Nestle Finance Int.	30-11-2012	30-11-2023	400	GBP	1.2564	503	106.459	535
Nestle Purina PetCare Co	15-06-1995	15-06-2025	51	USD	1.0171	52	132.692	69
Nestle Finance Int.	13-06-2016	13-07-2106	33	USD	1.0171	34	100.000	34
Total						10,990		11,339

Source: Reuters and own calculations (values in million)

In order to compute the market value we multiplied the CHF Amount Outstanding by the respective bond's closing price and divided by 100. The sum of all of Nestlé's outstanding bonds as at 31-12-2016 amounts to 11,339 million CHF.

Appendix VII – Beta computation**Figure 4** Linear regression outputSUMMARY
OUTPUT

<i>Regression Statistics</i>						
Multiple R		0.811836566				
R Square		0.659078609				
Adjusted R Square		0.65880609				
Standard Error		0.005511253				
Observations		1253				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	0.073458321	0.073458321	2418.467607	1.3147E-294	
Residual	1251	0.037997763	3.03739E-05			
Total	1252	0.111456085				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	4.08052E-05	0.000155775	0.26195022	0.793402945	-0.000264803	0.000346414
X Variable 1	0.801339221	0.016294696	49.17791788	1.3147E-294	0.769371274	0.833307167

Source: own calculations

In our linear regression analysis, we defined the independent variable as the Swiss Market Index (SMI) daily quote variation and the dependent variable as Nestlé stock daily quote variation, between 30-12-2011 and 30-12-2016.

Looking at the regression statistics, we can conclude that 65.91% of the movement of Nestlé stock price is due to variations on the SMI (or 65.88% if we take into account the sample size).

The raw beta corresponds to the coefficient of the X Variable 1, standing at 0.801339221.

Appendix VIII – Historical and Forecasted Financial Statements

Table 21 Historical Balance Sheet

Consolidated Balance Sheet						
Million CHF	2011	2012	2013	2014	2015	2016
Cash and cash equivalents	4,938	5,713	6,415	7,448	4,884	7,990
Short-term investments	3,050	3,583	638	1,433	921	1,306
Inventories	9,255	8,939	8,382	9,172	8,153	8,401
Trade and other receivables	13,340	13,048	12,206	13,459	12,252	12,411
Prepayments and accrued income	900	821	762	565	583	573
Derivative assets	731	576	230	400	337	550
Current income tax assets	1,094	972	1,151	908	874	786
Assets held for sale	16	368	282	576	1,430	25
Total current assets	33,324	34,020	30,066	33,961	29,434	32,042
Property, plant and equipment	23,971	26,576	26,895	28,421	26,576	27,554
Goodwill	29,008	32,688	31,039	34,557	32,772	33,007
Intangible assets	9,356	13,018	12,673	19,800	19,236	20,397
Investments in associates and joint ventures	8,629	11,586	12,315	8,649	8,675	10,709
Financial assets	7,161	4,979	4,550	5,493	5,419	5,719
Employee benefits assets	127	84	537	383	109	310
Current income tax assets	39	27	124	128	128	114
Deferred tax assets	2,476	2,899	2,243	2,058	1,643	2,049
Total non-current assets	80,767	91,857	90,376	99,489	94,558	99,859
Total assets	114,091	125,877	120,442	133,450	123,992	131,901
Financial debt	16,100	18,408	11,380	8,810	9,629	12,118
Trade and other payables	13,584	14,627	16,072	17,437	17,038	18,629
Accruals and deferred income	2,909	3,078	3,185	3,759	3,673	3,855
Provisions	576	452	523	695	564	620
Derivative liabilities	646	423	381	757	1,021	1,068
Current income tax liabilities	1,417	1,608	1,276	1,264	1,124	1,221
Liabilities directly associated with assets held for sale	-	1	100	173	272	6
Total current liabilities	35,232	38,597	32,917	32,895	33,321	37,517
Financial debt	6,207	9,008	10,363	12,396	11,601	11,091
Employee benefits liabilities	7,105	8,360	6,279	8,081	7,691	8,420
Provisions	3,094	2,827	2,714	3,161	2,601	2,640
Deferred tax liabilities	2,060	2,240	2,643	3,191	3,063	3,865
Other payables	2,119	2,181	1,387	1,842	1,729	2,387
Total non-current liabilities	20,585	24,616	23,386	28,671	26,685	28,403
Total liabilities	55,817	63,213	56,303	61,566	60,006	65,920
Share capital	330	322	322	322	319	311
Treasury shares	(6,722)	(2,078)	(2,196)	(3,918)	(7,489)	(990)
Translation reserve	(16,927)	(17,924)	(20,811)	(17,255)	(21,129)	(18,799)
Retained earnings and other reserves	80,116	80,687	85,260	90,981	90,637	84,068
Total equity attributable to shareholders of the parent	56,797	61,007	62,575	70,130	62,338	64,590
Non-controlling interests	1,477	1,657	1,564	1,754	1,648	1,391
Total equity	58,274	62,664	64,139	71,884	63,986	65,981
Total liabilities and equity	114,091	125,877	120,442	133,450	123,992	131,901

Source: Nestlé, S.A.

Table 22 Projected Balance Sheet

Consolidated Balance Sheet					
Million CHF	2017	2018	2019	2020	2021
Cash and cash equivalents	6,231	6,231	6,231	6,231	6,231
Short-term investments	3,346	3,966	4,965	6,132	7,514
Inventories	8,303	8,314	8,399	8,555	8,778
Trade and other receivables	12,953	13,209	13,595	14,113	14,764
Prepayments and accrued income	723	737	759	788	824
Derivative assets	550	550	550	550	550
Current income tax assets	786	786	786	786	786
Assets held for sale	25	25	25	25	25
Total current assets	32,918	33,818	35,310	37,179	39,472
Property, plant and equipment	27,788	27,876	28,215	28,796	29,609
Goodwill	33,007	33,007	33,007	33,007	33,007
Intangible assets	19,063	18,682	18,448	18,340	18,340
Investments in associates and joint ventures	11,136	11,579	12,040	12,520	13,019
Financial assets	7,759	8,379	9,378	10,545	11,927
Employee benefits assets	310	310	310	310	310
Current income tax assets	114	114	114	114	114
Deferred tax assets	2,049	2,049	2,049	2,049	2,049
Total non-current assets	101,226	101,996	103,562	105,681	108,374
Total assets	134,144	135,814	138,872	142,861	147,847
Financial debt	12,839	12,565	12,676	12,904	13,248
Trade and other payables	17,874	17,297	16,868	16,563	16,362
Accruals and deferred income	3,472	3,540	3,644	3,783	3,957
Provisions	642	664	687	711	735
Derivative liabilities	1,106	1,143	1,183	1,224	1,267
Current income tax liabilities	1,197	1,524	1,910	2,363	2,893
Liabilities directly associated with assets held for sale	5	5	5	5	5
Total current liabilities	37,134	36,738	36,972	37,553	38,467
Financial debt	11,751	11,500	11,602	11,811	12,125
Employee benefits liabilities	8,420	8,420	8,420	8,420	8,420
Provisions	2,640	2,640	2,640	2,640	2,640
Deferred tax liabilities	3,865	3,865	3,865	3,865	3,865
Other payables	2,387	2,387	2,387	2,387	2,387
Total non-current liabilities	29,063	28,812	28,914	29,123	29,437
Total liabilities	66,196	65,550	65,885	66,676	67,905
Share capital	311	311	311	311	311
Treasury shares	(990)	(990)	(990)	(990)	(990)
Translation reserve	(18,799)	(18,799)	(18,799)	(18,799)	(18,799)
Retained earnings and other reserves	86,035	88,351	91,074	94,272	98,029
Total equity attributable to shareholders of the parent	66,557	68,873	71,596	74,794	78,551
Non-controlling interests	1,391	1,391	1,391	1,391	1,391
Total equity	67,948	70,264	72,987	76,185	79,942
Total liabilities and equity	134,144	135,814	138,872	142,861	147,847

Source: Own projections

Table 23 Historical Income Statement

Consolidated Income Statement						
Million CHF	2011	2012	2013	2014	2015	2016
Sales	83,642	89,721	92,158	91,612	88,785	89,469
Other revenue	128	210	215	253	298	317
Cost of goods sold	(44,127)	(47,500)	(48,111)	(47,553)	(44,730)	(44,199)
Distribution expenses	(7,602)	(8,017)	(8,156)	(8,217)	(7,899)	(8,059)
Marketing and administration expenses	(17,395)	(19,041)	(19,711)	(19,651)	(20,744)	(21,485)
Research and development costs	(1,423)	(1,413)	(1,503)	(1,628)	(1,678)	(1,736)
Other trading income	51	141	120	110	78	99
Other trading expenses	(736)	(637)	(965)	(907)	(728)	(713)
Trading operating profit	12,538	13,464	14,047	14,019	13,382	13,693
Other operating income	112	146	616	154	126	354
Other operating expenses	(179)	(222)	(1,595)	(3,268)	(1,100)	(884)
Operating profit	12,471	13,388	13,068	10,905	12,408	13,163
Financial income	115	120	219	135	101	121
Financial expense	(536)	(825)	(850)	(772)	(725)	(758)
Profit before taxes, associates and joint ventures	12,050	12,683	12,437	10,268	11,784	12,526
Taxes	(3,112)	(3,259)	(3,256)	(3,367)	(3,305)	(4,413)
Income from associates and joint ventures	866	1253	1264	8,003	988	770
Profit for the year	9,804	10,677	10,445	14,904	9,467	8,883
of which attributable to non-controlling interests	317	449	430	448	401	352
attributable to shareholders of the parent (Net profit)	9,487	10,228	10,015	14,456	9,066	8,531

Source: Nestlé, S.A.

Table 24 Projected Income Statement

Consolidated Income Statement					
Million CHF	2017	2018	2019	2020	2021
Sales	90,329	92,116	94,807	98,417	102,961
Other revenue	320	326	336	349	365
Cost of goods sold	(43,829)	(43,885)	(44,333)	(45,154)	(46,333)
Distribution expenses	(8,092)	(8,252)	(8,493)	(8,816)	(9,223)
Marketing and administration expenses	(20,132)	(20,531)	(21,131)	(21,935)	(22,948)
Research and development costs	(1,818)	(1,854)	(1,908)	(1,981)	(2,072)
Other trading income	109	112	115	119	125
Other trading expenses	(781)	(781)	(781)	(781)	(781)
Trading operating profit	16,107	17,252	18,613	20,218	22,094
Other operating income	252	257	264	274	287
Other operating expenses	(1,202)	(1,226)	(1,262)	(1,310)	(1,370)
Operating profit	15,156	16,282	17,615	19,182	21,010
Financial income	121	121	121	121	121
Financial expense	(803)	(786)	(793)	(807)	(829)
Profit before taxes, associates and joint ventures	14,474	15,617	16,943	18,496	20,302
Taxes	(4,389)	(4,716)	(5,102)	(5,555)	(6,085)
Income from associates and joint ventures	995	1,034	1,076	1,119	1,163
Profit for the year	11,079	11,936	12,917	14,059	15,381
of which attributable to non-controlling interests	352	352	352	352	352
attributable to shareholders of the parent (Net profit)	10,727	11,584	12,565	13,707	15,029

Source: Own projections

Appendix IX – Comparison with Deutsch Bank research**Table 25** Income Statement comparison

Income Statement						
CHF million	Dissertation			Deutsche Bank		
	2017	2018	2019	2017	2018	2019
Sales	90,329	92,116	94,807	91,721	94,854	98,327
Trading Operating Profit	16,107	17,252	18,613	16,166	17,620	19,256
TOP margin	17.8%	18.7%	19.6%	17.6%	18.6%	19.6%
Net interest income	(682)	(665)	(672)	(522)	(412)	(293)
Taxes	(4,389)	(4,716)	(5,102)	(4,441)	(4,754)	(5,115)
Associates	995	1,034	1,076	847	932	1025
Minorities	352	352	352	356	375	395
Net Income	10,727	11,584	12,565	11,231	12,546	14,012

Source: Deutsche Bank research and Dissertation

Table 26 KPI's comparison

Key Performance Indicators						
CHF million	Dissertation			Deutsche Bank		
	2017	2018	2019	2017	2018	2019
Change in Working Capital	1,259	1,296	1,258	10	(104)	(128)
D&A	3,104	3,106	3,136	3,222	3,443	3,685
CAPEX	3,800	3,629	3,488	4,566	4,699	4,847
FCFF	8,811	9,748	10,904	9,502	10,874	12,524
Dividends paid	8,761	9,267	9,843	7,109	7,280	7,590
ROE	15.8%	16.5%	17.2%	16.3%	17.3%	18.6%
Sales growth %	1.0%	2.0%	2.9%	2.2%	3.4%	3.7%

Source: Deutsche Bank research and Dissertation

Table 27 Balance Sheet comparison

Balance Sheet						
CHF million	Dissertation			Deutsche Bank		
	2017	2018	2019	2017	2018	2019
Cash and other liquid assets	6,231	6,231	6,231	7,990	7,990	7,990
Tangible fixed assets	27,788	27,876	28,215	28,416	29,213	29,937
Goodwill/intangible assets	52,070	51,689	51,455	53,240	53,054	52,846
Associates/investments	22,241	23,923	26,384	17,940	18,155	18,380
Other assets	25,813	26,094	26,587	25,243	25,400	25,586
Total assets	134,144	135,814	138,872	132,829	133,811	134,738
Interest bearing debt	24,589	24,065	24,277	21,071	18,438	15,281
Other liabilities	41,607	41,485	41,608	42,744	42,798	42,855
Total liabilities	66,196	65,550	65,885	63,816	61,236	58,136
Shareholders' equity	66,557	68,873	71,596	67,703	71,351	75,467
Minorities	1,391	1,391	1,391	1,310	1,225	1,135
Total shareholders' equity	67,948	70,264	72,987	69,013	72,576	76,602

Source: Deutsche Bank research and Dissertation