



Danone SA, a valuation of a centennial company

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Dissertation written under the supervision of
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Dissertation submitted in partial fulfilment of the requirements for the
MSc in Finance, at the Universidade Católica Portuguesa,
September 2019.

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September 2019

Abstract

The present Dissertation aims to obtain the value of the multinational dairy company Danone as of 2019. In order to determine what is the aforementioned company worth, this document employs two different valuation techniques. First, the Discounted Cash Flow model is applied, and a target price is derived based upon Danone's intrinsic value. Additionally, Danone's value is computed through a comparison approach considering how similar firms are valued in the market. More specifically, this document employs the EV/EBITDA and PE multiples. Data was retrieved from both the Financial Report presented by Danone in February of 2019 as well as from the Thomson Reuters Eikon software, the OECD Economic Outlook and estimates from Damodaran website.

A DCF base case scenario involving multiple growth and cost of capital assumptions is presented. Following Danone's internal reporting and forecasting approach, the author develops two additional scenarios with potential risks and opportunities, divided into High and Medium according to their probability of materializing. The outcome from both methodologies results in a valuation range of €65.5 and €88.6, close to which the most accurate target price for Danone is to be found. Derived from a detailed and extensive analysis of the company's intrinsic value, this target price is €88.77, implicitly suggesting a Strong Buy recommendation from the author.

Keywords: Corporate Finance, Cost of Capital, Firm Investment, Value of Firm

J.E.L. Classification: G30, G31, G32

Danone SA, avaliação dum companhia centenária

por Ignacio Díaz Estévez

Setembro, 2019

Resumo

A presente Dissertação tem como objetivo principal determinar o valor atual da companhia multinacional de lacticínios Danone. A fim de quantificar qual é o valor líquido da empresa acima mencionada, o presente documento utiliza duas técnicas de avaliação diferentes. Em primeiro lugar, aplica o método do cash flow atualizado, conseguindo assim um preço-alvo baseado no valor intrínseco da Danone. Além disso, calcula o preço por ação através dum método de comparação, mediante o qual considera ativos similares no mercado e o valor dos mesmos. Mais especificamente, este documento emprega os múltiplos EV/EBITDA e PE. Os dados foram obtidos quer do relatório financeiro apresentado pela Danone em 2019 quer do software Thomson Reuters Eikon, o último Economic Outlook publicado pela OCDE assim como estimativas do website de Damodaran.

Um cenário de base relativo ao método do cash flow atualizado é apresentado, incluindo uma série de pressupostos relativos ao crescimento futuro e ao custo de capital. Baseado nos relatórios internos e o método de previsão da Danone, o autor desenvolve dois cenários adicionais com riscos e oportunidades potenciais, divididos em High e Medium segundo a probabilidade de se materializarem. Os resultados da aplicação das duas metodologias, nomeadamente o preço-alvo da Danone, variam entre €65.5 e €88.6, perto dos quais se encontra o preço por ação mais preciso. Este preço-alvo é de €88.77 e é obtido após uma análise extensa e detalhada do valor intrínseco da companhia, o qual sugere implicitamente uma recomendação Strong Buy.

Palavras-chave: Finanças Corporativas, Custo de Capital, Investimento Corporativo, Valor de Empresa

Classificação J.E.L.: G30, G31, G32

Table of Contents

1. Introduction	11
2. Literature Review	13
2.1 Discounted Cash Flow Valuation	14
2.1.1 Equity Valuation	15
2.1.1.1 Dividend Discount Model	15
2.1.2 Firm Valuation	15
2.1.3 Adjusted Present Value (APV)	16
2.2 Discount Rate	17
2.2.1 Cost of Equity	17
2.2.1.1 Risk-Free Rate (r_f)	18
2.2.1.2 Equity Beta (β_e)	18
2.2.1.3 Market Risk Premium (r_m)	19
2.2.1.4 Country Risk Premium	20
2.2.1.5 Unlevered Cost of Equity (k_u)	21
2.2.2 Cost of Debt	21
2.2.3 Weighted Average Cost of Capital (WACC)	21
2.3 Terminal Value	22
2.4 Relative Valuation	23
2.5 Options Pricing Model	23
2.6 Utilized Models in Present Dissertation	23
3. Valuation	25
3.1 Company Overview	25
3.1.1 Reporting entities	27
3.2 Industry Overview and Macroeconomic Outlook	29
3.2.1 Macroeconomic conditions	29
3.2.2 Industry analysis	31
3.3 Past Financial Performance	32
3.4 Business & Cost of Capital Assumptions	34
3.4.1 Revenue Growth	34
3.4.2 Terminal Value	36
3.4.3 Pre-Tax Operating Margin	37
3.4.4 Tax Rate	38
3.4.5 Net Capital Expenditures	39
3.4.6 Non-Cash Working Capital	40

3.4.7	Cost of Capital Components	41
3.4.7.1	Risk-Free Rate	41
3.4.7.2	Pre-Tax Cost of Debt	41
3.4.7.2.1	Operating Leases	42
3.4.7.3	Cost of Equity	43
3.4.7.3.1	Bottom-up Betas	43
3.4.7.3.2	Equity and Country Risk-Premium	45
3.4.8	Market Value of Debt	46
3.4.9	Market Value of Equity	46
3.4.10	Weighted Average Cost of Capital	47
3.5	Valuation Outcome	47
3.5.1	Discounted Cash Flow Valuation	47
3.5.1.1	Sensitivity analysis	50
3.5.1.1.1	Cost of Capital Assumptions	50
3.5.1.1.2	Risk & Opportunities – Growth Assumptions	51
3.5.1.1.2.1	High Probability	51
3.5.1.1.2.2	Medium Probability	52
3.5.2	Relative Valuation	52
4.	Comparison versus Analyst Report	55
5.	Conclusion	57
	Appendix	58
	References	60

Table of Equations

Equation 1 - Net Present Value..... 14

Equation 2 - Equity Value in Equity Valuation 15

Equation 3 - Free Cash Flow to Equity..... 15

Equation 4 - Value per Share 15

Equation 5 - Firm Value..... 16

Equation 6 - Free Cash Flow to the Firm..... 16

Equation 7 - Unlevered Value of the Firm..... 17

Equation 8 - Equity Value in Adjusted Present Value valuation 17

Equation 9 - Cost of Equity..... 18

Equation 10 - Capital Asset Pricing Model Formula 19

Equation 11 - Cost of Equity II..... 20

Equation 12 - Equity Risk Premium 20

Equation 13 - Levered and Unlevered Cost of Equity 21

Equation 14 - Weighted Average Cost of Capital..... 22

Table of Figures

Figure 1 - FY 2018 Danone Sales by Reporting Entity 25

Figure 2 - FY 2018 Danone Sales by Geographical Area 26

Figure 3 - Yearly Forecasted Growth by Region 29

Figure 4 - Yearly Forecasted Growth by Region Vis. 31

Figure 5 - Yearly Data on 10-year German Bund 41

Table of Tables

- Table 1.** Top 10 Countries in terms of Total FY 2018 Sales 26
- Table 2.** Sales by reporting entity 33
- Table 3.** Organic and like-for-like projections broken down by growth levers 34
- Table 4.** Forecasted EBIT 37
- Table 5.** Marginal Tax Rate computation 39
- Table 6.** Forecasted Net Capex and its weight over revenues 39
- Table 7.** Forecasted Non-cash working capital and its weight over revenues 40
- Table 8.** Interest coverage ratios, Moody’s ratings and its consequent default-spreads 42
- Table 9.** Operating lease commitments 43
- Table 10.** Average unlevered betas by Industry and Region 44
- Table 11.** Weight by division, as of 2018 Total Revenues 44
- Table 12.** Danone unlevered beta final step computation 45
- Table 13.** Revenue-weighted country risk-premium computation 46
- Table 14.** Bank financing Danone 46
- Table 15.** Discounted Cash Flow Valuation 48
- Table 16.** Discounted Cash Flow Valuation / Value per share breakdown 49
- Table 17.** Price per share derived from cost of capital sensitivity analysis 50
- Table 18.** High and Medium Risks & Opportunities, plus impact on price per share 52
- Table 19.** Comparable firms and characteristics 53
- Table 20.** Price per share through relative valuation 53
- Table 21.** Comparison of projected revenue growth 55
- Table 22.** Assumed cost of capital components 56

Acknowledgements

I would like to thank my Thesis Supervisor, Professor José Carlos Tudela Martins for his support, and time during all the Dissertation process.

I also would like to acknowledge the team of wonderful people working at Danone Portugal for their professional insights, which represented a great source of inspiration in the elaboration of the present Dissertation.

To Matilde Gonçalves, my life Partner and Friend, who accompanied me during all the Dissertation drafting process and who never gave up on me.

At last, I am very grateful to my family for always being there and their unconditioned love.

Dedication

For my Family: my Mother Lourdes, my Father Aitor, my Sister Andrea, my Brother Javier, and for Matilde.

Consumers are craving change. They expect large organizations like Danone to bring our scale of impact to change the world for the better. 'One Planet. One Health' is a rallying call to everyone to join the food revolution. And we aim to make that revolution a reality for as many people as possible, across the world.

Emmanuel Faber

CEO and Chairman of Danone (2016)

1. Introduction

Firm valuation is a widely utilized technique amongst both academics and business professionals, since it constitutes the perfect tool to determine whether a company is worth-investing in. However, a firm can be very difficult to measure since there is no secret recipe applicable to every single company. In fact, there are numerous existing methodologies available that could serve for obtaining the value of any specific company, if the correct guidelines for each model were followed by the analyst. Though, there is a clear lack of consensus either on the choice of the most appropriate valuation (i.e. Intrinsic or Relative) or on the most adequate model to be applied (i.e. Discounted Cash Flow, Adjusted Present Value, or type of multiples considered). Additionally, and unluckily quite frequently, it is also challenging to retrieve all the data necessary to perform a valuation adequately due to data scarcity or the available figures not representing the complete reality of the firm being analysed.

Equity or Firm Valuation is an important technique due to its impact on shareholder or any other stakeholder's decision, which ultimately affects the outlook of the companies and their consequent decisions with the objective of value maximization.

Accordingly, the present Dissertation aims to conduct a valuation process on a specific company, namely Danone. The French Dairy behemoth is considered as one of the most successful organizations of the last century. Employing more than one hundred thousand people in more than 60 countries, the pioneer of the 'One Planet. One Health' mission aims to keep delivering high-quality products while diminishing its environmental footprint at the same time.

The academic literature hereinafter presented covers the state-of-the-art valuation methodologies mainly developed by academia though utilized in the day-to-day life of every professional analyst. It covers both intrinsic valuation models such as the well-known Discounted Cash Flow, as well as the valuation based on market comparables (i.e. also known as relative valuation).

The author first conducts a valuation of Danone based on its intrinsic value through the application of the Discounted Cash Flow methodology. Hence, assumptions regarding future growth coupled with the cost of capital are made following a thorough analysis of

the company in question (i.e. previous years' performance by division or capital structure), and its competitive context and future market outlook.

Briefly, the present Dissertation values Danone at a target price of €88.77, which represents an upside of 14.68 percent over the stock price at the time of the valuation (i.e. July 16, 2019). Moreover, target prices derived from relative valuation methodologies are €65.5 for EV/EBITDA and €88.6 for PE.

The ensuing part of this Dissertation is organized as follows: the most advanced valuation techniques are discussed in Section 2. Section 3 contains a brief overview of the company, a description of the industry, its macroeconomic outlook, and the all the assumptions regarding growth and cost of capital utilized. Additionally, results from both the DCF and relative valuation are presented in the previous part. Section 4 discusses and compares the results from the present Dissertation with the ones obtained from the Goldman Sachs Equity Research analyst report. Finally, Section 5 presents a brief conclusion the Dissertation.

2. Literature Review

In the fast-paced business environment we are living today, determinants of profitability are shifting from ‘size and reputation’ to ‘reliability and agility’. Corporations, and especially corporate behemoths, are bound to enter a path towards sluggish growth if they fail to adapt themselves to the shifting consumer behaviors and competitive landscape changes. In the middle of the aforementioned conditions, mass-brand companies are increasingly driven to portfolio diversification through mergers or acquisitions as a way of sustaining organic growth. Valuation is thus becoming a fundamental tool for any manager willing to minimize uncertainty in every of their strategic resource-allocation decisions. The importance of firm valuation, however, has been widely assessed by scholars and practitioners indistinctly.

Damodaran (2016) states that knowing the value of an asset and its determinants constitutes a “prerequisite for intelligent decision making”. For such purpose, analysts have available a wide range of models, ranging from the simplistic multiple-based relative valuation to more complex ones. In essence, the more sophisticated the method is, the greater the number of assumptions needed, hence significantly weakening the precision and reliability of the outcome.

There are three approaches to valuation according to Damodaran (2016). First, Discounted Cash Flow (also referred to hereinafter as DCF), states that the value of a specific firm equals the present value of its future expected cash flows. With thousands of existing models, Equity Valuation and Firm Valuation are considered the most widely applied within business professionals. Second, Multiple-based Valuation or Relative Valuation, estimates the value of a corporation by comparing it with market variables for other entities sharing a significant level of similarity. The number of variables utilized may vary over valuations, the main ones being Earnings, Book Value or Industry-Specific parameters. Third, the so-called Contingent Valuation approach considers the value of a firm as the present value of future free cash flows, depending on potential expected states of the world as well as managerial decisions. The Decision-Tree Analysis (DTA) and Real-Option Valuation (ROV), both using option pricing models, are two sub-approaches derived from the latter and can be selected based on the availability of information (Koller et al. 2010).

Luehrman (1997) defended the utility of the Adjusted Present Value (APV) over the well-known Discounted Cash Flow (DCF) methodology. Presented as another derivative of the latter, it separates the effects from value creation-destruction by financial activities from the value of the operations of a business. Contrary to the main DCF model, where all effects are embedded within a single discount rate, the Adjusted Present Value approach intends to analyze them separately and then add the overall value to that of the business.

Finally, the Dividend Discount Model is presented as specialized case of equity valuation, which computes the value of a firm as the present value of expected future dividends. Hence, the model only applies to dividend-distributing companies (Damodaran, 2016).

2.1 Discounted Cash Flow Valuation

According to a survey by the University of Zurich, the Discounted Cash Flow method is considered the most popular choice among practitioners nowadays, followed by the Multiple-based valuation. Damodaran (2016) argues that this approach is based on the present value rule, by which a firm's value is computed as the present value of all cash flows that will generate in the future, as expressed in Formula 1. The discount factor utilized must represent the opportunity cost of the cash flows to be discounted, this is, the expected return on an alternative investment with the same risk entailed within (Luehrman, 1997) .

$$Net\ Present\ Value = \sum_{t=1}^{t=n} \frac{CF_t}{(1+r)^t} \quad (1)$$

where, n represents the life of the to-be-valued asset, CF_t the Cash Flows for the aforementioned period, and r the discount rate entailing the riskiness of the Cash Flows being estimated.

Business professionals apply a wide array of Discounted Cash Flow methods when performing a valuation of a particular asset, each of them claiming their model being more effective or sophisticated over other alternatives. Though, Damodaran (2016) believes that a few dimensions differentiate these DCF models, the ones being highlighted in the subsequent methods: a) Equity Valuation, b) Firm Valuation, and c) Adjusted Present Value.

2.1.1 Equity Valuation

The Equity Valuation or Free Cash Flow to Equity approach assesses the value of the equity stake in a company. In other words, the objective of this model is to determine the value of shareholders' expected cash flows, where the Equity Value is computed as stated in Formula 2 below.

$$\text{Equity Value} = \sum_{t=1}^{t=n} \frac{FCFE_t}{(1 + k_e)^t} \quad (2)$$

where, Free Cash Flows to Equity, which constitutes the free cash flow available to all stockholders, is obtained through the consequent application of two approaches presented in formula 3 indistinctly. It is then discounted at the cost of equity (k_e), whose computation will be discussed in the section hereinafter.

$$\begin{aligned} FCFE_1 = & \text{Net Income} - \text{Capex} + \text{Depreciation} - \Delta \text{Working Capital} \\ & + \Delta \text{Net Debt} - \text{Preferred Dividend} \end{aligned}$$

$$FCFE_2 = \text{Dividends} + \text{Share Repurchases} - \text{New Equity Issues} \quad (3)$$

2.1.1.1 Dividend Discount Model

Presented as a variant of Equity Valuation methodology, the Dividend Discount Model (DDM) determines the value of a firm based on expected dividend payoffs (Penman, 1998). The equity is valued as expressed in Formula 4.

$$\text{Value per Share} = \sum_{t=1}^{t=\infty} \frac{E(\text{Dividend per Share}_t)}{(1 + k_e)^t} \quad (4)$$

2.1.2 Firm Valuation

According to Koller (2010), performing a valuation of a company utilizing a Firm Valuation approach is a four-step process. First, one must determine how much the

company's operations are worth by discounting its expected free cash flows at the Weighted Average Cost of Capital or WACC (Please refer to Formula 5).

$$Firm\ Value = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1 + WACC)^t} \quad (5)$$

where, Free Cash Flow to Firm is the free cash flow available to all investors, namely equityholders, debtholders, and other non-equity investors (Koller, 2010; Refer to Formula 6 for further detail). Also, it represents the value of a company's operations less any value being reinvested back into the specific firm.

$$FCFF = After - Tax\ Operating\ Income - Capex + Depreciation - \Delta Working\ Capital \quad (6)$$

Thereafter, summing the value of non-operating assets, depicted by Koller (2010) as "excess cash and marketable securities, and other non-operating assets not included in the free cash flow", the so-called Gross Enterprise Value (GEV) is computed. Third, it is vital to thoroughly identify all debt and other non-equity stakes of the specific company. The last step to determine equity value comprises the subtraction of the company's debt to the previously calculated gross EV. Equity value is also referred to as Net Enterprise Value (NEV). To determine our target valuation price in per-share terms, the previously computed equity value is to be divided by the current number of shares outstanding.

2.1.3 Adjusted Present Value (APV)

Based on the Modigliani and Miller (1963) teachings, Myers (1974) first introduced the Adjusted Present Value method in 1974. It constitutes an effective model to value firms with a changing capital structure over the years or that are not growing at a steady state. Koller (2010) defends that when a company's debt-to-value ratio is expected to change, WACC-based models, though still yielding plausible accurate results, should be replaced by the APV methodology.

The application of this method follows a three-step approach in order to estimate the value of a firm (Damodaran, 2016). First, we estimate the unlevered value of the company by

discounting the same cash flows at the DCF-based Firm Valuation model, but using the unlevered cost of equity as the discount rate (Refer to Formula 7).

$$\text{Unlevered Firm Value} = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1 + k_u)^t} \quad (7)$$

where, k_u represents the riskiness that the to-be-valued firm would exhibit if it were financed entirely with equity.

Subsequently, we add the present value of the Interest Tax Shields (ITS), meaning the tax savings related to debt borrowings. At last, we evaluate the effect of the aforementioned debt level of the firm on the the default risk and the consequent expected bankruptcy costs (Damodaran, 2016). In summary, the value of equity or Net Enterprise Value is computed as expressed in Formula 8 below.

$$\begin{aligned} \text{Equity Value} = & \text{EV as if Firm were All – Equity Financed} \\ & + \text{PV (Interest Tax Shields)} - E[\text{Bankruptcy Costs}] \end{aligned} \quad (8)$$

2.2 Discount Rate

As to compute the present value of the cash flows for each of the methodologies discussed in the previous section, one must apply a discount factor that will vary depending on the valuation method being utilized. Thus, the purpose of the following section is to thoroughly assess all discount factors, as well as calculation intricacies embodied within them (i.e. market risk-premium or beta choices). It is noteworthy that a discount factor must entail the riskiness of the cash flows being analyzed, likewise the opportunity cost of undertaking such investment, in our case, this investment being represented as a specific company.

2.2.1 Cost of Equity

Damodaran (2016) defines the cost of equity (K_e) as the rate of return a specific investor requires when undertaking an investment in a firm. It incorporates solely the non-diversifiable risk that investors are unable to eliminate through holding stock portfolios. Furthermore, it is the most difficult component of the WACC to estimate, worsened after the subprime mortgage crisis in 2007-2008 (Koller, 2010) There are various existing risk-return models to compute the aforementioned cost of equity, however, the present

Dissertation will only cover in detail the most notorious among practitioners: the capital asset pricing model (also referred to as CAPM). This widely-discussed model presents the following formula to determine the expected return on an equity investment:

$$\text{Cost of equity} = r_f + \beta_e \cdot (E(r_m) - r_f) \quad (9)$$

where, r_f represents the risk-free rate, β_e the to-be-valued firm's sensitivity to the market or equity beta and $E(r_m)$ the expected market return. Further, the difference between the expected market return and the riskless rate constitutes the so-called market risk premium. The above-mentioned factors will be assessed in the subsequent sections.

2.2.1.1 Risk-Free Rate (r_f)

Damodaran (1999) argues that for an investment to be considered “risk free”, the expected return should equal the actual return. Nevertheless, there are two conditions that need to be met in order for this mathematical expression to hold true. First, there cannot be default risk entailed in an investment to be considered riskless. Hence, the only non-risk-bearing securities are government securities due to their control of money supply. The second criterion is that the asset has to be free of reinvestment risk.

Applying these two criteria, the risk-free rate for any particular time-span should be the expected return on a default-free zero-coupon government bond. Damodaran also suggests that it is appropriate for the duration of both the forecasted cash flows and the riskless bond to coincide. Adding to this aforementioned consistency between cash flows and the risk-free asset, it is important to determine the currency and whether the estimation is to be done in nominal or real terms (should the company being analyzed operates under market conditions of high and unstable inflation).

2.2.1.2 Equity Beta (β_e)

In the CAPM, the beta of an investment represents the risk of the firm being analyzed relative to the market. There are three approaches available to estimate betas according to Damodaran (2016), as to know: Historical market betas, fundamental betas and accounting betas. The first approach represents the most commonly used in firm valuation, thus it will be consequently covered below.

This conventional approach of estimating betas involves regressing the historical returns of the to-be-valued firm against the historical market returns (i.e. Morgan Stanley Capital International MSCI Index or the S&P 500 returns for U.S. firms). Please refer to the formula below for in-detail calculations.

$$R_i = \alpha + \beta \cdot R_m + \varepsilon \quad (10)$$

where, α is the intercept of the regression and β is the slope corresponding the beta of the stock and the riskiness thereof.

Koller (2010) defends that individual company betas can be “heavily influenced by nonrepeatable events”. The authors therefore recommend practitioners to use an industry peer median instead of the historical betas. More specifically, use an industry unlevered beta that is then relevered to the to-be-valued firm’s target capital structure. The aforementioned computation will be discussed in further detail within the section ‘Unlevered Cost of Equity’.

2.2.1.3 Market Risk Premium (r_m)

It is unarguable that investments with higher implied risk should consequently have greater expected returns than investments in safer assets. Damodaran (1999) and Koller (2010) agree on the fact that expected returns on any investment are to be considered as a sum of the parts: a riskless rate plus a risk premium compensating for risk-bearing. There is no consensus, though, on neither the measurement nor how to convert the quantified risk into an expected return for an investor. Nevertheless, practitioners rely heavily on two existing models, according to the above-mentioned authors.

The first approach is the well-known Historical Premium approach, which is considered the standard method when it comes to estimating market risk premium among analysts and academia indistinctly (Damodaran, 1999). It consists on comparing the actual returns on stocks and a default-free security over a specific time-span. However, Koller states that since the historical market returns are heavily biased by the inflation rates prevailing at the time, we should not compute a simple average of the risk premia. Instead, the author suggests that we should incorporate today’s expected inflation by adding the currently prevalent interest rate to the historical risk premium.

The second approach suggested by Damodaran (2016) is the Market Implied Risk Premium approach. Although it represents a method to estimate market risk premia without utilizing historical data, it is based on the principle that markets are fairly priced. As stated in Formula 11, the cost of equity is first reversed engineered through the implied relationship between current stock prices and aggregate fundamental performance indicators, namely Earnings, Return on Invested Capital (ROIC), among others (Koller, 2010).

$$k_e = \left(\frac{1}{P/E} \right) \cdot \left(1 - \frac{g}{ROE} \right) + g \quad (11)$$

where, Price/Earnings (P/E), Return on Equity (ROE) and growth expectations (g) could be obtained with relative ease by any analyst or investor.

Thereafter, the risk-free rate is to be extracted to the implied cost of equity for the market obtained in order to reach the market risk premium.

2.2.1.4 Country Risk Premium

Since we cannot apply the widely computed market risk premium for the United States to foreign company valuations, Damodaran suggests an approach to compute the risk premium for any market worldwide (Please refer to Formula 12). This approach defends the idea that country risk matters (Damodaran, 2016), which lead to higher premia for riskier countries (i.e. developing countries entail greater risk than developed countries, thus, any investor willing to undertake an investment in the former should receive a premium compensating for the extra risk).

$$\text{Equity Risk Premium} = \text{Equity Market Premium}_0 + \text{Country Premium} \quad (12)$$

where Country Premium represents the additional non-diversifiable risk of investing in a specific country.

Despite the multiple existing methods for measuring country risk premium, the most accessible and straight-forward is the Default Risk Spread methodology. It consists on obtaining the rating assigned to the country's debt by any rating agency, namely Standard & Poors or Moody's. The main advantage is that these rating typically contain default

spreads over the U.S. treasury bonds, which is the value to be used as country risk premium in the cost of equity formula.

2.2.1.5 Unlevered Cost of Equity (k_u)

Koller (2010) states that there are two applications for the Unlevered Cost of Equity. First, it serves as discount factor in the Adjusted Present Value approach, which has already been discussed in detail above. Additionally, the Unlevered Cost of Equity formula is utilized to determine a more accurate beta in the Cost of Equity formula. Instead of applying a raw regression beta of the company being analyzed, an unlevered industry beta is computed through the K_u formula and then relevered to the specific firm's debt-to-equity ratio. The rationale behind it relies on Modigliani and Miller's work and is presented as follows:

$$K_e = K_u + \frac{D}{E}(K_u - K_d) \quad (13)$$

where the unlevered cost of equity can be reverse engineered using the cost of equity, the cost of debt and the market debt-to-equity ratio.

For the Unlevered beta computations, the equation is identical though replacing betas for cost of equity in the aforementioned formula.

2.2.2 Cost of Debt

According to Koller (2010), the cost of debt can be estimated by computing the Yield to Maturity of the firm's long-term, option-free bonds. If the company's debt is comprised solely of short-term or rarely-traded debt, then credit ratings should be utilized as a more accurate approach to estimate cost of debt instead of computing the Yield to Maturity.

Lastly, to determine the after-tax cost of debt that will be plugged into the Weighted Average Cost of Capital (WACC) computation, the cost of debt obtained is to be multiplied by one minus the marginal tax rate.

2.2.3 Weighted Average Cost of Capital (WACC)

The wacc considers the cost of equity and the after-tax cost of debt, as well as the company's target capital structure.

$$WACC = \frac{D}{V}K_d(1 - T_m) + \frac{E}{V}K_e \quad (14)$$

It is noteworthy that an infime change in the discount factor could lead to a significant change in the valuation outcome. As restated in the thorough explanation of the WACC components in the previous sections, practitioners should ensure that all assumptions behind represent the firm's reality. The higher the accuracy in the components' computations, the more accurate the target value reached is.

2.3 Terminal Value

Projecting cash flows to the future represents a considerable challenge over the medium and long horizon, especially when trying to capture trends for each item in the financial statements. Hence, both academia and practitioners suggest using a continuing-value formula (Koller. 2010), also referred to as terminal value. Damodaran (2016) also argues that as companies grow, it becomes more difficult to maintain organic growth, eventually leading to a long-term growth rate equal or lower than than the growth rate of the country/economy in which it makes business.

There are three ways of estimating the terminal value, according to Damodaran. First, the liquidation value approach, assumes that the to-be-valued firm ceases its operations at a point in future time and estimates the value of selling the accumulated assets (i.e. based on Book Value of assets or Expected Cash Flows of the assets).

Further, the multiple approach, estimates the terminal value by applying a multiple of the company being analyzed, namely Value-to-Sales or Price-Earnings. Despite its simplicity, it does not provide a clear estimate of the intrinsic value but of relative value instead. Damodaran (2016) therefore defends that, when performing a Discounted Cash Flow valuation, either the liquidation value or the stable growth approaches represent the most suitable alternatives.

Lastly, the stable growth approach assumes the firm in question will grow at a stable growth rate, which enables the analyst or practitioner to use a perpetual growth model to compute the terminal value.

2.4 Relative Valuation

Koller (2010) defends that the rationale behind relative valuation is that “similar assets should sell for similar prices”. When valuing traded companies, the most commonly used multiples are the Price-Earnings (P/E) and the Enterprise Value-EBITDA (EV/EBITDA) multiple.

There are five principles to correctly assess the value of a firm through the multiples methodology (Koller, 2010). First, multinational companies ought to be analyzed and valued using a sum-of-parts approach, since the Return on Invested Capital (ROIC) and growth rates are likely to differ within the firm’s business units. Second, forward multiples are always preferred over multiples based on historical data, as the former account for future expectations thus considerably reducing estimation errors. Third, we should avoid using the P/E multiple since it could be easily twisted by the firm’s capital structure. Multiples such as Enterprise Value-EBITDA or Enterprise Value-NOPLAT are strongly recommended. Fourth, non-operating assets should be adjusted for to avoid distorted multiples and, therefore, misleading interpretations. Last, the peer group choice is fundamental when performing a relative valuation. The peers should not only operate within the same industry but also possess similar growth and Return on Invested Capital expectations.

2.5 Options Pricing Model

The Options Pricing Model or Contingent Claim Valuation is based on the assumption that a company’s cash flows are dependent on a potential event, and the value of those cash flows will depend on whether the event occurs. Damodaran (2016) states that an option can be valued as a function of multiple variables, namely the value in moment 0, the strike price, how the value of the underlying asset varies, the time of expiration of the option and a risk-free interest rate.

There is a wide range of models nowadays that can be applied, though the most widely used ones are the Black and Scholes model, developed in 1972 and the Binomial option pricing model.

2.6 Utilized Models in Present Dissertation

The current Dissertation assumes that the capital structure of Danone S.A. will not suffer material changes over the forecasted period. Hence, utilizing any variation of the

traditional Discounted Cash Flow or DCF methodology (i.e. Adjusted Present Value) will not yield any added value to the undergoing valuation. In addition, the cost of capital applied in the DCF model, namely the Weighted Average Cost of Capital or WACC, also assumes that the capital structure of the valued company is to remain stable, thus reinforcing the choice for applying this specific model. Further, Danone is neither a highly levered company (i.e. three times 'net debt to ebitda' target reached in 2018 is assumed to remain stable for the forecasted time-span) nor debt is expected to reduce significantly over time.

With respect to other intrinsic valuation methodologies, Dividend Discount Model was rejected due to the dividend payout differing significantly from the Free Cash Flow to Equity (include Damodaran link, reference). Lastly, relative valuation was utilized through the application of Price Earnings and Enterprise Value EBITDA multiples.

3. Valuation

3.1 Company Overview

Founded in 1919 by Isaac Carasso, a Jewish doctor, Danone has gone from selling yoghurts to pharmacies in Barcelona to become one of the global leaders in the food and beverages industry. Headquartered in Paris, Danone operates in over 120 countries around the globe, with the latest full-year results in 2018 amounting to 24.6€ billion. It conducts business structured in four different reporting entities, as to know Essential Dairy and Plant-based (EDP) International, EDP Noram, Specialized Nutrition and Waters, which represented 33%, 20%, 29% and 18% of the firm’s total sales in 2018, respectively. Through its long-term vision “One Planet. One Health”, Danone managed to strengthen its business model by coupling together its economic and social objectives, contributing to reinforcing Danone’s close bond with environmentally-friendly and sustainable practices.

In April 2017, Danone completed the acquisition of WhiteWave, an American consumer-packaged plant-based goods and beverages company. This newly-formed company runs under the name of Danone North America and is embedded within the EDP Noram reporting entity. According to the CEO of Danone Emmanuel Faber, both companies represented a perfect match to become a global institution leading consumers towards more sustainable eating and drinking choices.

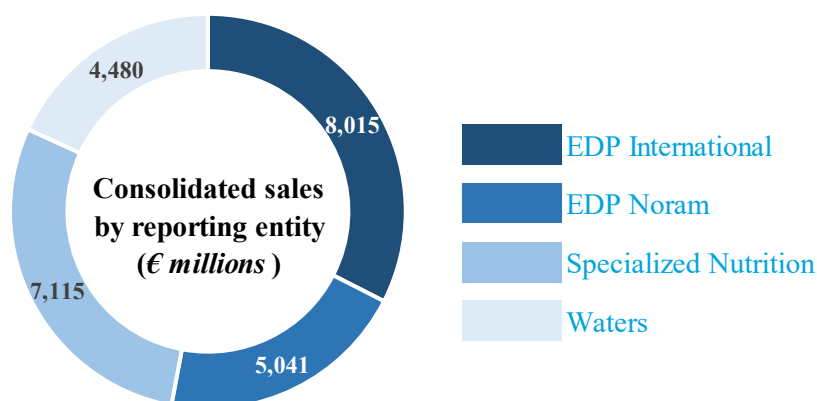


Figure 1. FY 2018 Danone Sales by Reporting Entity (Source: Own elaboration; based on Danone 2018 Annual Financial Report)

It is noteworthy that, albeit being differentiated into four reporting entities, Danone’s organizational structure evolves around two well-defined geographical areas, more specifically the Europe and Noram Region and the Rest of the World region. The former represented 55% of the Company’s sales in 2018, with the United States, France, the United Kingdom and Spain being the main countries in this so-called cluster. Additionally, the Rest of the World region, with Latin America, Asia/Pacific and Africa/Middle East under its umbrella, represented 45% of Danone’s total sales in 2018.

Table 1 contains the top ten countries in terms of sales both for 2017 and 2018, led by the United States with a percentage over total company sales of 20% in 2018, presenting a 200 bps growth versus the preceding period. China also contributes significantly to Danone’s total sales thanks to their presence in the Waters and Early Life Nutrition businesses (9% of total sales in 2018, growing over 200 bps with respect to last year).

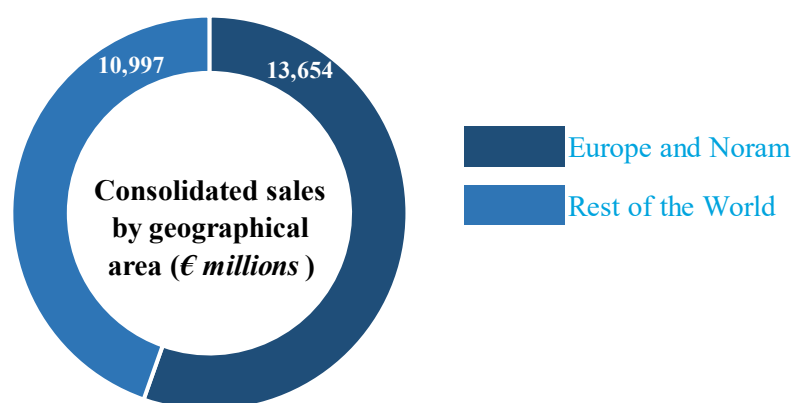


Figure 2. FY 2018 Danone Sales by Geographical Area (Source: Own elaboration; based on Danone 2018 Annual Financial Report)

(in percentage)	Year ended December 31	
	2017	2018
United States	18%	20%
China	7%	9%
France	9%	9%
Russia	7%	6%
Indonesia	5%	5%
United Kingdom	5%	5%
Mexico	4%	4%
Spain	4%	4%
Germany	4%	3%
Brazil	4%	3%

Table 1. Top 10 Countries in terms of Total FY 2018 Sales (Source: Own elaboration; based on Danone 2018 Annual Financial Report)

3.1.1 Reporting entities

As previously stated, Danone is divided into four different reporting entities or broad segments, namely Essential Dairy and Plant-Based (EDP) International, EDP Noram, Specialized Nutrition and Waters.

Danone is the worldwide leader in the Essential Dairy and Plant-based category, operating through the EDP International and EDP Noram reporting entities. Although being integrated within the same sector, these entities differ in terms of portfolio thus it is worth explaining them in further detail. First, the EDP Noram, it is positioned among the top-15 biggest food corporations in North America and can be divided into five categories:

- The yoghurt category, which englobes mainly solid and liquid yoghurts sold under a few key brands such as Activia, Dannon, Danonino, Light & Fit, DanActive, Danimals, Wallaby and YoCrunch, and Oikos.
- The plant-based products and drinks category, including plant-based liquids such as almond-, cashew- and soy-based products; plant-based ice creams and ornaments; and nutrition products mainly consisting of powdered proteins originally targeting fitness practitioners and athletes as a way of enhancing strength while performing physical activities.
- The coffee-creamers category, including coffee creamers and beverages commercialized under the well-established brand International Delight and, under licensing, through Dunkin Donuts, Land O Lakes and Bailey's.
- The premium-dairy category, which contains organic milks, cheese and other dairy products commercialized under the Horizon brand.
- The fresh foods category, including packaged salads, fresh and organic fruits and greens that can be found in the market through the Earthbound Farm brand.

On the other hand, the EDP International manages the EDP operations in the developed European countries as well as growing markets like South America, Russia and other Eastern European countries, together with other key countries in Asia and Africa. It manages to do so through a wide portfolio of products:

- The essential brands such as Danone Brand, Danonino or Dan'Up, as well as trendy lifestyle brands as Light & Free, Vitalinea (or Corpos Danone in Portugal)

or the recent launch of YoPro, with a stronger focus on athletes and people with a healthy and sportive lifestyle.

- Plant-based products sold under the recently acquired brand Alpro, currently leading the plant-based European scenario with a wide array of products in its portfolio, with ingredients ranging from almonds to cashew nuts and coconut, plus new sub-segments like plant-based high-protein and ice cream products.
- A portfolio of indulgence brands, comprised by Oikos and Danet in Europe and Danissimo in Russia, presenting a strong innovation pipeline year by year.
- Lastly, the soft functionals brands, which include the group's emblematic brand Activia; also offers products for the most health-conscious consumer under the brands Actimel and Danacol.

The next main reporting entity is the Specialized Nutrition, which englobes Early Life Nutrition (ELN) and Advanced Medical Nutrition (AMN). These sub-entities make up a portfolio of nutritional products aimed at accompanying consumers through their full life span, from the birth until old age. Nutricia, a hundred-year-old brand acknowledged around the world, constitutes an iconic asset for both businesses.

The Early Life Nutrition (ELN) business is focused on providing the right nutrition within the first thousand days of life, approximately since the beginning of the pregnancy until the newborn is two years old. The infant milk formula segment represents the most important in terms of ELN revenue, with a wide range of products available and consumed worldwide. Apart from that, the so-called complementary food segment is also englobed within ELN, though it is only available in a narrow set of countries worldwide. Notorious brands within this business are Aptamil and Nutrilon.

On the other hand, the second business represented in the Specialized Nutrition reporting entity is the well-known Advanced Medical Nutrition (AMN) division. This business focuses on managing diets of both young and adult patients, who have been diagnosed certain diseases. More specifically, the products are mainly designed to treat patients suffering from malnutrition coming caused by certain medical conditions. These products are commonly prescribed by doctors, hospitals, clinics and pharmacies, being also eligible for reimbursement from insurance companies. Offered under the Nutricia flagship brand,

the AMN business has a large portfolio of products, namely Nutrison, Fortimel/Fortisip, Neocate and Nutrini/Infantini.

Lastly, the Waters reporting entity consists of the plain water business coupled with aquadrinks, this is, waters flavored with natural extracts, juices or vitamins. This business contains notorious international brands like Evian, as well as other regional brands, well established in the customers' minds. Examples of the latter are Mizone in China, Bonafont in Mexico, and Fontvella and Lanjarón in Spain, among others.

3.2 Industry Overview and Macroeconomic Outlook

3.2.1 Macroeconomic conditions

According to the International Monetary Fund (hereinafter referred to as IMF), following a two-year upturn in cyclical growth, the global economic growth slowed down throughout the second half of 2018 and is likely to continue in early 2019. The activity suffered a downturn following the infamous Sino-American trade war prompted by U.S. President Donald Trump, coupled with a decline in business confidence and worsened financial conditions linked to political uncertainty across many economies, namely Venezuela. All the above considered, global growth declined from a 4 percent peak in 2017, to 3.8 percent in the first semester of 2018, further dropping to 3.2 percent in the second half of the year. Following the latest growth trends, 2019 is projected to stabilize at 3.3 percent before returning to a 3.6 percent global growth in 2020.

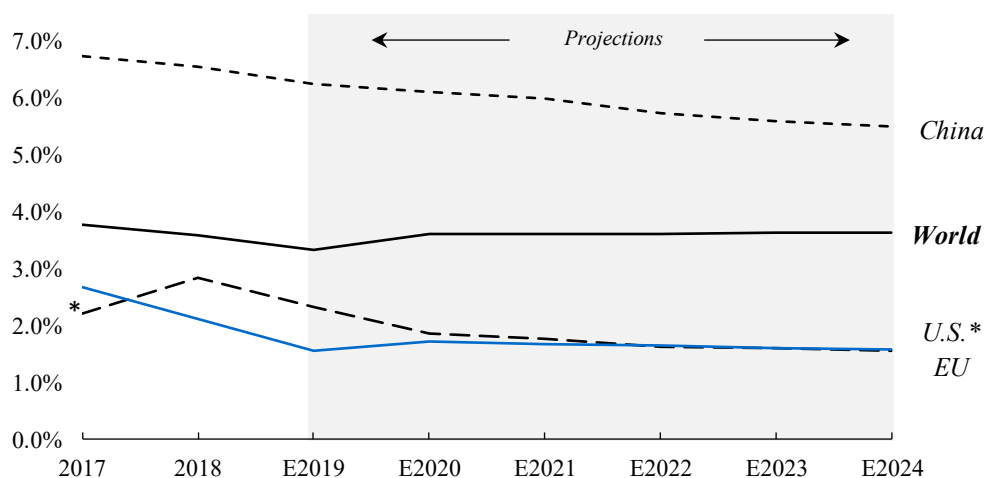


Figure 3. Yearly forecasted growth by region (Source: International Monetary Fund (IMF))

Despite weakening investment in the second semester, the United States, representing one fifth of Danone's total sales volume, remained strong overall in 2018 following a stable labor market and strong consumption. Though, growth is expected to decline in 2019 and slow even further to 1.6 percent in the upcoming years with the reversal of fiscal stimulus that contributed partly to the positive growth in 2018.

China, second largest country for Danone in terms of total sales per annum, suffered a growth decline of 6 percentage points throughout 2018. A tighter financial regulatory environment, primarily designed to control debt spending as well as restrain and prevent money laundering-alike activities, led to an inevitable reduction in domestic spending. As a result, not only investment in infrastructure declined significantly but commodities and staples consumption were also affected. Plus, exports diminished within the second half of the year as a result of the severe tariffs imposed by the United States, further pressuring down growth in 2018. The outlook for economic growth falls in line with the downward trend experienced last year, projected to slow down up to 1 percentage point in the next five years.

The European Union comprises various countries deemed vital for Danone's sustainable growth since its foundation in 1919, namely France, Spain or Germany. Growth in the Euro area was lower than projected due to a combination of several factors affecting activity across its constituent countries: From weakening general consumption to new fuel emission standards in Germany, passing through political and fiscal uncertainty in Italy, or the widely-covered protests in the streets of France that severely hampered consumer confidence and consequently average in-store sales. Regarding projections, growth is expected to stabilize over the forecasted time-span up to a yearly growth of 1.6 percent, following a similar growth trend like the United States.

Additionally, other countries worth-analyzing due to their strategic importance for the company's total sales are Indonesia, Mexico and Brazil, accounting for five, four and three percent of Danone's sales in 2018, respectively. In Brazil, forward-looking estimations are positive, with growth expected to grow from 1.1 percent in 2018 up to 2.5 percent in 2020. Mexico is projected to grow below 2 percent in 2019 and 2020. It is noteworthy that estimations for both countries were significantly adjusted due to political uncertainty after new government administrations came to power. Finally, Asean-5 country-aggregation is expected to maintain stable growth within the forecasted time-span.

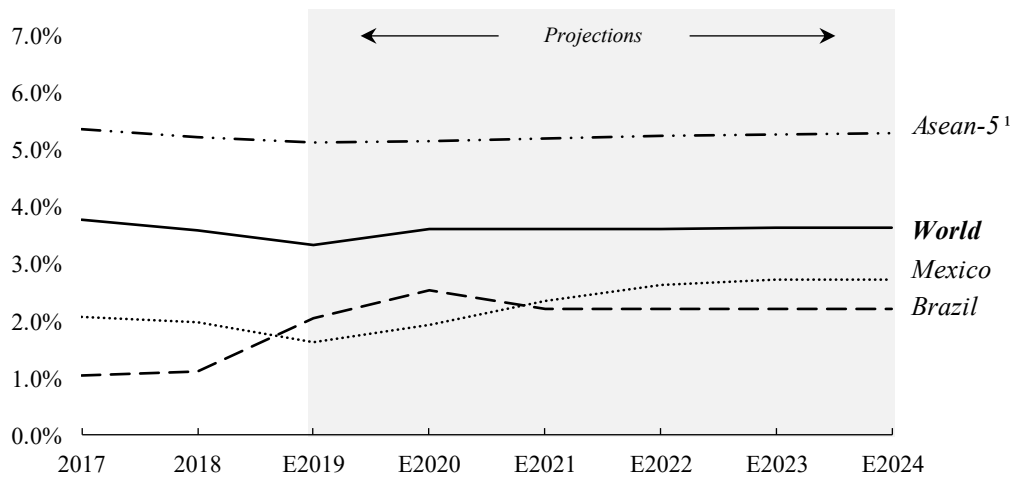


Figure 4. Yearly forecasted growth by region vis. (Source: IMF; ¹Includes Indonesia, Malaysia, Philippines, Thailand, and Vietnam.)

3.2.2 Industry analysis

Danone SA represents one of the key players in the Fast-Moving Consumer Goods Industry (herein referred to as FMCG Industry), also known as Consumer-Packaged Foods Industry. It involves products that are sold at a relatively low cost, which are generally consumed on small quantities by the end consumer and are available in a wide variety of outlets (i.e. hypermarkets, supermarkets, convenience stores, grocery stores, cash and carries, etc.). The FMCG market can be segmented based on product type and distribution channel. Regarding the product type, Foods & Beverages account for the majority of the global revenues, with more than 85 percent of the industry share. Danone SA falls into this category, given its vast portfolio is solely composed of food products. On the other hand, Supermarkets & Hypermarkets dominate the FMCG market in terms of distribution channel, accounting for more than one third of the revenues. Looking forward, though, channels like specialty stores or E-Commerce are expected to grow substantially, becoming increasingly relevant for the FMCG players (Allied Market Research, 2019).

The Consumer-Packaged Foods industry is considered to be on a maturity stage, with growth rates evolving from positive flat up to 4 percent. It has a history of generating reliable organic growth through mass brands recognized worldwide, namely Danone with Activia or PepsiCo with Pepsi. Nevertheless, the industry is now facing great pressure due to shifting consumer behaviors as Millennials and Generation-Z consumers are

overtaking the so-called Baby Boomers as primary source of income of these corporate giants. According to a study carried out by McKinsey & Co. (Kelly G. et al, 2018), these new consumers “tend to prefer new brands, especially in food products” and are “more likely to avoid buying products from the big food companies”. This is the reason why forecasted growth for the main players of the FMCG Industry are slightly below the global FMCG growth rate, since they intend to include the aforementioned consumer-behavioral risk.

The Packaged-Foods sector is highly competitive due to the numerous existing competitors, both national and international. The main players within the Foods & Beverages branch of the FMCG Industry, thus, the main global competitors for Danone SA are well-known Swiss multinational Nestlé SA, American company Mondelez International or grocery manufacturing conglomerate Kraft Heinz, among others.

3.3 Past Financial Performance

Following the completion of the WhiteWave acquisition, WhiteWave and Danone’s activities have been merged and are in fact generating the expected synergies. Thus, it is not worth looking backwards to years prior to 2017 since those figures no longer represent the real performance of both companies. As a matter of fact, this dissertation will not utilize data from 2016 backwards since is no longer useful for valuation for the aforementioned reasons.

As of the 2017 full-year results, Danone presents its figures using an additional indicator to monitor and report its performance, namely the so-called “like-for-like New Danone” changes. This financial indicator adds the contribution of WhiteWave as a whole to Danone’s organic growth from the time of the acquisition. It constitutes a variation of the widely used “like-for-like changes” indicator, which already intended to reflect Danone’s organic performance excluding the impact of non-recurring or exceptional company-related events (i.e. changes in consolidation, changes in applicable accounting principles or exchange rate fluctuations).

Amid an extremely volatile environment characterized by an increased reliance on promotions, rising raw material prices, hyperinflation in Argentina or the boycott to milk suppliers in Morocco, Danone proved that its worldwide reputation of delivering solid

positive growth is second to none. In fact, it reported a solid performance in 2018 through growth acceleration highly levered in innovation, coupled with achieved efficiencies and synergies from the WhiteWave consolidation. The results for the fiscal year of 2018 were €24,6bn consolidated sales, presenting a positive “like-for-like New Danone” change of 2,9 percent (on a “vs Last Year” basis), with all reporting entities contributing to growth.

<i>(in € millions, exc. Percentages)</i>	2017	2018	Sales growth^a
EDP International	8,612	8,015	0.10%
EDP Noram	4,492	5,041	1.50%
Specialized Nutrition	7,079	7,115	5.90%
Waters	4,630	4,480	5.30%
Total	24,813	24,651	2.90%

^aLike-for-like New Danone

Table 2. Sales by reporting entity (Source: Own elaboration, based on Danone 2018 Annual Financial Report)

Table 2 summarizes Danone’s sales by reporting entity for both 2017 and 2018, as well as the “like-for-like New Danone” changes. First, EDP International reported sales of €8bn in 2018, positive flat versus last year’s results. Excluding the Morocco boycott, sales for this reporting entity would be up by 2.1 percent instead. Regarding the main markets within EDP International, Europe continued its progress fueled by the relaunch of the flagship brand Activia; CIS region managed to grow through new product launches and continued innovation; in Latin America, Mexico and Brazil contributed to growth helped by a expansion of the plant-based assortment. Lastly, in Morocco, sales decreased by 27% strongly impacted by the consumer boycott on milk and dairy products.

EDP Noram registered sales of €5bn, up 1.5 percent on a “like-for-like New Danone” basis. As for the main markets, Yoghurt was the biggest contributor both in absolute and relative terms, with the Greek assortment (i.e. Oikos) and Activia brand overperforming in a highly competitive category. In the Plant-Based segment, nut-based products helped deliver positive organic growth while sales were slightly penalized by the declining soy category (i.e. There is a growing negative perception among consumers regarding soy products, after several research centers having proved soy-related products being harmful for human health). Additionally, the Coffee Creamers segment delivered positive growth through new product single-formats intended to nourish the growing importance of the so-called “uncomfortable” or convenience channels.

Third, Specialized Nutrition sales were up by 5.9 percent versus 2017, with both sub-entities growing above 5 percent, namely Advanced Medical Nutrition and Early Life Nutrition. With respect to the latter entity, growth in Chinese direct and ultra-premium channels contributed significantly in reaching high-single-digit figures, since this region represents around 30 percent of its total sales. On the other hand, all regions englobed within Advanced Medical Nutrition, especially China, reported positive growth in the adult and pediatric segments.

Lastly, the Waters entity reported €4,5bn sales in 2018, growing 5.3 percent versus previous full-year results. Performance was solid overall for all regions, particularly due to local Indonesian Aqua brand and world-recognized Evian brand delivering over expectations.

3.4 Business & Cost of Capital Assumptions

3.4.1 Revenue Growth

Following the 2020 official objectives presented to Danone investors, the author believes the company will fully focus its efforts in reaching and delivering the top-2 targets, namely revenue like-for-like sales growth of 4 to 5 percent as well as a minimum operating margin of 16% by 2020. Thus, growth is forecasted to reach 4.5 percent on a like-for-like basis in 2020 following a gradual stabilization up until reaching a growth rate equal 0.4 percent in 2029.

Since absolute revenues are to be computed applying an organic growth rate, the present Dissertation provides and forecasts a detailed list of levers explaining the differences between like-for-like and organic estimates. As to reflect expected inflation, like-for-like New Danone and consequent organic changes are constructed based upon region-weighted inflation 10-year estimates from the "OECD Economic Outlook: Statistics and Projections".

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
vs LY (organic*)	-0.7%	2.8%	3.0%	2.8%	2.4%	1.9%	1.6%	1.2%	0.9%	0.6%	0.4%
WhiteWave consolidation	4.0%	-	-	-	-	-	-	-	-	-	-
Changes in consolidation scope (disposal of Stonyfield in Aug 17)	-0.8%	-	-	-	-	-	-	-	-	-	-
Currency impact (appreciation of euro vs foreign currencies)	-6.6%	-0.5%	-1.0%	-0.7%	-0.7%	-0.5%	-0.3%	-0.2%	-0.2%	-0.1%	-0.1%
Adoption of IAS 20 hyperinflationary accounting in Argentina	-0.2%	-	-	-	-	-	-	-	-	-	-
WhiteWave SI 2017 Results	7.2%	-	-	-	-	-	-	-	-	-	-
Objectives Landing (Promo & TT phasings, B/S Reversals, ...)	-	-	2.5%	1.0%	-0.88%	-0.88%	-0.88%	-0.88%	-	-	-
Like-for-like New Danone	2.90%	2.25%	4.50%	3.10%	0.83%	0.59%	0.36%	0.13%	0.77%	0.53%	0.30%

*Inflation already embedded within organic growth figures

Table 3. Organic and like-for-like projections broken down by growth levers (Source: Own elaboration)

The author considers a top-down approach to forecast growth, by establishing a like-for-like yearly growth and then estimating intermediate impacts leading to the organic sales percentual change in Table 3 above, subsequently applied in the computation of the absolute revenues. The only levers forecasted into the future are the currency impact and the landing of 2020 objectives, with any consolidation impact from the WhiteWave acquisition or the adoption of the hyperinflationary accounting in Argentina exclusively impacting in 2018.

The first lever considered tries to reflect potential impacts of currency exchanges Danone is subject to for conducting operations worldwide. More specifically, impacts coming from the appreciation or depreciation of the Euro versus the Argentinian Peso, U.S. Dollar and emerging currencies such as Russian Ruble, Turkish Lira or Brazilian Real. Due to lack of detail in the revenue-breakdown by region, an average of the last 5 years' impacts was assumed, namely negative one percent, controlling for its weight over like-for-like growth (i.e. impact diminished according to sales growth trend). The second lever refers to the actions Danone will need to perform for the landing of the 2020 objectives. The present Dissertation assumes that Danone will not reach its ambitious 4 to 5 percent sales growth organically. Instead, it will do so via phasing in Trade Terms & Promotion costs from 2020 to 2021, as well as through the so-called balance sheet reversals (i.e. Reversal of past provisions for risk not having materialized).

Overall, the above-mentioned 2020 targets seem ambitious though plausible. As a matter of fact, the author considers the organic growth forecast to be conservative but is intended to reflect the rising competition from smaller brands offering new healthier and organic foods, as well as the growing concern of private label brands, constantly driving consumers towards pricing instead of quality. For instance, German discounters such as Lidl and Aldi represent a clear threat to Danone's revenues due to their strong focus on simple and affordable products.

Following the WhiteWave acquisition in 2017, Danone will deliver a significant share of its growth by nourishing the growing plant-based and organic food trend through a well-diversified portfolio of plant-based products, including yoghurts, on-the-go beverages, coffee creamers and a wide variety of milks. In absolute terms, Danone's plant-based revenues are forecasted to triple in volume within the next 6 years. Additionally, innovation is now considered a fundamental sales-booster. As a way of adapting to the constant changes in consumer demand, Danone is considered a pioneer when it comes to

launching innovations (i.e. New products, revitalized brands via positioning or rebranding, new on-the-go formats or more environmentally-friendly materials). According to Danone estimates, around one-fifth of its revenues will depend upon innovation in the upcoming years. Further, Danone will benefit from the surge of e-commerce as a substitute channel for many consumers, together with the growing impulse or uncomfortable channels (i.e. small stores, on-the-go and on-premise). Danone expects to double sales from the aforementioned distribution channels by 1bn in the next two years.

Additionally, both mix product and customer mix will play a vital role in driving the company's sales up in the foreseeable future. Danone will maximize its revenues through boosting sales in high-profitability products at the expense of low-margin ones, together with increasing sales in less dilutive clients (i.e. there is negative correlation between a client's contractual conditions and its contribution to Danone's net sales. More aggressive trade terms will consequently translate into lower net sales to the company).

Finally, Danone's future growth will only be reached via its reporting entities. Therefore, it is worth-presenting a brief explanation of their contribution to the overall company results. Weighting one-fifth of total revenues, the Waters division is expected to drive sustained growth by progressively turning towards circular economy (i.e. well-known Evian brand is committed to be a 100 percent circular brand by 2025), along with a strong focus on high-profitable innovations, namely naturally-flavored water-based beverages. Secondly, the Specialized Nutrition division will deliver sustained single-digit growth in the forecasted time-span despite having suffered a drop in the last year due to China's low birth rates. Growth will be driven by further entering the €30 billion Chinese market via targeting low-tier cities as well as focusing on premium segments, namely high-end infant formula and baby food products. Lastly, representing half of Danone's total revenues, the Essential Dairy and Plant-based division will also help deliver the established financial targets by unlocking growth opportunities through the combination of its leadership position in the dairy business and a plant-based high-growth potential.

3.4.2 Terminal Value

As mentioned above, growth is estimated to stabilize over the forecasted period until reaching a terminal value slightly above 0.4 percent. According a study by the research

consultancy firm Kantar (Grande Consumo, 2019), average growth in the fast-moving consumer goods industry falls slightly below 2.5 percent on a yearly basis and is expected to remain equal throughout the next decade. However, the present Dissertation adopts a conservative approach to reflect the current aggressive competitive situation and constant changes in consumer behavior, with new players entering and consumer trends in constant change as well a potential downturn in plant-based products that fueled an important part of the growth in the first five forecasted years.

3.4.3 Pre-Tax Operating Margin

In accordance with the objectives set by the company, and assuming that the company will fully focus its actions in delivering them, the author forecasts a pre-tax operating margin on 16 percent by 2020, as depicted in Table 4 below.

	Base year										Terminal year	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
EBIT (Operating) margin	14.87%	15.43%	16.00%	15.77%	15.54%	15.31%	15.08%	14.86%	14.63%	14.40%	14.17%	14.17%
EBIT (Operating income)	3,665	3,909	4,174	4,221	4,259	4,277	4,279	4,266	4,239	4,199	4,148	4,164

Table 4. Forecasted EBIT (Source: Own elaboration)

After reaching the aforementioned target by 2020, this indicator is adjusted over the forecasted time-span up to 14.17 percent, which represents the revenue- and region-weighted average of pre-tax operating margin plus a Danone premium of 3 percent. The selected industries are Soft Beverages, representing the Waters division, and Food Processing, for both Essential Dairy and Plant-Based and Specialized Nutrition entities. Due to lack of detailed information, regions are divided into United States, Europe, China and Rest of the World (RoW). Thereafter, the author computes the weighted average operating margin for Danone, based on average operating margins of the Soft Beverages (i.e. set of 97 companies) and Food Processing (i.e. set of 1234 firms) sectors broken down by region. Data is computed as of January 2019 and retrieved from the Damodaran website.

Representing an increase of 112 basis points within the next two years, the margin expansion will be primarily driven by a reduction in Advertising and Promotional (A&P) costs plus a further drop in Selling, General and Administration (SGA) expenses related to the so-called “Protein” savings program launched by Danone in 2017. According to

Danone, this cost-cutting program already identified €688 million savings through several initiatives, though is expected and assumed to deliver €1 billion by 2020. Among the potential actions that could be implemented, this Dissertation highlights the following: an improvement in real estate management, travel smartly, significant inventory reduction and warehouse optimization, and development of digital asset management and knowledge sharing platforms.

The above-mentioned margin expansion, fueled by the savings program, is assumed to be partially offset by high single-digit inflation in Danone's strategic raw materials. More specifically, a progressive rise in milk prices is estimated on a yearly basis in all geographical areas where the company carries out its operations (Food Ingredients First, 2017). Furthermore, an inflationary trend is also estimated with regards to other raw materials, including carton, sugar, fruits and plastics.

Forecasted target of 16 percent is therefore reachable but at the expense of the company being heavily reliant on cost savings. Author considers 3 percent premium over weighted average for the remaining years due to Danone's competitive and leadership position, implying an outperformance over the average market players (i.e. No. 1 worldwide for fresh dairy and plant-based foods and beverages; No.3 worldwide for packaged waters; No. 2 worldwide for specialized nutrition).

A forecasted detail of COGS, Selling, General & Administration, Marketing and Other operating expenses was not performed. Instead, assumptions regarding them are included in the forecast of the operating margin. More specifically, a rise in COGS from increased inflation and drop in SGA due to Protein program.

3.4.4 Tax Rate

The author utilizes the reported effective tax rate of 27.90 percent until 2022. Subsequently, the tax rate is adjusted progressively until reaching the company's marginal tax rate of 29.12 percent in 2029.

According to Damodaran, firms generally pay less than the reported marginal tax rate mainly due to existing deferred taxes. Since the present Dissertation assumes that the current deferred taxes will fade over the forecasted period, the tax rate will consequently suffer a progressive increase.

Regarding the computation for the marginal tax rate, a country-based weighted average was considered (Please refer to Table 5 below). Revenue breakdown by region corresponds to the last reported results from the 2018 fiscal year. Tax rates by country were collected from the KPMG Survey of Tax Rates by Country.

	Revenues* (abs)	Revenues (%)	Tax rate	Weighted Tax Rate
United States	4 930	20%	27,0%	5,4%
China	2 219	9%	25,0%	2,3%
France	2 127	9%	33,0%	2,8%
Russia	1 479	6%	20,0%	1,2%
Indonesia	1 233	5%	25,0%	1,3%
United Kingdom	1 233	5%	19,0%	1,0%
Mexico	986	4%	30,0%	1,2%
Spain	986	4%	25,0%	1,0%
Germany	740	3%	30,0%	0,9%
Brazil	740	3%	34,0%	1,0%
Rest of Europe & NorAm	3 639	15%	32,2%	4,8%
New ROW	4 341	18%	36,0%	6,3%
Danone SA	24 651			29,1%

*FY 2018 Results

Table 5. Marginal Tax Rate computation (Source: Own elaboration based on Damodaran figures)

3.4.5 Net Capital Expenditures

According to Damodaran, net capital expenditures represent a clear reflection of the current growth for any specific company. Hence, mid- to high-growth firms will present higher levels of investment in capital expenditures than other firms with lower growth. This rationale implicitly states that assumptions about net capex can therefore never be made independently from future growth estimates.

The author follows the previous foundation to determine the net capex over the forecasted time-span, by assuming a yearly growth slightly above the projected revenue growth. More specifically, net capex will grow at a rate of revenue growth plus 5 percent. Such variation is solely intended to reflect the extraordinary investments Danone will need to take in as to support the plant-based acceleration (Refer to Table 6).

	Base year										Terminal year	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Net Capex	173	178	183	189	193	197	200	203	205	206	207	208
% of Revenues	0.7%	2.9%	3.2%	2.9%	2.5%	2.0%	1.6%	1.3%	1.0%	0.7%	0.4%	0.4%

Table 6. Forecasted Net Capex and its weight over revenues (Source: Own elaboration based on Damodaran figures)

The author acknowledges that R&D expenses, commonly treated as operating expenses, should be considered among the capital expenses since they bring future benefits to the company over time. Though, capitalized R&D expenses are not considered in this valuation for adjusted operating income nor included in the net capex computation due to its low impact.

3.4.6 Non-Cash Working Capital

The present Dissertation considers current assets exempt of cash, non-debt current liabilities (i.e. short-term is being excluded since it is already present in the cost of capital) and the change in deferred taxes. Citing Donald M. DePamphilis Ph.D. (2018), “deferred taxes have an impact on cash flows, which is reflected in valuation by adding the change in deferred tax liabilities and subtracting the change in deferred tax assets in the computation of the working capital”. Furthermore, yearly estimates for non-cash working capital are not broken down into detail for not bringing any material added-value to the valuation. In fact, year-on-year working capital tends to be significantly volatile, thus trying to estimate each component could result in valuation bias. Instead, following the Damodaran guidelines, the forecast is performed based on working capital as a percentage of revenues.

	Base year										Terminal year	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
<i>Change in non-cash WC</i>	-123	-126	-130	-134	-137	-140	-142	-144	-145	-146	-146	-147
<i>% of Revenues</i>	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%

Table 7. Forecasted Non-cash working capital and its weight over revenues (Source: Own elaboration based on Damodaran figures)

The author considered the average of the past two years (i.e. negative 0.5 percent) and assumed it will remain stable throughout the projected period. It is worth-mentioning that the actual working capital is negative, meaning Danone is efficiently allocating its capital by increasing its reliance on suppliers’ funding instead of taking on extra financial debt.

3.4.7 Cost of Capital Components

3.4.7.1 Risk-Free Rate

Since the current valuation is being performed in the European currency, the author considered the German 10-year government bond, or commonly referred as medium-term German Bund, as an approximation of the risk-free rate. It consists of a nominal default-free rate, following the rationale applied in the revenue growth computation, which embeds expected inflation within the figures. The author used the yield as of July 16 as an estimate of the risk-free.

As a result, the risk-free rate applied in the current valuation is -0.3 percent. It is worth-mentioning that already the yield is current at its lowest levels, as depicted in figure 5, and represents a downgrade of 700 basis points with respect to the average default-free rate used in valuations of European companies in 2018, according to the KPMG “Cost of Capital” study.

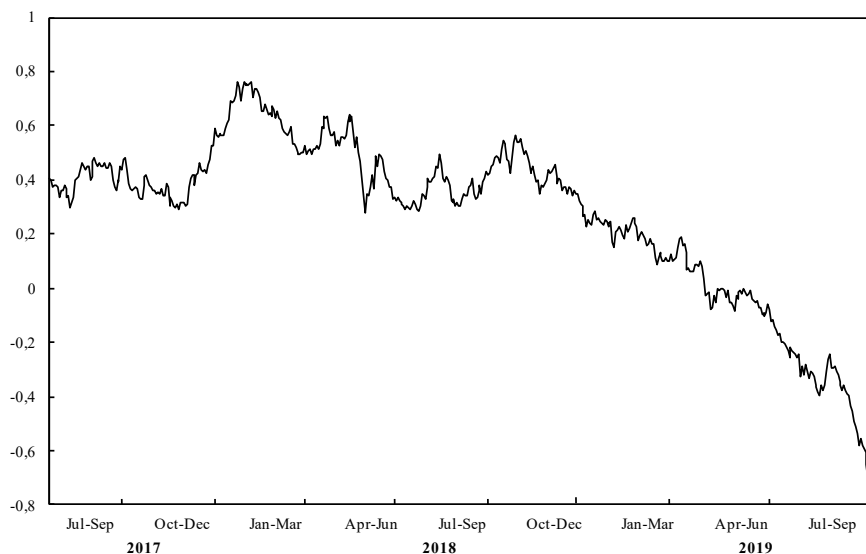


Figure 5. Yearly data on 10-year German Bund – July 2017 to July 2019 (Source: Own elaboration; Thomson Reuters Eikon)

3.4.7.2 Pre-Tax Cost of Debt

The pre-tax cost of debt is computed using the above-mentioned risk-free rate plus a default spread estimated through the synthetic rating approach. Despite Danone having multiple ratings by agencies like Moody’s or Standard & Poor’s based on its default risk, the present Dissertation adopted an alternative approach to estimate the default spread of the company. The reason behind is that the author believes that a Baa1 rating revised on

October 2018 does not reflect the current and future prospects for Danone. Thus, the synthetic rating methodology, presented by Damodaran, consists on assigning a rating to Danone based upon its financial ratios. More specifically, given an interest coverage ratio, the firm is assigned a rating which implicitly carries a specific default spread. Table 8 below illustrates the link between interest coverage ratios for large manufacturing companies in the Moody's rating scale.

<i>Interest coverage ratio ></i>	<i>Interest coverage ratio ≤ to</i>	<i>Rating is</i>	<i>Spread is</i>
-100000	0,199999	D2/D	19,38%
0,2	0,649999	C2/C	14,54%
0,65	0,799999	Ca2/CC	11,08%
0,8	1,249999	Caa/CCC	9,00%
1,25	1,499999	B3/B-	6,60%
1,5	1,749999	B2/B	5,40%
1,75	1,999999	B1/B+	4,50%
2	2,2499999	Ba2/BB	3,60%
2,25	2,49999	Ba1/BB+	3,00%
2,5	2,999999	Baa2/BBB	2,00%
3	4,249999	A3/A-	1,56%
4,25	5,499999	A2/A	1,38%
5,5	6,499999	A1/A+	1,25%
6,5	8,499999	Aa2/AA	1,00%
8,50	100000	Aaa/AAA	0,75%

Table 8. Interest coverage ratios, Moody's ratings and its consequent default-spreads (Source: Own elaboration based on Damodaran figures)

Interest coverage ratio for Danone is 9.14, thus implying a triple A rating and a default spread of 0.79 percent. Added to a risk-free rate of -0.3 percent, the cost of debt derived and applied in the current valuation is 0.44 percent.

3.4.7.2.1 Operating Leases

For the calculation of the interest coverage ratio, the author utilizes the interest expenses from the fiscal year 2018 and the adjusted pre-tax operating income including capitalized lease commitments. In accordance with the article "Dealing with Operating Leases in valuation" by Damodaran (1999), operating leases are treated as financing expenses instead of operating ones due to its payments representing a similar commitment to interest payments from debt (Please refer to Table 9 below for further detail). Essentially, leasing becomes an alternative to taking on debt to buy the assets in case, inevitable

turning its payments into financial expenses. This inevitably impacts the valuation, which is thereby adjusted in two ways.

First, total capital suffers an increase since the present value of the operating lease commitments is now treated as debt. A pre-tax cost of debt of 0.44 percent is utilized for discounting the existing payments for consistency reasons (i.e. commitments are pre-tax). Total debt value of leases is €810 million, which will be added to the interest-bearing debt reported on the balance sheet.

In addition, reported operating income is adjusted by adding back the current year's operating lease expense and subtracting the depreciation on the leased asset, namely €219 million and €116 million, respectively. The latter is computed as an approximation by dividing the debt value of leases by the number of years embedded in the operating lease commitments (i.e. 7 years). Hence, the reported pre-tax operating income of € 3562 million is converted into € 3665 million.

<i>(in € millions)</i>	2019	2020	2021	2022	2023	2024 and after
Operating lease commitments	-219	-133	-92	-64	-105	-210

Table 9. Operating lease commitments (Source: Own elaboration based on Danone Financial Report 2018)

3.4.7.3 Cost of Equity

The cost of equity was computed by summing the above-mentioned risk-free rate plus a risk premium, which comprises a market risk-premium and a country risk-premium. Since the first component of the equation, the default-free rate, has already been covered in previous sections, the present Dissertation will focus on the calculation mechanics for the beta, equity and country risk-premia.

3.4.7.3.1 Bottom-up Betas

The riskiness of Danone is represented by its beta, which is computed through an alternative approach rather than the standard procedure of regressing stock returns against market returns. This approach is called Bottom-up beta approach (Damodaran, 2016) and represents a more precise way of estimating relative risk for any particular company. Unlike a regression beta, it allows to reflect changes both in the business mix and debt to equity ratio. There are five steps involved in the estimation of the bottom-up beta for Danone:

- Company is to be broken down by its constituent businesses. More specifically, Danone is divided into Soft Beverages, corresponding to the Waters division, and Food Processing, for EDP and Specialized Nutrition entities.
- Average unlevered betas for the businesses are obtained. A sample of publicly traded firms is considered and subsequently unlevered using the average debt to equity ratio among the sample firms. This is performed for the Soft Beverages and Food Processing industries in the United States, Europe, China and Global, as presented in Table 10 below.

	United States	Europe	China	Global
Soft Beverages	0,84	0,57	1,22	0,68
Food Processing	0,77	0,63	1,52	0,66

Table 10. Average unlevered betas by Industry and Region (Source: Own elaboration based on Damodaran figures)

- The value derived from both businesses is estimated. This is, which portion of Danone's total revenues comes from the Soft Beverages entity and which part from the Food Processing divisions. Considering the 2018 Danone revenues and the average Enterprise Value to Sales for European companies (Data from Damodaran website), the author performs a broad estimation of the total value of each business. As depicted in table 11 below, the Waters division weights 37 percent of total revenues while the combination of Essential Dairy and Plant-Based and Specialized Nutrition entities represent 63 percent of total sales.

<i>(in € millions)</i>	Revenues	EV/Sales	Estimated value (abs)	Estimated value (%)
Soft Beverages	4 480	3,23	14 474	37%
Food Processing	20 171	1,22	24 597	63%

Table 11. Weight by division, as of 2018 Total Revenues (Source: Own elaboration based on Danone 2018 Financial Report and Damodaran figures)

- Industry weighted average of the unlevered betas is calculated for all four aforementioned regions, using the weights covered in previous step. Additionally, these newly-computed industry-weighted unlevered betas are weighted by region, as presented in table 12 below. This derives an unlevered beta for Danone's operating assets of 0.74.

	Revenues (abs)	Revenues (%)	Industry-weighted unlevered beta (β_{ui})	$\beta_{ui} * \text{Region weights}$
United States	4 930	20%	0,79	0,16
Europe	2 219	9%	1,40	0,13
China	5 611	23%	0,61	0,14
Global	11 891	48%	0,67	0,32
Total	24 651	100%	N/A	0,74

Table 12. Danone unlevered beta final step computation (Source: Own elaboration based on Danone 2018 Financial Report and Damodaran figures)

- Lastly, the levered beta for Danone is computed by utilizing a Debt to Equity ratio of 38.37 percent (i.e. Debt and Equity are applied considering their market value instead of book value) and the marginal tax rate of 29.12 percent (Refer to section 3.4.4 for further information). It is worth-mentioning that the beta for the company was reached by controlling for cash, since it has a beta of zero. In conclusion, the levered beta for Danone subsequently applied in WACC computation is 0.84.

The levered beta obtained does not differ significantly from Danone's stock beta, which is 0.76. Thus, the author decided to utilize the computed beta from the bottom-up approach.

3.4.7.3.2 Equity and Country Risk-Premium

Based on Damodaran estimates, the author assumes the risk-premium for mature markets to be 5.96 percent (i.e. obtained from the implied premium for the S&P 500). Thereafter, a country risk-premium reflecting the risk of Danone's operations worldwide is included, weighted by the proportion of revenues coming from each region or country in specific. By treating country risks separately, the author is therefore assuming that Danone is not equally exposed to conducting business in every country (Damodaran, 2013).

The country risk premium is computed by utilizing an operation-based approach. First, scaled default spreads for each country are considered (i.e. based on local currency sovereign Moody's rating and adjusted with the average emerging market volatility of 1.23 to reflect the higher risk of equity against bonds; Damodaran estimates). These premia are then weighted by twelve regions to obtain a country risk-premium for Danone of 1.15 percent, as shown on table 13 below.

	Revenues	% Revenues	CRP	Weighted CRP
United States	4 930	20%	0,00%	0,00%
China	2 219	9%	0,98%	0,09%
France	2 127	9%	0,69%	0,06%
Russia	1 479	6%	3,47%	0,21%
Indonesia	1 233	5%	2,64%	0,13%
United Kingdom	1 233	5%	0,69%	0,03%
Mexico	986	4%	1,67%	0,07%
Spain	986	4%	2,22%	0,09%
Germany	740	3%	0,00%	0,00%
Brazil	740	3%	4,17%	0,13%
Rest of Europe & Noram	3 639	15%	0,93%	0,14%
Rest of the World	4 341	18%	1,16%	0,20%
Danone SA	24 651	100,00%		1,15%

Table 13. Revenue-weighted country risk-premium computation (Source: Own elaboration based on Danone 2018 Financial Report and Damodaran figures)

3.4.8 Market Value of Debt

Danone's market value of debt was computed by considering the market value of its traded bonds. Despite having bank financing available at any time via credit facilities, the company did not use any amount neither in 2017 nor in 2018 (as depicted in Table 14), therefore the author assumed it will not use it in the forecasted time-span.

<i>(in € millions)</i>	2017		2018	
	Principal Amount	Used Amount	Principal Amount	Used Amount
Credit facilities	3,450	-	3,037	-

Table 14. Bank financing Danone (Source: Own elaboration based on Danone 2018 Financial Report)

The market value of debt is €17,98 billion. A detailed list of the bonds and their maturity is available in Appendix 1.

3.4.9 Market Value of Equity

Market value of equity was computed by multiplying the number of shares outstanding as of July 16th (i.e. 647.3 billion shares) by a price per share of €75.62 as of the same day, leading to a market value of €48.9 billion.

3.4.10 Weighted Average Cost of Capital

The cost of capital is reached by adding the bottom-up beta-based cost of equity to the after-tax cost of borrowing, weighting both components by their market value weights over total capital.

To recapitulate, the pre-tax cost of debt is 0.44, which is comprised by the risk-free rate and a default-spread derived from the synthetic rating approach. By applying Danone's marginal tax rate of 29.12 percent, the after-tax cost of debt results in 0.31 percent. Furthermore, the cost of equity applied is 5.84 percent, which consists of the risk-free rate, plus a levered bottom-up beta of 0.84 times the mature market risk-premium of 5.96 percent (i.e. representing the implied premium on the S&P 500) and a region-weighted premium for the risk of operating in multiple countries worldwide.

For the computation of debt and equity weights, both market values presented in sections above are considered. As for the market value of debt, a small adjustment has been made by adding the debt value of operating leases (Please refer to section "operating leases" for further details). Consequently, the market value of equity represents 72 percent of Danone's total capital while the remaining 28 percent shows the market value of debt.

In conclusion, following the application of the WACC formula, the author derives a cost of capital for Danone of 4.31 percent.

3.5 Valuation Outcome

3.5.1 Discounted Cash Flow Valuation

Following the assumptions from the previous section, the author performs a Discounted Cash Flow valuation to determine the fair value of Danone. First, revenues are projected 10 years into the future up until 2028, with growth stabilizing in 2029 (i.e. Terminal value). Thereafter, a pre-tax operating income is computed through the application of the forecasted margins. A yearly free cash flow to the firm is obtained after applying the consequent tax rate and subtracting reinvestment (i.e. Net capex and changes in non-cash working capital). For further detail please refer to Table 15 in the following page.

	Base year										Terminal year		
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Organic growth		2.8%	3.0%	2.6%	2.4%	1.9%	1.6%	1.2%	0.9%	0.6%	0.4%	0.4%	
<i>Like-for-like revenue growth</i>		2.3%	4.5%	2.9%	0.83%	0.59%	0.36%	0.13%	0.77%	0.53%	0.30%	0.3%	
Revenues	24,651	25,329	26,089	26,767	27,400	27,929	28,364	28,713	28,979	29,166	29,276	29,387	
EBIT (Operating) margin	14.87%	15.43%	16.00%	15.77%	15.54%	15.31%	15.08%	14.86%	14.63%	14.40%	14.17%	14.17%	
EBIT (Operating income)	3,665	3,909	4,174	4,221	4,259	4,277	4,279	4,266	4,239	4,199	4,148	4,164	
Tax rate	27.90%	27.90%	27.90%	27.90%	27.90%	28.07%	28.25%	28.42%	28.60%	28.77%	28.94%	29.12%	
After-tax EBIT (1-t)	2,643	2,819	3,010	3,044	3,070	3,076	3,070	3,053	3,027	2,991	2,948	2,952	
- Net Capex		178	183	188	193	197	200	203	205	206	207	208	
- Change in non-cash WC		-126	-130	-134	-137	-139	-142	-143	-145	-146	-146	-147	
FCFF		2,767	2,957	2,989	3,014	3,019	3,012	2,994	2,967	2,931	2,887	2,891	
Reinvestment:													
<i>Net Capex</i>		173	178	183	188	193	197	200	203	205	206	207	208
<i>% of Revenues</i>		0.7%	2.9%	3.2%	2.7%	2.5%	2.0%	1.6%	1.3%	1.0%	0.7%	0.4%	0.4%
<i>Change in non-cash WC</i>		-123	-126	-130	-134	-137	-139	-142	-143	-145	-146	-146	-147
<i>% of Revenues</i>		-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%
Cost of capital		4.31%	4.31%	4.31%	4.31%	4.31%	4.31%	4.15%	4.00%	3.85%	3.69%	3.69%	
Cumulated discount factor		0.96	0.92	0.88	0.84	0.81	0.78	0.75	0.72	0.69	0.67		
PV(FCFF)		2,653	2,717	2,634	2,546	2,445	2,338	2,232	2,126	2,023	1,922		

Table 15. Discounted Cash Flow Valuation (Source: Own elaboration)

To determine the present value of the above-mentioned cash flows the author applies a discount rate of 4.31 percent, which will progressively diminish to 3.69 percent within the last 4 forecasted years before reaching the terminal year. This assumption is intended to reflect the positive performance of the company in the foreseeable future plus represents a cost of capital similar to the average of mature companies, as depicted by the stable margins and revenue growth rates, according to Damodaran. As shown in Table 16, the present value of the free cash flows to the firm amounts to €23.6 billion and the discounted terminal value results into €48.1 billion. The sum of both discounted figures, namely €71.7 billion, is the current value of Danone’s operating assets, since no probability of failure is assumed in the present valuation (i.e. Danone is neither a young-growth nor a declining, distressed company).

<i>(if applicable, in € millions)</i>	
Terminal Cash Flow	2,891
Terminal Cost of Capital	3.69%
Terminal Value	72,263
PV (Terminal value)	48,100
PV (CF over forecasted time-span)	23,636
Sum of PV = Value of Op. Assets	71,735
- MV of Debt	18,797
- PV Net Deferred Tax Liabilities	517
+ Cash	5038
Value of Equity	57,459
N° of shares	647
Estimated value / share	88.77
Price (€/share) as of July 16	75.74
Price as % of value	-14.68%
Basis points variation	-1,468 bps

Table 16. Discounted Cash Flow Valuation / Value per share breakdown (Source: Own elaboration)

In order to reach the equity value, the market value of debt is to be deducted from the value of the operating assets. Market value of debt amounts to €18.8 billion, which includes the debt value of operating leases. Additionally, the present value of Net Deferred Tax Liabilities (i.e. Deferred tax assets less deferred tax liabilities) is subtracted, based upon Donald M. DePamphilis Ph.D., in *Mergers, Acquisitions, and Other Restructuring Activities* (Ninth Edition), 2018. Since growth is expected to stabilize in

10 years, the Net Deferred Tax Liabilities are discounted back 10 years and amount to €597 million. To conclude, cash totaling €5 billion is added to the value of operating assets to obtain an equity value for Danone of €57.5 billion.

Dividing the obtained equity value of €57.5 billion by the number of shares outstanding (i.e. 647 million), an estimated value per share of €88.77 is derived. It represents a positive variation of +1468 bps in comparison with Danone’s actual price per share as of July 16th. Otherwise stated, Danone is currently trading 14.68 percent below its real value. Hence, leading to a strong buy recommendation due to potential upturn over the estimated price since the growth assumptions are deemed conservative.

3.5.1.1 Sensitivity analysis

3.5.1.1.1 Cost of Capital Assumptions

Concerning the cost of capital applied in the previous computations, the author performed a sensitivity analysis to reflect the potential and unpredicted though common valuation bias. As depicted in Table 17, the cost of equity was applied a positive and negative variation of 50 bps and 100 bps. This resulted in a variation of €6 per share (i.e. €82.1 being the worst-case scenario with a base-case cost of equity +1% and base cost of debt of +1%; and €93.9 per share reflecting a base-case cost of equity -1%).

		Cost of Equity				
		5.84%	6.34%	6.84%	7.34%	7.84%
Cost of Debt		-100 bps*	-50 bps	0 bps	50 bps	100 bps
0.31%	0 bps	93.94	91.32	**88.77	86.29	83.88
0.81%	50 bps	92.92	90.33	87.81	85.36	82.97
1.31%	100 bps	91.92	89.36	86.86	84.44	82.08

Table 17. Price per share derived from cost of capital sensitivity analysis (Source: Own elaboration)
*Variation versus base case; **Price target derived from initial assumptions

As for the cost of debt, since it already represents the riskiness of a triple-A rated company, the sole modifications applied were upwards (i.e. +50 bps and +100 bps over base case cost of debt of 0.31 percent). The main purpose of worsening the cost of debt is to show the impact of a future potential rating downgrade over the price per share.

Nevertheless, if the cost of equity were to remain the same as in the base case, the fact of increasing the cost of debt by both notches does not imply a significant impact over the stock price (i.e. If cost of debt increases by 1 percent, the stock price diminishes by 2.1 percent).

3.5.1.1.2 Risk & Opportunities – Growth Assumptions

The author presents hereinafter a series of risks and opportunities that are not embedded in the forecasted growth figures, though could potentially materialize in the future and are thus worth-mentioning below. The so-called Risk & Opps are divided into High and Medium, according to their likelihood of eventually becoming substantial. All described facts will impact organic growth until 2025.

3.5.1.1.2.1 High Probability

Within the high-probability opportunities, there could be greater cost efficiencies in bottom-line coming from the extension of the Protein Savings program previously mentioned. Additionally, there could be larger top-line synergies from the WhiteWave acquisition consequently leading to a reduction in trade terms or promotion costs, after the elimination of redundant contractual conditions or benefitting from a greater purchasing power over their suppliers. Further, a faster recovery of Russia (i.e. suffering since 2015 though presenting flat positive results in 2018) could eventually bolster up the projections for the Essential Dairy and Plant-based division.

On the other hand, all the above-mentioned opportunities could be partially offset by larger competitive pressure versus what was expected and included in the original scenario. This pressure coming from competitors pushing down prices ultimately leading to price wars, which would indubitably hamper Danone's total revenues.

All the above considered, annual organic growth would be impacted by 1 percent up in the first three years (i.e. from 2019 to 2021). This impact being diluted by one-third during the subsequent years until 2025. As a consequence, the new price per share for Danone would be €92.86, representing an upturn of 4.6 percent over the initial estimated price.

3.5.1.1.2.2 Medium Probability

Regarding the medium-probability risks and opportunities of occurring, the author identified a potential boost in China through new marketing and innovation launches as well as brand relaunches (i.e. continue focusing on high-end segments as to maximize value creation). Differently, Danone could be affected by the restructuring of the WhiteWave acquisition not having been carried out in full or wrongly. This could affect the employees' workload and ultimately impact total sales. Plus, there could be a slowdown in the fast-growing emerging markets like China or Indonesia, where Danone currently obtains a significant portion of its revenues.

In sum, all identified medium-probability facts would mean an increase of 0.5 percent on top of the previous scenario. Hence, the new "High + Medium" price per share would be €94.95, representing a growth of 2.25 percent over the High-probability case. Table 18 briefly details all risks and opportunities presented above.

Description	R/O	Probability
Better resource-allocation strategies from greater cost efficiencies in bottom line	Opp.	HIGH
Larger topline and cost-saving synergies from the WhiteWave acquisition	Opp.	HIGH
Faster Russia recovery (impacting EDP Europe growth positively)	Opp.	HIGH
Larger competitive pressure vs expectations	Risk	HIGH
New marketing and innovation launches in China; New brand launches	Opp.	MEDIUM
Restructuring after acquisition not carried out to a full extent (by management)	Risk	MEDIUM
Slowdown growth in Emerging Markets (China as principal player)	Risk	MEDIUM
Overall impact	€/Share	dif. vs previous
Base Case	88.77	
HIGH	92.86	4.60%
HIGH + MEDIUM	94.95	2.25%

Table 18. High and Medium Risks & Opportunities, plus impact on price per share (Source: Own elaboration)

3.5.2 Relative Valuation

Valuing an asset based on market values for comparable assets, regardless of its characteristics, is common practice in our everyday life. Hence, the author deemed appropriate to utilize and perform a relative valuation in the present Dissertation.

To determine the value of Danone through the application of multiples, a peer group and the multiples utilized need to be defined. First, the peer group selected consists of 10

companies, which are depicted in Table 19 below (Danone not included in peer group calculations). The choice is based upon the comparables defined by Danone and presented both in the 2018 Financial Report and the several investors meetings conducted in 2018. Despite significantly differing in terms of enterprise value or profitability, they all belong to the Fast-Moving Consumer Goods industry (i.e. the fact of not producing dairy products is not an eliminatory factor) and are assumed to present similar growth prospects as Danone. In addition, no small peer group is considered since all 10 companies are deemed equally relevant for Danone for comparison purposes.

Identifier	Company Name	Enterprise Value (in € millions)	EBITDA (in € millions)	Price Close (as of July 18)	Normalized EPS	EV/EBITDA	P/E
NESN.S	Nestle SA	313,578	17,527	93.4	3.4	17.9	27.4
KO.N	Coca-Cola Co	206,264	9,688	46.5	1.8	21.3	25.6
PEP.OQ	PepsiCo Inc	158,956	11,450	112.5	8.0	13.9	14.1
ULVR.L	Unilever PLC	132,978	11,336	52.3	2.3	11.7	23.0
OREP.PA	L'Oreal SA	110,864	6,142	227.8	7.3	18.0	31.4
MDLZ.OQ	Mondelez International Inc	67,134	4,330	47.0	2.4	15.5	19.2
DANO.PA	Danone SA	53,285	4,706	75.7	4.8	11.3	15.7
KHC.OQ	Kraft Heinz Co	60,044	6,247	27.2	0.4	9.6	63.8
RB.L	Reckitt Benckiser Group PLC	60,931	4,121	64.2	3.9	14.8	16.3
GIS.N	General Mills Inc	39,259	3,165	46.7	3.0	12.4	15.8
K.N	Kellogg Co	25,573	1,963	54.9	3.4	13.0	16.3

Table 19. Comparable firms and characteristics (Source: Own elaboration based on data from Thomson Reuters Eikon)

The multiples utilized in the current Dissertation, given the availability of the data as well as for being the most widely-used ones, are the Enterprise Value to EBITDA or EV/EBITDA, and Price Earnings or PE. After computing both the average and median of the peer group for both multiples, the author derived a price per share for Danone by accordingly multiplying them by the growth drivers in case (i.e. Normalized EPS for the PE; Regarding EV/EBITDA, Enterprise Value was adjusted by deducting the market value of debt, the present value of net deferred tax liabilities plus cash).

	Peer group average		Peer group median	
	EV/EBITDA	PE	EV/EBITDA	PE
Multiple applied	14.5	24.4	13.9	19.2
Implied Danone €/share	65.5	88.6	61.8	69.7

Table 20. Price per share through relative valuation (Source: Own elaboration based on data from Thomson Reuters Eikon and Own calculations)

As stated in table 20 above, the price per share reached falls between €61.8 and €88.6. Despite being significantly lower than the estimated stock price in the Discounted Cash Flow valuation, the author maintains his strong buy recommendation since the market is clearly underestimating the future overall growth potential for Danone and for the rest of the comparable firms.

4. Comparison versus Analyst Report

The selected analyst report for comparison purposes is the titled “Growth challenges likely to persist in 2019” developed by Goldman Sachs Equity Research and presented on the 19th of February of 2019. The analyst report also applies a Discounted Cash Flow valuation and derives a price target of €61. This estimate represents a significant downgrade in comparison with the present Dissertation’s price per share derived from the DCF valuation (i.e. 31% lower).

Since the gap between both valuations is significant, it is worth-performing a deep-dive on the main elements that could explain a variation of approximately €28 per share. Primarily, revenue growth projections differ considerably from one another. As depicted in Table 16, 5-year Goldman Sachs estimates for growth are nearly 1 percent below compared to the current Dissertation estimates, excluding 2019. The analyst report forecasts an improvement in 2019 probably following the belief that Danone will fully focus its efforts in delivering its 2020 objectives. Though, Goldman Sachs fails to expect an upturn after 2020 due to existing concerns surrounding the inflationary trend in raw materials, especially in milk prices, thus adapting an even more conservative approach than the current valuation.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Terminal year 2029
Goldman Sachs	3,7%	1,4%	1,4%	1,4%	1,4%	1,3%	1,2%	1,1%	1,1%	1,0%	1,0%
Present Dissertation	2,8%	2,5%	2,3%	2,4%	1,9%	1,6%	1,2%	0,9%	0,6%	0,4%	0,4%

Table 21. Comparison of projected revenue growth (Source: Own elaboration based on data from Goldman Sachs Equity Research and Own estimates)

In addition, another aspect driving the difference is the assumed cost of capital. More specifically, the analyst report assumes a WACC of 7.1 percent, while the author utilizes a discount rate of 4.31 percent. Table 21 shows that both the pre-tax cost of debt and the cost of equity differ considerably. With regards to the pre-tax cost of debt, Goldman Sachs may have assumed the default spread based on a triple B rating (i.e. consequent default spread based on Damodaran table in present Dissertation is 2 percent). This rating follows the existing rating given by Moody’s, though it was assigned prior to the WhiteWave acquisition and therefore assumed outdated by the present Dissertation. Further, the cost of equity is 2.2 percentage points higher mainly due to the risk premium considered being

8.3 percent (i.e. current valuation estimated a risk premium of 7.11 percent: 5.96 percent corresponding to the mature market ERP and remaining 1.15 percent as the country risk premium). It is noteworthy that Goldman Sachs does not provide a detailed assumption concerning the equity risk premium.

	Pre-tax cost of debt	Cost of equity
Goldman Sachs	2.0%	8.0%
Present Dissertation	0.4%	5.8%

Table 22. Assumed cost of capital components (Source: Own elaboration based on data from Goldman Sachs Equity Research and Own estimates)

Finally, the analyst report includes a brief list of potential upsides to their valuation, including higher organic sales growth, lower financing costs after 2019 and greater costs savings achieved. The fact of not having included these opportunities in the valuation also helps explaining the differences in the price target among valuations.

5. Conclusion

The present Dissertation's main goal is to assess the value of a specific company, namely Danone. The French multinational company, though first founded in Barcelona one hundred years ago, is considered a role model in terms of quality and trustworthiness by customers around the globe. This is depicted by the spectacular growth the company has suffered throughout its centennial life, and it is committed to remain competitive for at least another century, according to its CEO Emmanuel Faber and its more than 100.000 employees worldwide.

For the valuation, the author utilizes the Discounted Cash Flow valuation based upon the assumption that capital structure will not suffer material changes in the forecasted period. After gearing up for another century of competitive outlook with the WhiteWave acquisition, Danone explicitly stated that it has no further plans of expansion. Hence, as to perform the valuation successfully, the author estimated both the cost of capital and the free cash flows of the firm based on multiple assumptions. It is worth-mentioning that the 2020 objectives set by the company were strongly considered, since the author believes that Danone will undoubtedly deliver them though not organically. Instead, the company will perform phasings both in top-line and bottom-line costs from 2019 and 2020 to 2021 and 2022 in order to reach such ambitious targets. From 2020 onwards, Danone is expected to deliver positive growth year-on-year by nourishing its well-diversified portfolio of competitive and high-quality products as well as via relentless innovation to provide the customers with new product experiences as consumer trends change.

The value derived from the Discounted Cash Flow valuation is €88.77, which falls slightly above the target prices coming from the application relative valuation (i.e. €65.5 with EV/EBITDA and €88.6 with PE). Moreover, if the risks and opportunities described in Section 3.5.1.1.2 were to materialize, there could be an upside of approximately €6 over the price per share from the base case. Nevertheless, since the current valuation is based on subjective assumptions (i.e. we are trying to forecast the future), Danone's estimated value may and should differ from any other analyst report or Dissertation.

Appendix

Appendix 1. Market Value of Debt Computation

Due in	Amount Outstanding (in € millions)	Maturity (years)
2019	25	0
2019	30	0
2019	20	0
2019	9	0
2019	5	0
2019	20	0
2019	18	0
2019	44	0
2019	27	0
2019	20	0
2019	41	0
2019	18	0
2019	53	0
2019	9	0
2019	50	0
2019	9	0
2019	22	0
2019	20	0
2019	9	0
2019	25	0
2019	22	0
2019	8	0
2019	44	0
2019	20	0
2019	44	0
2019	18	0
2019	20	0
2019	18	0
2019	20	0
2019	20	0
2019	25	0
2019	89	0
2019	50	0
2019	18	0
2019	10	0
2019	15	0
2019	45	0
2019	50	0
2019	50	0
2019	15	0
2019	30	0
2019	15	0

Appendix 1. Market Value of Debt Computation (Cont')

Due in	Amount Outstanding (in € millions)	Maturity (years)
2019	50	0
2019	8	0
2019	40	0
2019	45	0
2019	10	0
2019	28	0
2019	10	0
2019	45	0
2019	10	0
2019	20	0
2019	20	0
2019	20	0
2019	1 066	0
2019	70	0
2019	30	0
2019	50	0
2019	100	0
2020	15	1
2020	40	1
2020	550	1
2020	1 000	1
2020	500	1
2021	66	2
2021	0	2
2021	49	2
2021	49	2
2021	711	2
2021	1 000	2
2022	755	3
2022	1 000	3
2023	500	4
2023	1 333	4
2024	750	5
2024	1 250	5
2025	750	6
2025	300	6
2026	1 777	7
2028	1 600	9
Perpetuity	1 250	100
Total	17 987	

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