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EQUITY VALUATION

Sonae SGPS S.A.

Fernando Miguel Reis Correia

Master Thesis

presented as partial requirement for obtaining the Master Degree in Statistics and Information Management

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação

Universidade Nova de Lisboa

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Sonae SGPS S.A.

by

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Master Thesis presented as partial requirement for obtaining the Master's degree in Statistics and Information Management, with a specialization in Risk Management and Analysis

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I have fully acknowledged the Rules of Conduct and Code of Honor from the NOVA Information Management School.

[Lisbon, July 2024]

Fernando Miguel Reis Correia

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ABSTRACT

Valuation of companies is a critical exercise across various contexts, including financing, asset transactions, investment decisions, and internal management. Sonae SGPS S.A., a leading conglomerate in Portugal and listed on the Lisbon Stock Exchange (Euronext Lisbon) has a strong presence in various markets being an important driver of the country's economic growth, and for that reason the main goal of this project is to accurately estimate the per-share fair value of the company Sonae SGPS, S.A and emit an opinion regarding a potential investment.

This project will begin by identifying different valuation methods, followed by an analysis of Sonae group with a focus on its history, each company's details and financials. Additionally, the main industry in which Sonae operates will be analyzed and the economic context of Portugal and Europe. Finally, to estimate the per-share fair value of Sonae SGPS, S.A. it will be used the discounted cash flow method, more specifically the Free Cash Flow to the Firm approach and the relative method with the multiples approach. This methodology resulted in an equity value per share of 4.39€ in the Discounted Cash Flow method and 2.12€ in the Relative method, being a clear sign that Sonae SGPS S.A is undervalued as at 31/12/2023.

KEYWORDS

Equity Valuation; Sonae SGPS S.A.; Free Cash Flow to the Firm; Multiple Valuation; Retail

Sustainable Development Goals (SDG):



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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|----------------|---|
| CAGR | Compound annual growth rate |
| CAPEX | Capital expenditure |
| CAPM | Capital asset pricing model |
| COGS | Cost of goods sold |
| D&A | Depreciation and amortization |
| DCF | Discounted cash flow |
| DIY | Do-it-yourself |
| EBIT | Earnings before interests and taxes |
| EBITDA | Earnings before interests, taxes, depreciation and amortization |
| ECB | European central bank |
| ESG | Environmental, social and governance |
| ERP | Equity risk premium |
| FCFF | Free cash flow to the firm |
| FCFE | Free cash flow to equity |
| GDP | Gross domestic product |
| HICP | Harmonized Index of Consumer Prices |
| LfL | Like-for-like |
| M&A | Mergers and acquisitions |
| SME | Small and medium enterprises |
| SOTP | Sum-of-parts |
| WACC | Weighted average cost of capital |
| YoY | Year-on-year |

1. INTRODUCTION

Valuation of companies is a critical exercise across various contexts, including financing, asset transactions, investment decisions, and internal management. It provides essential information for stakeholders, including lenders, investors, and company management, enabling informed decision-making.

This thesis focuses on the equity valuation of Sonae SGPS S.A., a leading conglomerate in Portugal, listed on the Lisbon Stock Exchange (Euronext Lisbon). Sonae operates in diverse sectors, including financial services, real estate, and most prominently, the retail industry, where it leads the market in food retail through the Continente brand and electronic retail via Worten. The company's recent expansion into international markets, such as Spain and the Nordic countries with the acquisition of Musti Group, underscores its dynamic growth and market significance. Due to its size, the Sonae Group is a reference in the Portuguese economy, and as stated in the recent study made by NOVA SBE, Sonae is responsible for 3.7% of Portugal's Gross Domestic Product, contributing 8.9 billion euros to the GDP and 17.8 billion euros to Portugal's turnover across the entire value chain. As such, "the Sonae Group is an important driver of the country's economic growth, while also serving as a stimulus and cushion for the national economy in times of crisis".

For an investment purpose it is important to fill the gap between market perception and intrinsic value and given the volatile economic landscape, the critical need for accurate company valuations in today's market and the importance of a correct valuation of Sonae for the stakeholders and for the portuguese economy, this project aims to conduct a valuation of Sonae SGPS S.A. to estimate an accurate fair value per-share, comparing the results obtained with Sonae's share price on December 31, 2023, and thus issue an investment opinion on the company.

The complexity surrounding a conglomerate like Sonae makes this a challenging valuation. There are several valuation methods adopted internationally and it is important to be aware that only two of these methods will be applied in this valuation. It should also be noted that the valuation is carried out taking into account the information available at the present time and is influenced by projections made by the author, so the valuation should not be taken as an absolute value but rather as an estimate.

Therefore, the structure of the thesis is as follows: Section 2 Literature Review will analyze different valuation methods, as well as the different variables considered important and necessary for the correct preparation of the valuation. Next, in the Section 3 Sonae Outlook, the Sonae group will be described, analyzing not only its history and each of the companies included in the group, but also its historical data and the variation in the share price of Sonae SGPS S.A. After analyzing the group, in the Section 4 Industry Analysis, the main industry in which Sonae has a presence, retail, will be approached, not only from a Portuguese perspective but also in Europe, as well as the macroeconomic context in Portugal and Europe

in the Section 5 Economic Outlook. After this analysis, in the Section 6 Methodology, two valuation methods will be applied, namely the free cash flow to the firm and the relative method. After obtaining the results from the two valuation methods, a sensitivity analysis will be carried out to understand the impact on the value obtained by the free cash flow to the firm method through a variation in two variables, the WACC and the Terminal growth rate, but also through the variation in growth and cost assumptions, with 3 scenarios analyzed.

Once the methodology has been applied, in the Section 7 Results and Discussion, the deviation of Sonae's share price on 31/12/2023 will be analyzed with the results obtained along with an additional sensitivity analysis and an explanation of other possible reasons for that deviation. Finally, in Section 8 Conclusion and future works, it will be described the main outputs of the project and thus achieve the objective of determining the fair value per share of Sonae SGPS S.A. and issuing an investment opinion.

2. LITERATURE REVIEW

WHY VALUE THINGS?

Every asset, financial as well as real, has a value (Damodaran, 2012), but it is important to not confuse value with the definition of price, which is the quantity agreed between the seller and the buyer in the sale of a company (Fernandez, 2013). A person willing to buy an asset, setting a price agreed with the seller, but not knowing the value of the asset is running the risk of buying above the asset's real value. Following Damodaran (2012), an investor must at least try to value the asset before buying it. The fundamental rule for investing or managing assets is to understand not only the value of an asset, but also the sources of value (Damodaran, 2012), and Damodaran shares examples of the different areas of finance that knowing the value of assets is essential to perform well in the industry, from corporate finance to merger and acquisitions or even portfolio management. The valuation techniques can be organized into two main categories: direct valuation methods and relative valuation methods (Lee, 2003). Charles Lee (2003) also identified methods based on the balance sheet, contingency claims, and projected cash flows as direct valuation methods. On the other hand, he defined the use of market multiples as a relative valuation method.

BOOK VALUE

The book value it's a balance-sheet method for valuing a company by estimating the value of the shareholders' equity as stated in the balance-sheet and is also the difference between assets and liabilities (Fernandez, 2013). The book value as defined by Pignataro (2013) is the value of an asset or entire business as determined by its financials, and it can be determined in the balance sheet.

DISCOUNTED CASH FLOW

As stated by Havnaer (2012), one of the most widely accepted valuation methods is Discounted cash flow, and it remains a favorite of practitioners by the fact that it relies on cash flow in and out of the company, rather than on accounting-based earnings (Inc et al., 2020). Financial theory states that the fair market value of an ongoing business is the present value of its expected cash-flows (Larrabee & Voss, 2012). This approach has its foundations in the present value rule (Damodaran, 2012), where those cashflows are discounted back reflecting the time value, at a certain discount rate, to reflect the riskiness of the estimated cash flows.

The DCF formula is shown below (Larrabee & Voss, 2012):

$$Value = \frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \dots + \frac{CF_\infty}{(1+i)^\infty} = \sum_{n=1}^{\infty} \frac{CF_n}{(1+i)^n} \quad (1)$$

where CF are the cash flow, i is the discount rate and n denotes the time periods considered in the analysis.

As we can see, to use the discount cash flow valuation we need certain information. First, we need to estimate the “life” of the asset to conclude how many “ n ” periods are we going to discount. Second, we need to estimate the cash flows generated during the life of the asset; Third, we need to estimate the discount rate to apply to these cash flows to get the present value. Damodaran (2011) stated that the discounted cashflow valuation has two different paths, one is the firm valuation, which values the entire business using the Free Cash Flow to the Firm (FCFF) and uses the Weighted average cost of capital (WACC) as a discount rate, and the other is the equity valuation, where it evaluates the value corresponding to the shareholders using the Free Cash Flow to Equity (FCFE) at a discount rate that reflects the cost of equity. The Free Cash Flow to the Firm is going to be addressed later in this chapter.

FREE CASH FLOW TO THE FIRM

The concept of free cash flow responds to the reality that, for going concern, some of the cash flow from operations is not “free”, i.e. is not available to all suppliers of capital, because to maintain or maximize the long-run value of a firm, it needs to be committed to reinvestment and new investment in assets (Pinto et al., 2010). So, the free cash flow is the surplus cash generated by the company’s operations, that is available to be distributed to investors, both debt and equity holders, for debt reduction or reinvestment in the business.

Pinto et al. (2010) state that the free cash flow to the firm is the cashflow available to the company’s suppliers of capital after all operating expenses have been paid and operating investments have been made.

$$FCFF = EBIT \times (1 - t) + D\&A - CAPEX - Net\ Working\ Capital\ Variation \quad (2)$$

where $FCFF$ is the free cash flow to the firm, $EBIT$ is the Earnings before interests and taxes and $D\&A$ the Depreciations and amortizations.

As stated in the formula above, the Free Cash Flow can be obtained by adding the amortizations and depreciation to the Cash flow from operations (EBIT) after taxes, minus the investments in capital expenditures and the Net Working Capital. As Damodaran reported, the working capital is the difference between the current assets (inventory, cash and accounts receivable) and current liabilities (accounts payables, short-term debt, and debt due within the next year). For that reason, any investment in working

capital can be translated into additional cash for the operations, therefore, any increase in working capital will reduce the cash flow.

FREE CASH FLOW TO EQUITY

The free cash flow to equity can be defined as the cash flow available to the company's holders of common equity after all operating expenses, interest, and principal payments have been paid and necessary investments in working and fixed capital have been made (Pinto et al., 2010). FCFE is the cash flow from operations minus capital expenditures minus payments to (and plus receipts from) debt holders as stated in the formula below:

$$FCFE = FCFE - Int(1 - Tax\ rate) + Net\ borrowing \quad (3)$$

where *FCFE* is the free cash flow to the firm and *FCFE* is the free cash flow to equity.

In general, the FCFE can be understood as what the company can afford to pay out in dividends, or in other way, the amount of cash flow available to equity holders only. Therefore, we must subtract the tax from the free cash flow to the firm and add the Net borrowing (which is simply the difference between the debt issued and the debt repaid).

COST OF CAPITAL

When allocating capital for an investment in a certain asset or business, every investor has a different level of risk aversion, some are willing to invest in more risky assets or companies, while others prefer to invest in assets that bring less volatility and more confidence related to the future cashflows they are expecting from that asset.

Despite the different risk profiles, investors may charge a price for bearing risk, as Damodaran stated, investors may face an opportunity cost of an investment as a consequence of a decision to use a scarce resource in a particular way. In other words, what the investors could have earned by reinvesting that capital in another investment with a similar risk. These statements lead to the definition of cost of capital. Inc et al. (2020) mention the cost of capital as the investors' required rate of return or expected return. For Damodaran (2012), it's defined as the opportunity cost of all capital invested in an enterprise from all sources, which include debt, equity, or both. For Damodaran the cost of capital is a rate at which the future cashflows for a company or project are discounted to the present, reflecting the time value and risk.

When calculating future cashflows, the uncertainty regarding the forecasts must be reflected in some way, and the risk enters valuation through the cost of capital (Inc et al., 2020). As

Damodaran stated, risk could be interpreted as the deviation of real returns in comparison with expected returns, hence, the higher the deviation of real returns the higher uncertainty and consequently higher risk, being reflected through a higher discount rate. In the opposite way, the smaller the deviation of real returns the smaller the risk associated with the investment, leading to a smaller discount rate.

In an investment in a company both through debt and equity, the cost of capital will be a weighted average cost of capital (WACC), reflecting both the cost of equity for the equity holders and the borrowing rate (or cost of debt).

COST OF EQUITY

The cost of equity is the required rate of return that the company's equity investors expect to earn, by investing in the company's common stock. Taking in mind the fact that the expected rate of return of a company is not directly obtainable, especially for a public company, to determine the cost of equity, the calculation must rely on the asset-pricing model (Pignataro, 2013). To calculate the cost of equity, Paul Pignataro states that the most common asset-pricing model used in investment banking is the Capital Asset-Pricing Model (CAPM), as it models the expected return based on the risk of an entity. The formula for the CAPM is as follows (Larrabee & Voss, 2012):

$$R_e = R_f + (R_m - R_f)B \quad (4)$$

where R_e is the expected return, R_f is the expected risk-free rate, R_m the expected return on the market and B is the expected systematic risk (commonly called beta).

To Damodaran, this model states that the equity holders demand a minimum rate of return equal to the return from a risk-free investment plus a return for bearing an additional risk. The additional risk is called the "equity risk premium", which is equivalent to the market risk premium times the "Beta".

RISK FREE RATE

For an asset to be considered risk-free, ideally their returns must have a level of certainty in which the actual return is always equal to the expected return (Damodaran, 2012). The best proxy for the risk-free rate is a yield on the long-term, default-free government fixed-income security (Mauboussin, M. J. et al., 2023), that ideally should have no covariance with the market, which appoints to a beta of zero. However, some countries don't have the default-free characteristic, and the investors might perceive default risk in their government. In these

cases, Damodaran shares in his website the estimates for the default spread, based on local currency ratings, and presents the formula for calculating the risk-free rates for these cases:

$$\text{Risk free rate} = \text{Government bond rate} - \text{Default spread} \quad (5)$$

BETA

In the CAPM, the beta of an investment is the risk that the investment adds to a market portfolio (Damodaran, 2012), also known as systematic risk. Pignataro (2013) defines beta as a correlation coefficient that represents how a company's historical stock returns move with the historical market returns, in other words, beta measures the return of a stock relative to the return on the market index, reflecting the financial elasticity (Morgan Stanley). Pignataro (2013) in his book presents the formula to calculate the beta:

$$\beta_{\alpha} = \frac{\text{Cov}(r_{\alpha}, r_p)}{\text{Var}(r_p)} \quad (6)$$

where β_{α} is the beta of an asset, r_{α} is the rate of return of the asset, r_p is the rate of return of the index or portfolio, $\text{Cov}(r_{\alpha}, r_p)$ is the covariance between the rates of return of the asset and the index and $\text{Var}(r_p)$ the variance between the rates of return of the index.

Damodaran (2012) shows different possible ways to calculate the beta of an investment, the most conventional approach is by doing a regression analysis of the investment return against the return of the market index, which is called the unadjusted or "raw" Beta. To Damodaran, the beta of a firm is determined by the type of business, the degree of operating leverage, and the firm's financial leverage, and defined this method as bottom-up beta, which takes in consideration the average unlevered beta of the company business by unlevering the average beta of comparable firms in the same business by the average debt-to-equity ratio, and to determine the levered beta, the unlevered beta calculated has to consider the tax rate and leverage profile of the company, as follows:

$$\text{Levered Beta} = \text{Unlevered Beta} \times (1 + (1 - \text{Tax rate}) \times (\text{Debt-to-Equity})) \quad (7)$$

Damodaran explains the interpretation of the results when calculating beta, if the beta of an investment is:

- $\beta = 1$, is the average risk investment;
- $\beta > 1$, is above average risk investment;
- $\beta < 1$, is below average risk investment;
- $\beta = 0$, is a riskless investment;

EQUITY RISK PREMIUM

To complete the Capital Asset Pricing Model (CAPM) formula, we get to the equity risk premium. Taking in mind the intuition that a riskier investment should have a higher expected return than a safer investment (Damodaran, 2012), the equity risk premium can be defined as the extra return the investor should expect to compensate for the additional risk for the equity investment. Thus, the Equity Risk Premium is higher than the credit spreads because equity is riskier than debt, and ERP is stated as the difference between the return of the equity market and the return of the risk-free asset (Mauboussin, M. J. et al., 2023).

Damodaran (2012) states that one way to estimate de equity risk premium is by analyzing the historical premiums, i.e., observing the actual returns earned on stocks over a period of time and then compare with the actual returns on a default-free security, in which the difference between the two is computed and stated as risk premium. However, this approach might lead to deviations among practitioners as it depends on the time period used, the choice of the risk-free security, and the geometric/arithmetical averages, and Damodaran refers to it as reasonable when estimating the risk premium in the U.S market, because of its large and diversified stock market and long history of returns, but when used in other countries that have an immature equity market, Damodaran suggests a modified historical risk premium, in which the equity risk premium is the sum of the base premium for a mature equity market and the country premium.

Damodaran suggests on his website several country risk premiums from almost every country in the world, and it's based on the credit default spread and the sovereign rating (estimated by Moody's).

COST OF DEBT

The cost of debt can be defined as the expected return to the debt lenders (Pignataro, 2013) and measures the current cost of borrowing funds to finance projects and assets, this can be translated into interest rates.

Damodaran shows different methods to estimate a company's cost of debt. If the company has bonds outstanding and they are traded, the yield to maturity implied on those bonds can be used as the interest rate. In case the company does not have any trading bonds and the company is rated, the cost of debt can be estimated using the company's credit rating and the

typical default spread on bonds with that rating. If the company is not rated and it has recently borrowed funds from a bank, the interest rate on the borrowing can be used as cost of debt. The cost of debt should be adjusted for the tax-deductibility of interest expenses, thus the formula:

$$\text{After-tax cost of debt} = \text{Pretax cost of debt} \times (1 - \text{Tax rate}) \quad (8)$$

WEIGHTED AVERAGE COST OF CAPITAL

The rate at which the cashflows are discounted to their present value is determined by how much the investors expect to be returned for their investment. For a company with both debt and equity in its capital structure, the discount rate should reflect the weighted average of the returns that the equity and debt investors would expect by the respective proportion of debt and equity in its capital (Pignataro, 2013). This is the weighted average cost of capital (WACC), the average cost of each dollar of cash employed in the business, and the formula is (Pignataro, 2013):

$$\begin{aligned} WACC = & \frac{\text{Debt}}{(\text{Debt} + \text{Equity})} \times \text{Cost of Debt} \times (1 - \text{Tax}\%) \\ & + \frac{\text{Equity}}{(\text{Debt} + \text{Equity})} \times \text{Cost of Equity} \end{aligned} \quad (9)$$

When calculating the WACC, it's important to understand that the debt and equity should be in market values, not in book values.

TERMINAL VALUE

Once the projected cashflows and discount rate are estimated for the cashflow period, the value obtained is the company value for that period (Pignataro, 2013). In theory, publicly traded firms can last forever (Damodaran, 2011), so the DCF model must incorporate a value in which the company could be sold after the cashflow period or a value that assumes the company maintains its business forever.

That value is defined as terminal value and calculating it is a crucial step in the DCF model, because usually more than half of the ultimate appraised value comes from the terminal value (Larrabee & Voss, 2012).

The two major methods for calculating the terminal value of a company are the Multiple Method and the Perpetuity Method (Pignataro, 2013). The Multiple method is driven by the market, as the method consists of applying a multiple to the company's final projected year's

financials. This multiple could be obtained from comparable companies or the company's current market multiple. Paul Pignataro stated that usually the most used in this method is the EBITDA multiple. The Perpetuity method is driven by the cashflow and low growth, and basically what it means is that the cash flow in the next period is capitalized and assumes that the company cashflows are growing at a constant rate forever. These statements are related to the Gordon-Shapiro Model, and the terminal value formula is shown as follows:

$$\text{Terminal value in year } n = \frac{\text{Cash flow in year } (n + 1)}{\text{Discount rate} - \text{Perpetual growth rate}} \quad (10)$$

It is difficult to predict the correct growth rate, although some practitioners use GDP growth rate or the rate of inflation, but as Damodaran stated, there are some key constraints to keep in mind when estimating a growth rate. In general, what he states is that the company should not grow forever at a rate higher than the economy growth rate, in fact should not grow more than the risk-free rate used in the valuation model. He also defends that a stable growth firm should reinvest enough to sustain that growth, based on the formula below:

$$\text{Reinvestment rate} = \frac{\text{Expected growth in operating (net income)}}{\text{Return on capital (equity)}} \quad (11)$$

After the terminal value is obtained, it should be discounted back at the discount rate, in order to reach the present value.

DIVIDEND DISCOUNT MODEL

The dividend discount model relies on the same assumptions of a discounted cashflow model, with the critical inputs to this model being the expected cashflows (the dividends paid to equity investors) and the cost of equity. The formula to obtain the value per share of stock is at follows:

$$\text{Value per share of stock} = \sum_{t=1}^{t=\infty} \frac{E(DPS)_t}{(1 + k_e)^t} \quad (12)$$

where $E(DPS)_t$ is the expected dividend per share in period t and k_e the cost of equity.

Taking in mind that most dividends cannot be estimated forever, several versions of this model have been developed based on different future growth of dividends assumptions (Damodaran). The most common future growth patterns are:

- Gordon Growth Model, which assumes that the dividends paid to equity investors grow at a constant rate forever. The formula is:

$$D_t = D_{t-1}(1 + g) \quad (13)$$

where g is the expected constant growth rate in dividends and D_t the expected dividend payable at time t .

- Two-stage Dividend Discount Model, which assumes two stages to forecast dividends. The first stage is the initial stage, where the growth rate of dividends is not stable, and then the second stage in which the growth rate of dividends is stable and assumed as constant for the long term (Damodaran).

RELATIVE VALUATION

In the discounted cashflow valuation it is assumed that the market could make mistakes, often occurring across entire sectors or in the entire market, but as with any intrinsic valuation, the valuer believes that the market will correct those mistakes overtime (Damodaran, 2011). In the relative valuation it is assumed that despite the market making mistakes around individual stocks, they are correct on average.

In the relative valuation, the objective is to value a company compared to similar companies currently priced in the market that operate in the same sector and have similarities like the business model and target markets, observing several variables like earnings, cashflows, book values or sales (Damodaran, 2011). Another form of relative valuation is by looking at a recent precedent transaction of a similar peer company and comparing the multiples related to the acquisition price. To Damodaran, relative valuation is an important complement method to the discounted cashflow valuation, as it reflects the market environment, although Pignataro (2013) refers to some drawbacks to relative valuation, one of them is that the market could be overvalued/undervalued which could lead to a flawed valuation. Other drawback is that could be difficult to find a good comparable company.

The most common multiples used in a relative valuation are:

- Enterprise Value/Revenue (EV/Revenue)
- Enterprise Value/EBITDA (EV/EBITDA)
- Price/Earnings (P/E)
- Price/Book (P/B)

In the precedent transaction analysis, the purchase multiples are similar to the market multiples detailed above, the difference will be in numerator, the purchase multiple is based on the price paid for a company and not on the market value, thus the enterprise value mentioned above will be the purchase price (Pignataro, 2013).

SUM-OF-PARTS VALUATION

A holding company is a company that has several participations in different companies (at least 10%), called subsidiaries, those companies could be operating all in the same industry or different business segments. Considering the different industries that the companies of the group might be operating, it's important to analyze each of the industries to have a robust understanding of each business and have a small deviation of the reality of each company. In a holding company, another valuation method could be the sum-of-the-parts valuation (SOTP).

This valuation method is suitable for companies that report different types of business segments, holding companies and companies with distinct assets (CFI Team, 2023), although it is not suitable if the company doesn't disclose any segments. SOTP valuation is an approach to valuing a firm by separately assessing the value of each individual company and adding them to get the total value of the firm (CFI Team, 2023). Once each company is identified, to perform this valuation McKinsey suggests using a comparable company analysis, in which values each company with a multiple appropriate to each peer and performance.

3. SONAE OUTLOOK

HISTORY

Founded in 1959 by Afonso Pinto de Magalhães, Sonae has its origins in the Sociedade Nacional de Estratificados, specialized in the processing of wood products and derivatives, and in the first years of its creation, Sonae was an SME (Small and Medium Enterprise). After being nationalized and then re-privatized, Sonae experienced growth in the 1980s due to portfolio diversification and a change in management with Belmiro de Azevedo taking majority control of Sonae after the death of its creator in 1984.

During this decade, Sonae Investimentos SGPS S.A. was created, marking Sonae's entry into the capital markets, Contacto was created in the construction sector and Ibersol in the restaurant and hotel sector. In 1985, Sonae inaugurated Continente Matosinhos, the first hypermarket in Portugal. This marked the beginning of Sonae's activity in the food retail sector and its entry into the real estate market with the opening of the Portimão and Albufeira shopping centers.

The 1990s was another strong decade for the group and was marked by the creation of Worten, demonstrating strong growth in the specialized retail area along with the Maxmat and Sportzone brands. Additionally, the telecommunications company Optimus was established, the newspaper Público was created, and the Solinca Health Club gyms were opened. The decade was also marked by the opening of Colombo, the largest shopping center on the Iberian Peninsula. In 2000, Sonae was listed on the Lisbon stock exchange, and in the following two decades the main highlights include the creation of NOS in 2013, derived from the merger between Optimus and Zon, the creation of Universo in 2015 and the launch of Wells clinics specializing in dentistry and aesthetics in 2017.

SONAE TODAY

Sonae today is a Portuguese multinational conglomerate listed on the Lisbon stock exchange, with a presence all over the world and operating in various sectors, making Sonae a very diversified company, which makes it one of the largest companies in Portugal. Its sectors include retail, which is the main sector, divided into electronic retail, food retail and fashion retail, real estate, technological investment and innovation, telecommunications and entertainment and financial services. The group's companies are Sonae MC (Retail), Worten (Retail), Zeitreel (Retail), Sonae Sierra (Real Estate), BrightPixel (Investment), Sparkfood (Investment), NOS (Telecommunications) and Universo (Financial Services).

According to the consolidated results for 2023, the segment revenue share and geographic revenue share shown below highlight Sonae MC as the group's main company with 78% of all turnover, followed by Worten with 15%. 93% of total turnover is obtained in Portugal,

followed by 5% in Spain and only 2% in the rest of the world, such as France, the UK or Germany.

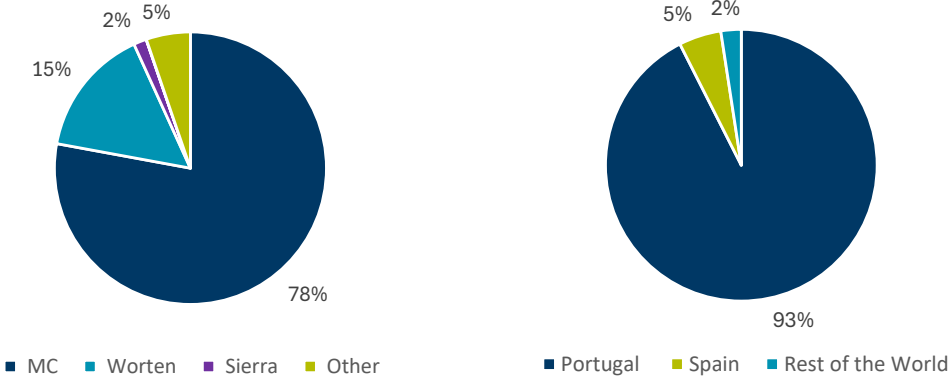


Figure 1 – Revenue share by segment and geographic location. Source: Sonae Annual Reports and EIKON

Sonae's consolidated results for 2023 show an increase in turnover of 9% compared to the previous period, to 8.4 billion euros. EBITDA stood at 990 million, representing an increase of 7% compared to 2022. Regarding net debt, after having reduced it by almost 50% in 2021, Sonae has managed to reduce debt over the next years, with a decrease of 4% in 2022 and 3% in 2023, resulting in 526 million euros. The continuous investment is notorious, increasing 4.9% in 2023, particularly in Capex at Sonae MC of +43% compared to 2022.

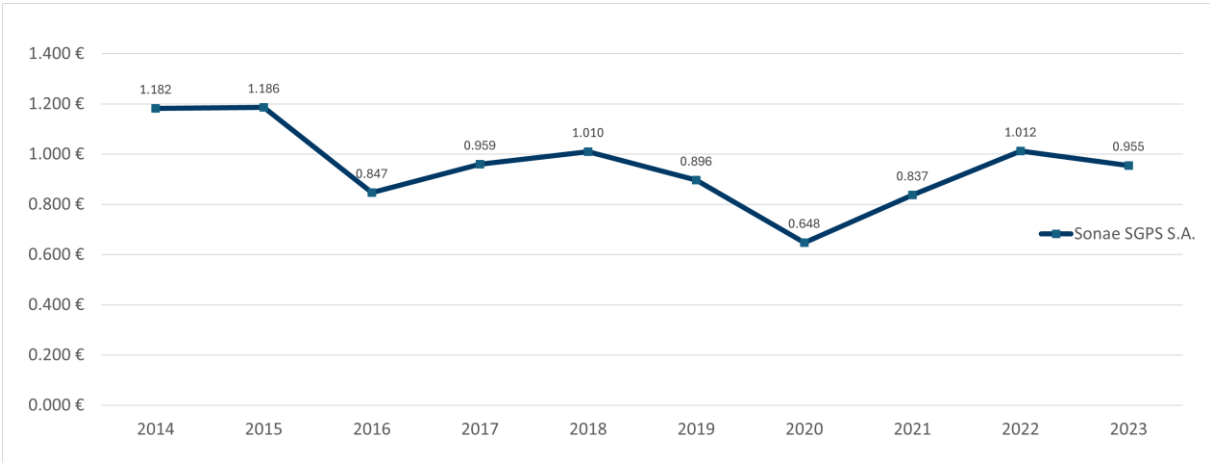


Figure 2 – Sonae SGPS S.A. share price (2014-2023). Source: EIKON

Regarding the performance of the Sonae share price, after reaching its 10-year minimum in the 1st year of covid-19 (2020) with a price of 0.648, the share price improved in the following years, reaching the same pre-covid record in 2022, at 1.012, being adjusted in 2023 to below 1 euro, at 0.955. Comparing the year-on-year variations of the Sonae share with the PSI-20 and Euronext 100 index, it is noted that they have a similar annual performance and a relative degree of volatility, especially in the Sonae share as expected, with the greatest negative variations occurring in 2016 and 2020, and the greatest positive variations in 2017 and 2021, exceeding the variation of PSI-20 and Euronext 100.

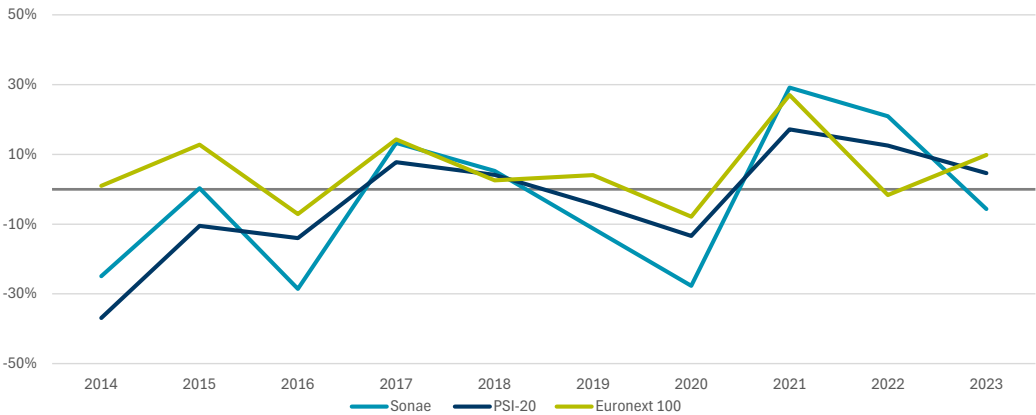


Figure 3 – Annual variations of Sonae, PSI-20 and Euronext 100 share price (2014-2023).
Source: EIKON

SONAE MC

Sonae MC is a major player in the Portuguese retail sector, specializing in food retail with diverse formats that offer a wide range of products at competitive prices. Sonae MC's portfolio includes various formats, such as Continente (hypermarkets), Continente Modelo, and Continente Bom Dia (convenience supermarkets), Meu Super (franchise proximity stores), Bagga (cafeterias and restaurants), Note! (bookstores/stationery), ZU (products and services for dogs and cats), and Wells (health, wellness, and optical services), including real estate asset management. Sonae holds about 75% of Sonae MC.

In 2023, the turnover increased by 10.5% year-on-year to €6.6 billion (LfL of +8.9%). The last quarter showed a growth of +7.3% compared to the same period last year (LfL of +5.0%), with some deceleration in food inflation. This performance was driven by both the food retail format and the health, wellness, and beauty segment, which posted remarkable results with a double-digit LfL growth. During the year, MC opened 65 new stores, representing over 32,000 square meters of sales area. The main highlight was the opening of 21 new food retail stores, including 19 Continente Bom Dia stores.

According to the Sonae management team, MC's objectives are focused on strengthening its leadership position in the Portuguese food retail market, both online and offline. Also, MC aims to expand its convenience and proximity stores while ensuring an omnichannel value proposition that prioritizes customer satisfaction. Additionally, MC seeks to develop and expand its health, wellness, and beauty business throughout the Iberian Peninsula.

WORTEN

Worten, the retail electronics division of Sonae, is a major player in the consumer electronics industry. It operates under the brands Worten, Worten Mobile and Iservices, offering a diverse range of products and services including appliances, computing devices, telecommunications, audiovisual equipment, entertainment, toys, beauty, wellness & health, sports, books, home & decor, DIY & gardening, and more. Worten, owned 100% by Sonae, is the largest e-commerce platform in the country with 269 physical stores in Portugal and Spain. Worten provides personalized service and a wide range of products to its customers.

In 2023, the company's turnover was €1.3 billion, a 4.9% increase from the previous year, with a LfL of +4.3%. The last quarter recorded sales of €418m, representing a 4.1% YoY increase and a LfL of +3.9%. The online channel remained a significant contributor, with sales increasing by 6% year-on-year in the quarter. Online sales represented about 16% of total sales in 2023.

Worten's objectives are to maintain market leadership in the retail of appliances and consumer electronics, both online and offline. Furthermore, Worten aims to expand the marketplace offering a wide range of products, while also expanding the service offered, particularly in the areas of repairs, installations and home solutions.

SONAE SIERRA

Sierra is the real estate arm of Sonae, specializing in investment management, real estate development, design and construction, asset management, leasing, as well as sustainability and ESG services. With a presence in Europe, Asia, Africa, and South America, Sierra is positioned to capitalize on diverse market opportunities. Some of the major retail assets in the portfolio in Portugal include Colombo Shopping Center, CascaisShopping, and NorteShopping, and includes other retail assets in Europe such as Gli Orsi in Italy and Designer Outlet in Spain or even in Colombia with the Jardin Plaza.

The performance of the European shopping center portfolio exceeded expectations, with tenant sales reaching record levels of double-digit LfL growth compared to last year and the pre-pandemic period. This was driven by increased visitor numbers and high occupancy rates (98%). Sierra's solid performance in all business areas resulted in a direct result and an indirect result of € 63 million and € 26 million respectively, leading to a net profit of € 89 million (+ € 58 million year-on-year).

With complete ownership at 100%, Sonae Sierra's objectives include expanding their real estate investment management, accelerating investments in mixed-use assets, preparing their portfolio of shopping centers for the future, and enhancing their service offerings.

BRIGHTPIXEL

Bright Pixel Capital, formerly known as Sonae IM, is the investment arm of the Sonae Group. Its active portfolio management strategy aims to create and manage technology companies linked to retail, telecommunications, and cybersecurity. Bright Pixel has allocated over 250 million euros in investments within the initial five years and has made over 50 direct investments, demonstrating its commitment to innovation. Sonae owns 90% of BrightPixel, whose portfolio currently includes 43 companies, such as Feedzai, Outsystems, Sensei, Inovretail, Probely, and Ometria. BrightPixel's ambition is to drive innovation, fuel the evolution of technology-driven companies and contribute to the transformation of industries on a global scale.

NOS

NOS is a telecommunications and entertainment group that offers telecommunications services in all market segments: residential, personal, business, and wholesale. NOS holds a prominent position in subscription TV services, unlimited telephone, as well as cinema distribution in Portugal. Some of the TV channels in the NOS portfolio are Canal Panda, Biggs, Hollywood and Blast (through Dreamia) and SportTV.

In the fixed services, NOS has increased the customer base by an additional 25,000 subscribers for Fixed TV and 28,000 broadband customers. The cinema business has experienced a rebound in audience numbers with an increase of 28.7% in ticket sales compared to the previous year, still below pre-pandemic levels with -13.1% decline compared with 2019. Sonae owns 37.4% of NOS whose results are consolidated through the equity method, which contributed € 63 million to Sonae accounts.

As stated by the management team, the strategic objectives aim to solidify leadership in 5G and enhance customer experience through a digital-first approach. NOS aims to expand its business reach while adapting its operational model to the evolving economic paradigm to shape the future of telecommunications and entertainment in Portugal.

UNIVERSO

The Universo portfolio includes Universo Brand offering a suite of financial services including payments, cards, personal credit, and insurance. Additionally, it includes Universo Flex, which provides financing options for online purchases. Cartões Dá meets various needs with meal cards, gift cards, and rewards programs. Furthermore, the partnership with MoneyGram facilitates secure and efficient money transfers.

Bankinter recently acquired 50% of Universo, creating a joint venture with Sonae. The management team stated that this acquisition will accelerate Universo's growth, thanks to Bankinter's extensive experience in the financial sector. This will boost the progress and strength of Universo's offer, making it even more relevant and distinctive. As a result, Sonae will now consolidate Universo's results in its accounts using the equity method.

SPARKFOOD

Sparkfood is an investment firm dedicated to investments in innovative solutions. Their strategy involves implementing a buy & build approach through majority investments (or minority with a path to majority) focused on small and medium-sized enterprises with a turnover ranging from €5M to €150M. Within its ventures division, Sparkfood invests in scale-ups, supporting the transition of the food system and promoting disruptive ideas that will drive innovation across Sonae platforms.

Sparkfood's portfolio of brands includes Gosh (UK), Mondarella (Germany), Blue Seafood (Germany), Evra (Italy), Nvh (Italy), Nutraceutica (Italy), Bon Vivant (France), and La Vie (France). Sonae owns 100% of Sparkfood.

Sparkfood's objective is to continue being dedicated to making impactful investments that not only generate financial returns but also contribute to a more sustainable and healthier future for individuals and the planet.

ZEITREEL

Zeitreeel is Sonae's specialized retail division in the apparel sector, offering a diverse range of brands to meet different demographics and fashion needs. The Zeitreeel portfolio includes MO, Zippy, Losan, and Salsa, each offering different styles and products to customers.

In 2023, the number of stores was reduced from 376 to 359, representing a decrease of 5,000 square meters.

Sonae owns 100% of Zeitreeel. The company aims to maintain its position as a leader in the specialized retail sector by continually innovating and evolving its brands to meet the ever-changing demands of the fashion industry and customers. Through its extensive network of stores and online platforms, Zeitreeel strives to provide a satisfying shopping experience that ensures customer satisfaction and loyalty.

MUSTI GROUP

Sonae recently made a takeover bid for Musti group, acquiring around 80% of the company's share capital in March 2024. Musti is the market leader in pet products in the Nordic countries, with 45% of net sales in Finland, 40% in Sweden and 15% in Norway. The group's store brands are Musti ja Mirri, which specializes in pet supply stores in Finland, Arken Zoo, the largest pet store in Sweden and Musti, which is also present in Norway. Musti group net sales were 425

million in 2023 and at the end of 2023, the company had 1,643 employees, 1,543 loyal customers and 342 stores.

HISTORICAL ANALYSIS

Looking at Sonae's income margins compared to the overall revenue for the year, Sonae has a gross profit, which represents the revenue generated after deducting the Cost of Goods Sold (COGS), of around 31.13%, which is in the average of the last 6 years of 31.6%, meaning that around 70% of the total revenue generated in the year is deducted by COGS. The operating margin, which represents the revenue generated compared to the overall revenue after deducting all the expenses arising from its operating activity, was around 6.82%, above the average of the last 6 years of 5.84%. This margin varies more than the gross margin because it is linked to the expenses inherent in its operational activity, such as employee expenses relating to salaries and bonuses, administrative expenses, marketing expenses, accounting expenses, etc. The big difference between gross margin and operating margin is explained by Sonae's activity, mainly in the retail business, which in addition to administrative expenses and salaries, contains a large part of the advertising and marketing expenses that are inevitably a major expense of all retail businesses.

The net profit margin, which represents the profit available after deducting all the operating costs already mentioned but also non-operating costs (interests, taxes, D&A), stands at 4.25% in 2023, within the average of the last 6 years of 3.54%. The net profit margin, despite being low, and considering that Sonae is a conglomerate with a strong food focus, is quite acceptable, and within the average of the competition.

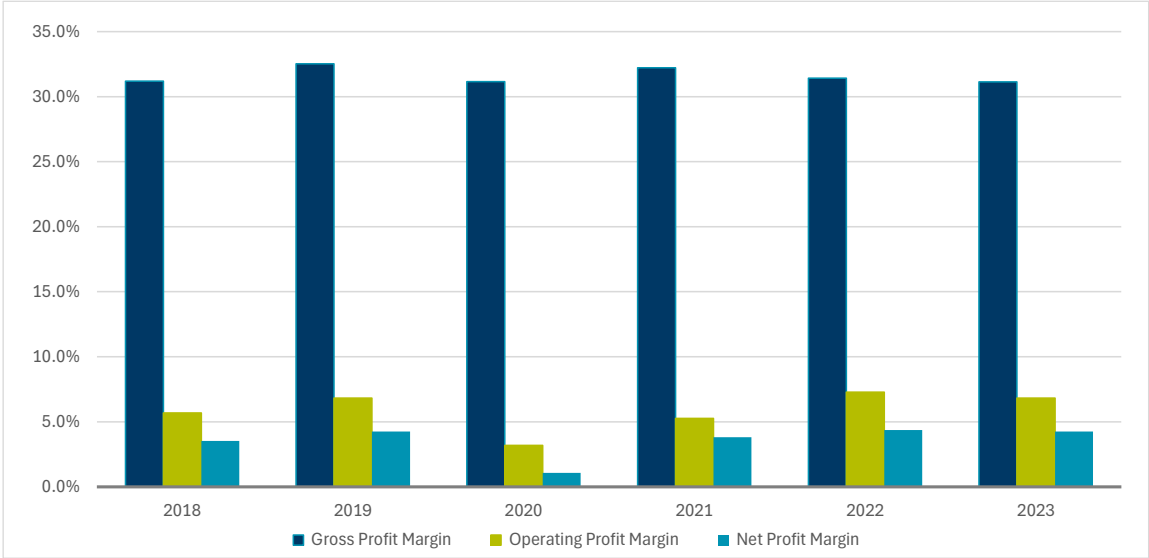


Figure 4 – Sonae’s profit margins (2018-2023). Source: Sonae Annual Reports

Regarding total revenues, Sonae's commitment to growth is visible, as it shows a growth of around 43% compared to 2018, which stands at 8,399 million euros in the last year, and in terms of annual growth shows an average growth of 7.38%, a clear increase in revenue,

sustained mainly by the growth of the Sonae MC and Worten businesses, with a 6-year growth of 53% and 19% respectively. Regarding the Price to Sales Ratio, which measures market capitalization (share price x number of outstanding shares) compared to the group's total revenues, Sonae has a ratio of 0.22 in 2023, within the average of the last 6 years of 0.25, meaning that Sonae is valued on the stock exchange at 1/4 of what it generates in revenues in a year. This low ratio may be an indicator that Sonae is undervalued in the market.

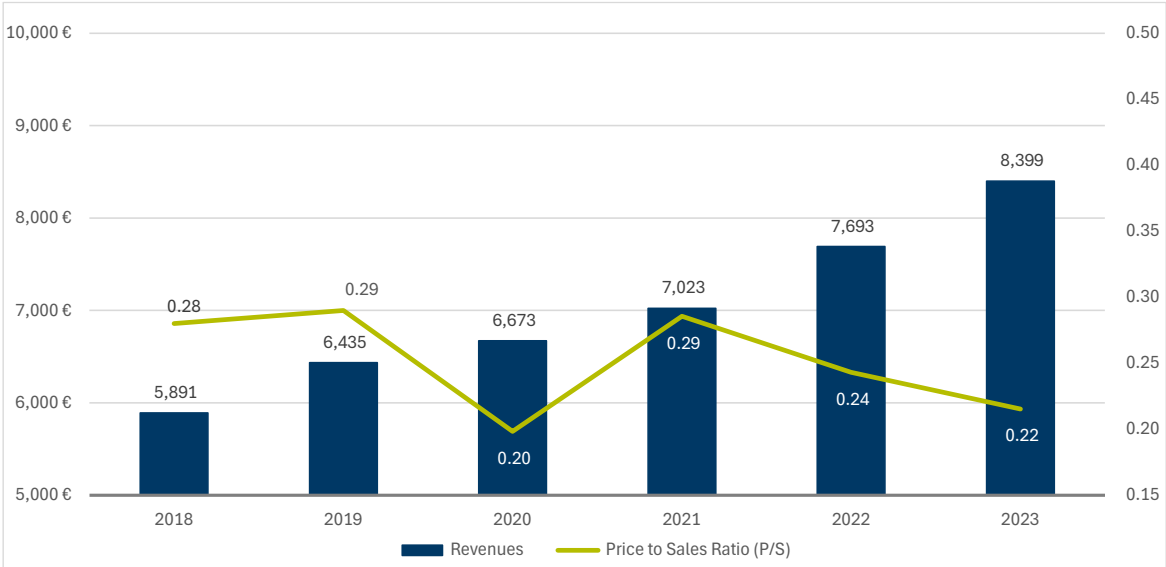


Figure 5 – Revenues and Price to sales ratio (2018-2023). Source: Sonae Annual Reports

Many investors consider Enterprise value to be the true cost of buying a company, which is determined by adding net debt and minority interests to its market cap. Relative to Enterprise value, it is stable, reflecting the stable variations in Sonae's stock market price. Relative to EBITDA, which reflects Earnings Before Interests, Taxes, Depreciation and Amortization costs, it stands at 990 million and has been growing in recent years, with a variation of 59% from 2020 to 2023, and an average variation of 17%. The EV/EBITDA ratio has been decreasing in recent years, due to the maintenance of its Enterprise Value and the increase in EBITDA, and in 2023 it stands at 2.80, which means that its Enterprise Value corresponds to 2.80x the value of EBITDA, one of the lowest in recent years, which may mean that Sonae is undervalued.

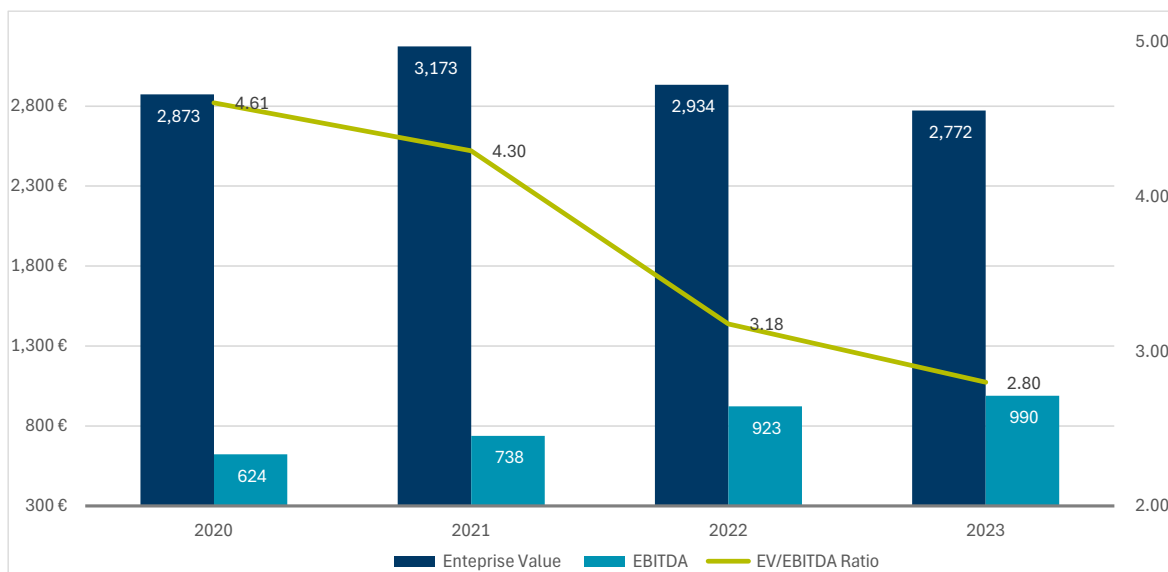


Figure 6 – Enterprise value, EBITDA and EV/EBITDA ratio (2020-2023). Source: Sonae Annual Reports

Sonae's net profit has been consistent, with profits in 24 of the last 25 years. In 2023, the profit attributable to its shareholders was 357 million, the highest figure in the last 9 years, a profit that has been growing after the decrease in 2020 of only 70 million. The Price to Earnings ratio, which measures the proportion of its share price to its earnings per share, is 4.89 in 2023, the lowest value in the last 6 years. The ratio remains low, which denies the idea that Sonae is overvalued or that its investors expect high growth rates in the coming years.

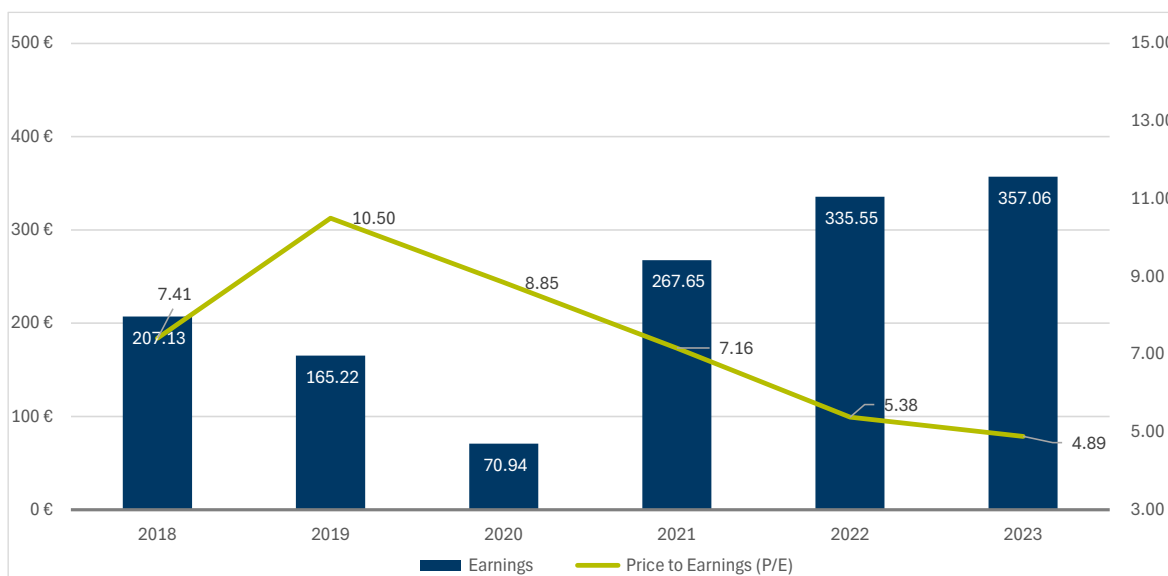


Figure 7 – Earnings and price to earnings ratio (2018-2023). Source: Sonae Annual Reports

Regarding the analysis of Sonae's liquidity profile, two ratios were selected: the quick ratio, which measures the ability of a business to pay its short-term liabilities by having assets that are readily convertible into cash, and the current ratio, which measures a business's ability to meet its short-term obligations that are due within a year. Both ratios are below 1, which

means that current liabilities are higher than current assets, representing poor short-term liquidity. Despite this, as explained in Sonae Annual Report, the main businesses have negative working capital requirements, and Sonae expects to meet all its cash needs by relying on cash flows from operating activities and financial investments, and, if necessary, by using credit lines available through relationship banks.

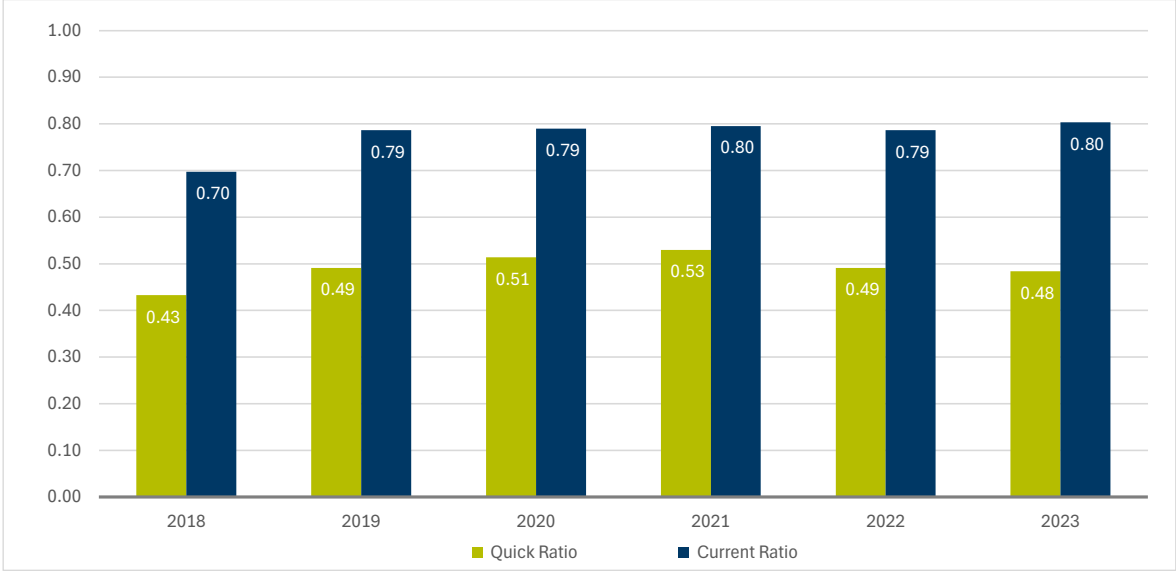


Figure 8 – Quick and current ratios (2018-2023). Source: Sonae Annual Reports

Analyzing Sonae's leverage, despite being a leveraged company, we can see that the group has managed to reduce its net debt in recent years, from 1.317 million to 526 million. However, with the need for growth financing and M&A projects, it is expected that its debt will increase in the coming years. The Debt-to-Equity ratio compares debt and equity financing, and there has been a noticeable decrease over the years, although as mentioned above, this ratio is expected to rise due to the increase in financing for growth and M&A projects. It should be noted that the equity value used in this ratio is book value and not market value. Regarding the Debt to EBITDA ratio, it is a ratio that measures the financial risk due to the existing debt, which means that the higher the ratio, the more risk the company has and the less capacity it has to pay off the debt. In Sonae's case, this ratio has been decreasing due to the rise in EBITDA in recent years and Sonae's ability to reduce its Net debt.

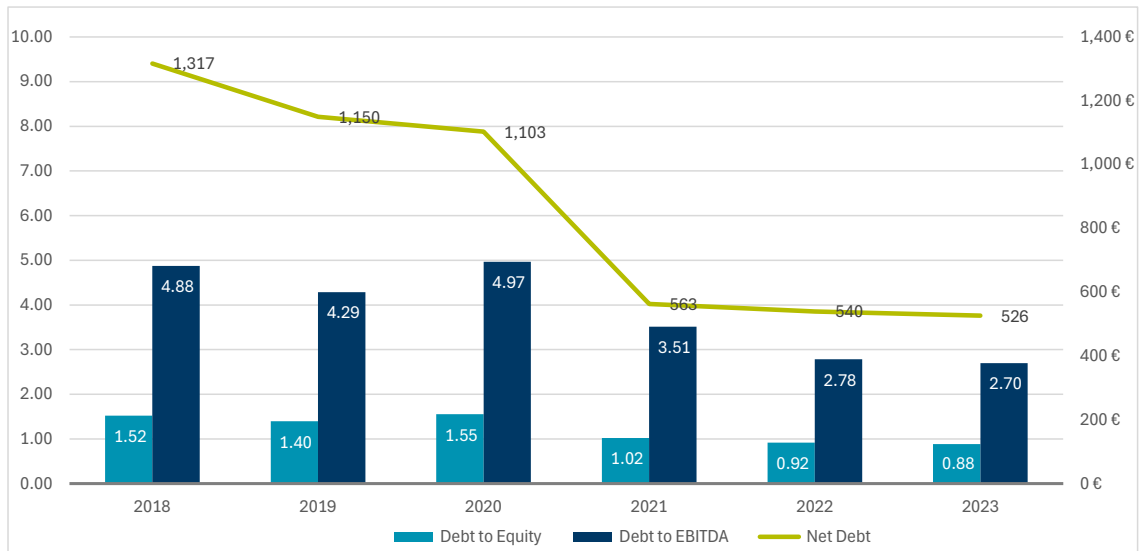


Figure 9 – Debt to equity, Debt to EBITDA ratios and Net debt (2018-2023). Source: Sonae Annual Reports

4. INDUSTRY ANALYSIS

According to recent financial data, around 93% of the group's total turnover comes from its retail activities, namely Sonae MC in food retail and Worten in electronic retail. This figure reflects the fundamental role that Sonae plays in this dynamic and competitive sector and given the significant weight of retail in Sonae's portfolio; it is important to carry out an analysis of this sector. With this in mind, and not disregarding the other sectors, the focus of the industry analysis will be on retail.

RETAIL IN PORTUGAL

Taking into consideration the data on the retail sector in Portugal, Sonae's major area, and according to data from the Bank of Portugal, the sector has a turnover of 23,113.30 million euros, from which most of the retail trade is done in supermarkets and hypermarkets, which together account for 93% of total turnover, with 21,497.70 million euros. Other convenience stores represent 7% of total turnover, with a total of 1.615.60 million euros.

Table 1 – Retail turnover breakdown.

| Economic Sector | Value (million €) | % |
|---|--------------------------|-------------|
| Retail sale in non-specialized stores with food, beverages or tobacco predominating | 23,113.30 | 100% |
| Retail sale in supermarkets and hypermarkets | 21,497.70 | 93% |
| Retail sale in others non-specialized stores with food, beverages and tobacco predominating | 1,615.60 | 7% |

Source: Banco de Portugal

Regarding the main players in the food retail industry, Portugal demonstrates a diverse landscape with several key players seeking to gain market dominance.

According to recent market data, shared by Kantar Worldpanel, Sonae (Continente) stands as the leading player, with a substantial share of 27.0%. Following closely behind is Jerónimo Martins (Pingo Doce) with a market share of 21.2%, solidifying its position as a significant competitor in the sector. Lidl, with a market share of 13.1%, also holds a considerable stake in the market, demonstrating its impact on consumer choices. Other players include Intermarché with a market share of 6.9%, Mercadona with 5.8%, and Auchan with 4.5%, each contributing to the competitive dynamics within the industry. Additionally, Dia Portugal and Aldi maintain smaller market shares of 2.6% and 2.5%, respectively.

Table 2 – Market share of food retail Industry.

| Company | Market share |
|-------------------------------|---------------------|
| Sonae (Continente) | 27% |
| Jerónimo Martins (Pingo Doce) | 21% |
| Lidl | 13% |
| Intermarché | 7% |
| Mercadona | 6% |
| Auchan | 4% |
| Dia Portugal | 3% |
| Aldi | 2% |

Source: Kantar WorldPanel

Among the most active food retailers, Aldi and Mercadona stand out, with the opening of 19 and 10 stores in 2023, respectively. These retailers have very aggressive expansion plans across the country, given the smaller number of stores compared to dominant brands such as Pingo Doce (Jerónimo Martins) or Continente (Sonae). It is important to mention that Auchan recently acquired the Mini Preço supermarkets (Dia Portugal) in Portugal, growing from its initial 100 units to approximately 583 units, making Auchan a possible top 4 retailer in Portugal, reaching around 7% in market share. This distribution serves to illustrate the competitive dynamics that shape consumer choices and market strategies within the Portuguese food retail sector.

RETAIL TRADE AND VOLUME IN PORTUGAL AND EU

The graphic below provides the Eurostat data on the annual rates of change in retail trade volume for both Portugal and the European Union from 2015 to 2023.

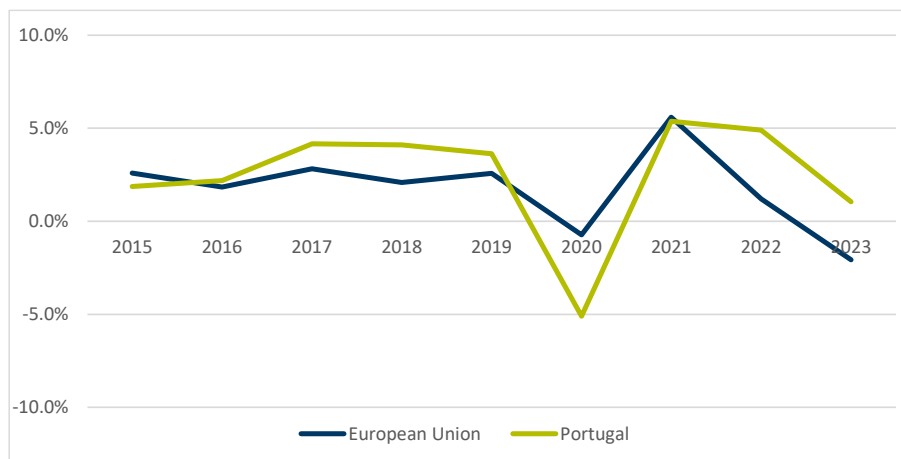


Figure 10 – Retail trade and volume in annual rates of change. Source: Eurostat

The retail sector in the European Union (EU) and Portugal showed dynamic trends over the years. In the EU, growth rates had moderate increases in 2015 and 2017, followed by a slight decrease in 2016. Stability was observed in 2018 and 2019, but the sector experienced a decline in 2020 due to the impact of the Covid-19 pandemic. However, there was a significant recovery in 2021, indicating a post-pandemic rebound. Growth slowed down again in 2022 and turned negative in 2023, explained by the economic challenges.

Similarly, Portugal experienced various growth rates during the same period. Steady growth was observed from 2015 to 2017, with slightly higher rates compared to the EU. Growth continued in 2018 and 2019, although at a slower pace. In 2020, Portugal, like the EU, faced a significant decline attributed to the impact of the pandemic. However, Portugal also saw a strong rebound in 2021, reflecting recovery from the downturn.

Generally, Portugal demonstrated a relatively stronger performance in terms of growth rates compared to EU, reflecting a more resilient retail sector. The significant fluctuations in growth rates highlight the sensitivity of the retail sector to external factors such as economic conditions and global events.

Regarding the retail trade related to the Supermarkets, Department Stores, and Mail order and Internet, it is possible to observe different behaviors through the years. Supermarkets experienced consistent growth in turnover during 2015 to 2020, with a slight dip in 2021 and a decline in 2023. In contrast, department stores showed more volatile behavior compared to supermarkets, with substantial growth from 2015 to 2019, followed by a significant drop in 2021 and a sharp increase in 2023.

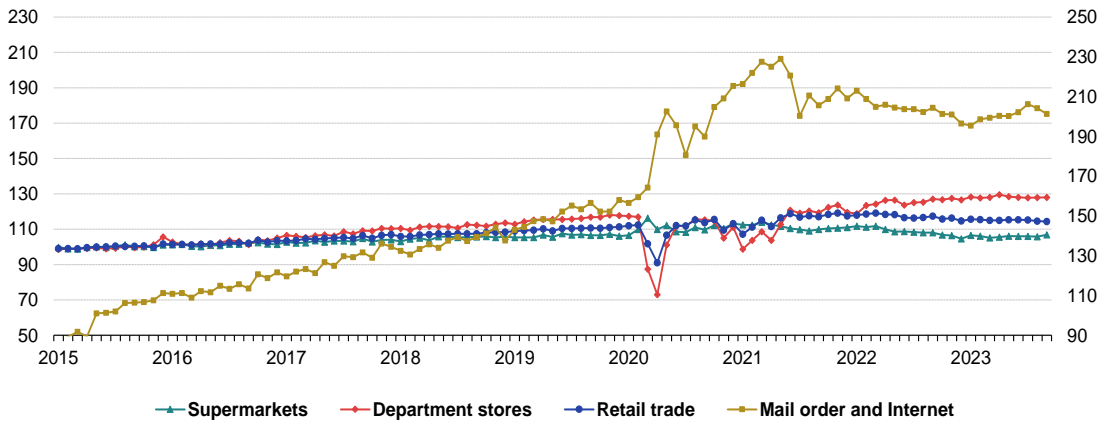


Figure 11 – Retail trade in Supermarkets, Department stores and internet. Source: Eurostat

In terms of Mail order and Internet retail trade, it showed a remarkable growth through the period, starting at 87.3 in 2015 and reaching 195.4 in 2023, making it evident that mail order and internet retail outperformed supermarkets and department stores in terms of growth. This growth reflects a shift in consumer behavior, indicating the importance of e-commerce in retail.

RETAIL OUTLOOK IN PORTUGAL AND EU

In Portugal, the retail sector shows signs of recovery in 2023, driven by various factors as noted in Deloitte's Last Mille 2023 study. Deloitte highlights the structural growth of online commerce, particularly influenced by the pandemic context, estimating that the e-commerce market will reach 9.68 billion dollars by 2025. Despite a slowdown in digital commerce revenues in 2022, the number of online shoppers is forecasted to rise to 56.8% by 2025. In 2024, CI&T anticipates a moderate retail growth, with a particular focus on the role of artificial intelligence in optimizing logistics, sales processes, and discount strategies. Furthermore, the incorporation of personalized experiences and loyalty programs is expected to enhance consumer engagement and satisfaction, particularly in the context of evolving market dynamics.

In Europe, sustainability considerations are significantly shaping consumer purchasing decisions, as outlined by McKinsey in Consumer Sentiment research. Health and environmental factors, such as product recyclability and fair-trade practices, are considered by more than half of European consumers across various product categories to be of substantial importance. This consumer behavior is reflected in the e-commerce landscape, where Eurostat's 2023 survey indicates a notable increase in the share of revenue generated by online sales, reaching 18.0%. The Economist Intelligence Unit forecasts a 2% growth in real sales volume for retail in 2024 and confirms that online commerce continues to expand, constituting 14.6% of total global retail sales. However, the Economist Intelligence Unit says that some challenges are expected, including profitability pressures, market consolidation and regulatory obstacles, with the rising interest rates in much of the world will make it difficult to attract new investment, and existing investors will demand better returns.

5. ECONOMIC OUTLOOK

The last few years have been marked by a series of events that have affected national and international economic performance in various ways, with different effects on the lives of individuals and the operations and performance of economic agents.

The recent conflicts both in Ukraine and in the Middle East, with no end in sight and a tendency toward escalation of the geopolitical tensions, has been a risk to supply chains. The most recent, the Israel/Gaza conflict, is giving rise to many divisions of opinions on a global scale, and the attack by Yemeni rebels (Houthis) on commercial ships in the red sea being evidence of that, putting in danger the navy industry in that area which represents part of the world commercial trade, creating additional uncertainty on a global level.

These wars have a negative impact that goes beyond the worsening of diplomatic relations between the countries directly and indirectly involved. The generalized increase in the prices of all goods is notorious, initially felt in energy products, but which quickly spread to the rest, because of the strong dependence of all sectors on these subsidiary materials in the production process.

EUROPEAN ECONOMIC OUTLOOK

The European economy has demonstrated resilience in the face of several challenges. Despite the restrictive monetary policy and the European Central Bank (ECB) raising rates to historic levels, the labor market has held up, and a recession has been avoided so far.

The German economy, once Europe's driver of growth, has been underperforming since the end of 2022, falling into a technical recession. This underperformance has the potential to tip the rest of the euro area economy into recession.

Despite the economic challenges, countries that are heavily dependent on tourism and services have been larger contributors to the region's overall growth. The convergence of declining inflation and rising wages is expected to increase consumers' purchasing power until 2024. However, the weakness in exports and investment will restrict any meaningful uplift in broader economic growth.

Overall, the average annual real GDP growth is projected to decelerate from 3.4% in 2022 to 0.6% in 2023, recovering to 0.8% in 2024, and stabilizing at 1.5% in 2025 and 2026. Growth prospects for GDP have been slightly revised downward for 2023 and 2024 compared to September 2023 projections, reflecting recent data and survey weakness, but remain unchanged for 2025.

Headline inflation in the euro area has made significant progress since its peak of 10.6% in October 2022, overall HICP inflation is expected to decrease from 5.4% in 2023 to an average

of 2.7% in 2024, 2.1% in 2025, and 1.9% in 2026, meeting the medium-term ECB’s 2% inflation target.

The unemployment rate in the euro area increased nominally to 6.5% from the previous month’s 6.4%. This, however, still marks a decline from the 6.7% rate recorded at the beginning of the year.

The European Central Bank (ECB) predicts a growth comeback from early 2024 as real disposable income rises, supported by falling inflation, robust wage growth and employment resilience, alongside export growth recovery driven by improved external demand.

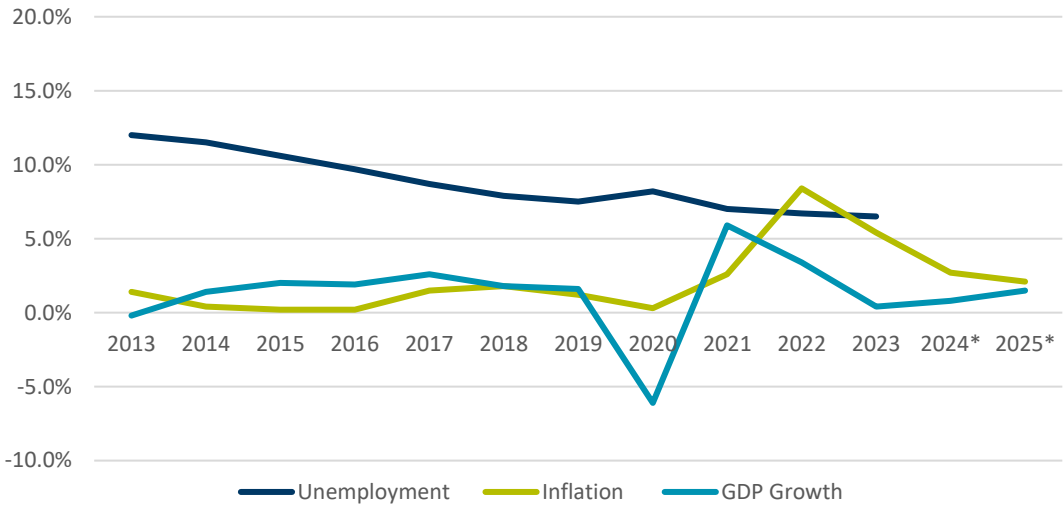


Figure 12 – European economic indicators. Source: Eurostat

PORTUGAL ECONOMIC OUTLOOK

The macroeconomic scenario shows us that in 2023 the GDP of the Portuguese economy slowed down to 2.3% according to estimates by Moody's Analytics, despite that Portugal is one of the European Union countries with the highest growth.

The significant deceleration in exports (4.2%), private consumption (1.6%) and investment, which is almost stagnant at around 0.8%, are the main drivers of this growth slowdown. The labor market remains resilient, with Moody's Analytics forecasting an unemployment rate of 6.5% in 2023. The inflation rate, after reaching its all-time high in 2022 (7.8%), reached 4.3% in 2023, marked by the pressure of interest rate policies established by central banks.

The year 2024 remains surrounded by a high level of uncertainty due to the continuous duration of the armed conflict in Ukraine and the recent conflict in Israel/Gaza.

Moody's latest estimates point to a slowdown in economic activity in 2024 (1.9%), the result of an expected slight increase in exports (4.7%), a slowdown in private consumption (0.7%), as well as a stoppage in job creation (-1.1%). Moody's estimates still point to a maintenance

in economic activity in 2025 (1.9%). The inflation rate is expected to decline to 2.3% in 2024 and 1.1% in 2025. The labor market is expected to remain resilient, with Moody's forecasting an unemployment rate of 6.2% in 2024 and a decline to 5.6% in 2025.

In its latest Economic Bulletin (March 2024), the Banco de Portugal (BdP) forecasts that the Portuguese economy should continue to grow with an average of 0.5 basis points above the Euro zone, supported by the expected increase in exports and investment. In numbers, the GDP, after declining to 2.3% in 2023, will continue its trend with a growth of 2.0% in 2024, followed by a recovery in the following years, to 2.3% in 2025 and 2.2% in 2026. This economic growth is driven by the increase of 5.4% in investments forecasted for 2025 and 4.1% for 2026, and by the increase in exports with 4.0% forecast for 2025 and 3.3% for 2026, contributing 0.2-0.3 pp to the GDP variation in this period. In terms of inflation, BdP projects a reduction between 2024 and 2026, with 2.4% in 2024, reaching the monetary policy objective of 2.0% in 2025, followed by 1.9% in 2026.

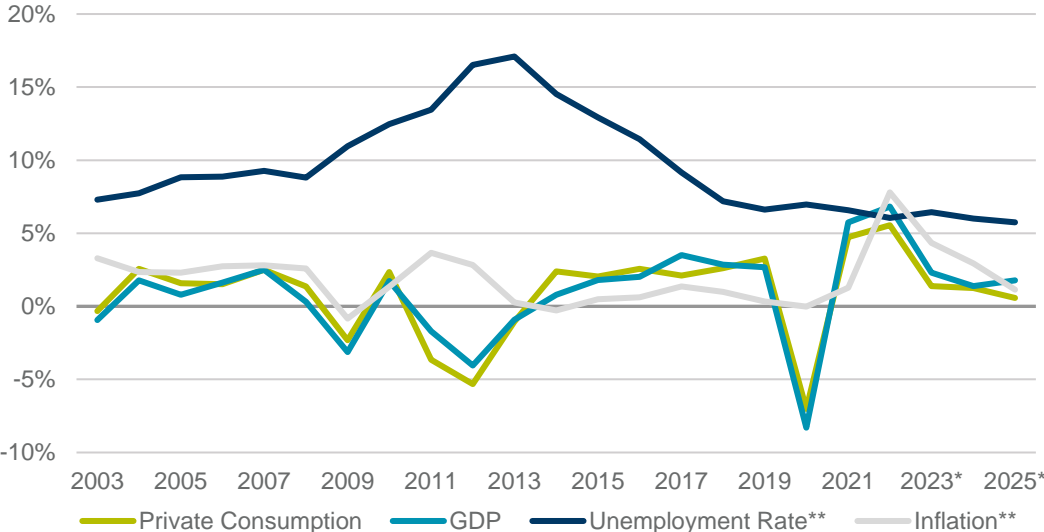


Figure 13 – Portuguese economic indicators. Source: Moodys Analytics

In its economic forecast for Portugal, the European Commission stated that private consumption is expected to benefit from an increase in employment, while the implementation of the Recovery and Resilience Plan will continue to support investment.

As of 19 January 2024, Morningstar DBRS has maintained the long-term foreign and local currency issuer ratings of the Republic of Portugal at "A".

The stable trend reflects Morningstar DBRS's view that risks to the ratings are balanced and that Portugal is resilient in the face of external headwinds despite the slowdown in the economy. According to DBRS, Portugal is expected to achieve a budget surplus of around 0.8%-1.1% of GDP in 2023, driven by a steady increase in tax revenues and the unwinding of crisis-related spending.

6. METHODOLOGY

6.1. DISCOUNTED CASH FLOW

The DCF model is based on the forecast of the free cash flow to the firm for the following periods, and from the amount of operational cashflow is deducted the amount of capex and the amount of changes in net working capital forecast for the DCF period, to obtain the Enterprise Value. Since this valuation model is fundamentally based on assumptions made by the valuer, from which it is necessary to make long-term forecasts, which in this case will be 10-year forecasts, it is imperative to carry out a careful analysis of historical data and analysis of the industry corresponding to the company, to determine the correct FCFF. To produce this analysis, 3 possible scenarios were calculated for the corresponding drivers, a base case, a best case and a worst case, and the main drivers of the assessment are as follows.

6.1.1. VALUATION DRIVERS

REVENUE GROWTH

For the revenue growth analysis and given that Sonae's main source of revenue comes from the food and electronic retail business units, namely Sonae MC and Worten, revenue growth was split between revenue growth retail, which forecasts the growth of Sonae MC, Worten and a possible incorporation of Musti, and revenue growth other, which forecasts the growth of the remaining companies in the group. According to the historical data, the Sonae MC and Worten businesses together have been growing by 7.9% per year over the last 5 years, and the other businesses together by around 2.08% per year over the same period, as shown in the table below.

Table 3 – Annual revenue growth of Sonae MC, Worten and other Sonae businesses (2019-2023).

| | 2019A | 2020A | 2021A | 2022A | 2023A |
|---------------------------------|--------|---------|-------|--------|-------|
| Sonae Growth Other | 32.18% | -27.56% | 4.15% | -2.05% | 3.68% |
| Sonae Growth Retail (MC+Worten) | 7.16% | 7.18% | 5.34% | 10.40% | 9.54% |

Source: Sonae Annual Reports

According to Damodaran, in his analysis of the Retail industry (Grocery and food) presented on his website (See Annex 1), he predicts a growth in Revenues over the next 2 and 5 years of 15.64% and 52.98% respectively. Statista's forecast for the retail food sector predicts an average annual growth of 5.69% (see Annex 2). In the retail revenue growth forecast, a growth of 7.5% was applied in the best case, taking into account the average growth of the last few years of 7.5% with a positive increase considering the 11% yoy growth in Q1 2024, but below the 9% of 2022 and 2023. In the base case it grows by 6.0%, in line with Statista's forecast for food retail. In the worst-case scenario, it will grow by 5%, below Statista's forecast.

Given the negative economic forecasts for 2024, this year's growth is contained. In 2025, the Bank of Portugal predicts that the economy will recover, with inflation stabilizing and purchasing power increasing. In this case, the best-case scenario predicts an increase of 1% compared to the growth in 2024 (8.5% applied), which is close to the growth seen in 2023, while the base case scenario will see growth stabilize at 6.5% (+0.50%) and the worst-case scenario will see a growth of 0.50% (5.5% applied) compared to 2024.

In 2026, the economy is expected to stabilize and the effects of incorporating Musti could begin to take effect from this year. As a result, the best-case scenario will see growth of 9% (+0.50bp). In the base scenario, it will grow by 7.5% (+1%) and in the worst scenario it will grow by 6% (0.50%). From 2027 until the end of the period, all scenarios will be the same. During this period, retail growth will stabilize at between 2%- 6%, in line with forecasts for the sector. In the final years, growth will be more contained, stabilizing at the rate calculated by the average between the long-term inflation rate forecast and the CAGR for the sector in the long term. Below is a table with the forecast revenue growth for Retail:

Table 4 – Revenue growth forecast of retail operations (2024-2033).

| | 2024F | 2025F | 2026F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Best Case | 7.5% | 8.5% | 9.0% | 6.0% | 6.0% | 3.5% | 2.5% | 2.0% | 2.0% |
| Base Case | 6.0% | 6.5% | 7.5% | 6.0% | 6.0% | 3.5% | 2.5% | 2.0% | 2.0% |
| Worst Case | 5.0% | 5.5% | 6.0% | 6.0% | 6.0% | 3.5% | 2.5% | 2.0% | 2.0% |

For the remaining businesses in 2024, the same average growth of the last 5 years was applied in the best-case scenario and 1.5% was applied in the base case scenario. In the worst-case scenario, the growth applied was 1%, to reflect a possible drop in performance in Real Estate at Sonae Sierra and the other companies, but also to reflect a possible drop in purchasing power. In 2025, growth was stabilized in the best-case scenario at 2.5%, above the 5-year average, and in the long term (2032-2033) it was applied the expected inflation growth.

In the base scenario, it was applied the same growth as the 5-year average until the end of the period. In the worst-case scenario, it was applied an increase of 0.50% in growth in 2025 and stabilization at 2% in 2028 at the same inflation rate. Below is the table with the revenue growth forecast for Other:

Table 5 – Revenue growth forecast of other operations (2024-2033).

| | 2024F | 2025F | 2026F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Best Case | 2.0% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.0% | 2.0% |
| Base Case | 1.5% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |
| Worst Case | 1.0% | 1.5% | 1.5% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |

NUMBER OF STORES

The number of stores was analyzed considering the data shared in the annual report, by analyzing the variations in the number of stores in each business of Sonae MC, Worten and Zeitreel from 2018 to 2023. Through this analysis, it was possible to see a pattern of growth

in Continente Bom Dia and Continente Modelo stores, and stabilization in Sonae MC's Bagga, Note and Wells stores.

Still about Sonae MC, Arenal stores in Spain have stabilized in recent years, although Arenal and Druni are expected to be merged into a single company. Arenal is already 60% owned by Sonae and this merger is expected to significantly increase the number of stores owned by Sonae in Spain and perhaps in Portugal. The acquisition of Musti is expected to increase the number of stores, which will be implemented in 2025.

Regarding Sonae MC's franchised units, there was a pattern of a reduction in the number of stores, of which the same reduction was applied in the following years. In the case of Worten, with its Worten, Worten Mobile and IServices units, growth was applied, although at a lower rate compared to Sonae MC, due to historical data. Regarding Zeitreel, there has been a general decrease in the number of stores in recent years, with greater focus on the Salsa and MO stores, so a reduction was applied to maintain the trend. In summary, the number of stores predicted in the first few years is around 2,074 and remains the same in all 3 scenarios. From 2026 onwards, the best scenario predicts an increase of 5% compared to the base scenario, and in the worst scenario a decrease of 5% compared to the base scenario, with the number of stores remaining the same from 2029 until the end of the period. The growth in stores over 5 years, from 2024 to 2029, is 12%. Below is the table with Sonae's forecast store growth:

Table 6 – Number of Sonae’s stores forecast (2024-2033).

| | 2024F | 2025F | 2026F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Best Case | 2,074 | 2,159 | 2,323 | 2,319 | 2,319 | 2,319 | 2,319 | 2,319 | 2,319 |
| Base Case | 2,074 | 2,159 | 2,212 | 2,209 | 2,209 | 2,209 | 2,209 | 2,209 | 2,209 |
| Worst Case | 2,074 | 2,159 | 2,101 | 2,099 | 2,099 | 2,099 | 2,099 | 2,099 | 2,099 |

INFLATION

The inflation forecast for the period is based on the data taken from Moodys Analytics from the Consumer Price index for Portugal, given that most of its operations are based in the country. The estimated inflation rates from 2024 to 2033 are as follows:

Table 7 – Portugal inflation rate forecast (2024-2033).

| | 2024F | 2025F | 2026F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Inflation Rate | 2.30% | 1.10% | 1.10% | 1.60% | 1.70% | 1.80% | 1.80% | 1.80% | 1.80% |

Source: Moodys Analytics

WORKING CAPITAL

In order to be able to make a correct forecast of Working Capital variations for the period, it was analyzed the balance sheet between 2018 and 2023, in order to perform a trend analysis as well as the average annual variation, with the objective of applying the same trend for the

future, according to Sonae's Working Capital policy reported in the Annual Report. Its Working Capital policy, as described in the annual report, Sonae has negative working capital needs due to the main business (Sonae MC), and in relation to Customer credit risk, this is reduced due to the fact that most transactions are cash payments, in the remaining cases the relationship with customers is controlled by a financial and qualitative data collection system, in order to mitigate credit risk. Regarding suppliers, credit risk arises because of advance payments or debits for commercial revenue and is mitigated by the expectation that the commercial relationship with them will continue.

In the analysis of the balance sheet between 2018 and 2023, the amounts of Accounts Receivable, Inventory and Accounts Payable were as follows:

Table 8 – Amounts of Accounts Receivable, Inventory and Accounts Payable (2018-2023).

| | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A |
|---------------------------|-------|-------|-------|-------|-------|-------|
| TOTAL AMOUNTS (M€) | | | | | | |
| Accounts Receivable | 142 | 115 | 148 | 131 | 129 | 129 |
| Inventory | 671 | 664 | 636 | 634 | 727 | 799 |
| Accounts Payable | 1,287 | 1,338 | 1,339 | 1,347 | 1,435 | 1,442 |

Source: Sonae Annual Reports

When analyzing the period (in days) of customer receipts, payments to suppliers or inventory maintenance, Accounts Receivable Days was analyzed, which calculates the amount of Accounts Receivable as a percentage of total revenue and multiplies it by the number of days in the period (365), which totals 6 days in 2023 and means the number of days that an invoice will remain outstanding before it is collected or how long a customer takes to pay their invoices. Accounts Payable Days was also analyzed, which calculates the amount of Accounts Payable as a percentage of the Cost of Goods Sold (COGS) and multiplies it by the number of days in the period (365), which totals 91 days in 2023 and means the number of days it takes the company to pay its suppliers. Finally, Inventory Days was analyzed, which like Accounts Payable Days, was calculated as a percentage of COGS and multiplied by the number of days in the period (365), which totals 50 days in 2023 and means the number of days that inventory is in stock until it is sold. (See Appendix A) for more details.

When forecasting Accounts Receivable days, the value applied throughout the period was 7 days, based on the average of the last 5 years, and is expected to continue the receivable policy, it should be noted that this value decreased from 9 to 6 in this period. Regarding Inventory Days, the average of the last 5 years (53 days) was applied to the next 5 years, then considering that it has a decreasing profile, the same approach was applied, stabilizing at 50 days. The same principle was applied to Accounts Payable days, where 100 days was applied for the first 5 years, decreasing and stabilizing at 90 days. Below is the table with the working capital days forecast for the period under analysis:

Table 9 – Working capital days forecast (2024-2033).

| | 2024F | 2025F | 2026F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Working Capital | | | | | | | | | |
| Accounts Receivable Days | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Inventory Days | 53 | 53 | 53 | 53 | 52 | 52 | 51 | 51 | 50 |
| Accounts Payable Days | 100 | 100 | 100 | 100 | 95 | 95 | 90 | 90 | 90 |

CAPEX

Capex is calculated based on operating and financial capex. In year 1, we already have data for Q1 2024, so operating capex was calculated based on the amount up to March (dividing the value by the number of months yet-to-date and multiplying by 12 to obtain the annual value). Financial capex was obtained by adding the capex up to March 2024 with the average financial capex of the last 5 years (divided by 12 and multiplied by the remaining 9 months). In the remaining years, it was calculated using the 5-year moving average and based on the capex ratio for Net Fixed Assets and D&A. The capex for 2024 is high given the existing M&A operations, so it is an atypical year. The table below shows historical capex data, divided into operational and financial categories, and the forecast for the following years:

Table 10 – Capex breakdown (2020-Q1 2024) and forecast (2024-2033).

| | 2020A | 2021A | 2022A | 2023A | Q12024A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F |
|-------------------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| Operational Capex | 264 | 279 | 357 | 443 | 81 | 323 | 336 | 348 | 361 | 362 | 346 | 351 | 354 |
| M&A Capex | 237 | 195 | 277 | 223 | 658 | 833 | 233 | 233 | 232 | 240 | 232 | 234 | 234 |

Source: Sonae Annual Reports and own computations

6.1.2. VALUATION INPUTS

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

The cost of debt was estimated considering Sonae's annual report, which states that the interest rate on bonds and bank loans was, on average, 3.97% as of December 31, 2023. The after-tax cost of debt was calculated by multiplying the cost of debt presented by Sonae by (1-effective tax rate), which totals 3.8% of after-tax cost of debt.

To calculate the cost of equity, it was necessary to measure the correct risk-free rate, the market risk premium (which multiplied by the Beta) gives rise to the Equity risk premium and finally it was necessary to measure the country risk premium, which according to Damodaran needs to be present when calculating the cost of equity.

As for the risk-free rate, it was calculated based on the yield of the 10-year Portuguese Government Bond, since most of the operation as well as the head office is located in Portugal, and was obtained from the World Government Bonds website, which is 2.8%.

The market risk premium was obtained from the Damodaran website for Portugal, which gave a value of 6.35%. To calculate the levered beta, it was necessary to obtain the unlevered beta also from the Damodaran website for the Retail (Grocery and Food) industry, which totals

0.48. To obtain the levered beta, it was necessary to multiply the effects of the effective tax rate and Sonae's capital structure, both of which are assumed to remain constant over the period. With an effective tax rate of 4.40% and a debt-to-equity ratio of 1.50 (the equity value used was its market value), the levered beta calculated was 1.17. Finally, to obtain the cost of equity, it was necessary to multiply the risk premium by the beta in order to obtain the total equity risk premium and add not only the calculated risk-free rate but also Portugal's country risk premium of 1.75%. With the Cost of Debt multiplied by the weight percentage of Debt Capital added to the Cost of Equity multiplied by the weight percentage of Equity Capital, it reached a total WACC of 7.07%. Appendix B shows the calculation of WACC in more detail.

VALUATION SCHEDULES

By analyzing the historical data and by forecasting the drivers needed to correctly prepare the DCF, it was possible to obtain the total revenue figures forecast for the period from 2024 to 2033. As explained, the value of future revenues was divided into Retail (Sonae MC and Worten) and Others (other group companies), as can be seen in more detail in Appendix C. The total revenue calculated in 2024 was around 8.881 million euros and at the end of the period it amounted to 14.094 million.

Regarding the Cost schedule, the COGS were analyzed as a percentage of total revenue, which showed an almost constant value from 2018 to 2023 of around 68% of total revenue. Given the constant percentage and considering the forecast Revenues for the following years, the same percentage of 68%, resulting from the average of the last 6 years, was applied to the rest of the period. Regarding Operating Expenses, the same reasoning was applied as for COGS. In the same exercise, it is visible that the Gross Margin remains at around 31% over the period, as well as the EBITDA margin remaining at around 11% over the same period, which supports the figures calculated. See Appendix D for more details.

Net fixed assets were calculated based on their historical value as a ratio of the number of stores in each year of the period. Considering the historical values, it can be seen that the ratio remains around 1.10 on average. A 6-year moving average of the ratio for the following years was applied in order to obtain the estimated value of Net Fixed Assets. See Appendix E for more details.

The depreciation and amortization assumption was based on an historical data analysis as a percentage of the Net fixed assets on the balance sheet. On average, depreciation represented around 16% of net fixed assets and, taking into consideration the expected value of net fixed assets calculated above, the fixed percentage of 16% was applied to the rest of the period. See Appendix F for more details.

The tax assumption was analyzed based on the effective rate paid from 2018 to 2023. Considering the amount of tax as a percentage of Earnings Before Tax (EBT), it was possible to conclude that the average effective rate for the last 2 years was 4.40%, which will be used to determine the tax amounts for the following years.

Based on the analysis of the working capital driver, the amounts of Net Working Capital in the following years were measured, as shown in Appendix G. To calculate the changes in working capital, the value of Accounts Payable (Current Operational Liabilities) was deducted from the value of Accounts Receivable and Inventory (Current Operational Assets) for each year and the annual change was calculated.

FREE CASH FLOW TO THE FIRM

After all the necessary forecasts of the main drivers and all the Income Statement values (see Appendix H) have been made to obtain EBIT, which is essential for the correct use of the FCF model, it is now possible to calculate the Enterprise Value of Sonae SGPS.

In the Discounted Cash Flow model, the Base case scenario was applied and begins with obtaining EBIT (Earnings before Interests and Taxes) in order to calculate the cash taxes for that period and, in turn, NOPAT (Net Operating Profit After Taxes). To the EBIT figure is added the previously calculated D&A figure, to obtain the EBITDA value, which is then deducted the corresponding Capex and Changes in Net working Capital amounts, thus obtaining the value of Unlevered Free Cashflow to the firm (UFCFF).

In the final year of the cash flow, in 2033, the terminal value must be calculated in addition to the UFCFF, which in this model was calculated based on the average of two methods, the Perpetual Growth Rate and the EV/EBITDA Multiple. In the perpetual growth rate method, a perpetual growth rate of 2% is applied to the UFCFF divided by the difference between the WACC and the same perpetual growth rate, from which the terminal value of 11,297 million euros was obtained. In the multiple method, the EV/EBITDA multiple was calculated based on the peer group, explained in more detail later in this chapter, and this multiple was multiplied by the EBITDA value in the last year, giving a value of 17,350 million euros. Applying the average between the two methods, a terminal value of 14,324 million was obtained.

From all the FCF values calculated for each year, it was necessary to discount them to the present, applying the previously calculated discount rate (WACC) of 7.07%, and thus obtain the Enterprise value of 11,181 million euros. To calculate the Equity Value of Sonae SGPS, it was necessary to add the value of Cash & Cash Equivalents to the Enterprise Value and subtract the value of total debt and the book value of non-controlling Interests, from which the Equity Value of 8,784 million was obtained, which divided by the number of outstanding Shares of 2,000 million, resulted in an Equity Value per share of 4.39€.

Intrinsic Value (millions €)

| | |
|---------------------|--------|
| Enterprise Value | 11,181 |
| Plus: Cash | 711 |
| Less: Debt | 2,671 |
| Less: Non-contr.Int | 437 |
| Equity Value | 8,784 |

Equity Value/Share 4.39 €

Figure 14 – Equity value per share calculation using Free Cash Flow to the Firm method.

The value obtained of €4.42 per share is around 388% above its current price, which indicates that Sonae is undervalued in the market. When calculating the rate of return, the Enterprise Value was calculated using its current market cap of 1.809 million (0.90€/share x 2.000 million shares), adding the value of total debt and non-controlling interests and deducting the value of Cash & Cash Equivalents, from which the Enterprise Value of 4.206 million euros was obtained, giving a rate of return of around 20%. Please see Appendix I for DCF model and Appendix H for the Income Statement.

A sensitivity analysis was also carried out to assess changes in Sonae's value, taking into account the variations in the terminal growth rate, the discount rate (WACC) and the impact of the different scenarios (best, base and worst) on Sonae's value. The terminal growth rate was adjusted by 0.5% (positive and negative) and the discount rate (WACC) by 1.5%, with the objective of understand the impact of the variation in these two variables, as shown below:

All figures in € million unless stated

Main Outputs DCF Model

| | Enterprise Value | Equity Value | Equity Per Share |
|------------|------------------|--------------|------------------|
| Best Case | 12,055 | 9,658 | 4.83 |
| Base Case | 11,181 | 8,784 | 4.39 |
| Worst Case | 10,593 | 8,196 | 4.10 |

Enterprise Value

| | | Terminal Growth Rate | | | | |
|------|-------|----------------------|--------|---------------|--------|--------|
| | | 1.0% | 1.5% | 2.0% | 2.5% | 3.0% |
| WACC | 4.1% | 18,119 | 19,994 | 22,777 | 27,339 | 36,183 |
| | 5.6% | 13,188 | 13,876 | 14,758 | 15,927 | 17,553 |
| | 7.1% | 10,458 | 10,787 | 11,181 | 11,661 | 12,259 |
| | 8.6% | 8,662 | 8,842 | 9,050 | 9,293 | 9,579 |
| | 10.1% | 7,362 | 7,470 | 7,592 | 7,730 | 7,888 |

Equity Value per Share

| | | Terminal Growth Rate | | | | |
|------|-------|----------------------|------|-------------|-------|-------|
| | | 1.0% | 1.5% | 2.0% | 2.5% | 3.0% |
| WACC | 4.1% | 7.86 | 8.80 | 10.19 | 12.47 | 16.89 |
| | 5.6% | 5.40 | 5.74 | 6.18 | 6.77 | 7.58 |
| | 7.1% | 4.03 | 4.20 | 4.39 | 4.63 | 4.93 |
| | 8.6% | 3.13 | 3.22 | 3.33 | 3.45 | 3.59 |
| | 10.1% | 2.48 | 2.54 | 2.60 | 2.67 | 2.75 |

Figure 15 – Sensitivity Analysis 1.

It's possible to conclude that a change in the valuation scenarios (Best, Base, Worst) has an impact on the equity value per share. The best case provides a value per share of 4.83€, circa 0.42€ above the base case, and the worst case provides a value per share of 4.10€, minus 0.29€ compared to the base case. As stated above, a change in the Wacc and Terminal growth rate assumptions also has a significant impact on Sonaes' Equity value per share.

6.2. RELATIVE VALUATION

The other important valuation method for calculating Sonae's equity value is relative valuation. This method is highly based on multiples of a given peer group of competitor companies (in the same industry) as Sonae, and with this it's possible to verify the value by looking at similar companies. Sonae's peer group was obtained through an analysis carried out by Sonae itself, in the preparation of its internal valuations of the companies in the group. This group consists of the following companies:

- Jerónimo Martins S.A.
- Colruyt S.A.
- Tesco Plc
- Carrefour S.A.
- Axfood AB

The financial data used to calculate the multiples was obtained directly from the Reuters website for each of the companies. Some of the data obtained was Market Capitalization, Net Debt, Sales, EBITDA and Earnings. The multiples chosen considered that Sonae and its peer group are mature companies, which show a certain level of constant EBITDA and a solid capital structure, without major fluctuations. Therefore, the multiples calculated were EV/EBITDA multiple and Sales/EBITDA multiple. The P/E Multiple was also calculated but given the large differences in the values of this multiple between the companies selected, it was decided not to use it as a metric. The table below gives details of the peer group companies' financials, as well as the multiples calculated:

Table 11 – Peer group company financials and valuation multiples calculation.

| Company Name | Company Details | | | Financial Data | | | Valuation | | |
|------------------|--------------------|------------------|------------|----------------|----------------|------------------|---------------|----------------|----------|
| | Market Cap (€M) | Net Debt (€M) | EV (€M) | Sales (€M) | EBITDA (€M) | Earnings (€M) | EV/Sales x | EV/EBITDA x | P/E x |
| Jeronimo Martins | 12,516 € | 2,069 € | 14,585 € | 30,608 € | 2,150 € | 756 € | 0.5x | 6.8x | 16.6x |
| Colruyt SA | 5,899 € | 970 € | 6,869 € | 9,934 € | 650 € | 180 € | 0.7x | 10.6x | 32.8x |
| Tesco Plc | 21,321 € | 10,167 € | 31,488 € | 68,187 € | 4,449 € | 1,760 € | 0.5x | 7.1x | 12.1x |
| Carrefour SA | 9,892 € | 13,053 € | 22,945 € | 84,908 € | 4,559 € | 930 € | 0.3x | 5.0x | 10.6x |
| Axfood AB | 58,005 € | 9,076 € | 67,081 € | 81,111 € | 6,653 € | 2,357 € | 0.8x | 10.1x | 24.6x |
| Average | | | | | | | 0.5x | 7.9x | 19.3x |
| Median | | | | | | | 0.5x | 7.1x | 16.6x |

Source: Reuters and own computations

To calculate Sonae's equity value, the EV/EBITDA and EV/SALES multiples were selected based on the average and median among the companies in the peer group. As shown in the table below, the EV/Sales multiple of 0.5x and the EV/EBITDA multiple of 7.9x were calculated. With the EV/EBITDA multiple, the Enterprise Value was 4.481 million euros, adding the net debt (Debt - Cash) gives an Equity Value of 2.621 million euros, around 1.31€ per share. With the EV/Sales multiple, an Enterprise Value of 7.831 million was obtained, which, when adding net debt, gives an Equity Value of 5.871 million, around €2.94 per share.

Table 12 – Equity value per share calculation using the multiples method.

| Metric | Comps | EV | Net Debt | Equity Value | Shares | Share Price |
|-----------|-------|---------|----------|--------------|-----------|-------------|
| EV/Sales | 0.5x | 4,581 € | 1,960 € | 2,621 € | 2,000,000 | 1.31 € |
| EV/EBITDA | 7.9x | 7,831 € | 1,960 € | 5,871 € | 2,000,000 | 2.94 € |
| | | | | | Average | 2.12 € |

Given that Sonae's share price is 0.90€ per share, this valuation method, like the DCF method, indicates that Sonae is undervalued.

7. RESULTS AND DISCUSSION

Based on the methodology applied in the two valuation models, an equity value of 8.784€ and a value per share of 4.39€ were obtained in the discounted cash flow model, using the free cash flow to the firm method, and an equity value of 4.246€ and a value per share of 2.12€ in the relative method. The table below shows the summary of the two valuation methods, as well as the absolute difference compared to Sonae's current share price on 31/12/2023.

Table 13 – Valuation methods results and absolute difference compared to Sonae stock price at Dec-23.

| Valuation Model | Value/Share | Absolute Difference |
|-----------------------------|-------------|---------------------|
| Free Cash Flow to the Firm | 4.39 € | 3.49 € |
| Relative Valuation | 2.12 € | 1.22 € |
| Sonae Stock Price at Dec-23 | 0.90 € | - |

As shown above in the methodology, in the discounted cash flow model, 3 possible cases were studied (Worst case, Base case and Best case) in the forecast of revenues, costs and investments, so the base case was used to calculate the value considered, to avoid being too optimistic or pessimistic. In addition, Sonae's capital structure was assumed to remain constant, and the terminal value was calculated using the average of two common methods, the EBITDA Multiple and the Perpetual growth method, as there is no common opinion as to which method is the most appropriate.

Both capital structure and terminal value are important parameters in the calculation of equity value, and in addition to the sensitivity analysis already carried out on the WACC and terminal growth rate parameters, it is also important to analyze the impact of these two additional parameters on Sonae's value per share. As detailed below:

Equity Value per Share

| | Terminal Value method | | |
|---------------------|-----------------------|----------------|-------------------------|
| | EBITDA Multiple | Average Method | Perpetual Growth Method |
| Terminal Value (M€) | 11,297 | 14,324 | 17,350 |
| Base Case (€/share) | 3.63 | 4.39 | 5.16 |

Equity Value per Share

| | | Capital Structure (Debt/Equity) | | |
|-----------|-----------|---------------------------------|-------|-------|
| | | 100% | 150% | 180% |
| WACC | | 7.15% | 7.07% | 7.02% |
| Base Case | (€/share) | 4.31 | 4.39 | 4.43 |

Figure 16 – Sensitivity Analysis 2.

As shown in the sensitivity analysis, the value per share varies significantly depending on the method used, with €3.63 per share obtained using the EBITDA Multiple method and €5.16 per share in the Perpetual growth method, *ceteris paribus*. The terminal value obtained in this methodology is around 26% higher compared to EBITDA Multiple method and around 21% lower than the perpetual growth method. Regarding the capital structure, we see less variation in the value per share and in the WACC.

Sonae's share price on 31/12/2023 is €0.90 per share, significantly below the values obtained in the two methods. It is important to understand that the values obtained in the methodology are based on assumptions and methods made by the author that are considered appropriate for the correct valuation of Sonae. As seen above, depending on the case chosen and the terminal value method chosen, the value per share varies considerably.

Other possible reasons for the significant difference between the values obtained in the methodology compared to Sonae's share price could be the fact that Sonae is a conglomerate and can be traded at a discount, i.e. it may have a conglomerate discount, but there is no common opinion on its application and therefore it was not considered in the valuation.

Another reason could be the fact that Sonae has low profit margins, which is explained by the nature of its operation but from an investment perspective could lead to undervaluation in the market. Finally, another reason is the possible low confidence of investors in Sonae's decisions and management.

8. CONCLUSIONS AND FUTURE WORKS

As previously mentioned, the aim of this project is to determine the fair value per-share of Sonae SGPS S.A. on 31/12/2023 and, using the value obtained to produce an investment opinion taking into account the price of Sonae's shares on 31/12/2023. In order to support the valuation, an analysis of the Sonae group was made, in which it analyzed not only the group's companies but also the main industry in which it operates, the retail industry. Also, the macroeconomic context in Portugal and Europe and its historical data were analyzed. Regarding the valuation models, the Free cash flow to the firm was used, from which an equity value of €8,784 and a value per share of €4.39 were obtained. The relative valuation was also used, namely multiples valuation, which gave an equity value of €4.246 and a value per share of €2.12.

Taking in consideration that Sonae is quoted at around €0.90 per share on 31/12/2023, and given that in both valuation methods, the value per share obtained is higher than its share price, it is possible to conclude that Sonae SGPS S.A on 31/12/2023 is undervalued, and therefore the author's opinion on a possible investment in the company is: buy.

It is important to mention that the valuation carried out cannot be seen as absolute certainty, but rather as an estimate of value in which its fair value may be above or below the figures presented. Given that the valuation is fundamentally based on historical data and assumptions for the future, it is linked to a certain level of uncertainty, given that the long-term forecasts made may not come true due to changes in the industry, changes in Sonae's management or even a worsening of the macroeconomic situation in the future. The analysis of its historical data, although fundamental for estimating future assumptions, must take into account that past results do not mean that the same results will materialize in the future.

Given that the valuation was also based on an analysis of the annual financial statements for 2023 and the Q1 results for 2024, it is important to keep an eye on the stock market throughout the year, both on the variation in its share price and on the results published in the future, in order to make an investment with greater certainty.

BIBLIOGRAPHICAL REFERENCES

- Banco de Portugal. (2024) Economic bulletin. Accessed on June 22, 2024. Available at: <https://www.bportugal.pt/en/page/economic-bulletin-march-2024>
- Banco de Portugal. (n.d.). Quadros do setor. Accessed on June 22, 2024. Available at: <https://www.bportugal.pt/QS/qsweb/Dashboards>
- CI&T. (2024). CI&T apresenta tendências de retalho para 2024. Accessed on February 15, 2024. Available at: <https://ciandt.com/pt/pt-pt/press-release/tendencias-de-retalho-2024>
- Corporate Finance Institute. (n.d.). Sum of the parts (SOTP) valuation. Retrieved from <https://corporatefinanceinstitute.com/resources/valuation/sum-of-the-parts-sotp-valuation/>
- Cushman & Wakefield. (2024). European economic outlook 2024: The tide is turning. Cushman & Wakefield.
- Damodaran, A. (2011). The Little Book of Valuation. John Wiley & Sons.
- Damodaran, A. (2012). Investment Valuation. John Wiley & Sons.
- Damodaran, A. (n.d.). Discounted cash flow valuation: The inputs. Retrieved from www.damodaran.com
- Damodaran. (2024) Historical growth rate in earnings by industry. Accessed on June 22, 2024. Available at: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html
- Damodaran. (2024) Implied equity risk premiums. Accessed on June 22, 2024. Available at: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html
- Damodaran. (2024) Levered and unlevered betas by industry. Accessed on June 22, 2024. Available at: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html
- Damodaran. (2024) Risk premiums for other markets. Accessed on June 22, 2024. Available at: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html
- Deloitte. (2023). O reinado do consumidor: A experiência digital. Commerce & Last Mile 2023: Estudo sobre experiência de compra online e de operações last mile. Associação Portuguesa de Logística.
- Economist Intelligence Unit. (2023). Consumer goods and retail outlook 2024: Higher footfall amid depleted savings. The Economist Intelligence Unit Limited.

Euronext. (n.d.) Sonae. Accessed on June 22, 2024. Available at: <https://live.euronext.com/pt/product/equities/ptson0am0001-xlis>

European Commission. (2024) Economic forecast for Portugal. Accessed on June 22, 2024. Available at: https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/portugal/economic-forecast-portugal_en

European Commission. (2024) European economic forecast. Accessed on June 22, 2024. Available at: https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/portugal/economic-forecast-portugal_en

European Commission. (2024). European economic forecast: Winter 2024 (Interim) (Institutional Paper 268). Publications Office of the European Union.

Eurostat. (2023). E-commerce statistics. Accessed on February 24, 2024. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics

Eurostat. (2023). Retail trade volume index overview. Accessed on November 23, 2023. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Retail_trade_volume_index_overview

Eurostat. (n.d.). HICP - monthly data (annual rate of change). Accessed on March 06, 2024. Available at: <https://www.bportugal.pt/QS/gswweb/Dashboards>

Eurostat. (n.d.). Real GDP growth rate - volume. Accessed on March 11, 2024. Available at: <https://ec.europa.eu/eurostat/databrowser/view/tec00115/default/table?lang=en>

Eurostat. (n.d.). Unemployment by sex and age – monthly data. Accessed on March 06, 2024. Available at: https://ec.europa.eu/eurostat/databrowser/view/UNE_RT_M_custom_5254775/default/table

Fernandez, P. (2013). Company valuation methods. IESE Business School, University of Navarra.

Gomes, J. A. (2024). A crescer como a Sonae, PIB per capita já superava Espanha. ECO. <https://eco.sapo.pt/2024/05/16/se-portugal-crescesse-como-sonae-pib-per-capita-seria-maior-que-o-espanhol-revela-estudo/>

Havnaer, K. (2012). DCF VS MULTIPLES. Lake Oswego, OR: Jensen Investment Management.

Inc, M. C., Koller, T., Goedhart, M., & Wessels, D. (2020). Valuation. John Wiley & Sons.

International Monetary Fund. (2023). Regional economic outlook: Europe: Restoring price stability and securing strong and green growth. International Monetary Fund.

International Monetary Fund. (2024). World economic outlook update: January 2024.

Jessica Moulton. (2024). An update on European consumer sentiment: Mixed feelings remain. Mckinsey & Company. Accessed on January 27, 2024. Available at: <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/an-update-on-european-consumer-sentiment#/>

Larrabee, D. T., & Voss, J. A. (2012). Valuation Techniques. John Wiley & Sons.

Lee, C. M. C. (2003). Choosing the Right Valuation Approach. AIMR Conference Proceedings.

Mauboussin, M. J., & Callahan, D. (2023). Cost of capital: A practical guide to measuring opportunity cost. Morgan Stanley.

Moody's Analytics (2024). Economic Indicators. Accessed on May 06, 2024. Available at: <https://www.economy.com/portugal/>

Morningstar. (2024). Morningstar DBRS Confirms Republic of Portugal at "A", Stable Trend. Accessed on March 11, 2024. Available at: <https://dbrs.morningstar.com/research/426956/morningstar-dbrs-confirms-republic-of-portugal-at-a-stable-trend>

Morningstar. (n.d.) Sonae. Accessed on June 22, 2024. Available at: <https://www.morningstar.com/stocks/xlis/son/valuation>

Musti Group. (2023). Annual Report 2023. Musti Group.

OECD. (n.d.). Economic outlook. Accessed on March 11, 2024. Available at: <https://www.oecd.org/economic-outlook/november-2023/>

Pignataro, P. (2013). Financial Modeling and Valuation. John Wiley & Sons.

Pinto, J. E., Henry, E., Robinson, T. R., & Stowe, J. D. (2010). Equity Asset Valuation Workbook. John Wiley & Sons.

Reuters. (n.d.) Sonae. Accessed on June 22, 2024. Available at: <https://www.reuters.com/markets/companies/YSO.LS>

Sonae SGPS, SA. (2018). Annual Report 2018. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2019). Annual Report 2019. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2020). Annual Report 2020. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2021). Annual Report 2021. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2022). Annual Report 2022. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2023). Annual Report 2023. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2024). 1st Quarter Report 2024. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2024). Apresentação Resultados 2023. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/financial-information/financial-data/>

Sonae SGPS, SA. (2024). Last Announcements. Accessed on June 22, 2024. Available at <https://sonae.pt/en/investors/releases-to-the-market/>

Sonae. (2024). Apresentação Resultados 2023. Sonae.

Sonae. (n.d.). History. Retrieved June 19, 2024, from <https://sonae.pt/en/sonae/history/>

Sonae. (n.d.). O grupo e os negócios. Retrieved June 19, 2024, from <https://sonae.pt/pt/sonae/o-grupo-e-os-negocios/>

Statista (2024). Market insights – Food Europe. Accessed on June 10, 2024. Available at: <https://www.statista.com/outlook/cmo/food/europe?currency=USD>

Value Investing. (n.d.) Sonae. Accessed on June 22, 2024. Available at: <https://valueinvesting.io/SON.LS/overview>

APPENDIX A – RECEIVABLE, PAYABLE AND INVENTORY DAYS ANALYSIS

Source: Annual reports and own computations

| | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A |
|------------------------|-------|-------|-------|-------|-------|-------|
| Days in Period | 365 | 365 | 365 | 365 | 365 | 365 |
| Revenue | 5,891 | 6,435 | 6,673 | 7,023 | 7,693 | 8,399 |
| COGS | 4,053 | 4,342 | 4,593 | 4,760 | 5,276 | 5,784 |
| AMOUNTS IN DAYS | | | | | | |
| Accounts Receivable | 9 | 7 | 8 | 7 | 6 | 6 |
| Inventory | 60 | 56 | 51 | 49 | 50 | 50 |
| Accounts Payable | 116 | 112 | 106 | 103 | 99 | 91 |

APPENDIX B – WEIGHTED AVERAGE COST OF CAPITAL (WACC) CALCULATION

| Risk Premium for Equity | | | Cost of Equity | |
|--------------------------|-------|---------------|---|---------------------------|
| Market Risk Premium | 6.35% | | Risk Free Rate | 2.8% |
| Unlevered Beta | 0.48 | | Equity Risk Premium | 7.4% |
| Levered Beta | 1.17 | | Country Risk Premium | 1.75% |
| Equity Risk Premium | 7.4% | | Cost of Equity | 12.0% |
| Capital Structure | | | Cost of Debt | |
| | | Target | Pre-Tax Cost of Debt | 3.97% |
| Total Debt | 2,671 | 60.0% | Tax Rate | 4.40% |
| Market Capitalization | 1,809 | 40.0% | After-Tax Cost of Debt | 3.8% |
| Total Capitalization | 4,480 | 100.0% | | |
| <i>Debt / Equity</i> | | 150.0% | Weighted Average Cost of Capital | |
| | | | | Weight Cost |
| | | | Debt Capital | 60.0% 3.8% |
| | | | Equity Capital | 40.0% 12.0% |
| | | | Weighted Average Cost of Capital | 7.07% |

APPENDIX C – REVENUE SCHEDULE

| Revenue Schedule | | | | | | | | | | | | | | | | |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| All figures in € millions | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
| RETAIL OPERATIONS | | | | | | | | | | | | | | | | |
| Sonae MC | 4,308 | 4,702 | 5,044 | 5,362 | 5,978 | 6,607 | 7,003 | 7,458 | 8,018 | 8,499 | 9,009 | 9,549 | 9,884 | 10,131 | 10,333 | 10,540 |
| Worten | 1,095 | 1,088 | 1,161 | 1,175 | 1,238 | 1,298 | 1,376 | 1,465 | 1,575 | 1,670 | 1,770 | 1,876 | 1,942 | 1,990 | 2,030 | 2,071 |
| OTHERS | | | | | | | | | | | | | | | | |
| Revenue | 488 | 645 | 467 | 487 | 477 | 494 | 502 | 512 | 522 | 532 | 543 | 554 | 565 | 576 | 588 | 600 |
| TOTAL REVENUE | 5,890.90 | 6,434.79 | 6,672.61 | 7,023.28 | 7,692.91 | 8,399.18 | 8,880.89 | 9,435.57 | 10,115.09 | 10,701.12 | 11,321.89 | 11,979.48 | 12,390.46 | 12,697.39 | 12,951.34 | 13,210.37 |

APPENDIX D – COST SCHEDULE

| Cost Schedule | | | | | | | | | | | | | | | | |
|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>All figures in € millions</i> | | | | | | | | | | | | | | | | |
| | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
| Revenue | 5,891 | 6,435 | 6,673 | 7,023 | 7,693 | 8,399 | 8,881 | 9,436 | 10,115 | 10,701 | 11,322 | 11,979 | 12,390 | 12,697 | 12,951 | 13,210 |
| Net Fixed Assets | 2,022 | 2,090 | 2,108 | 2,124 | 2,198 | 2,285 | 2,271 | 2,346 | 2,394 | 2,396 | 2,398 | 2,403 | 2,401 | 2,398 | 2,398 | 2,399 |
| Inflation | 1.0% | 0.3% | – | 1.3% | 7.8% | 4.3% | 2.3% | 1.1% | 1.1% | 1.4% | 1.6% | 1.7% | 1.8% | 1.8% | 1.8% | 1.8% |
| Cost of Goods Sold | | | | | | | | | | | | | | | | |
| Total | 4,053 | 4,342 | 4,593 | 4,760 | 5,276 | 5,784 | 6,066 | 6,445 | 6,924 | 7,318 | 7,754 | 8,202 | 8,475 | 8,687 | 8,863 | 9,040 |
| As % Revenue | 69% | 67% | 69% | 68% | 69% | 69% | 68% | 68% | 68% | 68% | 68% | 68% | 68% | 68% | 68% | 68% |
| Final COGS | 4,053 | 4,342 | 4,593 | 4,760 | 5,276 | 5,784 | 6,066 | 6,445 | 6,924 | 7,318 | 7,754 | 8,202 | 8,475 | 8,687 | 8,863 | 9,040 |
| Gross Margin | 31.20% | 32.52% | 31.16% | 32.22% | 31.42% | 31.13% | 31.69% | 31.69% | 31.55% | 31.62% | 31.52% | 31.53% | 31.60% | 31.58% | 31.57% | 31.57% |
| Operating Expenses | | | | | | | | | | | | | | | | |
| Total | 1,191 | 1,398 | 1,455 | 1,525 | 1,493 | 1,625 | 1,827 | 1,941 | 2,081 | 2,201 | 2,329 | 2,464 | 2,549 | 2,612 | 2,664 | 2,717 |
| As % Revenue | 20% | 22% | 22% | 22% | 19% | 19% | 21% | 21% | 21% | 21% | 21% | 21% | 21% | 21% | 21% | 21% |
| As % of Net Fixed Assets | 59% | 67% | 69% | 72% | 68% | 71% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% |
| Final OPEX | 1,191 | 1,398 | 1,455 | 1,525 | 1,493 | 1,625 | 1,827 | 1,941 | 2,081 | 2,201 | 2,329 | 2,464 | 2,549 | 2,612 | 2,664 | 2,717 |
| EBITDA margin | 10.97% | 10.80% | 9.35% | 10.51% | 12.00% | 11.79% | 11.12% | 11.12% | 10.98% | 11.05% | 10.95% | 10.96% | 11.03% | 11.02% | 11.00% | 11.00% |

APPENDIX E – ASSET SCHEDULE

| Asset Schedule | | | | | | | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <i>All figures in € millions</i> | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
| Number of Stores | 1,765 | 1,876 | 1,973 | 1,972 | 2,046 | 2,094 | 2,074 | 2,159 | 2,212 | 2,209 | 2,209 | 2,209 | 2,209 | 2,209 | 2,209 | 2,209 |
| NET FIXED ASSETS | | | | | | | | | | | | | | | | |
| As Ratio of Number of Stores | 1.15 | 1.11 | 1.07 | 1.08 | 1.07 | 1.09 | 1.10 | 1.09 | 1.08 | 1.08 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 | 1.09 |
| Total | 2,022 | 2,090 | 2,108 | 2,124 | 2,198 | 2,285 | 2,271 | 2,346 | 2,394 | 2,396 | 2,398 | 2,403 | 2,401 | 2,398 | 2,398 | 2,399 |

APPENDIX F – DEPRECIATION SCHEDULE

| Depreciation Schedule | | | | | | | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <i>All figures in € millions</i> | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
| Capital Expenditure | 311 | 316 | 264 | 279 | 357 | 443 | 1,156 | 569 | 581 | 594 | 602 | 578 | 585 | 588 | 589 | 588 |
| Net Fixed Assets | 2,022 | 2,090 | 2,108 | 2,124 | 2,198 | 2,285 | 2,271 | 2,346 | 2,394 | 2,396 | 2,398 | 2,403 | 2,401 | 2,398 | 2,398 | 2,399 |
| TOTAL DEPRECIATION | | | | | | | | | | | | | | | | |
| As % of Net Fixed Assets | 14% | 16% | 16% | 16% | 16% | 17% | 16% | 16% | 16% | 16% | 16% | 16% | 16% | 16% | 16% | 16% |
| Total Depreciation | 291 | 331 | 339 | 338 | 352 | 386 | 360 | 372 | 379 | 380 | 380 | 381 | 381 | 380 | 380 | 380 |

APPENDIX G – WORKING CAPITAL SCHEDULE

| Working Capital Schedule | | | | | | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| All figures in € millions | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
| Days in Period | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 |
| Revenue | 5,891 | 6,435 | 6,673 | 7,023 | 7,693 | 8,399 | 8,881 | 9,436 | 10,115 | 10,701 | 11,322 | 11,979 | 12,390 | 12,697 | 12,951 | 13,210 |
| COGS | 4,053 | 4,342 | 4,593 | 4,760 | 5,276 | 5,784 | 6,066 | 6,445 | 6,924 | 7,318 | 7,754 | 8,202 | 8,475 | 8,687 | 8,863 | 9,040 |
| AMOUNTS IN DAYS | | | | | | | | | | | | | | | | |
| Accounts Receivable | 9 | 7 | 8 | 7 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Inventory | 60 | 56 | 51 | 49 | 50 | 50 | 53 | 53 | 53 | 53 | 53 | 52 | 52 | 51 | 51 | 50 |
| Accounts Payable | 116 | 112 | 106 | 103 | 99 | 91 | 100 | 100 | 100 | 100 | 100 | 95 | 95 | 90 | 90 | 90 |
| TOTAL AMOUNTS (M€) | | | | | | | | | | | | | | | | |
| Accounts Receivable | 142 | 115 | 148 | 131 | 129 | 129 | 170 | 181 | 194 | 205 | 217 | 230 | 238 | 244 | 248 | 253 |
| Inventory | 671 | 664 | 636 | 634 | 727 | 799 | 881 | 936 | 1,005 | 1,063 | 1,126 | 1,168 | 1,207 | 1,214 | 1,238 | 1,238 |
| Accounts Payable | 1,287 | 1,338 | 1,339 | 1,347 | 1,435 | 1,442 | 1,662 | 1,766 | 1,897 | 2,005 | 2,124 | 2,135 | 2,206 | 2,142 | 2,185 | 2,229 |
| NET WORKING CAPITAL | | | | | | | | | | | | | | | | |
| Current Assets | 813 | 779 | 784 | 765 | 856 | 927 | 1,051 | 1,117 | 1,199 | 1,268 | 1,343 | 1,398 | 1,445 | 1,457 | 1,487 | 1,492 |
| Current Liabilities | 1,287 | 1,338 | 1,339 | 1,347 | 1,435 | 1,442 | 1,662 | 1,766 | 1,897 | 2,005 | 2,124 | 2,135 | 2,206 | 2,142 | 2,185 | 2,229 |
| Net Working Capital | (474) | (559) | (555) | (582) | (579) | (514) | (611) | (649) | (698) | (737) | (781) | (737) | (761) | (685) | (699) | (737) |
| Cash from Working Capital Items | | | | | | | | | | | | | | | | |
| | (85) | 4 | (27) | 3 | 64 | (96) | (38) | (49) | (40) | (44) | 45 | (24) | 76 | (14) | (39) | |

APPENDIX H – INCOME STATEMENT

| Income Statement | | | | | | | | | | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| All figures in € millions | | | | | | | | | | | | | | | | |
| Model Running: Base Case Drivers | | | | | | | | | | | | | | | | |
| | 2018A | 2019A | 2020A | 2021A | 2022A | 2023A | 2024F | 2025F | 2026F | 2027F | 2028F | 2029F | 2030F | 2031F | 2032F | 2033F |
| Inflation | 1.0% | 0.3% | – | 1.3% | 7.8% | 4.3% | 2.3% | 1.1% | 1.1% | 1.4% | 1.6% | 1.7% | 1.8% | 1.8% | 1.8% | 1.8% |
| Interest Expense | 130 | | | | | | | | | | | | | | | |
| Tax Rate | 4.4% | | | | | | | | | | | | | | | |
| Revenue | 5,891 | 6,435 | 6,673 | 7,023 | 7,693 | 8,399 | 8,881 | 9,436 | 10,115 | 10,701 | 11,322 | 11,979 | 12,390 | 12,697 | 12,951 | 13,210 |
| COGS | 4,053 | 4,342 | 4,593 | 4,760 | 5,276 | 5,784 | 6,066 | 6,445 | 6,924 | 7,318 | 7,754 | 8,202 | 8,475 | 8,687 | 8,863 | 9,040 |
| Gross Profit | 1,838 | 2,093 | 2,079 | 2,263 | 2,417 | 2,615 | 2,814 | 2,990 | 3,192 | 3,383 | 3,568 | 3,778 | 3,915 | 4,010 | 4,088 | 4,171 |
| Operating Expenses | 1,191 | 1,398 | 1,455 | 1,525 | 1,493 | 1,625 | 1,827 | 1,941 | 2,081 | 2,201 | 2,329 | 2,464 | 2,549 | 2,612 | 2,664 | 2,717 |
| EBITDA | 646 | 695 | 624 | 738 | 923 | 990 | 988 | 1,049 | 1,111 | 1,182 | 1,240 | 1,313 | 1,367 | 1,399 | 1,424 | 1,453 |
| Provisions and Impairments | 22 | 19 | 72 | 31 | 12 | 31 | 25 | 23 | 26 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Depreciation | 291 | 331 | 339 | 338 | 352 | 386 | 360 | 372 | 379 | 380 | 380 | 381 | 381 | 380 | 380 | 380 |
| EBIT | 334 | 345 | 213 | 369 | 559 | 573 | 603 | 655 | 705 | 778 | 835 | 908 | 961 | 994 | 1,020 | 1,048 |
| Interest | 98 | 110 | 106 | 106 | 95 | 124 | 130 | 112 | 113 | 115 | 119 | 118 | 115 | 116 | 117 | 117 |
| EBT | 236 | 235 | 107 | 263 | 464 | 449 | 473 | 543 | 592 | 663 | 716 | 790 | 846 | 878 | 903 | 931 |
| Total Tax | 19 | 20 | (8) | 6 | 18 | 22 | 21 | 24 | 26 | 29 | 31 | 35 | 37 | 39 | 40 | 41 |
| Net Income before Indirect results and minority interests | 217 | 215 | 114 | 257 | 446 | 427 | 452 | 519 | 566 | 634 | 685 | 755 | 809 | 839 | 863 | 890 |

ANNEX 1 – RETAIL (GROCERY AND FOOD) INDUSTRY GROWTH ANALYSIS

Source: Damodaran Website

| | CAGR in Net Income- Last 5 years | CAGR in Revenues- Last 5 years | Expected Growth in Revenues - Next 2 years | Expected Growth in Revenues - Next 5 years | Expected Growth in EPS - Next 5 years |
|---------------------------|-------------------------------------|-----------------------------------|---|---|--|
| Retail (Grocery and Food) | 19.88% | 11.72% | 15.64% | 52.98% | 10.26% |

ANNEX 2 - RETAIL FOOD REVENUE GROWTH FORECAST

Source: Statista

| | 2024F | 2025F | 2026F | 2027F | 2028F |
|-------------------------------------|-------|-------|-------|-------|-------|
| Retail food Revenue Growth Forecast | 6.23% | 5.85% | 5.69% | 5.29% | 5.40% |



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