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Equity Valuation of Sonae SGPS, S.A.

Gonçalo José Martins Sousa

Masters in Finance

Supervisor:

PhD Pedro Manuel de Sousa Leite Inácio, Assistant Professor,

Iscte-Iul

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Department of Finance

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Resumo

O principal objetivo deste projeto é estimar o valor da Sonae SGPS, S.A. e expressar uma opinião relativamente ao valor de mercado das suas ações. A Sonae é um dos maiores grupos empresariais portugueses, sendo constituída por diversas empresas que atuam em diferentes mercados. Consequentemente, o grupo Sonae pode ser considerado um grupo extremamente diversificado, o que torna a sua avaliação uma das mais complexas e desafiantes de entre as empresas portuguesas. Dada a atual situação pandémica, esta avaliação constitui uma oportunidade para analisar qual o impacto da pandemia no contexto económico português, nomeadamente, na Sonae. Em relação ao processo de avaliação, numa primeira fase serão identificados quais os principais modelos e métodos que se encontram a ser atualmente utilizados para avaliar empresas, e, para cada um destes modelos, serão identificadas as suas vantagens e desvantagens. Numa segunda fase, analisar-se-á o grupo Sonae. Começar-se-á por analisar todas as empresas pertencentes ao grupo, bem como a forma como a pandemia afetou os seus negócios e quais são as suas perspetivas futuras. Adicionalmente, com o objetivo de melhor compreender o contexto no qual o grupo opera, será analisada a principal indústria na qual a empresa se encontra presente. Finda esta análise, e dadas as caraterísticas do grupo, serão escolhidos os modelos de avaliação a aplicar com o intuito de obter uma avaliação eficaz e fidedigna. Tendo por base os resultados obtidos, será emitida uma opinião relativamente ao valor de mercado das ações da Sonae a 31.12.2020.

Palavras-chave: Sonae SGPS; PSI-20; Retalho; Avaliação de empresas; Múltiplos; Fluxos de Caixa Descontados

JEL Classification: G30; G32

Abstract

The main goal of this project is to estimate the Equity value of Sonae SGPS, S.A. and emit an opinion regarding the market value of its shares. Sonae is one of the biggest Portuguese groups and it contains several different business units. In consequence, it can be considered as an extremely well diversified entity, which makes its equity valuation one of the most complex and challenging among Portuguese companies. Additionally, having into consideration the current pandemic situation, this valuation also constitutes an opportunity to understand the impact of the coronavirus pandemic in the Portuguese economic context, particularly, in Sonae. Regarding the valuation process, firstly, we are going to identify which are the main models and methods that are currently being used to evaluate a company, and, for each one of those models, its advantages and drawbacks are identified. Secondly, we will analyze the group, specifically, identifying all its business units, analyzing how the coronavirus pandemic has affected them, and what are the company's future perspectives. Additionally, in order to understand better the context in which the group operates, we are going to analyze the main sector in which it is present. Once this analysis is completed, and given the characteristics of the group, it will be chosen which models to apply in order to obtain an accurate and reliable valuation. Based on the results obtained, we are going to emit an opinion regarding the market value of the stock at the end of 2020.

Keywords: Sonae SGPS; PSI-20; Retail; Corporate Valuation; Multiples; Discounted Cash Flows

JEL Classification: G30; G32

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Glossary

APV - Adjusted Present Value

CAPM - Capital Asset Pricing Model

DCF - Discounted Cash Flow

DDM - Dividend Discount Model

EBIT - Earnings before interest and taxes

EBITDA - Earnings before interest, taxes, depreciation, and amortisation

FCFE - Free Cash Flow to Equity

FCFF - Free Cash Flow to the Firm

FMCG - Fast-moving consumer goods

IQR - Interquartile Range

SOTP - Sum-of-the Parts

WACC - Weighted Average Cost of Capital

Introduction

The act of valuing a company is complex and sometimes subjective since different analysts may consider different assumptions, which could result in different outcomes regarding a company valuation.

In the last decades, we have observed the creation of large corporations and groups. Many of them are composed of several companies or business units, which transforms the process of valuing a company into a more challenging one. The diversification of the business has been a rule followed by several companies in order to reduce the total amount of risk associated with them. In Portugal, one of the best examples of a diversified company is Sonae. Its foundation occurred in 1959 and, at that time, it was operating exclusively in the wood processing industry. Over the years, it has expanded its business, and currently, it is present in numerous sectors like food retail, sports retail, financial services, telecommunications, fashion retail, electronics retail, technology, and real estate. It can be concluded based on the wide number of sectors in which it is present, that this is one of the most relevant and important companies in Portugal. According to Portuguese law, it is considered a public interest entity, which corroborates its importance in the Portuguese economic context.

One of the main goals regarding this project is to apply relevant valuation models to Sonae SGPS, S.A. in order to obtain an accurate equity valuation, which will allow stating an opinion regarding the value of Sonae's securities. Additionally, this project also pretends to analyze the impact of the coronavirus pandemic on the company and to conclude on how Sonae has been affected by this situation. Hence, this project constitutes an opportunity to understand the current situation of one of the largest and prestigious Portuguese companies.

Furthermore, an accurate and reliable outcome regarding the company valuation will provide useful information for stakeholders, namely, investors, who intend to decide which action to undertake, in order to maximize the results regarding their investments. As well as shareholders, who can assess the fair value of their positions; and other stakeholders who are interested in the company and are directly dependent or affected by its performance, such as, customers, suppliers, employees and government.

In order to assess the company's value, it will be identified in the Literature Review, which models are being currently used to perform equity valuations and which models are considered as the most reliable ones by valuation authorities. For instance, it will be analyzed the Discounted Cash Flow model and the Relative Valuation model. Regarding the Discounted Cash Flow model, it will be studied its different approaches, namely, the Free Cash Flow to the Firm (FCFF), the Free Cash Flow to Equity (FCFE), the Adjusted Present Value (APV), and the Dividend Discount Model (DDM). For each one of the previously announced models, it will be referred not only how to compute the value of a company, but also its advantages and drawbacks according to the authors.

After the Literature Review, a detailed analysis of the company will be done. It will begin with a general overview of the company where all its business areas will be identified, subsequently, for each one of these business areas, it will be analyzed its current situation, how the coronavirus pandemic affected its activity and what are its future perspectives.

Due to the high number of sectors in which the company is present, it will be analyzed which sectors contribute the most to Sonae's turnover in order to understand the main sources of value. Then, it will be examined the main industry in which the company is present in order to better understand the context in which the company operates.

As soon as the industry analysis is completed, the models identified in the Literature Review will be applied in order to obtain an estimate regarding the Equity value of the company. Throughout the analysis, three different valuation models will be applied, to be specific, it will be applied two models based on the Discounted Cash Flow method, and it will be applied one model based on the Relative Valuation method. Regarding the Discounted Cash Flow method, it will be considered the Free Cash Flow to the Firm approach and the Divided Discount Model approach, whereas in relation to the Relative Valuation method the estimate for Sonae's Equity value will be obtained according to the Price-to-earnings ratio.

By the end of this project, and having into consideration the results obtained, it will be achieved its main goal, which is to produce an opinion regarding the value of Sonae's securities, namely, if its shares are undervalued or overvalued.

Literature Review

From investors who aim to maximize the outcome of their investments, to managers who pretend to satisfy the shareholders' interests, "knowing what an asset is worth and what determines that value" (Damodaran, 2006, p.18) is crucial to maximize the results from the decision-making process. However, it is important to distinguish value from price, since they represent two different concepts (Pablo Fernandez, 2019a). Regarding, for example, a company's value, Pablo Fernandez (2019a), refers that the value of a company may differ from analyst to analyst since different analysts may attribute different values to the company's characteristics. On the other hand, a company's price just represents an amount accorded between a buyer and a seller (Pablo Fernandez, 2019a).

Over the years, various models have been developed and improved in order to obtain more accurate and reliable valuations. Charles Lee (2003) divides the available valuation techniques into direct valuation methods and Relative Valuation methods. The approaches based on the balance sheet, contingency claims and forecasted cash flows are classified as direct valuation methods, while the use of market multiples is classified as a Relative Valuation method.

1. Balance sheet-based methods

In accordance with the balance sheet-based methods, the company's value depends on the value that is estimated for its assets (Pablo Fernandez, 2019a). It assumes an accounting point of view since the value of the assets is obtained based on the company's balance sheet. Consequently, it ignores the future development of the company (Pablo Fernandez, 2019a) and this can be considered as one of the major drawbacks regarding the use of these valuation methods.

The following valuation methods are considered as balance sheet-based methods: Book Value, Adjusted Book Value, Liquidation Value and Substantial Value (Pablo Fernandez, 2019a).

1.1 Book Value

The Book Value of a company corresponds to the difference between the total value of its assets and the total value of its liabilities (Pablo Fernandez, 2019a). The two major downsides of this method referred by Pablo Fernandez (2019a) are the fact that due to relying on an accounting criterion it will always be subject to some subjectivity and that, in most of the cases, the Book Value of a company differs from its market value.

1.2 Adjusted Book Value

Pablo Fernandez (2019a), states that the Adjusted Book Value is a method designed in order to surpass the limitations that emerge when accounting criteria are used exclusively. The Adjusted Book Value of a company is obtained when the assets and liabilities are adjusted in order to reflect their true market values instead of their book values (Pablo Fernandez, 2019a).

1.3 Liquidation Value

The liquidation value corresponds to the value that will be obtained if the company shuts down its activity, or in other words, it corresponds to the value obtained if its assets were sold and all financial obligations paid (Pablo Fernandez, 2019a). Besides that, it should consider the expenses that will arise from the liquidation process, namely, employees' compensations and other liquidation costs (Pablo Fernandez, 2019a). As referred by Pablo Fernandez (2019a), the utility of the method is restricted to very specific situations, particularly, when the objective is to end the company's activity.

1.4 Substantial Value

The Substantial Value can be interpreted as the value that would be necessary to create a company similar to the one that is being valued (Pablo Fernandez, 2019a). Usually, when computing the Substantial Value, it is not considered the value of the assets that are not used by the company in its operations, for example, participations in other companies and unused machinery (Pablo Fernandez, 2019a).

2. Discounted Cash Flow

According to the Discounted Cash Flow (DCF) method, the value of a company depends on its future cash flows. This means that the current value of a company is equal to the present value of the expected cash flows that will be generated by the company. The present value of a cash flow is obtained by discounting back the future cash flow at an appropriate discount rate, this means, a rate that truly reflects the risk associated with these cash flows (Damodaran, 2006). Mathematically (Damodaran, 2006):

$$Value\ of\ a\ firm = \frac{E(CF_1)}{(1+r)} + \frac{E(CF_2)}{(1+r)^2} + \cdots + \frac{E(CF_n)}{(1+r)^n} \tag{1}$$

$Where$:

$E(CF_t) = Expected\ Cash\ Flow\ in\ period\ t$

$r = Discount\ Rate$

$n = Number\ of\ periods$

2.1 Free Cash Flow to the Firm

The Free Cash Flow to the Firm (FCFF) is one of the possible approaches regarding the use of the Discounted Cash Flow method; through this approach, we obtain the value of the firm (Damodaran, 2006). The FCFF "is the cash flow available to the company's suppliers of capital after all operating expenses (including taxes) have been paid and necessary investments in working capital (e.g. inventory) and fixed capital (e.g. equipment) have been made" (Pinto et al, 2007, p.147). After obtaining the value of the future cash flows, we should discount them at a rate that correctly reflects the cost of capital. One of the possible hypotheses is to use the Weighted Average Cost of Capital or simply WACC (Damodaran, 2006) as the adequate discount rate. The WACC could be computed according to the following formula (Pinto et al, 2007):

$$WACC = \frac{MVD}{(MVD + MVCE)} * Rd(1 - Tax\ Rate) + \frac{MVCE}{(MVD + MVCE)} * R \tag{2}$$

$Where$:

$MVD\ =\ Current\ market$ value of debt

$MVCE\ =\ Current\ market\ value\ of\ common\ equity$

$Rd = Cost\ of\ debt$

$R = Rate\ of\ return\ required\ by\ equity\ holders$

As mentioned by Pablo Fernandez (2019c) some of the most commons errors, regarding the computation of the WACC, are the use of an incorrect tax rate, the use of debt and equity book values instead of market values and the assumption of an incorrect capital structure.

The DCF method using the FCFF and the WACC as the discount rate was widely used in the 1970s, and, at that time, it was considered the best approach for valuing corporate assets (Luehrman, 1997).

2.2 Free Cash Flow to Equity

Through the Free Cash Flow to Equity (FCFE) approach, we only obtain the value of the equity stake of a company (Damodaran, 2006). The FCFE "is 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, 2007, p.147). Then, we should discount the FCFEs at a rate that accurately reflects the cost of equity (Damodaran, 2006).

Regarding the FCFF and FCFE approaches, and independently of the chosen one, the results of the valuation should be the same, i.e., the Equity value obtained through the FCFE approach should be equal to the firm value obtained through the FCFF approach minus the value of all non-equity claims (Damodaran, 2006).

2.3 APV

A third variant of the DCF method is the Adjusted Present Value (APV) approach, which is broadly used. In this variation, the effects obtained regarding the use of debt are separated from the value of the assets (Damodaran, 2006). Mathematically (Damodaran, 2006):

$$\begin{aligned} \mathit{Value\ of\ business} \\ &= \mathit{Value\ of\ business\ with\ } 100\% \mathit{\ equity\ financing} \\ &+ \mathit{Present\ value\ of\ expected\ tax\ benefits\ of\ debt} \\ &- \mathit{Expected\ bankruptcy\ costs} \end{aligned} \tag{3}$$

2.4 Dividend Discount Model

Williams (1938) splits the security market between investors who intend to hold securities expecting income from its dividends, or coupons and principal, and speculators who hold securities expecting to profit from their trading with other speculators or investors. Regarding investors, they will only buy securities that they think, based on their valuations, their future inflows will overcome the value of the investment. So, based on that, its concluded that all securities' prices depend on estimates for their future incomes. To summarize, the current value of a stock could be defined as the present value of its future dividends. Mathematically (Damodaran, 2006):

$$\mathit{Value\ per\ share} = \sum_{t=1}^{t=+\infty} \frac{E(DPS_t)}{(1+K_e)^t} \tag{4}$$

$Where$:

$DPS_t = \mathit{Expected\ dividends\ per\ share\ in\ period\ } t$

$K_e = \mathit{Cost\ of\ Equity}$

3. Inputs

Regardless of the different DCF variation chosen, there are two inputs that are always needed, namely, the discount rates and the expected cash flows.

3.1 Discount rates

In relation to the discount rates, as previously referred, they should reflect the risk associated with the cash flows. The higher the risk associated with a cash flow, the higher should be its discount rate; in the same way, the smaller the risk associated with a cash flow, the smaller should be its discount rate (Damodaran, 2006). In his book "Damodaran on Valuation", Damodaran refers to two ways in which the concept of risk could be seen. Firstly, he states that risk could be defined as the probability that a company will default when confronted with a financial obligation, and he classifies this type of risk as default risk. This risk directly affects the cost of debt, which means that the higher the amount of default risk, the higher will be the cost of debt demanded by the debtholders.

Secondly, he states that risk could also be interpreted as the deviation of real returns around expected returns. A higher deviation is associated with higher uncertainty and consequently with bigger risk. Hence, the higher the deviation of real returns around expected returns the higher should be the discount rate associated with a cash flow. In the same way, the smaller the variation of real returns around expected returns the smaller the risk and consequently the smaller should be the discount rate.

3.1.1 Cost of equity

The cost of equity could be interpreted as the rate of return that is expected on the company's common stock (Brealey et al, 2011), and it could be estimated through the Capital Asset Pricing Model (Brealey et al, 2011). This is a broadly accepted method for estimating the cost of equity (Pinto et al, 2007).

Mathematically, (Brealey et al, 2011):

$$Expected\ stock\ return = r_f + \beta(r_m - r_f) \tag{5}$$

$Where$:

$r_f = Risk - free\ interest\ rate$

$\beta = Beta\ of\ the\ company's\ stock$

$r_m = Market\ return$

The Beta of the company's stock, *id est*, the Levered Beta, represents the risk associated with the business in which the company operates and the risk arising from its financial leverage (Damodaran, 2006). If the company's debt does not have market risk, the Levered Beta can be computed according to the following formula (Damodaran, 2006):

$$\beta_L = \beta_u[1 + (1 - t)\frac{D}{E}] \tag{6}$$

$Where$:

$\beta_L = Levered\ beta\ for\ equity\ in\ the\ firm$

$\beta_u = Unlevered\ beta\ of\ the\ firm\ (i.e., the\ beta\ of\ the\ firm\ without\ any\ debt)$

$t = Marginal\ tax\ rate\ for\ the\ firm$

$\frac{D}{E} = Debt - to - equity\ ratio\ (in\ market\ value\ terms)$

3.1.2 Cost of Debt

The cost of debt is one of the required inputs in order to compute the WACC. This input can be characterized as the rate that a firm pays its loans and other similar financing alternatives that are used in order to finance its assets (Damodaran, 2006).

3.2 Expected cash flows

In what concerns the expected cash flows, it is needed to determine not only their value but also the moment at when they will occur. Regarding the future cash flows, one of the biggest sources of uncertainty is the estimation of their expected growth (Damodaran, 2006). Aswath Damodaran, identifies three ways in which it is possible to estimate the growth of the future cash flows. One way is based on historical values, namely, based on the past growth rates of the company. However, this approach may be deceptive, because past growth could be very distinct from future growth, since what happened in the past may no longer be valid for the future. A second way is based on estimates for growth provided by informed sources, such as a company's Board of Directors or specialists external to said firm. Finally, in the third way, the expected growth is based on two variables, the amount of earnings reinvested in the company and how well they are reinvested. In the FCFE approach, the expected growth rate is obtained through the multiplication of the retention ratio by the return on equity generated by the projects that will be undertaken with that investment. The retention ratio can be understood as the percentage of the net income that is not distributed to stockholders. In the FCFF approach, the expected growth rate is obtained through the multiplication of the reinvestment rate by the return on capital generated by the projects that will be undertaken with that investment. The reinvestment rate is defined as the portion of after-tax operating income that is invested into new projects.

4. Advantages and drawbacks regarding the DCF

Regarding the use of approaches based on the Discounted Cash Flow method, one of the many advantages is that an accurate valuation forces the analyst to comprehend and understand both the business of the company and its value creation. Otherwise, wrong assumptions regarding the future cash flows and risk might be made (Damodaran, 2006). On the other hand, one of the major drawbacks is that valuations obtained based on Discounted Cash Flow approaches can easily differ from the intrinsic value of a company if wrong assumptions are made (Damodaran, 2006). Additionally, Discounted Cash Flow approaches require larger amounts of information when compared with other models (Damodaran, 2006).

5. Relative Valuation

Relative Valuation is a valuation method based on the income statement of the company. Through this method, the company's value is determined according to its revenue, earnings, or other variables (Pablo Fernandez, 2019a). This method uses multiples from comparable companies in order to determine the value of a firm, since the rationale behind this approach is that similar assets should have similar prices (Damodaran, 2006). According to Pablo Fernandez (2019b) the most used multiples are the Price-to-earnings ratio (PER) and the Enterprise value-to-EBITDA (EV/EBITDA).

6. Advantages and limitations regarding Relative Valuation

Regarding Relative Valuation, one of its biggest advantages is that when compared with other approaches it requires less information and it is less time-consuming (Damodaran, 2006). In addition, it is a more straightforward approach due to implying fewer assumptions when compared with the Discounted Cash Flow approach. This characteristic makes it easier to defend (Damodaran, 2006). However, the major drawback regarding the use of the Relative Valuation is that because of its simplicity it ignores important aspects such as potential growth and risk (Damodaran, 2006). Additionally, since it is an approach based on market values, it may produce undervalued or overvalued results according to the current market sentiment (Damodaran, 2006).

7. Holding companies

In Portugal, the Decree-Law n. º 495/88 defines the legal framework for holding companies. According to its first article, the only contractual objective of a holding company is to manage social participations in other societies, as an indirect exercise of economic activities. The same article defines that, in order to be considered an indirect exercise of economic activities, the participation should be at least 10 percent and should not have an occasional character, which means that the holding company should keep its participation in the subsidiary for a period higher than one year.

So, based on the premise that a holding company could have participations in several different companies, and that these companies could belong to different sectors, or even if they belong to the same sector, they could have different specificities, it is raised a great challenge regarding a holding company valuation. One way in which we can value a company composed of different business units is based on a valuation methodology known as Sum-of-the Parts (SOTP) valuation (Goedhart et al, 2015).

7.1 Sum-of-the-Parts (SOTP) Valuation

The Sum-of-the-Parts is a valuation method in which the total value of a company is obtained through the sum of the value of the different business units that compose that company, considered as independent entities (Pinto et al, 2007).

One of the advantages regarding the use of this valuation method is that it will be obtained a more precise valuation of the entire company since each business unit or segment has its own characteristics (Goedhart et al, 2015). Additionally, valuing a company through the Sum-of-the-Parts allows us to understand better how value is being created.

7.2 Conglomerate discount

Berger and Ofek (1995) studied the impact of diversification on firms' value. Through estimating the value of a diversified firm as if its business segments operate as independent entities, they concluded that diversification reduces value. According to the authors, the average loss ranges from 13% to 15%. However, they also conclude that when diversification occurs within similar or related sectors this impact is attenuated.

Identically, Ammann, Hoechle, and Schmid (2011) also studied the existence of a conglomerate discount and analyzed its most prominent explanations. Firstly, the authors studied how diversification contributes to reduce risk and if such effect impacts the conglomerate discount. They referred that, as long as market rates remain constant, changes in the value of debt (increases/decreases) can exist only if changes in the diversification degree occur (increases/decreases). Besides that, their results also point out that conglomerate discount increases with leverage and that there is no conglomerate discount for all-equity firms.

Finally, in the same study, the authors estimate a conglomerate discount that ranges from 11% to 21% for the analyzed data.

8. Considerations when choosing a valuation model

In order to obtain an effective and accurate valuation, it is crucial to choose the most appropriate model. According to Pinto et al (2007), an adequate valuation model should satisfy the following conditions: Be congruent with the attributes of the entity that is being valued, adequate regarding the data available, and coherent regarding the analyst's valuation objectives and point of view.

Methodology

The estimates for Sonae’s Equity value will be obtained through the application of models that are considered references by valuation authorities. Additionally, the inputs that sustain these models are objective numbers, which indicates that the methodology followed is essentially a quantitative one.

Regarding the valuation models, they are meticulously described in the Literature Review and all the necessary information was gathered through books and academic papers written by valuation authorities.

In what concerns the models’ inputs, the two major data sources will be Sonae's annual report and Bloomberg. Since most of the inputs can be directly obtained from these data sources, they are not susceptive to a subjective analysis. However, there are inputs that cannot be directly obtained and require some assumptions. For instance, when determining the perpetual growth rate in the application of the Free Cash Flow to the Firm valuation approach, it was considered the historical growth rate as a basis to determine what will be the future growth rate. In this circumstance, it was considered the average growth rate of the Operating Income over the last five years as guesstimate to Sonae’s Free Cash Flow to the Firm future growth rate. When considering the Operating Income as reference to estimate Soane’s future growth the focus relies on Sonae’s activity and the effects arising from all non-operating activities are excluded. The same rational was applied when estimating the expected growth rate of Sonae’s future dividends. In this specific case, the expected growth rate was defined in accordance with the average growth rate of Sonae’s dividends over the last five years. In that way the years in which Portugal was affected by the economic crisis were excluded and even so it was still considered a significant period.

Regarding Relative Valuation, Sonae’s peer group was defined by Bloomberg Intelligence. However, in order to obtain a reliable valuation estimate, the outliers were identified and excluded from the initial peer group. To find the outliers it was used the Interquartile Rule, which defines the lower bound and the upper bound in accordance with the interquartile range (IQR). Thus, the lower bound is obtained by subtracting 1.5 times the IQR to the first quartile, and the upper bound is obtained by adding 1.5 times the IQR to the third quartile. Consequently, all values below the lower bound or above the upper bound were excluded from the initial peer group.

Sonae overview

1. Historical analysis

According to both, its annual report and its website, Sociedade Nacional de Estratificados (Sonae) was created in 1959 and, at that time, it produced, exclusively, wood processed goods. Twenty-four years later, in 1983, it was founded Sonae Investimentos, SGPS, S.A. and the company entered the capital market achieving a capitalization value of approximately 2.5 million euros.

In 1985, took place the opening of the first hypermarket in Portugal, which represents Sonae's entry into the food retail business (currently Sonae MC), just four years later, in 1989, Sonae began its activity in the real estate sector (currently Sonae Sierra), launching its first two shopping centers (Portimão and Albufeira).

Throughout the 1990's, Sonae increased and diversified its investments, creating new brands focused on specialized retail, such as fashion (Modalfa, currently named by MO), sports (SportZone), building materials and tools (Maxmat), consumer electronics (Worten). Besides that, in 1998, it was set up Optimus, a telecommunication company, which corroborates the diversification of the business carried out during this period.

Regarding Optimus, in 2013, this company merged with Zon setting up NOS. In 2020, Sonae strengthened its position in NOS, holding 33.45% of the company by the end of the year. NOS is one of the main communication companies operating in Portugal, according to Sonae's annual report, since the mentioned merge, the financial and operating performance of the company has been consistent and above the expectations, which resulted in an increasing market share over the years.

Over the last few years, Sonae has been following the same strategy that was implemented during the 1990's. As of example, in an attempt of expanding and diversifying its business, in 2007 Sonae acquired Carrefour Portugal. In 2015 created Sonae Financial Services and launched the Universo Card, which is a credit card and actually represents Sonae Financial Services' main product. In 2016, Sonae acquired 51% participation in the company Go Natural, which is a supermarket focused on healthy and biological food and in the same year acquired 50% of Salsa Capital. In 2017, Sonae opened its first medical clinic specialized in dental and aesthetic medicine (Dr. Well's) and, in 2018, acquired 60% of the company Arenal Perfumerías, a retail company focused on beauty and self-care products.

As result of the innumerous acquisitions and efforts in expanding its operations, Sonae has become a company with a strong presence in the national market. As an example, according to the company Brand Finance, which can be considered one of the world's leading brand valuation consultancy, the brand Continente (Sonae MC) is the 7Th most valuable brand in Portugal with an estimated value of 508 million euros in 2020, whereas in 2019 its estimated brand value was 468 million euros.

2. Company outlook

As stated by its code of ethics and conduct, Sonae's mission is "to create long-term economic and social value, taking the benefits of progress and innovation to an ever-increasing number of people". Sonae's chairperson, in its annual letter, reinforces this message highlighting the importance of adopting sustainable strategies and focusing on the creation of long-term value.

According to its annual report, in 2020, the company had a turnover, at a statutory level, of 6.8 billion euros, which represents an increase of 6.1% when compared with 2019. However, the earnings before interest, taxes, depreciation, and amortisation (EBITDA) decreased by 1.3% year-over-year to 593 million euros. Finally, Sonae's net result was 56 million euros in 2020, which represents a decrease of 76.3% when comparing with the homologous period. This decrease results from the poor performance attained, in 2020, by some of the companies that belong to Sonae's portfolio, namely, NOS, Sonae Sierra, and Iberian Sports Retail Group. Besides that, in 2020, there were constituted extraordinary provisions related to the coronavirus pandemic, and the fair value of the investment properties held by Sonae Sierra decreased by 91 million euros.

However, despite this decrease, in 2020, the company paid 92.6 million euros to its shareholders, while, in 2019, the amount distributed was only 88.2 million euros.

The results obtained in 2020, come from Sonae's portfolio, which is composed of the following companies, Sonae MC, Sonae Sierra, NOS, Worten, Iberian Sports Retail Group, Sonae Fashion, Sonae FS, and Sonae IM. As revealed by Sonae SGPS, S.A.'s annual report, the contribution of each company to Sonae SGPS, S.A.'s turnover took place as the following:

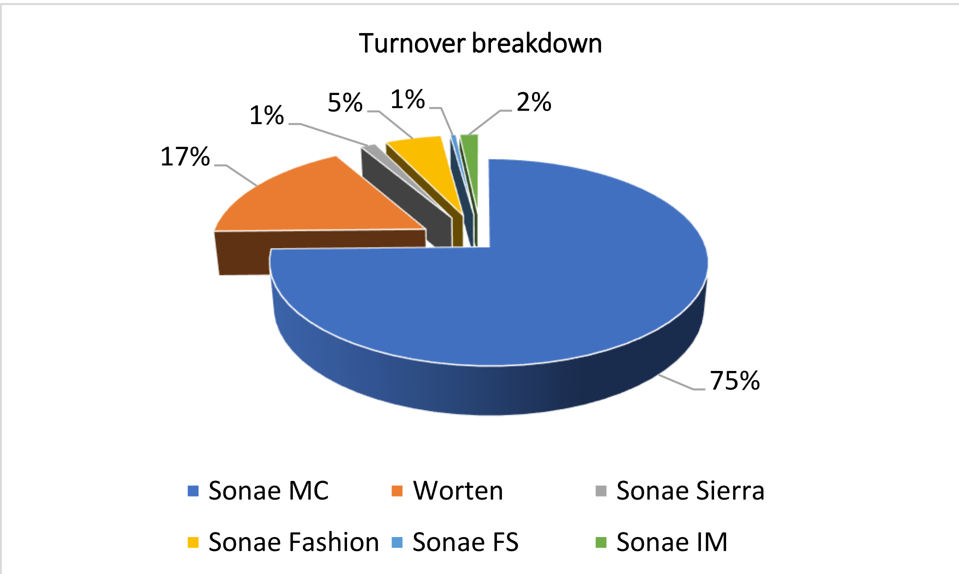

Figure 1 - Turnover breakdown.
Source: Sonae SGPS, S.A.'s 2020 annual report

Relying on Sonae SGPS, S.A.’s annual report as well as on each company’s annual report, it was possible to trace an updated analysis regarding each company’s recent performance, its future perspectives, and how each performance was impacted by the coronavirus outbreak.

2.1 Sonae MC

Sonae MC was the company that contributed the most to Sonae’s consolidated turnover. In 2020, Sonae MC's turnover adds up to 5,153 million euros, which represents, approximately, 75% of the consolidated turnover. With more than 1,300 stores spread across Portugal and Spain, Sonae MC focuses on offering, responsibly and conveniently, a large range of quality products and services at competitive prices, while providing an excellent service and performance. Sonae MC has been expanding its offer and currently, it operates not only on the food retail market but also in other areas such as health, beauty, and well-being (Wells, Go Natural and Arenal), construction (Maxmat), stationery (Note!), and coffee shops (BAGGA).

According to Sonae MC's annual report, despite the coronavirus outbreak, the company achieved a positive performance in 2020, owing to the fact that most of the products sold by Sonae MC satisfy basic needs. In 2020, the company’s turnover increased 6.6% when compared with the homologous period; in addition, its EBITDA also exhibits improvements when compared with the previous year. Its annual report also highlights the expansion verified in the online channel during 2020, according to its annual report, online sales achieved an 80% growth year-over-year. This growth was stimulated not only by the coronavirus outbreak, which incentivized customers to do their purchases through this channel in order to reduce physical contact, but also due to Sonae MC's strong investment in its digital transformation. For the future, Sonae MC’s ambitions are to continue as a market leader, to develop its store network while always having into consideration stores’ proximity and convenience, to reinforce its investment in digital technologies, and to continue the expansion in business areas such as health, beauty, and well-being.

2.2 Sonae Sierra

With more than thirty years of activity, Sonae Sierra represents Sonae’s presence in the real estate sector. Sonae Sierra operates in more than ten different countries and its activity consists, essentially, in investing, developing, and managing shopping centers.

In 2020, Sonae Sierra's performance was negatively impacted by the coronavirus outbreak since most of the countries in which the company operates imposed temporary measures in order to obtain control of the pandemic and to avoid the spread of the virus. As of example, in Portugal, during some of the confinement periods, most of the shopping centers were forced to close or to reduce their business hours, which negatively affected the activity of thousands of companies. Therefore, as an attempt to help the impacted companies, on July 24 the Portuguese government published the decree-law n. º 27-A/2020, in which it is approved the suspension of any fixed rents in shopping centers until December 31. According to this decree-law, the amount of rent to be paid by tenants to shopping centers should correspond only to the variable rent, *videlicet*; the amount of rent to be paid by tenants should be computed based on their sales.

The factors above-mentioned strongly influenced Sonae Sierra's turnover and, consequently, its net result. In 2020, Sonae Sierra's turnover ascended to 94 million euros, whereas, in 2019, it was 166 million euros, which represents a 43% decrease year-over-year.

Regarding Sonae Sierra's future perspectives, in March 2020, it was established a 1.8 billion euros joint venture between Sonae Sierra, APG, Allianz, and ELO, which symbolized the beginning of a new strategy. A strategy focused on maintaining a strong investment in shopping centers, reinforcing the activities of investment management through experience, conquers and reputation acquired over the years in this area, adapting the projects carried out to people needs, and leveraging on sustainability and real estate expertise. In the meantime, the company's Management will continue to be aware of the current pandemic situation since it had a significant impact on the business in 2020.

At the end of 2020, Sonae SGPS, S.A. had a stake of 70% in Sonae Sierra. However, on 17 March 2021, Sonae SGPS, S.A. strengthened its position by acquiring to Grosvenor Investments an extra stake of 10% of the share capital of Sonae Sierra.

2.3 NOS

In August 2013, a merge between Optimus, a telecommunication company founded by Sonae in 1998, and Zon, one of the biggest telecommunication groups in Portugal at that time, lead to the creation of NOS.

With the mission of connecting people, companies, and institutions, to everything and everyone, through the most advanced technologies, NOS is one of the biggest telecommunications and entertainment groups operating in Portugal. In 2020, its turnover was, approximately, 1.4 billion euros what represents a decrease of 6.2% when compared with the homologous period. According to its annual report, this decrease was, mostly, a consequence of the coronavirus outbreak, with the Media and Entertainment division being one of the most exposed to the pandemic. In this division, the revenues dropped by 54.7% year-over-year, a decrease that is explained by the closure of the cinemas between March 16 and July 2, and by the fact that, regardless of their reopening, their performance was significantly worse in the subsequent months comparing with last year.

Since its beginning, NOS's performance has been consistent and above expectations, which resulted in an increasing market share over the years. In the future, NOS will continue to perform an essential role in the digitalization of society and will prepare itself to embrace new opportunities related to 5G.

In 2020, Sonae strengthened its position in NOS, as a result, by the end of the year, Sonae held 33.45% of the company. According to its annual report, Sonae will continue to promote the necessary stability for the execution of the company's strategy.

2.4 Worten

With about 200 stores spread across the country and a strong online presence, Worten is the Portuguese leader in the electronics market. Apart from Portugal, the company also operates in Spain and Canary Islands.

Through its marketplace and other multiple services, the company has been focused on increasing its range of products. Due to this strategy, the company increased its turnover, raised its market share, and obtained solid results in 2020. For instance, despite the coronavirus pandemic, its turnover went from 1.087 billion euros to 1.161 billion euros, which represents an increase of almost 7%.

Regarding the future, the company intends to reinforce its digital approach in Spain, and, in Portugal, the main goal is to strengthen its leadership position. The strategy to achieve these objectives is centered on a sustainable and profitable growth.

2.5 Iberian Sports Retail Group

The Iberian Sports Retail Group (ISRG) was founded in 2017, because of a joint venture between JD Sprinter Holdings and SportZone. Nowadays, ISRG is the second largest Iberian sports retailer with a market share higher than 10% and 360 stores in Iberia.

Until the beginning of the pandemic, the Iberian Sports Retail Group was carrying out an expansion of its online and offline channels and obtaining extremely encouraging results. However, the coronavirus outbreak had a strong impact on the company's activity, since all its stores were closed for a long period. As a result, it was obtained, in 2020, a turnover of 660 million euros, which represents a decrease of 2% when compared with last year.

According to Sonae's annual report, ISRG should continue to face some difficulties, since some stores were temporarily closed, and customers reduced their visits to physical stores. Nevertheless, it is expected that sales go up as soon as the stores fully reopen. In the meantime, the online channel will be crucial in order to offset the negative impact arising from the stores' closure.

At the end of 2020, Sonae had a 30% stake in ISRG, which led to a contribution of 2 million euros into Sonae's results.

2.6 Sonae Fashion

Sonae Fashion operates in the fashion retail business, and it is responsible for brands like Salsa, MO, Zippy and Losan. Currently, these brands are present in over 5,000 points of sale and hold a very strong international presence.

Over the last few years, the strategy adopted by Sonae Fashion has been focusing on becoming a more trendy, digital, and agile company. In 2020, the company developed a reaction plan as a way to mitigate the difficulties arising from the coronavirus outbreak. Within the scope of this plan, there were implemented different ways of interacting with customers and new products adapted to the new reality were launched.

Although, despite the measures adopted, the company was not able to attain the performance achieved in 2019. To illustrate this point, it can be seen that while the turnover in 2019 was 392 million euros, in 2020, the turnover was 344 million euros.

In the future, Sonae Fashion aims to continue to be a resilient company, capable of facing new challenges and continuously looking to set the bases for achieving relevant future growth.

2.7 Sonae Financial Services

Sonae Financial Services (FS) is a company that renders services in the financial sector. It was created in 2015 as an opportunity to benefit from the activities developed by other companies of the group and, therefore, create positive synergies.

Currently, the products provided by Sonae FS include credit cards (Cartão Universo), prepaid cards (Cartão Dá), and money transfers (Moneygram). Among the products provided by Sonae FS, the most significant one is Cartão Universo. This credit card grants access to financial solutions that are adapted to families' needs. An evidence of its importance is that in just 5 years it achieved a market share of 13.8%, which represents an increase of 1% when comparing with last year.

In the future, Sonae FS intends to keep creating value for its customers and pretends to settle the bases that will allow the company to obtain higher levels of growth in the future.

In 2020, the company turnover was 35 million euros, whereas, in 2019, its turnover was 38 million euros. Despite this decrease, we can conclude that Sonae FS was not one of the companies most impacted by the coronavirus outbreak.

2.8 Sonae Investment Management

Sonae Investment Management (Sonae IM) represents the investment in technology on behalf of Sonae Group. Its investments comprehend areas like retail, cybersecurity, and digital infrastructures.

According to Sonae IM's website, its portfolio incorporates more than 30 companies, which, according to Sonae SGPS, S.A.'s annual report, implied an investment above 150 million euros until today. Among the companies that belong to Sonae IM's portfolio, two stand out from the remaining since they are considered unicorns[1]. The unicorns included in Sonae IM's portfolio are Arctic Wolf, a company that renders services in the cybersecurity sector, and Outsystems, a Portuguese company that provide digital solutions to its clients' problems. Henceforth, the company will continue to be an active investor in its investment areas, i.e., cybersecurity, digital infrastructures, and retail.

In 2020, Sonae IM's turnover was 115 million euros, whereas, in 2019, its turnover was 116 million euros. This circumstance allows us to conclude that, although the coronavirus outbreak, the companies that belong to Sonae IM's portfolio were not significantly impacted.

[1] The term "Unicorn" is used to indicate a startup company with a valuation of over 1 billion euros.

3. Industry analysis

In agreement with figure 1, it is evident that Sonae MC and Worten represent the biggest source of revenue for Sonae. The two above-mentioned companies constituted 92% of the total turnover in 2020, which denotes its crucial importance for the group. However, Sonae MC on its own is responsible for 75% of the total turnover, which clearly stands out from the remaining companies.

As stated in the company outlook, Sonae MC operates, predominantly, in the food retail sector and according to the most recent data available at Banco de Portugal, the Portuguese central bank, this sector had a turnover of 18,710.6 million euros in 2019, which could be split as follows:

Table 1 - Turnover breakdown per establishment type. Source: Banco de Portugal

Activity code	Economic Activity	Value (million euros)	Market Share
47111	Retail sale in supermarkets and hypermarkets	17,353.659	93%
47112	Retail sale in others non-specialised stores with food, beverages or tobacco predominating	1,356.951	7%
4711	**Retail sale in non-specialised stores with food, beverages or tobacco predominating**	**18,710.610**	**100%**

Based on the collected data, it is possible to observe that supermarkets and hypermarkets represent the vast majority of the market, with a market share of 93%, whereas the remaining stores hold a residual percentage.

Regarding the major players in the market, and according to a study performed by Kantar Worldpanel, a world specialist in customer behavior, in August 2020 Sonae MC had a market share of 26.8% in the fast-moving consumer goods (FMCG) market, making them the biggest player in the market. Jerónimo Martins occupied the second position with a market share of 22.9%, and Lidl filled the third position, with a market share of 11.3%. Regarding the above-mentioned market players, only Lidl increased its market share when comparing with the homologous period. On the other hand, Sonae MC and Jerónimo Martins lost market share in the respective period. The following table summarizes the market shares of the main players in the market, as well as their variance comparing with the homologous period:

Table 2 - Companies's market share in the FMCG market. Source: Kantar Worldpanel

Company	Market Share	Variance
Sonae	26.8%	-0.9%
Jerónimo Martins	22.9%	-1.4%
Lidl	11.3%	0.6%
Intermarché	8.8%	1.0%
Auchan	5.6%	-0.1%
Minipreço/Dia	3.9%	-0.3%

The same study points out that Portuguese families are spending more in 2020 than in 2019. To illustrate this point, from the beginning of the year until August 2020, the Portuguese families bought 8% more in volume and 12% more in value, when comparing with the homologous period. According to this study, one of the possible explanations for this increase in results is actually due to the coronavirus outbreak, given that families are spending more time at home, which can lead to an increase in their consumption. Another consequence of the coronavirus outbreak is related to FMCG e-commerce. As claimed by Kantar Worldpanel, in 2020, it was verified a great development in this field. Until August 2020, one out of three Portuguese homes had already used this channel at least one time, which shows the current relevance of this shopping method.

Regarding customer preferences, in November 2020, a study released by Dunnhumby, a global leader in Customer Data Science, points out Sonae (Continente) as the overall leader, repeating the success obtained in the first edition of this study released in July 2020. The overall leadership is the outcome of an outstanding performance in key pillars like One-stop-shop and Promotions.

Last of all, in 2021, Deloitte published the 24th edition of "Global Powers of Retailing", a study focused on the retail market. In this study, Deloitte analyzes how the coronavirus has been affecting the sector and identifies the 250 largest retailers in the world. Regarding coronavirus effects, this report points out some of the tendencies that were above referred, such as the growth in E-commerce. However, it also mentions other important tendencies like which categories of products were affected the most: luxury goods, cosmetics, and apparel and accessories.

In the list of the largest 250 retailers, there are two Portuguese companies, namely, Jerónimo Martins and Sonae, which hold positions number 50 and 158, respectively. According to the same study, the companies that belong to this list achieved, in the Fiscal Year 2019 (FY2019), a 4.3% revenue year-over-year growth and a net profit margin of 3.1%, which represents an increase when comparing with FY 2018.

Company valuation

As referred in the Literature Review, in order to obtain an accurate and reliable valuation, it is crucial to select an appropriate valuation model.

Considering that a large quantity of relevant information about the company can be obtained through its annual report, audited by an independent entity, which increases our confidence in the data, it will be chosen a valuation method based on Discounted Cash flows, more specifically, the Free Cash Flow to the Firm (FCFF) approach. However, in order to corroborate the results obtained two more methods will also be applied, namely, the Dividend Discount Model and Relative Valuation. The application of these two models aims to increase our confidence regarding the recommendations that will be given about Sonae's stocks. In other words, since the outcome of a company valuation could be directly related to the assumptions considered in the model, the use of different models intends to reduce the likelihood of providing an incorrect recommendation. For instance, if all models point out that Sonae's stocks are undervalued at the end of 2020, then the level of confidence in how Sonae's stocks are truly undervalued increases significantly.

1. FCFF approach

The FCFF approach is a valuation method based on the Discounted Cash Flow model. According to this valuation method, the value of a firm is obtained by discounting its future cash flows at an appropriate discount rate.

For the application of this model, several assumptions regarding the company were considered. For instance, given that Sonae began its activity as a food retailer in 1985, with the opening of its first supermarket, and considering that Sonae is one of the major players in its industry, it can be considered as a mature company. That is to say, it is not expected to have an exponential growth over the next years; on the contrary, it is expected to have a stable and consistent growth. The previously referred premise is one of the main assumptions behind the estimation of Sonae's future cash flows.

Another key point to remember is that 2020 was an atypical year for several companies due to the coronavirus outbreak; therefore, it is important to analyze how the coronavirus pandemic affected Sonae's cash flows. In the company outlook, it was analyzed how the coronavirus pandemic affected each one of the companies that belong to Sonae's portfolio; nevertheless, it is essential to understand the global impact on the group. Through the computation of the Free Cash Flow to the Firm for 2019 and 2020[2], it is possible to verify that despite the considerable decrease of the operating EBITDA, the Free Cash Flow to the Firm was higher in 2020 than in 2019. The reason for this situation is essentially

[2] The Free Cash Flows to the Firm were computed based on Sonae's 2020 annual report. Considering that some of the inputs require supplementary computations, it is possible to consult them throughout annexes A to C.

related to non-cash items, that is, components of the operating result that do not represent an outflow of cash. For instance, the accounts Impairment losses and Provisions showed significant increases when comparing with the homologous period. This reality meets our expectations given the adversities that arose from the coronavirus pandemic. Altogether, it can be concluded that the coronavirus pandemic did not have a substantial impact on Sonae's Free Cash Flows to the Firm. This situation can be explained by the fact that most of its revenue arises from Sonae MC, a company that operates in the food retail industry, where the commercialized products satisfy basic needs, therefore having a quite resilient demand level in terms of economic crises.

Table 3 - Sonae's Free Cash Flow to the Firm. Source: Sonae SGPS, S.A.'s 2020 annual report and own computations

Description	31/12/2020	31/12/2019
Revenue	6,827,024,079	6,433,326,841
Other Operating Income	140,360,123	130,806,606
Cost of Revenue	-4,728,423,274	-4,337,519,744
Operating Expenses	-1,747,911,458	-1,666,536,428
EBITDA (Operational)	**491,049,470**	**560,077,275**
Depreciation and amortisation expenses	-342,146,400	-330,593,724
EBIT	**148,903,070**	**229,483,551**
Adjusted Taxes	10,932,161	17,556,565
NOPLAT	**137,970,909**	**211,926,986**
Depreciation and amortisation expenses	-342,146,400	-330,593,724
Impairment losses	-50,750,461	-28,651,373
Provisions	-30,449,286	-9,704,926
Operating Cash Flow	**561,317,056**	**580,877,009**
Capex	264,000,000	298,000,000
(-/+) Δ WC	-26,881,414	-17,934,661
Free Cash Flow to the Firm	**270,435,642**	**264,942,348**

In relation to the expected growth rate, and considering that Sonae is a mature company, it was defined a historical criterion in order to estimate Sonae's future growth. According to data provided by Bloomberg, the average growth rate of the Operating Income (EBIT) over the last 5 years was 1.46% (see annex D). It was selected the Operating Income as the point of reference since it represents the income arising from the company's operations and it excludes the impact of the financial result. According to Sonae's annual report, the perpetual growth rate estimated for Sonae MC, the group's main source of revenue, is equal to or lower than 2%, which means that the estimate obtained meets the perpetual growth rate considered by management.

In what concerns future cash flows, it was noticed that in 2020 the depreciation and amortisation expenses exceeded the investment in operational Capex, which does not represent a reasonable assumption for the future. For this reason, when estimating Sonae's cash flow for 2021 it was assumed that all components will grow at the expected growth rate, except for the operational Capex, which will be equal to the value of expenses in depreciation and amortisation. Taking into account all the data above, the estimated cash flow for 2021 corresponds to the following:

Table 4 - Sonae's expected Free Cash Flow to the Firm in 2021. Source: Own computations

Description	31/12/2021 (Expected)
Revenue	6,926,698,631
Other Operating Income	142,409,381
Cost of Revenue	-4,797,458,254
Operating Expenses	-1,773,430,965
EBITDA (Operational)	**498,218,792**
Depreciation and amortisation expenses	-347,141,737
EBIT	**151,077,055**
Adjusted Taxes	11,091,771
NOPLAT	**139,985,284**
Depreciation and amortisation expenses	-347,141,737
Impairment losses	-51,491,418
Provisions	-30,893,846
Operating Cash Flow	**569,512,285**
Capex	347,141,737
(-/+) Δ WC	-27,273,883
Free Cash Flow to the Firm	**195,096,665**

Regarding the discount rate, in order to compute the WACC it is necessary to compute the expected stock return. Given that there is more than one possible way to determine the inputs of the model, the expected market return was computed twice according to different data sources, in order to verify if significant differences arise. Initially, it was computed according to data provided by Bloomberg. This platform has a function called EQRP (Equity Risk Premium), which computes the expected stock return automatically for a given date. According to Bloomberg, the expected stock return at 31.12.2020 for Sonae SGPS, S.A. was 8.5%, more specifically, 8.469% (see annex E). The Beta computed by Bloomberg considered as relative index the PSI 20 Index and used data from the last 2 years. As an alternative, the expected stock return was computed once again, but this time considering different data sources apart from Bloomberg. For instance, it was considered as the risk-free interest rate the Portuguese 10 Years Bond at 31.12.2020, with the data being obtained through the World Government Bonds website. It was chosen the Portuguese 10 years Bond since Sonae SGPS, S.A. is a company located in Portugal and its cash flows arise mainly from this country. Regarding Unlevered Beta, it was obtained from Damodaran's website, and it corresponds to the Beta of the Retail (Grocery and Food) sector in the Western Europe region, for the year 2020. Subsequently, in order to obtain Levered Beta, it was assumed that the current capital structure of the company will remain constant in the future and it was considered the average of the effective tax rate over the last two years as the marginal tax rate of the company. Finally, the market risk premium for Portugal was also obtained from Damodaran's website and it was assumed that Sonae's debt does not have any market risk since Sonae as a solid risk profile. An explanation for this assumption lies in the fact that Sonae has been presenting, on a regular basis, positive results, and its capital structure has remained relatively stable over time. Given all the data mentioned above it was possible to obtain an expected stock return of 9.047% (see annex F). This rate is 0.578% higher than the one previously found, which allow concluding that, despite the usage of different data sources, the results were very similar. However, as a cautious measure, for the computation of WACC, it will be used the higher rate obtained.

In relation to Sonae's cost of debt, it is referred in its annual report that the average cost of debt was 1.2% in 2020. This value is the same as last year, which means that, despite the coronavirus outbreak, Sonae's average cost of debt did not change. This fact illustrates the resilience and stability of the company against an adverse economic context. Since Sonae's annual report does not specify if this value considers the tax shield effects, as a cautious measure, it was assumed that the cost of debt mentioned in Sonae's annual report already considered the effects arising from corporate taxes, which will increase WACC's final value.

Lastly, in order to compute the WACC, it was considered that Sonae will remain with its current capital structure in the future and the tax rate was assumed equal to the average of the effective tax rate over the last two years. Taking everything in consideration, it was obtained a WACC of 3.55% (see annex G).

Applying the FCFF valuation method, it was obtained an Enterprise Value of 9,337 million euros. However, in order to determine Sonae's Equity value, it is necessary to deduct from the Enterprise Value the amount corresponding to Net Debt. This value can be obtained through Sonae's annual report, more specifically, through its Financial Position, corresponding to the total amount of Loans, Bonds, Other Loans, and Lease liabilities, minus the value of Cash and bank balances. According to this formula, Sonae's Net Debt at 31.12.2020 corresponds to 2,334 million euros. Finally, in other to determine the Equity value attributable to the equity holders of the Parent Company it is necessary to deduct from the Equity value the amount attributable to non-controlling interests. According to Sonae's Financial Position at 31.12.2020, the value of equity attributable to non-controlling interests was 447 million euros, which means that the Equity value attributable to the equity holders of the Parent Company corresponds to 6,556 million euros. The following table recapitulates the above-mentioned computation.

Table 5 - Sonae's Equity value. Source: Sonae SGPS, S.A.'s 2020 annual report and own computations

Inputs	Value (in million euros)
Enterprise Value	9,337
Net Debt	2,334
Equity attributable to non-controlling interests (Book Value)	447
Equity Value	**6,556**

Having into consideration the studies performed by Berger and Ofek (1995), regarding the impact of diversification on firms' value, it will be applied a conglomerate discount. Even though the companies that belong to Sonae's portfolio are considerably related, which according to the authors mitigates the effects arising from diversification, as a cautious measure it will be considered the highest discount value, in other words, 15%. Through the application of this conglomerate discount, it was obtained an Equity value of 5,572 million euros.

In order to compute the value per share, it is only necessary to divide the Equity value by the number of shares. According to note 25 of Sonae's annual report the share capital is totally subscribed, and it is composed of 2,000,000,000 ordinary shares. Dividing the Equity value by the number of shares, it was obtained a value per share of 2.79 euros.

According to Euronext Lisbon, which is the stock exchange where Sonae's shares are traded, the closing price of Sonae's shares at 31.12.2020, was 0.6615 euros. Comparing this value with the value per share obtained through the FCFF valuation approach, it looks like Sonae's stocks show signs of being undervalued. However, in order to confirm this indication, further analysis will be carried out using alternative models.

2. Dividend Discount Model

The Dividend Discount Model is a valuation approach based on the Discounted Cash Flow model. According to this valuation model, the value of a stock depends on its future dividends, in other words, the value of a stock is equal to its future dividends discounted at an appropriate discount rate.

According to Sonae's annual report, Sonae will distribute 97,200,000 euros to its shareholders in 2021 regarding the results obtained in 2020, which corresponds to a dividend per share of 0.0486 euros.

With the aim of determining what will be the future growth rate of Sonae's dividends, it was adopted a historical criterion based on past growth rates. According to Sonae's annual report, the dividends per share over the last 10 years can be summarized as follows:

Table 6 - Sonae's Dividends per share. Source: Sonae SGPS, S.A.'s annual report and own computations

Year	Dividends per share	Annual Growth Rate
2010	0.0331	
2011	0.0331	0.00%
2012	0.0331	0.00%
2013	0.0348	5.14%
2014	0.0365	4.89%
2015	0.0385	5.48%
2016	0.0400	3.90%
2017	0.0420	5.00%
2018	0.0441	5.00%
2019	0.0463	4.99%
2020	0.0486	4.97%

As it is possible to confirm, between 2010 and 2012 the dividends per share did not exhibit any growth, which could be explained by the economic crisis faced by Portugal at that time. Considering this circumstance, the expected growth rate was defined in accordance with the average growth rate over the last 5 years. In that way, it is excluded the period in which Portugal was under an economic crisis, and it is still considered a significant period. According to the given values, the average annual growth rate over the last 5 years was 4.77%. For this period, it was also studied how the annual growth rate has evolved, specifically, it was computed its variance and its standard deviation. As expected, both parameters presented low values. The following graph shows how these variants changed in the last years.

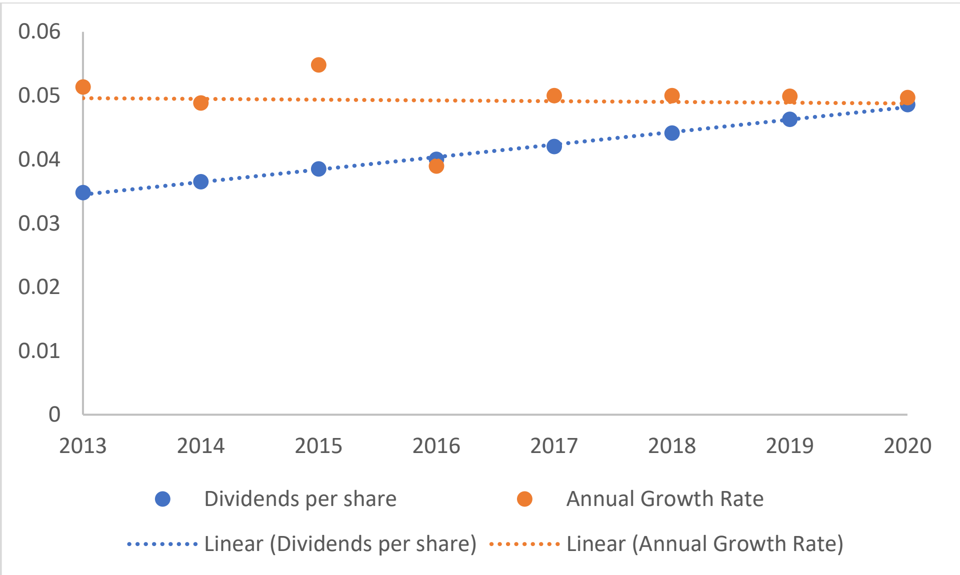

Figure 2 - Sonae's dividends per share and its respective annual growth rate.
Source: Sonae SGPS, S.A.'s 2020 annual report and own computations

As it is possible to verify, dividends per share have been growing in a regular and consistent way. Consequently, its annual growth rate has been stable over the years.

Regarding the discount rate, that is, the cost of equity, it was already determined in the computation of the WACC. As stated before, as a cautious measure it will be considered the higher discount rate in the computation of the value of the stock.

Applying the Dividend Discount Model, it was obtained a stock value of 1.14 euros. Comparing this value with Sonae's shares closing price at 31.12.2020 (0.6615 euros), it appears that Sonae's stocks are undervalued since its market value is lower than the value obtained through the Dividend Discount Model valuation. However, in order to increase our confidence regarding this conclusion, one last valuation model will be applied to Sonae.

3. Relative Valuation

Relative Valuation is a valuation method in which the value of a company is estimated based on the multiples of comparable firms, that is, companies that have similar characteristics to the one that is being valued.

With respect to Sonae, its peer group was defined on the basis used by Bloomberg Intelligence, which corresponds to Bloomberg's investment research. Given Bloomberg's considerable database, Bloomberg Intelligence can define a list of similar companies to Sonae, which can be used as comparable firms.

In the Literature Review, it was referred that two of the most used multiples are the Price-to-earnings ratio (PER) and the Enterprise value-to-EBITDA (EV/EBITDA). Since in the consolidated income statement there is not a clear division between the EBITDA attributable to equity holders of the parent company and the EBITDA attributable to non-controlling interests, it will be used only the PER multiple.

Regarding Sonae's peer group, Bloomberg Intelligence identified 16 companies with similar characteristics. The companies that constitute the peer group defined by Bloomberg Intelligence can be found in annex H. However, since the PER multiple is not available for Casino Guichard Perrachon and Distribuidora Internacional, these companies were excluded from the peer group.

Secondly, in order to identify possible outliers, it was used the interquartile range rule. This rule determines that any numbers above the upper bound or below the lower bound are suspect outliers. Based on the results obtained, it was excluded Dino Polska SA since its PER was higher than the upper bound.

Taken into consideration all the conclusions reached above, the companies that constitute Sonae's peer group and their respective Price-to-earnings ratios are presented as follows:

Table 7 - Sonae’s peer group. Source: Bloomberg

Name	P/E:2020
TESCO PLC	30.07
MAGNIT PJSC	16.77
COLRUYT SA	15.69
ICA GRUPPEN AB	19.90
WM MORRISON SUPERMARKETS	12.46
LENTA PLC	7.50
SAINSBURY (J) PLC	36.40
JERONIMO MARTINS	27.82
X 5 RETAIL GROUP NV-REGS GDR	25.67
AXFOOD AB	21.03
CARREFOUR SA	17.11
KONINKLIJKE AHOLD DELHAIZE N	17.64
KESKO OYJ-B SHS	19.30

Based on the Sonae’s peer group, it was obtained an average PER of 20.57 times. In order to obtain Sonae's Equity value, simply multiply the net income attributable to equity holders of the parent company by the average PER obtained. Given that, at 31.12.2020, the net income attributable to equity holders of the parent company was 70,944,578 euros, it was computed an Equity value of 1,459,124,447 euros. Then, dividing the Equity value by the number of shares, it was obtained a value per share of 0.73 euros.

Considering Sonae’s shares closing price at 31.12.2020 (0.6615 euros), it can be concluded that according to this multiple Sonae’s shares appear to be undervalued, albeit by a lower margin.

Conclusion

In the company valuation, there were applied three different models, namely, the Free Cash Flow to the Firm, the Dividend Discount Model, and the Relative Valuation Model. The results obtained can be summarized as follows:

Table 8 - Sonae's Equity value per share. Source: Own Computations

Valuation Model	Value per share
Free Cash Flow to the Firm	2.79
Dividend Discount Model	1.14
Relative Valuation	0.73

As it is possible to notice, different valuation models result in different estimates for the value of Sonae's shares. Based on the results obtained, it is possible to verify that the models which require a higher degree of research, and consequently more assumptions, result in higher valuation estimates. On the other hand, the models that require fewer assumptions result in lower valuation estimates. For instance, whereas the value per share obtained through the Free Cash Flow to the Firm approach was 2.79 euros, the value per share obtained through the Relative Valuation model was 0.73 euros. Despite this considerable difference, all the valuation estimates exceed the market value of Sonae's shares at 31.12.2020 since Sonae's shares closing price at 31.12.2020 was 0.6615 euros.

For each valuation model, the differences between the estimate obtained and Sonae's shares closing price at 31.12.2020 are the following:

Table 9 - Margins per valuation model. Source: Own Computations

Valuation model	Absolute difference	Relative difference
Free Cash Flow to the Firm	2.12	321.18%
Dividend Discount Model	0.47	71.79%
Relative Valuation	0.07	10.29%

Given the differences obtained, all models point that Sonae's stocks were undervalued at 31.12.2020. Considering this situation, we would recommend buying Sonae's shares.

Finally, in order to assess the accuracy of this recommendation, it will be analyzed how the price of Sonae's stocks has been evolving from the end of 2020 until the day of this analysis. According to Euronext Lisbon, which is the stock exchange where Sonae's shares are traded, at the end of 2020 Sonae's shares closing price was 0.6615 euros, while on August 31 its closing price was 0.9220 euros. The following graph illustrates how Sonae's shares closing price evolve from the end of 2020 until August 31.

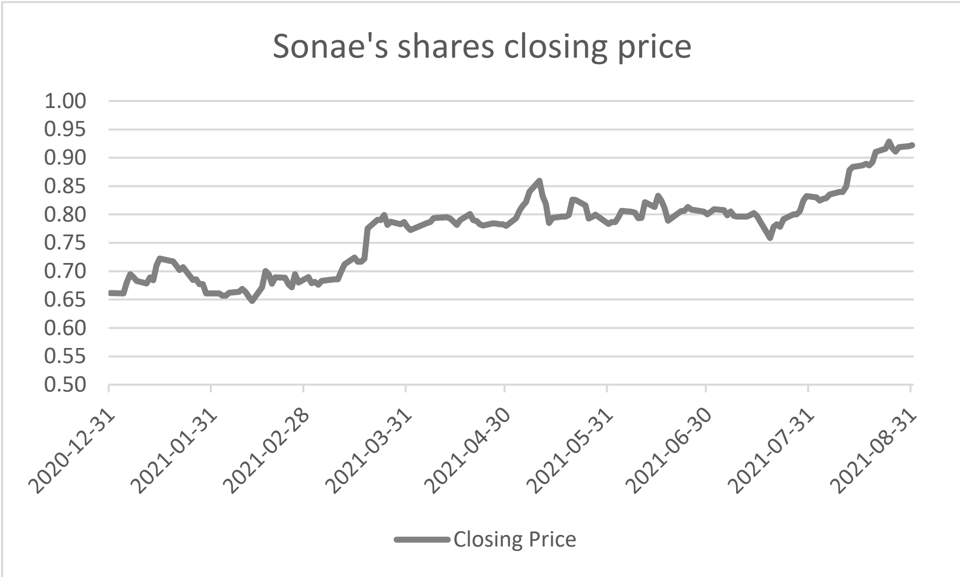

Figure 3 - Sonae’s shares closing price.
Source: Euronext Lisbon

By the end of August Sonae’s shares closing price was 0.9220 euros. This increase in the price of Sonae’s shares represents a variation of 39.38% in just 8 months, which corroborates the recommendation provided previously. Thus, taking into consideration the in-depth research conducted, the valuation methods used, calculations made, and all other relevant data utilized throughout this project it can be concluded that Sonae’s shares were undervalued at 31.12.2020.

Considerations and Limitations

This project relies on assumptions and premises that play a significant role in the results obtained. As it was possible to notice, the valuation models that required a higher number of assumptions resulted in higher valuation estimates for Sonae's Equity value. For instance, one of the major limitations regarding the application of the Free Cash Flow to the Firm valuation approach is that, through the use of Sonae's consolidated financial statements, it was followed a methodology based on the Sum-of-the-Parts valuation, which can lead to overvalued estimates for the value of the company. However, in other to mitigate this risk, it was applied a conglomerate discount over the valuation estimate obtained.

Besides that, given that Sonae MC represented 75% of the consolidated turnover in 2020 and is the main company of the group, it was considered as point of reference for the main assumptions taken. For future valuations it will be important to analyze how the activity of the companies that belong to Sonae's group evolve, in order to identify possible changes to the current framework.

Additionally, it is also important to notice that there is a significant gap between the posting of Sonae SGPS, S.A.'s annual report and the date of the financial statements. As of example, in 2020, Sonae SPGS S.A.'s annual report was posted on April 01, which represents a gap of three months between the date of the financial statements and the posting date of the annual report. So, it is impossible to use the information contained on Sonae SGPS, S.A.'s annual report in order to take a decision on whether to acquire Sonae's shares or not at 31.12.2020.

Finally, as referred previously, the assumptions taken throughout this project had a significant impact in the results obtained. However, in order to mitigate the risk associated with an incorrect recommendation arising from incorrect valuation estimates, three different valuation models were considered during this project, which increases the degree of confidence in the recommendation provided.

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Annexes

Annex A - Operating Expenses computation

Source: Sonae SGPS, S.A.'s 2020 annual report

Description	31/12/2020	31/12/2019
Selling & Marketing Expense	-101,451,247	-111,709,538
Provision for Doubtful Accounts	-81,199,747	-38,356,299
Other Operating Expenses	-1,565,260,464	-1,516,470,591
Total	**-1,747,911,458**	**-1,666,536,428**

Annex B - Investment in Capex

According to Sonae's 2020 annual report, the investment in Capex (in million euros) during 2020 and 2019, can be split as follows:

Source: Sonae SGPS, S.A.'s 2020 annual report

Description	2020	2019
Operational capex	264	298
Financial/M&A capex	237	101
Total capex	**502**	**399**

Annex C - Investment in Working Capital

Source: Sonae SGPS, S.A.'s 2020 annual report and Sonae SGPS, S.A.'s 2019 annual report

Current Assets	31/12/2020	31/12/2019	31/12/2018
Inventories	636,072,241	663,919,735	671,321,594
Trade receivables	147,594,934	115,052,834	141,935,385
Other receivables	102,619,195	102,069,694	79,832,822
Other tax assets	42,016,611	42,600,020	48,719,966
Other current assets	80,218,791	92,433,621	80,001,977
Total Current Assets	**1,008,521,772**	**1,016,075,904**	**1,021,811,744**

Current Liabilities	31/12/2020	31/12/2019	31/12/2018
Trade payables	1,338,556,811	1,337,962,023	1,286,775,817
Other payables	206,835,175	215,620,696	243,475,081
Other tax liabilities	96,992,405	100,751,716	99,761,468
Other current liabilities	325,647,099	294,369,773	306,493,021
Total Current Liabilities	**1,968,031,490**	**1,948,704,208**	**1,936,505,387**

WC	**-959,509,718**	**-932,628,304**	**-914,693,643**

Δ WC	**-26,881,414**	**-17,934,661**

Annex D - Sonae’s Operating Income (EBIT) average growth rate over the last 5 years

Source: Bloomberg

Year	Annual growth rate
2016	-17.6%
2017	2.5%
2018	53.3%
2019	4.2%
2020	-35.1%
Average	**1.46%**

Annex E - Sonae’s expected stock return computation according to Bloomberg

Source: Bloomberg

Inputs	Value
Risk-free interest rate	0.03%
Levered beta	1.10
Expected market return	7.72%
Expected stock return	**8.47%**

Annex F - Sonae’s expected stock return computation

Source: World Government Bonds, Damodaran's website, Sonae SGPS, S.A.’s 2020 annual report and own computations

Inputs	Value
Risk-free interest rate	0.03%
Unlevered beta	0.42
D/E ratio	2.34
Marginal tax rate	7.50%
Levered beta	1.32
Market Risk Premium	6.85%
Expected stock return	**9.05%**

Annex G - Sonae's WACC computation

Source: Sonae SGPS, S.A.'s 2020 annual report and own computations

Inputs	Value
Debt Value	5,709,074,925
Equity Value	2,439,852,346
D/E ratio	2.34
Rd (after-taxes)	1.20%
Tax Rate	7.50%
Rate of return required by Equity holders	9.05%
WACC	**3.55%**

Annex H - Sonae's Peer Group according to Bloomberg Intelligence

Source: Bloomberg

Name	Ticker
TESCO PLC	TSCO LN
MAGNIT PJSC	MGNT RM
COLRUYT SA	COLR BB
ICA GRUPPEN AB	ICA SS
WM MORRISON SUPERMARKETS	MRW LN
LENTA PLC	LNTA LI
SAINSBURY (J) PLC	SBRY LN
JERONIMO MARTINS	JMT PL
X 5 RETAIL GROUP NV-REGS GDR	FIVE LI
CASINO GUICHARD PERRACHON	CO FP
DISTRIBUIDORA INTERNACIONAL	DIA SM
AXFOOD AB	AXFO SS
DINO POLSKA SA	DNP PW
CARREFOUR SA	CA FP
KONINKLIJKE AHOLD DELHAIZE N	AD NA
KESKO OYJ-B SHS	KESKOB FH