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Equity Valuation of Ryanair Holdings plc

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Master (MSc) in Finance

Supervisor:
Phd Pedro Manuel de Sousa Leite Inácio, Assistant Professor
ISCTE-IUL

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BUSINESS
SCHOOL

Department of Finance

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Resumo

Esta tese apresenta uma análise de avaliação de capital próprio da Ryanair Holdings plc, uma das principais empresas na indústria da aviação na Europa. O foco deste projeto é avaliar o valor justo da empresa e fornecer uma recomendação de investimento. Foram empregues duas metodologias principais de avaliação para atingir este objetivo: o Fluxo de Caixa Descontado (DCF), com um foco particular no FCFF, e uma Avaliação Relativa.

Esta análise considera tanto fatores quantitativos como qualitativos, tais como a situação financeira da empresa, a sua posição competitiva e as perspetivas da indústria.

Após conduzirmos a nossa análise, determinámos que a Ryanair detém um preço-alvo de 18.30€. Tendo em conta o preço de fecho de mercado de 14.88€ em 31 de março de 2023, os resultados comprovam que as ações da Ryanair estão subvalorizadas. Desta forma, recomendamos a manutenção ou compra das ações, uma vez que representam uma potencial oportunidade de investimento.

Classificação JEL: G30; G32.

Palavras-Chave: Avaliação de capitais próprios; Ryanair Holdings plc; Indústria da aviação; Companhias aéreas de baixo custo.

Abstract

This thesis presents an equity valuation analysis of Ryanair Holding plc, one of the leading players in the European airline industry. The focus of this project is to evaluate the worth of the organization and provide an investment recommendation. Two main valuation methodologies were employed to achieve this goal: Discounted Cash Flow (DCF), with a particular focus on FCFF, and Relative Valuation.

This analysis considers both quantitative and qualitative factors, such as the enterprise's financial state, competitive position, and industry outlook.

After conducting our comprehensive analysis, we determined that Ryanair holds a target price of 18.30€. In light of the market's closing price of 14.88€ on March 31, 2023, our findings prove that Ryanair's shares are currently undervalued. Therefore, we recommend holding or buying the shares, as they present a potential investment opportunity.

JEL Classification: G30; G32.

Keywords: Equity Valuation; Ryanair Holdings plc; Airline Industry; Low Fares Airlines.

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Abbreviations

APT - Arbitrage Pricing Theory

APV - Adjusted Present Value

ASM - Available Seat Miles

Bn - Billions

CAPEX - Capital Expenditures

CAPM - Capital Asset Pricing Model

CO_2 - Carbon Dioxide

CRP - Country Risk Premium

D/E - Debt to equity

DCF - Discounted Cash Flow

DDM - Dividend Discounted Model

ECB - Economic Central Bank

ESG - Environmental, Social & Governance

EU - European Union

EU-UK TCA – EU-UK Trade and Cooperation Agreement

EV/EBITDA – Enterprise Value to EBITDA

FCFE - Free Cash Flow to Equity

FCFF - Free Cash Flow to the Firm

FSCs - Full-Service carriers

FY - Fiscal Year

GDP - Gross Domestic Product

IATA - International Air Transport Association

ICAO - International Civil Aviation Organization

IMF - International Monetary Fund

LCCs - Low-cost carriers

Mn - Millions

MRP - Market Risk Premium

MV - Market Value

NTM - Next twelve months

NYU - New York University

OPEC - Organization of Petroleum Exporting Countries

PER – P/E – Price to Earnings

PPE - Property, Plant, and Equipment

PV - Present Value

ROE - Return on Equity

RPK - Revenue Passenger Kilometers

RPM - Revenue Passenger Miles

SAF - Sustainable aviation fuels

TV - Terminal Value

UK - United Kingdom

US - United States

VTS - Value of Tax Shields

WACC - Weighted Average Cost of Capital

YoY - Year on Year

YTM - Yield To Maturity

βL - Beta Levered

βU - Beta Unlevered

1. Introduction

Over the last decades, the quickly accelerating globalization process has led to an aggressively competitive environment among enterprises. Regardless of the available indicators of the firm's performance, it is essential to have a more in-depth analysis of a company. Investors need to be aware of all the involvements behind an enterprise to decide whether to buy, sell, or hold an organization's stock. In this way, a company valuation provides the understanding an investor needs of the insights of a firm's value, which is a helpful way to clarify their investment strategies.

This thesis aims to conduct an Equity Valuation on Ryanair Holdings plc. The focus of the report is to explore the company's historical performance, risks, and sources of profits and consider macroeconomic and industry variables to provide information about the organization's performance and worth. Our main objective is to estimate the fair value per share as of March 31, 2023, ultimately assisting potential investors in making well-informed decisions.

Founded in 1985, Ryanair Holdings plc operates as an Irish-based budget airline that has grown into the largest European airline group, transporting 169 million customers and connecting over 230 destinations in 36 countries. The company's success hinges on a low-cost, no-frills model, where non-essential features are considered extras paid by the passengers to keep the price low. Ryanair's strategy revolves around cost-saving and operating efficiencies paired with intensive promotions and marketing to increase demand.

In such an extensive universe of companies, the choice fell on Ryanair. As a European market leader, it holds significant interest for investors. The airline industry, characterized by its vulnerability to external shocks and rapid demand fluctuations, presents a challenging and dynamic environment for financial analysis.

To perform a thorough analysis and subsequently estimate Ryanair's fair value, this study incorporates a review of significant valuation methodologies proposed by notorious authors alongside rigorous company, industry, and market research. Given the unique characteristics of Ryanair and the complexities of the airline industry, the most suitable approaches are the DCF and Relative Valuation. These models offer distinct perspectives that complement each other in our quest to determine the fair value of Ryanair's equity.

2. Literature Review

2.1. Research Scope and Significance

The rise in global capital markets, mergers, and acquisitions contributed to the growing interest in capital market research. The knowledge acquired supports analysts in gathering and processing information to perform investment decisions. Understanding the mechanisms of a company valuation has become fundamental in corporate finance and effective in identifying the sources of economic value (Fernandez, 2019a).

Every asset has a given value, and many participants in the investment field want to achieve their worth. The fair value can be reliably measured when valuing those assets with different methods. Doing it effectively generally affects the success or failure of accomplishing an investment strategy (Pinto et al., 2015).

Valuation is a commonly employed method for measuring the intrinsic value of common stocks. The objective of a company valuation is to provide investors and other market participants with the actual value of a firm at a specific moment. Damodaran (2012) emphasizes that valuation is fundamental in several finance subjects, such as Portfolio Management, Acquisition Analysis, and Corporate Finance. In the case of portfolio management, valuation depends on the investor's investment philosophy, being crucial for fundamental analysts and a supporting component for technical analysts. The central focus is to perceive the actual value of stocks with the purpose of generating profit. Regarding acquisition analysis, valuation is essential in assisting the buyer and the seller firm in determining the values they are willing to accept in an offer. Lastly, in corporate finance, the objective is to maximize the company's value.

Further exploring Portfolio Management, it is worth noting two major market approaches: technical and fundamental analysis. The methodologies are different in many ways, for instance, in the investor's preference, the investment strategy's time horizon, and methods of execution.

The basis of the technical analysis is market action, initially developed by Charles Dow in the late 1800s, who published a series of editorials on the theory in the Wall Street Journal. The technical approach aims to forecast future price trends by studying historical price movements and trading volume, relying mainly on charts to analyze patterns (Murphy, 1999).

On the other hand, fundamental analysis is an investment procedure that assesses the inherent value of a corporation's stock by analyzing economic and financial factors. Benjamin

Graham and David Dodd published the pioneering work in this area as "Security Analysis" in 1934, on which the valuation work in that text introduced the principle of value investing (Fabozzi et al., 2017). A stock's value depends on the organization's forecast earnings and dividends, and the firm's prospects are related to the broader economy. Thereupon, fundamental analysts study all the variables that can impact the value of a security, such as macroeconomic factors, industry analysis, and company analysis. Ultimately, the purpose of fundamental securities analysis is to identify stocks with pricing discrepancies (Bodie et al., 2018).

In this thesis, in light of fundamental analysts, valuation is used to provide an investment decision. Assisting investors in making prudent choices by determining if the financial asset is undervalued or overvalued, and hence, to either buy, sell, or hold the stock.

2.2. Valuation Methodologies

For valuing a company, academics and practitioners have developed several valuation methodologies over the past decades. However, these models generally employ different assumptions, highlighting concrete features while dismissing others (Frykman & Tolleryd, 2003). According to Young et al. (1999), most of these models are mathematically equivalent, just alternative ways to express the same underlying model. There is no competitive approach, and the model chosen depends on the company's characteristics. Regardless of the model, the investment choice remains consistent: compare the projected intrinsic value to the market price and choose whether to purchase, hold, or sell the stock (Reilly & Brown, 2012).

Although it is important to recall that valuing a firm is not a simple process, analysts' preconceptions and biases will make their way into the value (Damodaran, 2012). Moreover, Young et al. (1999) believe that data reliability is more significant than the valuation model chosen, given that the credibility of a project is directly related to the quality of the data collected for the evaluation process.

Luehrman (1997b) underscores that cash, timing, and risk are important factors in valuation. In line with studies developed by Damodaran (2007), only some aspects of valuation methodologies have diligent scrutiny. Despite that, there are numerous models, and some methods are more straightforward than others. Damodaran (2012) presented the most used approaches, categorizing them into four main groups: Discounted Cash Flow Valuation, Relative Valuation, Contingent Claim Valuation, and Asset-Based Valuation.

This thesis briefly discusses each of the four methodologies. Nonetheless, the main focus will be on the more suitable approaches to evaluate Ryanair.

2.2.1. Discounted Cash Flow Models

Analysts developed a category of valuation models, starting with John Burr Williams in 1938, known as DCF (Pinto et al., 2015). According to Luehrman (1997b), in the 1970s, the DCF model became the most popular practice for valuing corporate assets. To this day, it remains the most reliable and conceptually correct measure (Damodaran, 2007; Fernandez, 2019a; Koller et al., 2020).

This methodology rests on the notion of present value, defining that "the value of an asset is the present value of the expected cash flows on the asset, discounted back at a rate that reflects the riskiness of these cashflows" (Damodaran, 2007, p. 4).

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

Where:

n = life of the asset

CF_t = Cash Flow in period t

r = Discounted rate

The model depends on projected future cash flows and discounted rates, making it more suitable for firms with positive and consistent cash flows. The further it deviates from this premise, the more challenging the process becomes. A DCF model incorporates numerous assumptions, and the model is only as reliable as those assumptions. As a result, performing a sensitivity analysis becomes necessary to explore the ramifications of alterations in the underlying assumptions (Rosenbaum & Pearl, 2009).

Damodaran (2012) stated that there are several discounted cash flow models. Notwithstanding, two approaches are the most employed: the first is to value the entire company (Firm Valuation), and the second is to value just the equity (Equity Valuation). Although both strategies follow the same principle, the cash flows and discount rates differ.

2.2.1.1. Firm Valuation Models

The firm DCF method, also called enterprise valuation, values the entire business. According to Damodaran (2012), there are two approaches: the Cost of Capital Approach or Free Cash Flow to the Firm (FCFF) and the Adjusted Present Value (APV). While both procedures discount the FCFF, the discount rates vary for each. The first method uses a weighted average

cost of capital, known as WACC, embedding the financing side effects in its value, while the APV examines each impact separately.

2.2.1.1.1. Cost of Capital Approach Model

Miller and Modigliani introduced the first theoretical model for firm valuation in 1958. The authors observed that it is feasible to express a corporation's value as the present value of its after-tax operating cash flows (Damodaran, 2007).

In line with studies developed by Damodaran (2012), in this approach, the enterprise's worth contemplates the value of all claim holders. The model analyzes the evaluation of a company in two different time horizons. At first, it forecasts the cash flows for a chosen number of years discounted at the appropriate rate. Then, it discounts the termination value, corresponding to a period of constant growth.

$$Value\ of\ a\ firm = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1+WACC)_t} + \frac{Terminal\ Value_n}{(1+WACC)^n} \quad (2)$$

In DCF, analysts commonly project cash flows for five or ten years, which varies based on the corporation's stage of development. Hence, with each new year, it gets more challenging to estimate with an acceptable level of precision (Larrabee & Voss, 2013). Moreover, the WACC and Terminal Value (TV) assumptions significantly influence the output, and any minor changes can result in considerable differences in valuation (Rosenbaum & Pearl, 2009).

The upside of using the FCFF is that it enables assessing a company without predicting its dividend payments, share repurchases, or debt used in advance (Berk & DeMarzo, 2017).

2.2.1.1.1.1. Free Cash Flow to the Firm

The FCFF constitutes the residual cash flow after all operating expenditures and investments in working capital and fixed capital. It is the amount available to distribute among the company suppliers of capital (Pinto et al., 2015). This approach assumes no debt and tax benefits from interest expenses since these effects are implicit in the discount rate employed in the model (Damodaran, 2007).

The accounting information available determines the procedures analysts employ to calculate FCFF (Pinto et al., 2015). According to Damodaran (2012), there exist two paths to estimate these cash flows. Equation 3 computes the first measure, consolidating all cash flows available to the stakeholders.

$$FCFF = Free\ cash\ flow\ to\ equity + Interest\ expense \times (1 - Tax\ rate) + Principal\ repayments - New\ debt\ issues + Preferred\ dividends \quad (3)$$

The other measure, the most common one (Damodaran, 2007), is not dependent on the estimation of the Free Cash Flow to Equity (FCFE). As an alternative, it is also feasible to estimate the cash flows prior to any holder claim by making the following adjustments to the earnings before interest and taxes (EBIT), net out taxes, and reinvestment needs as follows (Damodaran, 2012):

$$FCFF = EBIT(1 - Tax\ rate) + Depreciation - CAPEX - \Delta Working\ capital \quad (4)$$

In essence, the concept of unlevered cash flows applies to FCFF since the cash flows are before debt payments. Therefore, regardless of the firm's financing structure, it reflects the funds produced by its whole asset base.

2.2.1.1.1.2. Weighted Average Cost of Capital

After estimating the cash flow, the next step involves calculating its present value. The discount rate must contemplate the risks all investors bear, such as higher returns from assets with higher exposure risk and lower rates for safer investments (Damodaran, 2012). Fernandez (2019e) states that the appropriate rate is the WACC, considering that it is the weighted average of the cost of debt and the required return on equity reflecting the risks of the entire company. The WACC represents the opportunity cost of funds, which is the return anticipated by an investor for an alternative investment of equivalent risk (Luehrman, 1997b). The general formula can be defined as shown:

$$WACC = \frac{E}{E+D} \times r_E + \frac{D}{E+D} \times r_D \times (1 - \tau_c) \quad (5)$$

Where:

E = market value of equity

D = market value of debt

r_E = equity cost of capital

r_D = debt cost of capital

τ_c = marginal corporate tax rate

The discount rate accurately reflects the target's business and financial risks. WACC relies on a firm's capital composition since the risk profiles and tax implications of debt and equity components typically differ considerably (Rosenbaum & Pearl, 2009). Considering that a firm's

capital structure can change over time, analysts use target weights instead of the current market-value weights. These target weights consider analysts' and investors' expectations of the target capital structure the business will adapt over time (Pinto et al., 2015). Therefore, it is commonly employed to value a mature firm on the presumption that the company will manage its capital structure over time toward a target level of debt (Larrabee & Voss, 2013).

Luehrman (1997b) points out some constraints about the WACC as a discounting rate, considering that it only works on static capital structures. When it significantly differs, it requires extra adjustments, raising the likelihood of misestimating the discount rate. Koller et al. (2020) further note that the expected tax shield will be under or overvalued by the current cost of capital if a corporation alters the debt-to-equity ratio. As a result, both authors draw attention to APV as a better alternative for valuing a business under such circumstances.

Cost of Equity, r_E

As an element of the WACC, the cost of equity embodies the expected rate of return that equity investors anticipate (Damodaran, 2012). However, among other components of the cost of capital, it is the hardest to measure. Despite the multitude of models proposed, the estimation remains a challenge, particularly within the corporate context, as none have exhibited consistent accuracy. The most used model to compute expected returns is the Capital Asset Pricing Model (CAPM). However, there are alternative approaches, such as the Fama-French three-factor model and the arbitrage pricing theory (APT). These models differ primarily in their assessment of compensated risk (Koller et al., 2020).

Markowitz's modern portfolio theory serves as the basis for CAPM. Sharpe (1964), Lintner (1965), and Mossin (1966) further developed this model, describing the relationship between an asset's expected return and its risk (Bodie et al., 2018). CAPM states that an asset's anticipated return is equal to the sum of risk free-rate and beta multiplied by the market risk premium (Koller et al., 2020).

$$E(R_i) = r_f + \beta_i\left[E(R_m) - r_f\right] \tag{6}$$

Where:

$E(R_i)$ = expected return of security i

r_f = risk-free rate

β_i = security i's sensitivity to the market portfolio

$E(R_m)$ = expected return of the market portfolio

The premise behind the CAPM is that investors demand compensation for the systematic risk borne in the form of a risk premium. Systematic risk, commonly known as non-diversifiable

risk, represents the inherent market risk that persists even when diversifying a portfolio (Rosenbaum & Pearl, 2009). The model "adjusts for company-specific risk using beta, which measures how a company's stock price responds to movements in the overall market" (Koller et al., 2020, p.306). Thus, beta is a market proxy for a stock's volatility.

Risk-free Rate, r_f

This rate is the expected return for investments on riskless securities (Rosenbaum & Pearl, 2009). Following that, the rate serves as a measure of the expected returns on risky investments, being the minimum return required. Hence, the expected returns of a risk-free asset are assured (Damodaran, 2012).

According to the previous author, an investment is risk-free if it has no default and reinvestment risks. Government securities are the only assets that can satisfy these requirements since the government controls currency printing along with zero coupon bonds, which have no inherent reinvestment risk since no coupon is associated. Therefore, for valuation purposes, it is essential to align the maturity of the chosen bonds with the duration of the cash flows in the analysis. Additionally, Damodaran (2008) argues that the government bond currency must be the same as the enterprise's cash flows to maintain consistency in inflation among the cash flows and discount rates. Lastly, developed economies often use 10-year government bonds (Koller et al., 2020), more specifically, the Treasury bills for the United States (US) and German Treasury bills for European companies (Pinto et al., 2015).

Beta, β

A stock's beta reflects its sensitivity to fluctuations in market profitability. On that account, the beta parameter measures its market risk (Miguel et al., 2018). For a diversified investor, a stock's beta reflects its incremental risk, where risk defines how much a stock fluctuates concerning the stock market. Otherwise stated, it reflects the connection between a firm's stock and the overall market return (Koller et al., 2020).

$$\beta_i = \frac{Cov_{i,m}}{\sigma_m^2} \tag{7}$$

Where:

$Cov_{i,m}$ = Covariance of asset i with market portfolio

σ^2_m = Variance of the market portfolio

Brealey et al. (2020) point out that securities with a beta that exceeds 1 are sensitive to market movements, amplifying the overall shifts. Conversely, stocks with a beta below 1 are less volatile than the market and safer. Thus, the higher the beta, the greater the risk and expected returns (Pinto et al., 2015).

Moreover, Damodaran (2012) highlights the value of financial leverage and how it affects a firm's beta. Leverage makes equity investments riskier and raises the volatility in net income, increasing the firm's beta. The author divides the beta into Levered (β_L) and Unlevered (β_U). The unlevered beta concentrates only on operating risk, not assuming any debt. At the same time, the levered beta is impacted by the organization's capital structure, considering both equity and debt.

$$\beta_L = \beta_U \left[1 + (1 - t) \times \frac{D}{E}\right] \quad (8)$$

Where:

β_L = Levered beta

β_U = Unlevered beta

t = marginal corporate tax rate

D/E = Debt-to-equity ratio

Market Risk Premium, MRP

This metric represents the variance between the anticipated return on equity and the risk-free rate, and it is known as the market risk premium (MRP). The MRP signifies the extra return that investors require when holding equities instead of risk-free assets (Pinto et al., 2015), that is, compensation for the market risk associated with that equity (Larrabee & Voss, 2013).

Pinto et al. (2015) argue that there is no agreement on how to estimate the MRP. Nonetheless, the most common approach among analysts is using historical data, in which "the actual returns earned on stocks over a long period is estimated and compared to the actual returns earned on a default-free (usually government security)" (Damodaran, 2022, p. 31). According to Rosenbaum and Pearl (2009), the standard risk premium varies between 4.0% to 8.0%.

Cost of Debt, r_D

Another element within the framework, the cost of debt, is the interest rate a firm must pay to debtholders (Frykman & Tolleryd, 2003). The risk-free rate, default risk, and tax benefits debt determine the after-tax debt cost (Damodaran, 2012).

$$After - tax\ cost\ of\ debt = Pretax\ cost\ of\ debt\ (1 - Tax\ rate) \quad (9)$$

Rosenbaum and Pearl (2009) and Damodaran (2012) states that, for publicly traded bonds, it is possible to estimate the cost of debt using the yield to maturity (YTM) on long-term debt. Since the YTM is the rate of return on a company's debt, assuming all interest payments and principal repayment, it is only suitable for companies with investment-grade debt, where the

default risk is low (Koller et al., 2020). Thus, a heavily leveraged firm renders the YTM as an unreliable indicator. As an alternative, Damodaran (2012) recommends using the firm's credit ratings to obtain default spreads in the absence of bonds widely traded.

2.2.1.1.1.3. Terminal Value

Since it is unrealistic to project a company's cash flows indefinitely, the TV serves to express how valuable the firm will be after the forecasted period (Rosenbaum & Pearl, 2009). Furthermore, Pinto et al. (2015) affirm that TV plays a crucial role in valuing a company since a substantial part of the stock's entire value emerges from the present value of the TV.

The explicit projected period typically ranges between five and ten years. Hence, according to Rosenbaum and Pearl (2009), it is fundamental that the last year of the forecast period corresponds to a steady phase where stable growth is verified.

Damodaran (2012) proposes three models to estimate the TV: the Liquidation Value, the Multiple Approach, and the Stable Growth Model. The Stable Growth Model represents the most common approach for obtaining the TV, which assumes that a company reaches a stable growth stage after an extended period and that the cash flows will develop perpetually at a consistent rate. However, a fundamental assumption in this context is that the growth rate (g) should not outpace the economic growth rate. Thereby, considering perpetual growth, TV is expressed as follows:

$$Terminal\ Value_t = \frac{Cash\ Flow_{t+1}}{Discount\ rate - g} = \frac{Cash\ Flow_t \times (1+g)}{Discount\ rate - g} \qquad (10)$$

2.2.1.1.2. Adjusted Present Value

Myers (1974) developed the concept, an alternative procedure for accounting financing decisions, providing a clear picture of the causes that are adding or subtracting the value in a company (Brealey et al., 2020).

The APV approach considers that the valuation of a leveraged firm equals the valuation of an unleveraged firm plus the present value of any financial side effects. The effects of debt financing produce tax benefits on the positive side while increasing the chance of bankruptcy on the negative side, as the following expression presents (Damodaran, 2007):

$$Value\ of\ business = Value\ of\ business\ with\ 100\%\ equity\ financing + PV\ of\ Expected\ Interest\ Tax\ Shields - Expected\ Bankruptcy\ Costs \qquad (11)$$

This approach begins by valuing the firm under the assumption of sole equity financing (Larrabee & Voss, 2013) and then contemplates the present value of expected interest tax shields. The value of tax shields (VTS) is a term used to describe an "increase in the company's value as a result of the tax saving obtained by the payment of interest" (Fernandez, 2019c, p. 2). However, regarding the proper method to estimate the VTS, there is no consensus among analysts and academics. Therefore, Myers (1974) proposes the following formula to estimate the approach:

$$PV_{VTS} = \sum_{t=1}^{n} \frac{Effective\ rate \times Debt \times r_D}{(1 + r_D)^t} \quad (12)$$

Lastly, it subtracts the expected bankruptcy costs, on which the impact of a specific debt level affects the company's likelihood of default and, as a result, the expenditures associated with the bankruptcy (Damodaran, 2007).

$$Expected\ Bankruptcy\ Costs = Probability\ of\ Bankruptcy \times PV\ of\ Bankruptcy \quad (13)$$

As mentioned previously, WACC assumes that a capital structure follows a debt-to-value ratio. In the event a firm changes its capital structure, the APV is the best alternative in determining both the corporation's total worth and the breakdown of its value sources (Luehrman, 1997a).

2.2.1.2. Equity Valuation Models

In the equity valuation models, the equity stake is the only term reflected in company valuation. As stated by Damodaran (2007), there are two approaches to value equity valuation models, the FCFE and the Dividend Discount Model (DDM), both discount at the same rate. Given that the DDM discounts actual dividends whereas the FFCE discounts potential payouts, the projected future cash flows are the primary source of variation between the models.

2.2.1.2.1. Free Cash Flow to Equity

This type of cash generation is the cash available after fulfilling all financial commitments, capital expenditures, and working capital needs. In short, it is the money available for distribution among shareholders. The estimation of this method starts with the net income. It adds non-cash charges, later subtracts changes in the net working capital and CAPEX, and then

adds the net debt, which is the difference between the new debt issued and debt repayments, as follows (Damodaran, 2012):

$$FCFE = Net\ income + Depreciation\ - CAPEX - \Delta Working\ capital + \Delta Net\ Debt \quad (14)$$

For determining the firm's value with FCFE, Fernandez (2019a) stated that it is necessary to discount the cash flows using the cost of equity capital (r_E) since it directly quantifies the cash flows accessible to shareholders. On that account, the CAPM is the most commonly used to retrieve that value.

In the same way as the FCFF, the company's worth is determined by discounting the future cash flows and terminal value by the required return of equity, as shown in equation 2.

2.2.1.2.2. Dividend Discount Model

The DDM represents a straightforward method for valuing equities, and it is another present value model on which the intrinsic value of common stock is the present value of the stock's projected future dividends. When a shareholder buys a stock, it expects to receive dividends throughout their ownership and sales price (Pinto et al., 2015).

Future dividends determine the model. Therefore, a stock's value is equal to the present value of all future dividends (Damodaran, 2012), as demonstrated in the equation below:

$$Value\ per\ share\ of\ stock = \sum_{t=1}^{t=\infty} \frac{E(DPS_t)}{(1+r_E)^t} \quad (15)$$

Where:

$E(DPS_t)$ = expected dividends per share in period t

With a finite holding period, it is possible to reach the stock value using the above expression. However, it becomes a challenge when it comes to an infinite period. Subsequently, besides the existence of several DDM versions, Gordon and Shapiro (1956) and Gordon (1962) derived the most common valuation, known as the Gordon Growth Model, assuming that dividends experience a consistent and stable growth rate (Pinto et al., 2015).

According to Damodaran (2012), the Gordon growth model is more appropriate for companies growing at a pace equivalent to or lower than the economy's nominal growth rate and aims to maintain dividend distribution policies in the future.

2.2.2. Relative Valuation

Unlike absolute valuation models, which identify an asset's intrinsic value and provide an estimate comparable to market price, relative valuation models state how much an asset is worth in relation to another, using multiples (Pinto et al., 2015). However, this model is more effective as a complementary valuation (Fernandez, 2019b), and it is "a useful check of your DCF forecasts, but also provides critical insights into what drives value in a given industry" (Koller et al., 2020, p.389).

Two categories of multiples – the Fundamentals and the Comparables – are described by Damodaran (2012) and Pinto et al. (2015). The Fundamentals approach relates multiples determined from forecasted fundamentals, such as earnings and book value. This method derives multiples from DCF models, displaying a relation between multiples and firm features, enhancing comprehension of how multiples change when features change. On the other hand, the method of Comparables, the more widely used model, evaluates a company's worth by comparing it to the market's valuation of similar firms.

2.2.2.1. Comparables Model

The law of one price is the basis of this approach, which states that identical assets should trade at similar prices (Pinto et al., 2015). Given that the assets share essential business and financial traits, performance drivers, and risks, comparable companies (peer group) serve as a very relevant benchmark for evaluating a specific target, according to the theory behind this model. On that account, this approach intends to speculate on the "current" valuation relying on the state of the market and consumer mood (Rosenbaum & Pearl, 2009).

Valuation by comparables relies on fulfilling two assumptions. Initially, the firm in question must face the same risks and future cash flow estimations as other businesses. Additionally, performance indicators, such as EBITDA, net income, or cash flows, must relate to value. Since it incorporates current market estimates of future cash flows and discount rates, the comparables approach should yield a measure of value that is as reliable as any DCF model, assuming the assumptions above are verified (Kaplan & Ruback, 1995).

An appropriate peer group selection is the cornerstone of a solid multiple's valuation (Koller et al., 2020). A set of firms with comparable commercial operations is known as a peer group, and its economics and valuation are affected by closely connected elements (Pinto et al., 2015). Damodaran (2012) also adds that firms are comparable when their growth, risk, and cash flow profiles are the same as those analyzed.

Compared to the other valuation models, the lack of assumptions and the approach's simplicity made the model widely accepted (Damodaran, 2012). Nonetheless, valuing a firm solely on its trading performance may not fully reflect its underlying worth (Rosenbaum & Pearl, 2009).

Damodaran (2012) proposed four stages to conduct a consistent and effective estimate of the multiple's valuations. Initially, multiples must be defined consistently and measured evenly among comparable enterprises, followed by an understanding of how multiples vary between firms in the market. Furthermore, it identifies the fundaments underlying the multiple and how alterations in those elements might influence the value of the multiples. Lastly, it chooses a suitable firm for comparison and accounting for discrepancies between these firms.

2.2.2.2. Multiples

Analysts classify the multiples into several frameworks to acquire a broad picture. For instance, Fernandez (2019b) systematizes multiples into three main groups (Appendix A).

Lie & Lie (2002) reported that there is no agreement on which multiple performs the best. However, according to Fernández (2019b), considering the sector of the company, there are some multiples more relevant than others, and the PER and the EV/EBITDA are the most notorious among all the others.

The PER determines the price an investor is willing to pay for each unit of a company's present or potential earnings. It is frequently employed to determine how appealing equity is regarding a benchmark (Larrabee & Voss, 2013).

$$PER = \frac{Share\ price}{Earnings\ per\ share} \tag{16}$$

When comparing companies with different levels of financial leverage, the EV/EBITDA ratio is preferable to PER alone. Likewise, the valuation indicator examines the entire company and considers debt (Pinto et al., 2015).

$$\frac{EV}{EBITDA} = \frac{Enterprise\ Value}{Earnings\ before\ interest, tax, depreciation\ and\ amortization} \tag{17}$$

According to Damodaran (2012), the approach presents some constraints mainly because of the model's reliability in market efficiency. For example, if the market price is incorrect, that can lead to a wrong estimation of the value of an asset.

2.2.3. Contingent Claim Valuation

Studies exhibit a persistent gap between traditional finance theory and the real corporate world, which results from traditional models such as DCF failing to adequately reflect management's flexibility to adjust and amend future choices in light of unforeseen market changes (Trigeorgis, 1998). On that account, one of the value-added components of contingent claim valuation relies on flexibility in response to events (Koller et al., 2020).

Black-Scholes (1973) and Merton (1973) pioneered the option pricing theory, which forms the foundation for contingent claim valuation. Hence, it "is a technique for determining the price of a security whose payoffs depend upon the prices of one or more other securities" (Mason & Merton, 1985, p. 9). In other words, it is a claim or option that only pays under certain circumstances (Damodaran, 2012).

Koller et al. (2020) propose two approaches to estimate this model: the Black-Scholes pricing model and the decision tree analysis. Additionally, Fernandez (2019d) underlines that the model is more appropriate, among other scenarios, for firms in an industry based on commodities, such as oil and gas, or companies who want to expand or abandon their businesses.

2.2.4. Asset-Based Valuation

The Asset-based valuation, also known as the balance sheet-based method, is an approach deeply rooted in the fundamentals of value investing, initially introduced by Benjamin Graham and David Dodd in 1934. Nevertheless, as opposed to other methods, which depend on future cash flows or earnings, the asset-based valuation relies on the current assets owned by a firm (Damodaran, 2007; Koller et al., 2020).

This approach assesses the total assets remaining after deducting liabilities to identify the worth of a company based on its assets, perceiving the value from a static perspective. It does not consider the firm's potential growth, the market's state, and the availability of human resources, among other factors (Fernandez, 2019a). In such cases, asset-based value methods are suitable, particularly when a firm has little to no room for expansion or current operations are at risk (Koller et al., 2020).

3. Methodology

Following a detailed analysis of the existing methodologies to conduct an equity valuation, it is possible to identify the most suitable models for assessing Ryanair's value. On that account, to perform a correct selection of the approach, features, such as earning level, growth potential, and leverage stability, must be contemplated. All that considered, we will conduct a DCF valuation as the primary methodology, more specifically, the FCFF, and a Relative Valuation will be applied to supplement and enrich the analysis.

Ryanair's valuation will disregard the remaining methodologies. The Asset-based valuation is not the most suitable given that the company operates in the airline industry, where value comes mostly from operational cash flows and intangible assets, including brand loyalty and brand value. Similarly, the Contingent Claim valuation, while suitable for companies with substantial financial options, is less applicable to Ryanair's financial structure.

In this sense, our valuation process begins by reviewing both the industry and the company's operational environment. Understanding the industry dynamics, competitive landscape, and market trends enables us to identify the key drivers that influence Ryanair's financial prospects.

After that, we proceed to the most critical section of an Equity Valuation, the forecast of financial statements. This step is the foundation of a good analysis that incorporates the estimation of the company's future cash flows. Lastly, with the information of the data projected, we can employ the DCF and Relative Valuation to ascertain the fair value of Ryanair's stock on March 31, 2023.

4. Industry Overview

4.1. Macroeconomic Outlook

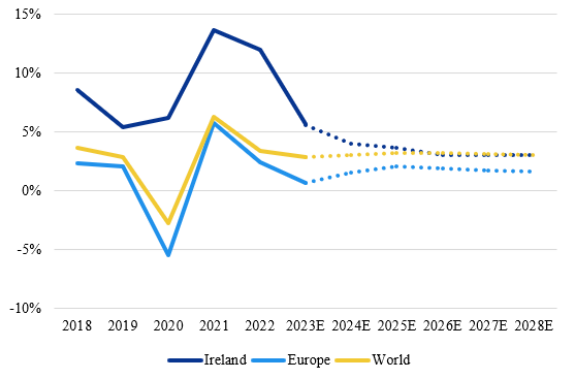
An industry development can be directly related to the economic environment. The appearance of the global pandemic, COVID-19, in late December 2019, along with the measures taken by the governments, impacted operations in all industries, leading to a worldwide economic crisis. While recovering from more than two years of the pandemic, the world is surprised by Russia's invasion of Ukraine, which is contributing to a severe slowdown in the global economy and increasing the upward pressure on several commodities prices, according to the World Bank. In general, the state of the economy can aid or jeopardize an industry's growth over which a firm has no control. For that reason, the following are the main elements that have an impact on the airline industry:

Gross Domestic Product

One of the most significant indicators of world economic health is the gross domestic product (GDP). This metric reflects a nation's economic development by measuring the total economic value of all goods and services generated within a country during a specific time frame. Since the 2008 financial recession, the world GDP has grown slowly. According to Figure 1, which shows a 2.8 percent decline in economic growth in 2020, GDP reflects the effects of the global pandemic, becoming the worst economic downturn since the Great Depression. Although economic activities started to reach pre-pandemic values as COVID-19 infections decreased, the expected growth for the upcoming years will remain between 2 and 4 percent (Figure 1). This economic rebound coincides with a resurgence in air travel demand.

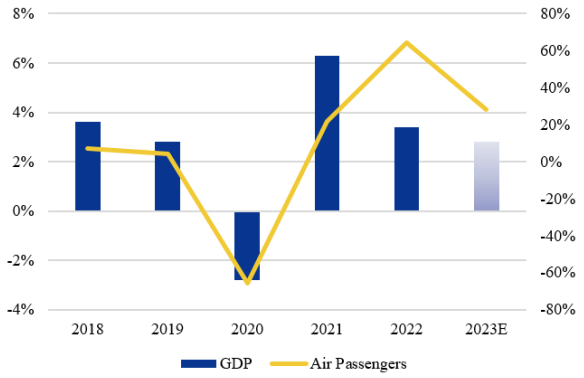
Changes in the economic conditions influence travel behavior. As the GDP rises, the number of passengers tends to follow the same pattern (Figure 2).

Figure 1: *GDP growth (%) (2018-2028E)*



Source: *IMF*

Figure 2: *Airline Passengers and GDP growth (%) (2018-2023E)*



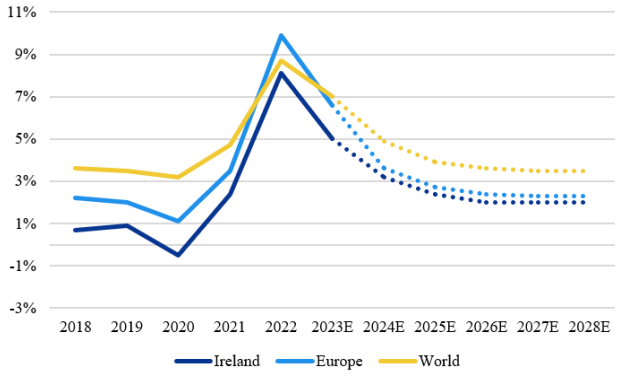
Source: *IMF and IATA*

Europe follows a similar pattern to the global GDP. During the COVID-19 period, the government restrictions severely disrupted areas that many member states strongly depend on, particularly tourism. However, following the downturn in 2020, the economy recovered quickly, with Ireland once again continuing to expand more than the European average. Overall, the Irish economy is anticipated to continue to grow but gradually slow down. Despite the significant importance of exports, the rise in inflation, the supply constraints, and the uncertainty in times of War compromise investment and private consumption.

Inflation

Inflation is a widespread rise in price levels, resulting in lower purchasing power. This phenomenon affects the airline industry mainly in operating expenses, aircraft prices, and the purchasing power of passengers. Over the past decades, the annual inflation rate has remained relatively stable. During 2000-2020, the rate ranged between 3 and 4 percent, deviating from this scope six times, particularly during the 2008 financial crisis. However, since 2021, the inflation rate has been increasing globally, reaching its peak in 2022, contemplating the impacts of lockdowns in the preceding two years and, more recently, the War in Ukraine. According to the IMF, these events motivated a shock in commodity markets and a supply-demand imbalance.

Figure 3: *Inflation rate, average consumer price (2018-2028E)*



Source: *IMF*

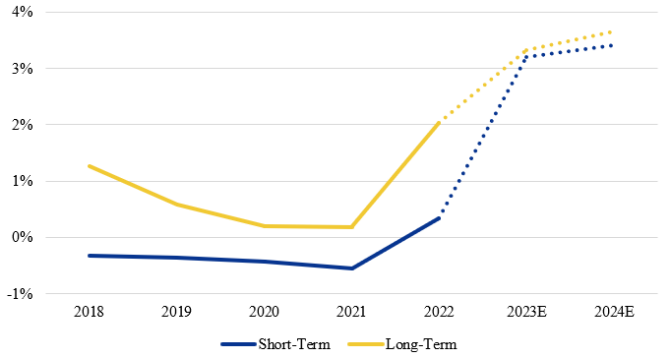
As demand decreases and commodity prices moderately level off, projections for the upcoming years indicate that inflation will decrease from 8.7% in 2022 to 7% in 2023 and continue to reduce in the years ahead (Figure 3). Despite the global deceleration of inflation, the rate is still above the EBC target and will persist at levels higher than its pre-pandemic level.

Interest rates

The airline industry is responsive to fluctuations in interest rates, primarily concerning fleet expansion. Interest rates are a monetary tool that Central Banks use to control demand and inflation. In a high inflation context, such as the current economic environment, the ECB raises

interest rates with the aim of affecting borrowing costs, which will reduce demand for goods and investments. The outlook for the coming years continues to indicate rising interest rates due to inflationary growth. (Figure 4).

Figure 4: *Interest rates in Euro Area (2018-2024E)*



Source: *OECD*

In Ryanair's case, loans account for a substantial portion of aircraft fleet purchasing. Beyond that, the firm raises unsecured debt through the issue of capital market bonds and syndicated bank loans. To mitigate interest rate risk, the firm uses interest rate swaps.

Exchange rates

Most airline companies perform transactions in a variety of currencies. As a result, currency appreciation or depreciation affects a company's results, exposing airlines to currency fluctuations risk. According to IATA, changes in currency rates may impact demand, supply, and financial results. Additionally, it states that the US dollar represents the predominant foreign currency exposure due to fuel expenses, maintenance expenditures, aircraft purchases, and lease payments.

In terms of currency exposure, Ryanair predominantly conducts its operations in euro, UK pounds sterling, and USD dollar. Since it is an Irish company, it discloses its results in euros. The company generates revenues and expenses in the UK pound sterling, given that a considerable portion of its activities is in the United Kingdom (UK). At the same time, when expressed in US dollars, the company only incurs expenses, becoming a greater risk to Ryanair when performing an exchange for euros. An appreciation of the euro against the US dollar would reduce the operating costs, and the opposite would negatively affect the company. Ryanair hedges the positions with forward contracts to mitigate the exposure to exchange rate fluctuations.

Fuel and Oil prices

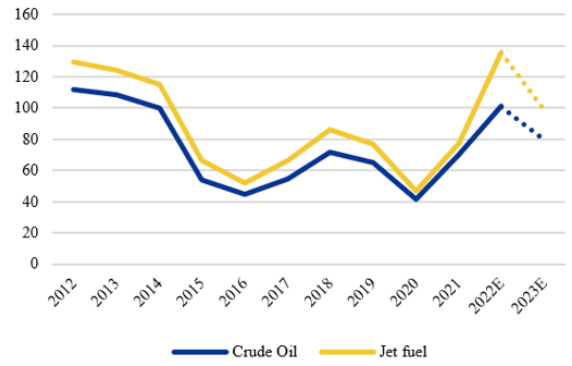
Jet fuel and crude oil represent a significant portion of the industry's operating cost, accounting for approximately 25-30% on average. Brent crude oil, due to its dominant position

in the market, serves as a benchmark commodity for setting the price of other crude oil and is also suitable for refining into gasoline and diesel. Additionally, crude oil distillation produces Jet Kerosene, which serves as aircraft fuel. As a result, there is a high correlation between jet fuel and oil prices (Figure 5).

The world's dependence on crude oil, the most widely traded commodity, makes the economy vulnerable to price changes. The oil market is considered highly volatile, with prices dependent on factors such as the producers (OPEC, the US, and Russia), politics, the global economic state, and supply and demand. While the economy is still recovering from the pandemic, fuel prices experienced a higher shock following the Ukraine invasion (Figure 5).

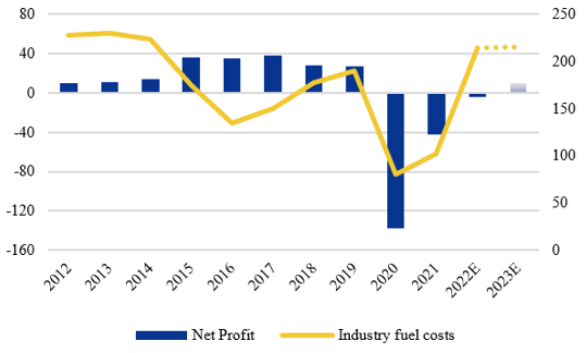
For airlines, the volatility of the oil markets poses a significant challenge. An increase in oil prices increases industry expenses, which has the knock-on effect of raising passenger fees. Therefore, the airlines' profitability can be highly affected by market fluctuations. Figure 6 illustrates the connection between the net profit and the industry fuel costs.

Figure 5: *Crude Oil and Jet Fuel price (USD/Bbl)*



Source: *IATA*

Figure 6: *Industry Fuel Costs and Net profit ($Bn)*



Source: *IATA*

Companies in the sector, like Ryanair, engage in fuel hedging contracts to mitigate the exposure to price changes. In addition, IATA advises businesses to choose fuel-efficient aircraft, another strategy to lower risk, in order to reduce fuel expenses.

4.2. Industry Analysis

Over the past decades, the airline industry has significantly contributed to the expansion and development of the global economy. It significantly contributes to globalization by connecting nations and promoting global trade and tourism. According to IATA, in 2022, the industry contributed 759 billion dollars to the world GDP, corresponding to a total of 0.7%.

As opposed to passenger transportation, when airplane technology first emerged, it primarily transported goods and weapons. However, after several trials and errors and

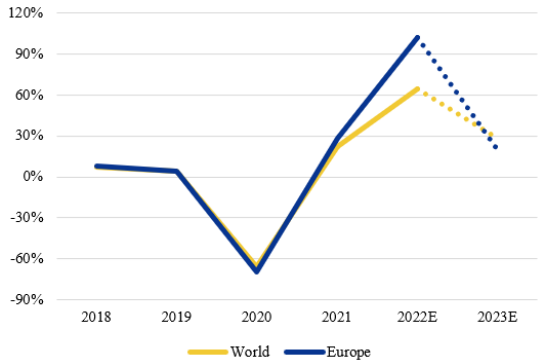
technological improvements, commercial flights became more of a reality after World War II. The airline deregulation process under the 1978 Act was the first step to the economic liberalization of air travel, removing all the government control over fares, routes, and market entry of new airlines, keeping commercial air travel competitive. In the European Union (EU), the process began in the 1990s, and the deregulation enabled airlines to personalize their business model and services, leading to a change in the structure of the markets.

The airline industry is cyclical and volatile, entirely dependent on supply, demand, and macroeconomic conditions. Nonetheless, the competition among companies in the industry is quite fierce, and to draw in more customers, the companies invest significant amounts in marketing and promotional campaigns. As a result, the number of passengers has risen following the lower travel costs and the addition of new routes.

The sector was among the first to face COVID-19 repercussions in 2020, as several governments banned flights and imposed travel restrictions and national lockdowns. As 2023 progresses, positive signs of recovery emerge within the airline sector, with a notable increase in air passengers. Passengers' volume is on an increasing trend, leading back to pre-pandemic values. Notably, revenue passenger kilometers (RPKs), a measure of air traffic, remarkably rebounded from a -65.8% decline in 2020 to a 64.2% recovery by 2022 (Figure 7).

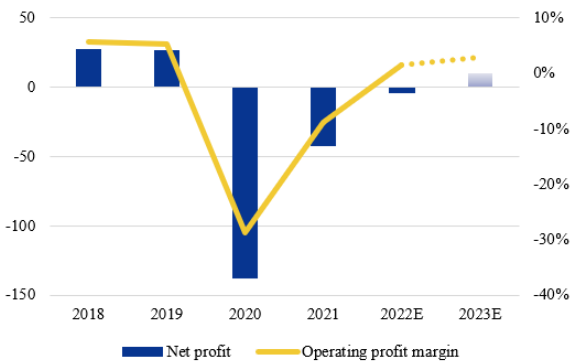
In this context, industry revenues displayed a fluctuating trend, increasing from 706 billion dollars in 2012 to reaching a peak of 838 billion dollars in 2019. However, due to travel restrictions imposed by the global pandemic, there was a decrease in revenues to 384 billion dollars. The decrease in revenues, coupled with the industry's fixed and semi-fixed costs, resulted in a high cash burn, which led to a sharp fall in operating profit of -34% (Figure 8). The industry's recovery in 2021 highlights the industry's resilience, with an increase of 20% in the operating margin.

Figure 7: *RPKs (%YoY) (2018-2023E)*



Source: *IATA*

Figure 8: *Net Profit ($Bn) and Operating Profit Margin (%) (2018-2023E)*



Source: *IATA*

4.3. Market Segmentation

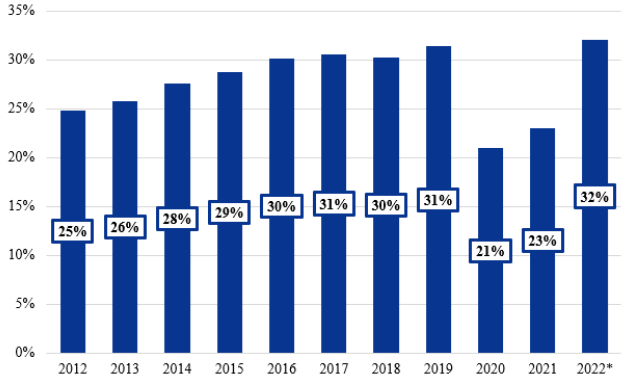
Since deregulation, airline businesses have evolved to remain competitive. As a result, corporations focus more on their business models to create value for passengers. Within the airline market, two main categories emerge based on carrier type: Full-service carriers (FSCs) and Low-cost carriers (LCCs).

The FSCs, also referred to as traditional or legacy carriers, offer passengers full-board flight experience. This business model prioritizes in-flight services, providing onboard catering services, seat allocation, baggage allowance, and entertainment during the flight. These carriers operate on a hub and spoke network connecting passengers from different regions to various destinations through major airport hubs.

On the other hand, the strategy of LCCs in the airline industry focuses mainly on cost reduction and operating efficiency. In contrast to FSCs, the low-cost model operates without offering traditional services and amenities, enabling the administration of low fares. Passengers must pay an additional cost to use this sort of service, which generates ancillary revenues for businesses. As part of their strategy, LCCs often operate point-to-point flights, utilize secondary airports, and maximize fleet utilization.

In the late 20th century, Southwest Airlines in the US and Ryanair in Europe pioneered the development of the LCC model. Strategically focusing on costs, this model drastically transformed the air transportation sector. With a 33.7% market share in September 2022 in Europe, LCCs have rapidly expanded their presence in the airline industry (Figure 9).

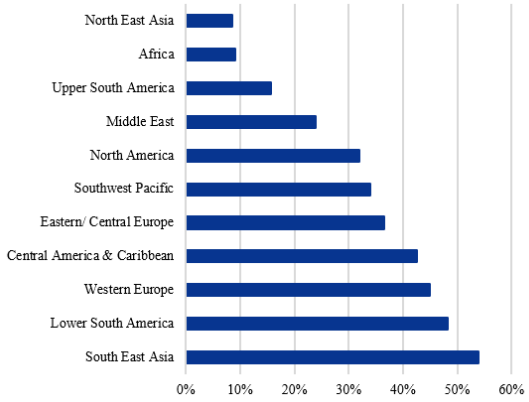
Figure 9: *Evolution of LCCs (%) (2012-2022)*



*Without Q4 values

Source: *EUROCONTROL*

Figure 10: *Regional distribution of LCC market share (2022)*



Source: *Statista*

Assessing the market's regional distribution, it is observable that in March 2022, the South East Asia LCC had more than half of the market (Figure 10). Even so, there remain several regions where this type of carrier has ample room for further development.

LCCs pose a significant challenge to traditional carriers in the short and medium-haul routes. Passengers' preference for competitive prices over higher comfort levels, especially among leisure travelers, exhibits significant price sensitivity, driving the emergence of LCCs.

4.4. Competitive Landscape

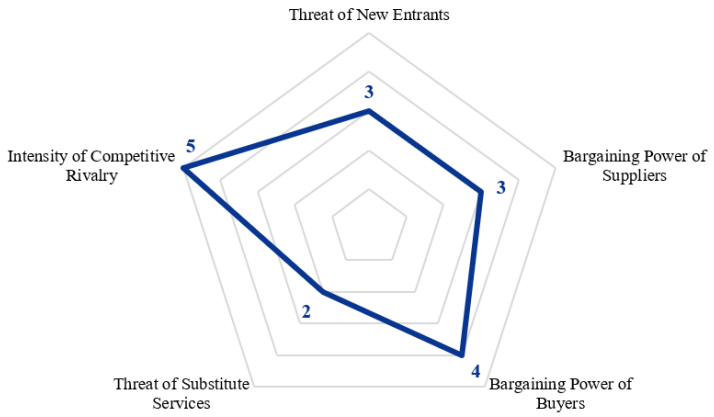
Companies must innovate as demand for air travel rises to satisfy evolving customer expectations and maximize operational effectiveness. With a vast market, companies must authenticate their brands' identities and strive to create a solid competitive edge through differentiation strategies. The airline with the highest market share in 2022, accounting for 24.47% of the European airline industry's revenues, was Lufthansa, according to each company's fiscal year. Moreover, Ryanair stands out as the lone advocate of the LCC model among the top five firms with the largest market share, with a significant 8.05% stake, closely followed by EasyJet's 5.09% share (Appendix B).

The airline business is a highly competitive sector. Multiple companies offer comparable services, with identical itineraries and often with the same pricing structure. The similar nature of the customers' experience puts airlines in an ongoing struggle to retain their customer bases. Consequently, it is essential to have a competitive advantage in this industry, such as strategic marketing campaigns, innovative service enhancement, customer loyalty programs, and fair pricing.

4.5. Porter's Five Forces

Diving into industry analysis, "competition is not manifested only in the other players … competition in an industry is rooted in its underlying economics, and competitive forces exist that go well beyond the established combatants in a particular industry" (Porter, 1979, p. 137). The essence of the model relies on assessing the attractiveness of a sector. It identifies market opportunities, discovers industry trends, and assesses the competitive landscape. By examining these forces (Appendix C), organizations can strategically position themselves, differentiate from opponents, and build a solid foundation for sustainable success.

Figure 11: *Porter's Five Forces Model*



Source: *Author Analysis*

4.6. Future Perspectives

As the world progresses, the airline industry must adapt and evolve to consistently meet the evolving needs of passengers. Air transportation has become a support pillar of society, serving as a vital connection between people and transporting goods and services worldwide.

With the increase in demand and the need to expand the business, airlines are taking on a more active role in innovating sustainable approaches. In 2022, the global airline industry contributed 2% of the world's carbon dioxide (CO_2) emissions. There is an urge to reduce emissions and move toward greater environmental responsibility and carbon neutrality. In October 2022, by mutual consensus, the International Civil Aviation Organization (ICAO) members agreed to accomplish net-zero carbon emissions by the year 2050. This long-term objective can be reached by expanding sustainable aviation fuels, optimizing flight operations, and, with technological advancement, the emergence of electric and hybrid aircraft.

Airlines can leverage technological advancements to elevate customers' experience, particularly with airports, significantly. Currently, passengers spend a lot of time on procedures that could easily be automatized, such as the check-in and baggage screening lines. Face recognition technology during check-in stands out as a disruptive use of biometric technology, improving the passenger experience and speeding up the entire process. Furthermore, airports can use virtual queuing systems to reduce congestion at peak times. Take the example of baggage screening by providing passengers with advance notice of a specific hour to go to the airport, granting them front-of-the-line access at predetermined intervals.

Amid these changes, it is also important to consider how LCCs are developing in the future. While LCCs have traditionally operated on short and mid-haul routes, their future business model envisions expansion into long-haul routes, competing with the FSC in another segment.

5. Company Overview

5.1. Company Description

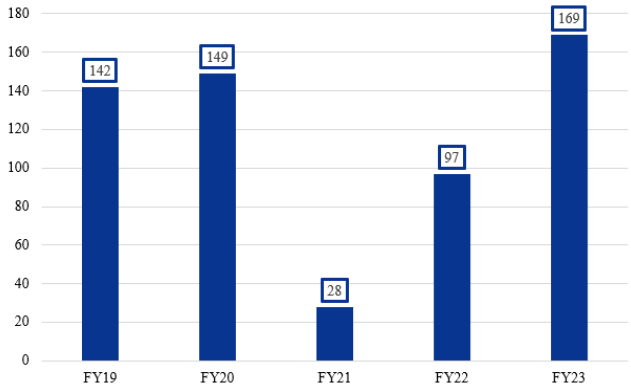
Ryanair Holdings plc is the largest airline group in Europe, headquartered in Dublin, Ireland. The company was established as a holding company for Ryanair Limited in 1996 after being created in Ireland in 1985. The latter is the parent company of Buzz, Lauda, Malta Air, Ryanair DAC, and Ryanair UK.

The company's first flight was in 1985, operating in a 15-seat aircraft connecting Waterford and Gatwick Airport. However, it was only in the early 1990s that the corporation suffered a significant change in its business trajectory, marking a crucial period in its history. Ryanair pioneered the adoption of the low-cost airline model in Europe. It is a no-frills model, where the non-essential amenities are preceded as extras, enabling the maintenance of the low fare prices.

In 1997, the airline went public, and as of today, it has listed shares on the Euronext Dublin and Nasdaq stock markets under the trading symbol RY4C and RYAAY, respectively. Following up, in 2020, the company launched a booking website, Ryanair.com, representing a considerable cost-saving measure. By eliminating the intermediaries associated with traditional travel agents, Ryanair promoted a more efficient way to book flights directly.

In the fiscal year 2023, the noted carrier administrated a fleet of 537 aircraft, facilitating over 3,000 daily flights connecting 36 countries. The company's passenger has increased significantly, from 1 million in 1991 to approximately 169 million in 2023. However, the COVID-19 pandemic temporarily halted the company's development trajectory in FY21. Nevertheless, by FY23, the airline had not only recovered but surpassed pre-COVID-19 figures (Figure 12). Moreover, from FY22 to FY23, Ryanair achieved a compound annual growth rate (CAGR) of 74%.

Figure 12: *Number of passengers, per year (in Mn)*



Source: *Ryanair Annual Report*

The ongoing development of Ryanair demonstrates a commitment to sustainable growth. Currently, it is considered the European greenest and cleanest airline. From the beginning, the firm made decisions to shape the future of travel. As a result, it has invested in new routes and bases and created differentiated services to fill the needs of passengers.

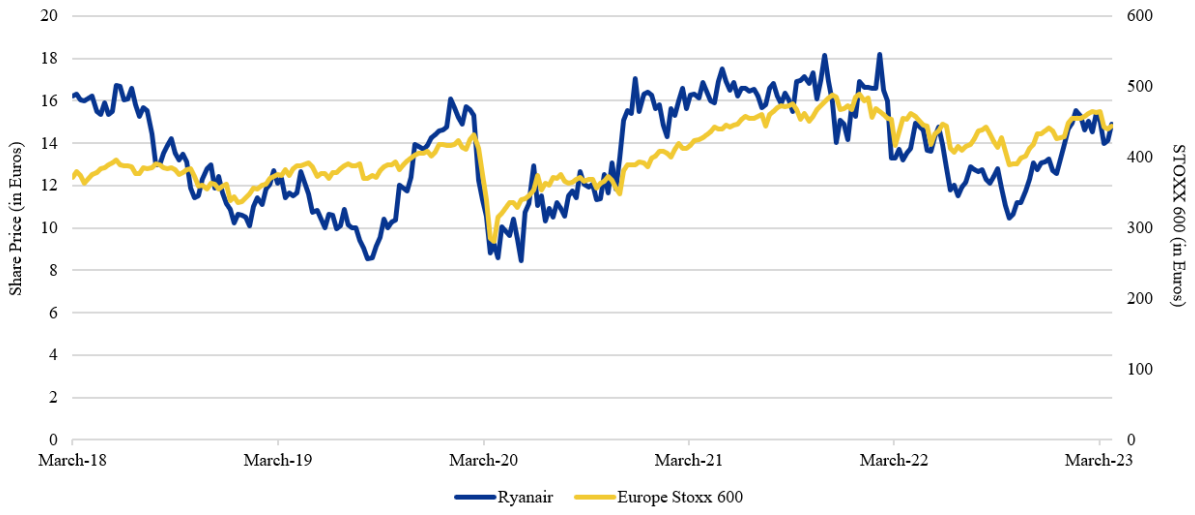
At the end of March 2023, the company had 1,138,674,528 shares. The following illustrates the current shareholding structure (Appendix D), with the United States retaining 43% of the Ordinary Share. According to EU Regulation, Ryanair must be an EU majority-owned company. Therefore, the Board of Directors holds the authority to prevent non-EU nationals from acquiring a quantity of Ordinary Shares that could put the company at risk. Currently, the maximum permission for non-EU nationals is 49.9%.

5.2. Stock Performance

As previously mentioned, the company has a listing on the stock market. Over the years, Ryanair's stock price has demonstrated some volatility (Figure 13) due to, for example, the pandemic, staff shortage, flight cancelations, and other industry challenges. The share price experienced significant growth, starting at 3.46€/share in 2001 and reaching 14.88€ on March 31, 2023.

For a broader perspective, it is essential to compare the stock performance with an appropriate market index, such as STOXX 600 Europe. This index comprises 600 of the largest companies across European countries, being a strong indicator of how the overall European market reacts.

Figure 13: *Ryanair stock price vs Europe Stoxx 600*



Source: *Reuters and Yahoo Finance*

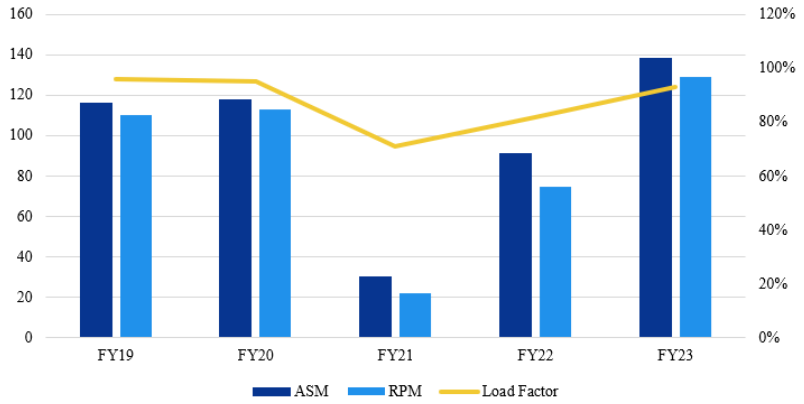
5.3. Operational Performance

When evaluating a company's performance, some metrics can show how Ryanair displays its capacity to make the best use of its resources and satisfy passenger demand. These metrics give insights into company efficiency, effectiveness, and commitment to customer satisfaction.

One crucial metric to consider is the Available Seat Miles (ASM), which portrays an airline's total capacity to operate. Similarly, the Revenue Passenger Miles (RPM) considers the actual passenger flow. Both measures have been growing at the same pace (Figure 14), demonstrating that Ryanair can align its supply (ASM) with demand (RPM).

The ratio between RPM and ASM represents the Load Factor, which enlightens the percentage of flight seats filled with passengers. In FY23, the Load Factor was 93%, meaning that 93% of the total seats were occupied by paying passengers, indicating a solid passenger demand and operational efficiency (Figure 14).

Figure 14: *Ryanair's ASM (€Bn), RPM (€Bn) and Load Factor (%)*



Source: *Ryanair Annual Reports*

5.4. Financial Analysis

Under Michael O'Leary's leadership, Ryanair has remained profitable, excluding the pandemic years from this spectrum. After observing the operational metric, it is important to delve into how these measurements influence the firm's financial performance.

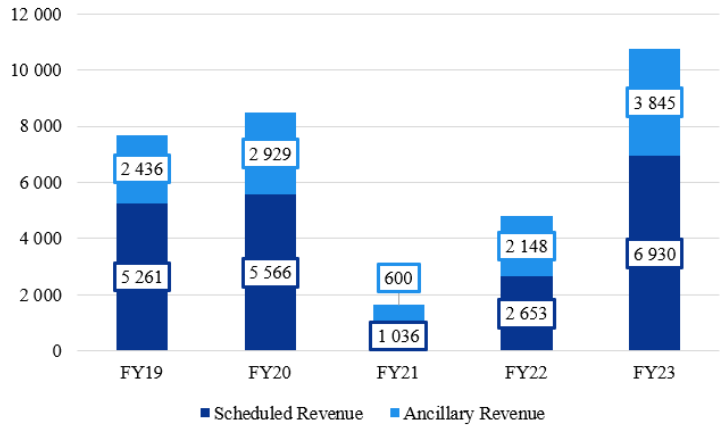
The company's operations as a low-cost airline are its sole business sector. As a result, the streams of revenues will result only from this activity. Ryanair divides the operational revenues into scheduled revenues and ancillary revenues.

Beyond the traditional air passenger service, Ryanair provides several ancillary services that can support and accommodate more passengers, such as the sale of goods and beverages during flights, car renting, accommodation services, car parking, and airport transfers, among

other activities. This type of service has been growing over the years (Figure 15), being another source of income that the company obtains.

The basis of the firm's income stream, scheduled revenues, encompass the bought ticket prices. In 2023, this component has a 64% share of the core revenue with 6 930 million euros, along with the 36% that belongs to the ancillary revenues (3 845 million euros).

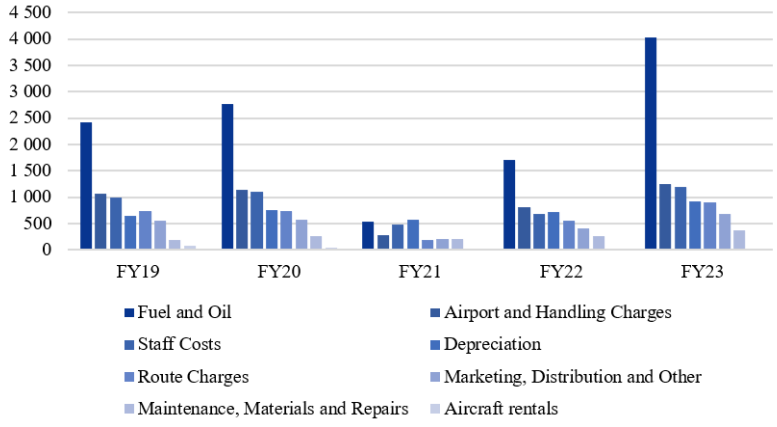
Figure 15: *Ryanair Revenue Breakdown (FY19-FY23)*



Source: *Ryanair Annual Report*

Understanding Ryanair's cost structure is one of the essential components of an organization's financial assessment. Cost control is a core element of the company's business strategy while continuing to offer affordable tickets and generating profit.

Figure 16: *Ryanair Cost Structure (FY19-FY23)*

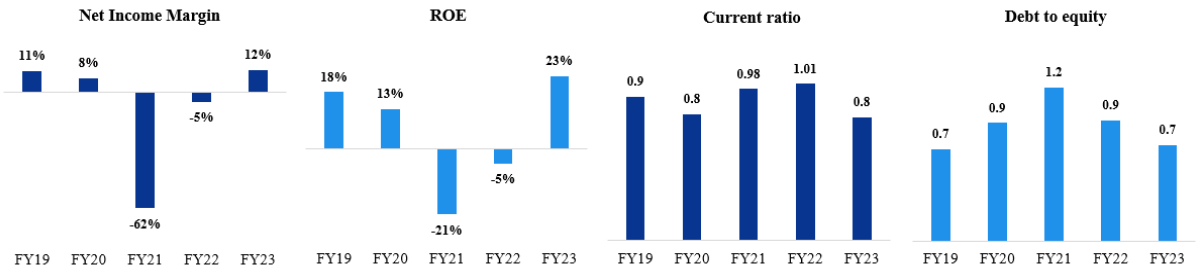


Source: *Ryanair Annual Report*

Fuel and Oil costs are the main operating expenses of Ryanair. In FY23, these expenses witnessed a notable increase, primarily attributable to the conflict in Ukraine, leading to a surge in fuel prices. Despite Ryanair's fuel edge policy, the company ended up affected.

For a whole perspective of a firm's well-being, it is necessary to understand some essential financial metrics that incorporate Ryanair's profitability, liquidity, and solvency.

Figure 17: *Financial Highlights (FY19-FY23)*



Source: *Ryanair Annual Report*

Over the past five years, Ryanair's financial metrics have shown an unprecedented trajectory, especially in the net income margin and the ROE. Both metrics reflect the impact of the global pandemic in FY21. Nevertheless, in FY22 and FY23, the company demonstrated a turnaround in the net profit margin and ROE of 12% and 23%, respectively.

The debt to equity (D/E) illustrates Ryanair's financial leverage. In FY21, the company had an increase in the ratio, but it was able to manage debt levels in the following years. Lastly, the metric current ratio exhibits the company's liquidity, which has demonstrated fluctuations in short-term liquidity, and in FY23, it is notable that the company faced challenges in meeting its short-term obligations.

5.5. SWOT Analysis

A thorough analysis of a company's internal and external factors is necessary to comprehend its strategic position within its industry. By evaluating the internal strengths and weaknesses alongside the external opportunities and threats, we aim to provide a holistic overview of Ryanair's present standing in the airline industry.

5.5.1. Strengths

Ryanair holds a prominent position as a leading LCC in Europe. The airline is able to continuously provide some of the most affordable tickets solely due to its focus on cost reduction and operational efficiency. The firm achieves this cost leadership using several tactics, including managing a fleet of primarily single-type aircraft and striking advantageous agreements with secondary airports.

Efficiency is a cornerstone of Ryanair's operations, notably with its primary Boeing 737 fleet. To further modernize and enhance cost efficiency, the company recently invested in 300 new Boeing 737-Max-10 aircraft. These new aircraft deliver a 20% reduction in fuel

consumption, along with a 20% decrease in CO_2 and a substantial 50% reduction in noise, reinforcing the firm's commitment to cost-effective and environmentally conscious operations.

Additionally, Ryanair's ability to eliminate travel agents by implementing an intuitive online booking system and continuously maintaining a high load factor, indicating the efficient use of available seats, reflects the organization's solid operational efficiency. Moreover, its extensive route network and strong brand recognition contribute significantly to its competitive edge.

5.5.2. Weaknesses

Despite its strong market presence, the company faces several vital areas for improvement in its operations and brand image. First and foremost, LCC customers tend to be highly price sensitive, often choosing airlines solely based on the fare price. This intense competition among this type of carrier undermines the establishment of brand loyalty, making it a challenge for Ryanair to secure the same customers.

Another significant challenge is brand perception. According to Daily Mail, Ryanair is among one of the world's worst short-haul airlines. The company has faced criticisms, especially in relation to additional surcharges, less comfortable seating, limited in-flight entertainment options, and unsatisfactory customer service.

The airline's labor relations have also been a recurring issue - disputes and strikes resulting from disagreements with employees over working conditions. Moreover, the use of secondary airports presents an inconvenience for passengers due to limited facilities and transport connections.

5.5.3. Opportunities

Numerous opportunities emerge that might greatly enhance Ryanair's position in the market. The anticipated rise in airline demand post-pandemic presents a promising opportunity for the company to rebound and potentially surpass its previous market presence.

The Airline Overview section highlights regions with a limited LCC market presence, offering Ryanair an opportunity to expand its services to underexplored regions in Africa, the Middle East, and Eastern Europe. By expanding to these areas, the company will have a larger market presence and become an industry leader in less saturated markets.

Mergers and Acquisitions offer Ryanair an alternative to strengthen its competitive advantage. The firm could consider forming alliances with other airlines in order to increase its market share following its acquisition of Malta Air in the 2020 fiscal year.

Moreover, for Ryanair, diversification of services offers an additional revenue potential. The organization might decide to branch out into other supplementary service, such as travel packages and in-flight entertainment. These value-added services may increase customer engagement and loyalty.

5.5.4. Threats

A series of risks threaten the stability of the market and Ryanair's operations. Seasonality is still an issue, which leads to inconsistent demand for travel at different times of the year. The cyclical nature of travel demand affects revenue streams and operational consistency.

The airline industry is highly concerned about fuel price volatility as it has a considerable impact on operating costs. Global economic and political factors, market speculation, and supply chain disruptions significantly affect Ryanair's profitability by causing fluctuations in jet fuel prices. Another pressing threat is currency movements. Ryanair is vulnerable to currency rate risk, especially involving the euro and the US dollar.

The company's dependence on a single supplier, Boeing, represents a considerable risk. The scarcity of companies offering similar services makes Ryanair vulnerable to disruptions in Boeing's operations or delays in aircraft delivery.

Another serious threat is Brexit. Ryanair's operations and financial performance can be affected by changes in the EU-UK TCA regarding the open air transport markets, freedom of movement, and trade agreements. Although headquartered in Ireland, Ryanair derives the majority of its revenues from the UK.

Moreover, the increase in remote work and the prevalence of video platforms might impact air travel demand. Additionally, economic downturns or global crises, such as the COVID-19 pandemic, could also have the same effect as the preceding statement.

5.6. Environmental, Social & Governance

According to Sustainalytics ESG Risk Rating, Ryanair is the top-rated European airline with a score of 23.4 on a scale ranging from 0 to 100. A lower score indicates better ESG performance. This rating provides insight into the overall ESG performance and the potential risks associated with environmental, social, and governance factors. In comparison with the industry, Ryanair secures the 196th position among 394 companies, with EasyJet following in the 247th place.

The comprehensive EG initiatives undertaken by Ryanair reflect the company's commitment to foresting sustainability and responsible corporate practices, as exemplified by the following results and policies:

Table 1: *ESG policies and results*

Environmental

In FY22, Ryanair committed to achieving Net Zero emissions by 2050, covering the Scope 1, 2, and 3 emissions.

To mitigate Scope 1 emissions generated using jet fuel:

- The group is growing its fleet with a more sustainable aircraft (Boeing 737-MAX-10). For instance, in FY23, the carbon intensity improved to 66g CO2 pax/km, mainly due to the addition of new Boeing 737-8200s in the fleet.
- Promoting the use of sustainable aviation fuels (SAF) at a higher rate. The company anticipates that these fuels will contribute to achieving 34 percent of the 2050 net zero target.
- The company supports the "Single European Sky" project in an effort to increase in-flight efficiency.

In the scope of the Scope 2 emissions:

- Green-certified electricity powers all Dublin buildings and hangars in Seville, Vienna, and Stansted.

And for the Scope 3 emissions:

- Ryanair has replaced 40% of the diesel group handling equipment with electric alternatives.
- Greater availability of SAF (agreement with Neste, OMV, Repsol, and Shell).

Social

- In FY23, the company launched the app "Safety Alert" for pilots, allowing the communication of urgent issues.
- In FY23, the firm made a 5-year partnership with CEFA Aviation.
- Ryanair reached an agreement to restore COVID-19 pay cuts to 28 months earlier.
- Finalized plans to develop two skills centers in Krakow and Madrid.

Government

- Michael O'Leary's contract as the Group CEO extends until July 2028.
- The Board comprises 30% women, surpassing the target of 33% female representation.

Source: *Ryanair Sustainability Report*

6. Forecast Analysis

After conducting a comprehensive analysis of the industry and the company's operational environment, the equity valuation process reaches the section where we design the future firm's financial trajectory. With the aim of valuing Ryanair using the DCF Valuation and Relative Valuation, it is necessary to forecast three financial statements. Hence, an accurate equity valuation relies heavily on forecasting analysis, emphasizing the significance of this section in determining the target price.

The purpose of the research is to evaluate Ryanair's share price as of March 31, 2023. Following that, a historical period of 5 years, from 2019 to 2023, of the Income and Balance Sheet Statements (Appendix E e F) will be used as a foundation for the forecasting, enabling the assessment of present figures, ratios, and past patterns. Similarly, our projecting period spans also for five years, covering the years 2024 through 2028.

6.1. Income Statement

6.1.1. Scheduled Revenues

As seen in the Company Overview, the scheduled revenues represent the primary operations of the airline. Ryanair's capacity and operational effectiveness have a significant impact on revenue development; thus, we choose to base our projections on these factors.

1. **Capacity:** An airline's capacity determines its proficiency to supply transportation services, which is measurable by the metric ASM.

$$ASM = Seats\ Available\ \times Average\ Sector\ Length\ (miles) \quad (18)$$

2. **Efficiency:** It relates to the effectiveness of how airlines use their capacity to generate revenues, which is quantifiable using the metric Revenue per Available Seat Mile (RASM). In essence, RASM stands for the revenue generated for each seat flown per mile.

$$RASM = Yield\ \times Load\ Factor \quad (19)$$

By determining both components, we can precisely estimate scheduled revenues by multiplying ASM with RASM.

ASM Metric Breakdown

Seats Available

The parameter seats available define the product of the average seating capacity of the airline by the sectors flown during a specific period. To compute this, we first need to assess how many future aircraft the airline anticipates operating in order to determine the seating capacity of each plane. The foundation for these projections relies on data retrieved from Ryanair's Annual Report (Appendix G).

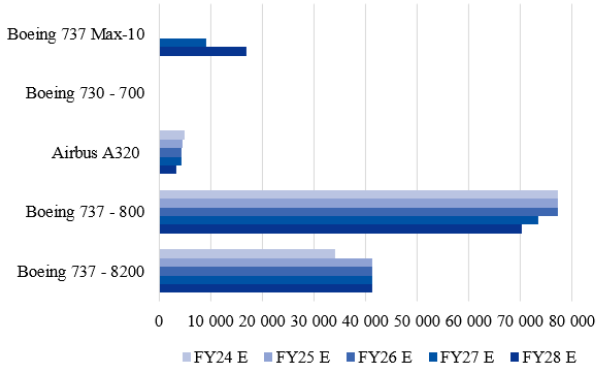
Table 2: *Number of Aircraft (FY23-FY28E)*

Type of Fleet	FY23	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
Boeing 737 - 8200 "Gamechanger"	98	173	210	210	210	210
Boeing 737 - 800 "New Generation"	409	409	409	409	389	372
Airbus A320 (leased)	29	28	25	24	24	19
Boeing 730 - 700 (leased)	1	1	1	1	1	1
Boeing 737 Max-10	n/a	n/a	n/a	n/a	40	74
Number of Aircraft	**537**	**611**	**645**	**644**	**664**	**676**

Source: *Ryanair Annual Report and Author Estimation*

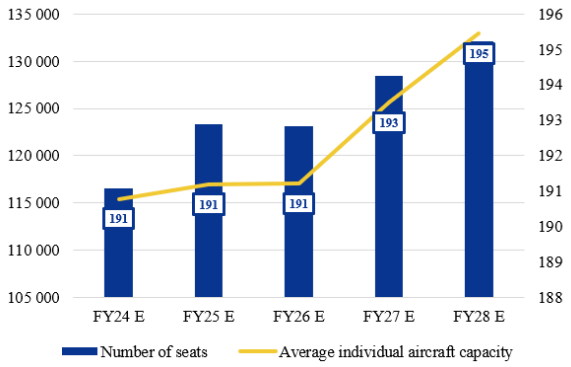
Table 2 displays the projected number of planes the company expects each year. To ascertain the airline's average individual seating capacity, we must consider each aircraft's maximum passenger occupancy, as they come with different dimensions and capacities (Figures 18 and 19).

Figure 18: *Maximum number of seats, per aircraft*



Source: *Author Estimation*

Figure 19: *Total number of seats and average capacity*



Source: *Author Estimation*

To achieve the values of the sectors flown, we took a different approach by conducting a regression analysis. This analysis incorporated various variables, including Ryanair's number of aircraft, the number of European IFR flight movements, GDP growth, and inflation (Appendix H). The outputs provided helpful information for predicting the sectors' flown data.

Table 3: *Seats Available (FY24-FY28E)*

	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
Average individual aircraft capacity	191	191	191	193	195
Sectors flown	1 083 871	1 144 808	1 165 278	1 226 981	1 267 578
Seats available	**206 786 900**	**218 878 449**	**222 812 377**	**237 411 571**	**247 736 465**

Source: *Author Estimation*

After gathering all the inputs, we can estimate the seats available for each year, as seen in Table 3. It is notable that an increase in the seating capacity, coupled with an expansion of the fleet, demonstrates the strategic move of Ryanair to accommodate a more significant number of passengers and, consequently, remain competitive in the industry.

Average Sector Length (miles)

The average sector length represents the mean distance flown by a fare-paying passenger. To forecast this component, we perform a 5-year moving average approach, allowing the capture of patterns and fluctuations.

ASM Metric: From Data to Insights

Following the computation of ASM elements, we are able to compute the parameter. Table 4 showcases the conceptual underpinning for the measure. Notably, the ASM has been growing over the years, with a CAGR of 4%. This growth trajectory emphasizes the airline's commitment to raise its capacity and assist a greater number of individuals.

Table 4: *ASM (in Mn) (FY24-FY28E)*

	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
Seats available	207	219	223	237	248
Average sector length (miles)	770	769	771	769	769
ASM	**159 185**	**168 309**	**171 689**	**182 679**	**190 498**

Source: *Author Estimation*

RASM Metric Breakdown

Yield

The yield component refers to the average fare earned per passenger mile flown. This metric provides insights regarding the company's pricing strategy and its ability to generate revenue from ticket sales. Ryanair strategy is to offer low fares that typically change according to demand, seat availability, and advance booking.

To project this element, we consider the value of each last year as the starting point for the following year and apply half of the expected European inflation rate. With this adjustment, we want to maintain a balance between the airline's profitability and passenger affordability while also remaining competitive.

Load Factor

In relation to the load factor, it is a measure of an airline's efficiency in filling its available seats. For our projections, we prefer to use the load factor value from the fiscal year 2020 as a reference point. Prior to the pandemic, this was the year that Ryanair's operations were stable and achieved an efficient load factor. By choosing this fiscal year, we aim to illustrate the company's gradual transition back to normal operations.

***Table 5**: RASM (FY24-FY28E)*

	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
Yield	0.055	0.055	0.056	0.057	0.057
Load factor	95%	95%	95%	95%	95%
RASM	**0.052**	**0.053**	**0.053**	**0.054**	**0.055**

***Source:** Author Estimation*

Scheduled Revenues: Computation

Based on the latest, it is possible to estimate the revenues generated from ticket sales (Table 6). This parameter allows us to gauge the financial performance of the airline's core operations, shedding light on the company's income sources and overall financial health.

***Table 6:** Scheduled Revenues (FY24-FY28E)*

(In Million of EUR)	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
ASM	159 185	168 309	171 689	182 679	190 498
RASM	0.052	0.053	0.053	0.054	0.055
Scheduled Revenues	**8 271**	**8 863**	**9 149**	**9 847**	**10 386**
Number of passengers	**196**	**208**	**212**	**226**	**235**

***Source:** Author Estimation*

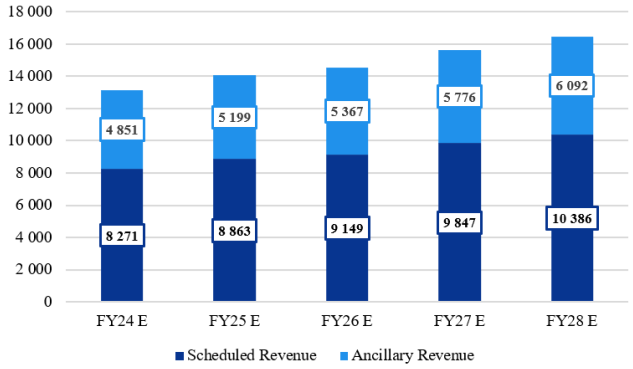
According to Ryanair Annual Report (2023), the introduction of new aircraft into the company's fleet will lead to a substantial rise in passenger numbers, with forecasts reaching approximately 230 million guests by FY28. As observable in the table above, our results align closely with the firm's projected numbers (Appendix I), underlining the accuracy of our forecasting methodology and its alignment with Ryanair's tactical objectives.

6.1.2. Ancillary Revenues

Besides scheduled revenues, the other stream of revenues of Ryanair is the ancillary revenues, portraying a substantial segment of the total revenues. These financial sources have a strong relationship with the sale of flight tickets, as passengers acquire them after the flight service. Given this connection, scheduled revenues serve as the foundation for forecast ancillary revenues.

The latter projection was assembled by considering the average weight of ancillary revenues relative to scheduled revenues over the past five years. Considering the historical data, it allow us to anticipate how ancillary revenues are likely to evolve alongside the scheduled revenues in the future.

Figure 20: *Operating Revenues (in €Mn) (FY24-FY28E)*



Source: *Author Estimation*

6.1.3. Other Income Items

In addition to the comprehensive breakdown of revenues, we projected the remaining Income Statement items using more straightforward methods (Appendix J) and, in Appendix K, the forecast statement. The methodology mainly relied on the weight of revenue rubrics from historical data. The goal was to align these components with the company's financial history.

Staff Costs

While using historical data for the other rubrics to project the staff costs, we adopted a slightly distinct approach. As the number of planes increases each year, the need for additional staff to handle operations grows.

Firstly, we assumed that between FY24 and FY28, there would be no employee turnover. To determine the future staffing needs of Ryanair, we established a correlation between the number of aircraft and the total number of employees, excluding the management and IT labs. Following that, in FY23, the crew requirement was 39 employees per aircraft. This ratio served as a reference point for estimating the number of employees needed in the upcoming years (Appendix L).

Additionally, we computed the staff costs on a per-employee basis by dividing the total staff costs by the number of employees each year, yielding an average staff costs figure. To align our projections with the expected economic conditions, we considered the effect of inflation.

After establishing these components, we estimated the costs for each year using the following formula:

$$Staff\ Costs_t = Average\ Costs_{t-1} \times Nº\ of\ employees_t \times (1 + Inflation_t) \quad (20)$$

Corporate Taxes

As stated in Ryanair Annual Report (2023, p. 210), "from April 2024, the overall effective rate of the company is expected to increase … for a global minimum tax rate of 15%". Bearing that in mind, we assumed the same tax rate of FY23 in FY24 since the fiscal year of Ryanair is March, and from then on, we adopted a tax rate of 15%, the minimum global rate.

6.2. Balance Sheet Statement

To build the Balance Sheet Statement, which lists a company's assets, liabilities, and shareholders' equity, we employed different methods. These methodologies, along with the data forecasted, can be found in Appendix M and Appendix N, respectively.

6.3. Cash Flow Statement

Within the context of this financial statement, two critical elements will be discussed in detail (CAPEX and Working Capital) due to their influence on the estimation of the FCFF.

6.3.1. CAPEX

The company's Capital Expenditure reflects changes in Property, Plant, and equipment (PPE) added by depreciation. For Ryanair, the PPE includes aircraft, hangar and buildings, plant and equipment, fixtures and fittings, and motor vehicles. In FY23, the total value of PPE was 9 900 million euros, of which 9 732 million euros corresponds to aircraft.

To forecast the future performance of PPE, we used the weight of aircraft (98%) as a proportion of the total PPE from FY23. Additionally, we incorporated the expected owned aircraft growth, along with the weight of the remaining PPE items (2%). The CAPEX forecast is available in Appendix O.

6.3.2. Net Working Capital

Working capital is an indicator that offers insights into a firm's immediate financial health by computing the gap between the value of its current assets and its current liabilities (Appendix O).

In all forecasted periods, the net working capital exhibits negative values. This occurs not just as a result of the significant investment made to expand the aircraft. Nevertheless, it is also a common occurrence in the airline industry since many carriers collect payments in advance of the actual service delivery.

7. Company Valuation

In this section, we employ the DCF and Relative Valuation methods to get to the core of the stock valuation process. These methods are powerful tools to uncover the intrinsic worth of a company.

7.1. Discounted Cash Flow Valuation

7.1.1. Cost of equity

To compute this element, we employed the CAPM, a widely recognized method for computing the required return of equity.

The first component of the CAPM is the risk-free rate, which relied on the yield of the 10-year German government bonds, as referred to in the Literature Review. As of March 31, 2023, this risk-free investment was 2.929 percent, as reported by Bloomberg.

To determine Ryanair's levered beta, we conducted a linear regression analysis based on Ryanair's 5-year daily returns against Europe Stoxx 600 index returns. The resulting slope of the regression, which represents raw beta, was calculated at 1.28 (Appendix P). This beta value suggests that the stock exhibits higher volatility compared to the overall market, indicating that investors can expect more returns to compensate for the increased volatility.

Finally, to estimate the market risk premium, it is used data gathered from the NYU Stern website. Damodaran's database provides equity risk premium information. We computed a weighted average of the equity risk premium by considering Ryanair revenue proportions from different regions (data from 2021-2023). Additionally, we added the country risk premium to reflect country-specific risks that the risk premium itself does not fully cover. We applied the same methodology to arrive at this value (Table 7).

Table 7: *ERP and CRP*

	Average Weighted (%)	ERP	CRP
United Kingdom	14.0%	5.0%	0.9%
Italy	23.3%	6.5%	3.3%
Spain	18.3%	5.5%	2.4%
Ireland	5.2%	5.0%	0.9%
Other (European Countries)	39.2%	6.4%	1.4%
		5.7%	**1.8%**

Source: *Damodaran and Author Estimation*

Having collected all the data, the cost of equity is the following:

Table 8: *Cost of Equity*

Cost of Equity	
Risk-free rate	2.29%
Beta Levered	1.28
Equity Risk Premium	5.67%
Country Risk Premium	1.78%
11.85%	

Source: *Author Estimation*

7.1.2. Cost of debt

Ryanair Annual Report (2023) reported that both Fitch and S&P upgraded the company's ratings to BBB+. The report also indicated that the weighted average interest rate of the outstanding borrowings stood at 1.78% as of March 31, 2023, serving as a proxy for the pretax cost. To calculate the after-tax cost of debt, we utilized the Irish corporate tax of 12.5%. Therefore, the cost of debt is determined to be 1.56%.

7.1.3. Market value of equity and debt

Finally, gaining insights into Ryanair's capital structure is imperative to determine the WACC.

The market value of equity demonstrates the market worth of a company's equity at a given moment. At the end of March, we valued this figure at 16 943 million euros by the product of the number of shares outstanding (1 138 million) by the share price in March 2023 (14.88€).

Since the book value of debt differs from the market value, which represents the current worth of a corporation's total outstanding debt, we employed an approach that incorporates various components of Ryanair's debt. To calculate the firm's debt, we choose to treat all debt as if it were a single coupon bond. In this scenario, the coupons representing all interest expenses, such as finance and lease expenses, were discounted by the cost of debt, which, in this case, is the weighted average interest rate of the outstanding borrowings. The final product will be the sum of the PV of Ryanair's outstanding bonds, operating leases, and non-traded debt.

According to Damodaran (1999), to incorporate operating leases in the approach, it is necessary to discount them at the pretax cost of debt, using an average of the maturity of each period interval. The present value of the operating leases is 221.31 million euros.

Table 9: *PV of Operating Leases (in €Mn)*

Maturity	Average	Commitment (€Mn)	Present value (€Mn)
<1	0.5	51	51
1-2	1.5	45	44
2-5	3.5	108	102
>5	7.5	29	25
Debt value of leases			**221**

Source: *Author Estimation*

In FY23, Ryanair had three bonds, with an amount outstanding of 2 800 million euros. The present value of these debt securities is the following:

Table 10: *PV of Ryanair's Bonds*

Bonds	Amount (€Mn)	Coupon rate (%)	Coupon	Maturity	Present value (€Mn)
1	750	1.1%	8.44	1.5	730.43
2	850	2.9%	24.44	2.6	812.2
3	1 200	0.9%	10.5	3.2	1134.8
					2677.45

Source: *Author Estimation*

Ultimately, regarding the non-traded debt, to incorporate the debt that is not traded in public markets, we employed the Damodaran technique in which "to convert book value debt into market valued debt is to treat the entire debt on the books as one coupon bond"[1]. The author presents the subsequent equation:

$$MV of\ Debt = Interest\ Expenses \times \frac{(1 - \frac{1}{(1+r_d)^{Avg.years}}}{r_d} + \frac{Non - traded\ debt}{(1+r_d)^{Avg.years}} \quad (21)$$

In assessing the market value of the non-traded debt, it becomes essential not to take into consideration the influence of operating leases and the issuance of bonds, as displayed in Table 11. The value MV of non-traded debt is 1 141 million euros.

Table 11*: Non-Traded Debt*

Maturity	Average	Debt (€Mn)	(%) Debt
<1	0.5	1 057	27%
1-2	1.5	808	21%
2-5	3.5	2 045	52%
>5	7.5	-	
Average maturity	**2.27**	**Total Debt**	**3 910**
		Non-Traded Debt	**1 011**

Source: *Author Estimation*

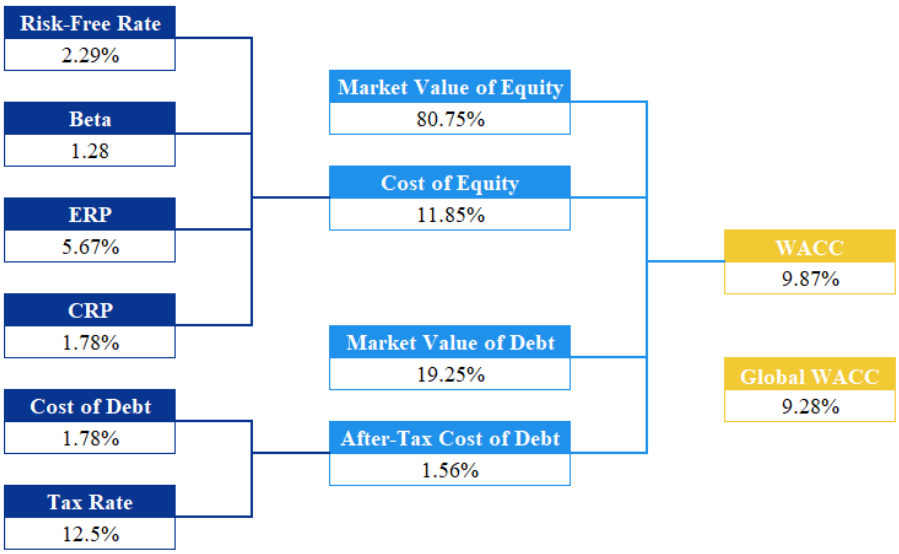
[1] Damodaran. Estimating Market Value of Debt

The cumulative value of debt from all three sources amounts to 4 040 million euros.

7.1.4. WACC

Given the estimation of all the elements, the WACC is as follows:

Figure 21: *WACC*



Source: *Author Estimation*

According to Damodaran, the global WACC for the airline industry is 9.28%. This benchmark is a valuable reference point for assessing the evaluation of the WACC of individual companies within the sector. Ryanair's estimate is slightly higher than the industry benchmark, suggesting that the company has higher financial costs compared to the industry average.

7.1.5. FCFF and TV

Upon estimating Ryanair's financial statements, we can assess the FCFF's value following equation 4, shown in section 2.

Table 12: *FCFF*

(In Million of EUR)	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
+ EBIT	1 489	1 608	1 712	1 915	2 078
- Taxes on EBIT	(133)	(241)	(257)	(287)	(312)
+ Depreciation	1 181	1 266	1 306	1 406	1 483
- Δ Net Working Capital	994	373	156	436	320
- CAPEX	(2 642)	(2 000)	(1 332)	(1 817)	(1 838)
Free Cash Flow to the Firm	889	1 006	1 585	1 653	1 732

Source: *Author Estimation*

As we progress into the future, the FCFF projections show signs of growth at a CAGR of 14% (2024-2028).

To determine a precise estimate of the company's intrinsic value, we must consider the TV. As stated in section 2, to determine this value, we will employ the Gordon Growth Model. Its foundation relies on two components: the expected growth rate (g) and the discount rate (WACC). The growth rate reflects the expected annual increase in a firm's cash flows beyond the projected horizon. We will base the estimation of the rate on this formula:

$$g = (1 + Expected\ Inflation\ rate) \times (1 + Expected\ GDP\ growth\ rate) \quad (22)$$

Since Ryanair operates in several countries, to estimate the inflation and the GDP it was used a weighted average of the countries where the company generates revenues.

***Table 13**: Growth rate (g)*

	Average Weighted (%)	Inflation	GDP
United Kingdom	13.95%	2%	1.5%
Italy	23.26%	2%	0.9%
Spain	18.33%	1.7%	1.6%
Ireland	5.23%	2%	3%
Other (European Countries)	39.23%	2.3%	1.6%
		2%	**1.72%**
g	**3.75%**		

***Source:** Author Estimation*

The achieved growth rate exceeds the growth of the Irish economy, and according to Damodaran (2012), a company's growth rate is generally not higher than the overall economic growth. Consequently, we will use the value of Ireland's GDP growth (3%).

7.1.6. Fair Value (End of March 2023)

Utilizing the WACC as the discount rate, it is feasible to yield the cumulative present value of FCFF and TV, resulting in an enterprise value of 21 274 million euros. Adjusting for the net debt, which represents the total debt minus cash and cash equivalents, we arrive at an equity value of 20 833 million euros. Having the information about the number of outstanding shares, we can calculate the estimated stock price.

Table 14: *Fair Value Estimation (March 31, 2023)*

	FY23	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E
FCFF		889	1 006	1 585	1 653	1 732
Terminal Value						25 969
Discount Rate		1.10	1.21	1.33	1.46	1.60
PV of Cumulative FCFF	5 054	(24%)				
PV of Terminal Value	16 220	(76%)				
Enterprise Value	21 274					
Net Debt	441					
Equity Value	20 833					
Number of Shares Outstanding	1 139					
Estimated Share Price	**18.30**					
Current Share Price	**14.88**					
Estimated Return	**22.98%**					

Source: *Author Estimation*

Comparing the market value (14.88€) with the estimated price achieved through DCF valuation (18.30€), it becomes evident that the company is undervalued, representing an upside potential of 22.98%. Several factors may contribute to this valuation gap, including the company's strategic plans to expand its fleet, which is expected to drive an increase in passenger demand.

7.1.7. Sensitivity Analysis

In this segment, we conduct a sensitivity analysis, closely examining pivotal variables that expose vulnerabilities in our firm valuation model. The objective here is to unravel the potential repercussions on the price target, meticulously computed via the DCF model. Therefore, we will do a financial and operational analysis and analyze some shifts in the assumptions made.

7.1.7.1. Financial Analysis

In the DCF valuation, the TV and WACC are important components that significantly influence the resulting valuation. The TV represents the estimated value of a company beyond the explicit project and, in our case, corresponds to 76% of the overall valuation. The WACC, on the other hand, determines the discount rate applied to future cash flows. Variations in either of these elements can impact the estimated intrinsic value of Ryanair.

By subjecting the DCF valuation to variations of ± 0.20 for the terminal growth rate and the WACC, ± 0.07 in fluctuation on the beta variable, we can assess the resilience of the company's estimated target price to changes.

Table 15: *Financial Analysis*

Terminal Growth rate \ WACC (fluctuations on variable Beta)	1	1.07	1.14	1.21	1.28	1.35	1.42	1.49	1.56
	8.17%	**8.59%**	**9.01%**	**9.43%**	**9.87%**	**10.27%**	**10.69%**	**11.11%**	**11.53%**
2.2%	21.88	20.34	19.00	17.81	16.17	15.81	14.96	14.19	13.50
2.4%	22.52	20.90	19.48	18.23	16.78	16.14	15.25	14.45	13.73
2.6%	23.22	21.49	19.99	18.67	17.46	16.48	15.55	14.72	13.97
2.8%	23.96	22.12	20.53	19.14	17.87	16.83	15.87	15.00	14.22
3%	24.96	22.80	21.11	19.64	18.30	17.22	16.20	15.30	14.48
3.2%	25.63	23.52	21.72	20.17	18.75	17.62	16.56	15.61	14.76
3.4%	26.57	24.31	22.39	20.73	19.24	18.04	16.93	15.94	15.05
3.6%	27.59	25.15	23.10	21.34	19.75	18.49	17.32	16.28	15.35
3.8%	28.70	26.07	23.86	21.98	20.30	18.97	17.73	16.64	15.67

Source: *Author Estimation*

A higher terminal growth rate (ceteris paribus) leads to more substantial expected future cash flows, resulting in a higher share price. Conversely, a higher WACC (ceteris paribus) lowers the share price. Based on various scenarios, the estimated share price for Ryanair falls within the range of 15.55€ to 22.39€.

7.1.7.2. Operational Analysis

In the operational segment, the primary focus was on the assumptions related to the sectors flown by Ryanair. These assumptions are crucial in determining how the company generates income. Any changes in revenue, which is a driver in the assumption made on projects of the financial statements, influence the overall estimate.

The airline industry experiences fluctuations in the sector flow, often influenced by seasonal travel patterns or economic conditions. To assess the potential impact of these variations, we introduced assumptions involving a range of ±10% deviations in the projected sectors flown. This enables us to examine the effects of these fluctuations in the valuation process, thereby influencing the estimated market price of Ryanair's shares.

Table 16: *Operational Analysis*

Sectors Flown	FY24 E	FY25 E	FY26 E	FY27 E	FY28 E	Share Price
Base Scenario	1 083 871	1 144 808	1 165 278	1 226 981	1 267 578	18.30
Upside Scenario	1 192 258	1 259 289	1 281 806	1 349 679	1 394 336	23.19
Downside Scenario	975 484	1 030 327	1 048 750	1 104 283	1 140 820	13.40

Source: *Author Estimation*

The sensitivity analysis reveals that Ryanair's share is notably responsive to changes in the sector flown. In order to make wise decisions, the research emphasizes the need for a dynamic approach to valuation and risk assessment.

7.2. Relative Valuation

7.2.1. Selection of the Peer Group

In the process of conducting Relative Valuation, a critical step is to identify a suitable peer group for the comparison. For determining Ryanair's peer group, we selected several financial factors to ensure that the chosen peer companies resemble Ryanair in terms of size, financial performance, and industry focus.

To establish a suitable peer group, we considered a large sample of companies operating in the airline industry, particularly low-cost carriers. This segment serves as a proper foundation of comparison since it has its market dynamics.

To remain in the Ryanair peer group, companies must comply with the following rules (in red are the companies excluded from the sample, Appendix Q).

1. The companies must have a market capitalization higher than 2 billion euros.
2. Only companies displaying a positive ROIC were considered in the peer group.
3. Companies with extremely high or negative D/E ratios.
4. Companies with exceptionally high or low revenue growth.

By incorporating these criteria, we were able to create a peer group that aligns more closely with Ryanair. Note that some of the low carrier airlines are not publicly traded. However, their parent companies, such as Ana Holdings (Peach Aviation), Singapore Airlines (Scoot), Qantas Airways (JetStar Airways), Lufthansa (Eurowings), and the Air France KLM-Group (Transavia France), are publicly traded. For this reason, we gathered the data from the parent companies.

7.2.2. Multiples

In the realm of valuation, the use of multiples is a valuable complementary analysis. When it came to valuing Ryanair, we employed an approach that focused on two specific multiples: P/E and the EV/EBITDA.

We choose to analyze these multiples on a NTM basis, making it a more forward-looking approach.

Recognizing the diversity within the peer group, we adopted a strategy to narrow down the range of multiples used in estimating the implied share value. The approach involved

establishing boundaries according to the average multiples within the peer group plus or minus the standard deviation.

Table 17: *Comparable Multiples*

Companies	P/E	EV/EBITDA
Southwest Airlines	14.69	4.43
Ana Holdings	15.29	6.01
Singapore Airlines	8.18	4.99
Air Arabia	8.99	5.54
Lufthansa Group	5.65	3.04
Pegasus	6.14	5.07
Easyjet	8.96	2.87
Frontier Airlines	24.69	6.09
Min	5.65	3.04
Median	8.96	5.03
Average	9.7	4.85
Max	15.29	6.01
Average + Standard Deviation	17.96	5.99
Average - Standard Deviation	5.19	3.517

Source: *Bloomberg and Author Estimation*

By performing this adjustment on the comparable multiples, it is possible to arrive at the implied share price of Ryanair (Table 18).

Table 18: *Relative Valuation (Estimated Share Price)*

	P/E	EV/EBITDA
Net Income	1 357	
EBITDA		2 670
Median Multiples		
Enterprise Value		13 432
Net Debt		441
Equity Value	12 154	12 992
Number of shares outstanding	1 139	1 139
Share Price	**10.67**	**11.41**
Average Multiples		
Enterprise Value		12 943
Net Debt		441
Equity Value	13 158	12 502
Number of shares outstanding	1 139	1 139
Share Price	**11.56**	**10.98**

Source: *Author Estimation*

8. Investment Summary

Table 19: *Market Profile (31/03/2023)*

Market Profile	
52-week range	10.48 - 15.52
Closing price (31/03/2023)	14.88

Source: *Author Estimation*

Table 20: *Methodologies Output*

Valuation Output	
DCF	18.30
Multiples (Median Average)	11.04
Multiples (Average)	11.27

Source: *Author Estimation*

In the pursuit of determining the worth of Ryanair's stock, we diligently employed two distinct valuation methodologies: the DCF approach, with a specific focus on FCFF, and the Relative Valuation method, encompassing P/E and EV/EBITDA multiples. These methodologies allowed us to gain more perspectives on the firm's valuation.

The results obtained from these two approaches, however, yielded disparate results. According to our DCF analysis, as of March 31, 2023, the estimated fair value per share for Ryanair stood at a promising 18.30€. This calculation implies that the stock is undervalued, indicating a substantial potential upside of 22.98%.

Conversely, when employing the Relative Valuation method, which involved the assessment of P/E and EV/EBITDA multiples, we observed an average share price of 11.04€-11.27€. This outcome implies that, based on relative market metrics, the stock is overvalued. Despite its widespread use, it is important to acknowledge that relative valuation has its share of constraints and limitations. It struggles to adjust to the dynamic and constantly shifting nature of business because multiple only offer a snapshot of an organization's value at a time horizon. Its inherent short-term focus often leads to a neglect of a firm's long-term growth potential.

In light of our comprehensive analysis and the substantial upside potential revealed by the DCF valuation, we recommend that investors consider buying or holding shares of Ryanair.

9. Conclusion

In conclusion, this equity valuation is the result of in-depth research into Ryanair's financial environment with regard to the economic and industrial dynamics that molded the airline sector. The primary purpose of this thesis is to achieve the fair value of Ryanair's shares as of March 31, 2023, through the use of a variety of valuation methodologies.

To determine the best valuation models, we delved into a literature review. After some research, we decided to use the DCF model as our main valuation model and Relative Valuation as a complementary methodology.

To better understand Ryanair's business, we examined the company's historical performance, identified key sources of profits, and assessed the broader macroeconomic and industry variables that influence its operations.

As highlighted in the Industry Overview, the macroeconomic environment influencing the company has been severely impacted by the COVID-19 aftermath and the repercussions of the ongoing war in Ukraine. Economic indicators such as GDP, inflation, interest rates, exchange rates, and fuel prices face a complex range of concerns that can easily affect Ryanair's operational resilience and financial performance.

Ryanair's dedication to efficient operations, coupled with its resilient position despite the turbulence in the industry, sets a promising course for the company. Even so, the company has an ambitious objective of achieving 300 million guests in FY34, which aligns with the projections made in the thesis.

It is important to acknowledge the limitations encountered during the valuation process. Forecasting fuel prices, a primary operating cost of Ryanair, was challenging, impacting the accuracy of future cash flow predictions. The forecasting of this variable could be more complex, but there was a need for more data to perform a better prediction. Therefore, we relied on the FY23 weight of the fuel costs on the revenues to predict the remaining years.

Taking into account this analysis, the DCF valuation model yielded a target price of 18.30€, indicating an upside potential of 22.98% compared to the price of 14.88€ on March 31, 2023. This analysis suggests that Ryanair's shares were undervalued, providing a potential investment opportunity for shareholders.

On the other hand, the Relative Valuation delivered a different perspective, suggesting that Ryanair's shares were overvalued with an average price of 11.16€. However, we must exercise caution when interpreting the results of Relative Valuation, as it relies on short-term market

sentiment and may not completely encompass the long-term potential and strategic plans of Ryanair.

Our recommendation is rooted in the DCF valuation, supported by the sensitivity analysis. This analysis covered both financial and operational aspects, emphasizing the considerable impact of variables such as the discount rate and the growth rate, ultimately confirming the stock's undervaluation. The sensitivity analysis revealed a price range of 15.55€ to 22.39€, reinforcing our confidence in the DCF valuation model.

Considering this comprehensive analysis, we recommend that investors consider buying or holding Ryanair shares. Nevertheless, given the industry's dynamism, investors need to conduct vigilance and be aware of market conditions because factors such as economic conditions, fuel price fluctuations, regulatory changes, and competitive dynamics pose a medium-level risk to Ryanair's operations and financial performance.

10. References

10.1. Academic Materials and Books

Berk, J., & DeMarzo, P. (2017). *Corporate Finance.* Pearson.

Bodie, Z., Kane, A., & Marcus, A. J. (2018). *Investments.* McGraw-Hill Education.

Brealey, R. A., Myers, S. C., & Allen, F. (2020). *Princinples of corporate finance.* McGraw-Hill/Irwin.

Damodaran, A. (1999). *Dealing with Operating Leases in Valuation.* Stern School of Business.

Damodaran, A. (2007). Valuation Approaches and Metrics: A Survey of the Theory and Evidence. *Foundations and Trends(R) in Finance*, 693-784.

Damodaran, A. (2008). *What is the riskfree rate? A Search for the Basic Building Block.* Stern School of Businees.

Damodaran, A. (2012). *Investment Valuation. Tools and Techniques for Determining the Value of Any Asset.* John Wiley & Sons, Inc.

Damodaran, A. (2022). *Damodaran, Aswath, Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – The 2022 Edition.* Stern School of Business.

Fabozzi, F. J., Focardi, S. M., & Jonas, C. (2017). *Equity Valuation Science, Art, or Craft?* CFA Institute Research Foundation.

Fernandez, P. (2019a). *Company Valuation Methods.* IESE Business School - University of Navarra.

Fernandez, P. (2019b). *Valuation using multiples: dispersion. Useful to compare and to negotiate.* IESE Business Shool - University of Navarra.

Fernandez, P. (2019c). *Value of tax shields (VTS): 3 theories with "some" sense.* IESE Business School - University of Navarra.

Fernandez, P. (2019d). *Valuing real options: frequently made errors.* IESE Business School - University Navarra.

Fernandez, P. (2019e). *WACC: definition, misconceptions and errors.* IESE Business School - Univesity of Navarra.

Frykman, D., & Tolleryd, J. (2003). *Corporate Valuation: an easy guide to measuring value.* Pearson Education Limited.

Kaplan, S. N., & Ruback, R. S. (1995). The Valuation of Cash Flow Forecasts: An Empirical Analysis. *The Journal of Finance, Vol.50*, 1059-1093.

Koller, T., Goedhart, M., & Wessels, D. (2020). *Valuation: measuring and managing the value of companies.* Wiley.

Larrabee, D. T., & Voss, J. A. (2013). *Valuation techniques : discounted cash flow, earnings quality, measures of value added, and.* John Wiley & Sons, Inc.

Lie, E., & Lie, H. J. (2002). Multiples Used to Estimate Corporate Value. *Financial Analysts Journal, 58*, 44-53.

Litner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stocks Portfolios and Capital Budgets. *Review of Economics and Statistics, Vol.47, Issue 1*, 13-37.

Luehrman, T. A. (1997a). Using APV: A Better Tool for Valuing Operations. *Harvard Business Review Vol.75 no.3*, 145-154.

Luehrman, T. A. (1997b). What's It Worth?: A General Manager's Guide to Valuation. *Harvard Business Review Vol.75 no.3*, 132-142.

Mason, S. P., & Merton, R. C. (1985). The Role of Contingent Claims Analysis in Corporate Finance. In E. Altman, & M. Subrahmanyam (Eds.), *Recent Advances in Corporate Finance* (pp. 9-54). Homewood: Irwin.

Miguel, A. F., Mota, A. G., Barroso, C. D., Pimentel, D., Lourenço, J. M., Nunes, J. P., . . . Alpalão, R. (2018). *Investimentos Financeiros - Teoria e Prática.* Edições Sílabo, Lda.

Mossin, J. (1966). Equilibrium in a Capital Asset Markets. *Econometrica, Vol.43, Issue 4*, 768-783.

Murphy, J. J. (1999). *Technical Analysis of the Financial Markets.* New York Institute of Finance.

Myers, S. C. (1974). Interactions of Corporate Financing and Investment Decisions - Implications for Capital Budgeting. *The Journal Finance Vol.29, No.1*, 1-25.

Pinto, J. E., Henry, E., Robinson, T. R., & Stowe, J. D. (2015). *Equity Asset Valuation.* John Wiley & Sons, Inc.

Porter, E. M. (1979). How Competitive Forces Shape Strategy. *Harvard Business Review 57, no.2*, 137-145.

Reilly, F. K., & Brown, K. C. (2012). *Investment Analysis & Portfolio Management.* Cengange Learning Inc.

Rosenbaum, J., & Pearl, J. (2009). *Investment Banking: valuation, leveraged buyouts, and mergers & acquisitions.* John Wiley & Sons, Inc.

Sharpe, W. (1964). Capital Asset Price: A theory of Market Equilibrium. *Journal of Finance, Vol.19, Issue 3*, 425-442.

Trigeorgis, L. (1998). *Real Options: Managerial Flexibility and Strategy in Resource Allocation.* The Mit Press.

Young, M., Sullivan, P., Nokhasteh, A., & Holt, W. (1999). *All Roads Lead to Rome: An Integrated Approach to Valuation Models.* Goldman, Sachs & Co.

10.2. Reports

European Comission. (2021). *Winter 2021 Economic Forecast: A challenging winter, but light at the end of the tunnel.*

IATA. (2015). *Exchange rates and aviation: examining the links.*

IATA. (2021). *Economic Performance of the Airline Industry.*

IATA. (2022). *One Size does not Fit All: A Study of how Airline Business Models have evolved to meet Demand in Europe.*

IATA. (2023). *Annual Review.*

IATA. (2023). *Industry Statistics.*

International Monetary Fund. (2022). *World Economic Outlook. War Sets Back to Global Recovery.*

Ryanair. (2021). *Annual Report.*

Ryanair. (2022). *Annual Report.*

Ryanair. (2023). *Annual Report.*

Ryanair. (2023). *Sustainability Report.*

The World Bank. (June 2023). *Global Economic Prospects.*

10.3. Internet Sources

Adler, J. (1992). *Europe Moves Toward Airline Deregulation :Transportation: After 1997, European Community airlines will compete freely for one another's domestic passengers.* Retrieved June 22, 2022, from Los Angeles Times: https://www.latimes.com/archives/la-xpm-1992-07-26-tr-4968-story.html

Agency, I. E. (n.d.). *Aviation*. Retrieved July 22, 2022, from https://www.iea.org/energy-system/transport/aviation

Damoradan. (n.d.). *Damodaran Online*. Retrieved from https://pages.stern.nyu.edu/~adamodar/

EUROCONTROL. (2022, October 25). *EUROCONTROL Data Snapshot #34 on the rise of Low Cost Carriers in Europe*. Retrieved August 15, 2023, from EUROCONTROL: https://www.eurocontrol.int/publication/eurocontrol-data-snapshot-34-rise-low-cost-carriers-europe

EUROCONTROL. (2023). *EUROCONTROL Forecast Update 2023-2029*. Retrieved September 4, 2023, from https://www.eurocontrol.int/publication/eurocontrol-forecast-update-2023-2029

Finance, Y. (n.d.). *Historical Data RYA.IR.* Retrieved July 30, 2023, from https://finance.yahoo.com/quote/RYA.IR/history?p=RYA.IR

ICAO. (n.d.). Retrieved August 01, 2023, from Future Aviation: https://www.icao.int/Meetings/FutureOfAviation/Pages/default.aspx

International Monetary Fund. (2023). *Inflation rate, average consumer prices*. Retrieved July 29, 2023, from https://www.imf.org/external/datamapper/PCPIPCH@WEO/WEOWORLD/EU/IRL

International Monetary Fund. (2023). *Real GDP growth*. Retrieved July 2023, 2023, from https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD

National Air and Space Museum. (2021). *Airline Deregulation: When Everything Changed*. Retrieved July 22, 2022, from https://airandspace.si.edu/stories/editorial/airline-deregulation-when-everything-changed

OECD. (2023). *Long-term interest rates (indicator)*. Retrieved July 30, 2023, from https://data.oecd.org/interest/long-term-interest-rates.htm#indicator-chart

OECD. (2023). *Long-term interest rates forecast (indicator)*. Retrieved July 30, 2023, from https://data.oecd.org/interest/long-term-interest-rates-forecast.htm#indicator-chart

OECD. (2023). *Short-term interest rates (indicator)*. Retrieved July 30, 2023, from https://data.oecd.org/interest/short-term-interest-rates.htm#indicator-chart

OECD. (2023). *Short-term interest rates forecast (indicator)*. Retrieved July 30, 2023, from https://data.oecd.org/interest/short-term-interest-rates-forecast.htm#indicator-chart

Ryanair Porter's Five Forces Analysis. (n.d.). Retrieved July 30, 2023, from http://aviation.itu.edu.tr/%5Cimg%5Caviation%5Cdatafiles/Lecture%20Notes/Aviation%20Economics%20and%20Financial%20Analysis%2020152016/Assignments/Porter%E2%80%99s%20Five%20Forces%20Analysis%20of%20Ryanair.pdf

Statista. (2022, August). *Average prices for Boeing aircraft as of March 2022, by type*. Retrieved 08 20, 2023, from https://www.statista.com/statistics/273941/prices-of-boeing-aircraft-by-type/

Statista. (2022, December). *Aviation industry fuel cost*. Retrieved 07 30, 2023, from https://www.statista.com/statistics/591285/aviation-industry-fuel-cost/

Statista. (2023, March 23). Retrieved October 13, 2023, from Market share of low cost carriers worldwide in March 2022, by region: https://www.statista.com/statistics/1088686/low-cost-carrier-market-share-region/

Stoevska, V. (2022, May 10). *Inflation more than doubled between March 2021 and March 2022*. Retrieved August 10, 2022, from International Labour Organization: https://ilostat.ilo.org/inflation-more-than-doubled-between-march-2021-and-march-2022/

Sustainalytics. (2023, April 13). *Company ESG Risk Ratings*. Retrieved October 13, 2023, from https://www.sustainalytics.com/esg-rating/ryanair-holdings-plc/1008292063?

10.4. Other References

Bloomberg

Thomson Reuters

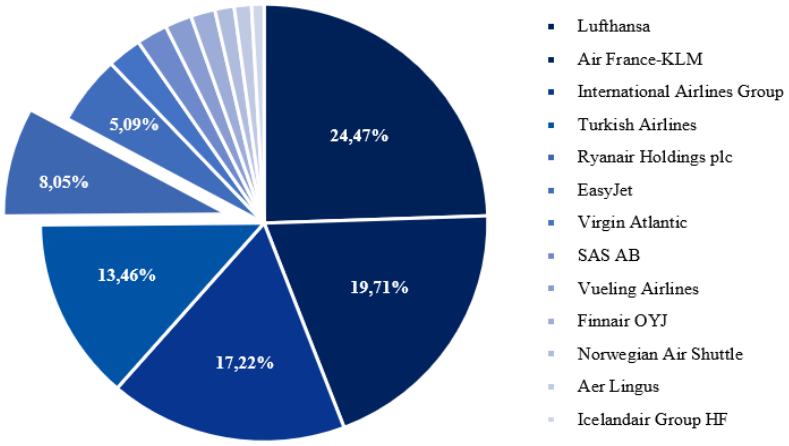
11. Appendix

Appendix A: Type of Multiples

Multiples based on company's capitalization	Price Earnings Ratio (PER); Price to Cash Earnings (P/CE); Price to sales (P/S); Price to Levered Free Cash Flow (P/LFCF); Price to Book Value (P/BS).
Multiples based on company's value	Enterprise Value to EBITDA (EV/EBITDA); Enterprise Value to Sales (EV/Sales); Enterprise Value to Unlevered Free Cash Flows (EV/FCF).
Growth-referenced multiples	PER to EPS growth (PEG); Enterprise value to EBITDA growth (EV/EG).

Source: *Fernandez (2019b)*

Appendix B: Market Share European Airlines in 2022



Source: *Bloomberg*

Appendix C: Porter's Five Forces Model Analysis

Threat of New Entrants (Moderate)

High entry barriers in an industry discourage the entrance of new enterprises into the market, minimizing the threat of new entrants. To establish a presence within this sector, new companies must overcome certain obstacles, such as high regulatory and capital requirements, economies of scale, and asset scarcity.

The airline sector is subject to increasingly rigorous regulatory requirements. New entrants must comply with the demanding safety protocols and aviation regulations standards, as well as secure the necessary operating licenses. These prerequisites are necessary for airlines to initiate their operations. On top of that, these criteria might dissuade potential entrants due to the considerable time and resource investments required.

Moreover, a considerable amount of initial capital must be put in place to invest in inventory, workforce, and marketing. For instance, the average price of a Boeing 737-800, the standard airplane used by Ryanair, is 106 million dollars. Alongside these considerations and the scarcity of airport capacity to allow new flight routes, the new competitors will likely need to negotiate with other companies to occupy their slots.

However, the threat of new entrants is not only posed by potential startups but also by existing hubs that choose to launch a new low-cost sector. For instance, when Lufthansa introduced Eurowings.

Bargaining Power of Suppliers (Moderate)

The sector is most affected by fuel providers, aircraft manufacturers, and labor suppliers. Fuel is one of the highest operating costs for airlines, and due to the scarcity of alternatives over this commodity, suppliers have a huge influence over price changes. Similarly, aircraft manufacturers, dominated by two major manufacturers, Airbus and Boeing, hold considerable leverage in negotiating power.

Furthermore, most airline workers are union members, and these unions significantly influence the bargaining power of labor suppliers. Currently, there is a series of labor shortages with workers claiming different work conditions.

Bargaining Power of Buyers (High)

The ability of customers to negotiate lower prices or better services determines the bargaining power of buyers. In the sector context, customers hold a strong negotiating position. Facilitated by online ticketing, passengers now possess the ability to compare fare prices for flights with similar routes and easily swap from one company to another.

The existence of online platforms like Google Fights, Skyscanner, and Momondo empowers customers to know which airlines have the most affordable prices. Therefore, airlines attempt to offer more competitive prices aligned with high-quality services and loyalty programs to retain their customer base.

Threat of Substitute Services (Low)

The influence of alternative services within the airline industry is limited. The principle "time is money" is truly relevant in this context, where air travel stands out as the most time-efficient mode of transportation. For shorter distances, cars, buses, and boats effectively substitute airplanes. However, with the rise of LCCs, flying is more economical than using other means of transportation.

Intensity of Competitive Rivalry (High)

Several essential elements influence how fiercely the airline sector competes with one another. The exit barriers and fixed costs are incredibly high, and to remain in the market, airline companies must stay competitive. Moreover, the abundance of companies offering the same routes creates an environment where differentiation is the only way, especially among the LCC firms.

Appendix D: Major Shareholders

	As of March 31, 2023		As of March 31, 2022		As of March 31, 2021	
	No. of Shares	% of Class	No. of Shares	% of Class	No. of Shares	% of Class
HSBC Holdings PLC	88,661,652	7.8%	103,285,582	9.1%	81,175,344	7.2%
Baillie Gifford	67,437,688	5.9%	88,863,106	7.8%	105,753,192	9.4%
Capital	62,310,109	5.5%	117,345,252	10.3%	127,825,495	11.3%
AKO Capital	58,367,069	5.1%	57,494,351	5.1%	54,526,393	4.8%
MFS	49,646,209	4.4%	44,973,351	4,0%	39,933,396	3.5%
Fidelity	48,099,289	4.2%	44,399,286	3.9%	47,674,061	4.2%
Causeway Capital Management	46,214,550	4.1%	-	-	-	-
Parvus Asset Management Europe	45,532,192	4,0%	49,760,850	4.4%	41,007,236	3.6%
Michael O'Leary	44,096,725	3.9%	44,096,725	3.9%	44,096,725	3.9%
Harris Associates	41,063,200	3.6%	-	-	-	-
Egerton Capital	-	-	-	-	46,270,426	4.1%
Société Générale SA	-	-	72,365,694	6.4%	82,686,947	7.3%
Marshall Wace	-	-	44,356,764	3.9%	-	-

Source: *Ryanair*

Appendix E: Historical Income Statement

	Year ended March 31,				
	2019	**2020**	**2021**	**2022**	**2023**
	€M	**€M**	**€M**	**€M**	**€M**
Operating Revenues					
Scheduled Revenues	5261	5566	1036	2653	6939
Ancillary Revenues	2436	2929	600	2148	3845
Total Operating Revenues	**7697**	**8495**	**1636**	**4801**	**10775**
Operating Expenses					
Fuel and Oil	(2427)	(2762)	(543)	(1699)	(4026)
Airport and Handling Charges	(1062)	(1140)	(287)	(813)	(1241)
Staff Costs	(984)	(1107)	(472)	(690)	(1191)
Depreciation	(641)	(749)	(571)	(719)	(923)
Route Charges	(745)	(736)	(187)	(551)	(904)
Marketing, Distribution and Other	(547)	(579)	(202)	(411)	(674)
Maintenance, Materials and Repairs	(191)	(256)	(207)	(256)	(373)
Aircraft rentals	(84)	(38)	(7)	-	-
Total Operating Expenses	**(6681)**	**(7367)**	**(2475)**	**(5141)**	**(9333)**
Operating Profit/(loss)	**1017**	**1127**	**(839)**	**(340)**	**1443**
Other (Expense)/Income					
Finance Expense	(59)	(480)	(297)	(91)	(77)
Finance Income	4	21	16	-	42
Foreign Exchange Gain/Loss	(4)	2	12	1	34
Gain on sale of associate	6	-	-	-	-
Share of associate losses	(16)	-	-	-	-
Total Other (Expenses)/Income	**(69)**	**(457)**	**(269)**	**(90)**	**(0)**
Profit/(loss) before tax	**948**	**670**	**(1109)**	**(430)**	**1443**
Tax (expense)/credit	(63)	(22)	94	189	(129)
Profit/(loss) for the year	**885**	**649**	**(1015)**	**(241)**	**1314**

Source: *Ryanair*

Appendix F: Historical Balance Sheet Statement

	Year ended March 31,				
	2019	**2020**	**2021**	**2022**	**2023**
	€M	**€M**	**€M**	**€M**	**€M**
Non-current assets					
Property, plant and equipment	9 030	9 438	8 361	9 095	9 909
Right of use assets	-	237	188	134	209
Intangible assets	146	146	146	146	146
Derivative financial instruments	228	379	111	185	55
Other assets	-	-	49	72	169
Deferred tax	43	54	14	42	7
Total non-current assets	**9 447**	**10 253**	**8 870**	**9 675**	**10 495**
Current assets					
Inventories	3	3	4	4	6
Other assets	238	179	180	401	879
Current tax	-	45	-	-	-
Assets held for sale	-	99	-	-	-
Trade receivables	60	68	19	44	60
Derivative financial instruments	309	293	106	1 400	292
Restricted cash	35	34	34	23	20
Financial assets: cash > 3 months	1 484	1 207	466	934	1 056
Cash and cash equivalents	1 676	2 566	2 651	2 669	3 599
Total current assets	**3 804**	**4 494**	**3 458**	**5 475**	**5 911**
Total assets	**13 251**	**14 747**	**12 328**	**15 150**	**16 406**
Current liabilities					
Provisions	-	43	10	9	20
Trade payables	574	1 368	336	1 029	1 066
Accrued expenses and other liabilities	2 992	2 589	1 275	2 993	4 784
Current lease liability	-	75	53	57	43
Current maturities of debt	309	382	1 726	1 225	1 057
Current tax	32	-	48	47	66
Derivative financial instruments	190	1 050	79	39	387
Total current liabilities	**4 097**	**5 508**	**3 527**	**5 399**	**7 422**
Non-current liabilities					
Provisions	136	37	47	94	155
Trade payables	-	-	180	49	-
Derivative financial instruments	8	181	6	-	11
Deferred tax	461	354	272	267	159
Non-current lease liability	-	171	131	81	163
Non-current maturities of debt	3 335	3 583	3 518	3 715	2 853
Total non-current liabilities	**3 939**	**4 325**	**4 155**	**4 206**	**3 341**
Shareholders' equity					
Issued share capital	7	7	7	7	7
Share premium account	719	739	1 162	1 328	1 380
Other undenominated capital	3	4	4	4	4
Retained earnings	4 182	4 245	3 232	2 881	4 180
Other reserves	304	(79)	242	1 326	73
Shareholders' equity	**5 215**	**4 915**	**4 646**	**5 545**	**5 643**
Total liabilities and shareholder's equity	**13 251**	**14 747**	**12 328**	**15 150**	**16 406**

Source: *Ryanair*

Appendix G: Number of Aircraft

	At March 31,						
Fiscal Year End	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Total**
Opening Fleet	500	537	611	645	644	644	500
Firm deliveries under 2014 Boeing Contract	37	75	37	-	-	-	149
Lease additions	1	-	-	-	-	-	1
A320 operating leases	(1)	(1)	(3)	(1)	-	(5)	(11)
Closing Fleet	537	611	645	644	644	639	639

The table omits the Boeing 737 Max-10 order.

Ryanair Statement about the Boeing 737 Max-10:

"Approved the purchase of 300 new Boeing 737 MAX-10 aircraft (150 firm orders and 150 options) which is subject to shareholder approval on 14 September next. These, fuel efficient, aircraft have 228 seats (21% more than our Boeing 737-NGs) and phased deliveries between 2027 and 2033." (Ryanair, 2023, p. 2)

"We expect to use up to half of these deliveries to replace our older NG aircraft from 2028 onwards, while the balance will be available for growth." (Ryanair, 2023, p. 7)

Assumption: Delivery of 40 Max-10 in 2027 and other 34 in 2028. All the deliveries will replace half of the older NGs, and the remaining deliveries will occur in the following years. Beyond 2028, the emphasis may shift from the ambitious fleet expansion to replacing aging aircraft.

Source: *Ryanair and Author Analysis*

Appendix H: Sector Flown Estimation (Multiple Linear Regression)

To estimate the sector flow, we choose to perform a regression analysis using the following independent variables:

Ryanair aircraft: It indicates an airline's operational and capacity, which might affect sector decisions. The quantity of aircraft can impact an airline's schedule and sector allocation in service.

European IFR Flight movements: The bulk of air traffic and volume of flights in a certain region are usually flights that follow the Instrument Flight Rules. Additionally, airlines base their sector and route choices on the actual number of flights.

GDP growth and inflation (%): These variables are measurements of economic conditions that impact the demand for air travel.

Inputs of the regression:

Year	Ryanair Aircrafts	European IFR Flight movements	GDP growth	Inflation	Sector Flown
2016	380	10 197 000	1.8%	1.5%	609 501
2017	427	10 604 000	2.8%	2.2%	675 482
2018	431	11 002 000	2.3%	2.2%	725 044
2019	471	11 085 000	2,0%	2,0%	789 711
2020	466	4 979 000	-5.5%	1.1%	823 897
2021	451	6 231 000	5.7%	3.5%	204 828
2022	500	9 238 000	2.4%	9.9%	620 524
2023	537	10 272 000	0.6%	6.6%	946 643

Outputs of the regression:

Regression Statistics	
Multiple R	0,996
R Square	0,993
Adjusted R Square	0,984
Standard Error	28159,750
Observations	8,000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4,0000	337561645250	84390411312	106,4230	0,0015
Residual	3,0000	2378914638	792971546		
Total	7,0000	339940559888			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-714238	156546	-4,56	0,01974	-1212438	-216038	-1212438	-216038
Number of Aircrafts	1867	350	5,34	0,01287	753	2980	753	2980
Number of flights	0	0	14,34	0,00074	0	0	0	0
GDP growth	-5895807	416580	-14,15	0,00076	-7221552	-4570062	-7221552	-4570062
Inflation	-1068143	551566	-1,94	0,14821	-2823470	687185	-2823470	687185

Source: *Ryanair and Author Estimation*

Appendix I: Estimation of the number of passengers

After achieving the values for ASM and Load Factor, we can compute the RPM. RPM illustrates the total number of miles traveled by paying passengers.

	2024	2025	2026	2027	2028
	€Bn	€Bn	€Bn	€Bn	€Bn
RPM	151	160	163	174	181

And consequently, we can estimate the number of passengers by multiplying RPM by the average sector length.

Source: *Author Estimation*

Appendix J: Income Statement Assumptions

	Assumptions
Operating Expenses	
Fuel and Oil	FY23 weight (%) of revenues
Airport and Handling Charges	Revenue growth (%)
Staff Costs	Explained in section 6.1.3.
Depreciation	FY23 weight (%) of revenues
Route Charges	Last historical 5y weight (%) of revenues
Marketing, Distribution and Other	Last historical 5y weight (%) of revenues
Maintenance, Materials and Repairs	Last year Unit Cost (the Unit Cost was achieve by dividing the FY23 Maintenance, Materials and Repairs by the number of aircraft on that year)
Financial results	
Finance Expense	FY23 (€)
Finance Income	FY23 (€)
Foreign Exchange Gain/Loss	FY23 (€)

Source: *Author Estimation*

Appendix K: Forecasted Income Statement

	Year ended March 31,					
	2023	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**
	€M	**€M**	**€M**	**€M**	**€M**	**€M**
Operating Revenues						
Scheduled Revenues	6 930	8 271	8 863	9 149	9 847	10 386
Ancillary Revenues	3 845	4 851	5 199	5 367	5 776	6 092
Total Operating Revenues	**10 775**	**13 122**	**14 061**	**14 516**	**15 623**	**16 479**
Operating Expenses						
Fuel and Oil	4 026	4 804	5 148	5 315	5 720	6 033
Airport and Handling Charges	1 241	1 445	1 530	1 557	1 659	1 732
Staff Costs	1 191	1 396	1 509	1 543	1 626	1 692
Depreciation	923	1 181	1 266	1 306	1 406	1 483
Route Charges	904	1 303	1 397	1 442	1 552	1 637
Marketing, Distribution and Other	674	1 078	1 155	1 192	1 283	1 353
Maintenance, Materials and Repairs	374	425	449	448	462	470
Total Operating Expenses	**9 333**	**11 633**	**12 453**	**12 804**	**13 708**	**14 400**
Operating Profit	**1 443**	**1 489**	**1 608**	**1 712**	**1 915**	**2 078**
EBITDA	2 366	2 670	2 873	3 018	3 321	3 561
Finance Expense	(77)	(77)	(77)	(77)	(77)	(77)
Finance Income	42	42	42	42	42	42
Foreign Exchange Gain/Loss	34	34	34	34	34	34
Total Other Expenses	**0**	**0**	**0**	**0**	**0**	**0**
Net Income Before Taxes	**1 443**	**1 489**	**1 608**	**1 712**	**1 915**	**2 078**
Provision for Income Taxes	129	133	241	257	287	312
Net Income	**1 314**	**1 357**	**1 367**	**1 455**	**1 627**	**1 766**

Source: *Author Estimation*

Appendix L: Staff Costs

	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E
Management	177	150	97	116	125					
Administrative/IT Labs	992	859	759	828	1 028					
Maintenance	426	395	417	483	506					
Ground Operations	704	555	312	488	655					
Pilots	5 446	5 584	5 170	5 860	6 582					
Cabin Crew	9 095	9 725	8 261	11 341	13 365					
Number of employees	16 840	17 268	15 016	19 116	22 261					
Summary: Management and Administrative/IT Labs	1 169	1 009	856	944	1 153	1 153	1 153	1 153	1 153	1 153
Maintenance, Ground Operations, Cabin Crew and Pilots	15 671	16 259	14 160	18 172	21 108	24 017	25 353	25 314	26 100	26 572
Number of employees	16 840	17 268	15 016	19 116	22 261	25 170	26 506	26 467	27 253	27 725
Staff Costs (on per employees basis)	58 432	64 101	31 446	36 101	53 520	55 446	56 943	58 310	59 651	61 023

Source: *Author Estimation*

Appendix M: Balance Sheet Assumptions

	Assumptions:
Non-current assets	
Property, plant and equipment	Explained in section 6.3.1
Right of use assets	Yearly leased aircraft growth (%)
Intangible assets	FY23 (€)
Derivative financial instruments	FY23 (€)
Other assets	FY23 weight (%) of revenues
Deferred tax	0€
Current assets	
Inventories	FY23 weight (%) of revenues
Other assets	FY23 weight (%) of revenues
Trade receivables	FY23 weight (%) of revenues
Derivative financial instruments	FY23 (€)
Restricted cash	FY23 (€)
Financial assets: cash > 3 months	FY23 growth (%)
Cash and cash equivalents	
Current liabilities	
Provisions	FY23 (€)
Trade payables	FY23 growth (%)
Accrued expenses and other liabilities	FY23 weight (%) of revenues
Current lease liability	Moving average last historical 5y (€)
Current maturities of debt	Moving average last historical 5y (€)
Current tax	FY23 (€)
Derivative financial instruments	FY23 (€)
Current liabilities	
Provisions	FY23 (€)
Trade payables	FY23 growth (%)
Accrued expenses and other liabilities	FY23 weight (%) of revenues
Current lease liability	Moving average last historical 5y (€)
Current maturities of debt	Moving average last historical 5y (€)
Current tax	FY23 (€)
Derivative financial instruments	FY23 (€)
Non-current liabilities	
Provisions	FY23 (€)
Trade payables	-
Derivative financial instruments	FY23 (€)
Deferred tax	FY23 (€)
Non-current lease liability	FY23 (€)
Non-current maturities of debt	Moving average last historical 5y (€)
Shareholders' equity	
Issued share capital	FY23 (€)
Share premium account	FY23 (€)
Other undenominated capital	FY23 (€)
Retained earnings	Moving average last historical 5y (€)
Other reserves	Simple average last historical 5y (€)

Source: *Author Estimation*

Appendix N: Forecasted Balance Sheet

	2024E	2025E	2026E	2027E	2028E
	€M	€M	€M	€M	€M
Non-current assets					
Property, plant and equipment	11 370	12 104	12 130	12 541	12 895
Right of use assets	202	181	174	174	139
Intangible assets	146	146	146	146	146
Derivative financial instruments	55	55	55	55	55
Other assets	172	174	177	180	183
Deferred tax	0	0	0	0	0
Total non-current assets	**11 944**	**12 660**	**12 682**	**13 096**	**13 418**
Current assets					
Inventories	7	8	8	9	9
Other assets	950	1 028	1 112	1 202	1 300
Trade receivables	73	78	80	87	91
Derivative financial instruments	292	292	292	292	292
Restricted cash	20	20	20	20	20
Financial assets: cash > 3 months	1 194	1 350	1 527	1 726	1 952
Cash and cash equivalents	3 302	2 864	2 803	2 554	2 371
Total current assets	**5 838**	**5 639**	**5 841**	**5 889**	**6 035**
Total assets	**17 783**	**18 300**	**18 523**	**18 985**	**19 453**
Current liabilities					
Provisions	20	20	20	20	20
Trade payables	1 103	1 142	1 183	1 225	1 268
Accrued expenses and other liabilities	5 825	6 242	6 444	6 935	7 316
Current lease liability	46	55	51	50	49
Current maturities of debt	940	1 066	1 203	1 098	1 073
Current tax	66	66	66	66	66
Derivative financial instruments	387	387	387	387	387
Total current liabilities	**8 387**	**8 978**	**9 353**	**9 781**	**10 178**
Non-current liabilities					
Provisions	155	155	155	155	155
Trade payables	-	-	-	-	-
Derivative financial instruments	11	11	11	11	11
Deferred tax	159	159	159	159	159
Non-current lease liability	163	163	163	163	163
Non-current maturities of debt	3 401	3 414	3 380	3 352	3 280
Total non-current liabilities	**3 889**	**3 902**	**3 868**	**3 841**	**3 768**
Shareholders' equity					
Issued share capital	7	7	7	7	7
Share premium account	1 380	1 380	1 380	1 380	1 380
Other undenominated capital	4	4	4	4	4
Retained earnings	3 744	3 656	3 539	3 600	3 744
Other reserves	373	373	373	373	373
Shareholders' equity	**5 507**	**5 420**	**5 302**	**5 363**	**5 507**
Total liabilities and shareholder's equity	**17 783**	**18 300**	**18 523**	**18 985**	**19 453**

Source: *Author Estimation*

Appendix O: Net Working Capital and CAPEX

	2024E	2025E	2026E	2027E	2028E
	€M	€M	€M	€M	€M
Current Assets					
Inventories	7	8	8	9	9
Trade Receivable	73	78	80	87	91
Other Assets	950	1 028	1 112	1 202	1 300
Total Current Assets	**1 030**	**1 113**	**1 200**	**1 297**	**1 401**
Current Liabilities					
Trade Payables	1 103	1 142	1 183	1 225	1 268
Accrued Expenses and Other Liabilities	5 825	6 242	6 444	6 935	7 316
Total Current Liabilities	**6 929**	**7 385**	**7 627**	**8 160**	**8 584**
Net Working Capital	**(5 898)**	**(6 271)**	**(6 427)**	**(6 863)**	**(7 183)**
Δ Net Working Capital	**(994)**	**(373)**	**(156)**	**(436)**	**(320)**

	2024E	2025E	2026E	2027E	2028E
	€M	€M	€M	€M	€M
CAPEX	2 642	2 000	1 332	1 817	1 838

Source: *Author Estimation*

Appendix P: Beta Estimation

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,54321095
R Square	0,295078136
Adjusted R Square	0,294531685
Standard Error	0,022096489
Observations	1292

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,263652748	0,263652748	539,9900535	4,5891E-100
Residual	1290	0,629848722	0,000488255		
Total	1291	0,89350147			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	1,24417E-06	0,000614837	0,002023577	0,998385733	-0,001204946	0,001207435	-0,001204946	0,001207435
Stoxx 600 Europe	1,283323513	0,05522596	23,23768606	4,5891E-100	1,174980968	1,391666057	1,174980968	1,391666057

Source: *Author Estimation*

Appendix Q: Peer Group Selection

Companies	Market Cap (Mn €)	ROIC (%)	D/E	3-y Revenue Growth
Ryanair	**16 944**	**13%**	**0.73**	**87%**
Cebu Pacific	396	-11%	-	35%
Controladora	871	1%	12.70	44%
Spirit Airlines	1 981	-7%	3.94	45%
Norwegian Air Shuttle	650	12%	2.4	30%
Allegiant Travel Co	1 233	1%	1.81	32%
JetBlue Airlines	1 978	-3%	1.23	50%
Wizz Air	3 488	-10%	-	74%
Gol	3 065	-10%	12.65	-
VietJet Air	2 343	-9%	1.27	33%
Quantas Airways	6 468	32%	672.6	51%
Air France-KLM Group	3 163	9%	-5.93	34%
Frontier Airlines	2 089	-1%	5.75	42%
Pegasus	2 450	15%	3.38	60%
Ana Holdings	9 374	4%	1.85	27%
Lufthansa Group	9 283	5%	1.79	34%
Easyjet	2 554	1%	1.70	26%
Southwest Airlines	20 000	3%	0.89	38%
Singapore Airlines	11 778	6%	0.76	73%
Air Arabia	2 551	12%	0.41	45%

Source: *Bloomberg*