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RASAT AMIRLI

ADVISOR

Asst. Prof Levent Yılmaz

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To my parents and sister

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Author

Rasat Amirli

ÖZET

1984 yılında kurulan Ryanair, Avrupa'nın en büyük düşük maliyetli havayollarından biridir. Şirket, 1990'ların sonlarında Avrupa'da havacılık endüstrisinin deregülasyonundan bu yana istikrarlı bir şekilde büyüyor. Covid-19 ile ilgili durum Şirket'in finansal sonuçlarını da olumsuz etkilemiş ve zarar etmiştir. Bu çalışma, Şirket'i değerlendirmeyi, şirketin değerini bulmayı ve pandemi sırasında yönetimin Şirket değerini sürdürmek için doğru kararlar alıp almadığını açıklamaya çalışmayı amaçlamaktadır. Bu makalenin sonucu, havayolu endüstrisinin ve bir bütün olarak ekonominin pandemi durumundan ne kadar çabuk kurtulacağıyla da bağlantılı olabilir. 2023 mali yılında trafik akışına ilişkin beklenti 2019 trafiğinin %70'i civarında olacak ve Şirket, giderlerini kısmaya çalışacaktır. Şirket'in finansal analiz yoluyla değerlendirilmesi yapılmıştır. Değerleme sonrası hisse başına fiyat 15.42 EURO olacak ve tavsiye hissenin satılması yönündedir. Duyarlılık analizi, ağırlıklı ortalama sermaye maliyeti düşürüldüğünde, Şirketin daha olumlu bir sonuca sahip olabileceğini ortaya koyuyor. Yönetim, büyümeyi ve canlılığı sürdürmek için doğru kararları almış ve almaya devam etmektedir. Değerleme, bilgilerin açıklanmasından ve COVID-19 salgınıyla ilgili belirsizliklerden etkilenebilir. Kilit yatırım riskleri sonuç ve riskler bölümünde açıklanmıştır.

ABSTRACT

Based in 1984, Ryanair is one of the largest low-cost airlines in Europe. The Company had been steadily growing since the deregulation of the aviation industry in Europe in the late 1990s. The situation with Covid-19 also had a negative impact on the Company's financial results, and it experienced losses. This work aims to evaluate, find the value of the Company, and try to explain if the management made correct decisions during the pandemic to sustain the Company's value. The outcome of this paper can also be linked to how quickly the airline industry and economy as a whole will recover from the pandemic situation. Expectation about the traffic flow in the fiscal year 2023 will be around 70% of 2019 traffic, and the Company will pursue to reduce its expenses. To evaluate the Company through financial analysis has been conducted. After evaluation, the price per share will be 15.42 EURO, and the recommendation was to sell. Sensitivity analysis revealed that once the weighted average cost of capital is reduced, the Company may have a more favorable outcome. The management undertook and continues to undertake correct decisions to sustain the growth and viability. The valuation can be affected by information disclosure and uncertainties related COVID-19 outbreak. Key investment risks are disclosed in the conclusion and risks section.

1. Introduction and aim of the paper

Because of a substantial drop in service demand and subsequent revenue, several firms worldwide experienced significant losses and went bankrupt due to the COVID-19 epidemic. The passenger airline industry, where the revenue is primarily generated by service provided to international and domestic passengers, is the industry segment that suffered a severe setback. First, the negative externalities caused by the COVID-19 pandemic are reflected in industry analysis for passenger airline companies, where new threats were identified, and company-specific weakness was assessed. The apparent impact of the COVID-19 pandemic on the passenger airline industry can be traced through a detailed analysis of financial performance and the value of the business from future perspectives. Although the COVID-19 pandemic caused an equally sharp decrease in revenue generation and substantial cost increase among all companies within the passenger airline segment, some companies maintained a predominant position, applying techniques for effective management of critical financial figures shown in statements of financial positions. This paper examines "Ryanair" airlines', Europe's biggest low-cost airline company, financial performance in terms of financial ratios and expected future cash flow to evaluate the business's future value following the COVID-19 impact. *Valuation* is a complex process, which includes an understanding of figures, more important reasons for lagging those figures, the direction in which these figures move. Management decisions and strategy play a significant role in addressing challenging circumstances and factor them into risk-adjusted indicators for cash flow forecasting and arriving at company value. Willingness to try to closely look at company performance and strategy, understand the company's path for further development, considering current economic turmoil, risks, valuation date, etc.

The purpose of this paper is to understand how the management was able to make correct decisions through valuation. Many companies within the same industry can have different outcomes due to management decisions. Observations showed that traffic reduced, resulting in reduced cash flow and reduced value. The valuation will reveal that the

management has been able to make tough decisions, sustain temporary consequences of the pandemic outbreak, and better position itself for the future.

The study reveals that before and during the COVID-19 pandemic, "Ryanair" managed its operations in terms of profitability and liquidity, which resulted in higher performance for major financial indicators than the industry average. While some indicators showed a slight decline caused by the COVID-19 pandemic, Ryanair still maintained a predominant position in the passenger airline industry, with reasonable prospects reflected in the business's future value.

The paper comprises eight sections. This section is about the introduction and aim. The following section is dedicated to introducing and understanding the fundamental principles of low-cost airline companies. Section 3 narrates about literature review and aims to understand the most suitable model for airline valuation. Section 4 describes COVID-19 impact on global stocks and particularly airline stocks. In section 5, there is information about Ryanair as an analyzed company. Brief description and market position SWOT analysis techniques provided. Section 6 reveals the company's historical, current, and future trends through financial-ratio analysis. In Section 7, critical indicators are forecasted to arrive at expected free cash flow. Section 8 evaluates the company and reveals the forecasted price per share of the company. Moreover, finally, relevant conclusions and discussion about risks are introduced.

2. Business description and specific characteristics

These days, there are different definitions for Low-Cost Carriers (LCCs) (Dietlin, 2004; Doganis & Hunter, 2006). However, despite different naming, (Dietlin, 2004; Doganis & Hunter, 2006) find LCCs as carriers, which achieved a comparative cost advantage over Full-Service Carriers (FSCs) or traditional airlines through a set of operations or operational processes. Ultimately, comparative cost advantage is transferred to the consumers in the form

of lower fares. It should be understood what drives the fare prices to be lower. Therefore, firstly, it is going to be analyzed which characteristics are inherent only to Low-cost carriers.

The first scheduled passenger airline took off in 1914 across Tampa Bay in Florida, USA (100 Years of Commercial Flight, 2014). Back in the old times, flying was an expensive experience. It was considered a luxury, and not everybody afforded this experience: only affluent and business travelers. The cabins of aircraft were full of food and wines. This tendency continued until the deregulation in the industry came out.

In the United States, the elements of deregulation began to be noticed during the 1970s. Ultimately, the Airline Deregulation Act was adopted in 1978, liberating the air travel industry and partly shifting control from the government to the private sector (Picardo, 2020). This period coincides with the rise of low-cost carriers. Moreover, one of such carriers, and perhaps the first one, was Southwest Airlines Co. The results of deregulation did not take long to see. In the U.S, the numeral of passengers traveling via aircraft surged from 205 million in 1975 to a record 927 million in 2019, while aircraft load factor increased from 54% to almost 85%, respectively (U.S. Airline Traffic and Capacity | Airlines for America, 2020). In its term, the price of fare (the price of base fare), adjusted for inflation, fell from $571 in 1990 to $348 in 2019 (Domestic Round-Trip Fares and Fees | Airlines for America, 2020).

Deregulation in Europe took place roundly ten years after that in the U.S. Several airline policies “packages” were agreed upon in 1988, 1990, and 1993 (Alderighi, Cento, Nijkamp, & Rietveld, 2004). The third one was the most essential and powerful and was fully enforced in 1997 (Chang & Williams, 2002). Within the E.U., the third package allowed European airlines to fly to other member countries by making stops in their home country; furthermore, they could serve domestic hauls of the member countries.

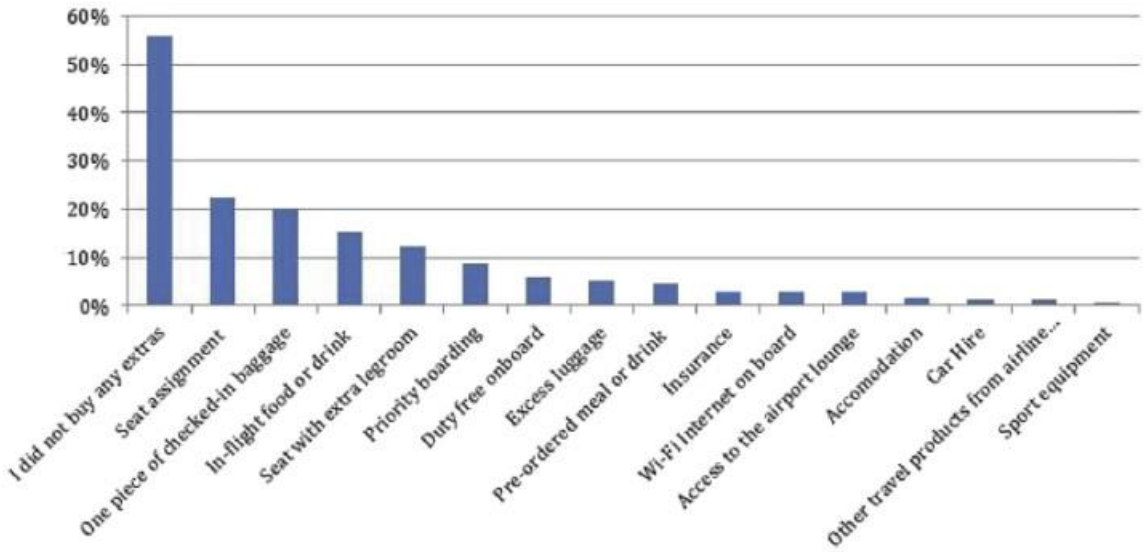
The process of deregulation was boosted by privatization that made changes to the structure of the airline industry. This helped LCCs to enter the market and experience rapid growth.

Below some typical characteristics of low-cost airlines are provided;

- Service offering

The primary focus of the LCCs business model is on providing essential transportation services. All other services are either not provided or provided at extra charge. In this way, LCCs create space for cost reduction, which is eventually transformed into fare price decrease, and opportunities to gain ancillary revenues. Idea Works, a company serving the airline and travel industry since 1996, has set a definition for ancillary revenues that is broadly accepted by the airline industry: "Revenue beyond the sale of tickets that is generated by direct sales to passengers, or indirectly as a part of the travel experience (IdeaWorksCompany, 2021). The sources of ancillary revenues are also called a la carte features. In an attempt to survive in fierce competition and gain as many ancillary revenues as possible, LCCs try to split their fare prices into various components such as onboard food and beverages, pre-assigned seats, checked baggage and excess baggage, priority boarding in-flight entertainment, and others. However, the three most common services offered at extra pay are onboard food and beverages, assigned seating, and check-in baggage. Figure 1 reveals the ancillaries purchased by respondents in their most recent flight. The questionnaire was conducted by D. Warnock-Smith et al. as a part of an empirical study.

Figure 1: Purchased ancillaries



Usually, Low-Cost Carriers do not serve meals, drinks, and other related services on flights. According to Karivate (2004) this results in a saving of 5 to 10 dollars per flight passenger and up to 3.2% from the average carrier's operating expenses. Instead, they run a trolley from which passengers can buy drinks and snacks at a given price. Such an approach drives passenger service costs to a minimum and allows to collect of extra revenue. Meals and/or accommodation for delayed and transit passengers can also be referred to this section: are not covered by LCCs.

Another no-frill feature typical of low-cost airlines is that passengers are not allowed to choose a seat beforehand. The free seating policy speeds up turnaround and reduces the waiting time for flights in the airport slots. At first, such companies like Ryanair, Southwest Airlines did not issue pre-assigned seats. The allocation of the seats was on a first-come, first-served basis. However, consumer preferences changed as time passed, and more importance was given to pre-assigned seats. Almost all LCCs offer today this option that can be purchased in advance.

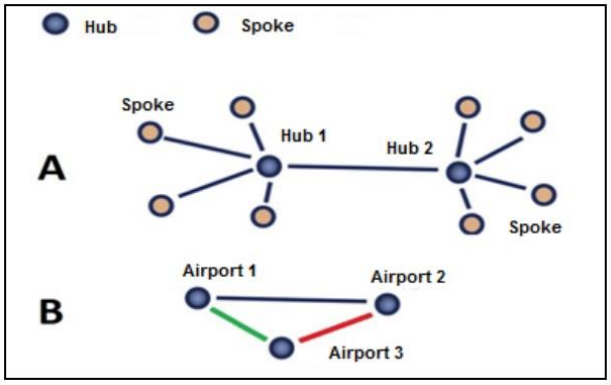
Check-in baggage plays an essential role in boosting LCCs' revenues. While United Airlines was the first FSC carrier to start separately charging for checked baggage, Spirit Airlines was the first LCC to charge for carry-on bags that did not fit under a seat (Vasigh, Fleming, & Tacker, 2013). According to (D. Warnock-Smith et al., 2017), baggage was the largest collector of such revenue among U.S. airlines, equaling 3.5 billion U.S. dollars in 2014. Forbes (Asquith, 2019) stated that baggage fees made up 3% of total revenue for U.S. carriers. However, this share is quite different for no-frills carriers and can make up to 19%, as is in the case with Spirit and Frontier Airlines.

- Point-to-point structure

Model at which traditional and low-cost carriers operate are also usually different. Traditional airlines focused on the "hub and spoke" model, while LC carriers are on the "point-to-point". Figure 2 (Rozenberg, Szabo, and Šebeščáková (2014) depicts these models. The "Hub and spoke" model implies that two hub airports of major cities are connected. The

aircraft mainly flies between these cities, while the ultimate destinations become spoke and passengers are transferred there in smaller aircraft. One of the advantages of this "pairing" model is that it can fly to more destinations. On the other hand, let us assume that if there are six destinations, the aircraft will need to fly between 5 routes (Zgodavova, Rozenberg, & Szabo, 2018), while the number of routes in the "point-to-point" model will be 15. Respectively, fewer routes lead to economies of scale, such as lower costs and efficient use of resources. Nevertheless, there are also disadvantages to this model. First, it is costly to maintain such a complex infrastructure: runaways, gate, baggage transfers operations, grounding equipment, personnel have to be prepared to handle this in a short time, taking into account strong traffic flow.

Figure 2: Description of "Point-to-point" vs "Hub and Spoke" structure



Next, a delay in one schedule may cause a "domino effect"–subsequent delays due to hub congestion. Vasigh et al. (2013) noted that during congested times it took much longer for aircraft to execute landing and take-off operations, which ultimately reflects in higher fuel and labor costs. "Hub and spoke" model also means longer travel time, if customers have to transit from hub airport to spoke. And finally, with this model, there is an increased chance of lost baggage.

In contrast, "point-to-point" is a model where aircraft directly fly between 2 cities. According to Zdogadova et al. (2018), this model results in up to 30% cost-saving due to direct flights without stopovers, enabling better labor and aircraft utilization. Dependence from the "domino effect" decreased – this model is less sensitive to schedule delays.

Moreover, as there are no transfers, total customer travel time is reduced, and the risk of a lost baggage item is also low. Despite adherence to this model, some LCCs have so-called "focus-cities" connected to many destinations (Schlumberger & Weisskopf, 2014).

- Usage of secondary airports

As a shared experience, LCCs mostly use secondary or regional airports. De Neufville (2005) defines a *secondary airport* as an airport that is complementary or supports the city's main airport when several airports are available. One of the advantages of using secondary airports is that they often offer lower charges to airline operators. Usually, due to the remote location and limited infrastructure, secondary airports have lower operating costs and increased efficiency (Forsyth, 2003).

Another advantage of secondary airports is that they do not suffer from congestion, as with primary airports. It means such airports are underutilized; more free airports slots are available. International Civil Aviation Organization (IATA) defines airport slot as follows: "a permission given by a coordinator for a planned operation to use the full range of airport infrastructure necessary to arrive or depart at a Level 3 airport on a specific date and time".

Airport charges are one of the main operating expenses in the airline industry. These include aircraft landing fees and passenger-related charges. According to Doganis (2006), in 2002, European infrastructure EasyJet's airport charge was 6.48 GBP, British Airways` 10.57 GBP, and British Midland`s 13.00 GBP. Despite, EasyJet was an early company, and it first operated as a startup and thus had some privileges; nevertheless, the use of secondary airports resulted in EasyJet's airport charges being almost two times lower than that of FSCs. Ryanair also made a more significant saving. Another comment by this author is that Ryanair`s charges were only one-third of Midland`s. Airport charged on the sort haul can represent up to 6-10 percent of total operating costs. Therefore, by reducing these costs by one-third, one can achieve optimization of overall costs by around 3-4%.

In recent years some primary airports have adjusted their rates to attract LCCs. Even more, some airports created so-called "low-cost terminals" to suit the LCCs business model

by offering better turnaround tie, gate facilities, and other procedures (Schlumberger & Weisskopf, 2014).

- Aircraft utilization

According to McLean (2006), aircraft utilization is an aspect of aircraft operation that affects operational efficiency. Vasigh et al. (2013) claim that there are primarily two ways to increase aircraft utilization: reducing the turnaround time or flying longer routes. By analyzing the data taken from Back Aviation form 41, they concluded that as aircraft utilization rises, operating costs go down. More and Sharma (2014) define turnaround time as "the time required to unload an airplane after it arrives at the gate and to prepare it for departure again." Some several factors or variables have an impact on turnaround time: the availability of accessible seating allows passengers to get on and get off on average more quickly and this, in turn, reduces boarding procedures; restricting catering; using secondary, less-congested airports, so that delay in schedule has the minor effect or nothing to do with time loss; choice of the operating model: point-to-point or hub-and-spoke model—an interesting fact on an increasing number of seats in the aircraft. In 2011 Ryanair planned to decrease their onboard toilet lavatories from 3 to 1. The airline`s CEO said that it would decrease the price of fares by about 5% (The Independent, 2011). Extended research on airplane utilization was carried out by the regional director of Boeing PLC Mansoor Mirza (economic and financial analysis group). Firstly, in his work Mirza (2009) stresses out that point-to-point carriers have a significant advantage on aircraft utilization compared to hub-and-spoke systems. Reduction of turnaround time from 40 to 30 minutes increases the number of trips from 2 304 to 2 491, an increase of 8.1%. From another prism, more specifically from a financial perspective, an increase in utilization allows airline companies to allocate fixed overhead costs over a higher number of trips, decreasing operating costs per trip. Mansoor Mirza points out that once aircraft utilization is increased by 20%, the operating cost per trip can be reduced by about 5%. Secondly, he considers workforce education as another efficient opportunity to increase aircraft utilization. According to him, if 10 minutes is saved for each trip, then for an annual 2 000 trips, it means 20 000 additional minutes or 300 hours additional flights. More flights mean more revenue. Moreover, finally, he

concludes that 10 minutes saving in turnaround time can increase aircraft utilization by 8% and lower operating cost per trip by 2%.

Though LCCs traditionally fly on short domestic hauls, some LCCs fly longer routes to maintain high aircraft utilization. For this case, many sources (Schlumberger & Weisskopf, 2014; Vasigh, Fleming, & Tacker, 2013) mention JetBlue, EasyJet, Southwest, etc., which operate several transcontinental flights.

- Fleet configurations

There is no precise definition of fleet commonality. To generalize all ideas, one can define this concept as when airlines exploit aircraft of the same type, from the same manufacturer family, that share standard features. Empirical evidence proves that common fleets are negatively related to operating costs (Brüggen & Klose, 2010; Li, Yu, & Dresner, 2015). On the other hand, other scientific research suggests that aircraft commonality and engine commonality also have a meaningful cost reduction result and the latter effect contributes more than half to the effect of the former (Merkert, 2018). Schlumberger et al. (2014) also bring other cost reduction benefits of this concept, such as reduction in ground support equipment, training, standardized handling and maintenance processes, and flexible crew processing. Besides, it should also be concluded that chances are higher to get a significant discount when many aircraft are purchased from the same supplier. Consequently, this may mean a reduction in capital expenditure, spare parts, and discounts on maintenance expenses. Vasigh et al. (2013) also agree with the abovementioned benefits of common fleet utilization but also stress out that the most importantly, it is the economy of scale that results in significant cost reduction, so that airline companies have to spend fixed costs only once (e.g., specialized equipment for a Boeing 737).

The idea of a single fleet utilization was first carried out by Southwest Airlines. Moreover, since fleet utilization is one of the central elements of cost optimization procedures, many low-cost carriers adhere to this strategy. However, in their paper, Brüggen et al. (2010) noted that sometimes it could be meaningful to add another type of fleet if there is a perspective route with high demand and a single type of fleet cannot meet this demand.

One of the inseparable aspects of the fleet configuration in LCCs is a seat pitch, the distance between row seats. Doganis (2006) mentions that seating density at low costs is higher than traditional airlines. The difference is mainly achieved through taking away business class catering facilities. As a result, low-cost carriers employ seat pitches of 71 – 74 cm compared to 79 – 81 cm employed by full-cost carriers. Moreover, in addition to this topic, Vasigh et al. (2013) point out that Southwest Airlines offer 7% more seats than the industry average, while this figure equals 6%. Sarkis (2020), on its observation in Forbes, outlines that seat pitches become smaller and smaller. If 40 years ago seat pitches in the business class ranged from 79 – 89 cm, today these figures dropped to 74 – 84 cm, while seating width from 47 cm to 43 cm. It may be a sign that changes in configurations of seat fleets take place not only in LCCs but also in FSCs.

- Labor / staff costs

Labor costs represent a significant portion of expenses in the airline industry. Ryanair's annual report for the financial year 2021 shows that staff costs equaled 15% of total operating expenses for 2019 and 2020. Various literature suggests that there are mainly two ways of driving down labor costs: high labor productivity and lower costs per full-time employee. The study conducted by The Boston Consulting Group suggests that 60% of the cost-saving effect stems from labor productivity, while only 40% from lower costs per full-time employee (Dietlin, 2004). Generally, available seat kilometers (ASK) or available seat miles per employee (ASM)[1] is the indicator of employee productivity. It is achieved in 2 ways: by increasing average block hour[2] per employee ratio and passenger per employee ratios. Research carried out by MIT on behalf of the Global Airline Industry Program shows that in the United States, total pilot and co-pilot average block hours per month for LCCs were higher for about 9.8 hours in 2018 and 7.7 hours in 2019 (MIT, 2021). This trend (and even a little more significant difference) is also maintained for flight attendants: block hours

[1] "Available seat miles (ASM) is a measure of an airplane's carrying capacity available to generate revenues. Available seat miles refer to how many seat miles are actually available for purchase on an airline. Seat miles are calculated by multiplying the number of miles that a given airplane will be flying by the number of seats available for a given flight" (Kagan, 2020).

[2] "A flight block time is defined as the total elapsed time between the time aircraft pushed back from its departure gate and arrives at its destination gate" (Sohoni et al. 2008).

per month were higher for about 11.7 hours and 9.4 hours for 2018 and 2019, respectively (MIT, 2021).

In an analysis for European Airlines conducted by the Centre for Aviation (CAPA) in 2013 (CAPA - Centre for Aviation, 2013), ATK (available ton-kilometers) was taken as a measure of productivity. On average, LCCs have higher ATK, particularly such companies like Wizzair, Ryanair, Vueling, Norwegian, and EasyJet.

There arises an important question what are the main drivers of employee productivity in low-cost airlines? One of the possible answers to this question is that the management of LCCs created a unique "company atmosphere" or "corporate family feeling" by implementing the idea "they against us" and promoting spirit community (ITF Survey: The Industrial Landscape of Low-Cost Carriers, 2002). This is in line with the statements of Doganis (2006), who describes the success story of Southwest Airlines and noted that management tries to create a "fun" atmosphere and developed work ethics and particular culture within the company, where the success of the company is shared, and ownership problems are encouraged. Paethrangsi and Jamjumrus (2021), in their research of Thailand airlines, found that airline personnel, namely pilots, cabin attendants, and ground service agents, are critical drivers of organization performance. They concluded that organizational culture, structure, workplace ambiance, leadership, and teamwork are critical in employee performance. Moreover, some companies, notably Southwest Airlines, employ an experience where profit before taxes is distributed between its employees, to which employees could buy shares of the company.

When it comes to the salary point paid to full-time employees, many papers suggest that LCCs, on average, pay lower to their employees than FSCs. For instance, according to Harvey (2007), low-cost airlines on average pay their pilots 27% less salary than traditional airlines. It is mainly achieved due to the point-to-point operational model, which does not require overnight pilots. ITF Survey (The Industrial Landscape of Low-Cost Carriers, 2002), which covers surveyed 30 airlines from 21 countries, suggests that significant LCCs' monthly basic pay is 21% lower than in traditional airlines and in the range of 5 – 50%. American

airlines (MIT, 2021) reported that full-cost airlines paid 6.9% and 7.2% more than LCCs in 2018 and 2019, respectively.

Furthermore, this figure equaled 8% and 13% for flight attendants, respectively. One interesting fact is that data in this report shows that in some previous years' average salary paid to flight attendants and pilots by LCCs was higher than that in traditional airlines. Observation shows that only one airline paid more to its staff than FSCs, and that is Southwest Airlines which impacted the average number. This observation is in line with Vasigh et al. (2013), who stated that Southwest's pilots are some of the highest-paid in the industry, yet they fly more (remain productive) and even help the crew do the aircraft cleaning or even carry bags.

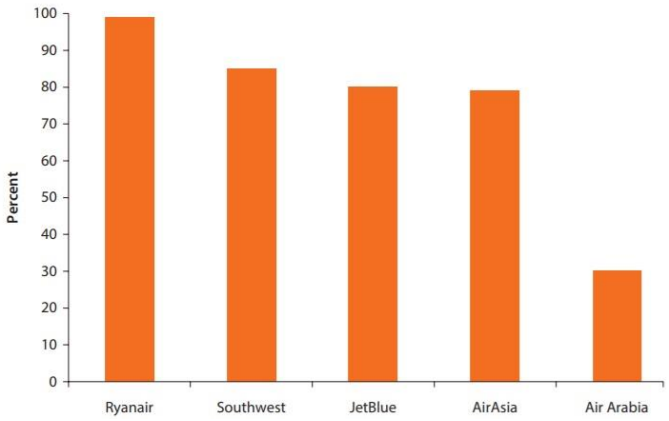
Some researchers link lower salaries with the lack of unionization. However, this statement has not found ground support. Karivate (2004) compares two low-cost airlines: Southwest Airlines, which is unionized, and JetBlue, which is not unionized. It concludes that both pay less salary than traditional airlines and link it with a point-to-point operational model. According to ITF (The Industrial Landscape of Low-Cost Carriers, 2002), in 2002, 70% of low-cost carriers were unionized (survey included 12 low-cost airlines).

- Distribution costs and pricing strategy

Distribution costs are also one of the main expense items in the airline industry. Distribution costs are expenses related to the sale and delivery of airline services, particularly aircraft seats, to passengers. Airlines use Global distribution systems (GDS), such as Amadeus, Sabre, and others, to sell, deliver or distribute their tickets worldwide. Also, there is inconsistent information regarding the share of the GDS industry. From one side Gunther, Ratliff, and Sylla (2012) note that “today, international air travel distribution is a US $500 billion per year industry around a complex network of suppliers, travelers, and intermediaries”; Infrata (Airline Distribution Costs. Examination of direct versus indirect distribution costs for airlines, 2017) in its report estimated this figure at around $500 billion in 2016 (they gave an estimation of US $523 billion of global online sales and stated that this equaled over the half of the global total), on the other side such reputable research center like

Transparency Market Research[3] estimated total GDS market at around the US $9.5 billion in 2019. The data provided by first sources indicate sales reported by GDS, while Transparency Market Research reported profit. In a report prepared by O'Toole and Ionides (2005), Horst Findeisen, past vice president at Star Alliance, states that it costs airlines around $13 to distribute tickets to the passengers, from which the transaction cost is only $5. The observation of Perkins (2012) also supports these figures. According to him, it costs between $5 to $12 to book a flight via GDS, while it costs probably less than $1 to reserve a flight via the airline`s system. According to the survey carried out by Statista (2018) in North America, 43.1% of airline passenger revenue was generated from airline website sales, while this figure was 42.2% for Europe, 28.2% both for the Asia Pacific and Latin America regions. Therefore, not surprisingly, the vast majority of low-cost airlines try to avoid external systems for distribution purposes and instead promote their call centers and websites. Southwest Airlines were the first to establish online ticket sales through their website (Southwest Airlines One Report, 2013). After Southwest Airlines, many airline companies tried to follow its example: sell tickets through their websites. Schlumberger et al. (2014), based on information from airlines` annual reports and presentations, provide a figure (Figure 3) depicting online distribution as a percentage of total distribution between 2011 and 2012. As it is clear from the figure online distribution channel for mentioned LCC samples, lay between 75% and almost 100%, except Air Arabia.

Figure 3: Online distribution as a percentage of total distribution



[3] Available at: https://www.transparencymarketresearch.com/global-distribution-system-market.html

The disadvantage of online distribution or e-commerce is its high dependence on internet penetration. Low website sales for the Asia Pacific and Latin America regions may be explained by low internet distribution among the population.

It can be risky for new airlines to ignore global distributions systems entirely, as was the case with LCC Independence Air. According to Field and Pilling (2005), its website did not have brand awareness, which was one reason the company ceased all its operations in 2006.

On the other hand, fares prices increase as the departure time approaches. This is in line with observations of Rozenberg et al. (Rozenberg, Szabo and Šebeščáková, 2014), whose observations included daily fare prices two months before flight departure over 30 flights on the 18 European routes. From LCCs as a sample were taken fare prices of Ryanair, EasyJet, and Wizzair, while from FSCs TAP, AirFrance, Swiss, Lufthansa, British Airways, Alitalia, and Iberia were taken. Generally, they identified that as more days left until departure, the cheaper the fare price. However, the pace of ticket prices going upward is different among sample low-cost airlines. In general, while tickets offered by Ryanair had a tendency to rise as the departure time approached drastically, easyJet's fares remained stable (though was not always the case), while Wizzair's prices lay somewhat between them. It can be risky for new airlines to ignore global distributions systems entirely, as was the case with LCC Independence Air. According to Field and Pilling (2005), its website did not have brand awareness, which was one reason the company ceased all its operations in 2006.

3. Literature review on airline valuation

The airline industry depends on the state of the economy. When the economy is in good shape, airline stock performs well, and the performance decreases in poor conditions. In economics, this understanding refers to common goods, which quantity demanded rises as peoples` income rises. One of the metrics used to value an airline company is stock performance. According to Zucchi (2020), revenue and profitability are drivers of stock

performance. When the economy is doing well and discretionary income rises, people travel more. On the other side, the author also stresses that factors such as fuel costs, airport slots, capital expenditure, foreign exchange rates, and others impact profitability and move the price of stocks.

Hsu`s and Flouris`s (2017) empirical results suggest that airline merging has a positive relationship between trading volumes and stock returns, and investors preferred the companies which announced merging. The observation was based on the European merger airline experience.

Another aspect that may influence airline firm value is hedging. By analyzing the US airline industry from 1992 to 2003, Carter, Rogers, and Simkins (2006) found that hedging jet fuel costs positively related to the airline's value. As a result of jet fuel hedging, airlines reduce underinvestment costs, which positively affects the company's value.

Malighetti et al. (2011) state that traffic rights and rights to airport slots have strong relevance to airline valuation. As it is known, there are different ways used in valuation. One of them is the valuation of fixed assets that appeared in the balance sheet. However, the abovementioned are intangible assets when traffic rights are rights to fly specific routes, while permission to land and take-off on certain airports is right to the airport slot.

However, there are two essential valuation methods used in the airline industry: EV (Enterprise Value) to EBITDAR (Earnings before Interest Depreciation Amortization and Rent) and DCF (Discount Cash Flow). First, the discussion will be about the EV to EBITDAR approach.

Enterprise value (EV), also comprehended as Firm value, and is a metric that includes market capitalization and the book value of long-term and current portion of long-term debt. According to Morrell (2007), this indicator shows the company's total value, including debt sources, and therefore no gearing distortion appears there. The airline industry is an industry that prevailed with high fixed costs. These costs mainly derive from owning, maintaining, and operating aircraft: rent or lease expenses, amortization, and depreciation. Therefore, in the background of these costs, EBITDAR was introduced. The main idea of EBITDAR is

that the company operates transparently enough and has the optimal fleet funding from an economic point of view. In other words, there is an interest in the company's economic performance, no matter how many aircraft it leases and how many planes they own. To get EBITDAR, interest and taxes are added back to operating profit or earnings before adding back depreciation and amortization to get EBITDA after lease expenses are added back to get EBITDAR.

The other model, which will be used for valuation purposes in this thesis, is Discounted Cash Flow method (DCF). In his research, Bert (2014) states that while there can be several variables used to determine the company's value, three of them play a crucial role: operating income, company size, and of course, cash flows. On the other hand, in their survey of financial managers, Graham and Harvey (2001) found that DCF technique such as Net Present Value (NPV) is strongly preferred to evaluate investments. This preference coincides with the results of another survey (also survey of financial managers but in this case financial managers of airline industry were surveyed) performed by Gibson and Morrel (2004). They found that airline managers also choose in favor of such valuation techniques like internal rate of return (IRR), payback time (PBK), and net present value (NPV) dominating among them. Morrell (2007) describes the DCF model as three-phase model. In the first phase, detailed forecasts of companies` key figures are prepared. This should embrace something between 3 to 5 years. The following phase is characterized by evaluating investment opportunities and whether the company will expand or shut down some of its operations for the next ten years. The third and last phase is determining the company's cost of capital. According to him, cash flow is projected for all these phases, including the terminal period, and then discounted to present values often at a weighted average cost of capital (WACC). DCF model was used to value 4 American airline companies described in the thesis by Caveney (2017). He made projections of companies` revenue, capital expenditures, expenses, net working capital, and other items to come at free cash flow. He then discounted it at each company's weighted average cost of capital (WACC).

The other information that should be considered during valuation is the information provided by rating agencies. There are 3 main rating agencies that rate companies` ability,

including those in airline industry, to meet their debt obligations: Standard & Poor's, Moody and Fitch. These agencies strive to evaluate the likelihood repayment of principal amount and interest of their debt obligations, dividends for preferred stock. Analysis may cover the airline industry as a whole, a particular company and perspectives of the company. Such analysis often delves into details and sheds light on the company's operational and management quality, cost-control performance, revenue and yield strategy, and control of capital expenditure and cash flow.

The other methodology that is occasionally utilized for airline valuation purposes is Tobin's Q or Q Ratio. Tobin's Q shows the relationship between the market value of a firm (enterprise value) in the numerator and the replacement cost if its assets in the denominator. To say differently, it is defined as the ratio between the firm's value in the market and the value of its assets in the goods market. It was first invented by Nicholas Kaldor in 1966 (Hayes, 2021) and was popularized by James Tobin, making further clarifications. The logic behind Tobin's Q is similar to market to book ratio; however, Q Ratio is often used in economic research and valuations to identify intangible value. The ability to neutralize the effects of depreciation due to discrepancies in depreciation policies of the companies is one of the main advantages of this method. However, one should consider that Tobin's Q requires too much input data to evaluate the replacement costs of fixed assets Malighetti et al. (2011). If Q is greater than 1, it means the company's market value is higher than its book value of fixed assets, and the company may expect a return on investments greater than the average.

There are several studies conducted using Tobin`s Q. Malighetti et al. s` (2011) work on value determinants in the aviation industry is among them. By employing Tobin`s Q (a dependent variable), they found out that ownership concentration, size, and state ownership are detrimental to market valuation. Abdi, Li, and Càmara-Turull (2020) examined 27 airlines from 2013 to 2019 and discovered that environmental and governance disclosures have a positive relationship with market-to-book ratio and Tobin`s Q, which were chosen as a proxy for firm value.

4. COVID-19 and impact on global stock airlines

The outbreak and widespread COVID-19 coronavirus led to hazardous disruptions and closures of the global economy the world has ever seen. This has resulted in the decrease of global equity and bond market indices. According to KPMG (2020), the global equity market indices dropped by approximately 30% to 40% from the end of 2019 to their lowest points in March 2020 before reviving again.

Several papers have been conducted investigating the impact of the COVID-19 outbreak on the global economy. The behavior of several financial parameters has been researched during pandemics, and expectations were assumed.

Berkman and Malloch (2021) found out that during the four months of the pandemic outbreak, change in short-term expected market returns, that is, discount rates substantially contributed to fluctuations in the equity market. They have analyzed estimations of the expected market risk premium for 13 international markets and found that changes in discount rates explained 40% of the change in market values during the COVID-19 outbreak. It is worth noticing that premium option-based estimates were utilized to find market risk. Moreover, they discovered that the short-term discount rate is more strongly correlated with index returns during pandemic movements than normal times.

Gormsen and Koijen (2020) documented a decline by as much as 30% in the EU, Japan, and the US equity markets. Dividends also saw a substantial plunge between March 5 and March 20. S&P 500 index fund saw a drop of more than 30%, while Euro Stoxx 50 for more than 40%. However, the authors state that stocks increased in price on March 13 after the United States announced a state of emergency and by 10% from March 20 to March 26 after the US declared a fiscal stimulus program. Gormsen and Kojien (2020) observed that models that use macroeconomic fundamentals are not sufficient to estimate future growth expectations. They offer to look at the prices of such financial resources like stocks, bonds, and credits as they are forward-looking. Remarkably, they conclude that dividend futures can be a useful measure to predict the lower bound of expected dividend growth and GDP as well as overall growth during the pandemic.

If Gormsen and Koijen (2020) looked at dividend futures to explain the expected term structure of future dividends, Landier and Thesmar (2020) looked directly at analysts` revisions of projections of firm earnings. As they explain, the advantage of this method is that this approach directly reflects the measure of beliefs; however, the disadvantage lay on the factor that it should be assumed that analysts` revisions are accurate. They divided earnings into short-term 2020-2022 and longer-term horizons 2023-2024. They found that analysts` expectations about earnings changed mostly for short-term horizons and less for longer-term forecasts (actually, forecasts beyond 2023 remained unchanged). Considering this fact, they conclude that, if analysts` expectations are reflected only in short-term forecasts, this tells us about the short-term nature of the shock. However, as 2023 expectations have also been impacted, analysts expect a long-lasting crisis downturn. At a constant discount rate, downward revisions were in line with an average mean return of -12%. The discount rate before the crisis was 10%, went up by 13% in late March, and was back to 10% in mid-May. An exciting observation also made by authors was that the leverage effect contributed reasonably to an increase in the risk premium: bad news increased the cost of equity. The rise in assets risk premium was only temporary.

It should also be noted that the COVID-19 outbreak did not leave aside the aviation industry. The airline industry is one of the primary business directions affected by the pandemic since the infection is easily passed among individuals. Firms of the travel industry in the United States were industries that experienced the most substantial stock price decline in the initial periods of the crisis (Ramelli & Wagner, 2020). Comparative occasions can be seen within the disastrous events in the airline industry (Kaplanski & Levy, 2010), the September 11, 2001 attacks (Gillen & Lall, 2003), and the outbreak of Severe Acute Respiratory Syndrome (SARS) on airline performance (Loh, 2006). Perhaps, the study performed by Maneenop and Kotcharin (2020) is the first of its kind describing the impact of coronavirus disease on the stocks of global airlines. They employed even study method to evaluate the impact of COVID-19 official news on airline stock returns. For this, they considered three significant events related to COVID-19: first–when the outbreak was first officially announced out of China in Thailand on January 13, 2020 (WHO, 2020). The

second–official announcement of the outbreak in Italy was on February 21, 2020 (Vagnoni, 2020).

Furthermore, the last one–was when WHO officially declared the COVID-19 pandemic as global on March 11, 2020 (WHO, 2020), and the U.S. banned travels to 26 European countries. For the analysis, they monitored information of 52 listed airline companies from around the globe. Their observation showed that the market under-reacted to the outbreak in Event 1 as there was no significant decline in cumulative abnormal returns of the airline stocks; however, investors overreacted to Events 2 and 3, showing an exponential drop. Comparing differences between the companies' fair values and actual market values, they prove traders overreact to pandemic news leading market values of the companies to a significant drop, where average differences in mean and median equaled -22.10% and -48.00%, respectively, among 35 listed companies. Furthermore, they documented that traders in Western countries are more sensitive to information than other regions; airline stocks in Canada, the U.K., and the U.S. had the worst performance in terms of airline stock price in the post-event period in Event 3.

Another event study approach was utilized by Kökény, Kenesei, and Neszveda (2021). They have examined the financial performance of 11 major European airlines listed on the stock exchange from January 2 to March 20, 2020. The financial performance included abnormal returns (which equaled expected return minus actual corporate return) and cash/assets ratios of the companies. Furthermore, they segregated airlines into low-cost carriers (LCCs) and full-service carriers (FSCs). First, they found out that the stock market responded differently at different stages of a crisis: the most substantial decline came on February 24, 2020, when the virus reached Europe and restrictions on border crossings across Europe were introduced. Second, contrary to their expectations, they revealed that airlines with better cash-to-asset ratios performed worse (their abnormal returns were lower) than companies with lower cash-to-asset ratios. They linked this phenomenon with the business model. Furthermore lastly, the study showed that LCCs showed substantially lower results than FSCs. As the effects of crisis became sharper, LCC declined faster. One explanation for this phenomenon could be linked with the fact that governments supported FSCs than LCCs.

Albers and Rudnshagen (2020) documented that EasyJet and Ryanair were not supported by the government as much as Air-France-KLM, IAG, or the Lufthansa Group.

5. Information on the company.

5.1.General overview

Ryanair was founded on November 28, 1984. Its headquarter is located in Dublin. It positions itself as a company offering ultra-low fares, point-to-point routes between Ireland, the United Kingdom, Continental Europe, Morocco, and Israel. By mid-2021, Ryanair had approximately 422 Boeing 7373-800 aircraft and 29 Airbus A320 aircraft. Moreover, Ryanair conducted more than 2 100 scheduled short-haul flights per day during the mentioned period, serving 210 airports mainly around Europe. In 2016 it became the most prominent European budget airline by scheduled passenger flown.

For the time being, there are five wholly-owned airlines within the Ryanair Group: Buzz (formally known as Ryanair Sun) was set up in 2019: A Polish charter and scheduled passenger airline with a Polish air operator certificate (AOC); Lauda, a Maltese wet lease provider, which was acquired in 2019; Ryanair U.K. which was set up also in 2019 under the U.K. (AOC); Malta Air, which was acquired in the fiscal year 2020; and Ryanair DAC – an original and parent company, which was incorporated in 1996.

Ryanair`s operational model was adopted from the first-ever low-cost airline company globally: Southwest Airlines. Michael O'Leary, Chief Executive Officer for 25 years, once stated: "We went to look at Southwest. It was like the way to Damascus. This was the way to make Ryanair work" (Doganis, 2006). The company identifies the following as critical elements for long-term growth: low fares, customer service, and frequent point-to-point flights on short-haul routes, low operating costs, maximum exposure to internet facilities, commitment to safety and quality maintenance, focus on ancillary revenues.

Ryanair is a public limited company (plc) with its shares listed on the Dublin stock exchange. It files its annual reports and other information with the SEC (Securities and Exchange Commission). According to Bloomberg, as of January 04, 2022 company`s share cost 16.60 EURO. According to the annual report (Ryanair, 2021, p.150), as of June 30, 2021, there were 1.1 billion ordinary shares outstanding.

5.2.SWOT Analysis:

Strength	▪ Lowest unit cost (cost per seat available vs average trip length) ▪ Low fares ▪ Technical innovations (online check-in, automated bag-drop) ▪ The largest short-haul network ▪ Management focus on cost differentiation strategy ▪ New efficient aircraft
Weaknesses	▪ Brand loyalty ▪ Seasonality of earnings ▪ Secondary airports ▪ Poor employee conditions
Opportunities	▪ Improved customer service ▪ Adding more primary airports ▪ Attract other customer segments (business travelers, family travelers) ▪ Opportunities to increase ancillary revenue
Threats	▪ Volatile fuel prices and currency movements ▪ Rising airport charges ▪ Increased competition ▪ Increased Employee / Employer expenses ▪ Brexit

6. Financial analysis

One of the critical measures of investment performance is Return on Equity Ratio (after this ROE). ROE helps to evaluate a corporation's strength and efficiency. It indicates how management utilizes shareholder equity to create profit. To introduce the financial

analysis, the ROE indicator was chosen as a company's performance measurement. ROE is measured as net income for the period divided by shareholder's average equity:

$$ROE = \frac{Net\ Profit}{Average\ Shareholders`\ Equity}$$

Trying to deepen analysis and shed light on the company`s performance, ROE was decomposed using DuPont analysis. DuPont decomposition analyzes company performance from the aspect of two components: profit margin and asset turnover:

$$ROE = \frac{PBIT}{Sales} * \frac{Sales}{Average\ Total\ Assets}$$

Where PBIT = Profit before Interest and tax

Soliman (2007) has revealed that DuPont components reflect incremental and viable information about the firm`s operational performance. It is worth mentioning that managers and owners of the companies should strive to increase returns. Ratio analysis gives valuable information in this regard, and the modified DuPont approach is one of the techniques used to enhance decisions undertaken by company officials. The "really" modified DuPont analysis, introduced by Liesz (2002), is shown below:

$$ROE = \frac{EBIT}{Sales} * \frac{Sales}{Invested\ capital} * \frac{EBT}{EBIT} * \frac{Invested\ Capital}{Equity} * \frac{EAT}{EBT}$$

Where, EBIT = Earnings before Interest and Tax; Invested capital = cash + working capital requirement + net fixed assets; EAT = Earnings after Tax; EBT = Earnings before Tax. However, in my opinion, as the airline industry is a capital-intensive one that is reflected in its total assets, total assets can be used instead of invested capital. In that case, Asset Turnover ratio will be:

$$ATO = \frac{Sales}{Total\ Assets}$$

EBIT, in this case, will be equal to Operating profit, considering Ryanair`s income statement and the fact that in this case, the logic behind both of them is the same.

To account for gearing ratio $1 + (\frac{D}{E})$ will be used, where D equals to all liabilities on the balance sheet; for effect of interest:$1 - (\frac{Net\ interest}{Operating\ profit})$; for tax effect:$1 - (\frac{TX}{PTP})$, where TX = tax paid, PTP = profit before tax. Ultimately, our modified ROE decomposition based on DuPont analysis will be as shown below:

$$ROE = \left(\frac{Operating\ Profit}{Sales} * \frac{Sales}{Total\ Assets}\right) * \left(1 - \frac{Net\ interest}{Operating\ profit}\right) * \left(1 + \frac{D}{E}\right) * (1 - \frac{TX}{PTP})$$

The results of the decomposition are shown below:

Table 4: ROE Decomposition

Indicators	2021	2020	2019	2018	2017	2016
ROE	-21%	13%	18%	33%	33%	—
Δ ROE	-265.8%	-29.9%	-44.0%	-0.6%	—	—
Operating Profit Margin	-51%	13%	13%	23%	23%	22%
Δ Operating Profit Margin	-486.6%	0.5%	-43.3%	1.0%	3.3%	—
Asset Turnover	0.12	0.61	0.60	0.59	0.57	—
Δ Asset Turnover	-80%	1%	2%	3%	—	—
Interest Effect	1.35	0.57	0.94	0.96	0.96	0.95
Δ Interest Effect	136%	-64%	-2%	0.8%	0.5%	—
Gearing Effect	2.65	3.00	2.54	2.77	2.71	3.12
Δ Gearing Effect	-12%	18%	-8%	2%	-13%	—
Tax Effect	0.92	0.97	0.93	0.90	0.89	0.91
Δ Tax Effect	-5.4%	3.7%	3.7%	0.6%	-1.2%	—
Note: Year ended March 31						

Source: Calculated by author

First, it should be noted that Ryanair's end of fiscal year comes on March 31. Second, as seen from the table, ROE for the year ended 2021 is negative. It is primarily connected with the fact that Ryanair had a negative profit for the year during this fiscal year (See Appendix 1). Third, as operating profit was negative for the year ended 2021, ratios indicating interest and tax effects are distorted (indicated by creamy color) and do not reflect the company's proper performance.

2021

Operating Profit Margin: Overall, by looking at 2021 figures, one can detect that company`s scheduled and respectively ancillary revenues have significantly dropped. As a result, total operating revenues equaled 1.6 billion EURO, which is a drop of more than five times compared to the previous year. As described in the previous sections, the COVID-19 pandemic has a crucial effect on the airline industry, and Ryanair is not an exception. This case is described in the company`s annual report (Ryanair, 2021, p86): "Ryanair began experiencing a substantial decline in international and domestic demand related to Covid-19 during the quarter ended March 31, 2020, and this demand reduction has continued throughout FY21 and into the first half of FY22". According to company officials (Ryanair, 2021, p.6), the number of booked passengers fell by 81% compared to the previous year: from approximately 149 million to 27.5 million. Michael O'Leary stated that the major collapse was in March and April. Though some recovery was noticed in the summer months, the second COVID wave across Europe in the autumn, tracked by a third wave in the spring, created substantial challenges for the guests and the crew. In response to the pandemic and decline in operating revenues company began to implement cost reductions across all Group Airlines. It all started with severe cuts from senior management`s salaries, and no bonuses were announced for the last year.

Furthermore, moderate reductions were made to pilots`, cabin crews`, engineers` pay. The company conducted negotiations with all their core suppliers of aircraft, engines, handling, airports, maintenance, and engineering services to smooth the number of passengers. The effect was partially reflected in operating expenses (related to CAPEX). Operating expenses were reduced by almost 3 times. However, although these efforts operating expenses were still greater than operating revenues, the total operating loss for the year equaled -0.8 billion EURO.

Asset Turnover: Since the revenue part has already been discussed this section will mostly deal with Total assets. Balance sheet figures reveal that total assets reduced by almost 20%: from 14.7 billion EURO in 2020 to 12.3 billion EURO in 2021. A closer look at the balance sheet reveals that reduction in "PPE" and "Financial assets: cash > 3 months" accounts for almost 75% of the drop. 2 main reasons explain the decrease in property, plant,

and equipment (PPE) figure: First, there were no significant additions during this year only 300 million EURO, while in 2020 this figure was more by 4 times. Second, Ryanair initially planned to purchase 135 aircrafts from Boeing. However, in December 2020, the company revised its order to increase the number of aircraft from 135 to 210. These resulted in a restructuring of the payment schedule so that an approximate trade payable of about 497 million EURO was reversed. Additionally, after the negotiations with Boeing, it was agreed for the 2-year delivery delay of the Boeing 737-8200 aircraft, so reimbursement of 378 million EURO was recorded as a reduction in PPE. "Financial assets: cash > 3 months" are liquid resources held either at banks on the appropriate EURIBOR or bank rates in the form of deposit cash or financial securities held for hedging purposes. They have dropped by 2.6 times and equaled 0.5 billion EURO in 2021 from 1.2 billion EURO in 2020. Such a sharp decline can be associated with two reasons: First, as the economic uncertainty increases, the company may prefer more liquid cash (with a maturity of fewer than three months). Secondly, as described in the company`s annual report (Ryanair, 2021, p.88), "there is no assurance that Ryanair will hedge fuel to the same extent in the future". So, they decided to reduce the value of derivative instruments.

Interest and tax effects: As discussed above, interest and tax ratios are distorted. As operating profit is a negative number, it could not account for interest and tax effects.

Gearing effect: Another big event that should be paid attention to is an increase in long-term borrowings. In 2021 the company, to withstand COVID consequences, raised 1.95 billion EURO new finance. Eurobonds and unsecured CCFF (COVID Corporate Financing Facility) totaling 850 million EURO and 600 GBP, respectively, were accounted on long-term debt and leases. Moreover, there were issued ordinary equity shares worth 423 million EURO, which also served to enhance the company's cash position. Both equity and total debts increased gearing effect represent only a 12% decrease from the previous year. A deeper analysis provides another ratio: the debt-to-equity ratio, which shows the company's financial leverage. According to this ratio, the company's leverage reduced by 5% from 67% in 2020 to 62% in 2021.

Other years

Though ROE equaled 33% in fiscal years 2017 and 2018, it gradually decreased to 18% in 2019 and 13% in 2020. DuPont decomposition shows that asset turnover was almost stable during these years (however, it was low in 2017). The first notable discrepancy came from the operating profit margin. Though in the years 2017 and 2018, this indicator was 23%, it equaled to 13% in the years 2019 and 2020. By analyzing operating expenses (table 5), it is seeable that an increase in fuel and oil staff costs majorly contributed to the worsening operating profit margin ratio in fiscal years 2019 and 2020.

Table 5. Operating expenses in relation to total Operating revenues

Indicators	2021	2020	2019	2018	2017	2016
Depreciation	34.9%	8.8%	8.3%	7.8%	7.5%	6.5%
Fuel and oil	33.2%	32.5%	31.5%	26.6%	28.8%	31.7%
Staff costs	28.9%	13.0%	12.8%	10.3%	9.5%	9.0%
Airport and handling charges	17.6%	13.4%	13.8%	13.1%	13.0%	12.7%
Maintenance, materials and repairs	12.6%	3.0%	2.5%	2.1%	2.1%	2.0%
Marketing, distribution and other	12.3%	6.8%	7.1%	5.7%	4.8%	4.5%
Route charges	11.5%	8.7%	9.7%	9.8%	9.9%	9.5%
Aircraft rentals	0.4%	0.4%	1.1%	1.2%	1.3%	1.8%

Source: Calculated by author

Indeed, in absolute figures and in comparison with previous years, fuel and oil expenses increased by 28%, staff costs by 33% in 2019, while in 2020 increase equaled 14% and 12% respectively (table 6).

Table 6. Total Operating revenue and Operating expenses and patterns of change from year to year

Indicators	2021	2020	2019	2018	2017	2016
Total operating revenues	1,636	8,495	7,697	7,151	6,648	6,536
Δ Total operating revenues	-419%	10%	8%	8%	2%	—
Depreciation	(571.0)	(748.7)	(640.5)	(561.0)	(497.5)	(427.3)
Δ Depreciation	-31%	17%	14%	13%	16%	—
Fuel and oil	(542.6)	(2,762.2)	(2,427.3)	(1,902.8)	(1,913.4)	(2,071.4)
Δ Fuel and oil	-409%	14%	28%	-1%	-8%	—
Staff costs	(472.2)	(1,106.9)	(984.0)	(738.5)	(633.0)	(585.4)
Δ Staff costs	-134%	12%	33%	17%	8%	—
Airport and handling charges	(287.2)	(1,140.2)	(1,061.5)	(938.6)	(864.8)	(830.6)
Δ Airport and handling charges	-297%	7%	13%	9%	4%	—
Maintenance, materials and repairs	(206.7)	(256.4)	(190.9)	(148.3)	(141.0)	(130.3)

∆ Maintenance, materials and repairs	-24%	34%	29%	5%	8%	—
Marketing, distribution and other	(201.5)	(578.8)	(547.3)	(410.4)	(322.3)	(292.7)
∆ Marketing, distribution and other	-187%	6%	33%	27%	10%	—
Route charges	(187.3)	(736.0)	(745.2)	(701.8)	(655.7)	(622.9)
∆ Route charges	-493%	-1%	6%	7%	5%	—
Aircraft rentals	(6.7)	(38.2)	(83.9)	(82.3)	(86.1)	(115.1)
∆ Aircraft rentals	-470%	-120%	2%	-5%	-34%	—

Source: Calculated by author

Interest effect also had an adverse effect to ROE in fiscal year 2020. In comparison with the previous year decline was about 64%. Further investigation reveals that interest coverage ratio[4] of the company has deteriorated. It fell from 17.20 in 2019 to 2.35 in 2020. By looking at the income statement of the company observation will indicate that the finance expense of the company has considerably increased in 2020: by more than 8 times. According to annual report (Ryanair, 2020, p.232) hedge ineffectiveness and interest payable are included under the consolidated income statement line item "finance expense". And 85% of the finance expense, which constitutes for the largest portion, related to hedge discontinuance and ineffectiveness, which did not appear in the previous two years. Hedge discontinuance and ineffectiveness related to the widespread grounding of aircraft due to COVID-19 outbreak. The company revised and significantly reduced its scheduled operations for 2021. As a result, the risks associated with jet fuel and foreign currency have exponentially reduced, which in its term caused a proportion of derivative financial instruments to become ineffective (Ryanair, 2020). This should be considered as an extraordinary item that is linked with COVID-19. Once hedging is dropped, the interest coverage ratio will be 15.47, which still indicates solid financial position of the company. Here is extract from the annual report (table 7).

Since it has already been discussed interest coverage ratio it is worth analyzing gearing indicators of the company. Before 2020 for the last three years (2019-2017), the gearing effect was somehow stable, ranging between 2.54 and 2.71 (Table 4). However, in 2020 this indicator has increased by 18%, rising to 3.0. The debt-to-equity ratio will be examined (table 9). The analysis revealed that, indeed, the company's leverage has increased

[4] The interest coverage ratio measures the amount of operating profit available to cover interest payable (Mclaney and Atrill, 2014, p.255). Higher ratio indicates a better financial health of the company.

by 6% compared to the previous year. As disclosed in the company's annual report (Ryanair, 2020, p.126), a new low-cost syndicated bank facility of 750 million EURO was obtained. Furthermore, the impact of IFRS-16 (related to leases) with 246 million EURO combined with debt and lease repayments increased gross debt by 567 million EURO. Ryanair explained this borrowing to strengthen its liquidity position and ensure new aircraft deliveries.

Table 7: Decomposition of finance expenses

23. Finance expense

	Year ended March 31, 2020	Year ended March 31, 2019	Year ended March 31, 2018
	€M	€M	€M
Interest payable	72.9	59.1	60.1
Hedge discontinuance and ineffectiveness (see note 6)	407.2	—	—
	480.1	59.1	60.1

Source: Ryanair annual report 2020, p.232

7. Forecasting

In order to implement the DCF model, the first income statement should be forecasted. Some industry-specific factors and drivers should be specifically considered during the forecasting period. According to Penman (2013, p.536), load factors, available seat-km, and fares are key operating income drivers, and therefore focus will be on these indicators.

7.1.Income statement items

2022 traffic: As has already been mentioned, Ryanair's fiscal year and calendar year do not coincide. By the time I focused on projecting Ryanair`s 2022 traffic, data for April-December had already been released (Ryanair, 2022). In response to travel bans associated

with pandemic, especially the Omicron variant, Ryanair cut its January capacity by 33%, reducing its traffic expectation from 10 million to approximately 6-7 million (Ryanair, 2021b). The cut came on governments` decisions: France and Germany banned UK travelers, and the EU suspended all flights to/from Morocco. However, by January 4, 2022, the German government announced a ban on British travelers (Schengenvisainfo, 2022). So, to forecast traffic for January, the abovementioned figure should add the effect of Germany ban cancellation. To do this: first, it has been accounted for grounding effect (Appendix 4): "In prior years, in response to typically lower traffic and yields from November to March (inclusive) ("winter"), higher airport charges and/or taxes and, at times, higher fuel prices, Ryanair adopted a policy of grounding a certain portion of its fleet during the winter months" (Ryanair, 2019a). Since October is the month with the largest load factor (84%), the effect of grounding is subtracted from October traffic and has resulted in 8.0 million. This would be traffic for the whole month if no bans existed. According to Appendix 3, for the last two years (excluding 2021), Germany accounted 10% of the whole Ryanair revenue. Therefore, this information suggests that if no bans existed between the UK and Germany, German traffic would be 0.8 million for January 2022. However, as the ban was released on January 4, Ryanair restored its operations on January 5. Therefore, by considering five days ban, the real share of Germany`s traffic will be 0.6 million (more detailed in Appendix 5). Suppose an extra 0.6 in addition to the company's traffic expectation (6.8) outcome for January traffic will be 7.4 million by analyzing corporate disclosures related to Ryanair. In that case, Calculation indicates that they have a sensitive and careful approach to corporate disclosures and try to be conservative. For example, in the abovementioned announcement (Ryanair, 2021b), though they expected December traffic between 9-9.5 million, actual traffic equaled 9.5 million. Therefore, in these projections, a similar approach will be adopted, and in January, traffic without Germany will be 6.8 million.

February traffic also will not differ too much from January. Winter month, the grounding effect will be on place; however, there is one point to note – a possible resuming of flights from and to Morocco. Initially, Morocco halted all flights from late November until December 31. However, to cope with the spread of the omicron variant of coronavirus, they prolonged the international travel ban until the end of January (Alarabaia, 2021). According

to Worldometers (2022), 7 064 new coronavirus cases were registered, and the trend is rising. This is an increase of almost 54 times in comparison with November 24. Taking into account this scenario, it is assumed that project that Morocco officials will not open borders with other states by the end of February. Therefore, the February traffic expectation would be 7.5 million.

Traffic for March 2022 and fiscal year 2023: As it is evident, the primary uncertainty about the industries' future operating activities comes from the COVID-19 pandemic. In this regard, World Health Organization (WHO) declared that "2022 must be the end of the COVID-19 pandemic" and that the world had enough tools and time to study and contradict the virus (Collis, 2021). This conclusion shows that the uncertainty will continue with its ups and downs in 2022 but with some degree of predictability. According to Eurocontrol (2022, p.1), 2022 traffic is expected to recover to 70-90% of 2019 levels. Moreover, there is solid ground in support of this assumption. First, national vaccination programs and COVID certificates boost these expectations and contribute to a more sustainable traffic flow. Second, in January 2021, Europe saw 64% traffic recovery vs. January 2019 and 22% in December (Eurocontrol, 2022, p.1). Considering the grounding effect and winter months for the fiscal year 2023, it is assumed that 70% of 2019 traffic for winter months and 90% for summer months. Some variations are possible, especially with months situated on the summer and winter season boundaries (for November and March 80% of 2019).

For March 2022, the projection would be 90% of 2019 traffic due to the following reasons: March traffic was 15% higher on average than February between 2016-2019; expecting that France and Morocco will cancel flight bans altogether, which will boost traffic volume.

Traffic for fiscal years: 2024 – 2028: One of the primary goals of Ryanair is to carry and be able to carry over 200 million guests per annum. By the end of 2019, the Group extended its deadline to 2024 (Ryanair, 2019b, p. 28). At the end of the fiscal year, the 2021 deadline to reach the targeted traffic growth was extended to the end of 2026 (Ryanair, 2021, p. 34). In this regard, the company claimed that this target is subject to uncertainty and cannot be predicted with certainty. Between 2012 and 2020, the average passenger growth was 8.8%.

By calculating this growth from the projected the year of 2023, findings (Appendix 6b) will show that it will be possible for Ryanair to pass this figure only in 2028. Findings (Appendix 6b) suggest that Ryanair will reach 200 million traffic growth p.a. by the end of the fiscal year 2028, which means around 6.2% compound growth per annum. In the calculation of 2024, the figure for 2020 before the pandemic was taken as a basis instead of 2023. This projection indicates traffic flow until the end of 2028 (Appendix 6).

Ancillary revenue: Ancillary revenue is any revenues received above a standard fare ticket sale. There can be several forces driving ancillary revenues up; however, inflation rate, and economic well-being, which is expressed in economic growth, play one of the primary roles. Therefore, it is assumed that ancillary revenue per guest will increase further, which will depend on GDP growth and inflation rates. Historical rates and projections for inflation (IMF, 2021a) and GDP growth rates (IMF, 2021b) are taken from the IMF. As projections were given only by the end of 2026, the last two years were taken as an average of the last previous three years. Results of projection are presented in Appendix 7b. Moreover, as observation indicates (Appendix 7a), scheduled revenue is solely not enough to cover the company's operating expenses. Therefore, driving ancillary revenue up will play a critical role in Ryanair's strategy.

Scheduled revenue: In the annual statement of 2021, in the section related to company risks, the company stated that it might not be successful in increasing fares to cover business related-costs. There is emerging an exciting situation where Ryanair tries to raise fare prices, while on the other hand, providing the lowest prices in the market. Average fare prices have substantially reduced from 46.7 EURO in 2016 to 37.7 EURO in the fiscal year 2021. The average fare price drop had stopped in 2019, and it rose by 1.2% in 2020 and 0.5% in 2021. The difference between scheduled revenue and total operating expenses increases at higher rates, with a CAGR equaling 54%. Therefore, Ryanair has no space to decrease fare prices further, and the ability to increase fare prices is limited by its strategy to provide the lowest fares in the market. Taking this into consideration, no significant changes are expected, but only a 0.5% annual increase in fare prices.

Fuel and oil expenses: According to the Company`s annual statement (Ryanair, 2021, p. 112), by the end of 2021, Ryanair will own 422 Boeing 737-800 aircraft. Many fleets consist of Boeing aircraft with only 29 Airbus, related to its subsidiary Lauda. Ryanair announced that it had ordered 210 new Boeing 737-8200 "Gamechanger" aircraft, delivered between fiscal years 2022 and 2025. New fleets contain 8 or 4% more seats, reducing fuel consumption by 16% per passenger. The Company expects to have around 600 aircraft by the end of 2025.

Furthermore, according to the Company`s website (Ryanair, 2021b), 65 new fleets will be delivered by summer 2022, and by the end of December 2021, it will have around 16 "Gamechanger" fleets. Armed with this information, first research shows historical fuel and oil cost per passenger and disaggregate fleets into Boeing 737-8200 and others. Next, the fuel consumption advantages of Boeing 737-8200 to the "fuel and oil expense per passenger" indicator are accounted. For this purpose, the 2021 indicator was taken as a base one. As no information regarding the company rolling stock strategy was provided after the fiscal year 2025, an average of 3 years was taken. Results are presented in Appendix 8.

Staff costs: By the time expenses are expected, Ryanair released its half-year unaudited interim and Q-1 reports for 2022. In that report, staff costs accounted for 14.1% of total operating revenue for the semi-annual period and 10.8% for the second quarter. By summarizing the information in the reports as well as the latest traffic volume, it is expected that staff costs for the fiscal year 2022 to be at around 13% to total operating revenue, which is equal to roundly 755 million as the financial year 2023 coincides with the assumed final year of COVID-19 pandemic, the uncertainty will be preserved, and 13% relationship will stay. In the subsequent years, when the situation with pandemic stabilizes, it is expected that Ryanair will take control over the staff costs, and the annual change in staff costs will be equal to the average figure of changes between years 2017-2016, 2018-2017, 2020-2019, which is 12%. The difference between 2019 and 2018 is excluded due to notable differences, equalling 33%. According to the clarifications provided by the Company, this unusual increase derived from growth in block hours, pilot pay increase, additional engineering

headcount, and additional pay increase for non-flight-staff. Projections for staff costs are provided in Appendix 9.

Airport and handling charges: As the half-year interim report was released, the semi-annual expenses related to airport and handling charges were taken as a historical fact, while the other half-year figures were projected. The traffic flow was the same in quarter two and quarter 3: 31 million, and airport and handling charge per passenger equaled to 8.1 in quarter 2. Considering that traffic flow was the same in both quarters (2&3), it is expected that approximately the same amount of airport and handling charge in quarter 3. Since coronavirus is stabilizing, airport and handling charges per passenger will stay the same. As for the last quarter of 2022, projected traffic is 24.8 million, charges equal to 200.9 million EURO. Total airport and handling charges for the fiscal year 2022 will equal 786 million EURO. For the fiscal year 2023, taking into account gradual stabilization of the situation with pandemic and an average load factor of around 82%, it is projected that airport and handling charge per passenger to be again 8.1. By multiplying this figure by the number of passengers, the result in related charges for 2023 will be obtained. After observing historical charge per passenger figures (excluding 2021), it will show that the range was between 7.2 and 7.81 EURO per passenger. According to Company`s annual report, it began to fly to primary airports as a part of its strategic news initiative in 2016. Therefore, after the drop in the fiscal year 2016 and focusing on the subsequent years, the average number will be 7.4 EURO per passenger. It is supposed that beginning from the fiscal year 2024, Ryanair`s airport and handling charge per person to be at an average of the selected years. Results are presented in Appendix 10.

Maintenance, materials and repair: After careful analyzing of Ryanair`s annual reports 3 main points are encountered regarding these expenses:

- Ryanair tries to carry out heavy maintenance on winter months, when the aircrafts are grounded
- The Company is dependent on external service providers, notably engine overhauls and “rotable” repairs

- The below mentioned variables were the main drivers of maintenance, materials and repair expenses:
    - Aircraft utilization
    - Lease-hand back charges
    - Fleet age
    - Provisions made for leased aircrafts
    - Maintenance schedule/timing
    - Strong US dollar against EURO or GBP

It could be possible to evaluate maintenance, materials and repair expenses based on abovementioned information, however, it will demand complex approach, therefore, it is calculated in the other way.

Half year interim report has already provided data related for the first half of fiscal year 2022. To forecast the other half, maintenance to total operating revenue ratio is analyzed on semi-annual basis. The results are provided in Appendix 11. Financial year 2021 was excluded, as previously discussed this is the year with the most uncertainty, hit by coronavirus pandemic. For the second half year average Maintenance to TOR indicator equals 0.03. My findings expect this trend will be preserved, so by applying this logic, calculations indicate maintenance, materials, repairs expense for HY-2, which is equal to 113.22 million EURO. Due to uncertainty in fiscal year 2023, projection indicates 0.03 relationship of maintenance to TOR will be preserved. In general, maintenance per TOR ratio was maintained at 0.02 almost for the most years (2016-2019, excluding 2020 and 2021). In my opinion Ryanair will be able to keep this pace, so for the subsequent years projections on maintenance, materials and repairs expenses will be at 0.02 of total operating revenue. Though, these expenses will rise in absolute terms, rising revenue will outweigh the effect.

Depreciation: Analysis of the historical depreciation trend revealed that the Depreciation to PPE ratio remained almost flat across the years (0.07). It is supposed that this relationship will continue, and the average of the last five (excluding 2021) were taken to project depreciation for the subsequent years. Projections can be found in Appendix 12.

Marketing, distribution and other expenses: Marketing, distribution, and other expenses include expenses related to marketing/advertisement, distribution expenses (expenses related to GDS), and customer complaint costs associated with EU-261 regulation. To understand the nature of these expenses, historical figures were examined, and it was found out that a sharp increase was observed in fiscal years 2018 and 2019. According to annual reports, the rise of these expenses during these years was mainly due to compensations paid to customers according to customer complaints. This trend was also observed in the previous years. However, according to the Company`s annual report, the number of customer complaints decreased in 2020; the growth in absolute figures compared with 2019 equaled only 5.8%. Unfortunately, no further information was disclosed regarding the customer complaints. The semi-annual figure was taken for marketing, distribution, and other expenses from the semi-annual report. To project the second half-year, Historical differences in marketing and etc. were analyzed. Expenses between HY-1 and HY-2 over the fiscal years 2016-2021. It is found that Ryanair, on average, spent 11% less on the second half-year than in the first. By applying this difference, the calculation indicates marketing and related expenses for HY-2 and the fiscal year 2022 in total (Appendix 13a). The cumulative annual growth rate (CAGR) (fiscal years 2016-2019) was adopted for the subsequent years. It is considered that as the business revives, marketing expenses, promoting Ryanair, customer complaints will rise, which eventually will bring to the increase of the mentioned cost item.

Route charges: Route charges mainly depend on the sector flown. Ryanair defines sector flown as a number of passenger flight sectors flown in the annual report. Moreover, the sector is the flight between two points.

By analyzing historical figures, it was discovered that almost in all years, route charges equaled 10% of total operating revenue. It is expected that Ryanair will maintain this trend; therefore, route charges will be equal to the average relationship factor of route charge to total operating revenue (excluding 2021). Historical as well as projected figures are shown in Appendix 14.

Aircraft rentals: Aircraft rentals represent leased aircraft and range between 1 to 2% of total operating revenue. No significant changes in this cost item are expected. Therefore,

the average aircraft to the total operating ratio (excluding 2021) was applied to project aircraft rental expenses (Appendix 15).

Finance expenses: Finance expenses comprise two main cost lines – interest expense arising from outstanding loans and hedge discontinuance and ineffectiveness arising from the hedge of jet fuel charges. Historically, hedge discontinuance and ineffectiveness appeared only in 2020 and 2021. Moreover, as the Company explained, it appeared due to the reduced flying schedule forced by COVID-19. This can be treated as an "extraordinary item" the Company was able to adjust its operations not to incur this expense again, and this expense will not further appear. The semi-annual report released in October 29, 2021, also showed that no hedge discontinuance or ineffectiveness were observed by that period. Furthermore, Ryanair published its expected future interest payments in the annual report for the fiscal year 2021 (p.141). According to this information, future payments for the fiscal year 2022 will be equal to 72 million EURO, 51 million EURO for the second year, and 115 million EURO between fiscal years 2024-2026. It is agreed with the interest payment of the fiscal year 2022: 72 million EURO. According to Company, management believes that working capital will be sufficient to cover anticipated cash requirements in 2022 (p.138). Moreover, at the same time, it was observed that Ryanair`s current and long-term debt, including lease obligations, increased by 16% in 2020 and 29% in 2021. It was observed that during the last two fiscal years, Ryanair's primary cash requirements have been for operating expenses, additional aircraft, including advance payments in respect of new Boeing 737 aircraft and related flight equipment, payments on related indebtedness and payments of corporation tax, as well as share buy-back. Around 112 new "Gamechanger" Boeing aircraft are expected to arrive in the fiscal years 2023 and 2024. Ryanair will turn to capital markets to finance its capital expenditure and expenses arising from ordinary operating and financing activities. The annual report (2021, p. 234) indicates that the total amount due in 1-2 years is 5 063 million EURO. It is expected that around 1 billion EURO of this amount to be financed by capital markets. By analyzing previous purchases, it is observed that around one-third of purchases made by Ryanair are financed through long-term debt. Therefore, in 2023 Ryanair`s balance sheet will see an increase in long-term debt at around 1 billion EURO, repayment of which should begin since the fiscal year 2024. Another assumption regarding

this debt is that it should be a long-term debt with a maturity of at least ten years because beginning from 2022, Ryanair's financial burden (loan and lease repayments) will be high (Appendix 15).

Furthermore, for fiscal years 2025 and 2027, the projection for new long-term borrowings equal 800 million and 500 million EURO, respectively. It was concluded by observing and analyzing the D/E ratio. Historically, it was equal to 0.95 (2016-2021) and not less than 0.7. Moreover, the D/E ratio is one of the components of ROE. Higher ROE contributes to a higher ROE ratio. Therefore, guided by this information relevant increase in long-term debts was made.

Equity was forecasted based on the average figure of the last 5 years. 2022 Equity figure was taken from semi-annual interim report.

To project the debt rate, historical effective rate of the last 5 years was used. It is founded that effective interest rate by dividing interest expense paid to non-current and current debt. Historically this figure was not more than 1.7% (excluding 2016).

Based on the information above, relevant projections were made (Appendix 16).

Finance income: Finance income represents a tiny portion of total revenue, even less than 1%. Increases and decreases in finance income depend on interest rates on deposits. Average of the previous five years (excluding 2021) finance income to total operating revenue ratio was taken and applied to projected total revenue to forecast finance income (Appendix 17).

Foreign exchange gain and loss: Foreign exchange gain and loss figures represent even a smaller portion of total revenue. The average of the previous six years was taken to forecast related items (Appendix 17).

Gain on sale of associate / share of associate losses: These are extraordinary items, so no projection was made regarding these items (Appendix 17).

Tax expense / (credit): Tax expense / credit was projected based on effective tax rate by diving tax expense into profit before tax. Average of the last five years (excluding 2021) was around 8%. So, 8% was used to calculate ta expense for future years (Appendix 17).

7.2.Balance sheet items.

Property, plant and equipment (PPE): Interim report for the fiscal year 2022 revealed that for September 30, 2021, Ryanair's PPE equaled 8.5 billion EURO. Taking into account the historical difference between HY-1 and HY-2, the fact that the majority of aircraft arrived and grounding effect, in my opinion, this figure will not substantially rise and will equal to roundly 8.8 billion EURO. To carry a targeted number of passengers, Ryanair has to grow its capital expenditures, mainly fleet number constantly. Historically from 2016 to 2020 cumulative annual growth rate of PPE equaled 11%. In my opinion, Ryanair will try to maintain this trend, and expectation about the fiscal year 2022 Ryanair`s PPE will grow at this rate. Projections are provided in Appendix 18.

Non-current assets: Rights of use asses represent leases of some aircraft. There were no leases under this item before 2020. In the fiscal year 2020, this item represented 2.8% of TOR. As this is a negligible figure, this relationship was preserved.

Intangible assets represent landing slots acquired with the acquisition of Buzz Stansted Limited in 2003 and Lauda in the fiscal year 2019. No, further acquisitions are expected.

Derivative financial instruments represent currency, interest swap, forward contracts, and jet fuel options. The value of this item historically was considerably low. This asset was projected based on the historical derivative financial instrument to the TOR ratio of the last five years, excluding 2021. The result for the fiscal year 2022 was taken from the semi-annual report.

Historically Ryanair had no other assets; it appeared only in 2021. These include prepayments that are due after one year. This case is linked with the coronavirus pandemic. Therefore, it is assumed that there will be no other assets after 2022.

Deferred tax assets also represent a minor portion of total operating revenue, less than 1%. In 2019 and 2020, deferred tax assets equaled roundly to 0.6% of total operating revenue. This relationship will be preserved. So, to project deferred tax assets, the average deferred tax assets / TOR ratio (years 2019 and 2020) was taken and applied to projected revenue (Appendix 19).

Balance sheet items. Current assets:

Historically, inventories ranged between 2.9 and 3.6 million EURO. As Ryanair is the company providing services, not goods, plus as most maintenance activities are outsourced, inventories have no significant value. The last five years' average was taken as the basis to project inventories.

Other assets consist of current and non-current portions. Moreover, mainly other assets consist of prepayments and other receivables. Historically, there were no non-current other assets, and they appeared only in the fiscal year 2021. The semi-annual interim report for the fiscal year 2022 revealed some other current assets remaining—however, expectation about no current other assets beginning from the fiscal year 2023 (Appendix 19b). Historically, the current portion ranged between 2.1 and 3.3% to total operating revenue. To project for subsequent years, the relationship of the last five years was taken as a basis (Appendix 20b).

Current tax appeared only once in the fiscal year 2020. No current tax assets seemed before indicate that this will continue in the future; therefore, no projections are made. 2022 semi-annual interim report proves this assumption

Assets held for sale: According to Ryanair's interim report for the Fiscal Year 2022, it has agreed to sell 10 of its Boeing aircraft. 2 of them have already been sold, while eight are held as assets held for sale. Considering the historical trend, no assets held for sale are expected in the upcoming years.

Sales are the main drivers of trade receivables. Excluding fiscal years 2016 and 2021, Ryanair's trade receivables to total operating revenue ratio equaled 0.8%. It implies that Ryanair has a strict policy regarding its trade receivables. Average Trade receivables to TOR ratio of fiscal years 2017, 2018, 2019, 2020 was taken to project trade receivables.

Results for current assets are provided in Appendix 19

Trade payables: Trade payables mainly consist of receipts from equipment and service suppliers and, more importantly, unpaid invoices associated with the initial payments from the aircraft manufacturer, Boeing, for future aircraft deliveries. It was not easy to forecast trade payables. The point was that beginning in 2019, Boeing began to send invoices due to new "Gamechanger" aircraft deliveries. However, due to delays in aircraft deliveries and pandemic outbreaks, it is assumed that change in trade payables did not coincide with the cash effect. For instance, in 2019 and 2020, trade payables equaled 573.8 million and 1,368 million EURO, respectively. However, as the Company stated in its annual report (Ryanair, 2021, p.182):"The operating and investing cash inflows and outflows for the years ending March 31, 2020 and 2019 have been restated. It has been reduced by €617 million (2019: €258 million) to reflect accrued supplier payables, which were previously included in the consolidated cash flows as capital expenditure. Accrued supplier payables were initially presented as cash flows relating to capital expenditure but were subsequently included as an adjustment to trade payables as they have not been paid and do not constitute actual cash flows".

Moreover, that created specific challenges during cash flow projection. Findings show this uncertainty will continue till the fiscal year 2024, and every year, restatements will be made to cash flow arising for changes in trade payables. Therefore, it is assumed that trade payables for fiscal years 2022 and 2023 will be equal to the average trade payables / total operating ratio of the fiscal years 2019 and 2020. For the subsequent years, when the situation stabilizes, trade payables are expected to be around 4% of total operating revenue (average of the fiscal years 2016, 2017, and 2018). Moreover, it is assumed that all changes in trade payables affect cash flow from operations. Historical and projected figures are provided in Appendix 20.

Accrued expenses and other liabilities: Accrual expenses and other liabilities include indirect tax, duties, and unearned revenue (contract liabilities). Historically cash effect and difference in the mentioned balance sheet item almost coincided. Moreover, excluding the fiscal year 2021, the accrued expense to total revenue relationship averaged 34% (last five years, excluding 2021). This trend was also maintained in the semi-annual interim report for 2022. Therefore, the average of the last five years was taken (Appendix 22).

Provisions: Provisions include provisions for aircraft maintenance on leased aircraft and provision for pension obligation. Provisions are divided into current and non-current parts. Historically, no provisions appeared on the current obligations section of the balance sheet, excluding for fiscal years 2020 and 2021. Observing the trend for the fiscal year 2022, the semi-annual report revealed that no current provisions were reported in the first HY-1 of 2022. It is assumed that no current provisions will appear in the subsequent years. Moreover, when it comes to the provisions overall, as the turmoil around the coronavirus pandemic continues, the number of passengers will stay low, which will bring to underutilization of aircraft. Therefore, Ryanair will not need new aircraft to lease until 2024. Beginning from fiscal year 2024, provision is expected to be equal to the average value of provision for fiscal years 2016-2019 and of the last four years subsequently (excluding 2020, 2021, 2022, 2023). Provision for fiscal years 2022 and 2023 will equal the average provision for fiscal years 2020-2021 (Appendix 23).

Other creditors: Other creditors consisted of deferral gains arising from the sale and leaseback of aircraft. The Company has not entered into sale-leaseback arrangements since 2019. Considering reviving of traffic flow and new aircraft delivery delays, in my opinion this trend will be preserved. It is projected that no any sale-leaseback operations for the subsequent years (Appendix 23).

Restricted cash: Restricted cash mainly consists of cash placed in escrow accounts for certain legal cases and appeals. The last five years' average was taken to project restricted cash (Appendix 24).

Financial assets: cash > 3 months: Observation of the last five years reveals that financial assets: cash > 3 months have constantly been dropping. These funds generally represent deposits based on appropriate EURIBOR or bank rates. The cumulative annual growth rate of the drop equaled -31% since 2016. European Central Bank projects negative EURIBOR rates till 2024. Considering historical figures, the EURIBOR rate, and the fact that governments will strive to revive the economy, deposit rates will not be attractive for cash savings. Therefore, it is expected that this financial asset to further drop based on CAGR (Appendix 25).

Cash flow from operating activities:

Share based payments: Share-based payments are payments made to the company's employees as a part of the remuneration policy. It is included into the staff costs in the income statement. Historically the relationship of share-based payment to Staff cost equaled between 0.6 and 1%. It is expected that this trend will be preserved. Therefore, shared-based payments based on the historical ratio of the last five years are projected (Appendix 26).

Supplier reimbursements & Proceeds from sale of PPF: According to the semi-annual interim report, supplier reimbursement for the fiscal year 2022 equaled 113.9 million EURO. This figure was taken as a fact, and expect no reimbursements for subsequent years. This item is considered extraordinary, and there were no historical reports about it (Appendix 27).

Income tax refunded/paid: Income tax paid or refunded was projected based on historical figures. An average of five years, excluding the fiscal year 2021, was taken to project income tax paid (Appendix 24).

Cash flow from investing activities:

Capital Expenditure: Considering the complexness of Ryanair operations, it was challenging to project funds directed for CAPEX purposes. After detailed analysis, it is concluded that change in PPE to Cash flow (used for the purchase of PPE) ratio better reflect the company's policy used for PPE financing. The average of the last four years was taken to

project to project PPE cash outflow since PPE has already been projected. Results are presented in Appendix 28.

8. Valuation

This research forecasted free cash flow for the foreseeable future. The other part consists of the calculation of the terminal value. Terminal value assumes that in the future, the business will grow at a constant rate after some period. Below is the provided formula for the projection of terminal value. There are several assumptions on constant growth rate. As Ryanair mostly operates throughout Europe, Europe's GDP growth rate is the most appropriate indicator to account for terminal growth rate. The data for GDP growth rate was taken from IMF (2021c). As the forecast was given only till the end of 2026, the average of the last three years was taken to project years 2027 and 2028 (Table 8).

Table 8. EU GDP Growth rate. Projection

Country Group	Subject Descriptor	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
EU	GDP, constant prices	4.44%	2.29%	1.88%	1.72%	1.66%	1.75%	1.71%
Average GDP growth rate*								**1.84%**

*Source: IMF; * calculated by author*

After projection Free Cash Flow, it has to be discounted to arrive at present values of free cash flows. WACC (weighted average cost of capital) is used for this purpose.

Here is formula for WACC calculation:

$$WACC = D/(D+E) * k(d) + E/(D+E) * k(e)$$

Where k (d) – cost of debt; k(e) – cost of equity

Cost of debt was derived through the following formula:

$$K(d) = (interest\ paid\ /\ average\ debt)\ x\ average\ effective\ tax\ rate$$

Table 9 reveals how cost of debt was calculated:

Table 9. Post-tax cost of debt

As of March 31, 2021		
Interest paid	**€ million**	**69.8**
Total value of debt 2021	€ million	5,427
Total value of debt 2020	€ million	4,211
Average debt	**€ million**	**4,819**
Pre-tax cost of debt	**%**	**1.4**
Effective tax rate 2021	%	8
Effective tax rate 2020	%	3
Average effective tax rate	**%**	**5.8**
Post-tax cost of debt	**%**	**1.4**

Source: Ryanair, Annual report 2021; calculated by author

Cost of equity was calculated based on CAPM (capital asset pricing model):

$$K(e) = R(f) + Market\ risk\ premium * beta$$

Where R (f) risk-free rate represents 10-year Irish government bond yield[5]. This is due to the reason that Company is headquartered in Ireland. The market risk premium is the difference between the expected rate of return and the risk-free rate, whereas beta is a measure of the asset/volatility security's performance in contrast to the market as a whole. Market risk premium[6] and beta[7] were directly adopted. Table 10 shows the calculation of the cost of equity.

Table 10. Cost of equity

Risk free-rate	%	0.40
Beta		1.59
Market risk premium	%	5.7

[5] Source: https://tradingeconomics.com/ireland/government-bond-yield

[6] Source: https://www.statista.com/statistics/664882/average-market-risk-premium-ireland-europe/#:~:text=The%20average%20market%20risk%20premium,compared%20to%20the%20previous%20year.

[7] Source: https://finance.yahoo.com/quote/RYAAY/

Cost of equity	**%**	**9.5**

Source: calculated by author

Finally, table 11 shows on how figures at WACC have been resulted:

Table 11. WACC

Total shares out. (March 31, 2021)	Million	1,128.1
Share price (March 31, 2021)	€	16.55
Market value of equity (E)	**€ million**	**18,669.4**
Market value of Debt (D) (March 31, 2021)	€ million	5,427.8
E / (E+D)	%	77
D / (E+D)	%	23
Cost of equity k(e)	%	9.5
Cost of debt k(d)	%	1.4
WACC	**%**	**7.6**

Source: calculated by author

After projection Free Cash Flow, by using WACC it has to be discounted to arrive at present values of free cash flows (Table 12).

Table 12. PV of expected FCF

Indicators	UoM	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F	Ter-nal value
Cash flow from operations	€ million	2,080.2	2,508.7	2,486.9	2,911.7	2,877.3	3,277.7	3,439.4	—
Interest paid	€ million	(2.2)	(12.3)	15.3	3.3	12.2	1.0	5.0	—
Interest received	€ million	8.3	(0.6)	(2.9)	(2.7)	(3.0)	1.3	(1.0)	—
Cash flow from investments	€ million	(310.6)	(1,304.0)	(1,451.3)	(1,646.1)	(1,858.1)	(2,065.8)	(2,292.9)	—
Free Cash Flow to Firm	**€ million**	**1,775.7**	**1,191.7**	**1,047.9**	**1,266.3**	**1,028.4**	**1,214.2**	**1,150.5**	**20,193.2**
Discount factor		1.0	0.929	0.863	0.802	0.745	0.692	0.643	0.643
PV of all FCF	**€ million**	**1,775.7**	**1,107.1**	**904.5**	**1,015.3**	**766.1**	**840.3**	**739.7**	**12,983.6**

Source: calculated by author

As it is almost the end of the fiscal year 2022 for Ryanair, free cash flow for 2022 was not discounted. The total present value of expected future cash flows equal 20,132.1 million EURO. By adding cash and cash equivalents and restricted cash by the end of the fiscal year 2021, the total firm value will be obtained. After subtracting the total value of debt

given in the annual report for the year ended 31 March 2021, the total equity value attributable to shareholders is obtained. Value of firm was calculated through this formula:

$$V = \sum_{t=1}^{T} \frac{FCF_t}{(1+WACC)^t} + \frac{1}{(1+WACC)^T} \frac{FCF_{t+1}}{(WACC - g)}$$

After dividing equity value attributable to shareholders into an outstanding number of shares, a targeted share price of 15.42 EURO is obtained. So, the recommendation's logical result is to sell (Table 13).

Table 13. Recommendation

PV of all FCF	**€ million**	**20,132.1**
Cash and Cash equivalents	€ million	2,650.7
Restricted cash	€ million	34.1
Total Firm value	**€ million**	**22,816.9**
Total book value of debt outstanding*	€ million	5,426.8
Total value attributable to shareholders	**€ million**	**17,390.1**
Number of shares outstanding*	million	1,128
Target price per share	**€**	**15.42**
Share price*	€	16.55
Recommendation		**Sell**

Source: calculated by author, as of March 31, 2021

In an attempt to understand the broader picture of key inputs affecting our valuation model, sensitivity analysis was conducted. Sensitivity analysis examines key variables to see how change in inputs might influence the outcome equity valuation in our case (E. J. Mclaney & Atrill, 2014, p. 724). As key variables, WACC and terminal growth rate were analyzed. The values that have been derived for our model are 1.84% for terminal growth rate and 7.6% for WACC. However, after looking at the table, it is noticed that once WACC is reduced to 6.6%, then the share price instantly increases, and a "buy" recommendation can be issued without any doubt. Perhaps, the company's management should think about decreasing the weighted average cost of capital, specifically the cost of equity, which accounts for a major part of WACC.

Table 14. Sensitivity analysis

		Terminal Growth rate						
		1.60%	1.64%	1.74%	**1.84%**	1.94%	2.04%	2.10%
WACC	4.6%	30.75	31.12	32.08	33.08	34.22	35.42	36.18
	5.6%	22.90	23.10	23.60	24.12	24.70	25.30	25.67
	6.6%	18.18	18.30	18.61	18.92	19.27	19.61	19.83
	7.6%	14.94	15.02	15.22	**15.42**	15.64	15.86	15.99
	8.6%	12.79	12.85	12.99	13.13	13.29	13.44	13.54
	9.6%	11.11	11.15	11.25	11.35	11.46	11.58	11.64
	10.0%	10.54	10.58	10.67	10.76	10.86	10.96	11.02

Source: calculated by author

9. Conclusion and key risks.

Ryanair and its sister companies Ryanair UK, Buzz, Lauda, and Malta Air have been top airline Europe for seven consecutive years in terms of average daily flights and passenger volume (Aviation Intelligence Unit, 2022). It connects over 240 destinations in over 40 countries. Ryanair adheres cost differentiation strategy, which means it constantly tries to reduce and control its costs by understanding customers` needs and preferences. For this reason, the Company can offer and focus on offering the lowest fares among its competitors and was able to generate revenue with a cumulative annual growth rate equaled around 6.8% (excluding 2021).

Furthermore, the Company shows a considerable commitment to reduce its costs further and increase capacity and fleet utilization. The decision to update its stock with 210 new "Gamechanger" Boeing aircraft serves these intentions. As reported in the annual report (Ryanair, 2021, p. 37), new aircraft deliver 4% more seats per flight, 16% less fuel burn, and 40% lower noise emissions.

The discount cash flow valuation results revealed that the company stock price is expected to be reduced. According to Bloomberg (2022), for January 27, 2022, the Company's share is priced at 16.7 EURO, whereas the 52-week price ranged between 13.75

EURO and 18.3 EURO. Findings showed that the target price equals 15.42 EURO, with WACC equal 7.6% and a terminal growth rate of 1.84%. Sensitivity analysis has been carried out, and it revealed that once WACC is reduced, "sell" recommendation can be changed into "buy". According to Deloitte (2020), companies of the airline industry focused on short-term viability such as deferring loan obligations, reducing costs, public and private grants, subsidies, secured financing, and new loans to begin the recovery process. The management of Ryanair has implemented and implemented the vast majority of these steps. Apart from the fact that Ryanair received a subsidy from the government, thanks to its strong balance sheet, it secured 3.15 billion EURO financing and reduced its 2021 operating expenses almost three times. Findings indicate that management made correct decisions to overcome the pandemic, though it was not thoroughly reflected in the target price. Uncertainty deriving from the pandemic outbreak and information disclosure can be the reason for this.

COVID-19 related risks: The COVID-19 pandemic incurred and continues to incur certain challenges for the Company`s business, strategic growth plans, results of operations, financial condition, and liquidity. Travel restrictions, including lockdowns, made Ryanair experience a significant decline in traffic volume. A number of actions have been taken to neutralize the impact of decreased demand, including grounding, reducing flight schedules, and capital and operating expenses. Moreover, new COVID-related costs were incurred, directed to aircraft cleaning and measures to restrict virus transmission among passengers. It is unknown how long the uncertainties around pandemic situations will continue.

Jet fuel costs: Fluctuations in fuel costs may adversely affect company results. Due to the decline of oil prices in fiscal years 2020 and 2021, Ryanair suffered substantial hedging losses. Oil prices began to rise since the fiscal year 2022. Correspondently this brings to the rise of jet fuel prices. Moreover, it should be noted that as jet fuel prices denominated predominantly in U.S. dollars, Ryanair’s fuel expenses are also exposed exchange rate risk.

Legal challenges: There are several legal challenges the Company engaged in. First, during the COVID-19 pandemic, the Company delayed the processing of cash refunds and offered travel vouchers as a reimbursement, however according to EU legislation, refunds must be made in seven days, and reimbursed tickets could either be re-routed or refunded in

the form of cash. Secondly, the Group is subject to legal procedures charging state help at certain airports. There are nine ongoing investigations to identify whether these agreements constitute illegal state aid under EU law.

Currency fluctuations: An exponential number of its operations Ryanair conduct in the U.K. Therefore. The Company derives a significant portion of its revenue denominated in U.K. pound sterling. On the other side, fuel expenses, capital expenditures, and other expenses are maintained in the U.S. dollar. Therefore, fluctuations in pound sterling and U.S. dollar may have a huge effect on the Groups` final results. Ryanair is particularly sensitive to the EUR USD relationship since the vast majority of its revenue denominated in EURO, while expenses in U.S. dollar.

There are nine ongoing investigations to identify whether these agreements constitute illegal state aid under EU law. After the exit of The U.K. from the European Union, on December 24, 2020, they reached an agreement on a Trade and Cooperation Agreement. This agreement's current and future arrangements may affect Ryanair's business in several ways. This includes custom procedures between the EU and the U.K., social security and tax issues, freedom of capital and labor movement, and, more importantly, inter alia, the status of the U.K. in relation to the EU's open-air transport market.

10. Reference page

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11. Appendices

Appendix 1. Income Statement

	Year ended March 31,					
	2021	**2020**	**2019**	**2018**	**2017**	**2016**
Operating revenues	**€M**	**€M**	**€M**	**€M**	**€M**	**€M**
Scheduled revenues	1,036.0	5,566.2	5,261.1	5,134.0	4,868.2	4,967.2
Ancillary revenues	599.8	2,928.6	2,436.3	2,017.0	1,779.6	1,568.6
Total operating revenues	**1,635.8**	**8,494.8**	**7,697.4**	**7,151.0**	**6,647.8**	**6,535.8**
Operating expenses						
Depreciation	(571.0)	(748.7)	(640.5)	(561.0)	(497.5)	(427.3)
Fuel and oil	(542.6)	(2,762.2)	(2,427.3)	(1,902.8)	(1,913.4)	(2,071.4)
Staff costs	(472.2)	(1,106.9)	(984.0)	(738.5)	(633.0)	(585.4)
Airport and handling charges	(287.2)	(1,140.2)	(1,061.5)	(938.6)	(864.8)	(830.6)
Maintenance, materials and repairs	(206.7)	(256.4)	(190.9)	(148.3)	(141.0)	(130.3)
Marketing, distribution and other	(201.5)	(578.8)	(547.3)	(410.4)	(322.3)	(292.7)
Route charges	(187.3)	(736.0)	(745.2)	(701.8)	(655.7)	(622.9)
Aircraft rentals	(6.7)	(38.2)	(83.9)	(82.3)	(86.1)	(115.1)
Total operating expenses	**(2,475.2)**	**(7,367.4)**	**(6,680.6)**	**(5,483.7)**	**(5,113.8)**	**(5,075.7)**
Operating (loss)/profit	**(839.4)**	**1,127.4**	**1,016.8**	**1,667.3**	**1,534.0**	**1,460.1**
Other income/(expense)						
Finance expense	(297.1)	(480.1)	(59.1)	(60.1)	(67.2)	(71.1)
Finance income	16.0	21.4	3.7	2.0	4.2	17.9
Foreign exchange gain/(loss)	11.8	1.6	(3.5)	2.1	(0.7)	(2.5)
Gain on sale of associate	—	—	6.0	—	—	317.5
Share of associate losses	—	—	(15.8)	—	—	—
Total other expenses	**(269.3)**	**(457.1)**	**(68.7)**	**(56.0)**	**(63.7)**	**261.8**
(Loss)/profit before tax	**(1,108.7)**	**670.3**	**948.1**	**1,611.3**	**1,470.3**	**1,721.9**
Tax credit/(expense)	93.6	(21.6)	(63.1)	(161.1)	(154.4)	(162.8)
(Loss)/profit for the year – all attributable to equity holders of parent	**(1,015.1)**	**648.7**	**885.0**	**1,450.2**	**1,315.9**	**1,559.1**

Source: Calculated by author

Appendix 2. Balance Sheet

	Year ended March 31,					
	2021	**2020**	**2019**	**2018**	**2017**	**2016**
	€M	**€M**	**€M**	**€M**	**€M**	**€M**
Non-current assets						
Property, plant and equipment	8,361.1	9,438.0	9,029.6	8,123.4	7,213.8	6,261.5
Right of use assets	188.2	236.8	—	—	—	—
Intangible assets	146.4	146.4	146.4	46.8	46.8	46.8
Derivative financial instruments	111.3	378.5	227.5	2.6	23.0	88.5
Other assets	48.7	—	—	—	—	—
Deferred tax	14.0	53.6	43.2	—	—	—
Total non-current assets	**8,869.7**	**10,253.3**	**9,446.7**	**8,172.8**	**7,283.6**	**6,396.8**
Current assets						
Inventories	3.6	3.3	2.9	3.7	3.1	3.3
Other assets	179.8	178.7	238.0	235.5	222.1	148.5
Current tax	—	44.5	—	—	—	—
Assets held for sale	—	98.7	—	—	—	—
Trade receivables	18.6	67.5	59.5	57.6	54.3	66.1
Derivative financial instruments	106.0	293.2	308.7	212.1	286.3	269.1
Restricted cash	34.1	34.4	34.9	34.6	11.8	13.0
Financial assets: cash > 3 months	465.5	1,207.2	1,484.4	2,130.5	2,904.5	3,062.3
Cash and cash equivalents	2,650.7	2,566.4	1,675.6	1,515.0	1,224.0	1,259.2
Total current assets	**3,458.3**	**4,493.9**	**3,804.0**	**4,189.0**	**4,706.1**	**4,821.5**
Total assets	**12,328.0**	**14,747.2**	**13,250.7**	**12,361.8**	**11,989.7**	**11,218.3**
Current liabilities						
Provisions	10.3	43.3	—	—	—	—
Trade payables	336.0	1,368.2	573.8	249.6	294.1	230.6
Accrued expenses and other liabilities	1,274.9	2,589.4	2,992.1	2,502.2	2,257.2	2,112.7
Current lease liability	52.5	75.0	—	—	—	—
Current maturities of debt	1,725.9	382.3	309.4	434.6	455.9	449.9
Current tax	48.1	—	31.6	36	2.9	20.9
Derivative financial instruments	79.2	1,050.0	189.7	190.5	1.7	555.4
Total current liabilities	**3,526.9**	**5,508.2**	**4,096.6**	**3,412.9**	**3,011.8**	**3,369.5**
Non-current liabilities						
Provisions	47.4	36.6	135.6	138.1	138.2	149.3
Trade payables	179.9	—	—	—	—	—
Other creditors	—	—	—	2.8	12.4	32.5
Derivative financial instruments	6.4	180.5	8.0	415.5	2.6	111.6
Deferred tax	272.4	353.5	460.6	395.2	473.1	385.5
Non-current lease liability	130.6	170.9	—	—	—	—
Non-current maturities of debt	3,517.8	3,583.0	3,335.0	3,528.4	3,928.6	3,573.1
Total non-current liabilities	**4,154.5**	**4,324.5**	**3,939.2**	**4,480.0**	**4,554.9**	**4,252.0**

Shareholders' equity						
Issued share capital	6.7	6.5	6.8	7.0	7.3	7.7
Share premium account	1,161.6	738.5	719.4	719.4	719.4	719.4
Other undenominated capital	3.5	3.5	3.2	3.0	2.7	2.3
Retained earnings	3,232.3	4,245.0	4,181.9	4,077.9	3,456.8	3,166.1
Other reserves	242.5	(79.0)	303.6	(338.4)	236.8	(298.7)
Shareholders' equity	**4,646.6**	**4,914.5**	**5,214.9**	**4,468.9**	**4,423.0**	**3,596.8**
Total liabilities and shareholders' equity	**12,328.0**	**14,747.2**	**13,250.7**	**12,361.8**	**11,989.7**	**11,218.3**

Source: Calculated by author

Appendix 3. Revenue disaggregation on geographical basis

Geographical location	**2021**		**2020**		**2019**		**2018**		**2017**	
UK	251.4	15%	1,782.3	21%	1,715.3	22%	1,644.7	23%	1,690.3	25%
Italy	377.5	23%	1,522.1	18%	1,440.8	19%	1,358.7	19%	1,270.0	19%
Spain	315.7	19%	1,107.1	13%	1,005.6	13%	929.6	13%	820.6	12%
Germany	N/A	0%	823.3	10%	773.2	10%	643.6	9%	543.4	8%
Ireland	81	5%	594.5	7%	529.8	7%	500.6	7%	739.0	11%
Other European Countries	610.2	37%	2,665.5	31%	2,232.7	29%	2,073.8	29%	1,584.5	24%
Total Revenue	**1,635.8**	**100%**	**8,494.8**	**100%**	**7,697.4**	**100%**	**7,151.0**	**100%**	**6,647.8**	**100%**

** Disaggregation in this manner were not provided before 2017.*

Source: Calculated by author

Appendix 4. Accounting for grounding effect in winter months

	2020	**2019**	**2018**	**2017**	**2016**
Summer Months					
April	13.5	12.3	11.3	9.9	9
May	14.1	12.5	11.8	10.6	9.5
June	14.2	12.6	11.8	10.6	9.5
July	14.8	13.1	12.6	11.3	10.1
Aug	14.9	13.8	12.7	11.5	10.4
Sep	14.1	13.1	11.8	10.8	9.5
Oct	13.8	13.1	11.8	10.9	9.7
Total	**99.4**	**90.5**	**83.8**	**75.6**	**67.7**
Average traffic per months	**14.2**	**12.9**	**12.0**	**10.8**	**9.7**
Winter Months					
Nov	10.9	10.4	9.3	8.8	7.7
Dec	11.2	10.3	9.3	9	7.5
Jan	10.8	10.3	9.3	8.77	7.5
Feb	10.5	9.6	8.6	8.2	7.4

Mar	5.5	10.9	10	9.4	8.5
Total	**48.9**	**51.5**	**46.5**	**44.17**	**38.6**
Average traffic per months	**9.78**	**10.3**	**9.3**	**8.834**	**7.72**
Difference between summer and winter months	**45%**	**26%**	**29%**	**22%**	**25%**
Average for 5 years **29%**					

Source: Calculated by author

Appendix 5. Finding Germany traffic share for January 2022

German Effect	million
October traffic	11.3
Effect of grounding (11.3 x 29%)	3.3
Pure October traffic	8.0
Germany share from the whole traffic (8.0 x 10%)	0.8
5 days effect	0.1
Real Germany traffic share (0.8 - 0.1)	**0.6**

Source: Calculated by author

Appendix 6a. Monthly traffic

	2016	2017	2018	2019	2020	2021	2022 *	2023 F
	million	million	million	million	million	million	million	million
April	9.0	9.9	11.3	12.3	13.5	0.0	1.0	11.1
May	9.5	10.6	11.8	12.5	14.1	0.1	1.8	11.3
June	9.5	10.6	11.8	12.6	14.2	0.4	5.3	11.3
July	10.1	11.3	12.6	13.1	14.8	4.4	9.3	11.8
Aug	10.4	11.5	12.7	13.8	14.9	7.0	11.1	12.4
Sep	9.5	10.8	11.8	13.1	14.1	5.2	10.6	11.8
Oct	9.7	10.9	11.8	13.1	13.8	4.1	11.3	11.8
Nov	7.7	8.8	9.3	10.4	10.9	2.0	10.2	8.3
Dec	7.5	9.0	9.3	10.3	11.2	1.9	9.5	7.2
Jan	7.5	8.8	9.3	10.3	10.8	1.3	7.4	10.3
Feb	7.4	8.2	8.6	9.6	10.5	0.5	7.5	9.6
Mar	8.5	9.4	10.0	10.9	5.5	0.5	9.8	10.9
Total	**106.3**	**119.8**	**130.3**	**142.0**	**148.3**	**27.4**	**94.9**	**127.8**

** 2022: January, February and March are projected figures*

Source: Calculated by author

Appendix 6b. Annual traffic Projection

	2022*	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
	million	million	million	million	million	million	million
Traffic	**94.9**	**127.8**	**157.4**	**167.1**	**177.4**	**188.4**	**200.0**

** 2022: January, February and March are projected figures*

Source: Calculated by author

Appendix 7a. Total Operating revenue. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Scheduled revenues	4,967.2	4,868.2	5,134.0	5,261.1	5,566.2	1,036.0
Ancillary revenues	1,568.6	1,779.6	2,017.0	2,436.3	2,928.6	599.8
Total operating revenues	**6,535.8**	**6,647.8**	**7,151.0**	**7,697.4**	**8,494.8**	**1,635.8**
Passenger number	106.3	119.8	130.3	142.0	148.3	27.4
Average fare	46.67	41	39.4	37	37.5	37.8
Ancillary revenue per guest	14.8	14.9	15.5	17.2	19.7	21.9
Total operating expenses	(5,075.7)	(5,113.8)	(5,483.7)	(6,680.6)	(7,367.4)	(2,475.2)
Scheduled reveue - Total operating expenses	(108.50)	(245.60)	(349.70)	(1,419.50)	(1,801.20)	(1,439.20)
CAGR						54%

Source: Calculated by author

Appendix 7b. Total Operating revenue. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Scheduled revenues	3,604.2	4,878.7	6,041.7	6,446.7	6,878.8	7,339.8	7,831.8
Ancillary revenues	2,201.2	3,064.1	3,892.6	4,257.8	4,660.1	5,099.6	5,580.0
Total operating revenues	**5,805.3**	**7,942.9**	**9,934.3**	**10,704.5**	**11,538.9**	**12,439.4**	**13,411.8**
Passenger number	94.9	127.8	157.4	167.1	177.4	188.4	200.0
Average fare	38.0	38.2	38.4	38.6	38.8	39.0	39.2
Ancillary revenue per guest	23.2	24.0	24.7	25.5	26.3	27.1	27.9
GDP growth rate	4.3%	2.0%	1.6%	1.4%	1.4%	1.5%	1.4%
Inflation	1.7%	1.4%	1.5%	1.6%	1.7%	1.6%	1.6%

Source: Calculated by author

Appendix 8a. Historical Fuel & Oil expense per passenger and Fleet disaggregation

Indicators	2016	2017	2018	2019	2020	2021
Fuel & Oil expense per passenger	**19.5**	**16.0**	**14.6**	**17.1**	**18.6**	**19.8**
Number of fleets	341	400	430	475	466	451
Other fleets	341	400	430	475	466	450
Boeing 737-8200 (Gamechanger)	0	0	0	0	0	1
Gamechanger %	0%	0%	0%	0%	0%	0%

Source: Calculated by author

Appendix 8b. Projected Fuel & Oil expense per passenger and Fleet disaggregation

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Fuel & Oil expense per passenger	**19.7**	**19.2**	**18.3**	**17.3**	**18.3**	**18.0**	**17.9**
Number of fleets	467	512	556	601	—	—	—
Other fleets	451	431	411	391	—	—	—
Boeing 737-8200 (Gamechanger)	16	81	145	210	—	—	—
Gamecnahger %	3%	16%	26%	35%	—	—	—

Source: Calculated by author

Appendix 9a: Staff costs. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Total operating revenues (million)	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Staff costs (million)	**(585.4)**	**(633.0)**	**(738.5)**	**(984.0)**	**(1,106.9)**	**(472.2)**
Δ Staff costs	—	8%	17%	33%	12%	-134%
Staff cost to Operating revenue	0.09	0.10	0.10	0.13	0.13	0.29
Average Δ Staff costs (excl 2019 and 2021)					**12%**	

Source: Calculated by author

Appendix 9b: Staff costs. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Total operating revenues (million)	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Staff costs (million)	**(754.7)**	**(1,032.6)**	**(1,239.7)**	**(1,388.5)**	**(1,555.1)**	**(1,741.7)**	**(1,950.7)**
Staff cost to Operating revenue	0.13	0.13	0.12	0.13	0.13	0.14	0.15

Source: Calculated by author

Appendix 10a: Airport and Handling charges. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Scheduled revenues	4,967.2	4,868.2	5,134.0	5,261.1	5,566.2	1,036.0
Ancillary revenues	1,568.6	1,779.6	2,017.0	2,436.3	2,928.6	599.8
Total operating revenues	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Passenger number	106.3	119.8	130.3	142.0	148.3	27.4
Airport and handling charges	**(830.6)**	**(864.8)**	**(938.6)**	**(1,061.5)**	**(1,140.2)**	**(287.2)**
Δ Airport and handling charges		4%	9%	13%	7%	297%
Airport and handling charges per Passenger	7.81	7.22	7.20	7.48	7.69	10.48

Airport and handling charges for Q-2	million EURO	249.8
Passenger number for Q-2	million	31.0
PAX for Q-2 2022	EURO	8.1
Projected number of passengers for Q-4	million	24.8
Airport and handling charges for Q-4	million EURO	199.6

Source: Calculated by author

Appendix 10b: Airport and Handling charges. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Scheduled revenues	3,604.2	4,878.7	6,041.7	6,446.7	6,878.8	7,339.8	7,831.8
Ancillary revenues	2,201.2	3,064.1	3,892.6	4,257.8	4,660.1	5,099.6	5,580.0
Total operating revenues	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Passenger number	94.9	127.8	157.4	167.1	177.4	188.4	200.0
Airport and handling charges	**(786.3)**	**(1,029.7)**	**(1,164.6)**	**(1,257.0)**	**(1,337.1)**	**(1,409.9)**	**(1,502.6)**
Airport and handling charges per Passenger	8.29	8.06	7.40	7.52	7.54	7.48	7.51

Source: Calculated by author

Appendix 11a. Maintenance, materials and repairs expenses. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Total operating revenues (TOR)	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Passenger number	106.3	119.8	130.3	142.0	148.3	27.4
Maintenance, materials and repairs	**(130.3)**	**(141.0)**	**(148.3)**	**(190.9)**	**(256.4)**	**(206.7)**
Number of fleets	341	400	430	475	466	451
Δ Maintenance, materials and repairs	—	8%	5%	29%	34%	-19%
Maintenance per passenger	-1.23	-1.18	-1.14	-1.34	-1.73	-7.54
Maintenance per TOR	-0.02	-0.02	-0.02	-0.02	-0.03	-0.13
Per number of fleets	(0.38)	(0.35)	(0.34)	(0.40)	(0.55)	(0.46)

Maintenance per TOR average	**-0.02**

Indicators	2021	2020	2019	2018	2017	2016
HY-1. Maintenance and etc.	(82.6)	(137.2)	(98.0)	(70.5)	(69.0)	(62.8)
HY-2. Maintenance and etc.	(124.1)	(119.2)	(92.9)	(77.8)	(72.0)	(67.5)
HY-1. Total Operating Revenue (TOR)	1,176.2	5,389.6	4,838.0	4,425.3	4,131.5	4,040.1
HY-2. Total Operating Revenue (TOR)	3,650.4	459.6	3,105.2	2,859.4	2,725.7	2,516.3
HY-1. Maintenance/TOR	**-0.07**	**-0.03**	**-0.02**	**-0.02**	**-0.02**	**-0.02**
HY-2. Maintenance/TOR	**-0.27**	**-0.04**	**-0.03**	**-0.03**	**-0.03**	**-0.03**

HY-2 Average	**-0.03**

Source: Calculated by author

Appendix 11b. Maintenance, materials and repairs expenses. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Total operating revenues (TOR)	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Passenger number	94.9	127.8	157.4	167.1	177.4	188.4	200.0
Maintenance, materials and repairs	**(231.02)**	**(239.74)**	**(232.20)**	**(250.20)**	**(269.71)**	**(290.76)**	**(313.48)**
Number of fleets	467	512	556	601	—	—	—
Δ Maintenance, materials and repairs	12%	4%	-3%	8%	8%	8%	8%
Maintenance per passenger	-2.43	-1.88	-1.47	-1.50	-1.52	-1.54	-1.57
Maintenance per TOR	**-0.04**	**-0.03**	**-0.02**	**-0.02**	**-0.02**	**-0.02**	**-0.02**
Per number of fleets	(0.49)	(0.47)	(0.42)	(0.42)	—	—	—

Source: Calculated by author

Appendix 12a. Depreciation expenses. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
PPE	6,261.5	7,213.8	8,123.4	9,029.6	9,438.0	8,361.1
Depreciation	(427.3)	(497.5)	(561.0)	(640.5)	(748.7)	(571.0)
Depreciation / PPE	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)	(0.07)

Source: Calculated by author

Appendix 12b. Depreciation expenses. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
PPE	8,746.8	9,691.7	10,738.7	11,898.7	13,184.1	14,608.4	16,186.5
Depreciation	**(623.7)**	**(697.0)**	**(778.7)**	**(871.0)**	**(971.0)**	**(1,059.4)**	**(1,177.7)**
Depreciation / PPE	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)

Source: Calculated by author

Appendix 13a: Marketing, distribution and other expenses. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Total operating revenues (TOR)	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Passenger number	106.3	119.8	130.3	142.0	148.3	27.4
Marketing, distribution and other	**(292.7)**	**(322.3)**	**(410.4)**	**(547.3)**	**(578.8)**	**(201.5)**
Δ Marketing, distribution and other	—	10.1%	27.3%	33.4%	5.8%	-65.2%
Marketing / TOR	-0.04	-0.05	-0.06	-0.07	-0.07	-0.12
Marketing per passenger	-2.75	-2.69	-3.15	-3.85	-3.90	-7.35
CAGR (Marketing and etc. exp)					**19%**	

Indicators	2021	2020	2019	2018	2017	2016
HY-1. Marketing and other	(106.40)	(299.10)	(283.90)	(223.80)	(172.30)	(149.00)
HY-2. Marketing and other	(95.10)	(279.70)	(263.40)	(186.60)	(150.00)	(143.70)
Difference	12%	7%	8%	20%	15%	4%

Average difference	**11%**

Source: Calculated by author

Appendix 13b: Marketing, distribution and other expenses. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Total operating revenues	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Passenger number	94.9	127.8	157.4	167.1	177.4	188.4	200.0
Marketing, distribution and other	**(318.3)**	**(377.5)**	**(447.7)**	**(530.9)**	**(629.5)**	**(746.5)**	**(885.2)**
Δ Marketing, distribution and other	58.0%	18.6%	18.6%	18.6%	18.6%	18.6%	18.6%
Marketing / TOR	-0.05	-0.05	-0.05	-0.05	-0.05	-0.06	-0.07
Marketing per passenger	-3.36	-2.95	-2.84	-3.18	-3.55	-3.96	-4.43

Source: Calculated by author

Appendix 14a: Route charges. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Total operating revenues (TOR)	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Passenger number	106.3	119.8	130.3	142.0	148.3	27.4
Route charges	**(622.9)**	**(655.7)**	**(701.8)**	**(745.2)**	**(736.0)**	**(187.3)**
Δ Route charges	—	5%	7%	6%	-1%	-293%
Route charges / TOR	**-0.10**	**-0.10**	**-0.10**	**-0.10**	**-0.09**	**-0.11**
Route charge per passenger	-5.86	-5.47	-5.39	-5.25	-4.96	-6.83

Average route charges / TOR	-0.10

Source: Calculated by author

Appendix 14b: Route charges. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Total operating revenues (TOR)	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Passenger number	94.9	127.8	157.4	167.1	177.4	188.4	200.0
Route charges	**(552.12)**	**(755.42)**	**(944.82)**	**(1,018.07)**	**(1,097.43)**	**(1,183.07)**	**(1,275.55)**
Δ Route charges	195%	37%	25%	8%	8%	8%	8%
Route charges / TOR	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
Route charge per passenger	-5.82	-5.91	-6.00	-6.09	-6.18	-6.28	-6.38

Source: Calculated by author

Appendix 15a: Aircraft rentals. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Total operating revenues (TOR)	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Passenger number	106.3	119.8	130.3	142.0	148.3	27.4
Aicraft rentals	**(115.1)**	**(86.1)**	**(82.3)**	**(83.9)**	**(38.2)**	**(6.7)**
Δ Aicraft rentals	—	-34%	-5%	2%	-120%	-470%
Aircraft rentals / TOR	-0.02	-0.01	-0.01	-0.01	0.00	0.00
Aircraft rentals per passenger	-1.08	-0.72	-0.63	-0.59	-0.26	-0.24
Average Aircraft rental / TOR	-0.01					

Source: Calculated by author

Appendix 15b: Aircraft rentals. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Total operating revenues (TOR)	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Passenger number	94.9	127.8	157.4	167.1	177.4	188.4	200.0
Aicraft rentals	**(66.7)**	**(91.3)**	**(114.2)**	**(123.0)**	**(132.6)**	**(143.0)**	**(154.1)**
Δ Aicraft rentals	896%	37%	25%	8%	8%	8%	8%
Aircraft rentals / TOR	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Aircraft rentals per passenger	-0.70	-0.71	-0.73	-0.74	-0.75	-0.76	-0.77

Source: Calculated by author

Appendix 16a. Finance expenses, debt and equity. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Interest expense	**70.9**	**67.2**	**60.1**	**59.1**	**72.9**	**69.8**
Hedge disc and inefect	—	—	—	—	407.2	227.3
Interest arising on pen. liab	0.2	—	—	—	—	—
Finance expenses	**71.1**	**67.2**	**60.1**	**59.1**	**480.1**	**297.1**

Non-current and current debt*	**4,023.0**	**4,384.5**	**3,963.0**	**3,644.4**	**4,211.2**	**5,426.8**
*Include current lease liability, current maturities of debt, non-current lease liability, non-current maturities of debt						
Net proceeds	—	793.4	65.2	99.9	750.0	2,286.6
Repayments of borrowings	(384.9)	(447.1)	(458.9)	(422.8)	(408.1)	(950.3)
Lease liabilities paid	—	—	—	—	(67.5)	(76.8)
Total	(384.9)	(447.1)	(458.9)	(422.8)	(475.6)	(1,027.1)
Equity	**3,596.8**	**4,423.0**	**4,648.9**	**5,214.9**	**4,914.5**	**4,646.6**
D/E	1.12	0.99	0.85	0.70	0.86	1.17
Average D/E (2016-2021)						**0.95**
Effective interest rate	**1.8%**	**1.5%**	**1.5%**	**1.6%**	**1.7%**	**1.3%**
Δ Interest expense	—	-6%	-12%	-2%	23%	-4%
Δ Non-current and current debt	—	9%	-11%	-9%	16%	29%

Source: Calculated by author

Appendix 16b. Finance expenses, debt and equity. Projected figures

Indicators	**2022 F**	**2023 F**	**2024 F**	**2025 F**	**2026 F**	**2027 F**	**2028 F**
Interest expense	**72.0**	**84.3**	**69.1**	**65.7**	**53.6**	**52.6**	**47.6**
Hedge disc and inefect	—	—	—	—	—	—	—
Interest arising on pen. liab	—	—	—	—	—	—	—
Finance expenses	**72**	**84.3**	**69.1**	**65.7**	**53.6**	**52.6**	**47.6**
Non-current and current debt*	**5,743.8**	**5,691.7**	**4,683.4**	**4,548.3**	**3,859.9**	**3,735.4**	**3,308.7**
Net proceeds	—	1,000.0	—	800.0	—	500.0	—
Repayments of borrowings	(1,725.9)	(998.3)	(960.2)	(910.3)	(684.5)	(624.5)	(426.7)
Lease liabilities paid	(52.5)	(53.8)	(48.1)	(24.8)	(3.9)	—	—
Total	(1,778.4)	(1,052.1)	(1,008.3)	(935.1)	(688.4)	(624.5)	(426.7)
Equity	**4,932.9**	**4,871.6**	**4.916.1**	**4,856.3**	**4,844.7**	**4.884.3**	**4.874.6**
D/E	**1.16**	**1.17**	**0.95**	**0.94**	**0.8**	**0.76**	**0.68**
Effective interest rate	**1.3%**	**1.5%**	**1.5%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**
Δ Interest expense	3%	17%	-22%	-5%	-23%	-2%	-9%
Δ Non-current and current debt	6%	-1%	-22%	-3%	-18%	-3%	-13%

Source: Calculated by author

Appendix 17. Other Income statement items. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Finance income	**7.7**	**8.3**	**11.2**	**13.9**	**16.9**	**15.6**	**16.6**
Total operating revenues (TOR)	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Finance income / TOR	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Foreign exchange gain and loss	**1.5**	**2.1**	**2.6**	**2.7**	**3.7**	**4.1**	**2.8**
Foreign exchange / TOR	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gain on sale of associate	—	—	—	—	—	—	—
Share of associate losses	—	—	—	—	—	—	—
Loss/profit before tax	**466.6**	**1,089.4**	**1,922.2**	**2,128.4**	**2,016.3**	**2,094.8**	**2,108.5**
Tax expense / credit	**(37.17)**	**(86.79)**	**(153.1)**	**(169.55)**	**(160.62)**	**(166.88)**	**(167.97)**
Tax effect	**-8%**	**-8%**	**-8%**	**-8%**	**-8%**	**-8%**	**-8%**

Source: Calculated by author

Appendix 18a. PPE. Historical figures

Indicators	2016	2017	2018	2019	2020
Depreciation	(427.3)	(497.5)	(561.0)	(640.5)	(748.7)
PPE	**6,261.5**	**7,213.8**	**8,123.4**	**9,029.6**	**9,438.0**
Depreciation / PPE	-6.8%	-6.9%	-6.9%	-7.1%	-7.9%
Average					-7.1%

Source: Calculated by author

Appendix 18b. PPE. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Depreciation	(699.5)	(740.8)	(809.7)	(842.9)	(849.5)	(857.3)	(837.3)
PPE	**8,746.8**	**10,389.3**	**11,258.5**	**11,624.2**	**11,605.8**	**11,640.4**	**11,546.2**
Depreciation / PPE	-8.0%	-7.1%	-7.2%	-7.3%	-7.3%	-7.4%	7.3%

Source: Calculated by author

Appendix 19a. Non-current assets. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Rights of use assets	**—**	**—**	**—**	**—**	**236.8**	**188.2**
Total Operating Revenue (TOR)	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
R / TOR	—	—	—	—	2.8%	11.5%
Intangible assets	**46.8**	**46.8**	**46.8**	**146.4**	**146.4**	**146.4**
Derivative financial instruments	**88.5**	**23.0**	**2.6**	**227.5**	**378.5**	**111.3**
Derivative financial instruments /TOR	1.4%	0.3%	0.0%	3.0%	4.5%	6.8%
Other assets	**—**	**—**	**—**	**—**	**—**	**48.7**
Deferred taxes	**—**	**—**	**—**	**43.2**	**53.6**	**14.0**
Deferred Tax assets / TOR				0.6%	0.6%	0.9%

Source: Calculated by author

Appendix 19b. Non-current assets. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Rights of use assets	**161.83**	**221.41**	**276.93**	**298.40**	**321.66**	**346.76**	**373.87**
Total Operating Revenue	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
R / TOR	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Intangible assets	**146.4**	**146.4**	**146.4**	**146.4**	**146.4**	**146.4**	**146.4**
Derivative financial instruments	**214.3**	**182.45**	**266.95**	**344.40**	**377.29**	**377.23**	**389.05**
Derivative financial instruments /TOR	3.7%	2.3%	2.7%	3.2%	3.3%	3.0%	2.9%
Other assets	**52.8**	**—**	**—**	**—**	**—**	**—**	**—**
Deferred taxes	**36.6**	**47.3**	**59.2**	**63.8**	**68.8**	**74.2**	**79.9**
Deferred Tax assets / TOR	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%

Source: Calculated by author

Appendix 20a. Current assets. Historical figures.

Indicators	2016	2017	2018	2019	2020	2021
Inventories	**3.3**	**3.1**	**3.7**	**2.9**	**3.3**	**3.6**
Other assets	**148.5**	**222.1**	**235.5**	**238.0**	**178.7**	**179.8**
Other assets / TOR	2.3%	3.3%	3.3%	3.1%	2.1%	11.0%

Current tax	—	—	—	—	**44.5**	—
Assets held for sale	—	—	—	—	**98.7**	—
Trade receivables	**66.1**	**54.3**	**57.6**	**59.5**	**67.5**	**18.6**
Trade receivables / TOR	1.0%	0.8%	0.8%	0.8%	0.8%	1.1%

Source: Calculated by author

Appendix 20b. Current assets. Projected figures.

Indicators	**2022 F**	**2023 F**	**2024 F**	**2025 F**	**2026 F**	**2027 F**	**2028 F**
Inventories	**3.3**	**3.4**	**3.3**	**3.4**	**3.4**	**3.3**	**3.4**
Other assets	**163.7**	**232.7**	**282.9**	**295.3**	**310.6**	**349.5**	**376.6**
Other assets / TOR	2.8%	2.9%	2.8%	2.8%	2.7%	2.8%	2.8%
Current tax	—	—	—	—	—	—	—
Assets held for sale	**82.1**	—	—	—	—	—	—
Trade receivables	**46.3**	**63.3**	**79.2**	**85.4**	**92.0**	**99.2**	**107.0**
Trade receivables / TOR	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%

Source: Calculated by author

Appendix 21a. Trade payables. Historical figures

Indicators	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Trade Payables	**230.6**	**294.1**	**249.6**	**573.8**	**1,368.2**	**336.0**
Total Operating Revenue	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
TP / TOR	4%	4%	3%	7%	16%	21%
Difference in trade payables	—	63.5	(44.5)	324.2	794.4	(1,032.2)
Cash Flow effect	—	63.5	(44.5)	66.2	15.0	(415.2)
Difference	—	—	—	258.0	779.4	(617.0)
Adjustment made	—	—	—	(258.0)	617.0	—
Adjusted figures	—	—	—	—	162.4	(617.0)

Source: Calculated by author

Appendix 21b. Trade payables. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Trade Payables	**683.9**	**935.7**	**378.9**	**408.3**	**440.1**	**474.5**	**511.6**
Total Operating Revenue	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
TP / TOR	12%	12%	4%	4%	4%	4%	4%

Source: Calculated by author

Appendix 22a. Accrued expenses and other liabilities. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Accrued expenses and other liabilities	2,112.7	2,257.2	2,502.2	2,992.1	2,589.4	1,274.9
Total Operating Revenue	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Accrued exp and etc. / TOR	32%	34%	35%	39%	30%	78%

Source: Calculated by author

Appendix 22b. Accrued expenses and other liabilities. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Accrued expenses and other liabilities	**1,981.1**	**2,739.1**	**3,436.4**	**3,694.2**	**3,881.5**	**4,263.0**	**4,600.1**
Total Operating Revenue	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Accrued exp and etc. / TOR	34%	34%	35%	35%	34%	34%	34%

Source: Calculated by author

Appendix 23. Historical figures and projections for Provisions and other creditors

Indicators	2019	2020	2021	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Provisions	135.6	79.9	57.7	68.8	68.8	140.3	138.1	138.0	138.0	138.6
Other creditors	—	—	—	—	—	—	—	—	—	—

Source: Calculated by author

Appendix 24. Restricted cash and Income tax paid. Projected figures

Indicators	2019	2020	2021	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Restricted cash	34.9	34.4	34.1	30.0	33.6	33.4	33.1	32.8	32.6	33.1
Income tax	(100.9)	(120.5)	7.1	(101.9)	(139.4)	(174.3)	(187.8)	(202.5)	(218.3)	(235.3)

Source: Calculated by author

Appendix 25a. Financial assets: cash > 3 months. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Financial assets: cash > 3 months	**3,062.3**	**2,904.5**	**2,130.5**	**1,484.4**	**1,207.2**	**465.5**
Change in financial assets		(157.8)	(774.0)	(646.1)	(277.2)	(741.7)
CAGR						-31%
EURIBOR *	-0.04%	-0.15%	-0.17%	-0.22%	-0.31%	-0.49%

** Source: (European Central Bank, 2021)*

Appendix 25b. Financial assets: cash > 3 months. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Financial assets: cash > 3 months	**319.4**	**219.1**	**150.3**	**103.1**	**70.8**	**48.5**	**33.3**
EURIBOR *	-0.50%	-0.20%	0.00%				

Source: Calculated by author

Appendix 26a. Share-based payments. Historical figures

Indicators	2016	2017	2018	2019	2020	2021
Share-based payments	**5.9**	**5.7**	**6.4**	**7.7**	**7.0**	**3.6**
Staff costs	(585.4)	(633.0)	(738.5)	(984.0)	(1,106.9)	(472.2)
TOR	6,535.8	6,647.8	7,151.0	7,697.4	8,494.8	1,635.8
Δ Share-based payments		-3.4%	12.3%	20.3%	-9.1%	-48.6%
Share-based paym / Staff cost	-1.0%	-0.9%	-0.9%	-0.8%	-0.6%	-0.8%

Source: Calculated by author

Appendix 26b. Share-based payments. Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Share-based payments	**5.95**	**7.92**	**9.26**	**10.27**	**11.83**	**13.24**	**14.72**
Staff costs	(754.7)	(1,032.6)	(1,239.7)	(1,388.5)	(1,555.1)	(1,741.7)	(1,950.7)
TOR	5,805.3	7,942.9	9,934.3	10,704.5	11,538.9	12,439.4	13,411.8
Share-based paym / Staff cost	-0.8%	-0.8%	-0.7%	-0.7%	-0.8%	-0.8%	-0.8%

Source: Calculated by author

Appendix 27. Supplier reimbursements and proceeds from sale of PPE. Historical and Projected figures

Indicators	2019	2020	2021	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Supplier reibursements for PPE	—	—	77.6	13.9	—	—	—	—	—	—
Proceeds from sale of PPE	—	—	12.1	—	—	—	—	—	—	—

Source: Calculated by author

Appendix 28a. Cash flow from investing activity (PPE). Historical figures

Indicators	2016	2017	2018	2019	2020	2021
PPE	6,261.5	7,213.8	8,123.4	9,029.6	9,438.0	8,361.1
PPE Cash Flow effect Δ PPE / CF	**(1,217.7)**	**(1,449.8)**	**(1,470.6)**	**(1,288.5)**	**(578.8)**	**(294.7)**
Δ PPE		952.3	909.6	906.2	408.4	-1,076.9
Δ PPE / CF		-0.66	-0.62	-0.70	-0.71	3.65

Source: Calculated by author

Appendix 28b. Cash flow from investing activity (PPE). Projected figures

Indicators	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
PPE	8,746.8	9,691.7	10,738.7	11,898.7	13,184.1	14,608.4	16,186.5
PPE Cash Flow effect Δ PPE / CF	**(574.8)**	**(1,400.6)**	**(1,520.3)**	**(1,693.6)**	**(1,890.7)**	**(2,088.3)**	**(2,307.6)**
Δ PPE	385.7	944.9	1,047.0	1,160.1	1,285.4	1,424.2	1,578.1
Δ PPE / CF	-0.67	-0.67	-0.69	-0.68	-0.68	-0.68	-0.68

Source: Calculated by author

Appendix 29. Consolidated Income Statement. Projection

Year ended March 31,							
	2022 F	**2023 F**	**2024 F**	**2025 F**	**2026 F**	**2027 F**	**2028F**
Operating revenues	**€M**	**€M**	**€M**	**€M**	**€M**	**€M**	**€M**
Scheduled revenues	3,604.2	4,878.7	6,041.7	6,446.7	6,878.8	7,339.8	7,831.8
Ancillary revenues	2,201.2	3,064.1	3,892.6	4,257.8	4,660.1	5,099.6	5,580.0
Total operating revenues	**5,805.3**	**7,942.9**	**9,934.3**	**10,704.5**	**11,538.9**	**12,439.4**	**13,411.8**
Operating expenses							
Depreciation	(623.7)	(697.0)	(778.7)	(871.0)	(971.0)	(1,059.4)	(1,177.7)
Fuel and oil	(1,867.2)	(2,448.6)	(2,887.9)	(2,894.2)	(3,242.6)	(3,386.6)	(3,571.0)
Staff costs	(754.69)	(1,032.57)	(1,239.73)	(1,388.50)	(1,555.11)	(1,741.73)	(1,950.74)
Airport and handling charges	(786.3)	(1,029.7)	(1,164.6)	(1,257.0)	(1,337.1)	(1,409.9)	(1,502.6)
Maintenance, materials and repairs	(231.0)	(239.7)	(232.2)	(250.2)	(269.7)	(290.8)	(313.5)
Marketing, distribution and other	(318.3)	(377.5)	(447.7)	(530.9)	(629.5)	(746.5)	(885.2)
Route charges	(552.1)	(755.4)	(944.8)	(1,018.1)	(1,097.4)	(1,183.1)	(1,275.6)
Aircraft rentals	(66.7)	(91.3)	(114.2)	(123.0)	(132.6)	(143.0)	(154.1)
Total operating expenses	**(5,200.1)**	**(6,671.8)**	**(7,809.7)**	**(8,332.8)**	**(9,235.1)**	**(9,960.9)**	**(10,830.5)**
Operating (loss)/profit Other income/(expense)	**605.2**	**1,271.1**	**2,124.6**	**2,371.7**	**2,303.8**	**2,478.5**	**2,581.3**
Finance expense	(72.0)	(84.3)	(69.1)	(65.7)	(53.6)	(52.6)	(47.6)
Finance income	7.7	8.3	11.2	13.9	16.9	15.6	16.6
Foreign exchange gain/(loss)	1.5	2.1	2.6	2.7	3.7	4.1	2.8
Gain on sale of associate	—	—	—	—	—	—	—
Share of associate losses	—	—	—	—	—	—	—
Total other expenses	**(62.8)**	**(73.9)**	**(55.2)**	**(49.1)**	**(33.0)**	**(32.9)**	**(28.2)**
(Loss)/profit before tax	**542.4**	**1,197.2**	**2,069.4**	**2,322.6**	**2,270.8**	**2,445.5**	**2,553.0**
Tax credit/(expense)	(43.2)	(95.4)	(164.9)	(185.0)	(180.9)	(194.8)	(203.4)
(Loss)/profit for the year – all attributable to equity holders of parent	**499.2**	**1,101.8**	**1,904.5**	**2,137.6**	**2,089.9**	**2,250.7**	**2,349.7**

Source: Calculated by author

Appendix 30. Consolidated Cash Flow statement. Projection

Year ended March 31							
	2022	**2023 F**	**2024 F**	**2025 F**	**2026 F**	**2027 F**	**2028 F**
	€M	**€M**	**€M**	**€M**	**€M**	**€M**	**€M**
Operating activities							
(Loss)/profit after tax	**499.2**	**1,101.8**	**1,904.5**	**2,137.6**	**2,089.9**	**2,250.7**	**2,349.7**
Adjustments to reconcile profit after tax to net cash provided by operating activities							
Depreciation	623.7	697.0	778.7	871.0	971.0	1,059.4	1,177.7
(Increase)/decrease in inventories	0.3	(0.0)	0.1	(0.1)	(0.0)	0.0	(0.0)
Tax (credit)/expense on (loss)/profit	(43.2)	(95.4)	(164.9)	(185.0)	(180.9)	(194.8)	(203.4)
Share-based payments	6.0	7.9	9.3	10.3	11.8	13.2	14.7
Decrease/(increase) in trade receivables	(27.7)	(17.0)	(15.9)	(6.1)	(6.7)	(7.2)	(7.8)
Increase/(decrease) in other assets	64.8	(69.0)	(50.2)	(12.4)	(15.3)	(38.9)	(27.0)
Decrease/(increase) in trade payables	347.9	251.8	(556.8)	29.4	31.8	34.3	37.1
(Decrease)/increase in accrued expenses & other liabilities	706.2	758.0	697.3	257.9	187.3	381.5	337.1
(Decrease) in other creditors	0	0	0	0	0	0	0
(Decrease) in provisions	11.1	0.0	71.5	-2.3	0.0	0.0	0.6
Decrease/(increase) in finance income	-8.3	0.6	2.9	2.7	3.0	-1.3	1.0
(Decrease) in finance expense	2.20	12.34	(15.27)	(3.33)	(12.16)	(0.97)	(4.98)
Gain on sale of associate	—	—	—	—	—	—	—
Share of associate losses	—	—	—	—	—	—	—
Hedge ineffectiveness/foreign exchange	—	—	—	—	—	—	—
Income tax refunded/(paid)	(101.9)	(139.4)	(174.3)	(187.8)	(202.5)	(218.3)	(235.3)
Net cash (used in)/provided by operating activities	**2,080.2**	**2,508.7**	**2,486.9**	**2,911.7**	**2,877.3**	**3,277.7**	**3,439.4**
Investing activities							
Capital expenditure - purchase of property, plant and equipment	(574.8)	(1,400.6)	(1,520.3)	(1,693.6)	(1,890.7)	(2,088.3)	(2,307.6)
Supplier reimbursements for property, plant and equipment	113.9	—	—	—	—	—	—
Proceeds from sale of property, plant and equipment	—	—	—	—	—	—	—
Decrease/(increase) in restricted cash	4.1	(3.6)	0.2	0.3	0.3	0.3	(0.5)
Decrease in financial assets: cash > 3 months	146.1	100.3	68.8	47.2	32.4	22.2	15.2
Acquisition of subsidiary (net of cash acquired)	—	—	—	—	—	—	—
Investment in associate	—	—	—	—	—	—	—
Net cash provided by/(used in) investing activities	**(310.6)**	**(1,304.0)**	**(1,451.3)**	**(1,646.1)**	**(1,858.1)**	**(2,065.8)**	**(2,292.9)**

Source: Calculated by author