

**MASTER OF SCIENCE IN
FINANCE**

**MASTERS FINAL WORK
PROJECT**

EQUITY RESEARCH:
RYANAIR HOLDINGS PLC

RICARDO FILIPE NUNES BÔTO

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SUPERVISOR:
VICTOR MAURÍLIO SILVA BARROS

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Abstract

Ryanair Holdings plc (Ryanair Holdings) is a holding company of Ryanair Limited. It is a passenger transport airline which has an ultra-low-price strategy coupled with a standard reduced quality service, where extra services are paid by the consumer. These nominated ancillary services are divided into non-flight, Internet-related and in-flight, which include the sale of beverages, food and goods. Additionally, it markets accommodation and travel insurance services through its website and even provides its own baggage services at Dublin airport. It serves short-haul routes ("point-to-point") between Ireland, the United Kingdom, continental Europe, Morocco and Israel. In June 2017, Ryanair had a main fleet of more than 360 Boeing 737-800 aircraft and offered more than 2,000 regular short-haul flights per day, serving approximately 200 airports throughout Europe.

The main goal of this Equity Research project is to determine Ryanair's stock intrinsic value through a detailed analysis of the company performance in the last couple of years and also through the most accurate prospecting of the market.

The valuation of the company was based on the Free Cash Flows to the Firm and the WACC methodology which was considered the most suitable for the company according to the literature review. In addition, we also performed a Relative Valuation to complement our analysis.

This report was written in accordance with the public information available on September 30th, 2017, any information or event subsequent to this date has not been considered. With a price target of €17.37 at the end of 2018, representing an upside potential of 6.45% from the current price of €16.32, our final recommendation for Ryanair Holding plc to Hold, mainly taking in consideration any risks that may occur such as the increase in fuel prices or the increase in the market risk premium that can strongly affect the price target.

Keywords: Equity Research; Valuation; Free Cash Flow to the Firm; WACC; Relative Valuation; Airline Industry, Ryanair Holdings plc; Low-cost.

Resumo

A Ryanair Holdings plc (Ryanair Holdings) é uma holding da Ryanair Limited. Trata-se de uma companhia aérea de transporte de passageiros que possui uma estratégia de preço ultra reduzido associado a um serviço standard de qualidade reduzida, em que os serviços extra são pagos pelo consumidor. Estes serviços auxiliares dividem-se em “non-flight”, relacionados com a Internet e ainda “in-flight”, onde se incluem a venda de bebidas, alimentos e mercadorias. Adicionalmente, comercializa serviços de alojamento e seguro de viagem através do seu site e ainda fornece os seus próprios serviços de bagagem no aeroporto de Dublin. Serve rotas de curta distância (“ponto-a-ponto”) entre a Irlanda, o Reino Unido, a Europa continental, Marrocos e Israel. Em Junho de 2017, a Ryanair tinha uma frota principal de mais de 360 aeronaves Boeing 737-800 e ofereceu mais de 2.000 vôos regulares de curta distância por dia, servindo aproximadamente 200 aeroportos em toda a Europa.

O principal objetivo deste projeto de pesquisa de patrimônio é determinar o valor intrínseco da ação da Ryanair através de uma análise detalhada do desempenho da empresa nos últimos anos e também através de uma prospeção o mais precisa possível do mercado.

A avaliação da empresa baseou-se nos fluxos de caixa descontados (DCF) para a empresa e na metodologia WACC que foi considerada a mais adequada para a empresa de acordo com a revisão da literatura. Além disso, também realizamos uma Avaliação Relativa para complementar a nossa análise.

Este relatório foi redigido de acordo com a informação pública disponível em 30 de Setembro de 2017, qualquer informação ou evento posterior a essa data não foi considerado. Com um preço-alvo de €17,37 no final de 2018, representando um potencial de valorização de 6,45% do preço atual de €16,32, a nossa recomendação final para a Ryanair Holding plc é Manter, principalmente tendo em consideração os riscos que possam ocorrer, como o aumento dos preços dos combustíveis ou o aumento do prêmio de risco de mercado que pode afetar fortemente o preço-alvo.

Palavras-Chave: Equity Research; Avaliação de Empresas; Fluxos de Caixa Descontados; Avaliação Relativa; Ryanair Holdings plc; baixo custo.

Acknowledgements

This project represents, as it seems, the end of my academic studies. It accompanied me during 3 different jobs, from my first professional internship, to my last year as coordinator of summer camps, ending at the beginning of my professional life.

In between, many crossed my path and something I received everywhere I went was the general support of the people with whom I had the pleasure of working, learning and get along with.

To my colleagues of BCP, who have always treated me as one of them but constantly reminded me that the most important thing was to finish my studies.

To my colleagues and friends of Roda Viva, that during that month, kept me away from the "real world" and all the stress and rush that is experienced daily.

To my new colleagues of PwC, who despite a little time together already manifest the natural "how is your thesis going?".

To my supervisor Victor Barros, for accepting this role and helping me through all these months.

To my colleagues and friends, for the friendship and good moments along this journey.

To my girlfriend Mariana, for the love, friendship and daily encouragement so that I did not lose the course and for accompanying and supporting me always in this path.

And finally, to my dad Jorge, my mom Clara and my brother Guilherme, for the unconditional support, encouragement and valuable insights through all my life that made me achieve my personal and professional goals, even when my future did not augur great achievements.

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RYA: Low Fares, Made Simple.

(YE2018 Price Target of € 17.37 (+6.45%); recommendation is to Hold)

1. Research Snapshot

HOLD is our recommendation for Ryanair Holdings plc (RYA), with a price target of € 17.37 at the end of 2018, using the discounted cash flow method. Relative valuation through multiples supports our view that Ryanair's price is close to its real value, especially as a consequence of recent events. This offers a potential 6.45% upside gain from its latest closing price of €16.32 on September 30, although with medium risk. This is mainly due to the following factors:

Established market share: Ryanair is one of the most well-known companies currently operating in the low-cost aviation market, being at the forefront of this ever-growing segment, making it maintain a higher financial performance when compared to its competitors.

Brand name: Often acknowledged for the worst reasons, the Ryanair brand gains more and more weight in everyday life. From the most positive points such as the near-perfect punctuality with which it operates or the low prices it practices, the most negative (and increasingly recurrent) points such as the cancellation of flights during long months or the weak relations between employees and between the company and the way the company deals with this aspect will largely dictate its future.

Continuous development: The constant renewal of the fleet with which it operates to increase not only the supply but also in order to be more efficient and friendly to the environment; the search for new markets to explore, including studying the initiation of long-haul flights in order to gain greater market share; or the market opportunities it explores, such as the buying intentions of Air Berlin or part of Alitalia's fleet are examples of the company's continued work not only to cement its place in this market segment but also to compete with LCC and also Hub airline companies.

Operational costs: Ryanair's operating costs are among the lowest of any European scheduled-passenger airline, as it strives to reduce or control four of the primary expenses involved in running a major scheduled airline: (i) aircraft equipment costs, by operating a single aircraft type; (ii) personnel costs, with sales bonus payments for onboard sales of products and payments based on the number of hours or sectors flown; (iii) customer service costs, by obtaining competitive rates for services like ticketing, passenger and aircraft handling by negotiating fixed-price, multi-year contracts; and (iv) airport access and handling costs, prioritizing airports that offer competitive prices.

Figure 2 - Stock price movement



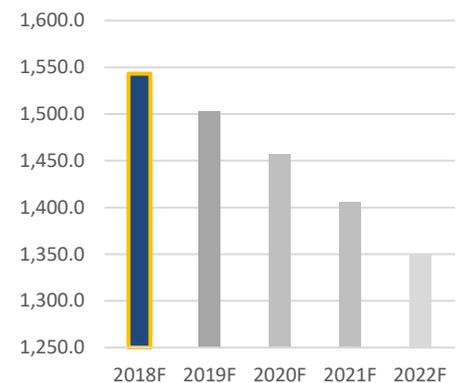
Source: Yahoo Finance

Table 1 - Analyst's risk assessment

Low	Medium	High
	Medium	

Our risk assessment reflects not only intense competition in company's domestic market and the dependence of international growth, as well as the recent events that affect company's prospection.

Figure 1 - EBIT estimations



Source: Author

Table 2 - Valuation output

Valuation	2018F Target Price
DCF	17.37 €
P/E	14.65 €
EV/EBITDA	17.48 €
Multiple Aver.	16.07 €

Source: Author and company data

2. Business Description

Ryanair Holdings Plc (RYA) is an Irish low-cost airline with headquarters in Swords (Dublin, Ireland) that has its primary operational bases at Dublin and London Stansted airports. Recognized as the largest European low-cost airline by scheduled passengers carried and the busiest international airline by passenger numbers in 2016, on more than 1,800 daily flights from 86 bases, the company connects about 119m passengers to nearly 200 destinations in 33 countries, with a fleet of over 360 Boeing 737-800 NG aircrafts and a further 305 Boeing 737's on order. Ryanair has a team of more than 11,500 highly skilled aviation professionals delivering Europe's No.1 on-time performance, and a leading 31-year industry safety record.

The company founded in 1985 by the Ryan family, with a share capital of just £1 and a staff of 25, launched its first route in July, with daily flights on a 15-seater Bandeirante aircraft, operating daily from Waterford to London Gatwick. In that year, it flew around 5,000 passengers. With exponential changes through the years, not only in passengers but also in the fleet, Ryanair's traffic reached 135m customers in 2017 (Figure 3), being the first airline to carry 100m international passengers in one year, achieved in 2015.

Ryanair's revenues as of 31 March 2017 (its FY end) ascended to €6.65bn and Figure 4 shows its geographical distribution. The U.K. is the main source of revenue, followed by its country of origin, Ireland. The other 31 European countries where it operates combine 63% of revenues, without individual relevance. All of the Company's operating profit arises from low-fares airline-related activities, its only business segment. The major revenue generating assets are its aircraft, registered in Ireland and therefore where profits accrue. Since the Company's aircraft fleet is flexibly employed across its route network in Europe, there is no suitable basis of allocating such assets and related liabilities to geographical segments. Recently in June 2017, Ryanair sold its first flights to the US and Latin America, comprising flights only from Madrid to 20 destinations in the American continent.

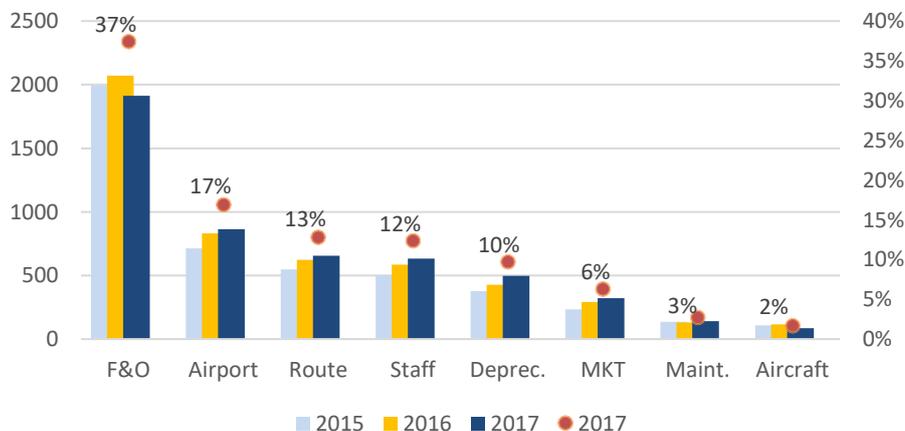
Ryanair is organized in two main segments: scheduled and ancillary segment.

Scheduled segment represents 73.23% share of RYA's core revenues with €4.87bn in 2017. It comprises the invoiced value of airline and other services, net of government taxes.

Ancillary segment represents the remaining 26.77% of RYA's revenues (€1.78bn), and is divided in three sub-segments: (i) non-flight (rail and bus tickets, hotel reservations, car hire, excess baggage charges and administrative fees), (ii) in-flight (food and services) and (iii) internet income (Figure 6).

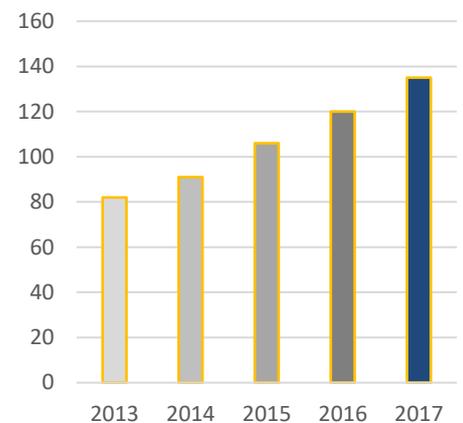
When looking at **total operating costs**, as it was expected, the company has its major costs allocated to **Fuel and Oil (37%)** and **Fees and Charges (30%)**, with the remaining 33% distributed between **Staff, Depreciations, Marketing, Maintenance and Aircraft Rentals** (Figure 5).

Figure 5 - Total operating costs



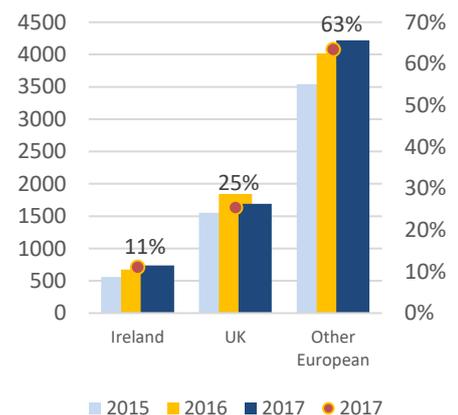
Source: Company data

Figure 3 - No. of passengers per year (in m)



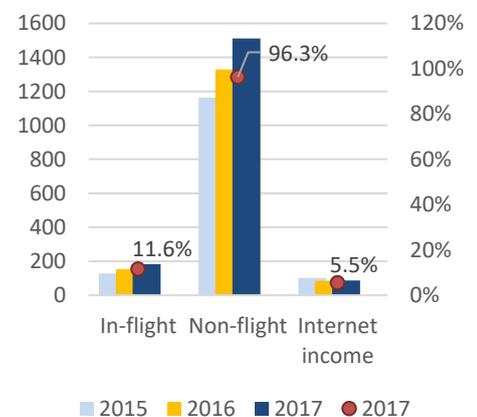
Source: Company data

Figure 4 - Revenue per country



Source: Company data

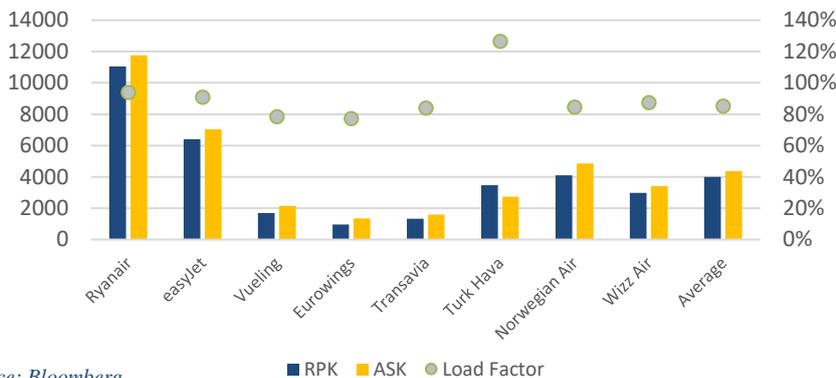
Figure 6 - Ancillary revenues (€m)



Source: Company data

Even though the company is increasing its costs, it is, at the same time, increasing its **gross margin** (Figure 8). To compete in a growing and competitive market as the LCC, increasing capacity alone doesn't directly boost revenue, but creates a greater revenue opportunity. At the same time, airlines constantly manage capacity to provide adequate service to satisfy demand while minimizing empty seats. As a result, the global airline market's **key revenue drivers and profitability** are the low-cost tickets; the high price related to all "non-ticket" services; the lightning deals it offers to its customers; the punctuality with which it operates; the high turnaround and the direct booking, resulting in criteria like **RPK**, **ASK** and **Load Factor** and, as can be seen in Figure 7, RYA outperforms when compared to its peers. We will talk about these criteria ahead.

Figure 7 - Drivers of revenue



Source: Bloomberg

Ryanair's long-term strategy key elements

In order to achieve its objectives, Ryanair outlined some strategies to be followed in medium-long-term. Among them we have the "low fares", "customer service", "frequent point-to-point flights and short-haul routes", "low operating costs", "internet advantages", "commitment to safety and quality maintenance", "enhancement of operating results through ancillary services", "focused criteria for growth" and "responses to market challenges". Of these, three of them are considered core strategies:

Low fares are every LCC pillar. Aiming to continually stimulate demand not only from fare-conscious leisure clients but also business travelers, RYA will sell seats on a one-way basis (eliminating minimum stay requirements on scheduled services), set high fares to flights with higher levels of demand and in bookings made nearer to the date of departure and will continue to have periodically special promotional fare campaigns.

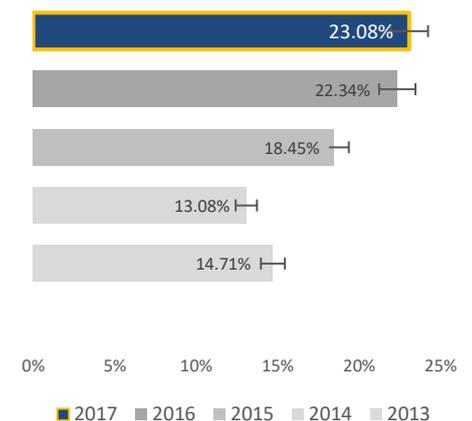
This strategy goes hand in hand with its **focused criteria for growth**, has Ryanair believes it will have opportunities for continued growth by using: (i) aggressive fare promotions to increase load factors; (ii) adding routes in the EU and exploring the Americas; (iii) adding routes in countries party to a European Common Aviation Agreement with the EU with higher-cost services; (iv) higher-fare carriers; (v) increasing the frequency of service on its existing routes; (vi) starting new domestic routes within individual EU countries; (vii) considering acquisition opportunities; (viii) connecting airports within its existing route network; (ix) establishing new bases; and (x) initiating new routes not currently served by any carrier.

Finally, as strategies can't only hold on revenues and growth, RYA kept in mind its necessity of **lowering operating costs**, namely to reduce and control (i) aircraft equipment costs - operating a single aircraft type limiting the costs associated with personnel training, maintenance, purchase and storage of spare parts; (ii) personnel costs - to continually improve the productivity of its already highly productive workforce, paying productivity-based incentives; (iii) customer service costs - by negotiating fixed-price, multi-year contracts with external contractors at certain airports for ticketing, passenger and aircraft handling; and (iv) airport access and handling costs - focusing on airports that offer competitive prices, what hasn't been easy as these costs have been growing year after year, as we previously saw in Figure 4.

Shareholders Structure

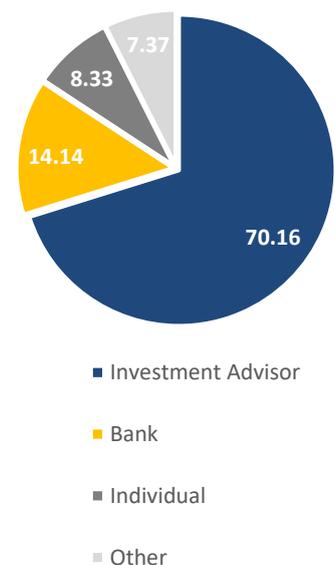
Figure 9 presents Ryanair's ownership structure by type. The major shareholders of RYA hold 3% or more of the ordinary shares as of June 30, 2016 and are presented in Table 3. The directors and executive officers of Ryanair Holdings as a group

Figure 8 - Gross margin



Source: Company data

Figure 9 - Ownership structure



Source: Bloomberg

Table 3 - Major shareholders as of June 2017

Shareholder	No. Of shares	% of Class
Capital	174,732,018	14,5%
HSBC Holdings PLC	105,488,520	9,3%
Fidelity	70,634,226	5,8%
Baillie Gifford	61,407,951	5,1%
Michael O'Leary	46,096,725	3,8%

Source: Company data

owned approximately 59,3m ordinary shares, representing 4,7% of Ryanair Holdings' outstanding shares as of such date. As the Board of Directors of Ryanair Holdings is given certain powers to ensure that the number of Ordinary Shares held in Ryanair Holdings by non-EU nationals doesn't reach a level which could jeopardize the company's entitlement to continue to hold or enjoy the benefit of any license, permit, consent or privilege which it holds or enjoys and which enables it to carry on business as an air carrier, RYA has the power to monitor the share ownership at any given time, preventing hostile takeovers.

A shareholder that holds at least (i) 5% of the issued share capital, has the right to requisition an extraordinary general meeting; (ii) 3% of the issued share capital of the company, has the right to put an item on the agenda of an AGM or to table a draft resolution for an item on the agenda of any general meeting.

The passing of resolutions at a general meeting, other than special resolution, requires a simple majority. To be passed, a special resolution requires a majority of at least 75% of the votes cast.

When comparing these percentage criteria with the major shareholders table, we can say that there's no protection for minority shareholders, using a minimum 5% hold to have more power over the firm. A few years ago a company that advises asset managers and institutional shareholders on corporate governance issues named PIRC said board independence was a major governance issue at the airline, as its uneasiness stem from their tenure on the board and "lack of independence" because David Bonderman was RYA's chairman for almost two decades, Charlie McCreedy made available limited biographical information to shareholders and concerns regarding the level of non-audit fees paid to Ryanair's auditor since 1985, KPMG.

3. Management and Corporate Governance

The Board of Ryanair is responsible for the leadership, strategic direction and oversight of management of the Group and its primary focus is on strategy formulation, policy and control, in matters such as approval of the annual budget, large capital expenditure, key strategic decisions, treasury policy, internal control, audit and risk management, remuneration of the non-executive directors and executive management and Corporate Governance. It has delegated responsibility for the management of the Group to the Chief Executive and executive management.

David Bonderman, the only American citizen that is part of the Directors team, serves as a Director and Chairman of the Board since 1996 and his primary responsibility is to lead the Board, to ensure that it has a common purpose and is effective as a group. He's the link between the Board and the Company, being specifically responsible for establishing and maintaining an effective working relationship with the Chief Executive, for ensuring effective and appropriate communications with shareholders and for ensuring that members of the Board develop and maintain an understanding of the views of shareholders.

The Board consists of one executive and eleven non-executive directors. It is the practice of Ryanair that a majority of the Board comprises non-executive directors, considered by the Board to be independent, and that the Chairman is non-executive. It has established **five committees: Executive, Audit, Remuneration, Nomination and Safety** committees – Table 3, Appendix 13.

Ryanair has its **Environmental, Social and Governance policies**, making it the Europe's greenest, cleanest airline, by adopting the most efficient operations and commercial procedures to minimize the impact on the environment. In order to achieve its growth objectives while reducing the environmental impact, Ryanair follows six key components: Safety & Quality; Energy Efficiency; Environment & Carbon Emissions; Labour Management, Training & Social; Ethics & Transparency and Corporate Governance.

4. Industry Overview and Competitive Positioning

Economy Overview

Since the economic crisis, the **World GDP** has been growing at a slower pace every year. In 2017, the growth is expected to remain modest because of the Brexit implications and advanced economies remain with weak activity. However, a recover is expected in the coming years (Figure 10), with an expected growth between 3 and 4 percent. The drivers for this recovery are developing economies, since they are expected to have higher growth rates than advanced economies.

The **European economy** is already in a recovery process and is forecasted to grow at a higher pace every year until it stabilizes at 1,8 percent from 2019 on. This growth in 2017 is mainly due to the low oil prices, the moderate fiscal expansion and the monetary policy. On the other hand, the referendum in the UK will have a negative impact on growth, since it will create some uncertainty and reduce investors' confidence. Other factors, such as the aging population or the low total factor productivity growth, will make potential growth for the medium-term very modest and not fulfilled its maximum potential.

Ireland GDP has had an incredible expansion from 2012 to 2015, achieving a maximum growth of 26,3 percent in 2015 (Figure 11). This increase is explained by the rise in the net exports and the fact that some companies moved their assets to Ireland from abroad. In the medium-term, Ireland growth is expected to stabilize and maintain values between 2,5 and 5 percent.

Since the referendum for the Brexit, it is expected a slower growth in the **United Kingdom**. This happens because investors feel uncertain about the aftermath of this situation. This will also weight on the decisions of investing and hiring for companies, as well as on the decisions of purchases of durable goods for consumers. Growth forecasts have then been revised down to 1,9 percent for the medium-term, since impediments related to trade, migration and capital flows are expected to have a negative impact on potential growth.

The inflation rate suffered a big decrease until 2015, but is now expected to stabilize at values between 1,5 and 2,5 percent in some of the main economies (Figure 12).

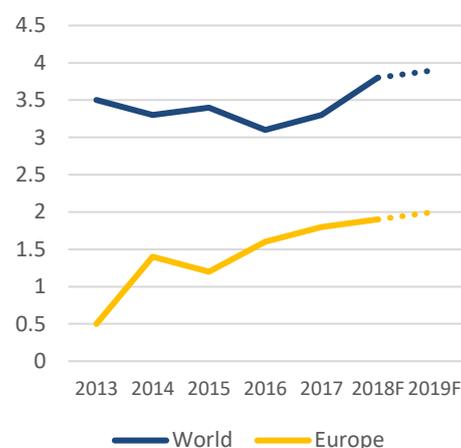
Brexit

Ryanair's Board thinks that the Brexit Referendum and the resulting uncertainty about the status of the U.K. can adversely affect RYA's business. This referendum held on June 2016 in the U.K. had a majority of the voters in favor of the U.K. leaving the EU, the so called "Brexit". Negotiations commenced to determine the future terms of the U.K.'s relationship with the EU, renegotiating a number of arrangements between these two parts that directly impact RYA's business, such as (i) freedom of movement; (ii) employment rules governing the relationship between the parties involved; (iii) the status of the U.K. in relation to the EU's open aviation market; and (iv) the tax status of EU member state entities operating in the U.K.

RYA is exposed to Brexit-related risks and uncertainties, as approximately 28% of revenue in fiscal 2016 came from operations in the U.K.; it can also present Ryanair with a number of potential regulatory challenges, leading to potentially divergent national laws and regulations as the U.K. determines which EU laws to replace or replicate. This will require RYA special efforts to ensure compliance with EU Regulation that solicit that air carriers registered in EU member states be majority-owned and effectively controlled by EU nationals. If U.K. holders of the Company's shares are no longer designated as EU nationals, the Board of Directors may have to take action to ensure continuing compliance. The issue of Brexit is particularly acute for the airline industry given existing agreements that allow companies to fly between the UK and EU, as well as between mainland European countries, and these will need to be renegotiated before the UK formally exits the bloc. A key sticking point is that the "EU Open Skies" agreement is overseen by the European Court of Justice (ECJ), but the UK wants to be unencumbered by ECJ rulings.

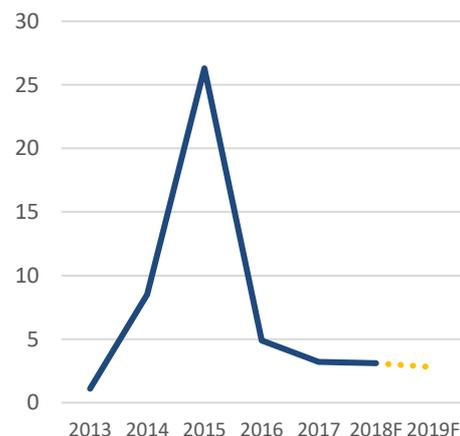
As RYA is already based in Dublin, will therefore remain an EU company even once Brexit is done and dusted, not having any problems with its flights between EU states. However, the UK is an important market and so it will be hoping for the existing regulations to be replicated to ensure barrier-free flying between Britain and the EU. If this doesn't happen and the existing EU Open Skies policy isn't replicated, it might need to apply for a domestic UK AOC to fly its intra-UK routes. A potential issue for the company is the make-up of its shareholders, over half of which must be

Figure 10 - World and Europe GDP



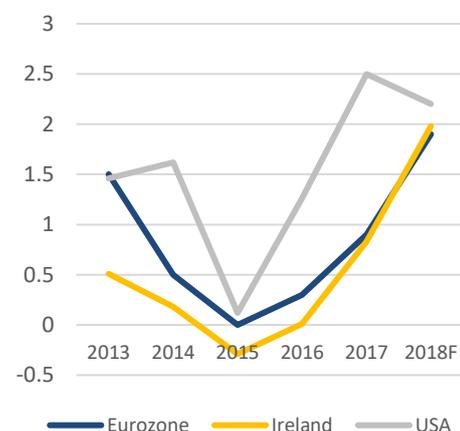
Source: IMF

Figure 11 - Ireland GDP



Source: IMF

Figure 12 - Inflation rate



Source: IMF

in the EU for it to operate as before. Once the UK leaves the EU, the percentage of EU-based owners on the Ryanair register could drop, as much of its shareholder base consists of UK-based institutions. To get around this, any fund managers holding the stock could simply switch ownership from one of their UK-domiciled retail funds, sometimes known as Oeics or unit trusts, into either Irish or Luxembourg-based equivalents, often known as Sicavs. The Referendum has also caused, and Brexit may continue to cause, both significant volatility in global stock markets and **currency exchange rate** fluctuations, as well as creating significant uncertainty among U.K. businesses and investors. In particular, the pound sterling has lost approximately over 10% of its value against the U.S. Dollar and the euro since the Referendum, and The Bank of England and other observers have warned of a significant probability of a Brexit-related recession in the U.K. As Ryanair earns a significant portion of revenues in pounds sterling, any significant decline in the value of the pound and/or recession in the U.K. would materially impact its financial condition and results of operations. At the same time, its fuel, aircraft, insurance, and some maintenance obligations are denominated in U.S. dollars.

It is important to keep in mind that with the Brexit, RYA might be affected by the devaluation of the pound sterling and, as the fuel is in U.S. dollars, the appreciation of this currency against the euro might also affect the company when purchasing this commodity. The company's currency forward contracts in U.S. dollars are presented in Figure 13.

Table 4 - Yearly exchange rates against euro

Year	GBP	USD
2012	0.81	1.29
2013	0.85	1.33
2014	0.81	1.33
2015	0.73	1.11
2016	0.82	1.11
2017	0.89	1.18

Source: USForex

Air Transportation Analysis

When talking about the airline industry, concepts like intense competition, low profit margins and high costs are always present, making it one important driver of the World Economy. As a result, we observe increases in connections, flow of goods and people, jobs and capital, allied to the exponential growth of technology.

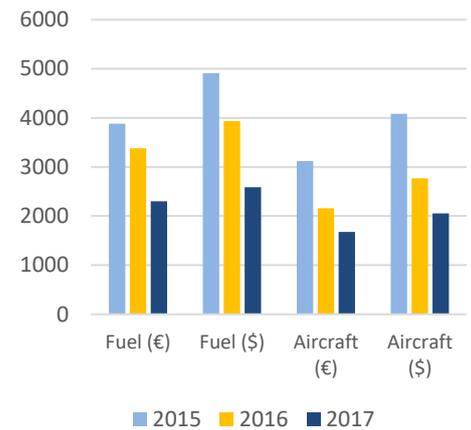
The airline industry is divided in two big pillars: the low-cost carriers (**LCC**) and the full-service carriers (**FSC**). LCC represent nowadays a 30% air share, and rose year after year with its simplified low-cost business model, having leisure and price sensitive business travelers as a target, operating a point-to-point network and moving away its traffic from central hubs to secondary airports that also function as maintenance and logistic bases.

The FSC are divided in Hub Airline Companies (**HAC**) and Luxury Airline Companies (**LAC**), with the first ones focused on price-quality equilibrium and in reducing prices without compromising the quality of service, and the most known are Air France-KLM, Deutsche Lufthansa AG and IAG Group, as well as Turkish Airlines; and the second ones operating in a niche of consumers that prefer to spend money in comfort and luxury, preferring a high service standard with the best technology, authentic quality and excellence, such as Qatar Airways or Emirates.

Demand and Supply

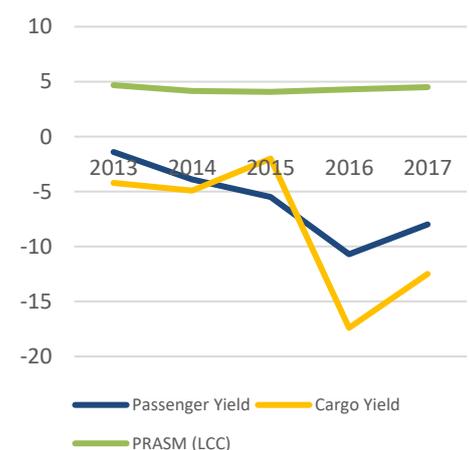
The comparison in the airline industry is mainly done by yields (Figure 14): **Passenger Yield**, the average fare paid by customers to fly one mile, and **Cargo Yield**, the average price paid by customers to transport one ton of freight and mail one mile. Typically Passenger Yield is presented in cents per mile and is useful to measure changes in fares over time, but isn't for comparisons across airlines, as it varies dramatically by stage length and doesn't incorporate load factor, unlike **PRASK** (Passenger Revenue per ASK). Airline companies aim to stabilize these two yields, but both dropped in 2016 due to the declining of prices and surcharges.

Figure 13 - Currency forward contracts



Source: Company data

Figure 14 - Cargo and Passenger yields



Source: IATA

The actual passenger traffic and the available passenger capacity are measured by the **Revenue Passenger Kilometers (RPK)** and the **Available Seat Kilometers (ASK)**, and the comparison between industry and Ryanair is shown in Figures 15 and 16.

Passenger Load Factor (PLF) measures the % ASK used, and we can see that there's been a decrease in 2016 that is expected to continue in 2017 in the industry, although the same is not expected in the company's future. Europe showed signs of contraction, as a result of the drop in the non-EU markets, primarily Turkey and Russia. The recent terrorist attacks in the region earlier this year, the Brexit factor, low consumer confidence and general uncertainty about the broader economy has had a negative impact on air travel.

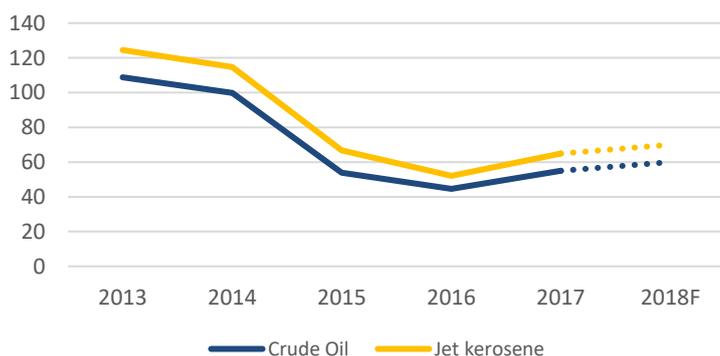
The main operating expense for Ryanair is the Fuel and Oil consumption, as previously shown in Figure 6. Airline companies use two correlated types of oil, Brent Crude and Jet Kerosene. The first one draws its oil from more than a dozen oil fields in North Sea aiming to refine into gasoline; the second comes from crude oil distillation that is used in jet aircraft. Aircraft fuel is the most critical operating expense for airlines. Jet fuel, the most common fuel, is highly correlated to oil prices (Figure 18). In the last five years, the industry has been affected by a high volatility due to many different global factors, such as geopolitical, environmental and economic. During 2016, oil prices averaged \$43.29 dollars per barrel (Oklahoma WTI Spot Price) which was the lowest yearly average since 2004. Under these circumstance, the Organization of the Petroleum Exporting Countries (OPEC), on November 2016, agreed to a daily production target of 32.5m barrel per day or a 3% decreased to increase oil prices on the international market. Also, Non-OPEC countries (notably the United States) reduced supply in 2016 due to cutbacks in investment. In contrast, recent developments in the productivity of shale companies in the United States boosted production and mitigated the effect of supply cuts. In effect, fuel oil production in the United States increased in the second part of 2016 similar to the growth from 2012 to 2014 when fuel production of oil increased an average of 15% YoY. Furthermore, a weaker than expected demand, especially from the Asian countries can downside the risk of higher oil prices. RYA, as other companies in the industry, mitigates the risk of the price of oil by fuel hedging. Companies are also focusing its efforts on improving fuel efficiency by replacing existing fleet with modern aircraft and better operations.

By looking at Figure 17, we can see that in 2016 the price decreased due to the oversupply and declining demand of crude oil, mainly as a result of the growth of EUA and Iraq as a producer, as the second one returned to the oil market, allied to the overproduction of the OPEC oil cartel; a stronger U.S. currency makes dollar-traded oil more expensive and the slowing growth of emergent markets like China. In 2017 the prices stabilized.

In order to reduce exposure to fluctuations in fuel prices, Ryanair usually practices fuel hedging by buying or selling expected future oil prices through investment tools such as swaps contracts, call options, among others, mainly in crude oil.

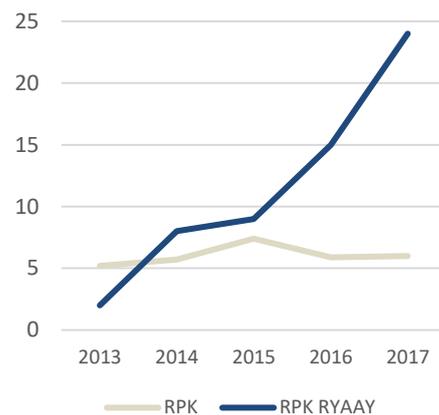
Taking into account the previous years, Ryanair entered into arrangements that provided protection against fluctuations in fuel prices through forward contracts for periods up to 18 months of anticipated jet fuel requirements, entering not only into forward jet kerosene contracts covering 95% of its estimated requirements for the FY2018 but also into forward jet kerosene contracts covering 55% of its estimated requirements for the FY2019, leading to a cushion on the impact of short-term fuel price increases, but not assuring that same cushion when talking about medium or long-term.

Figure 18 - Brent Crude oil and Jet kerosene prices



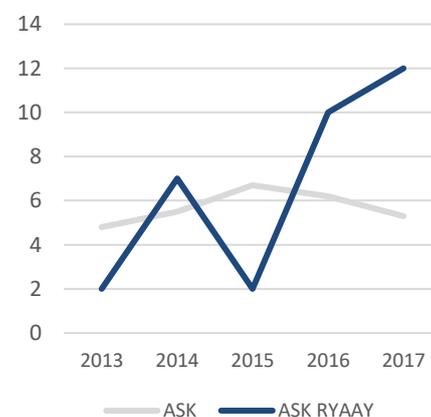
Source: IATA

Figure 15 - RPK



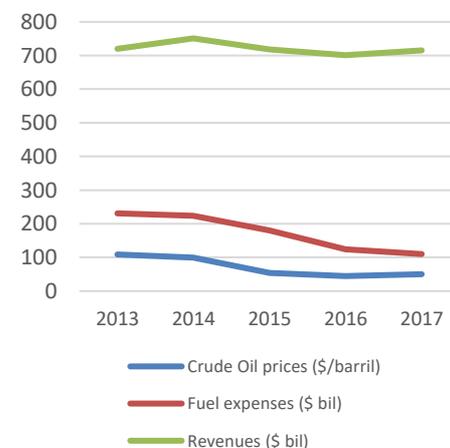
Source: Company data, IATA

Figure 16 - ASK



Source: Company data, IATA

Figure 17 - Revenues, fuel expenses and crude oil prices per barril



Source: IATA

Airport and handling costs are the second largest operating expense. To control this costs, Ryanair focus its activities on airports that offer competitive prices, typically secondary and regional airports. However, with the change in Ryanair's strategy, the access to more primary airports might increase, which can lead to a rise in costs. Also by opting for less expensive gate locations and by outdoor boarding stairs, all passengers are required to make an online check-in, reducing the waiting time at airports and the airport handling costs. To further reduce handling costs, a checked bag fee is charged to passengers if they want to carry extra bags.

A single amount of route charge is charged per flight to the aircraft operators, independently of how many states they overfly. Route charges have increased in absolute terms in 2017, mainly as a result of an increase in sectors flown and Eurocontrol price increases in France, Germany and the U.K.

The expenses with **staff** also have a large impact on Ryanair's finances, so RYA seeks to continually improve the productivity of its workforce, paying productivity-based incentives and sales bonus for onboard sales of products for flight attendants or payments based on the number of hours flown by pilots and flight attendants within limits.

Other costs include depreciations, marketing, maintenance and aircraft rentals.

Interest rates

As the majority of the company's aircraft purchases are funded in the form of loans - supported by a loan guarantee from Export-Import Bank - and by unsecured debt raised via capital market bond issuances, Ryanair defends itself against a +/- 1 p.p. movement in interest rates, avoiding negative impacts on the fair value of its liabilities and on earnings and cash-flow, caused by changes in interest rates. Approximately 32% of the loans for the aircraft acquired under the above facilities aren't covered by such swaps and have therefore remained at floating rates linked to EURIBOR, with the interest rate exposure from these loans largely hedged by placing a similar amount of cash on deposit at floating interest rates. The net result is that Ryanair has effectively swapped or drawn down fixed-rate euro denominated debt with maturities of between 7-12 years in respect of approximately 68% of its outstanding aircraft debt financing at March 31, 2016 and approximately 18% of total debt was floating rate at that date. The evolution of the interest rates is shown in Figure 19.

Competitors and Peer Group

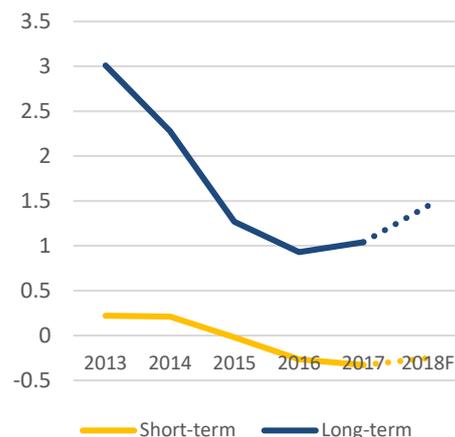
As an air transportation company, Ryanair competes with numerous airlines throughout the European continent. Based on total scheduled passengers per year, RYA's main **competitors** are Lufthansa Group, IAG, Air France-KLM, easyJet, Turkish Airlines, Aeroflot Group, SAS Group, Norwegian Air Shuttle, Air Berlin and Pegasus Airlines. From these, only four were part of the ceased ELFAA (European Low Fares Airline Association), and consequently considered as **peers**: IAG, easyJet, Norwegian Air Shuttle and Air Berlin Group.

This issue will be dealt with in detail in the Multiples approach, but it is important to note that the choice of peers was based on three aspects: (i) being a low-cost aviation company, and therefore having the same type of strategy; (ii) be a company operating in Europe; and (iii) not belonging to an economic group, such as Eurowings (Deutsche Lufthansa), Transavia (Air France - KLM) or Vueling (IAG Group). As a result, the final selection of peers consists of easyJet, Norwegian Air Shuttle, Air Berlin and Wizz Air.

In order to better compare RYA's peers, four indicators were used. The data are compared from 2012 to 2016 because not all companies reported their accounts in the current year of FY2017. Still, these data are sufficiently significant and in line with what has been stated previously: the continued growth of low-cost, gaining this market segment more and more expression in relation to the other six segments: traditional, business, charter, all-cargo, military and other (Figure 20). We can also see that Ryanair is the fastest growing company of **RPK** among the five companies (Figure 21), having even presented a RPK of €92.4m this year, an increase of 14% when compared to FY2016.

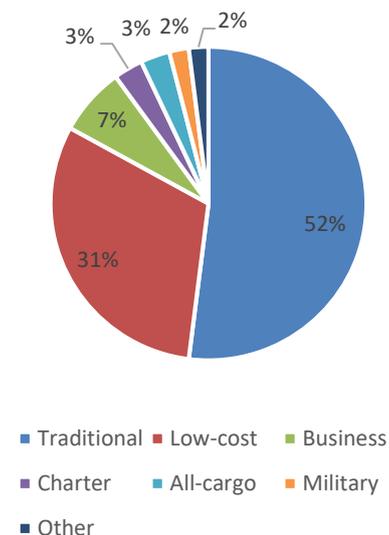
Expanding passenger volumes and capacity, high load factors and aggressive cost containment have enabled Ryanair to continue to generate operating profits despite increasing price competition and increases in certain costs. Cost per passenger was €47.69 in the FY2016 and €42.62 in the FY2017, with the lower fuel cost per passenger of €15.95 in the FY2017 as compared to €19.47 in the FY2016 being the most significant factor behind this decrease. EasyJet was the largest **ASK** company by FY2015, but in the following year Ryanair showed a large increase and equaled

Figure 19 - Eurozone interest rates



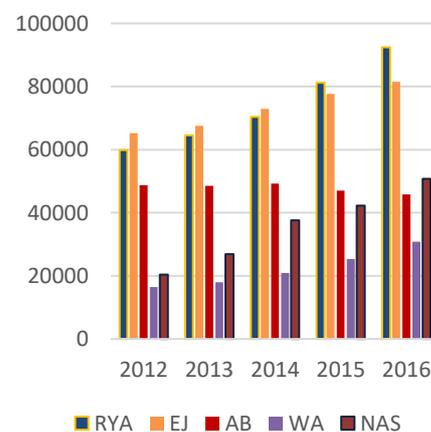
Source: OECD

Figure 20 - Aviation market segmented



Source: IATA

Figure 21 - Peers RPK



Source: Bloomberg and company data

the UK company at the top of this indicator (Figure 22), with a value of €98m in FY2017, an increase of 12% over the previous year. For a better view of costs, we have compared the cost per ASK (Figure 23), the common unit of measurement used to compare the efficiency of various airlines obtained by dividing the operating costs of an airline by its ASK. Ryanair is the second most profitable company in this group, just behind Wizz Air. Even so, this year the company presented a **CASK** of 3.27, a reduction of about of 5% over the previous year.

Finally the **Load Factor** was compared (Figure 24). Featuring the second lowest LF of the five companies in 2012, RYA increased by 134% this indicator by the year of 2016 (93%), with significant yearly increases in this timeframe and having even reached 94% in FY2017. This exponential increase is a demonstration of the strength that the company has gained in recent years compared to the other competitors and which is expected to continue in the coming years.

Air Berlin and Alitalia – Acquisition in sight?

Michael O'Leary confirmed his interest in Air Berlin in parallel with the intention to make an offer for Alitalia next October. For now, Air Berlin is not officially on sale, but Ryanair plans to compete with easyJet in the acquisition of Alitalia. The two companies are collapsing, but while the Alitalia lawsuit is being conducted transparently and open to all, in the case of Air Berlin there are only contacts with Lufthansa, as he claims that there is a “conspiracy” between the German government, Air Berlin and Lufthansa (that owns 50 Air Berlin leased planes) to keep competitors out of the process and sell most of the collapsed airline to the German flag carrier, that has announced on August 15 that it has requested the opening of insolvency proceedings following the decision of its majority shareholder Etihad Airways not to continue to provide financial support. O'Leary saw in the timing of the release of this information, two months before the German elections, the hand of Lufthansa in order to put pressure on the government, since this information never appears in August, the month of greater liquidity of the companies, he said, quoted by the Efe agency. Mr O'Leary warned that a merger with Air Berlin would create a monopoly, allowing Lufthansa to control 95% of national routes in Germany compared to the current 17%.

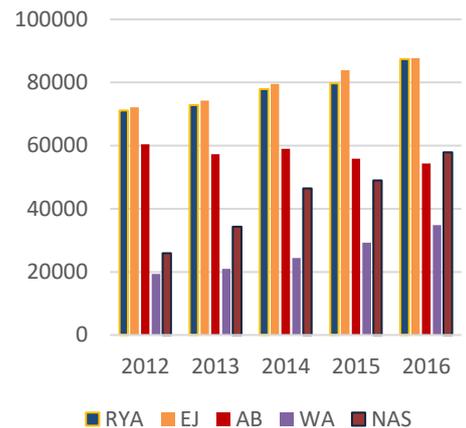
Alitalia's case is different, as it is already the second time in a decade that the firm declares insolvency, so the Government has already announced that it will not redeem the company. RYA has until October to make a binding bid for all or part of the Italian carrier, more precisely an offer for the 90 jet aircraft, with their pilots, cabin crew, routes, and would operate them using existing staff, but the offer would be dependent on some redundancies, changes to staff conditions and renegotiation of the leases. As Ryanair exclusively uses Boeing planes, Alitalia staff would be required to maintain the 90 Airbus planes, he said. Although RYA only currently operates short-haul routes, would also take on long-haul routes under the deal as Alitalia has really attractive long haul fleet, with the capacity to grow very strongly. Ryanair would be interested in bidding for the whole of Alitalia, which has around 120 planes, but such a deal would likely be blocked by regulators as it would leave Ryanair in control of over 50 percent of the Italian market. O'Leary said Alitalia would likely be broken up whoever buys it and that any takeover would include competition remedies.

These two proposals differ greatly from one another in terms of timing and certainty. If in the case of Air Berlin the probability of success is almost zero, in the case of Alitalia the probability becomes high and will be in line with the recent strategies of RYA: bet on long haul flights to not only have the monopoly of flights short-haul as well as start gaining expression in hub markets. The continued growth of low-cost airlines coupled with the great power Ryanair has in this market segment means that it is increasingly possible to achieve the company's goal: to drive the price of tickets to zero and to have the bulk of revenue based on the ancillary revenues.

Competitive Positioning

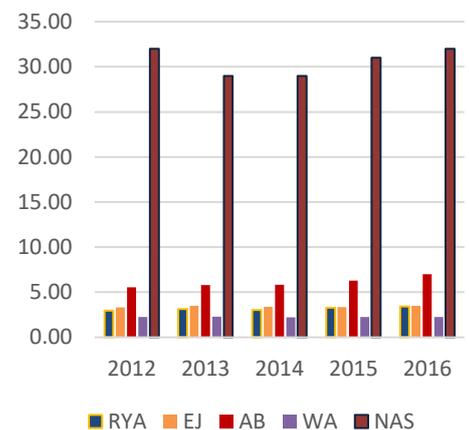
In June 2017 Ryanair has started selling flights to the US and Latin America, as part of a partnership with Air Europa aiming to become “Amazon of travel”. Flights depart from Madrid and call at 20 destinations across the Americas (Argentina, Brazil, Cuba, Mexico and the US) and will be operated by Air Europa. This new flight partnership will give Air Europa access to Ryanair's 130m odd customers, in one hand, and Ryanair will have access to new markets, in the other hand. It is also known that Ryanair has also been in talks with Aer Lingus and Norwegian Air to link with to be

Figure 22 - Peers ASK



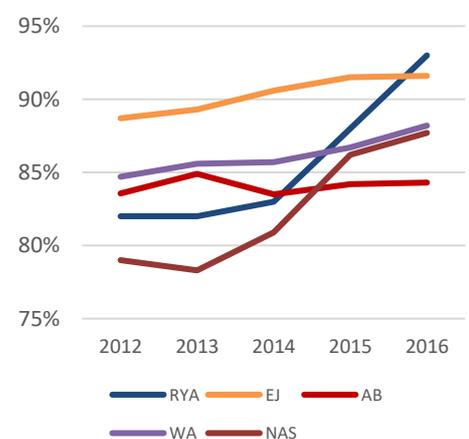
Source: Bloomberg and company data

Figure 23 - Peers Cost per ASK



Source: Bloomberg and company data

Figure 24 - Peers Load Factor



Source: Bloomberg and company data

able to offer long-haul flights around the world. This can be a game change in Ryanair's perspective, but things might go wrong as well, so for that we will only consider this "long-haul flights" perspective as a scenario, and maintain Ryanair as a short-haul flight airline company that actuates in Europe.

The delays due to the luggage were damaging firm's Load Factor, so it decided to eliminate one of the preferred characteristics of the passengers that traveled by the company: to carry two suitcases of cabin - a hand luggage and a small suitcase - without any additional cost. As part of the AGB program, RYA has announced new reduced baggage check-in values with increased bag sizes to encourage more customers to travel with trunks and reduce the number of customers with two suitcases as there is not enough room in the cabin for this volume of suitcases. Thus, as of November 1, each passenger can only carry a small hand luggage into the aircraft. If costumers want to bring both bags inside the cabin will need to purchase priority boarding (including Plus, Flexi Plus and Family Plus), costing €5.5 at the time of booking or €6.50 if added up to one hour before time of flight. All other customers will only be allowed to carry a small suitcase as carry-on luggage, while the second (large) suitcase must be placed in the hold (free of charge) at the boarding gate. Also in the basement bags there are changes: the allowed weight will increase from 15 to 20 kilos and the price drops from €35 to €25.

Ryanair says that due to the reduction in revenues from the purchase of hold baggage, this change to the policy will cost the company more than €50M.

With that being said, only companies that operate in this continent are considered as competitors. All LCCs are their direct competitors, rather than Luxury and Hub, which are indirect competitors. A summary of each competitor and comparison tables between companies are presented in Appendix 12.

In order to compare this company with the rest, we use SWOT analysis and Porter's Five Forces Model.

SWOT analysis (Table 5) is a process that identifies an organization's strengths, weaknesses, opportunities and threats, being a basic analytical framework that assesses what an entity can and can't do for both internal and external factors. Briefly, where the organization is today, and where it may be positioned in the future.

Table 5 - SWOT analysis



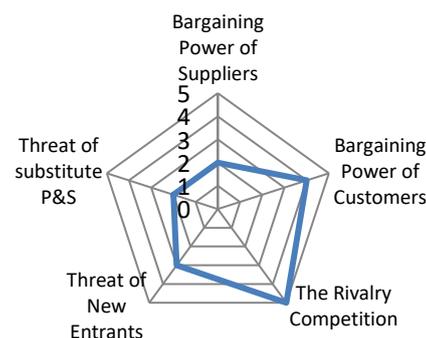
Source: Author

Porter's 5 Forces Model (Figure 25) identifies and analyzes five competitive forces that shape every industry, while helping to determine an industry's weaknesses and strengths. It's basically a strategic tool designed to give a global overview, rather than a detailed business analysis technique. The forces are:

Figure 25 - Porter's 5 forces model

Bargaining Power of Suppliers | LOW

In Europe we have mainly two aircraft producers – Boeing and Airbus. Switching costs are high due to significant amount of expenses involved, such as capital investments or pilot retraining, but highly intensified level of competition among airports has significantly increased the bargaining power of airline companies in their business relationships with the local airports. Ryanair's primary supplier is Boeing, although it can, at any time, change its suppliers. However, Chinese jet manufacturers like Comac are attracting interest due to greater amounts of seats within its planes, as well as increased level of efficiency associated with energy consumption.



Bargaining Power of Costumers | HIGH

As changing from one airline company to another is simple and doesn't have extra expenses, costumers have a high and increasing bargaining power, forcing companies to cut costs by aggressive competitors. There are low switching costs between firms as many people choose the flight based on where they are going and the cost at the time and in most customers, they prefer to always pay less. Loyalty to firms can exist but not enough for high switching costs and Ryanair's lack of brand loyalty makes it very vulnerable to price reductions from its competitors.

Source: Author

Threat of Substitute Products and Services | MODERATE

The threat of substitute products or services is a major factor upon the level of profitability of an industry, as there are almost no alternatives for high-speed travelling. Substitute services for airline industry in general and Ryanair in particular include railway networks, sea transports, coach transport, and car rental firms, but these transport tickets are usually more expensive than Ryanair's flight tickets. Europe is known for well-established railroad network, especially "EuRail" which connects west, central and southern part of Europe and the main barrier between airlines is the travel time. To travel to a destination with a plane takes less time than with a train and this factor for trains brings higher transaction and opportunity costs, but this scenario changes if we are a citizen in the center of Europe, where the ease of mobility for any country becomes much greater by land.

Threat of New Entrants | MODERATE

RYA has low threat of direct new entrants due to the significant entry barriers associated with entering airline sector that include economies of scale, capital requirements, access to distribution channels or price. Significant capital requirements associated with entering airline industry include dealing with inventories, engaging in marketing activities or attracting qualified workforce. Difficulties associated with gaining access to distribution channels is another considerable barrier faced by new entrants in the airline industry, as local and international airports may not be able to create additional slots in their platforms to serve new entrants into the market. We can still have another situation, when a Hub decides to create a new low-cost segment and to gain market share, even though most of its revenue continues to be generated by its main segment. An example of this is Lufthansa, when it decided to create Eurowings.

The Rivalry Competition | VERY HIGH

Airlines not only compete on price and service, but also they do compete on frequency of flights, frequent-flyer programs, reliability of flights, among other. In recent years, pressures have somewhat eased as established carriers have stayed within their existing geographical areas of dominance, concentrating more on returning to profitability than expansion. Although the threat of entry in the market is low, the intensity of rivalry competition is really high. Numbers have risen in competitors trying to copy Ryanair's successful cost leadership. There is a little chance of possible difficulty for Ryanair trying to broaden its strategy.

5. Investment Summary

With a price target of €17.37 and an upside level of 6.45% from €16.32 for 2018YE, using the Discounted Cash Flow Method, our recommendation stands for HOLD.

Relative valuation through Multiples supports our view with an average price target of €16.07 and a downside potential of -1.53%.

Valuation

In order to evaluate RYA, we used two different valuation methods, an absolute and a relative valuation model. For the absolute valuation model, we used the Discounted Cash Flow (DCF) approach and for the relative valuation model, we used the Market Multiples approach.

The key drivers for our recommendation are:

1) Stepping up revenues: GDP growth recovery

The cyclical recovery continues. Growth outturns in the first quarter of 2017 were higher than the April World Economic Outlook forecasts in large emerging and developing economies such as Brazil, China, and Mexico, and in several advanced economies including Canada, France, Germany, Italy, and Spain. High-frequency indicators for the second quarter provide signs of continued strengthening of global activity. Specifically, growth in global trade and industrial production remained well above 2015–16 rates despite retreating from the very strong pace registered in late 2016 and early 2017.

IMF estimate an average GDP growth of 2.88% over the next five years for Ireland and 1.83% for the United States. Based on this outlook, during 2018 we expect RYA's RPK to grow 10% due to the correlation between GDP growth and RPK growth; for the following years an average of 5% RPK increase is forecasted. The soft demand environment and high depreciation of some currencies in the region have deteriorated the passenger yield during the last few years. Nevertheless, a yield recovery is expected in the short term.

2) Strong Load Factor

RYA have been able to adapt faster than other carriers to market continuous changes. As yields have suffered during the last few years due to a higher competitive environment, Ryanair has been able to efficiently accommodate to these conditions and was capable of increasing the load factor to a historical high of 94% in 2017. The company has taken important actions as its fast operational adaptability to changes produced by external shocks on key streams as yield reveals, evidenced by a more disciplined capacity growth plan and the successful commercial plans in place. We expect RYA to grow an average of 7% YoY in ASK, balancing the estimated RPK growth and higher load factor.

3) Efficient cost management

Cost per Available Seat Kilometers (CASK) is in a decreasing trend, as the company's value proposition does not contemplate high quality service but low fares with the minimum accommodation. As a result, they have one of the lowest CASK among peers and competitors. Their investments has been allocated in lower cost maintenance assets, such as modern fleet, contributing to lower fuel costs and more ASK per block hours. In addition, sustained improvement in daily aircraft utilization is foreseeable.

6. Valuation

In order to evaluate RYA, we used two different valuation methods, an absolute and a relative valuation model. The first one corresponds to the **Discounted Cash Flow (DCF)** approach to estimate the corresponding streams of **Free Cash Flow to the Firm (FCFF)**, because it let us see how the capital structure is going to vary during the forecast period and how it is going to affect the evolution of the **Weighted Average Cost of Capital (WACC)**, allowing us to reach the most reliable enterprise value and price target for the valuation of the company. A Dividend Discount Model is not suitable, as RYA dividend distribution is uncertain as it only distributed dividends in three years over the past decade.

$$FCFF = EBIT (1 - Marginal Tax Rate) + D\&A - Changes in NWC - CAPEX$$

Table 6 - FCFF

Free Cash Flow to the Firm - FCFF					
	2018F	2019F	2020F	2021F	2022F
FCFF (€m)					
EBIT*(1-T)	1,350.24 €	1,314.51 €	1,274.51 €	1,229.88 €	1,180.20 €
Depreciation	512.43 €	527.80 €	543.63 €	559.94 €	576.74 €
Δ NWC	535.70 €	83.59 €	244.06 €	- 88.14 €	- 276.39 €
CAPEX	1,304.82 €	1,174.34 €	1,056.90 €	951.21 €	856.09 €
FCFF	1,093.54 €	584.38 €	517.18 €	926.75 €	1,177.24 €
Year	0	1	2	3	4
Discounted FCFF	1,093.54 €	554.98 €	467.51 €	796.06 €	958.08 €
Cummulative FCFF	1,093.54 €	1,648.52 €	2,116.03 €	2,912.08 €	3,870.16 €
Terminal Value	20,570.38 €	21,671.00 €	22,818.89 €	24,000.56 €	25,248.02 €

Source: Author

Discount Cash Flow (DCF) Method

The discount rate applied to the future cash-flows must reflect not only the time value of money, but also the specific risk of the industry and country where the company operates. Because we follow a DCF approach and estimate each segment's FCFF, the discount rate is the one that results from the RYA's WACC, which considers an optimal financing structure (mean of industry), in opposition to the actual structure (Table 7). The mean of comparables' financing structure was used rather than the actual structure because we do understand that the financing structure used in the model differ from the actual one, however it was assumed that at medium-long term all the companies converge to the industry mean. The **Enterprise Value (EV)** composed by the sum of the unlevered free cash-flows and discounted at the WACC rate (Table 7) is presented ahead.

$$WACC = We * Ke + Wd * Kd * (1 - tc)$$

With the aim of estimating the opportunity **Cost of Equity (Ke)**, a multi-factor model was used. The **Capital Asset Pricing Model (CAPM)** postulates that the opportunity cost of equity is equal to the return on risk-free securities plus an individual risk premium.

A modification of the CAPM was followed, which includes a country risk premium:

$$Ke = Rf + \beta * MRP + CRP$$

The **Risk Free Rate (RFR)** we used refers to the 10 year German Treasury bonds, which in our view constitutes a reasonable proxy for a risk-free rate for a company established in any European Member State. Therefore, the rate observed in August 2017 of 0,403% was used (Source: Bloomberg).

We decided to use the Air Transportation industry **unlevered Beta (β)** of 0,9 taken from Aswath Damodaran's Database, as well as the **Country Risk Premium (CRP)** for January 2017, with a value of 0.79%; the **Market Risk Premium (MRP)**, the general risk premium for a mature equity market, with a value of 6.48% for May 2017. Using the formula $\beta L = \beta u * [1 + \frac{D}{E} * (1 - T)]$, we reached the **beta levered** of 1.35.

With all of these components, we reached a **Cost of Equity** of **9.92%**.

The **Cost of Debt (Kd)**, which is the effective rate that a company pays in its debt, presents different values throughout the years following the firm's debt structure changes. The **Marginal Tax Rate (T)**, it was consider to be the Irish corporate tax rate (12,5%).

Aswath Damodaran's calculations as in Jan 2017 for the Air Transport sector give us a Kd of 4,05%. Multiplying that by (1-T), we got an **After-tax Cost of Debt** of **3,54%**.

In terms of the **Terminal Value (TV)**, the estimation of the normalized free cash flow taking into consideration the capital expenditures, we assumed that the **Perpetual Growth Rate (g)** should be 0,8%, based on the forecasted GDP growth rate for

Table 7 - WACC assumptions

Assumption	
Risk-free rate (RFR)	0.40%
Country risk premium (CRP) - Ireland	0.79%
Market risk premium (MRP)	6.48%
Beta unlevered	0.9
Beta levered	1.35
Cost of debt	4.05%
Terminal growth rate	0.80%
Corporate marginal tax rate	12.50%

Source: Author

Ireland (Source: Trading Economics). The **Perpetuity WACC** was assume to be the estimated 2022F WACC of 5.28%.

$$TV(2022F) = \frac{FCFF * (1 + g)}{WACC - g}$$

The valuation period would extend to infinity given the longevity of the industry in which the company operates. As it is practically impossible to estimating parameters for longer periods, we considered a limited explicit projected period of five years, from the base date 31st March 2018 (end of its FY) until 31st March 2022. The terminal value is then added at the end of this period.

The result of the DCF valuation was a target price of €17.37 for the end of 2018 (Table 8), representing an upside potential of 6.45%. In our perspective, the quotation of Ryanair is close to its true value, so our recommendation, based on the DCF valuation, is to HOLD. More details about the DCF Valuation can be seen in appendix 7.

Table 8 - DFC output

Enterprise Value - EV	
Terminal Value	25,248.02 €
PV of Terminal Value	20,570.38 €
NPV of FCFF	3,870.16 €
Enterprise Value	24,440.54 €
Net Debt	3,814.79 €
Equity Value	20,625.75 €
No. of shares outstanding	1187.22
Equity value per share	17.37 €
Target Price at the end of '18	17.37 €
Price at September 30	16.32 €

Source: Author

Forecast Analysis

Income Statement

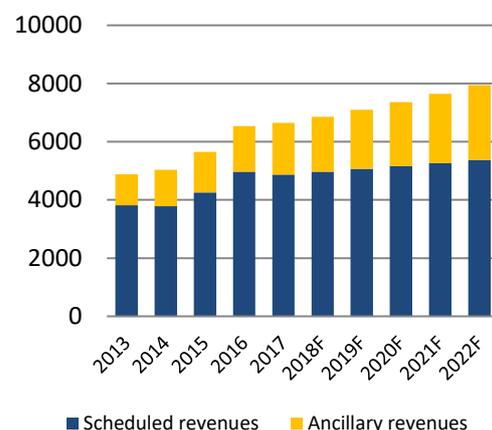
Total operating revenues are the sum of scheduled revenues and ancillary revenues (Figure 26). Ryanair as "the goal of increasing booked passenger volumes to 180M passengers/annum by March 31, 2024, an increase of 69% from the approximately 106.4M passengers booked in 2016". **Scheduled revenues** tend to grow at a lower rate than the ancillary revenues, being expected to grow at a conservative 2% from 2018F to 2022F, about 1/3 of ancillary revenues' growth in the same period. Michael O'Leary said that "the challenge for RYA in the future is to keep driving air fares down, that in the next 5 to 10 years the air fares on Ryanair will be free, in which case the flights will be full, and it will be making money out of sharing the airport revenues (of all the people who will be running through airports, and getting a share of the shopping and the retail revenues at airports)". Following this line, **ancillary revenues** will gain strength in the total operating revenues throughout the years, with a conservative 8% growth prevision between 2019 and 2022, accompanying entry into markets such as the North American and South American and also increasing its top-notch low-cost power in Europe. As RYA decided to ground 25 airplanes until March 2018, we expect only an increase of 2% and 6% in scheduled and ancillary revenues, respectively. **Fuel and Oil** is the largest cost of RYA (Figure 27), and given its expansion this cost is projected as a percentage of sales and taking in consideration an increase of 4% per year as a result of its expansion. In 2018 it will be lower than the following years as a result of RYA's flight cancellations. **Other costs** are expected to maintain its historical average, in accordance with the company's growth. **Tax expense on profit** is projected to be equal to 2017 value of 10.5%.

Balance Sheet

PPE includes aircraft, rotatable spare parts, hangars and buildings, motor vehicles, fixtures and fittings. The emergence of RYA in non-European markets where it continues to strengthen its position as a leader in low-cost companies is based on continued growth in PPE. As RYA is going to ground 25 airplanes until March 2018, we expect a decrease of 10% in this item. From a more conservative perspective, we expect annual growth of 2.5% from 2019 to 2022. **Intangible assets, Inventories, other assets, current and deferred tax, trade payables, current and non-current maturities of debt, provisions and other creditors** are projected to be equal to 2017 nominal value or to maintain its historical average weight/growth.

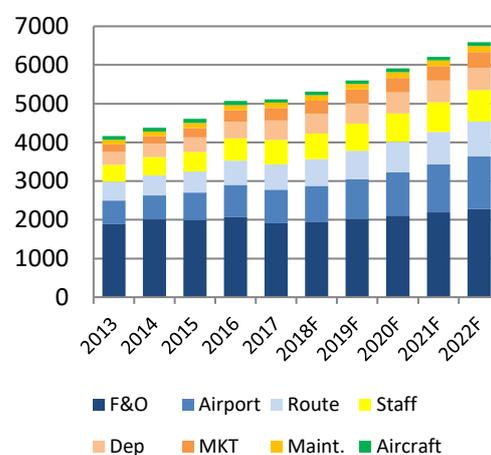
When talking about **derivative financial instruments (DFI)** Ryanair is exposed to market risks relating to fluctuations in commodity prices, interest rates and currency exchange rates. The objective of financial risk management at Ryanair is to minimize the impact of commodity price, interest rate and foreign exchange rate fluctuations on the Company's earnings, cash flows and equity. To manage these risks, Ryanair uses various DFI including interest rate swaps, foreign currency forward contracts and commodity contracts, generally held to maturity. The Company enters into these arrangements with the goal of hedging its operational and balance sheet risk but Ryanair's exposure to commodity price, interest rate and currency exchange rate

Figure 26 - Combination of total operating revenues



Source: Author

Figure 27 - Combination of total operating expenses



Source: Author

fluctuations cannot be neutralized completely. DFI have shown very disparate values over the years between each year, and it is not possible to make a satisfactory prediction. Thus, the most correct is to predict based on the value of 2017. In terms of **financial assets**, we combined two items presented in the annual report of the company: financial assets: cash > 3 months and restricted cash. Just like DFI, this item has been very inconsistent during the years, with huge increases (around 35%) followed by steep decreases (around 25%). With the continuous investment in aircraft, fuel and other, it is projected in a conservative look, resulting in a 2% increase per year.

Items in shareholder's equity follow the same logic used above. **Share premium account, other undenominated capital and other reserves** were projected to be equal to 2017 nominal value. The item **retained earnings** is used by the company to re-measurements, comprising actuarial gains and losses and the return on plan assets (excluding net interest) and are recognized immediately in the balance sheet with a corresponding debit or credit through other comprehensive income in the period in which they occur.

Cash Flow

Capital expenditures on PPE are discriminated in the company's report, with an average deliver of 20 airplanes by year until 2022, resulting in a 10% decrease each year. Due to RYA's buyback forecasts, we project a steep decrease in **shareholder's return** from 2018 to 2022.

Net cash used in financing activities totaled €671.6m. in FY2017, largely reflecting shareholder returns of €1bn. and repayments of long term borrowings of €447.1m. offset by the issuance of €750m. unsecured Eurobonds in February 2017. Net cash used in financing activities totaled €1,5bn. in the FY2016, largely reflecting shareholder returns of €1,1bn. and repayments of long term borrowings of €384.9m. **Proceeds from long term borrowings** are disclosed in the annual report and **repayments of long term borrowings** are projected to be equal to 2017 nominal value, even though the value presented in the last year is the highest since 2013, which shows a conservative look from us.

Multiples Valuation

In relative evaluation, an asset is valued based on the similarity of prices of other market assets, assuming that the market is efficient. Integrated in this definition are two steps.

First, a group of companies that are part of the same sector or industry, with similar risk levels and cash flow, is needed; Second, it is necessary to standardize the market price of a common variable, which will be the relative multiple (Damodaran 2006 and 2010).

The main reasons for the regular use of this method are the fact that it requires less information and its implementation is easy, but the ease with which the relative evaluation is used, by choosing a multiple and a group of comparable companies, may result in inconsistent value estimates, making this a complementary method to estimate more accurate, reliable and solid results.

The ratios considered to value Ryanair through market approach were the EV/EBITDA and P/E (Price to Earnings). In our opinion, these ratios allow us to perform a proper analysis of the capital framework of each company as well as of the business itself.

For the multiples valuation, which serves as a complement to the DCF valuation, we used the **Forecast Multiples** approach relative to 2018F.

In Table 9 we can see RYA's results compared to its peers.

The forward multiple EV/EBITDA realized a target price of €17.11, representing an upside potential of 4.87% from its closing price of €16.32. This multiple indicates a HOLD recommendation (Table 10).

The second forward multiple used, P/E, realized a target price of €15.38 and represents a downside potential of -5.78% from the same closing price of €16.32, with a SELL recommendation (Table 11).

The closing price used to make the assessment of the multiples was September 2017 (€16.32) and not the quotation from a date prior to recent events that affected

Table 9 - Forward multiple

	EV/EBITDA	P/E
Ryanair	10.87	16.82
easyJet	8.28	16.84
Norwegian Air	10.93	19.45
Air Berlin	6.37	15.67
Wizz Air	1.68	12.42
Average	6.81	16.10

Source: Thomson Reuters and author

Table 10 - EV/EBITDA – Target Price

	EV/EBITDA
RYA EBITDA 2018F	3,538.34 €
Average peer EV/EBITDA	6.81
RYA EV by peer estimate	24,110.26 €
Net Debt	3,800.08 €
RYA equity by peer estimate	20,310.18 €
Shares outstanding	1187.22
Target Price	17.11 €

Source: Thomson Reuters and author

Table 11 - P/E – Target Price

	P/E
RYA Profit 2018F	1,327.09 €
Average peer P/E	16.62
RYA EV by peer estimate	22,056.29 €
Net Debt	3,800.08 €
RYA equity by peer estimate	18,256.21 €
Shares outstanding	1187.22
Target Price	15.38 €

Source: Thomson Reuters and author

the company's price. At the beginning of September 2017, RYA announced that would reduce 40 to 50 flights per day for six weeks by the end of October to "improve its punctuality that fell below 80% in the first two weeks of the month. According to Reuters, if the airline cancels 40 flights a day and if those flights have a 90% occupancy rate, about 285,000 trips may be affected in the next six weeks. The drop in Ryanair's punctuality rate is mainly due to strikes, unfavorable weather conditions, employee holidays and the obligation to comply with flight rules for pilots and crews. By the end of the same month, the airline announced the extension of the cancellation of flights until March 2018 and is estimated to affect about 400,000 passengers. Between November and March, 34 routes will be suspended. Passengers affected by cancellations have the possibility to receive a full refund of the value of the trip or to opt for an alternative flight; the company promises to offer all passengers a voucher of €40 or €80 if it is a return trip that can be used between October and March on Ryanair flights. The company justifies in a statement that there will be at least 25 aircraft flying the company (out of 400 operating), resulting in changes in flights. The aim is to reduce the operation to avoid further flight cancellations, as "slower growth" allows for aircraft and alternate pilots throughout the winter period, which also facilitates holiday marking of airline crew members , guaranteeing that there will be no further cancellations. Flight delay compensations can be seen in Table 12.

We believe that not using the company's current quote would bias the results, because although the company wants to imply that it is an one-off event, the truth is that it can have quite negative consequences and have a repercussion for many months or even years.

7. Financial Analysis

Table 13 - Projected Financial Ratios

Liquidity Ratios	2016	2017	2018F	2019F	2020F	2021F	2022F
Current Ratio	1.43	1.56	1.36	1.32	1.23	1.24	1.30
Quick Ratio	1.43	1.56	1.36	1.32	1.23	1.24	1.30
Cash Ratio	1.29	1.37	1.18	1.15	1.07	1.08	1.15
Profitability Ratios	2016	2017	2018F	2019F	2020F	2021F	2022F
Net Profit Margin	23.9%	19.8%	19.4%	18.2%	17.0%	15.9%	14.7%
ROE	43.3%	29.8%	42.6%	41.8%	43.1%	39.5%	34.1%
ROCE	18.6%	17.1%	19.7%	19.0%	18.6%	17.4%	15.8%
EPS	1.16	1.05	1.12	1.15	1.17	1.19	1.20
Solvency Ratios	2016	2017	2018F	2019F	2020F	2021F	2021F
D/E Ratio	2.12	1.71	2.53	2.64	2.90	2.86	2.66
Equity Multiplier	3.12	2.71	3.53	3.64	3.90	3.86	3.66
Interest Coverage Ratio	10.58	9.52	9.52	9.52	9.52	9.52	9.52
Long-term Debt Ratio	0.38	0.38	0.43	0.43	0.43	0.42	0.41

Source: Company data, author

Overview

In 2017, despite difficult trading conditions caused by a series of security events in European cities and the sharp decline in Sterling following the Brexit referendum, Ryanair delivered a strong performance: profit after tax (+6%) to €1.32bn; traffic grew 13% to 135m as load factor rose to 94%; average fares fell 13% to €41 (Figure 28); the unit costs were cut 11% (for instance, fuel fell 5%); RYA delivered Year 3 of the AGB program and announced Year 4; launched 206 new routes and opened 10 new bases; "Ryanair.com" became the world's No. 1 airline website and over €1bn was returned to shareholders via share buybacks. As a result of the recent flight cancellations, these highlights are expected to decline.

Operating Result

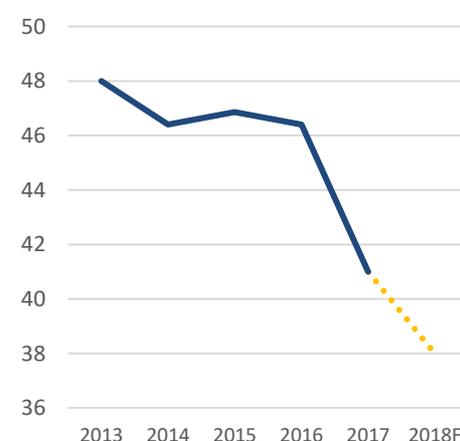
Operating profit decreased by 7% on a per passenger basis in the FY2017 but in absolute terms it increased from €1.5bn in the FY2016 to €1.5bn in the FY2017. Ryanair recorded a profit on ordinary activities after taxation of €1.3bn in the FY2017 as compared with €1.6bn in the year before, being this 16% decrease primarily attributable to the sale of the Company's 29.8% shareholding in Aer Lingus in 2016,

Table 12 - Flight delay compensation

Flight (km)	Length Of Delay	Compensation
Up to 1,500	+3 hours	€ 250
1,500-3,500	+3 hours	€ 400
Over 3,500	Between 2 EU Members & +3h	€ 400
Over 3,500	3h-4h	€ 300
Over 3,500	+4h	€ 600

Source: Company website

Figure 28 - Ryanair's average fare



Source: Company data, author

offset by a 2% increase in revenues (due to a 13% increase in traffic) and a 18% fuel saving per passenger. Excluding the one off gain in the FY2016, profit after tax increased by 6%.

Ryanair's scheduled passenger revenues decreased by 2%, from €5bn to €4,9bn in the FY2017 primarily reflecting the 13% decrease in average fare from €46.67 to €40.58 partially offset by the 13% increase in the number of passengers from 120m to 135m. Booked passenger load factors increased to 94% in FY2017, +1% when compared to the previous year (Figure 29). Passenger capacity during the FY2017 increased by 11% due to the increase in the average number of aircraft in the fleet and passenger revenues accounted for 73% of Ryanair's total revenues for the FY2017, -3% than in the FY2016.

Ancillary revenues increased by 13%, from €1,6bn to €1,8bn in 2017; revenues from non-flight scheduled operations increased by 14% to €1,5bn; revenues from in-flight sales increased by 19% to €182.0m and finally revenues from Internet-related services increased by 1% to €86.5m in the FY2017. The overall increase in ancillary revenues reflects solid performance in reserved seating, priority boarding, car hire and on-board sales offset by lower travel insurance and hotel penetration. In alignment with the aim of the company, increasing ancillary revenues and maintaining sustained scheduled revenues, it is expected that the ancillary have grown 44% by 2022F, when compared to FY2017 – Figure 30.

Ryanair's operating expenses decreased from 78% to 77% in 2017 as a percentage of sales, but total operating expenses increased by 1%, from €5bn to €5,1bn in the FY2017 principally as a result of increased costs associated with the growth of the airline. Fuel and oil expenses and aircraft rentals decreased as a percentage of total revenues, while airport and handling charges, route charges, staff costs, depreciation, marketing, distribution and other costs and maintenance, materials and repairs increased. Total operating cost per passenger decreased by 11%, reflecting principally an 18% reduction in per passenger fuel costs and non-fuel costs decreasing by 5%.

The P&L snapshot for 2018F is represented in Figure 31.

Liquidity

The Company finances its working capital requirements through a combination of cash generated from operations, debt capital market issuances and bank loans for the acquisition of aircraft. The Company had cash and liquid resources at March 31, 2017 and 2016 of €4,1bn and €4,3bn, respectively. The decrease in 2017 primarily reflects net capital expenditure of €1,4bn, shareholders returns of €1bn and debt repayments of €0.45bn, offset by the profit after tax of €1,3bn and a €0.75bn Eurobond issuance.

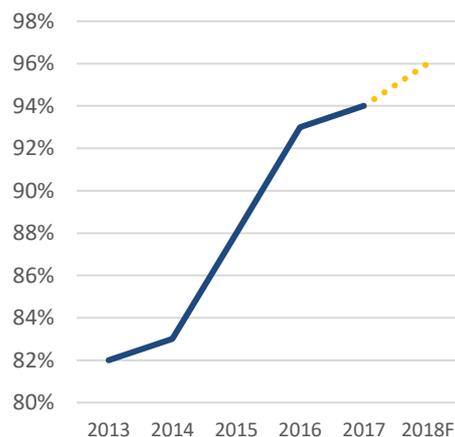
The Company's net cash inflows from operating activities in the 2017 and FY2016s amounted to €1,9bn and €1,8bn, respectively. The €80.9m increase in net cash flows from operating activities for 2017 was principally due to the increase in profit after tax of €74.3m, an increase in trade payables and a smaller increase in accrued expenses, offset by an increase in other assets. The movement, which primarily relates to cash received in advance for flights, receipts for other receivables and increases in other payables balances, generated €113.1m in cash in FY2017 compared with €135.6m in cash in FY2016.

Dividend Policy and Share Buy-back Program

Since its incorporation as the holding company for Ryanair in 1996, Ryanair Holdings has only occasionally declared special dividends on both its Ordinary Shares and ADRs, with the last occasions occurring in 2012 and 2015.

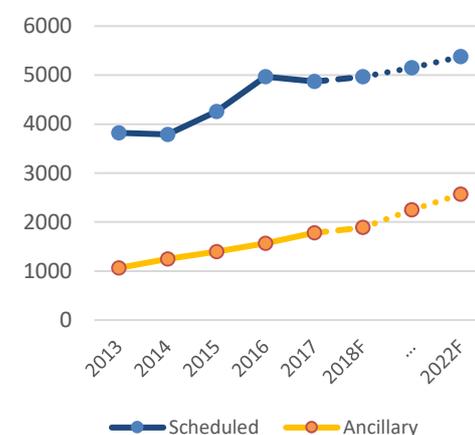
The company repurchased Ordinary Shares every year from 2014 to 2017, when the Company bought back 36.4m shares at a total cost of approximately €550m during the period November 2016 to February 2017. Recently, in May 2017 the Company announced the commencement of an Ordinary Share buyback of up to €600m in the five-month period to end October 2017. As of July 20, 2017 the Company had bought back approximately 14.2m shares at a cost of €260m under this program during FY2018. All Ordinary Shares repurchased have been cancelled.

Figure 29 - Passenger Load Factor



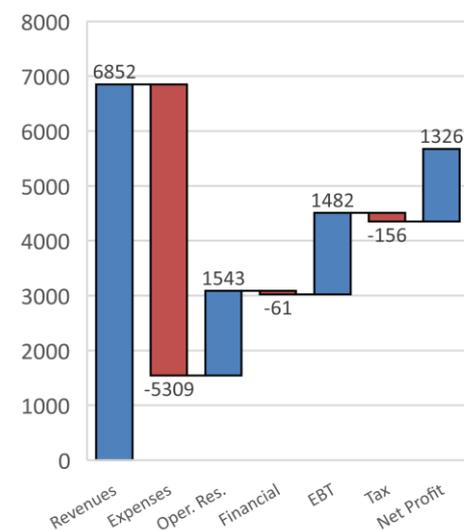
Source: Company data, author

Figure 30 - Ancillary revenues forecast



Source: Author

Figure 31 - P&L 2018F (000,000)



Source: Author

8. Investment Risks

Safety Risk | Accidents and Terrorism (SR1)

According to the Aviation Safety Network (ASN), in 2016 there were 325 aviation accidents, of which only 19 registered fatalities, being the most known the crash of Chapecoense's plane. This result makes 2016 the second safest year in the history of commercial aviation, leaving behind 2015 with 5 more accidents, all of this in a universe of more than 120,000 flights a day around the world.

Since 1933 there have been only seven terrorist attacks in the air, with 9/11 being the most remembered attack on the Twin Towers. Any prolonged general reduction in airline passenger traffic could have a material adverse effect on the Company's profitability or financial condition, as well as any significant increase in expenses related to security, insurance or related costs. As a consequence, future terrorist attacks in Europe, the U.S. or elsewhere, any significant military actions by the United States or EU nations, or any related economic downturn may have a material adverse effect on demand for air travel and thus on Ryanair's business, operating results, and financial condition. We can conclude that the likelihood of an accident due to a terrorist attack is low, even more so with the security measures that have been increasingly implemented given the ISIS threats.

Economic & Market Risk | GDP Growth (EMR1)

Ryanair's operations and the airline industry in general are sensitive to changes in economic conditions. Unfavorable economic conditions such as government austerity measures, the uncertainty relating to the Eurozone and in the U.K. following Brexit, high unemployment rates, constrained credit markets and increased business operating costs could lead to reduced spending by both leisure and business passengers. These tend to impact Ryanair's ability to raise fares to counteract increased fuel and other operating costs. A continued recessionary environment, combined with austerity measures by European governments and the Brexit can negatively impact Ryanair's operating results. It can also restrict the Company's ability to grow passenger volumes, secure new airports and launch new routes and bases, and have a material adverse impact on its financial results.

Economic & Market Risk | Interest Rate Risk (EMR2)

The constant investment in the fleet through bank loans that RYA makes with Import-Export Bank causes it to be exposed to higher interest rates. Nevertheless, given the large hedging policy that the company does and the projected D / E ratio decrease, this risk is likely to have a low probability of occurrence.

Economic & Market Risk | Exchange Rate Risks (EMR3)

Currently RYA only sells tickets to Europe. However, with the announced exploration of the American continent and the fact that the fuel is purchased outside Europe, the company is exposed to the risk of unfavorable exchange rates, which have a considerable impact on the company's accounts. Still, there is no great probability of this risk occurring, given the hedging policy.

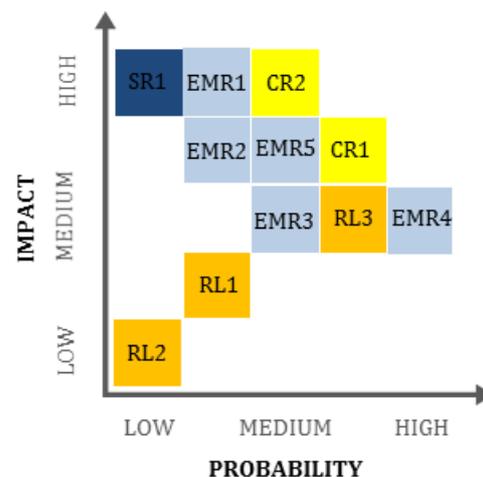
Economic & Market Risk | Brexit (EMR4)

As mentioned before, Brexit and the resulting uncertainty could adversely affect Ryanair's business. However, as RYA is based in Dublin, will therefore remain an EU company even once Brexit is done and dusted, not having any problems with its flights between EU states, but the UK is an important market and so it will be hoping for the existing regulations to be replicated to ensure barrier-free flying between Britain and the EU.

Economic & Market Risk | Fuel Price Risk (EMR5)

Jet fuel costs are subject to wide fluctuations as a result of many economic and political factors and events occurring throughout the world that Ryanair can neither control nor accurately predict, including increases in demand, sudden disruptions in supply and other concerns about global supply, as well as market speculation. While oil prices increased substantially in FY2012, FY2013 and FY2014, they declined significantly in the second half of FY2015 and in FY2016 remained at lower levels.

Figure 32 - Risk Matrix



Source: Author

Like any airline, RYA is very sensitive to the price of fuel, especially when oil costs account for 41% of its total costs. Its hedging policy greatly minimizes the probability of occurrence.

Regulatory & Legal Risk | Passenger Compensations (RL1)

EU Regulation requires airlines to compensate passengers who have been denied boarding or whose flight has been cancelled or delayed more than 3 hours on arrival. As Ryanair's average flight length is less than 1,500 km – the upper limit for short-haul flights – the amount payable is generally €250 per passenger. Passengers subject to flight delays over two hours are also entitled to "assistance," including meals, drinks and telephone calls, as well as hotel accommodation if the delay extends overnight. For delays of over five hours, the airline is also required to offer the option of a refund of the cost of the unused ticket. There can be no assurance that the Company will not incur a significant increase in costs in the future due to the impact of this regulation if Ryanair experiences a large number of delays or cancelled flights, which could occur as a result of certain types of events beyond its control.

Regulatory & Legal Risk | Emissions Trading and Noise Legislation (RL2)

In 2008 the European Council of Ministers adopted legislation to add aviation to the EU Emissions Trading Scheme (ETS) as of 2012 in order to encourage industries to improve their CO₂ efficiency. Ryanair takes its environmental responsibilities seriously and intends to continue to improve its environmental efficiency and to minimize emissions, being obliged to state its annual quantity of emissions in tons of carbon dioxide equivalent, under the Regulation 7 of The UK Companies Act 2006. It is unlikely to be penalized for non-compliance with this legislation, although the impact of these emissions is huge. RYA's commitment to reduce emissions and noise goes from investments in next generation aircraft and engine technologies to the implementation of certain operational and commercial decisions to minimize the environmental impact of its operations. According to the Air Travel Carbon and Energy Efficiency Report, RYA is the industry leader in terms of environmental efficiency, being unlikely to be penalized for non-compliance with this legislation.

Regulatory & Legal Risk | Government Taxes on Travel (RL3)

The U.K. government levies an Air Passenger Duty ("APD") of £13 per passenger. The increase in this tax has had a negative impact on Ryanair's operating performance, both in terms of average fares paid and growth in passenger volumes. The introduction of government taxes on travel has had a negative impact on passenger volumes, particularly given the current period of decreased economic activity. The introduction of further government taxes on travel across Europe could have a material negative impact on Ryanair's results.

Corporate Risk | Investment grade Rating (CR1)

With a BBB + rating, Ryanair has ADEQUATE capacity to meet its financial commitments. However, economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments. Having a good investment rating is essential for the company to obtain financing and access to hedging instruments. Losing this rating has a medium probability, resulting in medium impacts.

Corporate Risk | Recruitment (CR2)

Low-cost carriers such as RYA do a superior job in training new pilots into their first airline job, training far more than most other airlines, but the task for Ryanair is never ending, as many pilots will leave after three years when they have gained enough experience. Pilots tend to move on to airlines which give them better pay or working conditions, or offer a more suiting lifestyle such as long-haul flying or different home bases. RYA has lost 140 pilots to competitor Norwegian Air this year alone, showing this is a spiral which is hard for an airline to get out of when things get tough. It is a problem clearly forecast but often ignored, resulting in the need for airlines to apply quick and costly solutions.

Price Target

To calculate the impact of the main investment risks on the price target, we calculated a **sensitivity analysis** and a **Monte Carlo (MC)** simulation (Figure 33).

These risks are essential for the assessment and some differ from the investment risks mentioned above. We focused on the study of the impact of an airline's major costs and the impact of the change on some WACC rate variables.

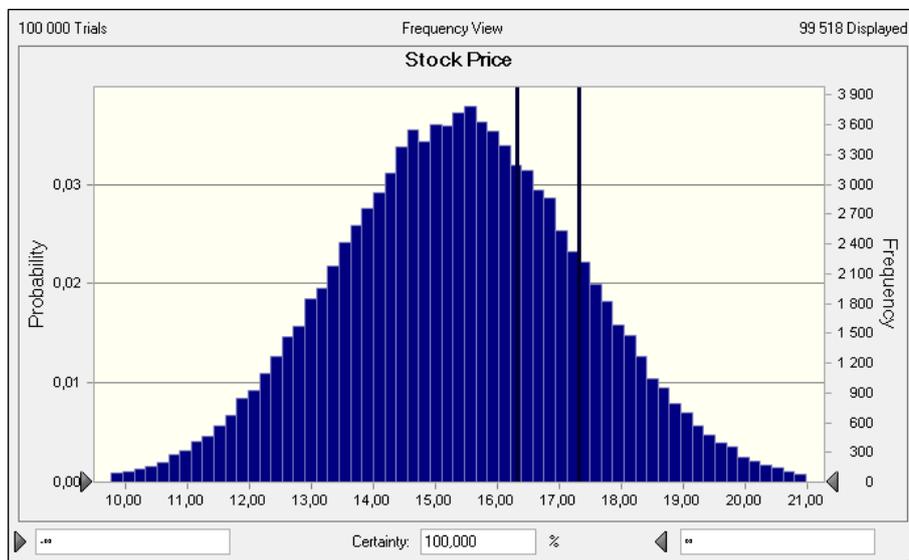
Monte Carlo

A total of 100,000 trials were covered when computing the MC simulation in the Crystal Ball software. We focus on testing the WACC and the terminal growth rate that in our opinion will have a major impact on RYA's target price.

The average price target for the Monte Carlo simulation is €15.37, representing an increase potential of 12.62%, close to the price target calculated by the DCF valuation of €17.31.

The first bar represents the closing price of €16.32 and the second bar represents the target price of €17.31 by the end of FY2018.

Figure 33 - Monte Carlo simulation



Source: Author

Sensitivity Analysis

In terms of sensitivity analysis we also tested for some WACC variables, such as country risk premium, beta and terminal growth rate – Figure 34.

Table 14 - Sensitivity analysis resume

Sensitivity Analysis for RYA Valuation			
Variable	Low estimate	Base case	High estimate
Terminal Growth	0.41%	0.80%	1.38%
Price (Euro)	15.98	17.37	19.94
Country Risk premium	0.40%	0.79%	1.37%
Price (Euro)	17.38	17.37	17.37
Beta	0.69	1.35	2.33
Price (Euro)	17.41	17.37	17.32
WACC	2.82%	5.50%	9.50%
Price (Euro)	40.44	17.37	9.40

Further details on the sensitivity analysis can be seen in Appendix 11.

Appendices

Appendix 1: Statement of Financial Position

<i>BS as at March 31 (€M)</i>	2016	2017	2018F	2019F	2020F	2021F	2022F
Non-Current Assets							
<i>PPE</i>	6,261.5	7,213.8	6,492.4	6,654.7	6,821.1	6,991.6	7,166.4
<i>Intangible assets</i>	46.8	46.8	46.8	46.8	46.8	46.8	46.8
<i>AFS financial assets</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>DFI</i>	88.5	23.0	134.3	134.3	134.3	134.3	134.3
Total Non-Current Assets	6,396.8	7,283.6	6,673.5	6,835.8	7,002.2	7,172.7	7,347.5
Current Assets							
<i>Inventories</i>	3.3	3.1	3.4	3.6	3.7	3.8	4.0
<i>Other assets</i>	148.5	222.1	228.8	235.6	242.7	250.0	257.5
<i>Current tax</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Trade receivables</i>	66.1	54.3	57.0	59.9	62.9	66.0	69.3
<i>DFI</i>	269.1	286.3	278.9	278.9	278.9	278.9	278.9
<i>Financial assets</i>	3,075.3	2,916.3	2,974.6	3,034.1	3,094.8	3,156.7	3,219.8
<i>Cash & equivalents</i>	1,259.2	1,224.0	787.9	812.5	685.7	900.6	1,314.1
Total Current Assets	4,821.5	4,706.1	4,330.7	4,424.6	4,368.6	4,656.0	5,143.6
Total Assets	11,218.3	11,989.7	11,004.2	11,260.5	11,370.8	11,828.8	12,491.1
Current Liabilities							
<i>Trade payables</i>	230.6	294.1	308.8	324.2	340.5	357.5	375.4
<i>Accrued expenses & other liab.</i>	2,112.7	2,257.2	2,370.1	2,488.6	2,613.0	2,743.6	2,880.8
<i>Current maturities of debt</i>	449.9	455.9	496.0	539.6	587.0	638.6	694.7
<i>Current tax</i>	20.9	2.9	2.9	2.9	2.9	2.9	2.9
<i>DFI</i>	555.4	1.7	1.7	1.7	1.7	1.7	1.7
Total Current Liabilities	3,369.5	3,011.8	3,179.4	3,357.0	3,545.1	3,744.3	3,955.5
Non-Current Liabilities							
<i>Provisions</i>	149.3	138.2	138.2	138.2	138.2	138.2	138.2
<i>DFI</i>	111.6	2.6	56.2	56.2	56.2	56.2	56.2
<i>Deferred tax</i>	385.5	473.1	473.1	473.1	473.1	473.1	473.1
<i>Other creditors</i>	32.5	12.4	12.4	12.4	12.4	12.4	12.4
<i>Non-current maturities of debt</i>	3,573.1	3,928.6	4,026.8	4,127.5	4,230.7	4,336.4	4,444.9
Total Non-Current Liabilities	4,252.0	4,554.9	4,706.7	4,807.4	4,910.6	5,016.3	5,124.7
Total Liabilities	7,621.5	7,566.7	7,886.1	8,164.3	8,455.6	8,760.6	9,080.3
Shareholders' equity							
<i>Issued share capital</i>	7.7	7.3	7.3	7.3	7.3	7.3	7.3
<i>Share premium account</i>	719.4	719.4	719.4	719.4	719.4	719.4	719.4
<i>Other undenominated capital</i>	2.3	2.7	2.7	2.7	2.7	2.7	2.7
<i>Retained earnings</i>	3,166.1	3,456.8	2,151.8	2,129.9	1,949.0	2,101.9	2,444.7
<i>Other reserves</i>	-298.7	236.8	236.8	236.8	236.8	236.8	236.8
Total shareholders' equity	3,596.8	4,423.0	3,118.0	3,096.1	2,915.2	3,068.1	3,410.9
Liabilities + Shareholders' equity	11,218.3	11,989.7	11,004.2	11,260.5	11,370.8	11,828.8	12,491.1

Appendix 2: Income Statement

<i>IS as at March 31 (€M)</i>	2016	2017	2018F	2019F	2020F	2021F	2022F
Operating revenues							
<i>Scheduled revenues</i>	4,967.2	4,868.2	4,965.6	5,064.9	5,166.2	5,269.5	5,374.9
<i>Ancillary revenues</i>	1,568.6	1,779.6	1,886.4	2,037.3	2,200.3	2,376.3	2,566.4
Total operating revenues	6,535.8	6,647.8	6,851.9	7,102.2	7,366.4	7,645.8	7,941.3
Operating expenses							
<i>Fuel and oil</i>	-2,071.4	-1,913.4	-1,951.7	-2,029.7	-2,110.9	-2,195.4	-2,283.2
<i>Airport and handling charges</i>	-830.6	-864.8	-925.3	-1,017.9	-1,119.7	-1,231.6	-1,354.8
<i>Route charges</i>	-622.9	-655.7	-688.5	-736.7	-788.2	-843.4	-902.5
<i>Staff costs</i>	-585.4	-633.0	-664.7	-697.9	-732.8	-769.4	-807.9
<i>Depreciation</i>	-427.3	-497.5	-512.4	-527.8	-543.6	-559.9	-576.7
<i>Marketing, distribution and other</i>	-292.7	-322.3	-338.4	-355.3	-373.1	-391.8	-411.3
<i>Maintenance, materials and repairs</i>	-130.3	-141.0	-140.0	-143.2	-146.5	-149.9	-153.3
<i>Aircraft rentals</i>	-115.1	-86.1	-87.8	-91.3	-95.0	-98.8	-102.7
Total operating expenses	-5,075.7	-5,113.8	-5,308.8	-5,599.9	-5,909.9	-6,240.2	-6,592.5
Operating profit	1,460.1	1,534.0	1,543.1	1,502.3	1,456.6	1,405.6	1,348.8
Other income/expense							
<i>Gain on disposal of AFS asset</i>	317.5	0.0	0.0	0.0	0.0	0.0	1.0
<i>Finance expense</i>	-71.1	-67.2	-63.8	-60.6	-57.6	-54.7	-52.0
<i>Finance income</i>	17.9	4.2	4.2	4.2	4.2	4.2	4.2
<i>Foreign exchange</i>	-2.5	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Total other income/expense	261.8	-63.7	-60.3	-57.1	-54.1	-51.2	-47.5
Profit before tax	1,721.9	1,470.3	1,482.8	1,445.1	1,402.5	1,354.3	1,301.3
<i>Tax expense on profit</i>	-162.8	-154.4	-155.7	-151.7	-147.3	-142.2	-136.6
Profit for the year	1,559.1	1,315.9	1,327.1	1,293.4	1,255.2	1,212.1	1,164.7
<i>Basic earnings per ordinary share</i>	116.3	105.3	106.2	103.5	100.4	97.0	93.2
<i>Diluted earnings per ordinary share</i>	115.6	104.6	106.0	103.3	100.2	96.8	93.0
<i>Number of ordinary shares (in Ms)</i>	1,341.0	1,249.7	1,187.2	1,127.9	1,071.5	1,017.9	967.0
<i>Number of diluted shares (in Ms)</i>	1,348.4	1,257.5	1,190.8	1,131.2	1,074.7	1,021.0	969.9

Appendix 3: Cash Flow Statement

CF as at 31 March (€M)	2016	2017	2018F	2019F	2020F	2021F	2022F
Operating activities							
Profit after tax	1,559.1 €	1,315.9 €	1,327.1 €	1,293.4 €	1,255.2 €	1,212.1 €	1,164.7 €
Depreciation	427.3 €	497.5 €	512.4 €	527.8 €	543.6 €	559.9 €	576.7 €
Retirement costs	0.2 €	0.2 €	0.2 €	0.2 €	0.2 €	0.2 €	0.2 €
Tax expense on profit	162.8 €	154.4 €	155.7 €	151.7 €	147.3 €	142.2 €	136.6 €
Share-based payments charge	5.9 €	5.7 €	5.7 €	5.7 €	5.7 €	5.7 €	5.7 €
(Increase)/decrease in inventories	- 1.2 €	0.2 €	- 0.3 €	- 0.1 €	- 0.1 €	- 0.1 €	- 0.1 €
(Increase)/decrease in trade receivables	- 6.0 €	11.8 €	- 2.7 €	- 2.9 €	- 3.0 €	- 3.1 €	- 3.3 €
(Increase)/decrease in other current assets	- 11.2 €	- 73.6 €	- 6.7 €	- 6.9 €	- 7.1 €	- 7.3 €	- 7.5 €
Increase in trade payables	34.1 €	63.5 €	14.7 €	15.4 €	16.2 €	17.0 €	17.9 €
Increase in accrued expenses	175.0 €	144.5 €	112.9 €	118.5 €	124.4 €	130.6 €	137.2 €
(Decrease) in other creditors	- 23.3 €	- 20.1 €	- €	- €	- €	- €	- €
(Decrease)/increase in provisions	- 31.8 €	- 11.1 €	- €	- €	- €	- €	- €
Gain on disposal of AFS assets	- 317.5 €	- €	- €	- €	- €	- €	- €
Decrease/(increase) in finance income	1.4 €	2.4 €	- €	- €	- €	- €	- €
(Decrease)/increase in finance expense	- 1.0 €	- 0.2 €	- 3.4 €	- 3.2 €	- 3.0 €	- 2.9 €	- 2.7 €
Income tax paid	- 127.5 €	- 161.6 €	- 132.7 €	- 129.3 €	- 125.5 €	- 121.2 €	- 116.5 €
Net cash provided by operating activities	1,846.3 €	1,929.5 €	1,982.9 €	1,970.4 €	1,953.9 €	1,933.2 €	1,908.8 €
Investing activities							
Capital expenditures (PPE)	- 1,217.7 €	- 1,449.8 €	- 1,304.8 €	- 1,174.3 €	- 1,056.9 €	- 951.2 €	- 856.1 €
Disposal of AFS asset	398.1 €	- €	- €	- €	- €	- €	- €
Decrease/(increase) in financial assets	542.3 €	159.0 €	- 58.3 €	- 59.5 €	- 60.7 €	- 61.9 €	- 63.1 €
Net cash (used in)/provided by investing activities	- 277.3 €	-1,290.8 €	-1,363.1 €	-1,233.8 €	-1,117.6 €	- 1,013.1 €	- 919.2 €
Financing activities							
Shareholder returns	- 1,104.0 €	- 1,017.9 €	- 610.7 €	- 794.0 €	- 516.1 €	- 258.0 €	- 129.0 €
Net proceeds from shares issued	0.8 €	- €	- €	- €	- €	- €	- €
Dividend paid	- €	- €	- €	- €	- €	- €	- €
Proceeds from long term borrowings	- €	793.4 €	- €	529.1 €	- €	- €	- €
Repayments of long term borrowings	- 384.9 €	- 447.1 €	- 447.1 €	- 447.1 €	- 447.1 €	- 447.1 €	- 447.1 €
Net cash (used in)/provided by financing activities	-1,488.1 €	- 671.6 €	-1,057.8 €	- 712.0 €	- 963.2 €	- 705.1 €	- 576.1 €
Increase/(decrease) in cash and cash equivalents	80.9 €	- 32.9 €	- 438.1 €	24.6 €	- 126.9 €	215.0 €	413.5 €
Cash and equivalents at beginning of year	1,178.0 €	1,258.9 €	1,226.0 €	787.9 €	812.5 €	685.7 €	900.6 €
Cash and equivalents at end of year	1,258.9 €	1,226.0 €	787.9 €	812.5 €	685.7 €	900.6 €	1,314.1 €

Appendix 4: Key Financial Ratios

4-1: Ratios

Liquidity Ratios	2016	2017	2018F	2019F	2020F	2021F	2022F
Current Ratio	1.43	1.56	1.36	1.32	1.23	1.24	1.30
Quick Ratio	1.43	1.56	1.36	1.32	1.23	1.24	1.30
Cash Ratio	1.29	1.37	1.18	1.15	1.07	1.08	1.15

Profitability Ratios	2016	2017	2018F	2019F	2020F	2021F	2022F
Net Profit Margin	23.9%	19.8%	19.4%	18.2%	17.0%	15.9%	14.7%
ROE	43.3%	29.8%	42.6%	41.8%	43.1%	39.5%	34.1%
ROCE	18.6%	17.1%	19.7%	19.0%	18.6%	17.4%	15.8%
EPS	1.16	1.05	1.12	1.15	1.17	1.19	1.20

Solvency Ratios	2016	2017	2018F	2019F	2020F	2021F	2021F
D/E Ratio	2.12	1.71	2.53	2.64	2.90	2.86	2.66
Equity Multiplier	3.12	2.71	3.53	3.64	3.90	3.86	3.66
Interest Coverage Ratio	10.58	9.52	9.52	9.52	9.52	9.52	9.52
Long-term Debt Ratio	0.38	0.38	0.43	0.43	0.43	0.42	0.41

4-2: Legend

Current Ratio: company's ability to pay short-term and long-term obligations.

Quick Ratio: company's ability to meet its short-term obligations with its most liquid assets.

Cash Ratio: company's ability to repay its short-term debt.

Net Profit Margin: how much of each dollar collected by a company as revenue translates into profit.

ROE: measures how much the shareholders earned for their investment in the company.

ROA: how efficient management is at using its assets to generate earnings.

ROCE: measures the efficiency with which its capital is employed.

EPS: portion of a company's profit allocated to each outstanding share of common stock.

D/E: measure a company's financial leverage, calculated by dividing a company's total liabilities by its stockholders' equity.

Equity Multiplier: calculated by dividing a company's total asset value by total net equity, and it measures financial leverage.

Interest Coverage Ratio: used to determine how easily a company can pay interest on outstanding debt.

Long-term Debt Ratio: provides a general measure of the long-term financial position of a company, including its ability to meet financial requirements for outstanding loans.

Appendix 5: Common-size of Financial Position

5-1: Income Statement

<i>Income Statement, at March 31</i>	2016	2017F	2018F	2019F	2020F	2021F	2022F
<i>Operating revenues</i>							
<i>Scheduled revenues</i>	76.00%	73.23%	72.47%	71.31%	70.13%	68.92%	67.68%
<i>Ancillary revenues</i>	24.00%	26.77%	27.53%	28.69%	29.87%	31.08%	32.32%
<i>Total operating revenues</i>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<i>Operating expenses</i>							
<i>Fuel and oil</i>	31.69%	28.78%	28.48%	28.58%	28.66%	28.71%	28.75%
<i>Airport and handling charges</i>	12.71%	13.01%	13.50%	14.33%	15.20%	16.11%	17.06%
<i>Route charges</i>	9.53%	9.86%	10.05%	10.37%	10.70%	11.03%	11.36%
<i>Staff costs</i>	8.96%	9.52%	9.70%	9.83%	9.95%	10.06%	10.17%
<i>Depreciation</i>	6.54%	7.48%	7.48%	7.43%	7.38%	7.32%	7.26%
<i>Marketing, distribution and other</i>	4.48%	4.85%	4.94%	5.00%	5.06%	5.12%	5.18%
<i>Maintenance, materials and repairs</i>	1.99%	2.12%	2.04%	2.02%	1.99%	1.96%	1.93%
<i>Aircraft rentals</i>	1.76%	1.30%	1.28%	1.29%	1.29%	1.29%	1.29%
<i>Total operating expenses</i>	77.66%	76.92%	77.48%	78.85%	80.23%	81.62%	83.02%
<i>Operating profit (continuing operations)</i>	22.34%	23.08%	22.52%	21.15%	19.77%	18.38%	16.98%
<i>Other income/expense</i>							
<i>Gain on disposal of AFS financial asset</i>	4.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
<i>Finance expense</i>	-1.09%	-1.01%	-0.93%	-0.85%	-0.78%	-0.72%	-0.65%
<i>Finance income</i>	0.27%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%
<i>Foreign exchange</i>	-0.04%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
<i>Total other income/expense</i>	4.01%	-0.96%	-0.88%	-0.80%	-0.73%	-0.67%	-0.60%
<i>Profit before tax</i>	26.35%	22.12%	21.64%	20.35%	19.04%	17.71%	16.39%
<i>Tax expense on profit</i>	-2.49%	-2.32%	-2.27%	-2.14%	-2.00%	-1.86%	-1.72%
<i>Profit for the year</i>	23.85%	19.79%	19.37%	18.21%	17.04%	15.85%	14.67%

5-2: Balance Sheet

<i>Balance Sheet as at March 31</i>	2016	2017	2018F	2019F	2020F	2021F	2022F
<i>Non-Current Assets</i>							
<i>PPE</i>	55.82%	60.17%	59.00%	59.10%	59.99%	59.11%	57.37%
<i>Intangible assets</i>	0.42%	0.39%	0.43%	0.42%	0.41%	0.40%	0.37%
<i>AFS financial assets</i>	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<i>DFI</i>	0.79%	0.19%	1.22%	1.19%	1.18%	1.14%	1.08%
<i>Total non-current assets</i>	57.02%	60.75%	60.65%	60.71%	61.58%	60.64%	58.82%
<i>Current assets</i>							
<i>Inventories</i>	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
<i>Other assets</i>	1.32%	1.85%	2.08%	2.09%	2.13%	2.11%	2.06%
<i>Current tax</i>	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<i>Trade receivables</i>	0.59%	0.45%	0.52%	0.53%	0.55%	0.56%	0.55%
<i>DFI</i>	2.40%	2.39%	2.53%	2.48%	2.45%	2.36%	2.23%
<i>Financial assets</i>	27.41%	24.32%	27.03%	26.94%	27.22%	26.69%	25.78%
<i>Cash & equivalents</i>	11.22%	10.21%	7.16%	7.22%	6.03%	7.61%	10.52%
<i>Total current assets</i>	42.98%	39.25%	39.35%	39.29%	38.42%	39.36%	41.18%
<i>Total Assets</i>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Balance Sheet as at March 31	2016	2017	2018F	2019F	2020F	2021F	2022F
Current Liabilities							
Trade payables	2.06%	2.45%	2.81%	2.88%	2.99%	3.02%	3.00%
Accrued expenses & other liabilities	18.83%	18.83%	21.54%	22.10%	22.98%	23.19%	23.06%
Current maturities of debt	4.01%	3.80%	4.51%	4.79%	5.16%	5.40%	5.56%
Current tax	0.19%	0.02%	0.03%	0.03%	0.03%	0.02%	0.02%
DFI	4.95%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%
Total current liabilities	30.04%	25.12%	28.89%	29.81%	31.18%	31.65%	31.67%
Non-current liabilities							
Provisions	1.33%	1.15%	1.26%	1.23%	1.22%	1.17%	1.11%
DFI	0.99%	0.02%	0.51%	0.50%	0.49%	0.47%	0.45%
Deferred tax	3.44%	3.95%	4.30%	4.20%	4.16%	4.00%	3.79%
Other creditors	0.29%	0.10%	0.11%	0.11%	0.11%	0.10%	0.10%
Non-current maturities of debt	31.85%	32.77%	36.59%	36.65%	37.21%	36.66%	35.58%
Total non-current liabilities	37.90%	37.99%	42.77%	42.69%	43.19%	42.41%	41.03%
Total Liabilities	67.94%	63.11%	71.66%	72.50%	74.36%	74.06%	72.69%
Shareholders' equity							
Issued share capital	0.07%	0.06%	0.07%	0.06%	0.06%	0.06%	0.06%
Share premium account	6.41%	6.00%	6.54%	6.39%	6.33%	6.08%	5.76%
Other undenominated capital	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Retained earnings	28.22%	28.83%	19.55%	18.91%	17.14%	17.77%	19.57%
Other reserves	-2.66%	1.98%	2.15%	2.10%	2.08%	2.00%	1.90%
Total shareholders' equity	32.06%	36.89%	28.34%	27.50%	25.64%	25.94%	27.31%
Liabilities + Shareholders' equity	100.00%						

Appendix 6: Forecasting Assumptions

5-1: Income Statement

Consolidated Income Statement	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
Inflation rate	1.30%	1.50%	1.60%	1.70%	1.80%	Based on IMF World Economic Outlook
Scheduled revenues	2.00%	2.00%	2.00%	2.00%	2.00%	Ryanair as "the goal of increasing booked passenger volumes to 180M passengers/annum by March 31, 2024, an increase of 69% from the approximately 106.4M passengers booked in 2016". Scheduled revenues tend to grow at a lower rate than the ancillary revenues, being expected to grow at a conservative 2% rate from 2018 to 2022, about 1/3 of ancillary revenues' growth in the same period. Michael O'Leary said that "the challenge for RYA in the future is to keep driving air fares down, that in the next 5 to 10 years the air fares on Ryanair will be free, in which case the flights will be full, and it will be making money out of sharing the airport

Consolidated Income Statement	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
<i>Ancillary revenues</i>	6.00%	8.00%	8.00%	8.00%	8.00%	revenues (of all the people who will be running through airports, and getting a share of the shopping and the retail revenues at airports)". Following this line, ancillary revenues will gain strength in the total operating revenues, throughout the years, with a conservative 8% growth prevision between 2019 and 2022, accompanying entry into markets such as the North American and South American and also increasing its top-notch low-cost power in Europe. As RYA decided to ground 25 airplanes until March 2018, we expect only an increase of 2% and 6% in scheduled and ancillary revenues, respectively.
<i>Fuel and oil</i>	2.00%	4.00%	4.00%	4.00%	4.00%	Projected as a percentage of sales and taking in consideration an increase of 4% per year as a result of the RYA's expansion. In 2018 it will be lower than the following years as a result of RYA's flight cancellations.
<i>Airport and handling charges</i>	7.00%	10.00%	10.00%	10.00%	10.00%	Projected based on a 5 year historical average of its growth rate. The expansion that the company aims will increase its costs. In 2018 it will be lower than the following years as a result of RYA's flight cancellations.
<i>Route charges</i>	5.00%	7.00%	7.00%	7.00%	7.00%	Projected based on a 5 year historical average of its growth rate. In 2018 it will be lower than the following years as a result of RYA's flight cancellations.
<i>Staff costs</i>	5.00%	5.00%	5.00%	5.00%	5.00%	Projected based on a 5 year historical average as a percentage of sales.
<i>Depreciation</i>	3.00%	3.00%	3.00%	3.00%	3.00%	Projected based on a 2017 growth rate and taking into account the aircraft acquired in the following years.
<i>Marketing, distribution and other</i>	5.00%	5.00%	5.00%	5.00%	5.00%	Projected based on a 5 year historical average of its growth rate, as a result of the AGB customer experience program implementation.
<i>Maintenance, materials and repairs</i>	-0.70%	2.30%	2.30%	2.30%	2.30%	Projected based on a 5 year historical average as a percentage of sales and accompanying the fleet expansion. In 2018 it will be lower than the following years as a result of RYA's flight cancellations.
<i>Aircraft rentals</i>	2.00%	4.00%	4.00%	4.00%	4.00%	Projected based on a 5 year historical average of its growth rate. In 2018 it will be lower than the following years as a result of RYA's flight cancellations.
<i>Gain on disposal of AFS financial asset</i>	0.00%	0.00%	0.00%	0.00%	0.00%	In September 2015, Ryanair's Board accepted the IAG Group offer of €398m for Ryanair's 29,8% shareholding in Aer Lingus, that was recognized in FY2016. Ryanair has no longer any percentage on Aer Lingus.
<i>Finance expense</i>	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	Ryanair has agreed to purchase 183 new Boeing 737-800 aircraft from FY2015 to FY2019, with delivery beginning in September 2014 (2013 Boeing Contract) and representing a 5% decrease per year. It will also purchase 200 new Boeing 737-MAX-200 aircraft from FY2020 to FY2024, with delivery beginning in August 2019 (2014 Boeing Contract).
<i>Finance income</i>	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
<i>Foreign exchange</i>	0.00%	0.00%	0.00%	0.00%	0.00%	With Brexit, the pound devalued, and so did the euro. As the company enters from time to time into cross-currency interest rate swaps to hedge against fluctuations in foreign exchange rates and interest rates in respect of U.S. dollar denominated borrowings, and it will offset the devaluation caused by Brexit. Projected to be equal to 2017 nominal value.

Consolidated Income Statement	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
<i>Tax expense on profit on ordinary activities</i>	10.50%	10.50%	10.50%	10.50%	10.50%	The effective tax rate for the FY2017 was 10.5%, as compared to an effective tax rate of 11.6% in FY2016 and 11.8% in FY2015.

5-2: Balance Sheet

Consolidates Balance Sheet	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
Inflation rate	1.30%	1.50%	1.60%	1.70%	1.80%	<i>Based on IMF World Economic Outlook</i>
<i>PPE</i>	-10.00%	2.50%	2.50%	2.50%	2.50%	This item includes aircraft, rotatable spare parts, hangars and buildings, motor vehicles, fixtures and fittings. The emergence of RYA in non-European markets where it continues to strengthen its position as a leader in low-cost companies is based on continued growth in PPE. As RYA is going to ground 25 airplanes until March 2018, we expect a decrease of 10% in this item. From a more conservative perspective, we expect annual growth of 2.5% from 2019 to 2022.
<i>Intangible assets</i>	0.00%	0.00%	0.00%	0.00%	0.00%	This comprises the landing rights acquired as part of a business combination. Projected to be equal to 2017 nominal value.
<i>AFS financial assets</i>	0.00%	0.00%	0.00%	0.00%	0.00%	In September 2015, Ryanair's Board accepted the IAG Group offer of €398m for Ryanair's 29.8% shareholding in Aer Lingus, that was recognized in FY2016. Ryanair has no longer any percentage on Aer Lingus.
<i>DFI</i>	0.00%	0.00%	0.00%	0.00%	0.00%	Projected based on a 5 year historical average (€134.3M).
<i>Inventories</i>	0.05%	0.05%	0.05%	0.05%	0.05%	Projected based on a 5 year historical average as a percentage of revenues.
<i>Other assets</i>	3.00%	3.00%	3.00%	3.00%	3.00%	Projected based on a 5 year historical average of its growth rate per year.
<i>Current tax</i>	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
<i>Trade receivables</i>	5.00%	5.00%	5.00%	5.00%	5.00%	Projected based on a 5 year historical average as a percentage of revenues (0.5%), resulting in a 7% increase per year.
<i>DFI</i>	0.00%	0.00%	0.00%	0.00%	0.00%	Throughout the years the values from this item varied from 16M€ to €744M. Projected based on a 5 year historical average (€278,92M).
<i>Financial assets</i>	2.00%	2.00%	2.00%	2.00%	2.00%	This item is composed by restricted cash and financial assets > 3 months. Throughout the years this item has been very inconsistent, with huge increases followed by steep decreases. With the continuous investment in aircraft, fuel and other, it is projected in a conservative look, resulting in a 2% increase per year.
<i>Trade payables</i>	5.00%	5.00%	5.00%	5.00%	5.00%	Projected based on a 5 year historical average of its growth rate per year.
<i>Accrued expenses & other liabilities</i>	5.00%	5.00%	5.00%	5.00%	5.00%	Projected based on a 5 year historical average as a percentage of revenues (0.4%), it is expected to grow at a 5% per year from 2018 onwards.

Consolidates Balance Sheet	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
Inflation rate	1.30%	1.50%	1.60%	1.70%	1.80%	Based on IMF World Economic Outlook
Current maturities of debt	8.79%	8.79%	8.79%	8.79%	8.79%	This item records the total amount of long-term debt that must be paid within the current year. Projected based on a 5 year historical average as a percentage of revenues.
Current tax	0.11%	0.11%	0.11%	0.11%	0.11%	Projected based on a 5 year historical average as a percentage of revenues.
DFI	0.00%	0.00%	0.00%	0.00%	0.00%	Projected based on a 5 year historical average (€56,2M).
Provisions	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
DFI	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
Deferred tax	0.00%	0.00%	0.00%	0.00%	0.00%	Deferred tax applicable to items charged or credited to other comprehensive income such as pension obligations, derivative financial instruments and capital allowances and other temporary differences. Projected to be equal to 2017 nominal value.
Other creditors	0.00%	0.00%	0.00%	0.00%	0.00%	This item consists of deferred gains arising from the sale and leaseback of aircraft. Projected to be equal to 2017 nominal value.
Non-current maturities of debt	2.50%	2.50%	2.50%	2.50%	2.50%	This item records the total amount of long-term debt that must be paid after the current year. It is expected a stabilized 2.5% growth per year given the need to use long-term financing to go along with the general expansion in fleet as a result of the entrance in new markets and routes.
Issued share capital	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
Share premium account	0.00%	0.00%	0.00%	0.00%	0.00%	This item consists in credited money paid by a shareholder for a share but only when the shareholder pays more than the cost of a share. Projected to be equal to 2017 nominal value.
Other undenominated capital	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
Other reserves	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.

5-3: Cash Flow

Consolidated Cash Flows	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
Inflation rate	1.30%	1.50%	1.60%	1.70%	1.80%	Based on IMF World Economic Outlook
Operating activities						
Retirement costs	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
Share-based payments charge	0.00%	0.00%	0.00%	0.00%	0.00%	The fair value of the services received is measured by reference to the fair value of the share options on the date of the grant, which is the date that a shared understanding of the terms of the award is established between the Company and the employee. The cost of the employee services received in respect of the share options granted is recognized in the income statement over the period that the services are received, which is the vesting period, with a corresponding increase in equity. Projected to be equal to the average of the 5 years nominal value.

Consolidated Cash Flows	Change					Assumption
	2018F	2019F	2020F	2021F	2022F	
Inflation rate	1.30%	1.50%	1.60%	1.70%	1.80%	Based on IMF World Economic Outlook
Gain on disposal of AFS assets	0.00%	0.00%	0.00%	0.00%	0.00%	There are no gains to recognize after Aer Lingus sale.
Income tax paid	10.00%	10.00%	10.00%	10.00%	10.00%	Income tax on the profit or loss for a year comprises current and deferred tax. Income tax is recognized in the income statement except to the extent that it relates to items recognized in other comprehensive income (such as certain hedging derivative financial instruments, available-for-sale assets, retirement benefit obligations). The effective tax rate for the FY2017 was 10%, as compared to an effective tax rate of 11.6% in the FY2016. The effective tax rate reflects the statutory rate of Irish corporation tax of 12.5%.
Investing activities						
Capital expenditures (PPE)	-10.00%	-10.00%	-10.00%	-10.00%	-10.00%	According to 2017 annual report, the net aircraft deliver is -25 (2018), +18 (2019), +23 (2020) and +22 (2021).
Disposal of AFS asset	0.00%	0.00%	0.00%	0.00%	0.00%	In September 2015, Ryanair's Board accepted the IAG Group offer of €398m for Ryanair's 29,8% shareholding in Aer Lingus, that was recognized in FY016.
Financing activities						
Shareholder returns	-40.00%	30.00%	-35.00%	-50.00%	-50.00%	Ryanair's buyback forecast for 2017 is 600m€. From 2018 to 2022 it's projected to be equal to the average of the 5 years nominal value.
Net proceeds from shares issued	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
Dividend paid	0.00%	0.00%	0.00%	0.00%	0.00%	Projected to be equal to 2017 nominal value.
Proceeds from long term borrowings	-	-	-	-	-	Net cash used in financing activities totaled €671.6m. in the FY2017, largely reflecting shareholder returns of €1bn and repayments of long term borrowings of €447.1m offset by the issuance of €750m unsecured Eurobonds in Feb. 2017. Net cash used in financing activities totaled €1,5 bn. in the FY2016, largely reflecting shareholder returns of €1,1bn. and repayments of long term borrowings of €384.9m. Proceeds from long term borrowings are disclosed in the annual report.
Repayments of long term borrowings	0.00%	0.00%	0.00%	0.00%	0.00%	

Appendix 7: Discounted Cash Flow Assumptions

Assumption		Description
Risk-free rate (RFR)	0.40%	Germany Bund 10Y Yield (Source: Bloomberg, May 30 2017).
Country risk premium (CRP) - Ireland	0.79%	Aswath Damodaran's calculations as in Jan 2017.
Market risk premium (MRP)	6.48%	Aswath Damodaran's calculations as in May 23 2017
Beta unlevered	0.9	Based on NASDAQ's data about Ryanair.
Beta levered	1.35	Computed based on unlevered beta.
Cost of debt	4.05%	Aswath Damodaran's calculations as in Jan 2017 for the Air Transport sector.
Terminal growth rate	0.80%	Based on the forecasted GDP growth rate for Ireland (Source: Trading Economics).
Corporate marginal tax rate	12.50%	Refer to Appendix X: Forecasting Assumptions.
Capital Structure	-	The terminal value of 35% equity and 65% debt is considered.

Appendix 8: Discounted Cash Flow Analysis

The DCF method was used to calculate the Target Price of RYA.

Weighted Average Cost of Capital - WACC						
	2018F	2019F	2020F	2021F	2022F	TV
COST OF EQUITY						
RFR	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%
CRP	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%
MRP	6.48%	6.48%	6.48%	6.48%	6.48%	6.48%
Beta levered	1.35	1.35	1.35	1.35	1.35	1.35
Cost of equity (*)	9.92%	9.92%	9.92%	9.92%	9.92%	9.92%
COST OF DEBT						
Cost of debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Marginal tax rate	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
After-tax cost of debt	3.54%	3.54%	3.54%	3.54%	3.54%	3.54%
Weight of equity (We)	28.34%	27.50%	25.64%	25.94%	27.31%	27.31%
Weight of debt (Wd)	71.66%	72.50%	74.36%	74.06%	72.69%	72.69%
WACC	5.35%	5.30%	5.18%	5.20%	5.28%	5.28%

(*) $R_f + \beta(R_m - R_f) + CRP$

Free Cash Flow to the Firm (FCFF)

Free Cash Flow to the Firm - FCFF					
	2018F	2019F	2020F	2021F	2022F
FCFF (€m)					
EBIT*(1-T)	1,350.24 €	1,314.51 €	1,274.51 €	1,229.88 €	1,180.20 €
Depreciation	512.43 €	527.80 €	543.63 €	559.94 €	576.74 €
Δ NWC	535.70 €	83.59 €	244.06 € -	88.14 € -	276.39 €
CAPEX	1,304.82 €	1,174.34 €	1,056.90 €	951.21 €	856.09 €
FCFF	1,093.54 €	584.38 €	517.18 €	926.75 €	1,177.24 €
Year	0	1	2	3	4
Discounted FCFF	1,093.54 €	554.98 €	467.51 €	796.06 €	958.08 €
Cummulative FCFF	1,093.54 €	1,648.52 €	2,116.03 €	2,912.08 €	3,870.16 €
Terminal Value	20,570.38 €	21,671.00 €	22,818.89 €	24,000.56 €	25,248.02 €

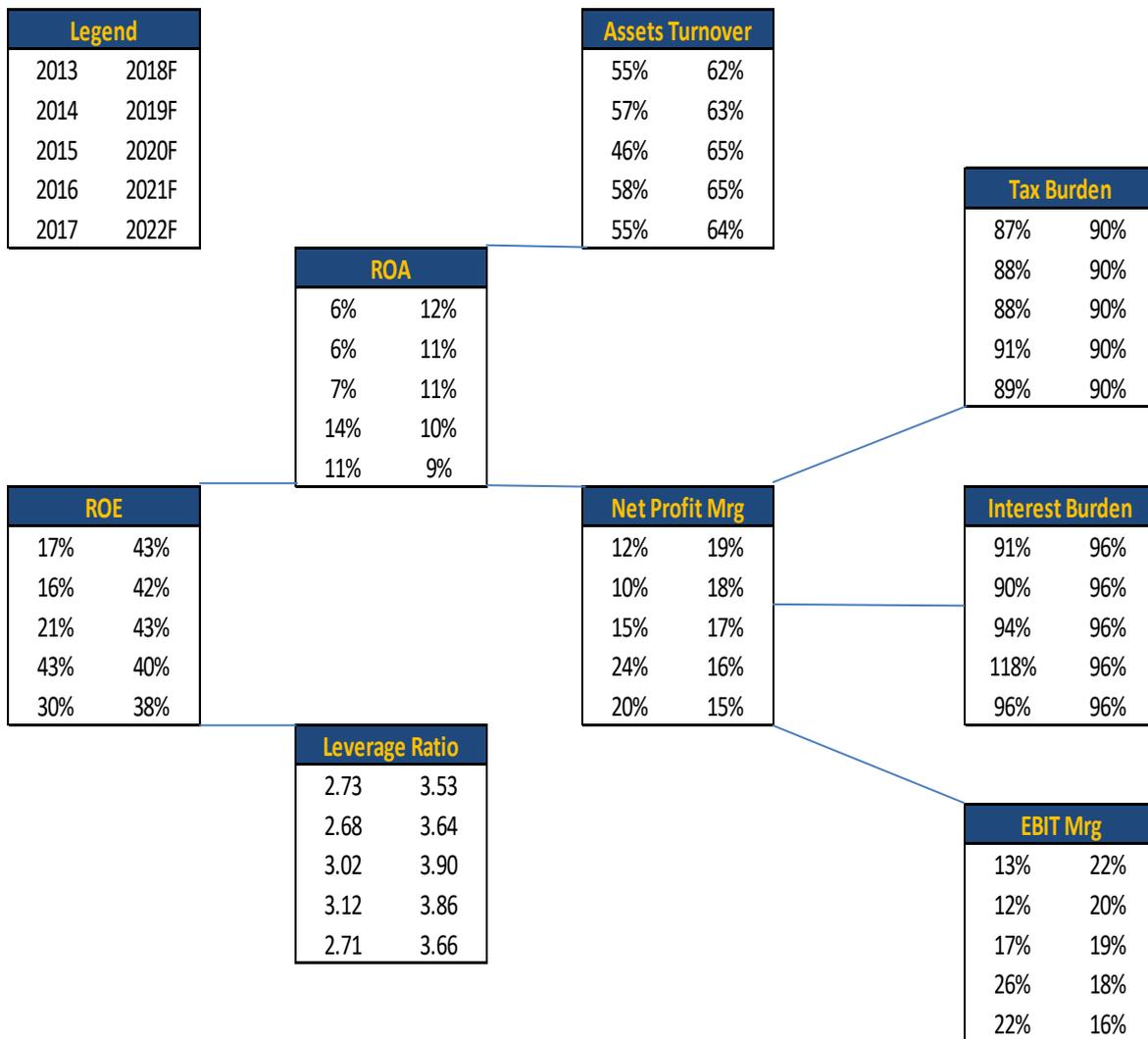
Perpetuity WACC 5.50%

Growth rate 0.80%

Target Price

Enterprise Value - EV	
Terminal Value	25,248.02 €
PV of Terminal Value	20,570.38 €
NPV of FCFF	3,870.16 €
Enterprise Value	24,440.54 €
Net Debt	3,814.79 €
Equity Value	20,625.75 €
No. of shares outstanding	1187.22
Equity value per share	17.37 €
Target Price at the end of '18	17.37 €
Price at September 30	16.32 €

Appendix 9: Du Pont Analysis



Legend

ROE: Total Equity / Total Assets

ROA: Net Income / Total Assets

Leverage Ratio: Total Assets / Total Equity

Assets Turnover: Total Sales / Total Assets

Net Profit Margin: Net Income / Total Sales

Tax Burden: Net Income / EBT

Interest Burden: EBT / EBIT

EBIT Margin: EBT / Total Sales

Appendix 10: Relative Valuation

	EV/EBITDA	P/E	P/CF	P/BV	ROE
Ryanair	10.87	16.82	18.86	4.91	30.86
easyJet	8.28	16.84	9.07	1.79	11.09
Norwegian Air	10.93	19.45	3.02	1.74	3.22
Air Berlin	6.37	15.67	0.00	0.00	13.28
Wizz Air	1.68	14.52	6.85	2.25	28.35
Average	6.81	16.62	4.74	1.45	13.99

As a complement to the DCF method we used EV/EBITDA and P/E multiples to value Ryanair.

EV/EBITDA		P/E	
RYA EBITDA 2018F	3,538.34 €	RYA Profit 2018F	1,327.09 €
Average peer EV/EBITDA	6.81	Average peer P/E	16.62
RYA EV by peer estimate	24,110.26 €	RYA EV by peer estimate	22,056.29 €
Net Debt	3,814.79 €	Net Debt	3,814.79 €
RYA equity by peer estimate	20,295.47 €	RYA equity by peer estimate	18,241.50 €
Shares outstanding	1187.22	Shares outstanding	1187.22
Target Price	17.10 €	Target Price	15.36 €

The combined relative valuation resulted to a target price of €16.3, with a downside of -0.55% from the closing price of €16.32. This price is lower than the €17.37 from the DCF target price, giving us the possibility to conclude that the comparison between Ryanair and its peers may not be the most appropriate. A relative evaluation is based on a group of peers, who have the same strategies and the same type of business. Nevertheless, in numerical terms the results of the company are closer to its competitors than the others, given its evolution in the market.

Appendix 11: Sensitivity Analysis

A brief resume of Ryanair's sensitivity analysis, considering three estimation cases:

Sensitivity Analysis for RYA Valuation			
Variable	Low estimate	Base case	High estimate
Terminal Growth	0.41%	0.80%	1.38%
Price (Euro)	15.98	17.37	19.94
Country Risk premium	0.40%	0.79%	1.37%
Price (Euro)	17.38	17.37	17.37
WACC	2.82%	5.50%	9.50%
Price (Euro)	40.44	17.37	9.40

A closer look at the variables with greater sensitivity in the analysis performed:

Change in Terminal Growth (2018F-2022F)								
	17.37	0.41%	0.51%	0.64%	0.80%	0.96%	1.15%	1.38%
DCF fair price		15.98	16.33	16.78	17.37	18.01	18.84	19.94
Change to initial target		-8.0%	-6.0%	-3.4%	0.0%	3.7%	8.5%	14.8%

Change in WACC (2018F-2022F)								
	17.37	2.82%	3.52%	4.40%	5.50%	6.60%	7.92%	9.50%
DCF fair price		40.44	29.99	22.67	17.37	14.09	11.48	9.40
Change to initial target		132.8%	72.6%	30.5%	0.0%	-18.9%	-33.9%	-45.9%

And also the variables that remain unchanged with the same analysis:

Change in Country Risk Premium (2018F-2022F)								
	17.37	0.40%	0.51%	0.63%	0.79%	0.95%	1.14%	1.37%
DCF fair price		17.38	17.38	17.37	17.37	17.37	17.37	17.37
Change to initial target		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Change in Beta (2018F-2022F)								
	17.37	0.69	0.86	1.08	1.35	1.62	1.94	2.33
DCF fair price		17.41	17.40	17.39	17.37	17.36	17.34	17.32
Change to initial target		0.2%	0.2%	0.1%	0.0%	-0.1%	-0.2%	-0.3%

Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%

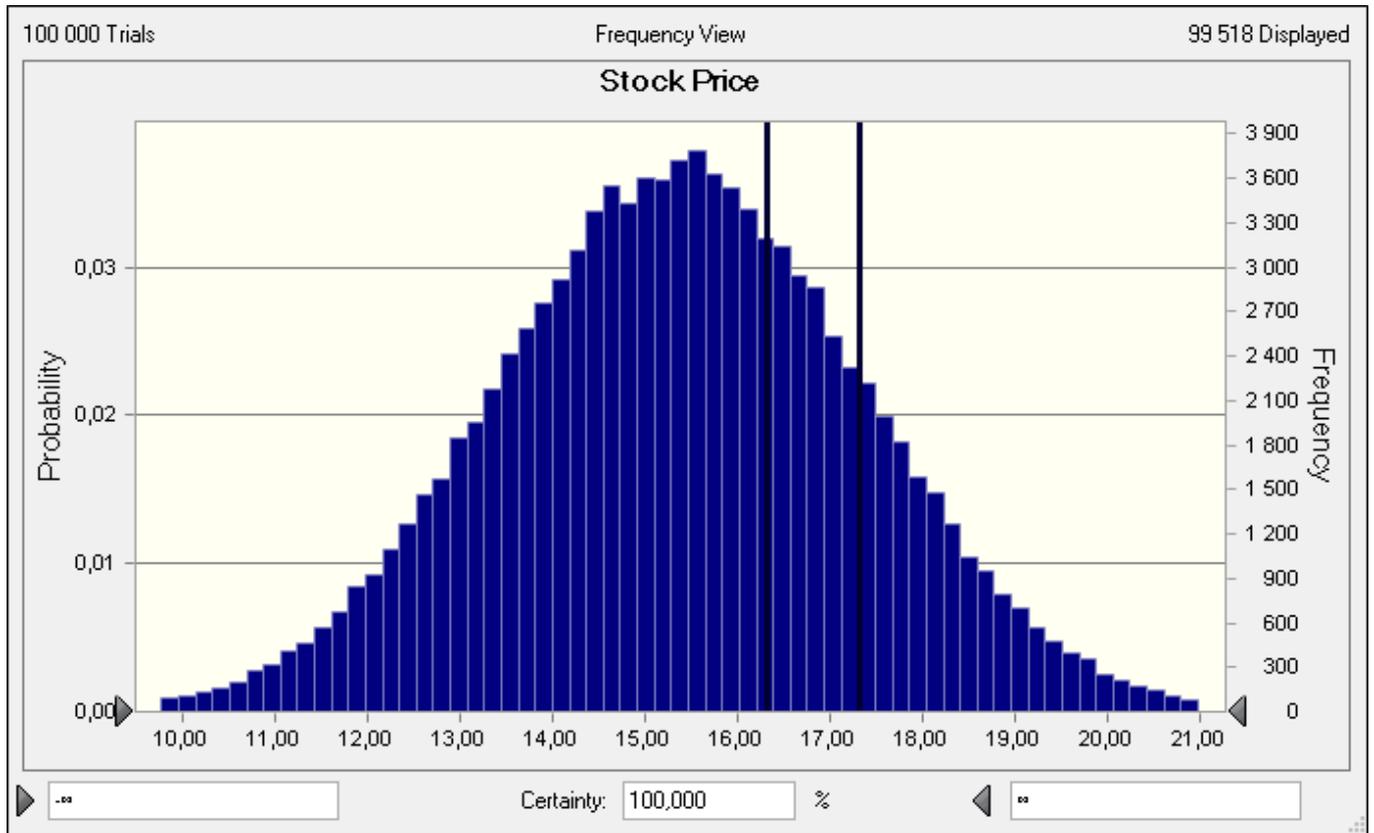
This recommendation system was used as a tool guide for the recommendation of RYA in terms of investment ratings. Terminal growth and WACC rate were the most sensitive factors during our tests as we have seen above, as they are highly influenced by the company's target price.

Change in Terminal Value								
	17.37	0.20%	0.40%	0.60%	0.80%	1.00%	1.20%	1.40%
4.01%		21.30	22.52	23.88	25.42	27.16	29.15	31.44
4.46%		19.07	20.05	21.13	22.33	23.66	25.16	26.86
4.95%		17.09	17.87	18.73	19.67	20.70	21.85	23.12
5.50%		15.32	15.95	16.63	17.37	18.18	19.06	20.03
6.05%		13.88	14.40	14.96	15.56	16.20	16.90	17.66
6.66%		12.59	13.01	13.47	13.96	14.48	15.03	15.64
7.32%		11.42	11.77	12.14	12.54	12.96	13.40	13.88

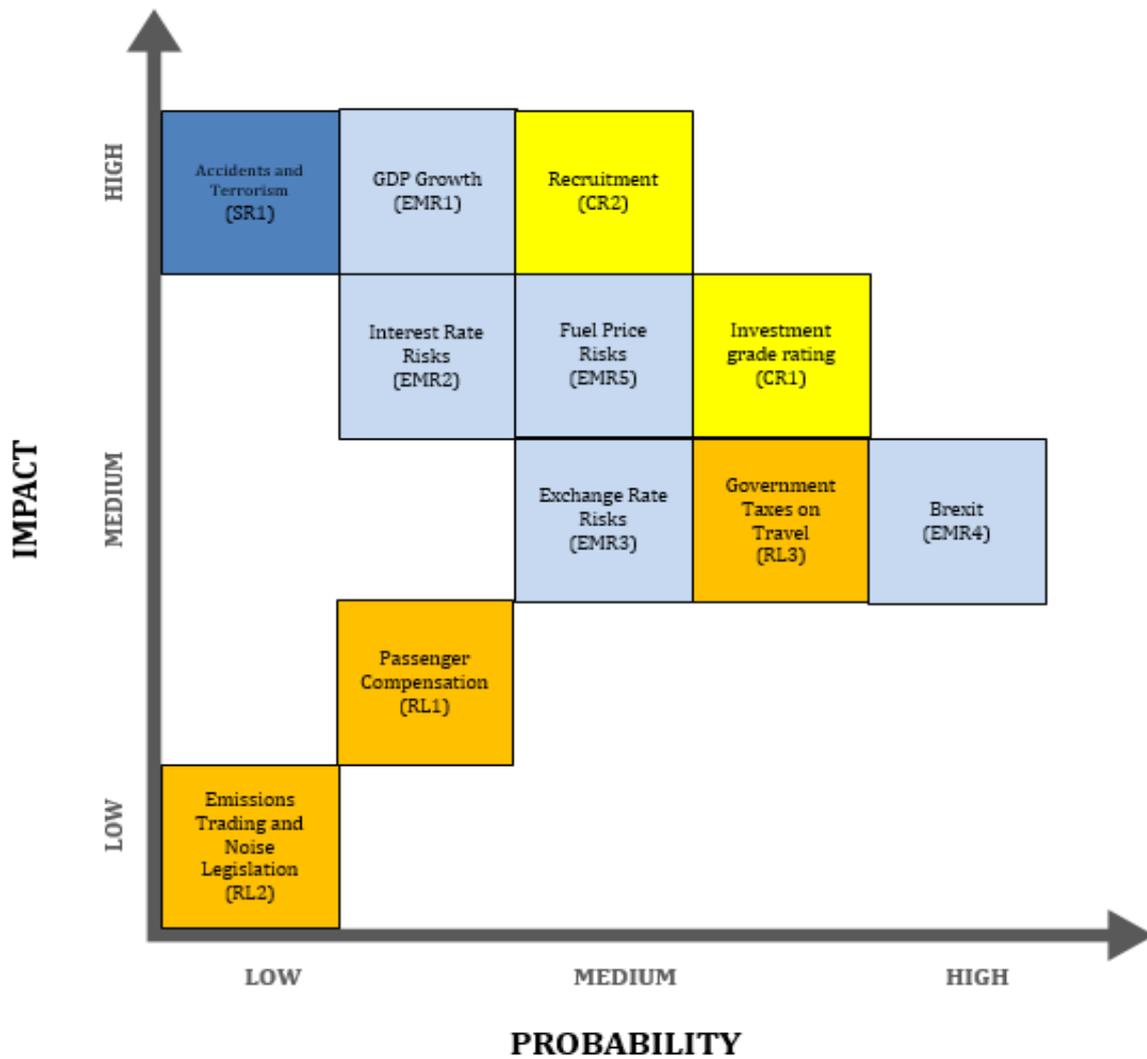
Strong Buy	E(R) =]30%;...[21.23	;100
Buy	E(R) =]15%;30%]	18.78	;21.22
Hold	E(R) =]5%;15%]	17.15	;18.77
Reduce	E(R) =]-5%;5%]	15.6	;17.14
Sell	E(R) =]...;-5%]	0	;15.5

A HOLD recommendation would be given if the company had a WACC rate of 4.95%, a REDUCE recommendation if WACC rate was between 5.5% and 6.05% and a sell recommendation if WACC was above 6.05%.

Appendix 12: Monte Carlo Simulation



Appendix 13: Risk Matrix



- Safety Risks
- Economic & Market Risks
- Regulatory & Legal Risks
- Corporate Risks

Appendix 14: Corporate Governance

Name	Age	Director since	Independent	Committee membership				
				Audit	Remuneration	Nomination	Executive	Safety
David Bonderman Chairman	73	1996	✓			C	C	
Michael Cawley	62	2014	✓			M		
Mike O'Brien	72	2016	✓					M
Charles McCreevy	66	2010	✓	M				
Declan McKeon	65	2010	✓	C				
Kyran McLaughlin	72	2001	✓				M	
Howard Millar	55	2015	✓		M			
Dick Milliken	65	2013	✓	M				
Michael O' Leary	55	1996					M	
Julie O'Neill	61	2013	✓		M			
James Osborne	67	1996	✓		C		M	
Louise Phelan	49	2012	✓			M		

C - Chair

M - Member

Appendix 15: Competitors Resume

Direct Competitors

easyJet: Founded in 1995 with headquarters in Luton, UK, operates 230 modern A320 in 31 countries and a global network of 132 airports.

Wizz Air: Founded in 2003 with headquarters in Budapest, Hungary, is the largest low-cost airline in Central and Eastern Europe and one of Europe's leading ultra-low-cost airlines. Wizz operates with its 81 aircrafts divided between Airbus A320 and A321s in 28 bases.

Norwegian Air Shuttle: Founded in 1993 in Bærum, Norway, has as hubs Oslo Gardermoen, London Gatwick and Helsinki-Vantaa airports. Operate 130 Boeing 737 in more than 150 destinations.

Air Berlin: Founded in 1978 with headquarters in Berlin, Germany, operates 131 aircrafts divided in Airbus and Boeing.

NIKI: Founded in 2003 with headquarters in Vienna, Austria, operates 23 aircrafts divided in Airbus and Embraer, and each aircraft has its own musical style. Flies to 32 destinations.

airBaltic: Founded in 1995 with headquarters in Riga, Latvia, operating a total fleet of 25 aircrafts between Boeings and Bombardiers to 53 destinations.

Pegasus Airlines: Founded in 1990 as a joint venture by Aer Lingus Group, Silkar Yatırım ve İnşaat Organizasyonu A.S. and Net Holding A.S., with headquarters in Istanbul, Turkey, operates a total fleet of 77 aircrafts between Boeing and Airbus to 40 countries and more than 100 destinations.

Monarch Airlines: Founded in 1968 with headquarters in Luton, U.K., operates a total fleet of 34 Airbus aircrafts to 43 destinations.

Indirect Competitors

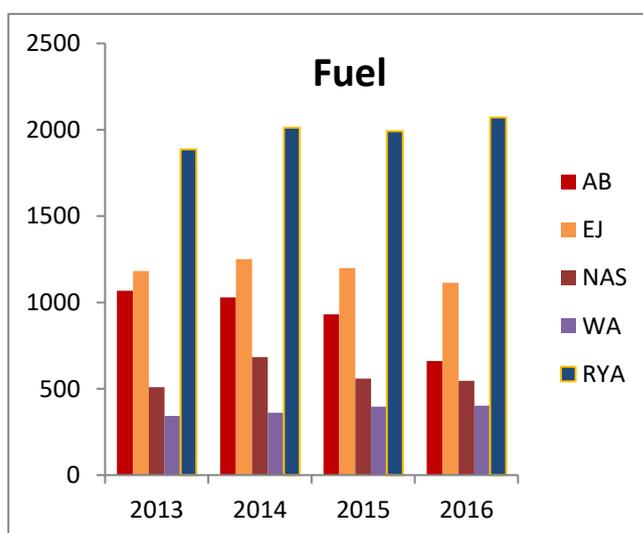
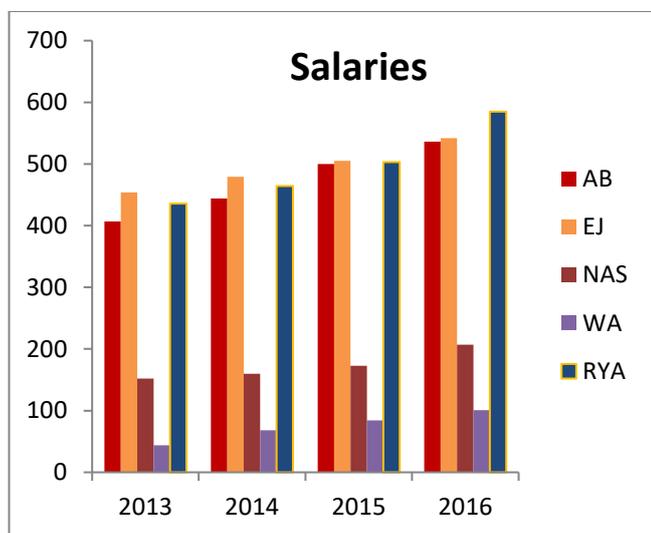
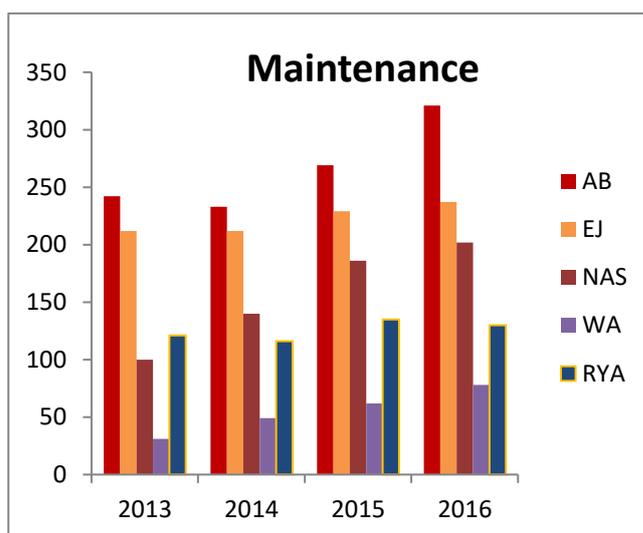
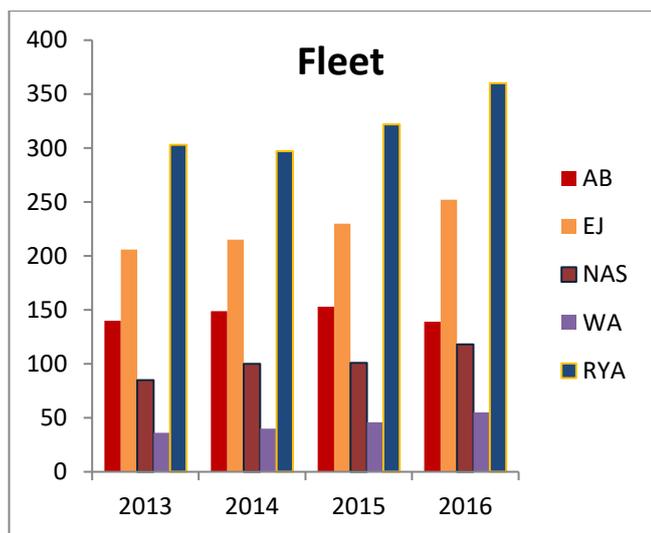
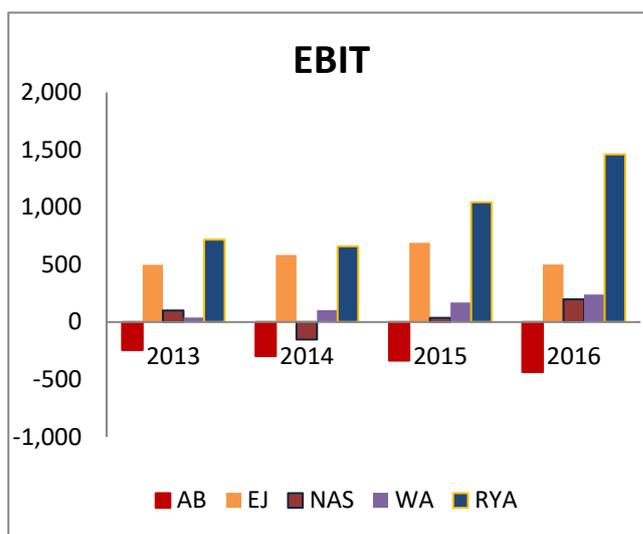
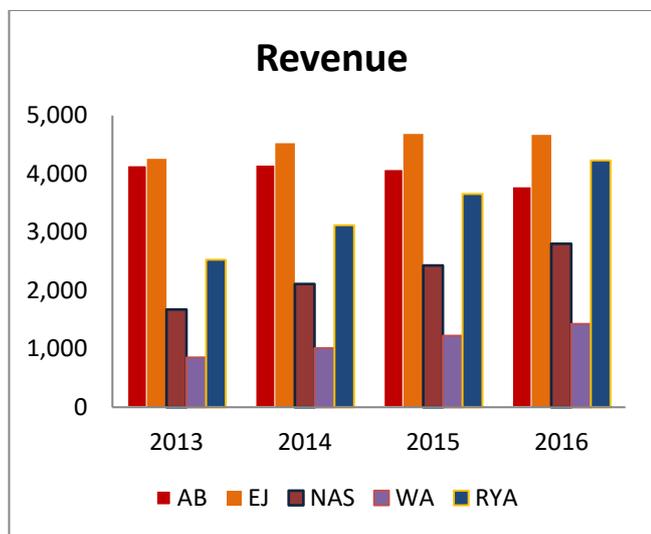
Deutsche Lufthansa: Founded in 1954 with headquarters in Cologne, Germany, operates a total fleet of 600 aircrafts in 89 countries, with 297 different destinations. The group has a low-cost company named Eurowings.

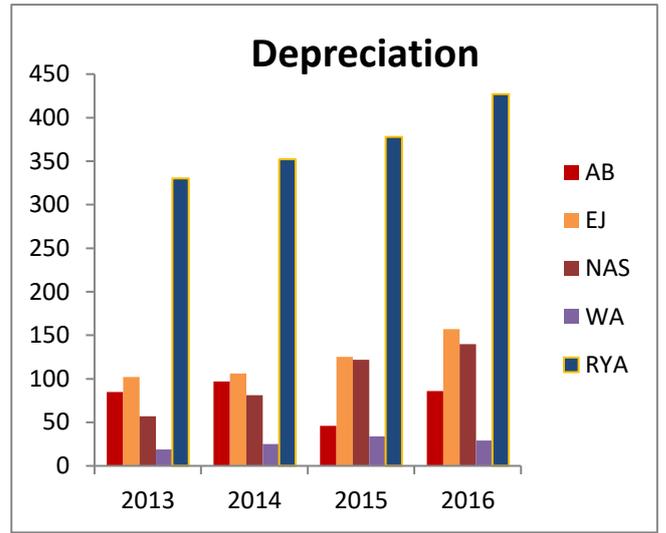
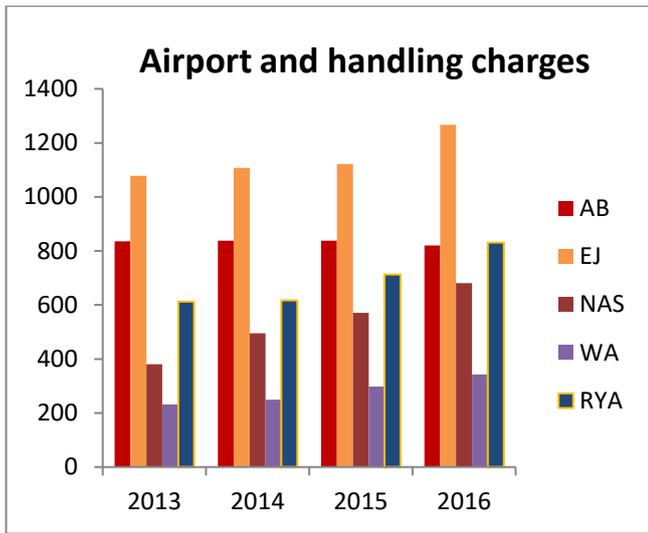
Air France-KLM: Founded in 2004 with headquarters in Tremblay-en-France, France, operates a total fleet of 534 aircrafts through 328 destinations in 118 countries. The group has a low-cost company named Transavia.

International Airline Group (IAG): Founded in 2011 with headquarters in London, U.K., is the parent company of Aer Lingus, British Airways, Iberia and Vueling, this one being the low-cost company of the group. Has 547 aircraft flying to 268 destinations.

Turkish Airlines: Founded in 1933 with headquarters in Istanbul, Turkey, and operates a total fleet of 337 aircrafts to 302 destinations in 120 countries. The group has a low-cost company named Turk Hava.

Comparison between peers





References

- Belobaba, P.; Odoni, A. and Barnhart C. (2009). *The Global Airline Industry*. John Wiley & Sons, Ltd.
- Berk, J., & DeMarzo, P. (2014). *Corporate Finance: The Core*. Pearson Education Limited.
- Berry, S.T. (1992). Estimation of a Model of Entry in the Airline Industry. *Econometrica*, 60(4), 889-917.
- Bloomberg Markets (2017). Ryanair [Online].
Available from: <https://www.bloomberg.com/quote/RYA:LN>
- Bloomberg Terminal (2017). Public/Private Company Overviews Database.
- Brueckner, J and Whalen, W (2000). The Price Effects of International Airline Alliances. *The Journal of Law and Economics*, 43(2).
- Damodaran, A. (2017) [Online].
Available from: <http://pages.stern.nyu.edu/~adamodar/>
- Fama, E.F. and French, K.R. (2004). The Capital Asset Pricing Model: Theory and Evidence. *Journal of Economic Perspectives* 18 (3), 25-46
- Fernández, P. (2002). Valuation Using Multiples: How Do Analysts Reach Their Conclusions? IESE Business School Research Paper, No.450.
- Fernández, P. (2013). Company valuation methods. IESE Business School Working Paper, No.449.
- IATA (2017). Air Transportation Data and Publications [Online].
Available from: <http://www.iata.org/Pages/default.aspx>
- IMF World Economic Outlook 2015 database
Available from: <http://www.imf.org/en/Data>
- Independent (2017). Publications [Online].
Available from: <http://www.independent.co.uk/>
- Kaplan, S. N. and Ruback, R. S. (1995). The valuation of cash flow forecasts: An empirical analysis. *Journal of Finance*, 50(4), 1059–1093.
- Koller, T., Goedhart, M. and Wessels, D. (2010). *Valuation, Measuring and Managing the Value of Companies*. 5th edition, McKinsey & Company.
- OECD database
Available from: <http://stats.oecd.org/>
- Pinto, J. E.; Henry, E.; Robinson, T. R. and Stowe, J.D. (2010). *Equity Asset Valuation*. 2nd edition. CFA Institute Investment Series. New Jersey, John Wiley & Sons, Inc.
- Pinto, J. E., Henry, E., Robinson, T. R., Stowe, J.D., and Miller, P.F, Jr. (2015). *Equity Asset Valuation*. 2nd Ed. New Jersey: CFA Institute
- Porter, M.E. (2008). The Five Competitive Forces that Shape Strategy. *Harvard Business Review* and Harvard Business School Publishing, 79-93.
- Reuters (2017). Ryanair (RYA.I) [Online].
Available from: <http://www.reuters.com/finance/stocks/overview/RYA.I>
- Rubin and Joy (2005). Where are the Airlines Headed? Implications of Airline Industry Structure and Change for Consumers. *The Journal of Consumers affairs*, 39(1), 215-228.

Ryanair (2017). Investors Relation [Online].
Available from: <https://investor.ryanair.com/>

Statista, The Statistics Portal. Low Cost Carriers [Online].
Available from: <https://www.statista.com/search/?q=low%20cost%20carriers>

The Economist (2017). Publications [Online].
Available from: <https://www.economist.com/>

Thomson Reuters Eikon Terminal (2017). Private Company Overviews Database.

Wilcox, S.E. (2012). Equity Valuation and Inflation: A Review. The Research Foundation of CFA Institute

Abbreviations

€bn	Billions of euros
€m	Millions of euros
APV	Adjusted Present Value
ASK	Available Seat Meter
CAPEX	Capital Expenditure
CFF	Cash Flow from Financing Activities
CFI	Cash Flow from Investing
CFO	Cash Flow from Operations
CRP	Country Risk Premium
D&A	Depreciations & Amortizations
DCF	Discounted Cash Flow
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciations and Amortizations
ECB	European Central Bank
EPS	Earnings per share
EV	Enterprise Value
FCFE	Free Cash Flow to Equity
FCFF	Free Cash Flow to the Firm
FSC	Full Service Carriers
FY201X	Fiscal Year of 201X
g	Perpetual growth rate
GBP	Great British Pound
GDP	Gross Domestic Product
IAG	International Airline Group
IATA	International Air Transport Association
IMF	International Monetary Fund
Kd	Cost of debt
Ke	Cost of Equity
Ku	Unlevered Cost of Equity
LCC's	Low Cost Carriers
MRP	Market Risk premium
NWC	Net Working Capital
OECD	Organization for Economic Cooperation and Development
P/E	Price-to-earnings ratio
PLF	Passenger Load Factor
Rf	Risk Free
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
RPK	Revenue Passenger Kilometer
T	Tax rate
TV	Terminal Value
WACC	Weighted Average Cost of Capital