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An Innovative Assessment of Corporate Credit Risk easyJet plc

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A Project carried out on Master in Finance Program, under the supervision of:

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Disclaimer

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Preface / Acknowledgment

This master thesis defines the end of my studies in the Masters program in Finance at Nova SBE University. This was only possible thanks to the suggestions and the support of a number of people I would like to mention.

First of all, I would like to express my gratitude to my supervisor, Miguel Ferreira, for giving me this opportunity and for making this thesis possible with his feedback.

I would also like to express my thanks to professor Martijn Boons for his reference when needed.

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Finally, I would like to thank my family and my Godmother who continuously gave me strong support through all my years of studying that now come to an end.

Abstract

Credit rating is often referred to as an art because it is up to the analyst's discretion how to interpret and evaluate the credibility of a company. It is also up to the analyst which approach will be adopted to reach the rating. In this paper, the reader will be provided with an analysis and a rating of easyJet's creditworthiness. This overall rating will derive from the weighted average of two sub-ratings. One obtained from a structural model, Merton Distance to Default, and one obtained from the traditional method that most rating agencies follow. Both approaches will be analyzed in detail later.

Executive summary

- EasyJet is a European short-haul airline based in Luton, England and is therefore subject to risks related to the aviation industry as well as to the country and region it operates.
- The depreciation of the pound after “Brexit” is expected to add about £90m to full-year costs.
- During the next year, the acquisition of an Air Operators Certificate in another EU country is anticipated, to ensure continuation of operations between UK and EU.
- According to both World Bank and IMF forecasts, oil price is expected to stay in relatively low levels and below \$60 per barrel until 2021, indicating lower costs.
- European Commission forecasts a slow but stable GDP growth for the next 3 years, between 1.5% and 1.7%.
- Operating in more of the 100 busiest connections in Europe than any other airline signifies a strong market share which is planning to increase.
- easyJet’s efficiency is characterized by very high load factor (91.5%) and its ability to keep costs low while increasing revenue.
- Strong profitability of the past years seems to slow down, yet ROIC will remain higher than the cost of capital and stably above 10%.
- FFO-to-debt will remain well above 0.5x despite the weakened earnings.
- October’s new issue of £500mn bonds will robust leverage, resulting in a Debt-to-EBITDA ratio around 1.5x the next two years.
- Trend of low liquidity ratios will stop, forecasting a current ratio of above 1.0 in 2017.
- Implemented Altman’s Z-score model suggests no signs of bankruptcy for 2016-2017 while it implies necessity for further analysis regarding 2017-2018.
- According to Merton DD applied model, the probability of default within the next year is 0.022%, which corresponds to an AA rating.

Business Risk	Financial Risk	Merton DD	Overall
BBB	BBB+	AA	BBB+

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List of abbreviations

EU – European Union

UK – United Kingdom

IMF – International Monetary Fund

GDP – Gross Domestic Product

CRA – Credit Rating Agency

FDI – Foreign Direct Investment

OECD – Organization for Economic Co-operation and Development

IATA – International Air Transport Association

IAG – International Airline Group

RPK – Revenue Per Kilometer

ASM – Available Seat Miles

RASM – Revenue per Available Seat Miles

CASM – Cost per Available Seat Miles

EBITDA – Earnings Before Interest Tax Depreciation Amortization

ROIC – Return On Invested Capital

FFO – Funds From Operations

DD – Distance to Default

1. Introduction

This chapter introduces the objective of the thesis, its importance in the credit rating context and the underlying research plan that was followed.

1.1. Credit Rating: Background, Definition and Objective

The idea of rating was created when the distance between businesses and customers started to grow.

In the past when the customer knew the owner of the business and vice-versa, strategies like “buy now, pay later” were considered safe. As trading distances increased due to expansions, the first ratings were developed in a relatively simple form, in an effort to answer whether the borrower could eventually pay back his debt. Nowadays rating is a much more complex concept and constitutes an important driver in capital markets. *Globalization* in the investment market together with *diversification* in the variety of securities issued, make it challenging for institutional and individual investors to analyze the risk associated with both foreign and domestic investments. On that note, the idea of credit rating was introduced.

Credit rating is a formal, independent and forward-looking concept about the creditworthiness of an obligor, either as a whole (*Issuer credit rating*) or regarding a specific debt or financial obligation (*Issue credit rating*). Such a rating can be accredited to any entity that pursues to borrow capital – an individual, corporation, state or sovereign government – and it can be distinguished by *short-term* (up to one year) or *long-term* (more than one year). According to Raymond W. McDaniel, president of Moody's corporation, “the objective of rating reports is to enhance transparency and efficiency in debt capital markets by reducing the information asymmetry between borrowers and investors”.

This paper adduces an **issuer** credit rating of a **corporation** in the **long-term**. Aviation industry was always attractive to investors and challenging to interpret. That is why the underlying corporation is an airline and more specifically, easyJet. Consequently, this thesis aims to provide investors with an unbiased assessment of easyJet's creditworthiness as an entity. Furthermore, it is not only an application

of the most common corporate rating method, it is also a *step-in-front* in the sense that it proposes a **combined approach** - made by the traditional rating method and the Merton Distance to Default model - in order to give a more accurate rating result.

From an **academic point of view**, it contributes to the state-of-the-art research in corporate credit rating methodology, based on an analysis of the existing literature review.

From a **practical point of view**, this paper is relevant to all investors that are looking for an investment opportunity that is correlated to the underlying company. Thus, it will contribute to the area of credit risk and hopefully, lead to a more successful and efficient credit rating method in the future.

The following research questions will be answered within this thesis:

1. Up to which point is easyJet able to meet its debt obligations?
2. How credible obligor should be easyJet considered in relation to its peers?
3. What is the probability of default within the next year?

1.2.Underlying research methodology

Credit ratings constitute an assessment of each issuer's ability to service debt in a timely manner. To reach this assessment there are different approaches which will be discussed in this chapter. The most common, is the one that most of the credit rating agencies (CRAs) traditionally use. At this point we should mention that rating industry is very highly concentrated, with four agencies (Standard & Poor's, Moody's, Fitch, DBRS) controlling 97.5% of the global market.

According to this approach, the rating is based on a combination of quantitative and qualitative analysis. More specifically, "an analytical framework is designed to ensure that all major issues are considered. This framework is divided into business analysis and financial analysis. The various aspects of these two areas are scored and then an overall business risk profile and financial risk profile score is determined", (Paul Sweeting, 2004). This score is expressed either in letter or numeric symbols. Nevertheless, there are no standard rules that combine scores to reach the final rating. In some cases financial measures may

dominate, while in other cases business risk may have stronger influence. It is important to understand that, even if the above mentioned approach is the same for all industries, the exact factors can differ from industry to industry.

Another approach is the one that uses market information to evaluate the risk of an issuer and it can be divided into two categories: the **reduced-form** model and the **structural** model. “Both aim to *quantify default risk and explain the cause of default*. To do so, they combine the crucial information on *leverage* and *asset volatility* to provide a mathematical description of credit risk where the output is a measure of default probability”¹. The main difference relies on the information assumed known by the modeler. In structural models all information is available to everybody resulting in a predictable default time, while in reduced-form some data can be inaccessible leading to an undefined default time. There are several forms of structural models; the most popular is the Black-Scholes-Merton (BSM, 1973) model.

In addition to the above, the approach of **credit scoring models** should be mentioned. As the name suggests, these models use a function of variant key financial ratios to come up with a final rating score. Obviously, there can be many alternatives of this function, with different ratios and coefficients, but the best known is the Altman Z-Score model (1968).

According to Altman, the Z-score is given by the formula:

$$Z = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 1.0 X_5$$

where X_1 = working capital/total assets; X_2 = retained earnings/total assets; X_3 = earnings before interest and tax (“EBIT”)/total assets; X_4 = market value of equity/book value of total liabilities; and X_5 = sales/total assets. Last but not least, **hybrid models** constitute a combination of the traditional approach and the structural model. Given these points, it comes without surprise that the same issuer can have different ratings, depending on which approach is followed.

¹ Paul Sweeting, 2004, “An analysis and critique of the methods used by rating agencies”.

In this paper, to assess easyJet's ability to meet its debt obligations, the hybrid method, consisting of a business and financial risk analysis together with the Merton Distance to Default model, will be applied.

1.3.Assumptions and the expected outcome

In order to proceed with the business and financial analysis we will follow the methodology suggested S&P. More precisely, according to the oldest rating agency, *business risk* encompasses country risk, industry risk as well as a company's competitive position and its profitability. When it comes to *financial risk* factors, emphasis is given to a company's adequacy of cash flows, its leverage and liquidity. As shown below (Figure 1), each of the above factors will be analyzed and rated following S&P's credit scoring.

Figure 1: Credit Rating Scores
(Data Source: S&P Global Ratings)

Rating description		Score	Credit worthiness
Investment Grade	Prime	AAA	An obligor has EXTREMELY STRONG capacity to meet its financial commitments.
	High Grade	AA+	An obligor has EXTREMELY STRONG capacity to meet its financial commitments.
		AA	
		AA-	
	Upper Medium Grade	A+	An obligor has STRONG capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligors in higher-rated categories.
		A	
	Lower Medium Grade	A-	An obligor has ADEQUATE capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments.
		BBB+	
		BBB	
Non-investment grade aka high-yield bonds aka junk bonds	Non-investment grade speculative	BBB-	An obligor is LESS VULNERABLE in the near term than other lower-rated obligors. However, it faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitments.
		BB+	
		BB	
	Highly Speculative	BB-	An obligor is MORE VULNERABLE than the obligors rated 'BB', but the obligor currently has the capacity to meet its financial commitments. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitments.
		B+	
		B	
	Substantial risks	B-	An obligor is CURRENTLY VULNERABLE, and is dependent upon favourable business, financial, and economic conditions to meet its financial commitments.
		CCC+	
		CCC	
	Extremely speculative	CCC-	An obligor is CURRENTLY HIGHLY-VULNERABLE.
		Default imminent with little	
		CC	
	prospect for recovery	C	The obligor is CURRENTLY HIGHLY-VULNERABLE to nonpayment. May be used where a bankruptcy petition has been filed.
		In Default	
	D		An obligor has failed to pay one or more of its financial obligations (rated or unrated) when it became due.

“Credit ratings express an *OPINION* and under no circumstances provide investment or financial advice.”, according to Moody's. In this thesis, the reader will find an analysis of easyJet, followed by a rating for its creditworthiness. This rating should not be perceived as a recommendation for an investment decision.

2. Business Risk Rating

2.1. Country Risk

Sovereign rating is taken into consideration because it generally sets an upper bound on the company's one. Bearing this in mind, with its headquarters based in Luton, England, EasyJet is subject to the United Kingdom's risk factors. As a composition of the economies of England, Scotland, Wales and Northern Ireland, the UK economy is one of the most globalized and the fifth-largest in terms of nominal GDP (World Bank, 2016). It is traditionally one of the strongest economic performers and most credible obligors. In fact, its growth was the fastest in Europe for the year 2014 (European Commission, 2014). A good indicator of its credibility is its fifth position on Foreign Direct Investments (FDI) confidence index by A.T. Kearney². Moreover London's leading position in Europe as a global financial centre signifies the confidence that investors have towards UK economy, which is the result of the well-functioning institutions and the transparency that is provided.

However, the decision of UK voters to leave European Union, in the referendum of June 2016, created several uncertainties. Immediately after the vote, sterling reached a thirty-year low. Speculations and worries regarding economic growth prospects arose, resulting to a *lower GDP growth forecast*. According to the author, this reaction was mainly driven by the fear that "Brexit" would cause a "domino" of extreme political reactions such as a Scottish referendum for independence or trade isolation of the UK. Trying to see things more logically, UK and EU have very strong trading relationships, with about half of British exports having European countries as their final destination. Moreover, there is the Lisbon Treaty, according to which a country deciding to leave the EU has two years to negotiate a withdrawal agreement. It is worth remembering that in the case of Switzerland and its rejection to become a member of the European Economic Area in 1992, the trade agreement was not fully applied before 2010. Having said that, I find it highly probable that a favourable trade agreement will be reached, as there are

² One of the top management consulting firms globally based in Chicago, USA.

advantages for both sides in continuing a close commercial arrangement. Furthermore, statements like the one made by Mark Carney, governor of the Bank of England, that “BoE is ready to inject an extra £250bn into Britain’s financial system”, seem to underwrite investors’ doubts. The sharp drop in the pound has undoubtedly decreased the purchasing power of British people but it can also have positive effects, like a robust of exports in a country with a high trade deficit. The GDP growth may slow down but will still be higher than the one of the Euro area and slightly less than 2%, according to OECD. All in all, I believe that the United Kingdom’s sovereign rating, in spite of the anticipated increasing uncertainty, should still reflect a high quality credit.

A **country risk rating of AA-** is, in my personal point of view, in alignment with today’s situation.

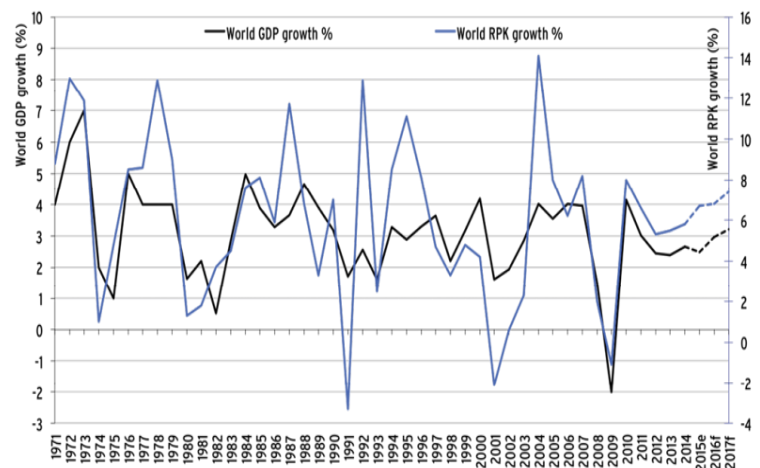
2.2. Industry Risk

Industry’s Risk Rating (IRR) is a crucial part for estimating an entity’s rating. Understanding the strengths and challenges of its industry constitutes the basis in assessing a firm. Just like country risk rating, IRR can act as a constraint or “cap” on the issuer’s rating. The airline industry can be divided into

legacy airlines, such as Lufthansa or Air France and

low-cost short-haul carriers, such as easyJet or Ryanair. The main difference between them is their business model and that legacy carriers operate long-haul routes as well. Generally, there are two main challenges that airlines face. Their *vulnerability to fuel price* and their *sensitivity to economic cycles*. Aviation industry is considered a

Figure 2: World economic growth and RPK growth
(Source: CAPA – Centre for Aviation)



very cyclical one with the growth of Revenue per Kilometre (RPK) well correlated with global GDP growth (Figure 2). On the other hand, jet fuel cost constitutes on average *one third of the total cost for*

*airlines*³ and therefore, its price fluctuation affects their profits significantly. Despite the 18% increase since the beginning of the year⁴, oil prices are still relatively low. Also, taking into consideration that airlines proceed with large future orders, I believe that we haven't fully seen the effects of the low oil prices in their profitability yet. Some other challenges that will be discussed more extensively later are: the *high intra-industry competition*, the sensitivity in "*special events*" such as terrorism, seasonality, *heavy debt use* and the organized and *powerful labour*.

The most important strength of aviation is the positive global economic and demographic trend that favours long-term demand growth. "Demand for Air Travel in 2015 Surges to Strongest Result in Five Years" (IATA, 2016). More specifically, demand measured in RPK rose by 6.5% compared to 2014 resulting in the strongest increase since 2010 and "well above the 10-year average annual growth rate of 5.5%". IATA's forecast that "passengers are expected to double in the next 20 years, from 3.8bn in 2016 to 7.2bn in 2035", indicates a flourishing industry. Taking into consideration that easyJet operates mostly in Europe, it is essential to take a closer look at the European airline industry. According to the recent European Commission's forecasts, GDP growth in the Euro area will remain fairly stable; 1.7% this year, 1.5% in 2017 and 1.7% in 2018. Furthermore, passengers in Europe are expected to increase by 570 million per year for the next 20 years, experiencing an annual average growth rate of 2.5%, according to IATA's forecast. In my opinion, there is space for higher demand for air travel within Europe but not as much as in other regions. This, coupled with industry's vulnerabilities and the less than 2% projected Euro area GDP growth, leads me to estimate an ***industry risk rating of BB-***.

2.3. Competitive Position

So far the risks associated with the country and the industry of the company have been analysed. In this paragraph, we will discuss the competitive position of EasyJet, taking into account both qualitative and

³ Inferred by data extracted from the annual reports of several airlines.

⁴ As of 14th of November 2016.

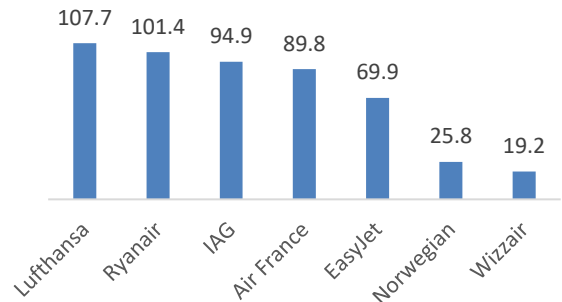
quantitative data. The aim is to recognize the strength of the company in relation to its peers⁵, which is its competitive advantage and where there is room for improvement.

Market Position

EasyJet is the fifth-largest airline in Europe and second-largest among low-cost carriers, both in terms of passengers carried (Figure 3) and revenues for 2015. It carried 69.9mn people, a 43% increase from 48.8 million people in 2010.

Moreover, easyJet operated 735 routes between 136 airports in 31 different countries by September 2015. The fact that 95 new routes were added last year, with more than 90 to be added in 2016, indicates the flexibility of the company and its ability to exploit demand opportunities. According to their annual report⁶, the British airline “focuses primarily on Western and Northern Europe, where it flies to a network of primary airports and routes that tap into affluent markets with populations that have a high propensity to travel”. Indeed, one of its competitive advantages is that it operates more of the top 100 routes in Europe than any other airline. The first point of EasyJet’s strategic plan is to establish itself as one of the strongest players in the main European airports by building a strong number one and two network positions. On that note, bearing in mind its low-cost philosophy, EasyJet’s presence in the top 100 European airports is impressive, being one of the two leading airlines in 22 of them in 2015. Regarding its position within markets served, the company has a very strong presence in the UK and Switzerland, with 20% and 23% market share respectively, while its market share in countries like Spain (8%) and Germany (4%) is relatively low. Other main markets are France (14%), Portugal (13%), Italy (12%) and Netherlands (9%). In terms of reputation, EasyJet was voted the favourite low-cost airline in Europe by Telegraph’s readers and Skytrax.

Figure 3: Airlines ranked by passengers carried in 2015 (millions). (Data Source: Wikipedia – own diagram)



⁵ As peers were chosen three low-cost airlines as direct competitors, Ryanair which is the largest in its industry, Wizz Air and Norwegian, along with the three largest legacy carriers, Lufthansa, IAG and Air-France.

⁶ Published on November 2015 for the financial year ended on the 30th of September 2015.

Given these points, I believe that the company's plan to "protect its number one position in the UK and Switzerland, to secure a bigger share in France and to invest in lean bases to drive more efficient capacity growth across its network"⁷, are in alignment with its potentials.

Diversification

EasyJet, as all short-haul airlines by definition, doesn't enjoy much geographic diversification. However, the British low-cost airline is well diversified in other aspects. Firstly, it refers to both *leisure and business travellers*. That is, in events like the recent financial crisis which drove demand for leisure travels down, its significant presence in

Figure 4: Airlines ranked by passengers carried in 2015 (millions). (Source: Wikipedia – own diagram)

Annual Results – 2015		Ancillary Source	Annual Results – 2008	
\$6,199,000,000	United	Various	\$2,200,000,000	American
\$4,718,000,000	American	Various	\$1,600,000,000	United
\$3,775,102,000	Delta	Various	\$1,500,000,000	Delta
\$2,165,996,840	Air France/KLM *	Various	\$833,591,870	Ryanair
\$2,118,600,000	Southwest	Various	\$611,343,126	Qantas
\$1,738,783,339	Ryanair	Various	\$528,491,844	easyJet
\$1,493,634,397	Lufthansa Group *	Various	\$350,000,000	JetBlue
\$1,465,956,723	easyJet *	Various	\$276,328,421	Emirates
\$1,167,168,403	Qantas Airways	Mostly FFP	\$246,456,904	TAM Airlines
\$1,092,000,000	Alaska Air Group	Various	\$245,700,000	Alaska Airlines
\$25,934,241,702			\$8,391,912,165	
Currency exchange based upon rates in effect when financial information was reviewed for each annual period. 2015 and 2008 carrier results were based upon recent 12-month financial period disclosures. * IdeaWorksCompany estimate based upon updated past disclosure and other sources.				

business routes shielded the losses. Moreover, its revenues are boosted by the *ancillary revenues*. A recent report from IdeaWorksCompany, demonstrates the ability of easyJet to generate revenues from optional services, such as on-board sales of food and beverages, checked baggage, premium seat assignment. More precisely, it occupies the fourth place in respect to ancillary revenue generation, among European airlines and the second when compared only to its low-cost rivals (Figure 4). Nevertheless, despite the significant volume of ancillary revenues, there is room for improvement since when it comes to percentage of total revenues the British short-haul carrier does not make it to the top 10 globally.

Operating efficiency

One of the most important parts of the business analysis is to evaluate the operating efficiency of the company. To achieve this, the operating performance of easyJet as a standalone during the past years, but also in comparison to its peers, needs to be discussed. Starting with *revenue generation*, easyJet displays a remarkable improvement, increasing its passenger revenue by 45% per Available Seat Mile

⁷ As stated in easyJet's 2015 annual report.

(RASM) during the period 2010-2015 (Figure 5). When compared to its peers⁸, the company's RASM is in the second place (Figure 6). I expect that, with larger fleet and stronger demand, easyJet will continue generating high revenues in the following years.

Figure 5: easyJet's Passenger Revenue per ASM (pence). (Data Source: Bloomberg – own diagram)

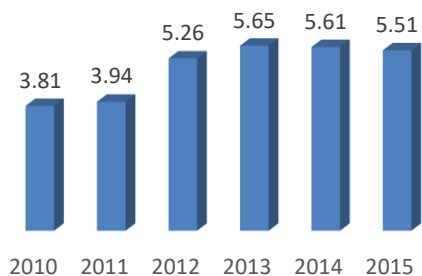
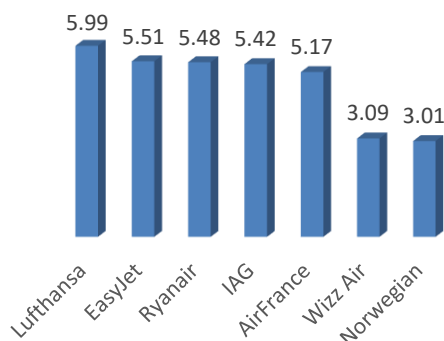


Figure 6: Airlines ranked by Passenger Revenue per ASM (pence). (Data Source: Bloomberg – own diagram)



Equally important is the ability of the company to control the operating Cost per ASM (CASM). Two of the main characteristics of the industry are related to the cost structure; these are the *high fixed costs* (labour, licenses, airports) as well as the *fluctuations in oil prices* since, as mentioned above, jet fuel cost comprises 30% of the total cost on average. On that note, easyJet has succeeded in keeping the cost at a fairly stable level (Figure 7).

When compared to its peers, easyJet's operating cost is, as anticipated, significantly lower than the one of legacy carriers but higher than its low-cost competitors (Figure 8). I believe that this is due to the fact that Ryanair and Wizz Air operate mainly in secondary airports⁹, while easyJet, as mentioned above,

Figure 7: easyJet's Operating Cost per ASM (pence) (Data Source: Bloomberg – own diagram)

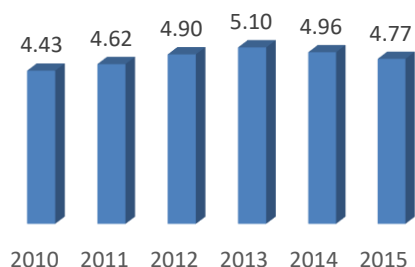
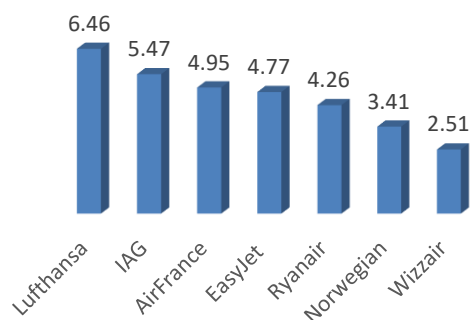


Figure 8: Airlines ranked by Operating Cost per ASM (pence). (Data Source: Bloomberg – own diagram)



⁸ Data extracted from Bloomberg.

⁹ A secondary airport is usually an under-utilized, back-up airport that complements a city and its main, primary airport and is often located far away from the city centre.

utilizes many prime airports. In my point of view, there is not much room left for further cost reductions, and in the near future the airlines should focus more on increasing their revenues.

Fleet

When it comes to fleet evaluation, it is easy to give a high rating to the British carrier, as it has one of the youngest fleets in the industry with an average age of 6.2 years according to Bloomberg. It is important to mention that from the 241 aircraft fleet (until 30 September 2015), a large amount (163) is owned by the company. Moreover, easyJet is focused on efficiently up-gauging its fleet with aircrafts providing more seating, thus further reducing costs by 7% per seat. According to the company's plan, most of the 156-seat A319 fleet will consist of over 70% 186-seat A320 by 2021. Taking everything into account, I believe that there is a high potential for stronger revenues through bigger capacity, further cost reduction per seat and an even safer fleet.

Management

The last factor we need to assess to come up with a rating regarding easyJet's competitive position is its administration. Management should be assessed on its ability to run and expand the business efficiently while aligning company's fundamentals with financial risks. A crucial task in such a *labour intense industry*, is to maintain good relations with the labour unions. "Our pilots are integral to the airline's success and we look forward to working closely with them and their union Balpa to deliver the proposal," EasyJet said after receiving a positive vote on its proposal that managed to head off a strike threat over pilots' fatigue¹⁰. I trust that EasyJet will continue addressing employees' demands and prevent losses that a potential strike could cause.

Taking every aspect into consideration, I consider a **competitive position rating of BBB**, fair and representative of easyJet.

¹⁰ Source of article: <https://www.ft.com/content/00beb192-a056-11e6-86d5-4e36b35c3550>

2.4. Profitability

The level of profitability is an important indicator of whether the company is able to protect its credit. As a matter of fact, a strong profit performance implies greater ability of the company to generate capital internally as well as to attract capital externally. The ratios that will be analysed to evaluate easyJet's profitability are: EBITDA margin, Operating margin and Return on Invested Capital, (ROIC). Figure 9

shows the spectacular improvement on the ability of the carrier to generate profit. Its EBITDA and operating margin increased significantly the last five years, from 10.40% to 17.65% and from 7.79% to 14.70%, respectively. Furthermore, ROIC surged 146% during the same period. Equally important is the fact that, contrary to its main rival, easyJet managed to achieve a continuous year-over-year growth in each ratio (Table 1), which demonstrates a stably successful business plan.

When compared to its peers¹¹, in terms of margins easyJet clearly outperforms its legacy competitors, while it underperforms Wizz Air and Ryanair. As can be seen in table 2, its ROIC is the second highest and most importantly, much higher than its cost of capital (12.48%)¹². Despite its strong past performance, "Brexit" and terrorism threaten easyJet's future profits.

Depleted margins forecast for the next couple of years, leads me to a **BBB rating of profitability**.

Ultimately, I assign to easyJet an overall **business risk rating of BBB**.

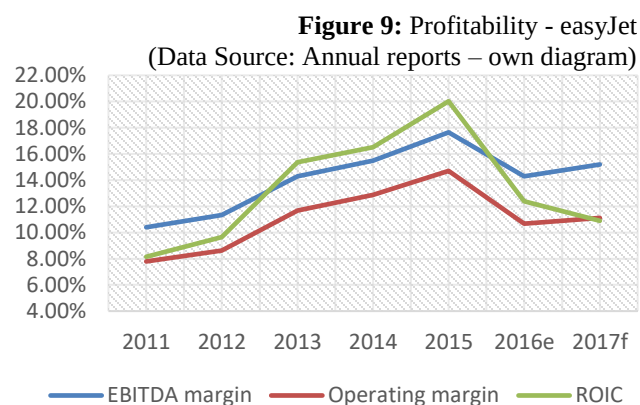


Table 1: Operating Margin trend, easyJet vs Ryanair
(Data Source: Annual reports)

	2011	2012	2013	2014	2015
easyJet	7.79%	8.61%	11.67%	12.88%	14.70%
Ryanair	15.56%	14.70%	13.10%	18.45%	22.34%

Table 2: Profitability, easyJet vs Peers
(Data Source: Annual reports)

Airline	EBITDA margin	Operating margin	ROIC
Ryanair	28.88%	22.34%	16.98%
Wizz air	18.49%	16.48%	31.21%
Lufthansa	10.20%	4.85%	8.13%
Air France	10.54%	4.28%	13.19%
easyJet	17.65%	14.70%	20.02%

¹¹ For simplicity, the number of peers was reduced.

¹² Calculated by using dividend capitalization model to compute Cost of Equity.

3. Financial Risk Rating

3.1. Cash Flow Adequacy

Analyzing the cash flow competency of an issuer is the most crucial part for credit rating decisions. Evidently there is a high correlation between profitability which was analyzed before and cash flow. However, examining the trend of the latter can be more explicit regarding the debt servicing capability of the borrower. In this paragraph, we will evaluate easyJet's ability to generate enough cash from internal sources to cover any calls on that cash. The ratios that will be taken into consideration are *EBITDA coverage* and *funds from operations (FFO) to total debt*¹³.

EBITDA coverage is simply EBITDA over the interest expense and reveals the ability of the company to satisfy interest obligations. On that note, easyJet should be considered a credible obligor with very high ratios,

EBITDA coverage of 75.18x and FFO-to-debt of 1.57 (Figure 10), resulting from continuously increasing earnings coupled with less debt and hence, less interest expenses. However, on 11 October 2016 the company issued €500 million, 1.125%-yield bonds maturing in October 2023. This comes without surprise for a company with such a low leverage and is expected to weaken the cash flow ratios of the following years.

When compared to its peers, the British carrier is in an advantageous position, as can be seen in Table 3. It seems to me that a scenario where easyJet defaults would imply that most of its competitors will also have defaulted, probably even sooner.

All in all, its *high cash flow ratios indicate a strong capability of the company to meet its debt obligations.*

Figure 10: Cash flow Adequacy - easyJet
(Data Source: Annual reports – own diagram)

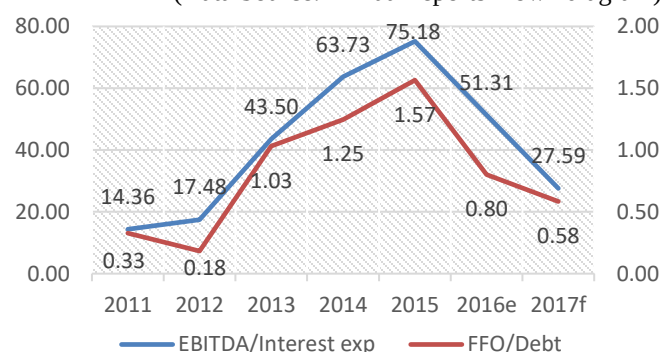


Table 3: Cash flow Adequacy, easyJet vs Peers
(Data Source: Annual reports)

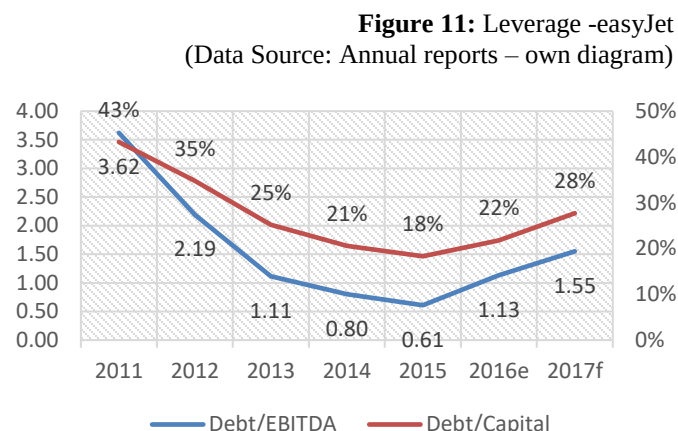
Airline	EBITDA/Interest exp	FFO/Debt
Ryanair	26.55	0.46
Wizz air	33.04	8.50
Lufthansa	9.19	0.37
Air France	7.36	0.30
easyJet	75.18	1.57

¹³ Total debt = short-term borrowing + long-term borrowings.

3.2. Capital Structure & Leverage

Analyzing easyJet's leverage ratios is a way to understand how the carrier is financed and therefore, how tolerant it is towards financial risk. Generally, a company with a strong cash flow generation and market share can hold a higher level of debt than less healthy companies. This is especially the case for airlines. Taking into account leverage ratios, such as *debt to EBITDA* and *debt to capital*¹⁴, we can assess management's financial policy.

For instance, the fact that easyJet's debt-to-EBITDA ratio is 6 times down the last five financial years (0.61x from 3.62x), indicates the firm's ability to generate strong earnings without using more debt. Similarly, the debt-to-capital ratio experiences a decreasing pattern (Figure 11), from 43% on 30th of



September 2011 to 18% by the same date of 2015, demonstrating company's intention to mitigate credit exposure and increase shareholder's return. Generally, the lowest the ratio, the safest the company but too low leverage may suggest too much conservatism. Nevertheless, as mentioned above, the issue of €500mn bonds 3 months ago, is expected to increase

leverage in fair levels.

Comparing easyJet's leverage to its competitors (Table 4), the company's conservatism is clearly noted. In fact, it has

Table 4: Leverage, easyJet vs Peers
(Data Source: Annual reports)

Airline	Debt/EBITDA	Debt/Capital
Ryanair	2.13	52.80%
Wizz air	0.13	4.70%
Lufthansa	2.78	60.83%
Air France	2.32	95.89%
easyJet	0.61	18.31%

much lower debt-to-EBITDA ratio than Ryanair, the most profitable airline in Europe. Additionally, a less than one debt-to-EBITDA ratio implies that bondholders should stay confident regarding their compensation, since it takes only the earnings of one year for easyJet to repay its debt.

¹⁴ Total capital = Shareholders' Equity + total debt (as specified in the footnote 12)

3.3. Liquidity

To evaluate the liquidity of the British short-haul airline, we will analyze the trend of *current* and *cash ratio*. Current ratio, which is computed by dividing current assets with current liabilities, assesses a company's ability to cover its short-term obligations by using its assets. On that note, a current ratio less than one may indicate a company which is in trouble. Nevertheless, due to the use of heavy debt that characterizes aviation industry, it is common for an airline to have relatively low liquidity ratios.

In the case of easyJet, current ratio is decreasing year by year, reaching 0.72 in the FY 2015 (Figure 12).

This is happening, more due to an increase in current liabilities, and more precisely in hedging cost¹⁵, rather than a decrease in current assets¹⁶. By taking a closer look at the balance sheet, we notice an increasing trend of short-term to long-term debt ratio (from 13.5% in 2011 to 56.5% in 2015). Accordingly, the current to non-current liabilities ratio increased from 0.74 to 2.2, indicating an

anticipated period of debt repayment. However, taking into account the recently issued bonds, I believe that cash and thus, current assets along with non-current liabilities will increase. Moreover, the second higher cash ratio (Table 5), when compared to its peers,

demonstrates easyJet's focus on maintaining a high level of cash & cash equivalents. According to me, there is no concern regarding liquidity as, due to the anticipated cash

injection the relatively low ratios will be enhanced. I also believe that, a company with such great performance and especially when referring to an airline, will easily raise capital externally if a liquidity problem occurs. Given these points, I suggest an overall **financial risk rating of BBB+** for easyJet.

Figure 12: Liquidity -easyJet
(Data Source: Annual reports – own diagram)

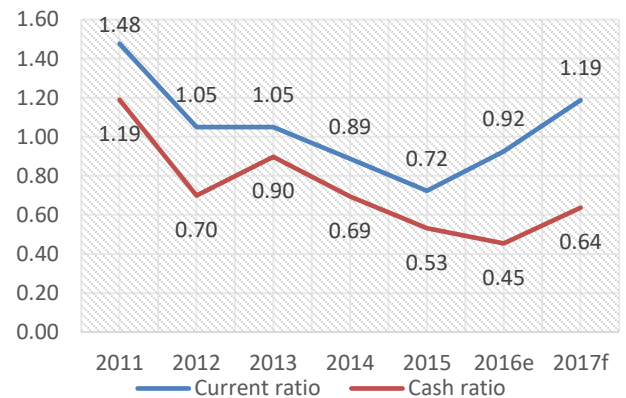


Table 5: Liquidity, easyJet vs Peers
(Data Source: Annual reports)

Airline	Current ratio	Cash ratio
Ryanair	1.43	0.37
Wizz air	1.70	1.38
Lufthansa	0.72	0.09
Air France	0.63	0.26
easyJet	0.72	0.53

¹⁵ Mainly due to losses in jet fuel derivatives instruments.

¹⁶ Regarding the period 2011-2015, current liabilities increased by 50% while current assets decreased by 26%.

4. Implementation of different approaches

In this section we will apply the Merton Distance to Default model to obtain a rating regarding easyJet's creditworthiness. Nevertheless, prior to that, we will implement the Altman Z-score approach, which will not be related to a specific rating but is a good indicator of whether a company is in trouble.

4.1. Altman Z-score model

As mentioned in the introduction, Altman's Z-score is a credit scoring model, which uses five key financial ratios to detect if there are signs of an imminent bankruptcy within the next two years. These ratios are *working capital to total assets* (X_1), *retained earnings to total assets* (X_2), *earnings before interest and tax to total assets* (X_3), *market value of equity to book value of total liabilities* (X_4) and *sales to total assets* (X_5). Therefore, by obtaining values from easyJet's annual reports and using them in the following formula: $Z = 1.2 * X_1 + 1.4 * X_2 + 3.3 * X_3 + 0.6 * X_4 + 1.0 * X_5$, we compute the Z-scores for the

last 3 years, as shown in table 6. Generally, the lower the score, the more probable is that the firm will face bankruptcy problem. More specifically, a Z-score of

Table 6: Altman's model for easyJet, Inputs and scores (Data Source: Annual reports).

Coefficient	Variable	2014	2015	2016
1.20	X1: (WC/TA)	(0.0355)	(0.1013)	(0.0216)
1.4	X2: (RE/TA)	0.3173	0.3563	0.3488
3.3	X3: (EBIT/TA)	0.1296	0.1425	0.0905
0.60	X4: (ME/TL)	2.4456	2.7354	1.4314
1.00	X5: (S/TA)	1.0100	0.9706	0.8481
	Z-score	3.31	3.46	2.47

lower than 1.8 indicates a high likelihood of bankruptcy while a company with Z-score above 3 is considered safe based on financial data. Between these two values there is a "gray" area and nothing more can be said besides that there is necessity for further analysis. Regarding easyJet the results are positive, with some uncertainty arising the last year. More precisely, while Z-scores for 2014 and 2015 are above 3 demonstrating financial health, the one of 2016 is in the "gray" area. That is mainly due to weaken of two ratios. Both, EBIT-to-total assets and the equity-to-liabilities, are down 36% and 47%, respectively when comparing to the previous year. As it is normal, a 42% decrease in share price¹⁷ along with the impact of the weaken pound on the earnings, affected significantly company's ratios.

¹⁷ In the period between 30/9/2015 – 30/9/2016.

4.2. Merton Distance to Default model

4.2.1. Literature Review

The Merton distance to default model is a particular application of Merton model (1974) and it *aims to forecast corporate defaults*. According to Merton, “the equity of the firm is a European call option on the underlying value of the firm with a strike price equal to the face value of the firm’s debt”. On that note, the model produces a probability of default for a specific firm at any point in time. Firstly, we need to define the inputs of the model which are the following: the total value of the firm as well as its volatility, the face value of its debt, the anticipated annual return on the firm’s assets and, finally, the forecasting horizon. As we will see in more details later on, the market value of equity together with its volatility also need to be computed. Once values are inferred, a measure called distance to default (DD) can be calculated using the following formula: $DD = \frac{\ln\left(\frac{V}{D}\right) + (\mu - 0.5\sigma(V)^2) * T}{\sigma(V) * \sqrt{T}}$. The distance to default is then substituted into a cumulative density function to obtain the probability that the value of the firm will be less than the face value of debt at the forecasting horizon, $\pi(Merton) = \pi(d) = N(-DD)$. In their paper¹⁸, Bharath and Shumway (2008) concluded that “while the Merton DD model doesn’t produce a sufficient statistic for the probability of default, its functional form is useful for forecasting defaults”.

4.2.2 Probability of Default for easyJet

Having described the model, it is time to apply it to easyJet. Regarding the inputs, some are easily observable while some others need to be assumed or inferred. Starting with the *market value of equity* (E), we simply multiply the number of the shares outstanding, according to the annual report, with the price of each share¹⁹. As far as *risk-free rate* is concerned, having discussed the credibility of the UK as an obligor, I chose the rate of the 10-year UK government bond²⁰. As stated by Bharath and Shumway,

¹⁸ “Forecasting Default with the Merton Distance to Default Model”, 2008

¹⁹ As of 30 of September 2016 – Bloomberg.

²⁰ As of 30 of September 2016 – Bloomberg.

“it is common to use historical returns data to estimate the *volatility of equity*, $\sigma(E)$, to assume a forecasting *horizon* of 1 year ($T=1$) and to take the book value of the firm’s total liabilities to be the *face value of the firm’s debt*”. That is, the volatility of equity was calculated as the average annual volatility of the last two years²¹ since I expect the next year to be less volatile than 2016, but still more than 2015. Furthermore, the value of total liabilities was obtained by the latest annual report to be considered as the face value of debt. While the *total value of the firm* (V) is easily computed as the sum of its debt and equity, the volatility of the firm’s assets $\sigma(V)$ is more challenging to infer. Bharath and Shumway, in the same paper, proved that their naïve estimate of firm volatility is highly correlated to the one published by Moody’s KMV²², capturing much of its information. That is why, we will use the same approach. Firstly, they approximated the volatility of each firm’s debt as $\sigma(D) = 0.05 + 0.25 \sigma(E)$. The five percentage point term represents structure volatility, while the 25% times equity volatility is included to allow for volatility associated with default risk. Ultimately, we calculate the total volatility of the firm $\sigma(V)$, proportionally to its equity and debt volatility based on its leverage.

Table 7: Merton DD inputs and probability of default for easyJet. (Data Source: Annual report – Bloomberg)

Variables	
SE	33.86%
T	1
rf	0.748%
E	3998
F	2793
v	6791
SV (naïve)	25%

DD	3.440331423
$\pi(d)$	0.0291%

Table 7 shows the values for every variable and we can, therefore, compute the probability of default within the next year $\{\pi(d) = 0.022\%\}$. Comparing this probability with the annual default rates by rating category (table 8), given by an S&P study²³ for the past 25 years, we notice that it corresponds to an **AA rating**.

Table 8: Annual default rates by rating category, (Data Source: S&P)

Average annual default rates for the period 1981-2014 by rating category (%)							
	AAA	AA	A	BBB	BB	B	CCC/C
Average	0.00	0.02	0.06	0.22	0.95	4.51	23.64

²¹ Daily stock returns for the last two financial years were used to compute the annual volatility – Bloomberg.

²² The correlation between Moody’s $\sigma(V)$ and our naïve $\sigma(V)$ is 0.853 and significant at the 0.1% level or lower.

²³ “Annual Global Corporate Default Study And Rating Transitions”, 2014

The British budget carrier may obtained a low probability of default and consequently a high rating but we still don't know how resilient it is comparing to its competitors. That is why, we will apply the model for Ryanair and Lufthansa, as the largest European low-cost and legacy airline, respectively. Following the same assumptions²⁴ and calculations as we did for easyJet, we compute the probabilities of default as can be seen below.

Table 9: Merton DD inputs and probability of default for Lufthansa. (Data Souce: Annual report – Bloomberg)

Ryanair	
Variables	
SE	30.83%
T	1
rf	0.748%
E	23091
F	7622
v	30713
SV (naïve)	26%
DD	5.160809022
$\pi(d)$	0.0000123%

Table 10: Merton DD inputs and probability of default for Lufthansa. (Data Souce: Annual report – Bloomberg)

Lufthansa	
Variables	
SE	31.28%
T	1
rf	0.748%
E	8917
F	26617
v	35534
SV (naïve)	17%
DD	1.568305113
$\pi(d)$	5.8405%

These results correspond to a credit rating of AAA for Ryanair and B for Lufthansa. The big difference in their results relies on the huge market capitalization of Ryanair as well as in the significant amount of liabilities the German airline has. Between the two main short-haul competitors, we conclude that easyJet has a slightly lower rating mainly due to the much smaller number of shares issued (397mn comparing to 1,291mn of Ryanair), but also because of the 3% higher equity volatility, mainly caused by “Brexit”.

²⁴ The face value of liabilities was employed by companies' annual reports. For the market value of equity, the stock price of the last day of their financial year was used (31/3/2016 for Ryanair, 31/12/2015 for Lufthansa). The volatility of equity was computed as the average volatility of returns of the last two financial years for each company.

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6. APPENDICES

Consolidated Income Statement - easyJet

Income Statement (million £)	2011	2012	2013	2014	2015	2016E	2017F
Seats	3,389	3,794	4,194	4,462	4,616	4,587	
Non-Seats	63	60	64	65	70	82	
Total Revenues	3,452	3,854	4,258	4,527	4,686	4,669	4,903
Fuel	(917)	(1,149)	(1,182)	(1,251)	(1,199)	(1,114)	-
Airports and ground handling	(923)	(955)	(1,078)	(1,107)	(1,122)	(1,267)	-
Crew	(407)	(432)	(454)	(479)	(505)	(542)	-
Navigation	(285)	(280)	(294)	(307)	(313)	(336)	-
Maintenance	(179)	(203)	(212)	(212)	(229)	(237)	-
Selling and marketing	(102)	(104)	(101)	(103)	(102)	(107)	-
Other costs	(171)	(200)	(226)	(245)	(276)	(296)	-
COSS:	(2,984)	(3,323)	(3,547)	(3,704)	(3,746)	(3,899)	(4,055)
EBITDAL	468	531	711	823	940	770	848
Aircraft dry leasing	(109)	(95)	(102)	(124)	(114)	(103)	(103)
EBITDA	359	436	609	699	826	667	745
Depreciation	(83)	(97)	(102)	(106)	(125)	(157)	(187)
Amortisation of intangible assets	(7)	(8)	(10)	(12)	(13)	(12)	(13)
EBIT	269	331	497	581	688	498	545
Interest receivable and other fin. Income	9	11	5	11	9	10	10
Interest payable and other fin. Charges	(30)	(25)	(24)	(11)	(11)	(13)	(27)
EBT	248	317	478	581	686	495	528
Tax	(23)	(62)	(80)	(131)	(138)	(68)	(93)
Net Profit	225	255	398	450	547	427	435

Consolidated Balance Sheet - easyJet

Balance Sheet (million £)	2011	2012	2013	2014	2015	2016E	2017F
Goodwill and other intangible Assets	451	456	467	478	492	517	545
Property, Plant & Equipment	2,149	2,395	2,280	2,542	2,877	3,252	3,577
Derivative financial instruments	24	21	13	36	44	154	133
Other Non-current Assets	107	96	204	165	136	128	100
Total Non-current Assets	2,731	2,968	2,964	3,221	3,549	4,051	4,355
Cash & cash equivalents	1,100	645	1,013	424	650	714	1,050
Money Market Deposits	300	238	224	561	289	255	400
Derivative financial instruments	83	73	17	23	128	268	210
Excess Cash	255	371	194	253	212	217	300
Total Current Assets	1,738	1,327	1,448	1,261	1,279	1,454	1,960
Total Assets	4,469	4,295	4,412	4,482	4,828	5,505	6,315
Financial Debt	1,145	828	592	472	322	664	1,050
Derivative financial instruments	27	24	41	23	101	49	100
Non-current deferred income	59	46	68	62	47	35	42
Maintenance provisions	177	141	171	147	165	235	255
Deferred Tax	179	198	144	186	176	237	203
Total Non-current Liabilities	1,587	1,237	1,016	890	811	1,220	1,650
Financial Debt	155	129	87	91	182	92	106
Derivative financial instruments	52	26	60	87	368	275	250
Working Capital (Liabilities)	970	1,109	1,232	1,242	1,218	1,206	1,294
Total Current Liabilities	1,177	1,264	1,379	1,420	1,768	1,573	1,650
Total Liabilities	2,764	2,501	2,395	2,310	2,579	2,793	3,300
Equity	1,705	1,794	2,017	2,172	2,249	2,712	3,015
Total Liabilities + Equity	4,469	4,295	4,412	4,482	4,828	5,505	6,315

Consolidated Cash Flow Statement - easyJet

Cash Flow statement (million £)	2011	2012	2013	2014	2015	2016F	2017F
OPERATIONS							
Cash generated from Operations	449	494	788	793	895	724	
Net taxes paid	(2)	(28)	(65)	(96)	(98)	(99)	
Net interest paid	(23)	(9)	(22)	5	(8)	(19)	
Total cash from operations	424	457	701	702	789	606	674
INVESTING							
Capital expenditures	(556)	(392)	(421)	(448)	(536)	(586)	(650)
Other investing and cash flow items, total	78	3	5	3	4	-	-
Total cash from investing	(478)	(389)	(416)	(445)	(532)	(586)	(650)
FINANCING							
Financing cash flow items	(67)	(37)	148	(20)	21	6	
Change in Money market deposits	(38)	55	41	(338)	277	45	
Total cash dividends paid	-	(196)	(85)	(308)	(180)	(219)	(214)
Proceeds from Eurobond issue	273	-	316	-	-	379	379
Issuance (retirement) of stock, net	(5)	(13)	(25)	(56)	(91)	(22)	
Issuance (retirement) of debt, net	83	(314)	(283)	(112)	(91)	(240)	
Total cash from financing	246	(505)	112	(834)	(64)	(51)	8
Effects of exc. rate change	(4)	(18)	(29)	(12)	33	95	60
Net Increase in Cash & cash Equiv.	188	(455)	368	(589)	226	64	92
Cash (beginning of year)	912	1,100	645	1,013	424	650	714
Cash (end of year)	1,100	645	1,013	424	650	714	806

Key Financial ratios – easyJet & comparables.

Financial Ratios - easyJet Plc

FYs	Profitability			Cash flow Adequacy		Leverage		Liquidity	
	EBITDA margin	Operating margin	ROIC	EBITDA/Interest exp	FFO/Debt	Debt/EBITDA	Debt/Capital	Current ratio	Cash ratio
2011	10.40%	7.79%	8.15%	14.36	0.33	3.62	43%	1.48	1.19
2012	11.34%	8.61%	9.65%	17.48	0.18	2.19	35%	1.05	0.70
2013	14.30%	11.67%	15.36%	43.50	1.03	1.11	25%	1.05	0.90
2014	15.48%	12.88%	16.52%	63.73	1.25	0.80	21%	0.89	0.69
2015	17.65%	14.70%	20.02%	75.18	1.57	0.61	18%	0.72	0.53
2016e	14.29%	10.67%	12.39%	51.31	0.80	1.13	22%	0.92	0.45
2017f	15.19%	11.12%	10.90%	27.59	0.58	1.55	28%	1.19	0.64

Profitability			
Airline	EBITDA margin	Operating margin	ROIC
Ryanair	28.88%	22.34%	16.98%
Wizz air	18.49%	16.48%	31.21%
Lufthansa	10.20%	4.85%	8.13%
Air France	10.54%	4.28%	13.19%
easyJet	17.65%	14.70%	20.02%

Leverage		
Airline	Debt/EBITDA	Debt/Capital
Ryanair	2.13	52.80%
Wizz air	0.13	4.70%
Lufthansa	2.78	60.83%
Air France	2.32	95.89%
easyJet	0.61	18.31%

Cash flow Adequacy		
Airline	EBITDA/Interest exp	FFO/Debt
Ryanair	26.55	0.46
Wizz air	33.04	8.50
Lufthansa	9.19	0.37
Air France	7.36	0.30
easyJet	75.18	1.57

Liquidity		
Airline	Current ratio	Cash ratio
Ryanair	1.43	0.37
Wizz air	1.70	1.38
Lufthansa	0.72	0.09
Air France	0.63	0.26
easyJet	0.72	0.53