

Corporate Social Responsibility and Financial Performance in the Airport Industry

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Abstract

In the last two decades corporate social responsibility (CSR), particularly when related to environmental issues, has been discussed extensively in the business literature. However, defining and measuring CSR remains a complicated process. One of the main reasons for the problematic measurement of CSR is the absence of a common framework in which business-society relations will be included. Within our context, the literature of CSR studies related to the airport industry is scant. In particular, limited attention has been given to the relationship between social responsibility programs and airport financial performance. The objectives of the paper are first to set up a methodology to measure the financial impact of CSR in the airport industry and second, to develop a theoretical model which provides an analytical connection between CSR activities and airport financial performance. We use the methodology Valuation Multiples and apply it for the UK Manchester Airport. The results of the application are discussed within a context of probable policy implications.

Key words: corporate social responsibility, airport, financial performance

Theme Area: Airline and airport performance

1. Introduction

A great need has been arising for the aviation industry to develop an environmental agenda and take measures to minimise the ever-growing environmental impacts produced by its activities. Aviation is associated with numerous of social and economic benefits, but in recent years it has also substantially impacted on the environment in terms of noise pollution, local air pollution and global climate change (Whitelegg, 2000). Notwithstanding the detrimental effects of aviation, the global demand for air transport is forecast to grow at around 5% per year and thus doubling in less than 15 years. The environmental impact will be noteworthy, as aircraft presently release approximately 3% of the global emissions of carbon dioxide and about 2% of nitrogen oxides from fossil fuels. This fraction will increase rapidly if technology and policies do not change (Barrett and Ferguson, 1996). The implementation of environmental and social strategies is becoming a significant approach in the aviation industry, that is, within the business model, addressing environmental and social concerns is no longer seen merely as a response to the regulator, and in this analysis the policy-maker, but rather as a proactive financial decision.

Although environmental investments are welcome by society, they are not as attractive to firms, as someone might expect. The main reason is that this kind of investments requires an initial significant input of money, while the majority of those are treated as irreversible investments under output price uncertainty. Another major concern about environmental investments is the time frame in which the return on the initial investment is occurred. Long-run return investments, as the environmental ones, are less desirable for decision makers, as they are associated in the business industry with high risk.

From this perspective, our objective is to introduce an optimisation factor in the calculation of the return on initial investment, in order to make environmental investments more attractive. This optimisation factor is related with the financial benefits that occur through Corporate Social Responsible (CSR) strategies in the airport industry context.

As argued by Moon et al. (2005), CSR is an umbrella term overlapping with some and synonymous with other conceptions of business-society relations. According to the World Bank, "Corporate Social Responsibility (CSR) is a term describing a company's obligations to be accountable to all of its stakeholders in all its operations and activities. Social responsible companies consider the full scope of

their impact on communities and the environment when they are making decisions, balancing the needs of stakeholders with their need to make profit” (Nicolau, 2008). The main force that drives companies to adopt corporate social responsibility may be CSR’s subsequent financial benefits. Although the causality between the two is not yet clear, empirical studies nevertheless indicate a simultaneous relationship-interaction between CSR and financial performance (Weber, 2008).

Among the benefits that CSR may provide to a company, financial success is the most crucial for shareholders. From a business perspective, some researchers argue that CSR can improve the competitiveness of a company (Weber, 2008, Burke and Logsdon, 1996, Knox and Maklan, 2004, Epstein and Roy, 2001). The relationship between a firm’s corporate social responsibility and its financial performance has been the subject of lively debate since the 1960s (Cochran and Wood, 1984). Despite that various researchers have analysed the relationship between CSR and financial performance, there are mixed results with regard to the benefits of such an analysis. Friedman (1970) has suggested a negative link, as social responsibility involves costs and therefore worsens a firm’s competitive position; while a decade later, Arlow and Gannon (1982), after reviewing seven empirical studies, concluded that economic performance is not directly related, in either a positive or a negative way, to social responsiveness (Arlow and Gannon, 1982). In a meta-analysis of 127 multiple regression studies between 1972 and 2002, Margolis and Walsh (2003) examine the connection between social and financial performance and concluded in a positive relationship between corporate social performance and corporate financial performance (Margolis and Walsh, 2003). A number of studies emphasised the problem of selecting appropriate measures for responsible corporate performance. Each method-measurement has limitations because they either have only one dimension (many empirical studies tend to focus on only one or two areas of social performance and ignore the rest) and thus may not properly reflect the overall level of a company’s CSR, or they are difficult to apply across the range of industries (Waddock and Graves, 1997, Heal, 2005, Knox and Maklan, 2004).

Another issue closely related to the interaction between CSR and financial performance is the causality between the two. One view is that good financial performance makes available the funds with which firms can invest in ways that improve their environmental and social performance. The other option is that good environmental and social performance will result in good financial performance due to the efficient use of resource and stakeholder commitment. Scholtens (2008) finds that financial performance in general terms

leads to social performance much more often than the other way around (Scholtens, 2008), while Waddock and Graves (1997), argue the presence of a simultaneous relationship in a kind of “virtuous circle” (Waddock and Graves, 1997).

However, the literature dedicated to CSR and financial performance in the aviation industry is still scant. Airport studies on CSR are constrained in their descriptions of socially responsible actions that industry may apply in order to be consistent with a CSR agenda. Perhaps this is due to the absence of a common framework and a systematic method by which to evaluate individual CSR activities. Many researchers have approached the measurement of the financial-to-CSR connection with various methods such as forced-choice survey instruments, social responsibility indexes, content analysis of documents, behavioural and perceptual measures, and case study methodologies resembling social audits.

In relation to the contribution of this paper, the innovative aspect of this paper is the introduction of an assessment methodology: Valuation Multiples Method, which is used extensively in the financial literature. In doing so, we aim to bridge the gap between Corporate Social Responsibility approaches and financial analysis. As Edwin (2006) has observed, this represents a challenge, but also an opportunity since it is difficult not to find an aviation-related business without some type of CSR programme.

The paper is structured as follows. Section 2 is dedicated to the description of the methodology used for our analysis, where we first present the main principles of our approach and state the reasons for selecting certain ratios in order to proceed with our valuation. In section 3 following the description of our case study, we define the airports that take part in our research. In section 4 we demonstrate and discuss the results of our study while we compare their coherence with our hypothesis. Concluding in section 5, we discuss the results of our selected methodology and we set the directions for further research.

2. Methodology

2.1. Introduction

Accounting-based market multiples are most commonly applied to corporate valuation. In our research we explore the relationship between CSR and financial performance via Valuation multiples (or peer multiples) a methodology widely used in financial research (Liu et al., 2001, Fernandez, 2002, Alford, 1992). Unlike other financial models such as the Dividend Discount Model (DDM) and Discounted Cash Flow (DCF), the Multiple Valuation Method does not require detailed multi-year forecasts of dividends or free cash flows. Instead, the firm being valued is associated with a peer group of firms considered to be comparable (Schreiner and Spremann, 2007). Valuation multiples are useful in comparing similar companies (comparable company analysis) by capturing many of a firm's operating and financial characteristics in a single number that can be multiplied by some financial metric (e.g. EBITDA) to yield an enterprise or equity value. Multiples are expressed as a ratio of capital investment to a financial metric attributable to providers of that capital (Suozzo et al., 2001).

The financial performance of a firm can be examined through its annual account reports, where information about growth, investments, earnings, costs, etc. are listed. In order to link these data with CSR performance, we will use indexes-ratios based in balance sheets, considering that a company's value resides in its balance sheet (Fernandez, 2002). This is the main reason we use this evaluation in this work, so that we may not only extract the enterprise value of a firm/airport, but also to compare a firm/airport with similarly comparable firms that differ in terms of policy decisions and profit management, those sectors where CSR has a prominent role.

2.2. Valuation Ratios

We assume that CSR activities intervene in the assets of a company (in our case, an airport company). These assets produce a value and, in accordance with their productivity, they generate earnings; we will study how the Net Assets (NA) and the Book Value (BV) of a company behave in relationship to its earnings.

Net Assets is the owners' equity. On the balance sheet, NA comprises both capital stock and additional paid-in capital, which represent capital paid into the company for its shares. Net assets also include retained earnings, the portion of accumulated net income not paid out as dividends (Downes and Goodman, 2003, p.p. 613). Therefore, if there is CSR activity, it should be included in the net assets of a company. Book Value is the shareholders' equity stated in the balance sheet. We could say that BV (calculated as total assets minus both intangible assets and liabilities) is a slighter view of a company's NA. Book value neither includes intangible assets nor liabilities in its calculation, domains where the existence contribution of CSR is still unknown.

In order to examine the earnings of each airport, we use the EBITDA (Earnings before Interest, Taxes, Depreciation, and Amortization) value, commonly used in the air transport industry (Fernandez, 2002). Hence, the two first ratios we use are:

$$NA/EBITDA \quad (1)$$

$$BV/EBITDA \quad (2)$$

In this work the hypotheses we want to test is the following: if the company we examine successfully applies a CSR programme, we expect that the trend line of both of the above ratios will have a negative slope through the years, which would indicate that, CSR activities, generate earnings in the company.

To distinguish the difference in million (£s) due to CSR activities, we have to quantify the NA/EBITDA ratio through the following equations:

$$\Delta_j(NA) = (NA)_j - (NA)_i \quad (3)$$

$$(NA)_j = R_j * (EBITDA)_i \quad (4)$$

$$(NA)_{j^i} = R_j * (EBITDA)_i \quad (5)$$

Where i = reference airport;

j = 1,2,...N, with N = set of peer airports;

$(NA)_j$ and R_j are Net Assets and Ratio of each peer airport;

$(EBITDA)_i$ is the EBITDA of the reference airport;

and $(NA)_{j^i}$ is the theoretical value of each peer airport's Net Assets, calculated according to the reference airport's EBITDA.

We also need to examine the relationship between Costs (C) and earnings of the company. If this ratio is below 1.0, the firm is economically viable, whereas firms with ratios greater than 1.0 are not. We assume that if a company has high costs, we also have great earnings due to investments made in order to generate profit. This assumption is one of the major principles in the CSR methodology. By examining the ratio:

$$C / EBITDA \quad (6)$$

we will be able to identify the direction of the interaction between CSR and financial performance, that is, whether CSR leads to earnings, or earnings lead to CSR. Finally, we need to emphasise that all of the above ratios will be calculated per passenger. Although we select peer airports according to number of passengers, we normalize the data by dividing each ratio with number of passengers in order to overcome the problem of passenger variation.

3. Identification of Peer Sets: the Manchester Case Study

Comparable companies will usually share a similar industry, business, and financial characteristics with the reference target. The choice of multiples in valuing and comparing companies depends on the nature of the business or industry in which the business operates (Suozzo et al., 2001). The characteristics we use to identify peer airports can be divided into the following categories:

Airport Characteristics:

- Number of terminals
- Runway Length
- Proximity to CBD (central business district)

Inputs:

- Domestic/International flights
- Number of employees

Outputs:

- Number of passengers
- Number of flights per day

All of the above characteristics are essential if we are to identify a set as peer airports. Airport characteristics are indexes of each airport's physical dimensions while inputs and outputs represent sources of generated income for an airport.

Airport operations are generally classified into two main categories: aviation and commercial. Aviation revenues are sources of income arising directly from the operation of aircraft and the processing of passengers (number of passengers, number of flights per day), whilst commercial operations are generated by activities not directly related to the operation of aircraft (terminal space, landing fees) (Ashford and Moore, p.p. 4-7, 1999). In our research we include both categories.

Apart from being revenue indicators, all of the above airport characteristics can help us create a general idea of each airport's level of social awareness. The ratio of Domestic to International flights is a measure

through which we can identify a hub airport. Along with number of flights per day, the domestic/international flight input provides us with a general view of the airport's contribution to the global inventory of greenhouse gases. In the same context, number of employees and passengers who travel to and from the airport on a daily basis, have some involvement in the environmental depreciation. Conversely, the existence of a hub airport is of great social importance, because it serves millions of people and provides many jobs, whereas the distance from the closest city is a measure of accessibility, choice, and ultimately passenger preference.

In our research we have selected Manchester airport as our reference airport for valuation multiples, because it is the busiest airport outside London, and busier than many European capital city airports. Located at Ringway, 15km outside the City of Manchester, UK, it serves a wide catchment area across Northern Britain, although the majority of passengers are from the North West region. The airport is becoming an integrated transport hub with easy access between air, rail, bus, and coach services for passengers and staff (around 19.000 employees). In 2009, more than 21 million passengers traveled on over 226,000 aircraft movements to over 200 destinations worldwide, as it offers non-stop scheduled international flights. Manchester airport has three passenger terminals and two runways; the second runway opened in February 2001, thereby providing the most substantial increase in national airport capacity for many years. The airport is owned and managed by the Manchester Airports Group (MAG) ¹, a holding company owned by the ten metropolitan borough councils of Greater Manchester, and it is the largest British-owned airport group.

¹ Manchester airport has won awards, including World's Best Airport 1995 and Travel Weekly Globe Award's UK Best Airport 2008 (www.manchesterairport.co.uk/manweb.nsf).

We have selected a group of 10 airports as peer sets to Manchester, in terms of number of passengers, number of employees, number of aircraft movements, number of terminals, runway length, and proximity to CBD. The characteristics are illustrated in Table 1. The sources of this table are multiple as it combines information from each peer airport's financial and traffic statistics, annual reports, as well as Eurostat's database. In accordance with these characteristics we form our set, which consists of European and International Airports. The majority of peers are European airports in the European Union that abide by the same regulations as our reference UK airport. Zurich is the exception, as Switzerland is not a member of the European Union. Three of the International airports belong to the United States and one is in China. Peer airports are listed below:

- Zurich Airport- Kloten Airport
- Vienna International Airport
- Copenhagen Airport
- Dublin Airport
- Barcelona Airport- El Prat Airport
- Palma De Mallorca Airport-Son Sant Joan Airport
- Salt Lake City International Airport
- Fort Lauderdale – Hollywood International Airport
- Tampa International Airport
- Shanghai Hongqiao International Airport

Table 1. Characteristics of peer airports. (Multiple sources).

<i>Airports</i>	<i>Country</i>	<i>Number of Passengers (millions)</i>		<i>Number of flights per day</i>	<i>Proximity to CBD (km)</i>	<i>Number of Terminals</i>	<i>Maximum Runway Length (m)</i>
		<i>2009</i>	<i>2003</i>	<i>2009</i>			
Manchester Airport	United Kingdom- Europe	20.4	18.61	473	15	3	3,200
Zurich Airport	Switzerland- Europe	21.9	17.02	718	9	3	3,700
Vienna International Airport	Austria- Europe	18.11	12.71	667	12	3	3,600
Copenhagen Airport	Denmark- Europe	19.72	17.71	647	8	3	3,600
Dublin Airport	Ireland- Europe	20.5	15.86	580	10	2	2,637
Barcelona Airport	Spain- Europe	30.27	21.35	881	10	3	3,352
Palma De Mallorca Airport	Spain- Europe	22.83	17.83	530	8	1*	3,270
Salt Lake City International Airport	Utah- USA	20.43	18.47	1020	7	2	3,659
Fort Lauderdale – Hollywood International Airport	Florida- USA	20.94	17.43	685	5	4	2,743
Tampa International Airport	Florida- USA	17	15.3	546	11	3	3,353
Shanghai Hongqiao International Airport	Shanghai- China	25.1	20.41	518	13	2	3,400

*Palma de Mallorca's terminal is divided into four modules (A,B,C&D). Module A is used for domestic flights and the others are for international flights. For our research we will consider each module as a separate terminal.

4. Results

As stated earlier, Net Assets is the owners' equity, which represents both capital stock and additional paid-in capital, and includes intangible assets and net income not paid out as dividends. The existence of CSR activity must be integrated in the net assets of a company. From our hypothesis, we expect that the trend line of NA/EBITDA ratio will have a negative slope through the years, indicating that indeed, CSR activities generate earnings in the company.

Figure 1 depicts the changes in NA/EBITDA ratio through the years 2000-2009 for our peer set, divided in two categories. The NA/EBITDA ratio behaviour for our peer set shows that there is a significant difference between the slopes of European airports (Zurich Airport- Kloten Airport, Vienna International Airport, Copenhagen Airport, Dublin Airport, Barcelona Airport- El Prat Airport, Palma De Mallorca Airport- Son Sant Joan Airport) and International airports (Salt Lake City International Airport, Fort Lauderdale – Hollywood International Airport, Tampa International Airport, Shanghai Hongqiao International Airport).

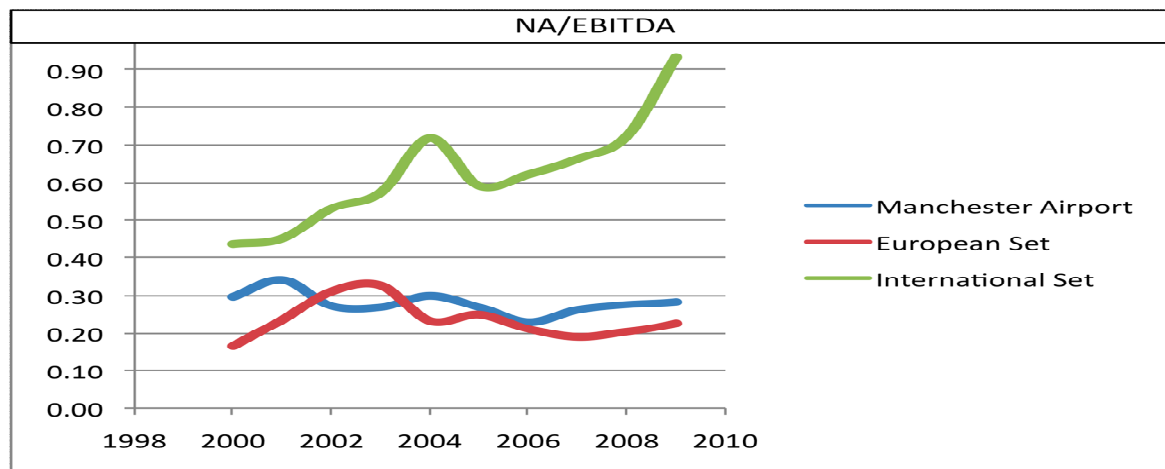


Figure 1. NA/EBITDA ratio through the years 2000-2009 for Manchester Airport (reference airport), European Set and International Set of airports.

Although the Manchester and European airports tend to have a slightly negative slope, the International airports has a significant positive slope, thus indicating that Manchester and the European set are in accordance with our hypothesis, while International airports are not. Manchester's ratio is almost constant, with a small negative slope in the trend line from 2000 to 2009, whereas in the European set the negative slope starts from 2003.

In the same context are also our results regarding BV/EBITDA ratio, which are consistent with Book Value's definition, where BV equals NA minus the intangible assets. Figure 2 demonstrates the changes in BV/EBITDA ratio through the years 2000-2009.

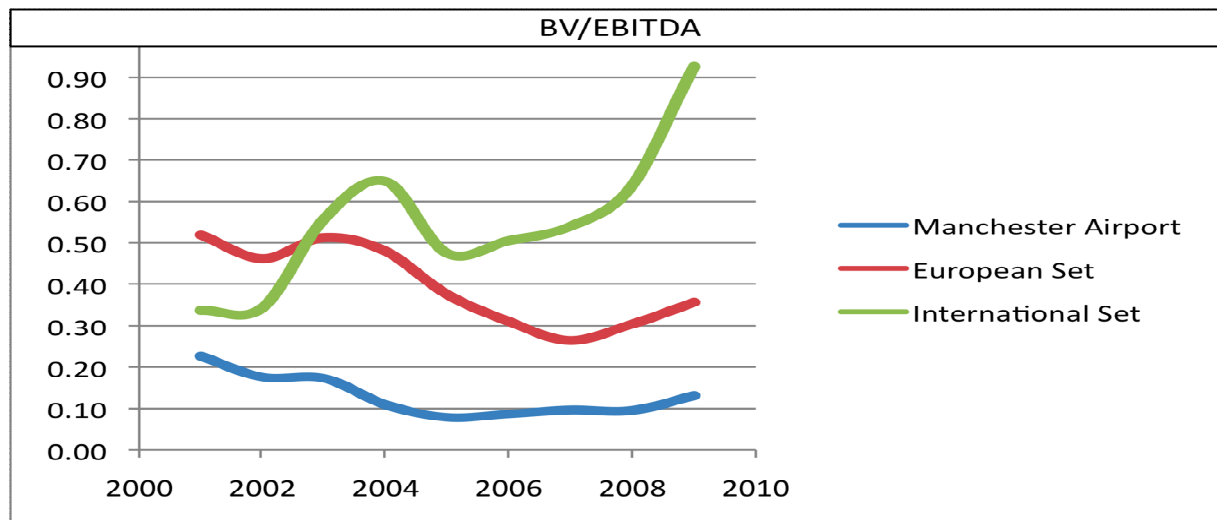


Figure 2. BV/EBITDA ratio from 2000-2009 for Manchester Airport (reference airport), European Set and International Set of airports.

The results show (Figures 1 and 2) that Manchester, as well as the European airports, generate earnings from their CSR activities, whilst we are not able to claim the same for the International airports in our research. However, we are not able to clearly justify the contribution of a well-performed CSR programme. For this reason in Figure 3 we can observe the difference in million (£s) due to CSR activities after quantifying the NA/EBITDA ratio. Figure 3 illustrates the potential difference in the earnings of each airport, in accordance with the reference airport-Manchester, where on the right-hand side we represent airports with higher earnings than Manchester's that have gained from their CSR activities, whilst on the left-hand side we depict the airports with lower earnings than Manchester's.

Barcelona, Copenhagen and Vienna achieve higher profit (almost 3 million £s per year) due to their CSR strategies. The income of Zurich airport is not entirely the result of its CSR activities. Zurich airport has another large source of income, which the other airports of the peer set do not have: a shopping centre with 117 shops, which makes Zurich airport one of the biggest shopping centres among all the European airports. The existence of the mall complicates our ability to estimate the exact difference between

Manchester's and Zurich's financial performance. From our analysis we can observe that, of all the International airports, Tampa displays the smallest difference to Manchester airport (almost 6 million £s per year), while the difference can reach 17 million £s per year for the Salt Lake City airport.

Our hypothesis in this analysis is that the trend line of the NA/EBITDA and BV/EBITDA ratios should have a negative slope in order to indicate that CSR activities generate earnings for the company. Therefore, in relation to our hypothesis, we can state that the differences in million £s per year between the International airports and Manchester may be due to Manchester's better CSR performance. Yet the International airports do not follow our hypothesis from the start, since their slope in NA/EBITDA and was not negative. For this reason, further investigation into the assets of the International airports is necessary in order to justify whether or not their CSR activities generate earnings.

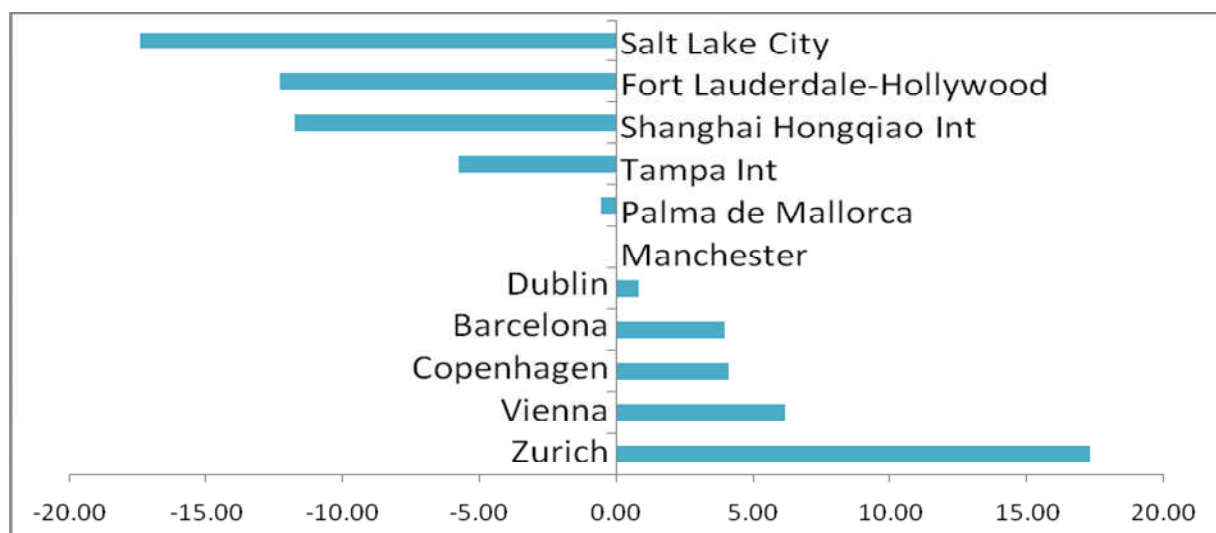


Figure 3. Differences in million (£s) between Manchester and Peer Set due to CSR activities, after quantifying the NA/EBITDA ratio.

Our last step is to calculate the ratio C/EBITDA. In the methodology section we made the assumption that in order to stay viable, a firm with high costs is assumed to have high earnings. Using the ratio C/EBITDA we want to examine if an increase in the costs of the airport, due to CSR investments, will gradually generate earnings after a period of time. In Figure 4 we can observe the C/EBITDA relation of all the European airports over the years. Although we are missing data, the connection between costs and earnings is clear.

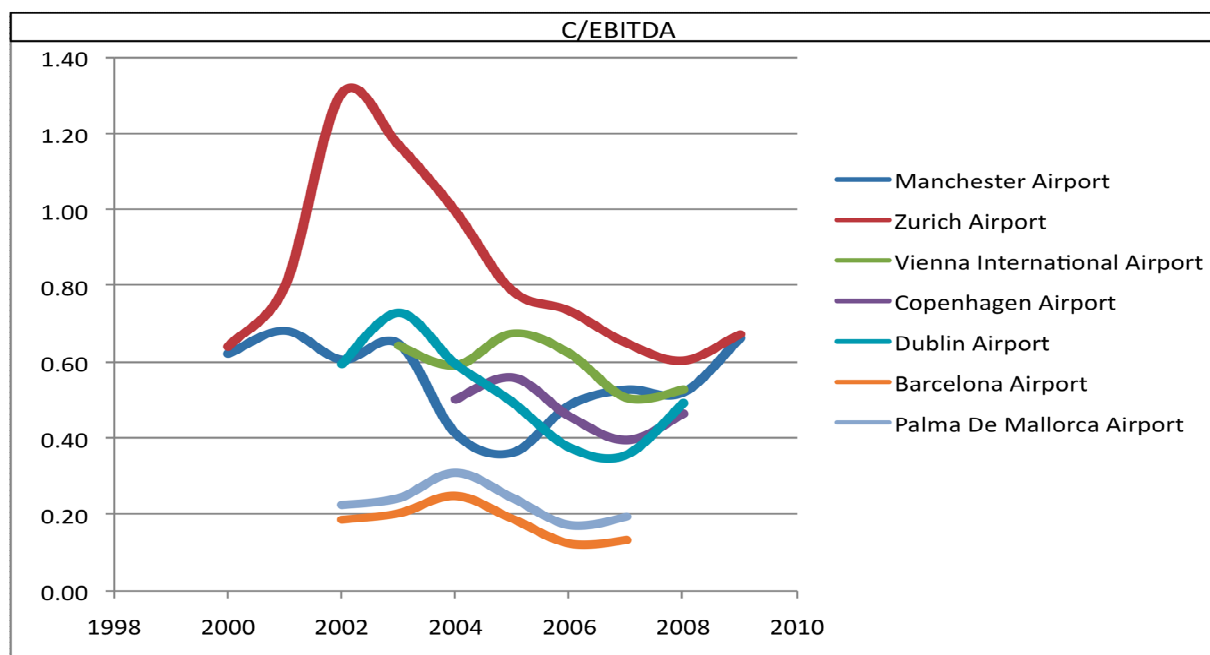


Figure 4. C/EBITDA ratio of all the European airports, over the years 2000-2009.

The curve of the C/EBITDA ratio follows the sine circular function, which demonstrates the continuous connection between Corporate Social Responsibility and Corporate Financial Performance, otherwise in our context known as the “virtuous” circle.

5. Conclusion

The motivation for this paper is a response to the limited attention that has been given to the relationship between social responsibility programmes and airport financial performance. Corporate Social Responsibility (CSR) is an issue, which has been discussed in the business literature for decades. The definition, as well as the measurement of CSR, is a complex endeavour and over the years there have been many proposed methodologies attempting to identify the connection between corporate social responsible activities and profitability, i.e., the stakeholder’s perspective. In our study we have applied the Valuation Multiples, a method commonly used in finance, but which we use in our context to measure the relationship between CSR and the financial performance of airports.

We have identified the peers set of airports and Manchester was selected as our reference airport. Our peer set comprises a selection of both European and International airports. We have shown that only the European airports follow the hypothesis of our work, that is, CSR contributes to the financial performance of an airport. In order to accept our hypothesis, the ratios $NA/EBITDA$ and $BV/EBITDA$ should have a negative slope during the examined period. European airports were consistent with our hypothesis, with Zurich airport being the most profitable airport and Manchester in the 6th place. Finally, by examining the relationship between costs and earnings through the $C/EBITDA$ financial ratio, we were able to identify the so-called „virtuous“ circle between CSR and financial performance.

However, the International airports in our study did not follow our hypothesis, which implies a negative or non-existent relationship between CSR and financial performance, according to the ratios that we have examined. The need for further research arises at this point. In order to understand the mechanism that relates the two, a more analytical assessment must be undertaken in the total assets of each airport. Furthermore, it will be helpful to identify the contribution of the intangible assets in the financial performance related to CSR activities.

References

- Arlow P. and Gannon M.J. 1982. Social Responsiveness, Corporate Structure and Economic Performance. *Academy of Management Review* 7, 235-241.
- Ashford N. and Moore C. 1999. *Airport Finance*, The Loughborough Airport Consultancy, United Kingdom.
- Barrett M. and Ferguson M. 1996. *Aviation Liberalisation and the Environment in Europe*. SENCO, Sustainable Environment Consultants Ltd., Institute for European Policy.
- Burke L. and Logsdon J. M. 1996. How Corporate Social Responsibility Pays Off. *Long Range Planning* 29(4), 495–502.
- Cochran P.L and Wood R.A. 1984. Corporate Social Responsibility and Financial Performance. *Academy of Management Journal* 27(1), 42-56.
- Downes J. and Goodman J. 2003. *Barron's Finance & Investment Handbook*. Barron's Educational Series, New York.
- Edwin D.P. 2006. Corporate Social Responsibility in Aviation. *Journal of Air Transportation* 11, 65-87.
- Epstein M. J. and Roy M.-J. 2001. Sustainability in Action: Identifying and Measuring the Key Performance Drivers. *Long Range Planning* 34(5), 585–604.
- Fernandez P. 2002. *Valuation Methods and Shareholder Value Creation*. Elsevier Science, USA.
- Friedman M. 1970. The Social Responsibility of Business is to Increase Its Profits. *New York Times Magazine*, 13 September: 32-3.
- Heal G. 2005. Corporate Social Responsibility: An Economic and Financial Framework. *The Geneva Papers on Risk and Insurance: Issues and Practice* 30(3), 387–409.
- Knox S. and Maklan S. 2004. Corporate Social Responsibility: Moving Beyond Investment Towards Measuring Outcomes. *European Management Journal* 22(5), 508–516.
- Margolis J.D & Walsh J.P. 2003. Misery Loves Companies: Rethinking Social Initiatives by Business. *Administrative Science Quarterly* 48(2), 268-305.
- Nicolau J.L. 2008. Corporate Social Responsibility, Worth-Creating Activities. *Annals of Tourism Research*, Vol 35, No.4, pp. 990-1006.
- Manchester Airport. <http://www.manchesterairport.co.uk/manweb.nsf>. Date accessed 07/06/10.

Scholtens B. 2008. A Note on the Interaction Between Corporate Social Responsibility and Financial Performance. *Ecological Economics* 68, 46-55.

Schreiner A. and Spremann K. 2007. Multiples and Their Valuation Accuracy in European Equity Markets. Available at SSRN: <http://ssrn.com/abstract=957352>. Date accessed 07/06/10.

Suozzo P, Cooper S., Sutherland G. and Deng Z. 2001. Valuation Multiples: A Primer. Available at: <http://macabacus.com/>. Date accessed 07/06/09.

Waddock S.A, Graves S.B. 1997. The Corporate Social Performance-Financial Performance Link. *Strategic Management Journal*, Vol. 18, No. 4 pp. 303-319.

Weber M. 2008. The Business Case for Corporate Social Responsibility: A Company-Level Measurement Approach for CSR. *European Management Journal* 26, 247-261.

Whitelegg J. 2000. Aviation: the Social, Economic and Environmental Impact of Flying. Ashden Trust, London. Available at: <http://www.areco.org/air10.pdf>. Date accessed 07/06/10.