An Analysis for the Airline Industry: A Case Study of Delta Air Lines and Southwest Airlines*

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Abstract

In this study, we investigate competences and key success factors in the airline industry by analyzing financial statements of Delta Air Lines, one of the best major airlines, and Southwest Airlines, one of the most successful regional airlines. This study conducts comparative analysis, common size analysis, and ratio analysis in order to identify competences and key success factors of the selected airlines. The study's results show that Delta Air Lines focuses on fuel and oil expense control, customer services with various programs, and global expansion. On the other hand, Southwest Airlines mainly adopts cost leadership strategy using a single kind of aircraft to reduce the expense of training and maintenance.

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Ⅰ. Introduction

As an essential part of a global economy, the international airline industry provides service to every corner of business and tourism destinations. Today, the airline industry consists of over 2000 airlines operating over 23,000 aircrafts and providing service to over 3700 airports. Despite great yearly fluctuation resulted both from changing economic conditions and gaps in economic growth in many different places of the world, the average growth of world air travel has been about 5% per year over the past 30 years. The annual growth in air travel has been about twice the annual GDP growth. Although economic growth is expected relatively conservative over the next decade, a continued 4-5% annual growth in global air travel will lead to a doubling of total air travel during this period (Peter P. B. and Amedeo Odoni, 2009).

Several key trends are currently identified in the airline industry (Lew, 2010). First, the Three-Hour Rule is prevalently adopted by airline firms. The US Department of Transportation recently passed a new rule to protect passengers from wasting their time in a plane idling on a airstrip for six hours or more. According to the Three-Hour Rule, an idling airplane has to take off or return to the gate and let passengers get off within three hours of boarding. Second, the increasing trend in baggage fee is recently found in the airline industry. To balance their books, most airline firms charge $25 for the first checked bag and extra fees for additional baggage, which is an additional income source. Third, more than a decade ago, when the economy was relatively stable, many domestic airports planned upgrades to their terminals and runways. Construction may have been delayed due to slow economy, but some new or renovated terminals, such as Detroit Metro Airport and JetBlue terninals at JFK, became available several years ago. Firth, airlines are becoming more dependent on technology to rationalize passenger experience at check in and at the gate, by introducing paperless boarding passes, for example, for which a bar code sent to the phone and then scanned through a bar code reader. Fifth, continuous successes of low cost airlines have been continuously dominant in the airline industry. Due to cheaper prices as a competitive advantage, low cost carriers, such as Southwest Airlines, JetBlue, and AirTran, went through economic crisis much better than their bigger rivals.

As the oldest airline still operating in the United States, Delta Air Lines is a major American airline whose headquarter is located in Atlanta, Georgia. The airline operates an extensive domestic and international network serving six continents and providing scheduled air transportation for passengers and cargo throughout the United States and around the world. Delta Air Lines has approximately 80,000 employees and its subsidiaries operate over 5,000 flights every day. The airline's hub at Hartsfield-Jackson Atlanta International Airport is the world's busiest airport by passenger traffic with over 91 million passengers per year and by number of landings and takeoffs. The company is one of the four founding members of the SkyTeam airline alliance, and the loyalty program of the company is called SkyMiles. To illustrate about Delta's efforts for customer services, Delta is focusing significant attention on the training its staff, especially those who face customers, as a part of the multi-billion quality improvement program. The enhanced training programs and seminars are conducted for about 11,000 Delta passenger service agents and supervisors. In addition, through Delta app for smart phones, the company started mobile bag tracking, which allows passengers to track their checked baggage in real-time, for the first time in the industry. The airline also introduced a premium service in partnership with the German automaker Porsche at its Atlanta hub for its highest-tier Diamond Medallion customers. In terms of airport experience, to improve customer service Delta placed 'wireless powerpads' in the seating areas of Delta SkyClub in early 2011, in addition to many free-standing charging stations throughout its terminals. Furthermore Delta announced that the firm vertically integrated a refinery near Philadelphia for 180 milion dollars to control fuel expense, the largest cost for the airline (Pillsbury, 2012).

Southwest Airlines is a major U.S. airline and the largest low-cost carrier in the world. The airline was established in 1967 and its headquarter is in Dallas, Texas. The airline has more than 46,000 employees as of August 2012 and operates more than 3,400 flights per day. It carries the most domestic passengers of any U.S. airline as of 2011 and it has scheduled service to 89 destinations nationwide, as of

2013. In general, Southwest Airlines has operated Boeing 737s only, being the largest operator of the 737 worldwide with over 550 in service. To expand market share and strengthen competence, Southwest acquired AirTran Airways in May 2011. For human resources management, widely recognized as one of the most customer-centric airlines in the industry, Southwest Airlines encourages its employees to make a difference under its fun culture. Additionally, Southwest is one of exceptions among US airlines since the company goes against the industry trend of charging for an increasing number of amenities. At the same time, the airline is the only major U.S. airline that does not charge extra money for passengers to check a first and second luggage, which is one of the major reasons for customers to choose Southwest. As a CSR activity, Southwest launched 'Dedicated to Denver' campaign to hire its local employees and offer Denver residents free services such as complimentary cab rides across town. Another CSR initiative worth to be mentioned is Southwest's 'Green Plane' for which the airline adopts eco-friendly cabin materials recyclable with lighter weight to save up to five pounds per seat. Finally, to attract more business travelers, Southwest has launched various measures including a 'Business Select' fare and inflight Wi-Fi. (Render, 2012).

Delta and Southwest airlines employ different operations and strategies. Delta, the second biggest air carrier in the United States, focuses on corporate level strategy to expand the firm's boundary of operations. For example, Delta surprised the industry by being the first airline to vertically integrate an oil refinery in order to improve fuel expense control and it actively conducted strategic alliance with other firms to better attract customers. In addition, Delta also has operated multiple aircrafts to enhance market shares serving comprehensive customer segments. On the other hand, as a regional airline, Southwest focuses on business level strategy to gain competitive advantage in one market. That is, Southwest has mainly taken advantage of cost leadership strategy with standardized fleets of Boeing 737s. This contributes to cost reduction in pilot training on aircraft, maintenance, and operations management by allowing the firm to concentrate on the same kind of aircraft.

Motivated by the significance of the airline industry for the global economy, representativeness of the two airline firms, different positioning and strategies of two airline firms, this study employs a case study of Delta Air Lines and Southwest Airlines. More specifically, this study conducts common size, comparative, and ratio analysis for the selected airline firms using key items extracted from balance sheet and income statement of each firm. Next literature review is provided, followed by methodology and results sections. Conclusion section finalizes the study.

II. Literature Review

Accounting analysis is used to assess the stability, viability, and profitability of a business. One of the key purposes of accounting analysis is to estimate a company's future performance using its past performance. A commonly used technique of accounting analysis is to calculate ratios from the data in financial statements in order to compare the current performance with the past performance of the company or those of other companies. Carrying out accounting analysis is helpful in solving purposes like solvency, profitability, liquidity and stability (Brealey, Myers, and Marcus, 2010; Chatfield and Dalbor, 2004; Weygandt, Kieso, Kimmel, and DeFranco, 2008; Wild and Kwok, 2011).

Common size (or horizontal), comparative (or vertical), and ratio analysis are three commonly used tools for accounting analysis using financial statements. Common size or vertical analysis, expresses each item of a financial statement as a percent of a base amount, which is total asset for the balance sheet and net sales in the case of the income statement (Brealey, Myers, and Marcus, 2010; Weygandt, Kieso, Kimmel, and DeFranco, 2008). Common size analysis is helpful to identity the proportion of each accounting item and compare the proportion of the item of one firm with that of other firms and with that in different accounting periods.

Comparative or horizontal analysis evaluates a series of financial statement data over a period of time. It is used to figure out the increase or decrease that happened over a certain period since it compares items in a financial statement from two different time periods (Brealey, Myers, and Marcus, 2010; Chatfield and Dalbor, 2004;

Weygandt, Kieso, Kimmel, and DeFranco, 2008). In comparative analysis, a base year is chosen and changes are expressed as the absolute amount or percentage compared to the base year amount. By conducting comparative analysis, users can find the growth trend of each accounting item efficiently and compare the growth rate of items of one company with that of competitors.

Ratio analysis is a technique used to analyze financial statements by expressing the relationship between chosen accounting items in financial statements (Brealey, Myers, and Marcus, 2010; Chatfield and Dalbor, 2004; Weygandt, Kieso, Kimmel, and DeFranco, 2008; Wild and Kwok, 2011). Ratios can be classified as liquidity, profitability, and solvency (Weygandt, Kieso, Kimmel, and DeFranco, 2008). Specifically, liquidity is the short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash. Profitability means the income or operating success of a company for a certain period of time. Solvency is the company's ability to survive over a long period of time.

Ⅲ. Methodology

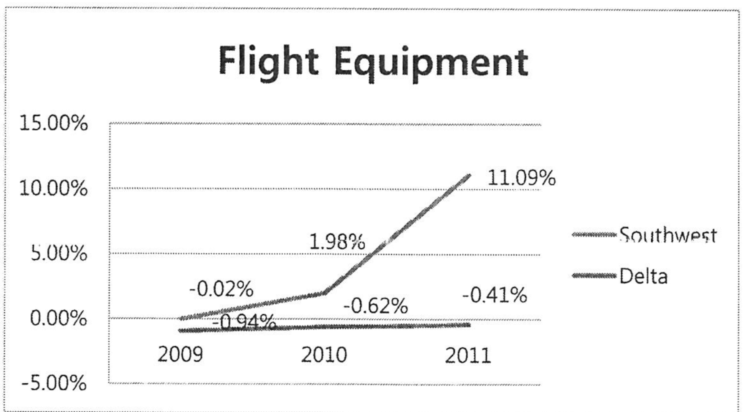
To analyze two selected airlines' accounting information, this study conducts common size, comparative, and ratio analysis using financial statements collected from 10-Ks of each firm. The time period of the study encompasses from fiscal year 2008 to fiscal year 2010. This study selects three representative accounting items in each firm's balance sheet and income statement respectively for common size and comparative analysis. And another three items were chosen for ratio analysis using accounting data in financial statements.

Three items selected from balance sheets are 'Flight Equipment', 'Liabilities', and 'Long-term Debt'. Assets of Delta Air Lines and Southwest Airlines both have increased. By taking a look at 'Flight Equipment' item, this study intends to identify business expansion and check what market circumstance looks like using items, 'Liabilities' and 'Long-term Debt'. Three items chosen from income statements are 'Maintain Cost per Flight Equipment', 'Fuel and Oil Expense', and 'Operating Income'. Aircraft are regarded the most important assets for airline companies, and fuel and oil costs are crucial factors that have significant influence on the airlines' overall expenses. Thus, this study attempts to analyze the companies' expense dimension with items, 'Maintain Cost per Flight Equipment' and 'Fuel and Oil Expense.' On the other hand, this study also checks operating income trends with comparative analysis on the item: 'Operating Income' and 'Total Operating Income.'

Three items used for ratio analysis are 'Quick Ratio' representing liquidity, 'Times Interest Earned' for the solvency, and 'Return on Asset (ROA)' for the profitability dimension. 'Quick Ratio' shows the ability of a company to use its cash or quick assets to extinguish or retire its current liabilities immediately. 'Times Interest Earned' can be a safety indicator that measures the long-term debt redemption ability, whereas 'Quick Ratio' shows the short-term debt redemption ability. ROA is an indicator of how profitable an enterprise is in relation to its total assets. With ROA, investors can get an idea regarding how the company's assets are efficiently generating earnings. ROA is calculated by dividing a business' annual earnings by its total assets.

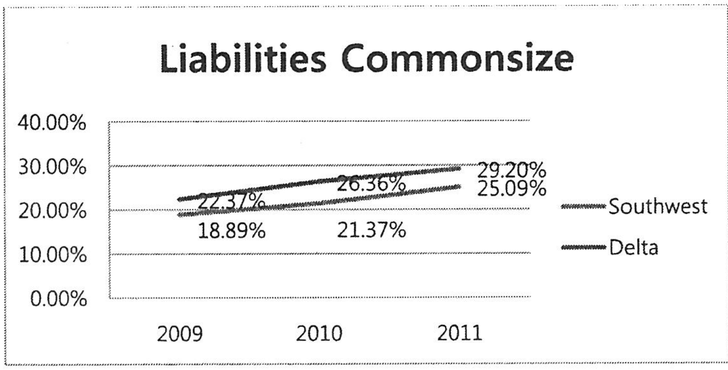
Ⅳ. Results

4.1 Flight Equipment

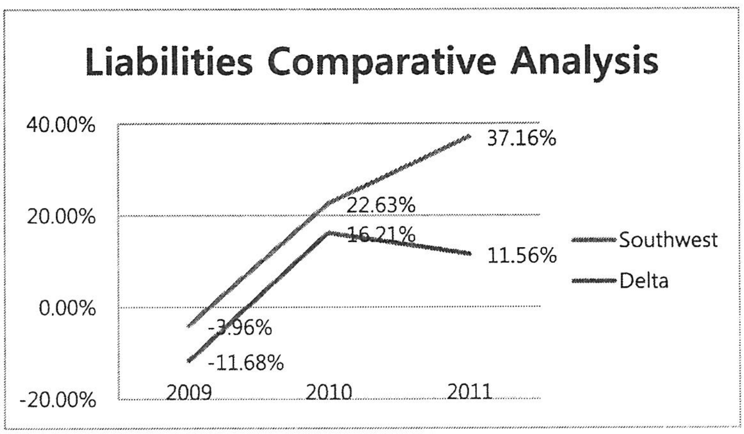


Southwest is not only expanding with diversification strategy but also improving their revenue in Atlanta. Southwest Airlines acquired Air Tran in 2011 and the main reason of the acquisition was considered as for expansion in Atlanta. Due to this acquisition, the company's flight equipment was increased in 2011, and it is expected to improve its market share in Atlanta.

4.2 Liabilities

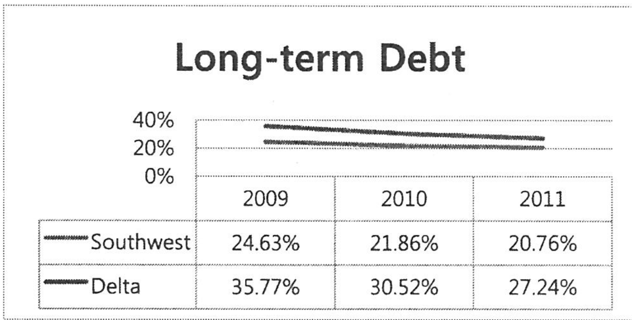


This is common-size analysis on both companies' liabilities, and the rates are increasing during the periods. As businesses expanded, overall total revenue increased and the firms became mature. Based on this factor, it seems that the common-size liabilities of both companies are getting continuously higher as they need much more amounts of budgets and capital.



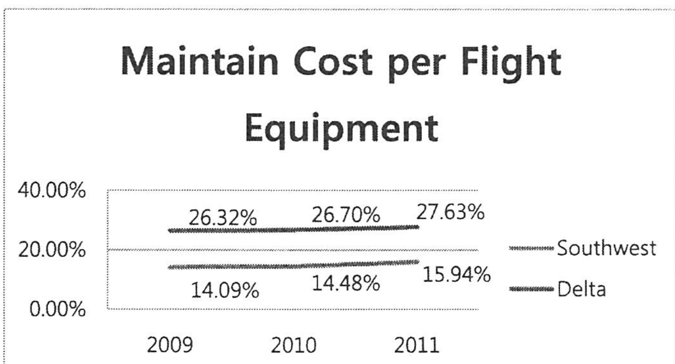
Looking at the graph of comparative analysis, in 2009, the firms showed a negative growth, which may be resulted from financial crisis started from 2008 as they suffered expanding business under harsh circumstances. It presented positive growth rate afterwards, and in 2011, in particular, Southwest recorded great liability growth rate compared to Delta. Southwest Airlines completed the M&A with Air Tran in 2011 and acquired 34 billion dollars of Air Tran's assets including liabilities.

4.3 Long-term Debt



In terms of composition of liabilities, long-term debts are continuously decreasing while short-term debts are increasing. It implies that companies have more burden for their flexibility when doing business and they are dealing with many variables in markets to ensure managerial capacity.

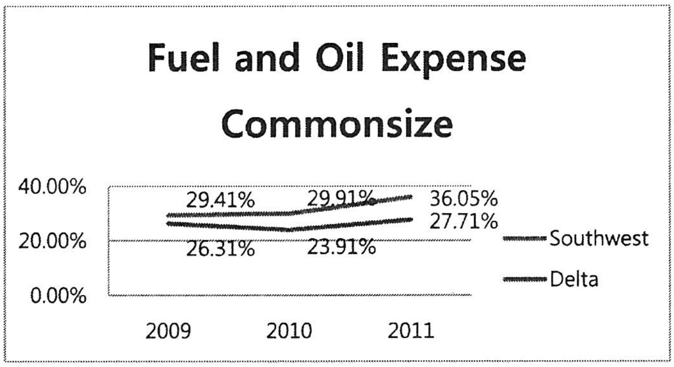
4.4 Maintain Cost per Aircraft



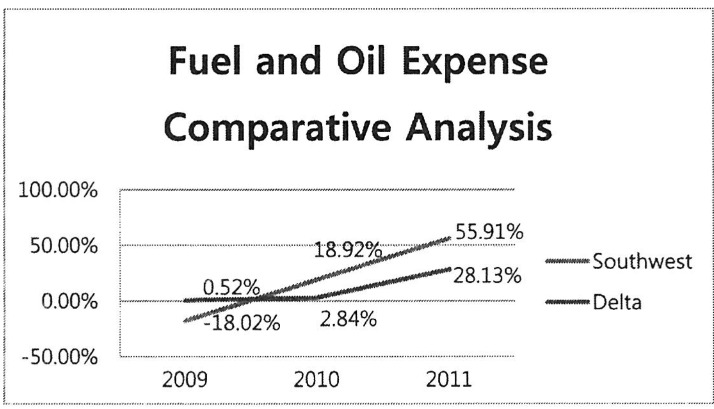
This graph shows the gap between the two firms' 'Maintain Cost per Flight Equipment' item proportion, which is almost double. Cost leadership strategy of Southwest Airlines is well reflected in this gap. Southwest Airlines has only one kind of aircraft, Boeing- 737, thereby reducing the expense for maintenance and training costs for pilots and ground crew.

4.5 Fuel and Oil Expense

Oil price has continuously increased, being doubled in 2011 from 2009. The increase in fuel and oil cost gives a huge burden to Airlines industry. Southwest Airlines and Delta Air Lines control this increasing cost by hedging.

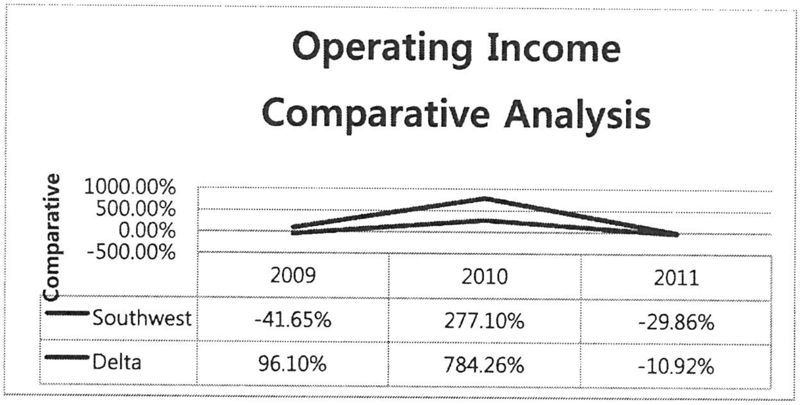


Delta Air Lines seems to have controlled oil expense more efficiency than Southwest Airlines. Based on this graph, Delta Air Lines may have much more excellent operating system and strategies than those of Southwest Airlines' in terms of fuel and oil expense management.

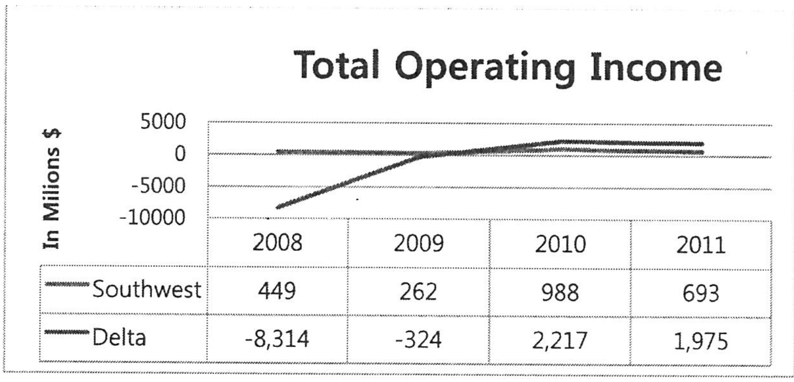


In the graph of comparative analysis on 'Fuel and Oil Expense', fuel and oil expense continuously increased until 2011. However, increases in revenue in both companies were a lot similar. Therefore, considering those factors, one can interpret that Delta Air Lines has shown the efficiency in controlling fuel and oil expense.

4.6 Operating Income



	2009	2010	2011
Southwest	-41.65%	277.10%	-29.86%
Delta	96.10%	784.26%	-10.92%



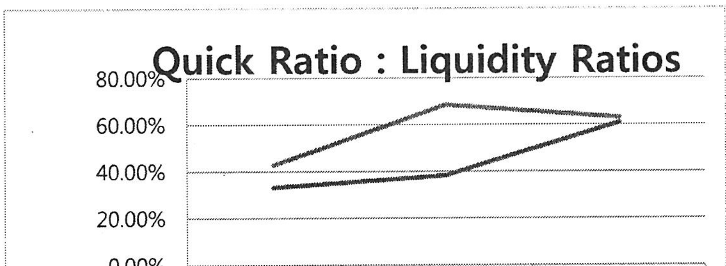
	2008	2009	2010	2011
Southwest	449	262	988	693
Delta	-8,314	-324	2,217	1,975

When we see the operating income in comparative analysis, there is a huge gap between the two companies in 2009 and this data is very likely to be misinterpreted if you just mind the figure itself. However, it does not mean that Delta did well in that year as you see the raw data in the following graph below the operating income. Delta recorded huge deficit, 8,314 million dollars in 2009 while they made less loss with the deficit of 324 million dollars the next year. Because of this, in the comparative analysis, it recorded positive figure even though they still made a lot of loss actually in the market.

Southwest Airlines, on the other hand, recorded the black-ink balances in 2008 and 2009 despite the financial crisis. But it recorded negative figure in the comparative graph of total operating income as it earned more operating income in 2008 than it did in 2009. With this figure, it shows that Southwest exerted better risk management ability than Delta did. It would be much appealing to prospective investors since Southwest shows less fluctuation of performance and riskiness of Southwest Airlines.

In 2011, both of the companies recorded negative operating income growth rate and the reason may be the increase in fuel price of that year, which resulted in increase in operating expenses.

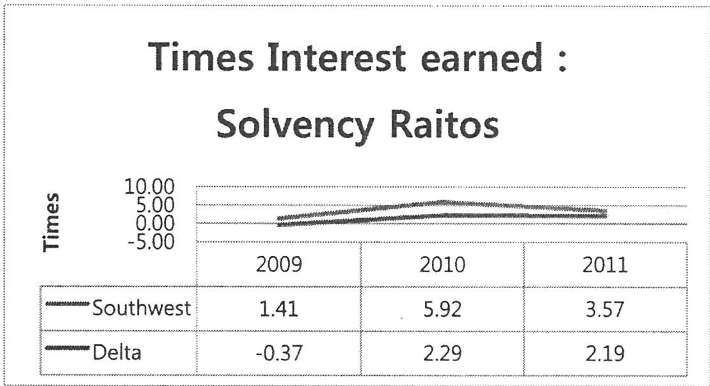
4.7 Quick Ratio



	2009	2010	2011
Southwest	42.71%	68.50%	62.89%
Delta	33.23%	38.19%	60.83%

Quick Ratio is an indicator that evaluates a company's short-term solvency ability. As shown in the graph, in the Southwest case, it steadily increased from the year of 2009 to 2010 but decreased to 62.89% in 2011 by a small margin due to the acquisition of Air Tran. On the other hand, Delta has come out of financial crisis and increased cash holding amount, thus, the company's solvency ability steadily increased from 33.23% in 2009 and hit 60.83% in 2011. This increase may be caused by stabilization of management.

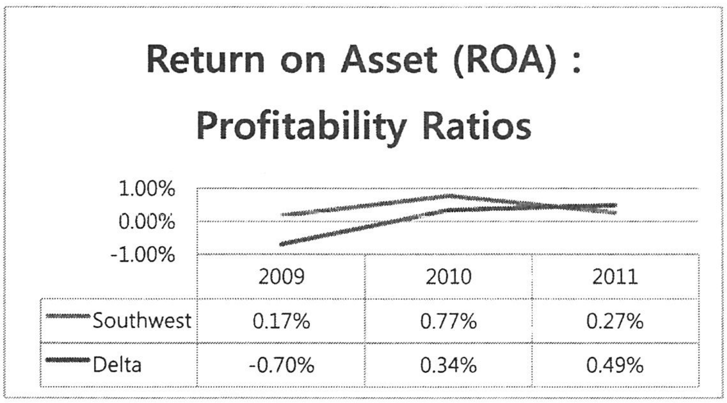
4.8 Times Interest Earned



	2009	2010	2011
Southwest	1.41	5.92	3.57
Delta	-0.37	2.29	2.19

While 'Quick Ratio' reflects the firm's short-term debt redemption ability, 'Times Interest Earned', a kind of solvency ratio, measures long-term debt redemption ability. For Southwest Airlines, the ratio grew from 1.41 in 2009 to 5.92 in 2010, but went down to 3.57 in 2011 because of cash investment resulted from M&A. On the other hand, Delta scored -0.37 in financial crisis of 2009, but as the firm raised its long-term debt redemption ability, they grew up to 2.19 in 2011. Through this analysis, it can be concluded that both companies do not have problem in interest payment.

4.9 Return on Assets (ROA)

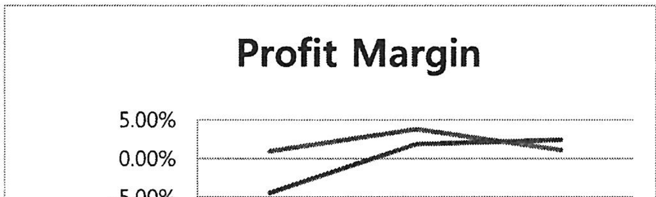


	2009	2010	2011
Southwest	0.17%	0.77%	0.27%
Delta	-0.70%	0.34%	0.49%

Southwest showed growth from 2009 to 2010, but showed decrease in 2011 by

0.5%, from 0.77% to 0.27%, again due to M&A. In the case of Delta, the company's ROA was -0.7% in 2009 but by virtue of management enhancement, Delta pulled it up to 0.49% in 2011. To dig into the each firm's profitability more specifically, this study investigates profit margin and asset turnover separately, which are two components that consist of ROA.

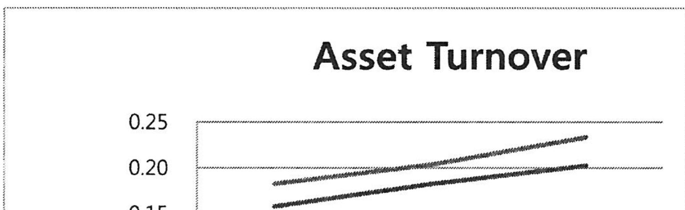
4.10 Profit Margin



	2009	2010	2011
Southwest	0.96%	3.79%	1.14%
Delta	-4.41%	1.87%	2.43%

Profit Margin is the net profit as a percentage of the revenue. As shown in the graph, in the case of Southwest, low profit margin seems to be the firm's basic strategy. Notably, the increase of total assets in 2011 that was resulted from acquisition of Air Tran led to the decrease of profit margin. In the case of Delta, the company scored -4.41% in 2009 mainly because of financial crisis, but came out of it in 2010 and increased its profit margin up to 2.43% in 2011.

4.11 Asset Turnover



	2009	2010	2011
Southwest	0.18	0.20	0.23
Delta	0.16	0.18	0.20

Both Southwest and Delta showed a steady growth in asset turnover. For Southwest Airlines, its assets turnover increased from 0.18 in 2009 to 0.23 in 2011. Particularly, despite the increase in its total assets resulted from the acquisition of Air Tran in 2011, it grew continuously. It can be seen that Southwest kept stable management even after M&A. Delta's asset turnover increased from 0.16 to 0.20 in two years, showing that they performed stable management as well.

V. Conclusion

In this study, a comparative analysis is conducted for the two selected airline companies, Delta Air Lines, which is a leading company of major airlines and Southwest Airline, which is a representative company in the regional airline industry. This study investigates each company's operations and strategy and analyzes accounting information using financial statements data. Based on the analysis, this study attempts to discuss how the strategies and operations bring benefits to the both companies and also provides the possibility of growth that can be referred by investors and other stakeholders that are influenced by the companies' decision making.

Delta Air Lines experienced deficits during the US financial crisis between the year of 2008 and 2009, but the company started to recover in 2009 and returned on a blank-ink balance in the end. One of the notable things of Delta Air Lines is that the firm showed a very competitive management ability in controlling fuel and oil expense. With its capability, Delta makes it possible to buy jet aircraft fuel cheaper than the standard market price. At the same time Delta made substantial amount of effort for better customer services trying out various programs and is also developing global market expansion through merge and acquisition. Delta Air Lines will be able to keep the title of the 1st airline company if they keep pursuing better achievements, just like their slogan, "Building a better airline, not just a bigger one.

Southwest Airlines showed great flexibility and capability of handling economic issues in every crisis. It seems that the company's strength, cost leadership strategy, worked in the economic crisis so successfully that the firm was able to keep the black-ink balance even in the 9.11 terrorists' attack and the US financial crisis. Since Southwest Airlines use a single kind of aircraft, Boeing-737, the company can lessen its maintenance costs for aircraft along with training costs for pilots and ground crews. Like Delta, it uses fuel-hedging to manage the fuel and oil expense. Southwest Airlines is expected to maintain its position and market share amongst low-cost regional airlines.

Regarding recommendations, first, Delta may go for the offensive management strategy. The firm is breaking away from passive management and competing against low-price airline rivals like Southwest Airlines by re-establishing a low-price airline, for example, Delta Song Airline. Also, it decreased the number of employees while increased the pay to provide high quality service. On the other hand, Delta can also pursue defensive management strategy. Since Delta's management already became stable, its goal is to maintain the company's management strategy, number of employees, and the quality of service. After reviewing all the evaluations, it seems that defensive management strategy would be better for Delta. Southwest is already running the tops in low-price airline industry, thus there is no need to take the risk of entering a new market. Also, because Delta is continuously showing growth in income, it is concluded that keeping the stability would be the better strategy in this situation.

In the case of Southwest Airlines, it also can choose from two different strategies. One way is to keep the offensive management strategy. Despite the M&A in 2011, Southwest managed the company fairly well, so it can be recommended that Southwest try enlarging their business by additional mergers and acquisitions or by purchasing more flight assets. Otherwise, the company can also consider choosing defensive management. Southwest already established unparalleled position in the low-price airline industry. Given that the majority of airlines are taking management strategy for stabilization and that Southwest still need to deal with the expenses from M&A in 2011, there is no need to take a risk for offensive management.

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