

Case Study

Traditional Ratio Analysis in the Airline Business: A Case Study of Leading U.S Carriers

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Abstract

The paper addresses the traditional ratio analysis in the airline industry based on the U.S example. Given the specificity of the airline industry and its significant vulnerability to adverse changes in economic and business conditions, conducting a ratio analysis aims to reveal the airline industry-specific behavior of the selected liquidity, profitability and solvency ratios computed for eight U.S largest airlines over the period 2007-2012 and find out whether known rules of thumb are applicable to the airline industry. Moreover, via traditional ratios the paper examines the financial performance of selected U.S carriers during the given period by identifying major challenges that they are facing. A brief part in the paper is dedicated to the description of the recent developments in the U.S airline industry and historically high fuel prices that will allow us to better understand the behavior of ratios over time.

Keywords: *Airline industry, Ratio analysis, Liquidity, Economic recession, Fuel prices, Earnings, Labor costs.*

Introduction

The financial ratio analysis has always been considered as a fundamental element in financial statement analysis and involves conducting a quantitative analysis of information disclosed in general purpose financial statements of companies under review via various accounting ratios that show relations among different items from the balance sheet, statement of operations and statement of cash flows and are used to evaluate companies' performance for investing and financing purposes.

Traditional ratio analysis used to assess the company's liquidity, profitability, operating efficiency and solvency has always been subject to limitations as it is mainly based on balance sheet data which is static and the income statement which includes various non-cash charges. Therefore, for the purpose of having a more comprehensive picture of a company's financial performance, over the last two decades different authors including Mills and Yamamura (1998), Giacomino and Mielke (1993), Figlewicz and Zeller (1991) and others have developed various cash flow ratios in an attempt to incorporate a company's cash flows into the overall ratio analysis. Financial ratios are industry specific, that is, they differ from one industry to another

depending on their economic characteristics. The airline industry is highly vulnerable to adverse economic, financial and business conditions being subject to challenges including historically high fuel and labor costs that represent largest operating expenses. Ongoing uncertainties in the airline business environment have produced profound interest in analyzing traditional financial ratios' behavior in this specific industry over the last six years based on the case study of leading U.S carriers. Over the past decade, U.S domestic airline operations have been highly affected by significant events including economic recessions that had hit the U.S economy in 2001 and from 2007 to 2009 causing domestic carriers to report significant financial losses, terrorist attacks on September 11, 2001, airline mergers, continuously increasing fuel prices and labor costs, as well as the replacement of older aircrafts with more fuel efficient ones [16].

To manage through consequences of economic recession and soaring fuel prices, U.S airlines resorted to the capacity reduction that would help them reduce operating expenses and improve profitability. Despite the recent improvements in the airline industry, profitability still remains low being conditioned by slow growth of air travel

demand, both for cargo and passenger traffic, and high fuel prices [17].

Therefore, the paper has a twofold approach placing emphasis, on the one hand, on the behavior of selected financial ratios inherent in the U.S airline industry over the past six years and the analysis of selected eight leading U.S carriers' financial performance, on the other hand. Furthermore, the selected financial ratios for the leading U.S airlines are examined over a certain time period being compared with the historical financial ratios, existing traditional rules of thumb, if any to determine whether they are applicable to the airline industry, as well as with average values of ratios for selected air carriers.

The paper additionally discusses the current literature on the ratio analysis, the methodology used to conduct a study, as well as briefly addresses the overall U.S airline industry including the recent developments and challenges prevailing in the industry.

Literature Review

The contemporary literature on financial statement analysis to a significant extent addresses the use of various financial ratios to assess a company's performance for a certain year or period of time as the ratio analysis is considered as a cornerstone for conducting financial statement analysis [12]. The computation of financial ratios based on information in a company's financial statements to evaluate profitability, operating efficiency and risk is one of the important and useful analytical tools and shows relations among various balance sheet and income statement items [24].

Charles Horngren et al. (2006) state that the most important part in ratio analysis is the interpretation and evaluation of financial ratios computed that require making three types of comparisons to determine whether they indicate good, average or bad performance. These comparisons include time-series analysis which implies that the set of financial ratios calculated for a certain year are compared with the entity's historical financial ratios, benchmark analysis when computed financial ratios are compared with general rules of thumb and cross-sectional comparisons that imply an analysis of a company's financial ratios in relation to those of peers or industry averages. Nevertheless, Larson and Miller (1995) claim that the financial ratios of competing companies under review are considered as standards that best serve comparison whereas rules of thumb are not so reliable as they cannot be similarly applied to all industries with

different economic characteristics. Therefore, it is crucial to identify economic characteristics of an industry under review and take them into account in evaluating financial ratios [14]. Erich Helfert (2001) classifies and discusses financial ratios in accordance with three major viewpoints: management's viewpoint, owners' or investors' viewpoint and lenders' viewpoint. A certain ratio becomes useful when it best serves the objectives of the analysis and relates to the viewpoint defined by the analyst. Managers are more interested in margin ratios, return on assets, EBIT, EBITDA, turnover ratios, and free cash flow whereas investors pay close attention to measures such as return on equity, earnings per share, dividends per share, total shareholder return, price to earnings ratio, and lenders assess a company's solvency and liquidity based on the current ratio, quick ratio, debt ratios and coverage ratios [13].

Unlike Helfert's classification, James Wahlen et al. (2008) discuss the use of financial ratios in relation to the analysis of short-term liquidity risk, profitability and long-term solvency risk.

Apart from traditional ratios that are mainly based on the balance sheet and income statement, George Friedlob and Lydia Schleifer (2003) also discuss cash flow ratios which have been developed over the past few decades by authors including Mills and Yamamura (1998) stating that cash flow information is much more reliable in evaluating a company's liquidity than information in the balance sheet and income statement, Giacomino and Mielke (1993) who claim that cash flow ratios are more useful in assessing a company's financial strength and profitability, and Figlewicz and Zeller (1991) whose cash-flow based analysis showed that it provided supplementary insight into the overall financial performance of a company.

Methodology

The paper presents a quantitative analysis of information reported in financial statements of selected U.S leading airlines using traditional financial ratios to not only understand their behavior specific to the airline industry and trends in the course of time, but also assess the U.S major airlines' financial performance for six successive years (2007-2012) which will reveal the main challenges that airlines are currently facing. As a source of information, airlines' 10-k form annual reports filed with the Securities and Exchange Commission (SEC) are used to calculate set of financial ratios. The paper primarily places emphasis on the assessment of airlines' financial performance and conditions via traditional ratios

employed to measure profitability and risk and does not encompass a cash-based analysis. The following set of financial ratios and measures presented in the table 1 are the concern of our analysis and are classified in accordance with the areas of financial statement analysis, that is, short-term liquidity analysis, profitability analysis, long-term solvency analysis.

Table 1: Traditional financial ratios in compliance with three major areas of analysis

Short-term liquidity analysis	Profitability analysis	Long-term solvency analysis
Working capital	Net income (loss) including special items	Long-term Debt to Equity ratio
Current ratio	Return on Assets (ROA)	Debt to Capitalization ratio
Quick ratio	Total assets turnover	Total Debt to Total Equity ratio
Cash ratio	Fixed assets turnover	Total Debt to Total Assets ratio
Accounts receivable turnover	Operating profit margin	Interest coverage (Times interest earned ratio)
Days' sales uncollectable	EBIT margin	Earnings to Fixed Charges ratio
Operating cash flow to current liabilities	EBITDA margin	Operating cash flows to Total debt
	Profit margin	
	Return on Equity (ROE)	

Subsequently, the tables presented in the paper provide a summary of the liquidity, profitability and solvency ratios calculated for each of the U.S major airlines including Delta Air Lines, United Continental Holdings, Continental Airlines, AMR Corporation, United Airways Group, Alaska Air Group, Southwest Airlines and JetBlue Airways allowing us to compare them with their historical values over the course of six consecutive years (2007-2012) by identifying trends and major changes, as well as with existing rules of thumb to find out whether they are applicable to the airline industry. Subsequent to a time-series and benchmark analysis, a comparative analysis among selected U.S largest airlines is made that involves comparing ratios of each airline with those of peers and average values.

Recent Developments in the US Airline Industry: Historically High Fuel Prices and Labor Costs

A turning point for the U.S airline industry was the passing of Airline Deregulation Act by Congress on October 24, 1978 as a result of which the Civil Aeronautics Board (CAB), a government agency, loosened its control over the airline industry allowing airlines to easily gain access to new routes and freely determine prices driven by

airline competition, the demand for air traffic and operating expenses. Prior to the deregulation of U.S airline industry, the CAB bore the responsibility of setting airfares and determining routes for each airline to operate flights. A few events that occurred throughout 70s led to the signing of Airline Deregulation Act into law, including the introduction of wide-body aircraft that increased airline capacity on many international routes. The capacity increase resulted in more operating expenses, and unable to set prices, U.S carriers could not manage to cover additional costs. Moreover, the oil embargo by OPEC in 1973 brought about an increase in fuel prices.

The financial condition of airlines worsened when the demand for air traffic dropped at the time of increased capacity and rising fuel costs.

As a result, to improve profitability the CAB permitted airlines to increase air fares and reduce capacity. Nevertheless, the CAB failed to significantly improve airlines' financial condition, and the airline profitability continued to remain low throughout 1970s [3].

The airline deregulation resulted in highly increased competition, decreased air fares and growth in demand for air transportation. Today, over 100 certified airlines operate in the U.S airline industry as opposed to 43 certified carriers in 1978 [3]. Not only do major U.S airlines compete with each other, but also with regional air carriers that operate flights in the small and medium-sized markets. An intense rivalry among carriers also exists in international markets [7].

A few significant events that have occurred over the past decade adversely affected U.S airlines' operations and financial condition. The most noteworthy events include 1) economic recessions from March to November 2001 and from December 2007 to June 2009, 2) terrorist attacks that occurred on September 11, 2001 and resulted in decreased demand for air travel, 3) airline mergers, 4) soaring fuel prices and labor costs, and 5) replacement of old aircrafts with new fuel effective ones [16].

The economic recessions, volatile and incremental fuel prices and terrorist attacks early in 2000s caused the airline earnings to significantly drop, in some years even turn negative. Profitability thus has been poor throughout the past decade and continues to remain so even today in the face of all the recent improvements in the airline industry. Most importantly, to reduce operating expenses, improve profit margins and better cope with consequences of the recession-related

decreased demand for air travel, soaring jet fuel prices and other external factors, U.S airlines reduced capacity on many international and domestic routes to match demand [1]. Furthermore, to increase fuel productivity U.S

airlines have begun to replace old aircrafts with newer and more fuel efficient ones [16]. The following figure shows the volatility in earnings in the airline industry over the past decade.

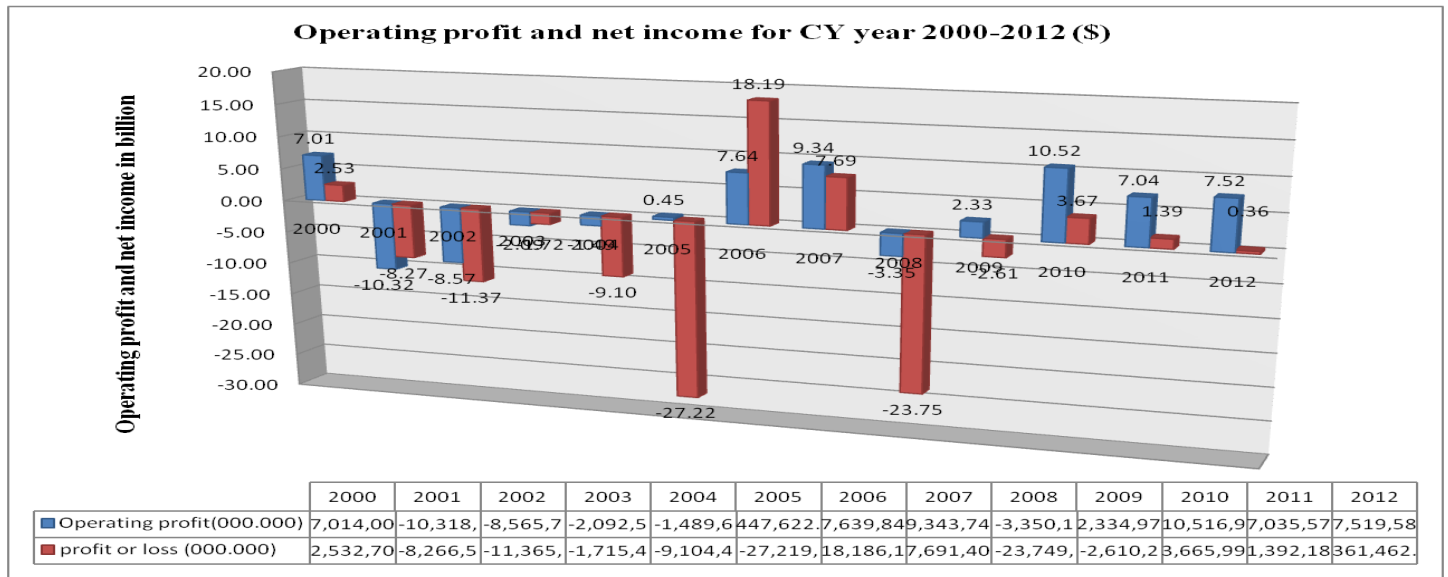


Fig. 1: Operating profit and net income for calendar years 2000-2012 [18]

As we can see from the Fig. 1, the U.S airline industry has experienced significant losses during 2001 and 2007-2009 economic recessions, in 2002 as a result of the terrorist attack-related decreased demand for air transportation and in 2005 in the aftermath of soaring jet fuel and labor costs and the hurricane Katrina that caused extensive damage to southern states [2]. Nonetheless, in the ensuing years both airlines' operating profit and net earnings began to slowly increase with the improvements in the global economic environment.

Historically high fuel prices have significantly impacted airlines' operations and financial condition throughout the past decade and continue to remain a significant challenge for U.S airlines as the fuel has become the largest operating expense since 2000 when fuel prices began to continuously rise. Today, both the fuel and labor costs constitute more than 25 percent of airline operating expenses [16]. The highest price for fuel that U.S air carriers paid was in July 2008 and amounted to 3.83\$ per gallon of fuel (147\$ per barrel). The graphical illustration presented below (Fig. 2) shows unadjusted and inflation adjusted fuel cost per gallon.

In December 2012 U.S airlines with annual revenue of \$20 million or more paid on average 3.13 \$ per gallon of fuel for domestic scheduled and nonscheduled services, 10.6 percent more than they paid in December 2011, 11.3 percent more as compared to December 2010 and around 33 percent more than the average fuel price

airlines paid in December 2000 after adjusting for inflation as illustrated in the Fig. 2. To reduce consequences of soaring fuel prices, many airlines enter into fuel hedge agreements to secure from possible increases in fuel prices [16].

Economic recessions, soaring fuel and labor costs in the past decade resulted in several airlines filing for bankruptcy protection under Chapter 11, including filings of U.S Airways in 2002 and 2004, United Airlines in 2002, Northwest Airlines and Delta Air Lines in 2005 and lastly the filing of American Airlines in late 2011 for the first time in the airline's history [21]. Furthermore, airline mergers in the U.S airline industry have recently become more frequent as a means of better coping with financial and economic challenges [4].

Similar to fuel expense, U.S airlines have experienced a continuous increase in labor costs which has become the second largest operating expense over the past decade due to the labor-intensive airline industry and the expansion of airline operations worldwide. The Fig. 3 illustrates the increasing trend in salaries and related costs for eight U.S largest airlines for the last six years. The main factor that has driven salaries, wages and related costs upward is the substantial role that labor unions play in the U.S airline industry. According to IATA (International Air Transport Association), almost half of the airline employees are members of labor unions, while the other half of workers has concluded collective bargaining agreements with unions.

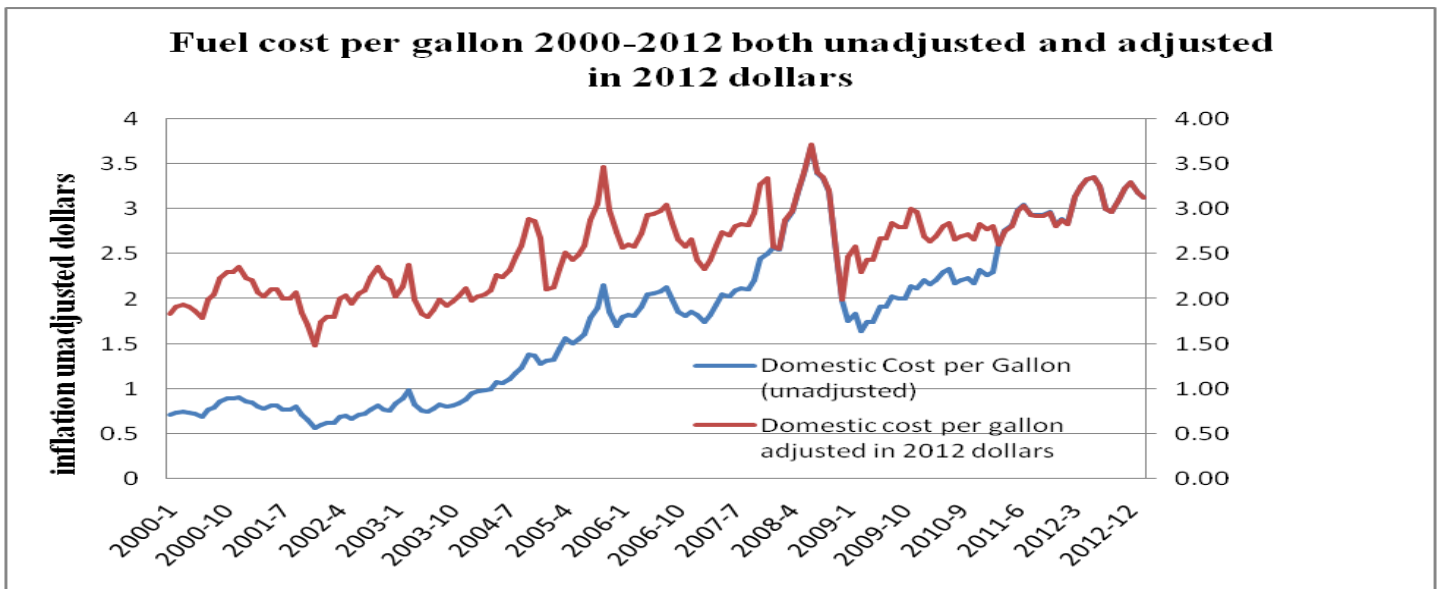


Fig 2: Fuel cost per gallon 2000-2012 unadjusted and adjusted for inflation [19]
 (To adjust for inflation Consumer Price Index (CPI) for fuel oil and other fuels was used, base year 2012= 335.908 [22])

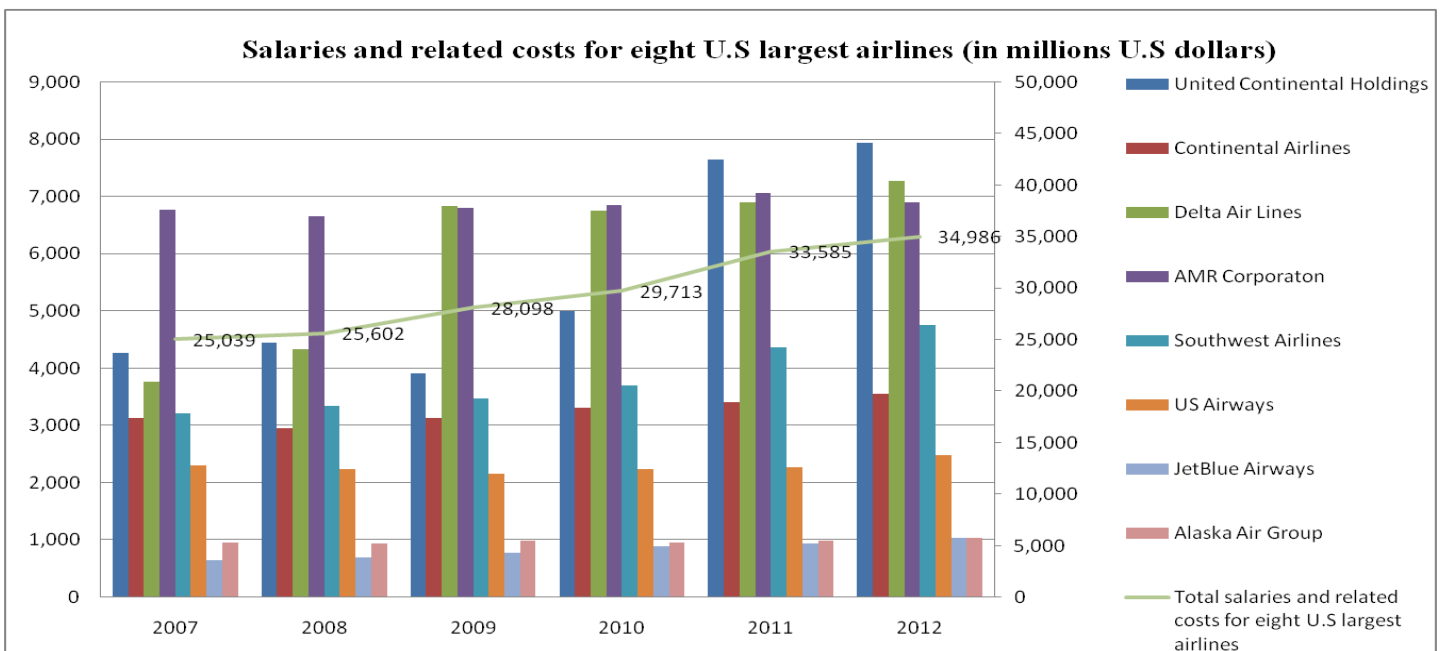


Fig. 3: Salaries and related costs for eight U.S biggest airlines for years 2007-2012 [27]

All US largest airlines presented in the Fig.3 are greatly unionized, and therefore, there is a significant pressure placed by labor unions on management of airlines in regard to salary levels. The existing strong bargaining power of labor unions is attributable to the possible strike threatened by airlines’ pilots, flights attendants, mechanics and other employees that can highly affect daily flight operations [25]. As Fig. 3 shows, among major US carriers AMR Corporation has reported incredibly high salaries and related costs over the period of 2007-2012 that has long been struggling to reduce wages and salaries through negotiations with labor unions and eventually, filed for bankruptcy protection under Chapter 11 to reduce costs blaming the filing on high labor costs and fuel prices [26].

The Federal Aviation Administration’s long-term outlook for the U.S airline industry is quite optimistic. The FAA estimated that the airline industry will sustainably grow in the long-term, but will remain moderate in the short-run, in particular for the next five years, primarily due to the slow growth in the U.S and European economies [8].

Evaluation of Leading U.S Airlines’ Financial Performance via Traditional Ratios: Research Findings and Discussion

The assessment of selected airlines’ financial performance involves analyzing the short-term liquidity, profitability and long-term solvency in the respective order as described below.

Liquidity Analysis of U.S Leading Carriers

For the examination of liquidity ratios in the airline business, six U.S legacy carriers including Delta Air Lines, United Continental Holdings (United Airlines and Continental Airlines since 2010), Continental Airlines (the company operated as a stand-alone airline until 2012 despite the merger agreement with United), AMR Corporation (a parent company of American Airlines), Alaska Air Group and U.S Airways which had been founded long before the airline deregulation, and two low-cost airlines including Southwest Airlines and JetBlue Airways have been selected and analyzed. The results of calculations of selected liquidity ratios for eight U.S major airlines are illustrated in the table 2 which also includes average values of ratios for each given year.

For the most part, selected U.S carriers have been operating with negative or low working capital during the given time span, in particular United Continental Airlines, Delta Air Lines and AMR Corporation, three biggest airlines in the world as of 2012 that have had only negative working capital over the six-year period which implies higher riskiness in terms of liquidity matters. The negative or positive but low working capital can primarily be explained by major U.S airlines being highly leveraged which requires periodic payments of the current portion of long-term debt, increasing accrued liabilities, in particular salaries and related benefits, significant amounts of air traffic liability (unearned revenue), low cash flows from operations and continuous significant capital investments, especially in aircrafts. Of selected U.S airlines under review, Alaska Air Group has only had a positive working capital during the period 2007-2012, but it is a relatively smaller airline in terms of flight operations, operating revenue and revenue passenger miles as compared, for example, to United, Delta or American Airlines. The analysis of liquidity ratios for selected airlines shows that the values of the current ratio have been less than 1 or slightly above it which indicates that the traditional rule of thumb 2 to 1 for the current ratio is not applicable in the U.S airline industry whereas the rule of thumb of 1 to 1 for the quick ratio has been reached only by Southwest Airlines in 2009 and 2010, U.S Airways in 2007, JetBlue Airways and Alaska Air Group in 2009. For the rest of the airlines and years the values of the quick ratio have been less than 1.

By examining average values for the current ratio and the quick ratio calculated for selected carriers, as well as differences between them, we

can conclude that U.S airlines, especially Alaska Air Group and Continental Airlines, have mostly invested in highly liquid assets including cash, short-term investments and accounts receivables that can readily be converted to cash. Furthermore, if we eliminate accounts receivable, we arrive at a stricter ratio, cash ratio, which considers cash, cash equivalents and short-term investments. The closer to 1 the cash ratio is, the better the company is positioned in terms of meeting its short-term obligations. For the selected U.S airlines the cash ratio on average has been in the range of 0.49 - 0.72 and dropped to 0.57 in 2012.

Separately considered, Continental Airlines, Alaska Air Group and Southwest on average have had high cash ratio whereas Delta Air Lines and AMR Corporation have had the lowest. Eventually, AMR Corporation filed for bankruptcy protection under Chapter 11 in late 2011 not being able to meet its short-term commitments. The interpretation of accounts receivable turnover and days' sales uncollected is quite hard in that the credit terms are not available. However, taking into account the fact that in practice many companies provide credit sales on payment terms of 30 days, leading U.S carriers collect their accounts receivable in less than 30 days.

Lastly, the average values of the ratio of cash flows to current liabilities indicate that selected carriers do not generate high cash flows from operating activities to cover a greater part of current liabilities.

In conclusion, the results may indicate that eight U.S largest carriers are very much likely to face liquidity issues in the short run as they are highly vulnerable to adverse business, financial and economic conditions.

Profitability Analysis of U.S Leading Carriers

Historically high fuel prices, the 2007-2009 economic recessions, slowing U.S economy and the slow growth in demand for air transportation in recent years have adversely impacted profitability in the U.S airline industry. Even today, soaring jet fuel prices and labor costs highly prevent airlines from generating significant profit. The results of profitability analysis for selected largest U.S airlines are summarized in the table 3 that includes eight profitability ratios calculated for six consecutive years.

The values of selected profitability ratios, especially the profit margin and operating profit

margin, indicate low profitability in the airline industry due mainly to slow growth in demand for air traffic, increasing operating expenses driven by rising jet fuel expenses and labor costs and the overall economic condition worldwide.

The impact of the recent economic downturn is obviously reflected in ratio values for 2008 and 2009 when most of the largest U.S airlines reported significant financial losses as illustrated in the table 3. The improvements in the global economic environment in late 2009 resulted in the slowly increasing demand for air transportation, in particular business travels, which allowed U.S leading airlines to report profit for the following years except for AMR Corporation, the parent company of American Airlines, which continued to increasingly incur losses

As a result, in late 2011 AMR Corporation was forced to voluntarily file for bankruptcy protection under Chapter 11 of U.S bankruptcy code not being able to meet its short and long-term commitments. The Chapter 11 of U.S bankruptcy code allowed the airline to continue its air traffic operations and at the same time go through the restructuring process according to the reorganization plan proposed by interested parties [5].

The results show that for the most part major U.S airlines have improved the values of profitability ratios since 2010 as compared to 2009.

Of all profitability ratios, the values of return on equity of U.S airlines, in particular legacy carriers including Delta Air Lines, United Continental Holdings, AMR Corporation and U.S Airways Group, will undoubtedly draw our attention in that for some of the years ROE was not measured due to the fact that total stockholders' equity was negative conditioned by the accumulated deficit and other comprehensive loss mainly resulted from financial losses airlines incurred during the years of the economic recession. As a consequence, this has resulted in airlines reporting either negative or very low total stockholders' equity which, in its turn, accounts for high return on equity, for example, for United Continental Holdings in 2011, Delta Air Lines in 2010 and U.S Airways in 2011 and 2012 that on the first face might indicate high profitability. Among legacy carriers Continental Airlines and Alaska Air Group have had relatively higher values of ROE over the six-year period. Therefore, the better financial conditions and relatively higher profitability of Continental Airlines were one of the main reasons that UAL Corporation, a parent company of United Airlines, made a decision to merge with Continental in 2010 which would allow United to become financially stronger and even avoid possible bankruptcy [6] whereas Alaska Air Group is relatively much smaller compared to other legacy carriers and serves smaller markets thus being less vulnerable to global economic, business and financial conditions

Table 2: Liquidity ratio analysis of U.S leading airlines for years ended December 31, 2007-2012

(in millions \$ except ratio data)			2007	2008	2009	2010	2011	2012	Average for 6 years
United Continental Holdings, Inc	Working capital	(in million \$)	(1,884)	(2,415)	(1,368)	(600)	(397)	(2,769)	(1,572)
	Current ratio	times	0.76	0.67	0.79	0.95	0.97	0.78	0.82
	Quick ratio	times	0.56	0.38	0.58	0.81	0.80	0.61	0.62
	Cash ratio	times	0.45	0.28	0.47	0.69	0.68	0.51	0.51
	AR turnover	times	23.59	25.21	22.42	19.80	24.98	27.56	23.93
	Days' sales uncollected	Average days	15.47	14.48	16.28	18.43	14.61	13.24	15.42
	Operating cash flows to current liabilities	times	0.27	(0.16)	0.14	0.20	0.20	0.08	0.12
Continental Airlines, Inc	Working capital	(in million \$)	112	(127)	(16)	397	663	(568)	77
	Current ratio	times	1.03	0.97	1.00	1.08	1.14	0.88	1.02
	Quick ratio	times	0.77	0.69	0.76	0.95	0.99	0.74	0.82
	Cash ratio	times	0.63	0.59	0.65	0.82	0.86	0.71	0.71
	AR turnover	times	23.96	28.99	26.66	26.02	26.87	45.94	29.74
	Days' sales uncollected	Average days	15.23	12.59	13.69	14.03	13.58	7.95	12.85
	Operating cash flows to current liabilities	times	0.27	(0.07)	0.08	0.30	0.21	0.01	0.13
Delta Air Lines, Inc	Working capital	(in million \$)	(1,365)	(2,118)	(1,806)	(4,078)	(4,972)	(4,998)	(3,223)
	Current ratio	times	0.79	0.81	0.82	0.64	0.61	0.62	0.72
	Quick ratio	times	0.58	0.54	0.62	0.44	0.41	0.38	0.50
	Cash ratio	times	0.42	0.40	0.48	0.32	0.28	0.25	0.36
	AR turnover	times	19.34	17.60	19.58	22.61	23.26	22.52	20.82
	Days' sales uncollected	Average days	18.88	20.74	18.64	16.14	15.69	16.20	17.71

	Operating cash flows to current liabilities	times	0.22	(0.19)	0.13	0.27	0.24	0.19	0.14
AMR Corporation (American Airlines)	Working capital	(in million \$)	(1,254)	(3,435)	(1,086)	(1,942)	(1,873)	(2,232)	(1,970)
	Current ratio	times	0.85	0.63	0.86	0.78	0.78	0.76	0.78
	Quick ratio	times	0.66	0.42	0.67	0.60	0.57	0.54	0.57
	Cash ratio	times	0.53	0.33	0.57	0.51	0.46	0.42	0.47
	AR turnover	times	22.76	25.86	25.23	29.44	29.24	24.54	26.18
	Days' sales uncollected	Average days	16.03	14.11	14.47	12.40	12.48	14.88	14.06
	Operating cash flows to current liabilities	times	0.23	(0.16)	0.11	0.15	0.08	0.14	0.09
Southwest Airlines, Co.	Working capital	(in million \$)	(395)	(153)	663	974	(188)	(423)	80
	Current ratio	times	0.92	0.95	1.25	1.29	0.96	0.91	1.05
	Quick ratio	times	0.63	0.72	1.02	1.13	0.76	0.71	0.83
	Cash ratio	times	0.57	0.64	0.96	1.07	0.69	0.64	0.76
	AR turnover	times	37.93	45.18	54.76	66.51	63.39	54.16	53.65
	Days' sales uncollected	Average days	9.62	8.08	6.67	5.49	5.76	6.74	7.06
	Operating cash flows to current liabilities	times	0.74	(0.40)	0.36	0.52	0.35	0.45	0.34
(in millions \$ except ratio data)			2007	2008	2009	2010	2011	2012	Average for 6 years
U.S Airways Group, Inc	Working capital	(in million \$)	796	(626)	(458)	69	(111)	279	(9)
	Current ratio	times	1.31	0.79	0.84	1.02	0.96	1.08	1.00
	Quick ratio	times	1.00	0.44	0.57	0.76	0.72	0.81	0.72
	Cash ratio	times	0.85	0.35	0.47	0.65	0.62	0.72	0.61
	AR turnover	times	30.7	36.3	36.2	40.0	40.9	44.3	38.06
	Days' sales uncollected	Average days	11.9	10.0	10.1	9.1	8.9	8.2	9.72
	Operating cash flows to current liabilities	times	0.2	(0.4)	0.0	0.3	0.2	0.3	0.10
JetBlue Airways, Corp.	Working capital	(in million \$)	(140)	(119)	377	267	216	(508)	15.5
	Current ratio	times	0.89	0.89	1.33	1.24	1.15	0.68	1.03
	Quick ratio	times	0.74	0.60	1.05	0.96	0.94	0.52	0.80
	Cash ratio	times	0.66	0.52	0.98	0.88	0.87	0.45	0.73
	AR turnover	times	33.63	38.11	39.43	45.81	48.69	48.14	42.30
	Days' sales uncollected	Average days	10.85	9.58	9.26	7.97	7.50	7.58	8.79
	Operating cash flows to current liabilities	times	0.34	(0.01)	0.43	0.46	0.49	0.46	0.36
Alaska Air Group, Inc	Working capital	(in million \$)	17	148	365	237	86	236	181.5
	Current ratio	times	1.01	1.11	1.29	1.17	1.06	1.16	1.13
	Quick ratio	times	0.70	0.88	1.03	0.93	0.85	0.92	0.88
	Cash ratio	times	0.60	0.79	0.94	0.85	0.76	0.83	0.79
	AR turnover	times	25.76	28.76	29.76	33.05	33.72	35.02	31.01
	Days' sales uncollected	Average days	14.17	12.69	12.27	11.04	10.82	10.42	11.90
	Operating cash flows to current liabilities	times	0.37	0.13	0.22	0.41	0.47	0.50	0.35
Average values for eight U.S leading airlines for each given year	Current ratio	times	0.95	0.85	1.02	1.02	0.95	0.86	
	Quick ratio	times	0.70	0.58	0.79	0.82	0.75	0.65	
	Cash ratio	times	0.59	0.49	0.69	0.72	0.65	0.57	
	Operating cash flows to current liabilities	times	0.33	(0.15)	0.19	0.33	0.27	0.27	

Unlike legacy carriers, low-cost carriers including Southwest Airlines and JetBlue Airways have much more adequate return on equity as shown in the table 3 due mainly to the fact that during the 2007-2009 economic recession they had incurred small losses as is the case with JetBlue Airways in 2008 or even ended the years of recession with

profit as is the case with Southwest Airlines, the largest low-cost airline in the world. The incurring of small loss or the reporting of profit by two above mentioned low-cost carriers during the recent economic downturn is attributable to the following factors: first of all, they have lower operating cost structure as compared to

competitors and operate point-to-point operating model as opposed to mainline carriers with a hub-and-spoke operating model. Second, in the face of rising fuel costs, low-cost carriers have experienced a moderate drop in operating profits as opposed to legacy carriers due to the fact that low-cost carriers have purchased a large portion of fuel under hedge contracts whereas legacy carriers have concluded hedge agreements to a lesser degree [16].

As for the return on assets (ROA) that measures the operating efficiency of employing assets to generate profit, we can notice that selected U.S airlines highly improved the ROA measure in 2010 as compared to 2009 and 2008 as the U.S economy began to recover from the 2008-2009 recession resulting in growing demand for air transportation. As a result, U.S airlines have increased their capacity to meet the slowly increasing air traffic demand that allowed them to generate higher passenger revenue. Among U.S legacy carriers United Continental Holdings experienced a considerable drop in ROA in 2012 resulted from financial losses incurred due primarily to slowing demand for air traffic in 2012 and highly increased operating expense in the first place driven by soaring fuel prices and labor costs [23]. Furthermore, AMR Corporation has had the worst results of ROA for six successive years, in particular in 2012, due to continuous net losses incurred since 2008 whereas the rest of the legacy carriers and low-cost carriers saw increase in ROA for 2012 with U.S Airways and Alaska Air Group having the highest operating efficiency of using assets to generate profit.

Analyzing the profit margin for eight U.S largest airlines with Alaska Air Group having the highest values of profit margin and AMR Corporation having the worst brings us to the conclusion that airline profitability has been significantly low over the six-year period despite all the recent improvements in the industry. Therefore, one of the main challenges for airlines is the efficient management of their operating expenses and the ability to keep them at a competitive level that would enable them to improve profitability. In addition, the table contains margins based on non-GAAP measures such as earnings before interest and taxes (EBIT) and earnings before interest, taxes, depreciation and amortization (EBITDA) that eliminate the effects of different capital structures and tax rates, as well as special items (non-recurring) and non-cash charges such as depreciation and amortization expense thus allowing a better understanding of airlines' profitability. Lastly, the table displays the

average values of several selected ratios for eight largest U.S airlines.

Long-term Solvency Risk Analysis of U.S Leading Carriers

The table 4 illustrates the results of debt and coverage ratios computed for eight U.S largest airlines which indicate that selected airlines are highly leveraged, that is, they have significantly more debt than stockholders' equity or interest-bearing debt and other liabilities account for a major part of airlines' assets thus putting them at higher long-term solvency risk. The average values of long-term debt-to-equity and long-term debt-to-capitalization ratios calculated for selected eight air carriers indicate that on average airline long-term debt including capital lease obligations is considerably more than twice the equity whereas interest-bearing debt obligations for the most part constitute more than 80% of airlines' capitalization and even exceeded it both in 2011 and 2012 due to negative total stockholders' equity which is very uncommon in practice. It is important to note that high debt ratios are primarily attributable to low amounts of stockholders equity reported by most of the selected carriers, in particular legacy carriers. The stockholders' equity reported even turned negative for airlines including Delta in 2011 and 2012, AMR Corporation since 2008, U.S Airways and United Continental Holdings in 2008 and 2009.

The low or negative amounts of airline stockholders' equity have essentially resulted from accumulated financial losses incurred during years of the economic recession. The contemporary literature on financial statement analysis points out that the optimal value of the debt-to-equity ratio is deemed to approximate 1 which implies that liabilities equal equity and the maximum acceptable debt-to-equity ratio is considered to be 1.5-2 or less while the rule of thumb for debt-to-assets expressed in percentages is considered to be from mid-30s to the low of 40s.

However, given the fact that these debt ratios are industry specific, the above mentioned optimal and acceptable values are not similarly applicable to the airline business as shown in the table 4. We can see that for selected eight carriers the ratios of debt-to-equity and debt-to-assets on average have ranged from 5 to 21 and from 79% until 95 % respectively due to the airline industry being both capital-intensive and labor-intensive.

As far as coverage ratios are concerned, the values of the interest coverage and the ratio of

earnings to fixed charges that incorporates also the portion of rental expense representative of interest factor in addition to interest expense including capitalized amounts show that on average selected airlines have been able to cover interest expense and rental expense with earnings before interest and taxes for the last three years presented, but could not do so during the period of the 2008-2009 economic downturn except Southwest Airlines that managed to generate sufficient earnings to cover both interest expense and fixed charges .

In comparing U.S airlines in terms of long-term solvency risk, the results reveal that Alaska Air Group, Inc is relatively less financially leveraged as opposed to other legacy carriers that are bigger in terms of assets, passenger revenue, revenue-passenger miles and have a significantly larger route network whereas AMR Corporation has been the most vulnerable to risk. Furthermore, Southwest Airlines, the biggest low-cost airline in the world, pronouncedly catches our eye with the values of its debt and coverage ratios that allow the company to stand out among selected U.S carrier as a financially stronger airline and less vulnerable to adverse economic and business conditions. As the table 4 illustrates, for Southwest long-term debt constitutes on average approximately 50% of its equity, total liabilities on average account for 60% of the total assets whereas the portion of interest-bearing debt in the capitalization on average approximates 35% over the six-year period. For the reason of being less subject to long-term solvency risk, Southwest has been given an investment grade (BBB-) by credit rating agency Standard & Poor's as opposed to the rest of the selected airlines that have received a speculative grade that classifies them as more vulnerable to adverse economic, business and financial conditions [20].

Conclusion

Having examined the airline industry based on the U.S example and underlying challenges that airlines are facing we saw that U.S airline business has been to a significant extent battered by recent economic crisis that has resulted in decreased demand for air travel, as well as by high historical jet fuel prices which still remain a major obstacle for airlines to generate higher profit. Nevertheless, since 2010 the global economy has begun to slowly improve enabling

U.S carriers to recover from the consequences of the 2008-2009 recession. Meantime, the traditional ratio analysis of selected carriers has shown that the existing rules of thumb for computed ratios including current ratio (2:1), quick ratio (1:1) and some of the debt ratios are not applicable to the airline business due to its specificity. Not only do these computed ratios reflect the implications of the recent economic downturn and following slow improvements in the industry, but also reveal the airlines' financial problems that they have experienced over the past six years or might even experience in the near-term.

The analysis of airlines' short-term liquidity risk has showed that during the given period of time they have been operating with negative or very low level of working capital, current ratio less or a bit higher than 1, quick ratio mainly less than 1 which may indicate that airlines under review are quite likely to face liquidity risk in the short run. Furthermore, via profitability ratios we have seen that profitability in the airline industry has been poor throughout the six-year period and remains so in the face of improvements primarily due to losses incurred during the economic recession, slowing demand for air travel and increasing operating expenses mainly driven by rising fuel expenses and labor costs whereas the analysis of long-term solvency risk has indicated high financial leverage in the U.S airline industry which puts the leading carriers at higher risk although coverage ratios have showed that on average selected air carriers have been able to cover interest expense and other fixed charges since 2010 when the global economic environment began to gradually better.

One of the limitations of this paper is that the traditional ratio analysis is based on balance sheets that contain static information and statements of operations that include special items being non-recurring by their nature that, as a matter of fact, distort net earnings. Therefore, the further analysis will require adjusting earnings to exclude special items for better comparison among airlines, as well as including set of cash flow ratios into the analysis for having a more comprehensive picture.

Table 3: Profitability ratio analysis of U.S leading airlines for years ended December 31, 2007-2012

(in millions \$ except ratio data)			2007	2008	2009	2010	2011	2012	Average for 6 years
United Continental	Net income(loss) including special items	(in millions)	360	(5,396)	(651)	253	840	(723)	(886)

Holdings, Inc	Operating profit margin	%	5.15	(21.98)	(0.99)	4.18	4.91	0.10	(1.44)
	EBIT margin	%	4.61	(5.26)	(2.07)	7.19	6.22	3.67	2.39
	EBITDA margin	%	9.20	(0.58)	3.54	11.82	10.39	7.76	7.02
	Profit margin	%	1.79	(26.72)	(3.99)	1.08	2.26	(1.95)	(4.59)
	Return on assets (ROA)	%	3.25	(23.06)	(1.48)	2.61	3.70	(0.54)	(2.59)
	Assets turnover	times	0.81	0.92	0.86	0.80	0.96	0.98	0.89
	Fixed assets turnover	times	1.77	1.86	1.62	1.74	2.22	2.20	1.90
	Return on Equity (ROE)	%	15.77	(11125.77)	N/A	N/A	47.55	(63.23)	-

Note: EBIT and EBITDA from ongoing operations and exclude special items and other non-recurring items whereas the rest of the profitability ratios include special items. The calculation of ROE for 2009 and 2010 is not applicable (N/A) due to negative average stockholders' equity.

Continental Airlines, Inc	Net income(loss) including special items	(in millions)	439	(586)	(282)	346	569	527	169
	Operating profit margin	%	4.83	-2.03	(1.14)	4.86	5.87	4.44	2.81
	EBIT margin	%	4.92	(0.85)	0.01	6.59	6.86	6.44	3.99
	EBITDA margin	%	7.82	2.00	3.92	10.47	9.72	9.93	7.31
	Profit margin	%	3.08	(3.82)	(2.23)	2.41	3.52	3.10	1.01
	Return on assets (ROA)	%	5.78	(2.93)	(0.51)	3.47	3.85	3.60	2.21
	Assets turnover	times	1.22	1.24	0.99	0.87	0.80	0.84	0.99
	Fixed assets turnover	times	2.22	2.21	1.71	1.93	2.18	2.16	2.07
Return on Equity (ROE)	%	46.28	(70.05)	(79.10)	14.12	13.18	12.15	(10.57)	

Note: The ratios do not exclude special items and other non-recurring items except for EBIT and EBITDA margins.

Delta Air Lines, Inc	Net income(loss) including special items	(in millions)	1,612	(8,922)	(1,237)	593	854	1,009	(1,015)
	Operating profit margin	%	5.72	(36.63)	(1.15)	6.98	5.62	5.93	(2.25)
	EBIT margin	%	5.72	0.50	0.30	8.40	6.31	7.16	4.73
	EBITDA margin	%	11.80	6.08	5.77	13.16	10.65	11.43	9.81
	Profit margin	%	8.42	(39.31)	(4.41)	1.87	2.43	2.75	(4.71)
	Return on assets (ROA)	%	7.82	(21.84)	(0.91)	3.19	3.60	3.78	(0.73)
	Assets turnover	times	0.74	0.59	0.63	0.73	0.81	0.83	0.72
	Fixed assets turnover	times	1.55	1.40	1.37	1.56	1.73	1.79	1.57
Return on Equity (ROE)	%	3.22*	(162.41)	(221.09)	103.85	N/A	N/A	-	

Note: the value of ROE for 2007 (3.22%) is computed for eight months ended December 31 (May 1- December 31, 2007) as a result of fresh-start reporting related to Delta's emergence from bankruptcy protection under Chapter 11 on April 30, 2007. The calculation of ROE for years 2011 and 2012 is not applicable in that the average total stockholders' equity is negative. EBIT and EBITDA from ongoing operations are adjusted to exclude special items. Except for EBIT and EBITDA, all of the other measures include special items and other non-recurring items.

(in millions \$ except ratio data)			2007	2008	2009	2010	2011	2012	Average for 6 years
AMR Corporation (American Airlines)	Net income (loss) including special items	(in millions)	456.0 0	(2,118.0 0)	(1,468.0 0)	(471.0 0)	(1,979.0 0)	(1,876.0 0)	(1,242.6 7)
	Operating profit margin	%	4.21	(7.95)	(5.04)	1.39	(4.40)	0.43	(1.89)
	EBIT margin	%	4.48	(2.84)	(4.18)	1.39	(1.37)	1.99	(0.09)
	EBITDA margin	%	9.72	2.23	1.36	6.32	3.16	6.07	4.81
	Profit margin	%	1.99	(8.91)	(7.37)	(2.12)	(8.25)	(7.55)	(5.37)
	Return on assets (ROA)	%	3.70	(6.02)	(4.00)	0.17	(6.00)	(6.24)	(3.07)
	Assets turnover	times	0.79	0.88	0.79	0.88	0.98	1.05	0.90
	Fixed assets turnover	times	1.30	1.43	1.28	1.45	1.63	1.79	1.48
Return on Equity (ROE)	%	44.47 %	N/A	N/A	N/A	N/A	N/A	-	

Note: EBIT and EBITDA are from ongoing operations and exclude special charges while the rest include special items. ROE is not applicable for 2008-2012 due to negative average total stockholders' equity and financial losses.

Southwest Airlines, Co	Net income including special items	(in millions)	645	178	99	459	178	421	330
	Operating profit margin	%	8.02	4.07	2.53	8.16	4.43	3.65	5.14
	EBIT margin	%	8.02	4.07	2.53	8.23	5.28	4.72	5.48
	EBITDA margin	%	13.65	9.51	8.48	13.42	9.85	9.66	10.76
	Profit margin	%	6.54	1.61	0.96	3.79	1.14	2.46	2.75
	Return on assets (ROA)	%	4.56	1.60	1.46	3.74	1.77	2.74	2.64
	Assets turnover	times	0.65	0.71	0.73	0.81	0.93	0.93	0.80
	Fixed assets turnover	times	0.94	1.01	0.96	1.14	1.38	1.37	1.13
Return on Equity (ROE)	%	9.63	2.99	1.90	7.85	2.71	6.07	5.19	

Note: EBIT and EBITDA are from ongoing operations and exclude special charges and other non-recurring items whereas the rest include special items.

U.S Airways Group, Inc	Net income including special items	(in millions)	423	(2,215)	(205)	502	71	637	(131)
	Operating profit margin	%	4.56	(14.85)	1.13	6.56	3.26	6.19	1.14
	EBIT margin	%	5.40	(9.09)	1.65	6.60	3.45	6.43	2.41
	EBITDA margin	%	7.02	(7.32)	3.97	8.68	5.26	8.21	4.30
	Profit margin	%	3.62	(18.28)	(1.96)	4.22	0.54	4.61	(1.21)
	Return on assets (ROA)	%	7.72	(26.84)	(0.10)	9.37	3.51	9.70	0.56
	Assets turnover	times	1.50	1.59	1.43	1.56	1.62	1.56	1.54
	Fixed assets turnover	times	5.08	4.20	3.00	3.18	3.29	3.12	3.64
	Return on Equity (ROE)	%	35.12	(468.78)	N/A	N/A	60.68	135.53	-

Note: EBIT and EBITDA are from ongoing operations and exclude special items. ROE for 2008 and 2009 is not applicable due to negative average stockholders' equity.

(in millions \$ except ratio data)			2007	2008	2009	2010	2011	2012	Average for 6 years
JetBlue Airways Corp.	Net income including special items	(in millions)	12	(84)	61	97	86	128	50
	Operating profit margin	%	5.95	3.33	8.66	8.81	7.15	7.55	6.91
	EBIT margin	%	5.70	2.65	8.63	9.31	7.15	7.19	6.77
	EBITDA margin	%	11.89	8.70	15.55	15.14	12.32	12.36	12.66
	Profit margin	%	0.42	(2.48)	1.85	2.57	1.91	2.57	1.14
	Return on assets (ROA)	%	2.62	0.76	2.95	3.22	2.91	3.35	2.64
	Assets turnover	times	0.54	0.58	0.52	0.58	0.66	0.70	0.60
	Fixed assets turnover	times	0.74	0.78	0.72	0.81	0.95	0.98	0.83
	Return on Equity (ROE)	%	1.21	(7.30)	4.34	6.06	5.04	7.02	2.73

Note: EBIT and EBITDA from ongoing operations are adjusted to exclude special items.

Alaska Air Group, Inc	Net income including special items	(in millions)	124	(136)	122	251	245	316	154
	Operating profit margin	%	6.02	(4.70)	7.87	12.29	10.40	11.42	7.22
	EBIT margin	%	6.42	(3.56)	9.18	12.63	11.30	11.42	7.90
	EBITDA margin	%	11.48	2.03	15.62	18.63	17.02	17.09	13.65
	Profit margin	%	3.55	(3.71)	3.58	6.55	5.67	6.79	3.74
	Return on assets (ROA)	%	3.81	(1.78)	3.75	6.34	5.77	6.48	4.06
	Assets turnover	times	0.82	0.79	0.69	0.77	0.85	0.87	0.80
	Fixed assets turnover	times	1.32	1.19	1.07	1.21	1.32	1.33	1.24
	Return on Equity (ROE)	%	13.01	(16.11)	15.85	25.39	21.50	24.35	14.00

Note: EBIT and EBITDA from ongoing operations are adjusted to exclude special items

Average values for selected profitability ratios of eight leading U.S airlines for each given year	Operating profit margin	%	5.56	(10.09)	1.48	6.66	4.66	4.96	
	EBIT margin	%	5.66	(1.80)	2.01	7.54	5.65	6.13	
	Profit margin	%	3.67	(12.70)	(1.70)	2.55	1.15	1.60	
	Return on assets (ROA)	%	4.91	(10.01)	0.14	4.01	2.39	2.86	

*N/A- Not Applicable

Table 4: The analysis of long-term solvency risk of major U.S airlines for years ended December 31, 2007-2012

(In U.S dollars)			2007	2008	2009	2010	2011	2012	Ave. for 6 years
United Continental Holdings, Inc	*Long-term Debt to Equity ratio	times	3.11	(3.04)	(2.69)	7.22	6.33	23.35	5.71
	*Debt to Capitalization ratio	times	0.78	1.41	1.49	0.90	0.88	0.96	1.07
	*Total Debt to Total Equity ratio	times	8.86	(9.39)	(7.65)	21.93	20.03	77.23	18.50
	*Total Debt to Total Assets ratio	%	88.48	111.92	115.04	95.64	95.25	98.72	100.84
	*Interest coverage	times	1.35	(1.93)	(0.60)	2.14	2.52	1.71	0.87
	Earnings to Fixed Charges ratio	times	1.55	(4.19)	0.36	1.18	1.44	0.57	0.15
	*Operating cash flow to total debt	times	0.25	(0.15)	0.11	0.13	0.19	0.07	0.10
Continental Airlines, Inc	Long-term Debt to Equity ratio	times	2.82	43.52	8.97	1.33	1.19	1.36	9.86
	Debt to Capitalization ratio	times	0.76	0.98	0.91	0.60	0.57	0.60	0.74
	Total Debt to Total Equity ratio	times	6.81	102.14	20.66	3.73	3.66	3.63	23.44

	Total Debt to Total Assets ratio	%	87.20	99.03	95.38	78.85	78.55	78.39	86.23
	Interest coverage	times	1.91	(0.38)	0.003	2.68	3.35	3.60	1.86
	Earnings to Fixed Charges ratio	times	1.61	0.22	0.50	1.40	1.71	1.66	1.18
	Operating cash flow to total debt	times	0.23	(0.06)	0.06	0.21	0.17	0.01	0.10
Delta Air Lines, Inc	Long-term Debt to Equity ratio	times	0.79	17.63	63.94	14.69	(8.49)	(5.20)	13.89
	Debt to Capitalization ratio	times	0.46	0.95	0.99	0.94	1.11	1.20	0.94
	Total Debt to Total Equity ratio	times	2.21	50.58	177.73	47.15	(32.16)	(21.91)	37.27
	Total Debt to Total Assets ratio	%	68.81	98.06	99.44	97.92	103.21	104.78	95.37
	Interest coverage	times	1.68	0.16	0.06	2.19	2.03	2.60	1.45
	Earnings to Fixed Charges ratio	times	2.99	(8.12)	0.08	1.37	1.51	1.71	(0.08)
	Operating cash flow to total debt	times	0.15	(0.10)	0.08	0.19	0.21	0.19	0.12
AMR Corporation (American Airlines)	Long-term Debt to Equity ratio	times	3.80	(3.07)	(3.03)	(2.35)	(0.94)	(0.89)	(1.08)
	Debt to Capitalization ratio	times	0.81	1.37	1.43	1.55	7.41	15.57	4.69
	Total Debt to Total Equity ratio	times	9.75	(9.58)	(8.29)	(7.36)	(4.35)	(3.94)	(3.96)
	Total Debt to Total Assets ratio	%	90.70	111.66	113.72	115.72	129.82	133.97	115.93
	Interest coverage	times	1.09	(0.88)	(1.19)	0.39	(0.42)	0.81	(0.03)
	Earnings to Fixed Charges ratio	times	1.31	(0.74)	(0.52)	0.59	(0.49)	(1.21)	(0.18)
	Operating cash flow to total debt	times	0.17	(0.13)	0.08	0.11	0.08	0.15	0.08
Southwest Airlines, Co	Long-term Debt to Equity ratio	times	0.30	0.71	0.61	0.46	0.45	0.41	0.49
	Debt to Capitalization ratio	times	0.23	0.43	0.39	0.35	0.35	0.31	0.34
	Total Debt to Total Equity ratio	times	1.42	1.84	1.62	1.48	1.63	1.66	1.61
	Total Debt to Total Assets ratio	%	58.62	64.79	61.78	59.67	61.94	62.40	61.53
	Interest coverage	times	11.46	4.28	1.59	6.68	4.54	6.40	5.83
	Earnings to Fixed Charges ratio	times	4.66	1.83	1.37	2.93	1.65	2.44	2.48
	Operating cash flow to total debt	times	1.36	(0.42)	0.28	0.46	0.36	0.65	0.45
(In U.S dollars)			2007	2008	2009	2010	2011	2012	Ave. for 6 years
U.S Airways Group, Inc	Long-term Debt to Equity ratio	times	2.11	(7.33)	(11.34)	47.65	27.53	5.54	10.69
	Debt to Capitalization ratio	times	0.69	1.14	1.09	0.98	0.97	0.86	0.95
	Total Debt to Total Equity ratio	times	4.59	(15.60)	(22.00)	92.08	54.57	10.89	20.76
	Total Debt to Total Assets ratio	%	82.10	106.85	104.76	98.93	98.20	91.59	97.07
	Interest coverage	times	2.28	(4.27)	0.57	2.39	1.38	2.59	0.82
	Earnings to Fixed Charges ratio	times	1.60	(2.14)	0.66	1.66	1.11	1.82	0.79
	Operating cash flow to total debt	times	0.14	(0.25)	0.01	0.18	0.10	0.21	0.07
JetBlue Airways Corp.	Long-term Debt to Equity ratio	times	2.50	2.27	1.89	1.72	1.62	1.30	1.88
	Debt to Capitalization ratio	times	0.75	0.71	0.68	0.65	0.64	0.60	0.67
	Total Debt to Total Equity ratio	times	4.40	3.76	3.24	2.99	3.02	2.74	3.36
	Total Debt to Total Assets ratio	%	81.49	78.97	76.39	74.91	75.15	73.30	76.70
	Interest coverage	times	0.84	0.46	1.49	2.00	1.85	2.13	1.46
	Earnings to Fixed Charges ratio	times	0.96	0.59	1.36	1.61	1.53	1.75	1.30
	Operating cash flow to total debt	times	0.12	(0.01)	0.15	0.17	0.20	0.24	0.15
Alaska Air Group, Inc	Long-term Debt to Equity ratio	times	1.10	2.41	1.95	1.19	0.94	0.61	1.37
	Debt to Capitalization ratio	times	0.56	0.74	0.68	0.58	0.53	0.42	0.58
	Total Debt to Total Equity ratio	times	3.38	6.31	4.73	3.54	3.40	2.87	4.04
	Total Debt to Total Assets ratio	%	77.17	86.31	82.54	77.97	77.28	74.19	79.24
	Interest coverage	times	3.74	(1.60)	3.23	4.75	6.51	11.57	4.70
	Earnings to Fixed Charges ratio	times	1.87	(0.13)	1.95	2.94	3.14	4.19	2.33
	Operating cash flow to total debt	times	0.37	0.09	0.16	0.36	0.53	0.73	0.37
Average values for selected debt and coverage ratios of eight leading U.S airlines for each given year	Long-term Debt to Equity ratio	times	2.06	6.64	7.54	8.99	3.58	3.31	
	Debt to Capitalization ratio	times	0.63	0.96	0.96	0.82	1.56	2.57	
	Total Debt to Total Equity ratio	times	5.18	16.26	21.25	20.69	6.23	9.15	
	Total Debt to Total Assets ratio	%	79.32	94.70	93.63	87.45	89.92	89.67	
	Interest coverage	times	3.05	(0.52)	0.64	2.90	2.72	3.92	
	Earnings to Fixed Charges ratio	times	2.07	(1.59)	0.72	1.71	1.45	1.62	
	Operating cash flow to total debt	times	0.35	(0.13)	0.12	0.23	0.23	0.28	

*Note: the followings have to be taken into account when analyzing debt and coverage ratios.

1. Long-term debt also contains long-term capital lease obligations.
2. Debt used in calculating the ratios of Debt to Capitalization and Cash flows to Debt is defined as a sum of short-term borrowing, current portion of long-term debt and capital lease and long-term debt including capital lease, less current maturities whereas capitalization includes mentioned debt items plus total stockholders' equity.
3. In the formula of ratios of Total Debt/Total Equity and Total Debt/Total Assets total debt has been considered as total liabilities.
4. In calculating the interest coverage ratio, EBIT is from ongoing operations adjusted to exclude special items.

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