



## Table of Contents

<b>Executive Summary</b>	<b>3</b>
<b>Industry Overview</b>	<b>4</b>
<b>Company History</b>	<b>6</b>
<b>Executives &amp; Directors</b>	<b>8</b>
<b>Recent Headlines</b>	<b>9</b>
<b><u>Industry Analysis</u></b>	<b>12</b>
Overview of the Industry	
Commercial Aircraft	
Outlook on Aerospace and Defense	
Analysis of Porter’s Five Forces	
Competitive Strategy	
<b><u>Financials</u></b>	<b>22</b>
Balance Sheet	
Income Statement	
Statement of Cash Flows	
<b><u>Fundamental Analysis</u></b>	<b>26</b>
Ratio Analysis	
Valuation	
Risk Factors	
Investment Drivers	
<b><u>Technical Analysis</u></b>	<b>39</b>
Bollinger Bands	
Parabolic SAR	
Moving Averages	
Relative Strength Index	
<b>References</b>	<b>41</b>
<b>Disclosures</b>	<b>42</b>



## Executive Summary

The Student Managed Fund on the Staten Island Campus is initiating coverage on the Boeing Company. The fundamental outlook for the Aerospace & Defense industry is positive. We believe that many companies in the Aerospace & Defense arena will record solid earnings per share gains in the near term, due to our nation's current military action, plus the high growth in emerging nations, such as China and India.

The phenomenal economic expansion of the Asia-Pacific region has unleashed demand for air transportation in a part of the world that has been underserved, based on its population and resources. Projections for the year 2012 show that China's share of the global economy will pull ahead of Europe's, to match the U.S. share at 18%. India and China, together, is expected to generate more than a quarter of the world's total economic output. Asia's share of the world's commercial airplane fleet will become equal to Europe's share at 24%. Demand for airplanes will thus be shared more evenly between the three major economic regions, rather than just the two. As China and India move up on the list of the top 10 world economies, other economies will appear on the list for the first time. These rapid movers are currently under-served by commercial aviation, so it is anticipated that their need for airplanes will far outpace that in the more mature economies.

A substantial amount of orders for the new 787 Dreamliner aircraft has contributed to Boeings' success, both in the military segment and in the commercial aircraft segment. Earnings for Boeing have been on the rise for the past couple of years. Since future growth in earnings comes, in part, from a firm reinvesting in new plant and equipment, (and thus being able to generate more income for next year) Boeing's capacity to grow without having to increase its financial leverage has increased about seven times since 2002. With a sustainable growth rate of 15.63%, up from 2.14% five years ago, management is doing a good job to limit how much they need to borrow in order to operate. Also, with an estimated growth rate of 26.50%, we conclude that Boeing is an undervalued company. Its current price is only \$93.61 as of May 4<sup>th</sup>, 2007, while the price-earnings model suggests a higher price of \$107.59.

After a comprehensive industry and fundamental analysis of Boeing, we recommend buying Boeing shares. Although Boeing has a higher P/E ratio than desired by value investors, its growth potential is astonishing. The demand for travel worldwide has opened up the door for impressive earnings growth in this industry, and this company, in particular.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: **BUY**

We recommend buying about 500 shares of Boeing at the current market price of \$93.61 a share. This is an estimated price of \$46,805. Our price target is \$107.59 a share. We recommend funding this transaction by selling an equivalent dollar amount of shares of the IJR ETF from our current portfolio. We are of the opinion that small capitalization stocks have had their run.

## Industry Overview

Surviving all odds could be considered a slogan for the U.S. airlines industry. Through inflation, depression, rising energy prices, terrorist activity, and much more, the airline industry has suffered several set backs, yet it has still managed to survive. Although bottom-line profits fluctuate a great deal, the U.S. airline industry can be characterized by steady revenue growth, falling prices and overall stability. As a whole, this industry contributes a great deal to our economic system. Much like many other cyclical businesses, successes and failures are largely dependant on the economies in which Boeing operates.

The number one weakness for this industry, as proved by the September 11th World Trade Center attacks, would be security and terrorist treats. Other weaknesses include rising and volatile fuel costs, inflation, deregulation, airplane crashes, and passenger comfort, all of which mark list that have plagued the airline industry for years. Deregulation stimulated the closing of many major airlines, such as Eastern, Pan Am, TWA, Republic, Piedmont, Ozark and Texas Air. Because of these exits, some observers argue that the airline industry is unstable and can't survive without government interventions.

For every weakness, there exists a challenge, and even a business opportunity, for the airline industry. The airlines industry's opportunity for better development include improving security screening, increasing profit margins (thereby lowing the need for government subsidies), and adding more leg room for its passengers. Another large opportunity for the airline industry would be to own and manufacture their own resources, which would help stabilize the prices of tickets a little more. Many managers and top executives' business decisions focus primarily on opportunities to stimulate profit and growth.

An analysis of the internal and external factors of an industry would show its strengths, weaknesses, opportunities, and threats. Threats are external factors, which may present a business or an industry with potential harm or failure. The airline industry faces a lot of such factors, and the changing environment of the global marketplace introduces new



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

factors each day. Rising fuel costs affects all aspects of the market, especially the airline industry. Aggressive competition from both foreign and domestic counterparts could pose another threat. India and China entering the global market as new players will increase the competition level. For example, both countries might aggressively pursue the limited number of consumers purchasing international vacations.

On the other hand, on the domestic front, drastic price reduction could pose as a "survival of the fittest." Such a price war has already been initiated by companies such as Jet Blue and Southwest Airlines. The third threat results from the September 11th attacks on the United States of America, which has imposed a certain degree of reluctance of using airlines as the preferred mode of domestic transport for the American consumer. This reluctance has translated into a fall in the overall demand for airline travel.



Source:  
[www.Boeing.com/history/](http://www.Boeing.com/history/)

### The legacy of The Boeing Company.

The development of the companies that merged to become a single enterprise as the twentieth century ended. Workers at these companies built passenger planes, helicopters, warbirds and missiles, satellites and spacecraft. They sent astronauts to the moon and brought cultures together in harmony aboard the International Space Station. Their inventions blazed the trail for today's new technologies.



## Company History



The history of Boeing may be divided into two distinct periods, namely the piston era and the jet age. Throughout the piston era, Boeing was essentially a military contractor producing fighter aircraft in the 1920's and 1930's, and bombers during World War II. During the jet age, beginning in the 1950's, Boeing had become the world's largest manufacturer of commercial aircraft, deriving most of its revenues from selling jetliners. Boeing's first jet was the 707.

The introduction of the 707 in 1958 represented a major breakthrough in the history of commercial aviation; it allowed Boeing to gain a critical technological lead over the Douglas Aircraft Company, its closer competitor. To benefit from government assistance in developing the 707, Boeing produced the first jet in two versions: a military tanker for the Air Force (KC-135) and a commercial aircraft for the airlines (707-120). The company, however, did not recoup its own investment until 1964, six years after it delivered the first 707, and the twelve years after it had launched the program.



In the end, the 707 was quite profitable, selling 25 percent above its average cost. Boeing retained the essential design of the 707 for all its subsequent narrow body single-aisle models (the 727, 737, and 757), introducing incremental design improvements, one at a time. One reason why Boeing used shared design for future models was the constant pressure experienced by the company to move down the learning curve and reduce overall development costs. Boeing introduced the 747 in 1970.

The development of the 747 represented another breakthrough; the 747 wide body design was one of a kind; it had no real competition anywhere in the industry. Boeing bet the entire company on the success of the 747, spending on the project almost as much as the company's total net worth in 1965, the year the project started. In the short-run, the outcome was disastrous.



As Boeing began delivering its 747's, the company was struggling to avoid bankruptcy. Cutbacks in orders, as a result of a deep recession, coupled with production inefficiencies, and escalating costs, created a severe cash shortage that pushed the company to the brink. As sales dropped, the 747 program was a triumph. The Jumbo Jet had become Boeing's most profitable aircraft and the industry's most efficient jetliner.

The new plane helped Boeing solidify its position as the industry leader for years to come, leaving McDonnell Douglas to exit the commercial airline market. The new plane, furthermore, contributed to Boeing's manufacturing strategy in two ways. First, as Boeing increased its reliance on outsourcing, six major subcontractors fabricated 70 percent of the value of the 747 airplane, thereby helping Boeing reduce the project's risks. Second, for the first time, Boeing applied the family concept in aircraft design to a wide-body jet, building the 747 with wings large enough to support a stretched fuselage with bigger engines, and offering as variety of other modifications in the 747's basic design. The 747-400 is a case in the point.



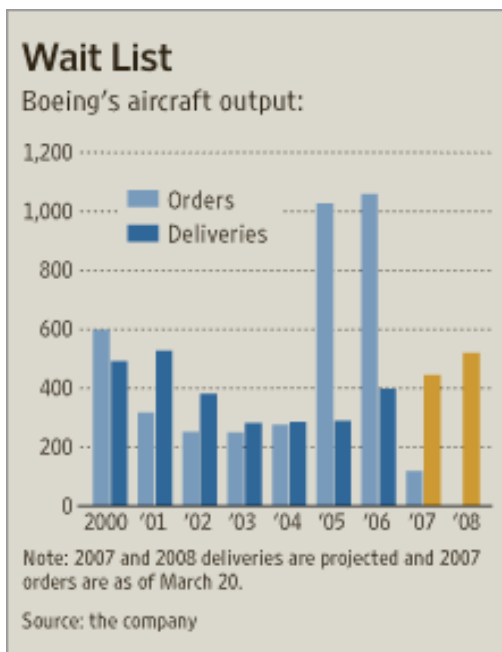
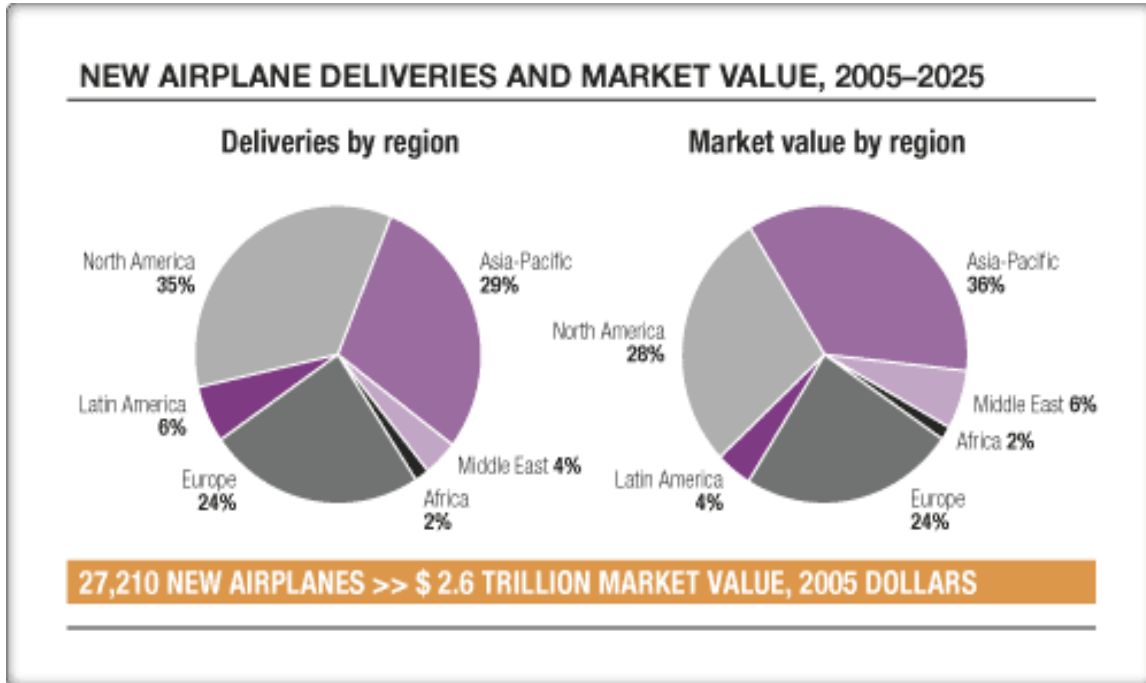
In 1997, Boeing sold the stretched and upgraded 747-400 in three versions: a standard jet, a freighter, and a "combi" (a jetliner whose main cabin was divided between passenger and cargo compartments). Boeing developed other successful models. In 1969, Boeing introduced the 737, the company's narrow-body flagship, and in 1982 Boeing put into service two additional jetliners, the 757 and the 767. By the early 1990's, the 737, 757, and 767 were all selling profitably.

Following the introduction of the 777 in 1995, Boeing's families of planes included the 737 for short-range travel, the 757 and 767 for medium to long range travel. In addition to building jetliners, Boeing also expanded its defense, space and information businesses. In 1997, the Boeing Company took a strategic gamble by merging with the McDonnell Douglas Company in a \$14 billion stock deal. As a result of this alliance, Boeing became the world's largest manufacturer of the military aircraft, NASA's largest supplier, and the Pentagon's second largest contractor. Nevertheless, despite the growth in its defense and space businesses, Boeing still derives most of its revenues from selling jetliners.



Analysis: Boeing Co (BA)

Recommendation: **BUY**



Source: The Wall Street Journal, March 26, 2007, Page A1.



## Executives & Directors



W. James (Jim) McNerney, Jr. CEO since 2005, prior to that, McNerney was the Chairmain and Chief Executive of 3M, a global technology company. He joined 3M in 2001, after 19 years at the General Electric Company. Mr. Mcnerney joined GE in 1982 where he held top executive positions including President & CEO of GE aircraft engines & EVP of GE Capital. He has been a member of the Boeing Board of Directors since 2001. He is also member of the Board of Directors of Proctor & Gamble. McNerney is a current member of the Northwestern University Board of Trustees. He is also the Chair of the US-China Business Council and the American Society of Corporate Executives, just to name a few.



James A. Bell has served as CFO and EVP of Finance of The Boeing Company since 2003. He became interim president and Cheif Executive on March 2005, following the resignation of Harry Stonecipher. He attended California State University, Los Angeles, where he earned a Bachelor's Degree in Accounting. In 1972, he joined the Rockwell Company as an accountant. At that company, he followed a path into management, including corporate senior internal auditor, accounting manager, and manager of general cost accounting. He joined Boeing in 1996, when Rockwell's aerospace and defense unit was acquired. He has held positions as VP of Finance, Corporate Controller, and VP of Contracts. He is a member of the Board of Directors of Dow Chemical Company, the Joffrey Ballet, the Chicago Urban League, World Business Chicago, the Chicago Economic Club. and New Leaders for New Schools.



Scott Carson is Executive Vice President of The Boeing Company and the President and Chief Executive Officer of Boeing Commercial Airplanes. Carson was named to this position in September 2006. He is a member of the Boeing Executive Council and serves as Boeing's senior executive in the Pacific Northwest. He led Connexion by Boeing, bringing high-speed, in-flight Internet service to market with airlines in Europe and Asia. Carson served as Executive Vice President and Chief Financial Officer of Boeing Commercial Airplanes. Carson joined Boeing in 1973 as a financial analyst on the B-1 bomber avionics program. Carson graduated from Washington State University with a Bachelor's and a Master's Degree in Business Administration. Carson is chair of the WSU College of Business and Economics national board of advisors; and is on the College of Engineering and Architecture Advisory Board.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

## Recent Headlines

### **Boeing awarded Australian Army Aviation helicopter flight and maintenance training contract**

ST. LOUIS, May 04, 2007 -- Boeing Australia Limited has been awarded a contract worth approximately AUD\$110 million by the Commonwealth of Australia to provide helicopter flight and maintenance training as well as maintenance support services for Australian Army pilots and ground technical staff.

### **Boeing receives NASA contract to develop spacecraft shield**

April 20, 2007 (msn.money.com) - The Boeing Co. received a NASA contract to develop alternate heat shield materials for the next generation Space Shuttle, dubbed the Orion exploration spacecraft, NASA officials said on Friday. The sole-source, indefinite-delivery, indefinite-quantity contract may be worth up to \$28 million during its five-year performance period that runs through April 2012.

### **Boeing gets 126 April orders, down from year ago**

NEW YORK, May 03, 2007 (Reuters) - Boeing Co. racked up about 126 commercial plane orders in April, it said on Thursday, the highest monthly total this year, but slightly lower than the 149 it took in the same month a year ago. The world's biggest-selling plane maker -- which snatched that title back from Airbus last year -- continued to lead its European rival in the wide-body market, notching up orders for its new, lightweight 787 Dreamliner.

### **Boeing No.1 In U.S. Patents in Aerospace and Defense Industry**

CHICAGO, April 27, 2007—The Boeing Company has been identified as one of the nation's top innovators among aerospace and defense companies based on the number of new patents it has received and the strength of its patent portfolio.

### **Boeing Net Climbs 27% on Strong Orders; Commercial Arm Helped By Air-Carrier Growth In Middle East and Asia**

*Summarized from The Wall Street Journal, April 26, 2007, Page C8*

Boeing Company's first quarter profit soared 27% as it delivered 106 commercial airplanes. This was the highest increase the company has seen in five years. The





Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

aerospace giant said total order backlog at the quarter's end reached a record \$262 billion, up 23% in the past 12 months.

Boeing has booked 544 orders for its 787 "Dreamliner," the fuel-efficient aircraft due to enter into service in May 2008. Boeing said the 787 program is running on schedule. Orders for commercial aircrafts remain strong due to growth of airlines in Asia and the Middle East. The aircraft-making business is expected to remain robust for several more years as U.S. airlines begin to replace aging fleets.

Boeing generates about half of its business from commercial-jet sales, with the rest coming from government contracts. In the first quarter, both businesses contributed equally to revenue gains, but the defense-systems unit reported a 4% profit drop, while commercial-jet profit was about flat. On the commercial side, revenue increased 7%, while it rose 7.4% in the defense business.

Boeing is taking advantage of the problems at rival Airbus who has delayed their new aircraft offerings from the European plane maker. Boeing CEO Jim McNerney is well aware of this issue and stated, "Boeing needs to stay ready for competition. We have customers that need to be productive and we have competitors that aren't going to sit still, and let us take easily as much of the market forever as we're taking now."

## **GRADUAL ASCENT**

### **Burned by Last Boom, Boeing Curbs Its Pace**

### **It Uses New Restraint To Juggle Jet Orders; Avoiding 'Bunny Holes'**

*Summarized from The Wall Street Journal, March 26, 2007, Page A1*

Boeing's jet orders rose above 300 for this year, worrying some at Boeing. The last time Boeing had this type of booming orders they were burned. In 1997, Boeing tried to ramp up production, to accommodate the high orders, too quickly that suppliers were unable to make the parts fast enough. This led to unfinished planes stacked up at its factories, forcing managers to shut down production for a month to allow the strained suppliers to catch up. The huge stumble led to a rare year-end loss and \$2.6 billion in charges against earnings over two years.

Boeing vows not to have the same occur this time around. The jet maker is trying to be more prudent and increase production gradually. In the process, it knowingly risks alienating some of its longtime, best customers. Boeing wants to build the most planes they can but they want to be responsible about it. Boeing does not want to fail on deliveries or fail on the quality that Boeing is known for. With a recovery in the airline



Analysis: [Boeing Co \(BA\)](#)

Recommendation: **BUY**

industry intensifying, there is a need for quick jet deliveries. Boeing won more than 2,000 jet orders over the past two years from airlines in emerging markets such as China, India and the Middle East. Without a major jump in production rates, it is largely sold out until 2011.

The September 11<sup>th</sup> terror attacks drove the airline industry into a slump. U.S. and European customers are now finally emerging from the slump. They're starting to shop for new planes to replace hundreds of old jetliners. Airlines are calling on Boeing to ramp up production but Boeing is staying on course with pacing itself with production. Instead, Boeing will agree to a jump in production rates only if it can sustain the pace for at least a couple of years. So far, Boeing's discipline has resulted in a leaner machine that produces airplanes more quickly, using fewer people, than ever before. Operating profit margins at the Commercial Airplanes unit reached nearly 10% last year, whereas margins had hovered around 6%. Boeing is keeping a close watch on production and controlling output to make sure that the 1997 attempt at overexpansion does not occur. Instead Boeing is expanding their output but at a slower pace. Since 2003, Boeing has boosted its jet output by 41%, delivering 398 airplanes in 2006. This year, Boeing says deliveries should increase 12%, to about 445, and then to around 520 in 2008. At the same time, Boeing is enforcing strict training standards for new assembly-line workers. The company requires new mechanics to attend an unpaid 30-day training course and pass a stringent technical test before being allowed to touch a wrench. This means mechanics show up for their first day better prepared for the rigors of Boeing's factories.

Boeing could lose sales opportunities on some of its most promising new products if customers get frustrated with its over- booked orders. It already has almost 500 orders for its newest airplane, the planned 787 Dreamliner. First deliveries are scheduled for mid-2008, and Boeing is telling new customers they will not get Dreamliners until 2013. Some skeptics say Boeing will eventually cave to the pressure from impatient airlines. Even before completing assembly of the first Dreamliner, it is contemplating how soon it can open a second assembly line. Some customers and suppliers say that an overly aggressive ramp-up of output could lead to a production breakdown that would hurt both Boeing and its customers.

At this point in Boeing's business, they are attempting to pace themselves so they do not have another breakdown in production to where they have to shut down production for a month or more. Boeing is attempting not to over expand too quickly as they did in 1997. At this rate, Boeing will maintain a slow but steady pace, which is what they want.



## Industry Analysis

### Overview of the Industry

The Aerospace and Defense industry has seen accelerated growth in the past couple of years. The rising demand in today's environment for military equipment has added to this huge success. The rapid growth rate of nations like China and India has contributed to the rising demand for passenger aircrafts for travel. The increase in the world's growth rate also helps benefit the Boeing Co. The Aerospace industry has recorded annual sales growth of 8.2% for the five years through 2005, and 10.4% for the past three years. Net income rose by 12.4% annually over the five year period, and 20.8% annually over the past three years. For the five year period ending in September of 2006, the S&P 500 Aerospace and Defense industry index had outperformed the S&P 500 by 71%. The result for the three year period was the same. The industry returned 87%, while the S&P 500 returned 42%.

The Aerospace industry has been revitalized and has been booming due to a strong wave of global economic growth and the emergence of countries such as China and India as economic powers. The rise of wealth in the Middle East has also added to the booming success. This massive growth throughout the world has spurred huge gains in business travel, as well as in air cargo traffic. Boeing saw its orders from China jump to 143 commercial jets in 2005, and 114 for the nine months through September 2006. India ordered 98 planes from Boeing in 2005. Middle East orders also rose to 44 in 2005. Also, rising income levels, in some countries, have added to the company's success, due to the greater mobility amongst people in such regions.

The defense market has experienced massive growth since the terrorist attacks of 2001, as a result of the U.S. government funding the wars in Afghanistan and Iraq. Since the wars have begun, the U.S. government and the governments of other nations have splurged and put a lot of money into defense. Safety and national security has become a huge profit gainer for the Aerospace and Defense industry. Also, it is believed that the United States and its allies are locked in a struggle for control that will continue in years to come. This will increase the need for expenditures in the future for military equipment. One issue that has risen is that while defense is benefiting from the current environment in which we live, air travel is not, as a result of the attacks in 2001. This could very well decrease commercial air travel.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

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## **Commercial Aircraft**

Based on total unit orders of 100-plus seat jetliners in 2005 (latest available), Boeing and Airbus control about 49% and 51%, respectively, of the global commercial jetliner market. Demand for jetliners is driven primarily by growth in the global 100-plus seat commercial aircraft fleet. Independent research firm Avitas Inc., projects that the global fleet of 100-plus seat jetliners will grow at a 4.3% compound annual rate over the next 20 years, due to its projection of a 5.9% compound annual growth in passenger traffic over the same period. We believe that, given the economic development of many former third-world countries in Asia, Eastern Europe, the Middle East, etc., fleet growth should continue at an above-average rate for the foreseeable future.

One of the things that helps Boeing in this segment of their business is their Six Sigma methodology. Six Sigma aids manufacturers in their quest to design, build and deliver near-perfect products by reducing defects and variation, and improving quality, resulting in substantial cost savings. Six Sigma refers to manufacturing processes that produce a level of quality at 3.4 defects per million opportunities. Most U.S. companies operate at a rate of 66,807 defects per million, or "3.0 Sigma." Boeings' current main plant location is in Seattle, Washington. Although Boeing mostly outsources many of its business products and flies them in, they still remain to have a presence in the States.

## **Military Segment**

Examining Boeings' military weapons segment, demand for IDS's equipment and systems is primarily driven by growth in the procurement and Research and Development sectors of the U.S. defense budget, which accounts for about 40% of global military weapons spending. Based on U.S. Department of Defense statistics, from fiscal year 1995 through fiscal year 2005, the procurement and Research and Development sectors of the total U.S. defense budget grew at 8.0% and 5.1% average annual rates, respectively. It is believed that two factors contributed to this strong growth: cuts to the defense budget that occurred during the Clinton presidential administration, which resulted in the need for increased defense spending in later years, and the wars in Iraq and Afghanistan. We expect defense budgets to continue to grow, but at much slower rates, going forward. This will be especially evident as the U.S. decreases its presence in Iraq in the near future.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

## **Outlook on Aerospace and Defense**

The fundamental outlook for the Aerospace & Defense industry is positive. We believe many companies in the Aerospace & Defense area will record solid earnings per share gains in the near term, due to our nation's current military action, plus the high growth in nations such as China and India. The outlook for the defense segment is strongly positive. We believe that the ongoing military actions in Iraq and Afghanistan, potential threats from Islamic terrorists, North Korea and Iran, as well as a military buildup in China, will make it necessary to continue funding the defense segment. At the same time, we believe that a number of defense contractors have become more efficient, have shown strong cash flow, and have engaged in significant share repurchases and dividend increases. However, there is also the potential likelihood of the risk of declining defense spending following the recent Democratic win of Congress.

The outlook for the commercial aircraft segment is especially positive. In looking at the 100-plus-seat commercial aircraft-making sector, we expect that the global airline industry, the largest customer of passenger jets, will continue to have strong passenger traffic growth, which the International Air Transport Associations projects at over 4.5% in 2007. Following the 9/11 attacks, global airlines were hit by large declines in air traffic. However, passenger traffic has picked up significantly in recent years, boosted by global economic growth and attractive fares.

Boeing currently has a higher price-to-earnings ratio than typically desired for a value investor. However, this high ratio is due to Boeings' very high growth potential. Boeing currently receives the most contracts in their industry, whether it is in the commercial aircraft segment of their business, or the military segment of their business. Furthermore, Boeing has surpassed its earnings estimates for the most recent quarter (ending March 31, 2007) by a whopping 27%. Orders are pouring into the company on an almost daily basis. This is for a hundred million dollar product! The price for a 787 Dreamliner ranges from \$138 million to \$188 million per plane.

Customers include: Air New Zealand (787-9, eight), Blue Panorama (four), First Choice Airways (eight), Continental (20), Japan Airlines (30 + 20 options), Vietnam Airlines (four), Chinese Airlines (60), Icelandair (four), Ethiopian Airlines (ten), Korean Airlines (ten + ten options), Northwest Airlines (18 + 50 options), Air Canada (14 + 46 options), Air India (27), Royal Air Maroc (four), LOT (seven), China Southern (ten), ILFC (20), Qantas (45 +



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

20 options), Kenya Airways (six), Singapore Airlines (787-9, 20 + 20 options), Air Pacific (787-9, five + three options), Monarch Airlines (787-8, six + four options).

DJ US Aerospace & Defense Index vs. Boeing: 5 Year Trend



DJ US Aerospace & Defense Index  
VS  
Boeing, Lockheed Martin, and Northrop Grumman: 5 Year Trend





## **Analysis of Competitive Forces**

The Porter model provides an analysis of the industry that any given company competes in. Porter's model defines, in a broad sense, all of the competitive forces in the market, existing alliances, potential threats, and other sources of positive and negative influence.

The analysis of the Aerospace and Defense industry shows that there are very few competitors competing for market share. It is not easy to get into the industry due to company recognition. The top companies in the industry are Boeing, Airbus, Lockheed Martin, and Northrop Grumman Corporation. Usually these companies have extremely close relationships with their suppliers and their customers. As a matter of fact, the industry is extremely concentrated.

### **New Entrants**

In the beginning, any new entrant attempting to enter this market faces a steep, uphill battle. Regulations, capital requirements, extremely skilled labor needs, sophisticated support industries, necessary proven track record, and the perspective of a long wait to reach profitability are a few of the very high barriers to entry into this industry. However, there is still some possibility of entry from China. China may decide that this industry is strategically vital for their long term well being and may encourage a highly subsidized entry into the market. Also, although highly unlikely, existing defense aerospace companies may be tempted by a late entry or re-entry into the industry. Although there seems to be some chances of new entrants, there are still very big entry barriers to overcome. Another hurdle to overcome is company recognition and reputation. In this industry in particular, where product safety and reliability are vital, brand recognition is essential. The Boeing Company, being a trusted and respected company in the Aerospace and Defense industry, makes it very difficult for new entrants to enter the market and compete.

### **Threat of Substitutes**

It is difficult to imagine a direct substitute for the Aerospace and Defense industry, especially in the long haul transport. Air travel is the most effective, secure, convenient,



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

and economic transportation method. However, a few threats do exist. Fast bullet trains are one substitute. They are an attractive solution for cities less than 400 miles apart. As their speeds approach, and exceed, 200 mph, they make such a trip in below two hours from downtown-to-downtown. After the start of the TGV service, which is a new high speed train service in Europe, between Paris and Lyons, air travel faced a 50% reduction between the two cities. If these solutions were to take place in the United States, between say San Francisco and Los Angeles, a great many airlines may lose market share, and as a consequence, could reduce their fleets. Another potential substitute would be the advances made in the automotive industry, such as cars capable of very high speeds, and under electronic control on specially equipped freeways. The last substitutes that could have an impact on the airline industry are the technological advances made in communication. Such threats as VOIP and video conferencing could reduce business travel requirements, effecting airlines and forcing airlines to reduce their fleet.

### **Bargaining Power of Buyers**

The buyers are mainly airlines and leasing companies. As the airlines optimize their operations and cut their investments, the competition among the buyers can become deadly. I would think that buyers do not have much bargaining power, unless they are the US Government, or are ordering a huge fleet of planes. Even so, with the high demand for the Dreamliner, I would imagine that Boeing is dictating pricing and production.

### **Bargaining Power of Suppliers**

The suppliers can be split into two different groups, based on their bargaining power. Engine manufacturers represent the most significant group of suppliers. It can be assumed that their bargaining power is going to significantly increase as they undergo concentration. General Electric, Pratt & Whitney, and Rolls Royce are the main suppliers. This power is somewhat balanced by the fact that airlines usually enter into separate negotiations with the engine suppliers to determine their choice of engine for their planes. Planes are usually designed for more than one engine type. Also, the required fuel efficiencies, increased reliability needs (especially for twin engine transatlantic wide bodies) and the need to provide more power for the new large body aircraft require aircraft manufacturers to enter into joint development programs. As the industry is extremely capital intensive, all sources of investment and financing detain considerable power.

### **Rivalry**





In the Aerospace and Defense industry, there are four main competitors: Boeing, Airbus, Lockheed Martin, and Northrop Grumman Corporation. Boeing has the largest market capitalization and also receives the most orders for new aircrafts and for military equipment. Boeing operates in two major segments: Commercial Airplanes and Integrated Defense Systems. Airbus released the largest passenger airliner, the A380, in 2005. They currently have a great deal of back orders, which has led to order cancellations. Lockheed Martin is currently the government's top supplier for military products. Lockheed Martin is Boeings' top competitor in the defense segment of the industry, and is second on the list as far as market capitalization. Lockheed Martin operates in four segments: Aeronautics, Electronic Systems, Information Systems & Global Services, and Space Systems. Northrop Grumman Corporation is also a favorite of the government, next to Lockheed Martin. Northrop is third as far as market capitalization. Northrop Grumman operates in four segments: Information & Services, Electronics, Aerospace, and Ships.

Sub-Industry Comparison: Aerospace & Defense

Peer Group\*: Aircraft Manufacturers

Peer Group	Stk.Mkt. Cap.(Mil)	Recent Stock Price	P/E Ratio	12-Mo. Trailing EPS	Beta	Yield(%)	Ret. On Equity (%)
<b>Boeing Co.</b>	<b>73,631</b>	<b>93.29</b>	<b>33</b>	<b>2.85</b>	<b>0.79</b>	<b>1.5</b>	<b>27.9</b>
Avcorp Industries	59	2.33	NM	-0.21	NA	Nil	NM
BombardierCI'A'	1,465	4.62	36	0.13	NA	Nil	4.7
Bombardier Inc.	6,608	4.61	35	0.13	NA	Nil	4.7
Groen Bros Aviation	26	0.17	NM	-0.15	0.23	Nil	NM
Lockheed Martin	40,305	95.40	16	5.80	-0.16	1.5	34.3
Northrop Grumman	26,655	76.10	17	4.37	0.10	1.9	9.4

Competitive Strategy

Boeing has built a competitive strategy that focuses on more new nonstop service and more frequent flights between destinations - not increased airplane capacity and size. The 777-200 longer range airplane, which entered service in 2006, is capable of connecting virtually any two cities in the world.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: **BUY**

The Boeing 787 Dreamliner has been the most successful launch in commercial airplane history. The 787 program is essentially sold out from 2008 - when the first deliveries will be made - through 2012. As a result of greatly increasing use of composites and other advances in engines and aerodynamics, the 787 will use 20 percent less fuel, and will be over 30 percent less expensive to maintain. This is remarkable for an industry where a three or a four percent improvement is considered a break through. This new airplane provides the highest comfort level of any wide body in the sky, and it goes faster than any other jet liner. This will enable airlines to offer more nonstop service and greater convenience to customers, at significantly reduced operating costs, which opens up the possibility of combining lower fares to passengers with greater profit to the airlines.

Boeing engages in the design, development, manufacturing, sale, as well as support of commercial jetliners, military aircraft, satellites, missile defense, human space flight and launch systems and services. They are one of the two major manufactures of 100+ seat airplanes for the worldwide commercial airline industry and are the second largest defense constrictor in the U.S. Their principal operations are in the U.S. They rely extensively on a network of partners, key suppliers and subcontractors located around the world.

Their business strategies are centered on the successful execution in their healthy core businesses of commercial airplanes and integrated defense systems (IDS), both of which are supported by Boeing Capital Corporation (BCC). Their core businesses generate substantial earnings and cash flow that permit them to invest in new products and services advancing the aerospace industry. IDS is a defense systems business that integrates its resources in defense, intelligence, communications and space to deliver capability-driven solutions. Their strategy is to leverage out their core businesses with a simultaneously intense focus on growth and productivity. Their strategy also benefits as commercial and defense markets often offset each other's cyclicity. BCC delivers value through their business units by managing overall financial exposures.

In 2006, the Company's revenues grew by 15 percent. Earnings from operations increased 7%. They continued to invest in key growth programs, as research and development expense grew by 48% to \$3.3 billion, reflecting increased spending on the 787 and 747-8 programs, and lower cost sharing payments from suppliers. They generated operating cash flow of \$7.5 billion driven by operating and working capital performance. Also during fiscal year 2006, the Company reduced their debt by \$1.2 billion and repurchased 25 million common shares. Their contractual blockage grew 35% to \$217 billion, driven by 40% growth in commercial airplanes, while their total backlog grew 22% to \$250 billion.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

We expect continued growth in commercial airplane revenues and deliveries as they execute out record backlog and respond to global demand by ramping up commercial aircraft production. Boeing expects IDS revenue to be slightly lower in 2007 and anticipate that the U.S. Department of Defense budget growth will moderate over the next several years. They are focused on improving financial performance through a combination of productivity and customer-focused growth.

Higher consolidated revenues in 2006 were primarily due to higher new commercial aircraft deliveries. IDS revenues were up moderately in 2006, as growth in Precision Engagement and Mobility Systems and Support Systems was partially offset by lower volume in Network and Space Systems. BCC revenues increased in 2006 primarily due to higher investment income and higher net gain on disposable assets. Other segment revenues decreased in 2006 as a result of the buyout of several operating lease aircraft in the amount of \$369 million in 2005. In addition, revenues decreased in accounting differences/eliminations due to higher commercial airplanes inter-company deliveries in 2006.

## AIRLINE

Industry Statistics									
Market Capitalization:	99B								
Price / Earnings:	26.5								
Price / Book:	635.2								
Net Profit Margin (mrq):	4.2%								
Price To Free Cash Flow (mrq):	19.0								
Return on Equity:	21.5%								
Total Debt / Equity:	1.6								
Dividend Yield:	1.6%								
Description	1 Day Price Change %	Market Cap	P/E	ROE %	Div. Yield %	Long-Term Debt to Equity	Price to Book Value	Net Profit Margin % (mrq)	Price to Free Cash Flow (mrq)
<b>Sector:</b> <a href="#">Industrial Goods</a>	1.43	1242.8B	19.42	16.54	1.47	0.94	30.25	5.94	61.86



Analysis: Boeing Co (BA)

Recommendation: **BUY**

Orders through May 1, 2007	737	747	767	777	787	Total
2007 Net Orders	106	5	36	49	119	315
Air Canada					23	23
Air New Zealand					4	4
ALAFCO	6				6	12
All Nippon Airways				4		4
Arik Air				4	3	7
Aviation Capital Group	15				5	20
Azerbaijan Airlines	2				3	5
Boeing Business Jet	5					5
British Airways				4		4
C.I.T. Leasing Corporation	5					5
Continental Airlines					5	5
COPA Airlines	4					4
DHL International			6			6
First Choice Airways					4	4
JAL International					5	5
LOT Polish Airlines					1	1
Oak Hill Capital Partners				6		6
Philippine Airlines				2		2
SkyEurope	5					5
Southwest Airlines	2					2
SpiceJet	10					10
TAM				4		4
Travel Service					1	1
Unidentified	56	6	3	21	44	130
UPS			27			27
Virgin Atlantic Airways					15	15
Virgin Blue Airlines				6		6

This chart includes both gross and net total orders for the current year. The net total includes order changes such as conversions or cancellations subtracted from the gross total orders (net year of cancel). This chart is updated weekly.

The totals displayed in the reporting database are 'net year of order' totals. The data for the reports is updated once a month.

From the Company's Website (www.Boeing.com)



Analysis: Boeing Co (BA)

Recommendation: **BUY**

<b>2007 Gross Orders</b>	<b>110</b>	<b>9</b>	<b>36</b>	<b>51</b>	<b>119</b>	<b>325</b>
<b>Changes</b>	<b>-4</b>	<b>-4</b>	<b>-</b>	<b>-2</b>	<b>-</b>	<b>-10</b>
<b>2007 Net Orders</b>	<b>106</b>	<b>5</b>	<b>36</b>	<b>49</b>	<b>119</b>	<b>315</b>
	<b>737</b>	<b>747</b>	<b>767</b>	<b>777</b>	<b>787</b>	<b>Total</b>

## Financials

### Annual Balance Sheet

	2006/12/31	2005/12/31	2004/12/31
<b>Assets</b>			
Cash and cash equivalents	6,118,000,000.00	5,412,000,000.00	3,204,000,000.00
Short-term investments	268,000,000.00	554,000,000.00	319,000,000.00
Accounts receivable, net	5,285,000,000.00	5,246,000,000.00	4,653,000,000.00
Current portion of customer financing, net	370,000,000.00	367,000,000.00	616,000,000.00
Deferred income taxes	2,837,000,000.00	2,449,000,000.00	1,991,000,000.00
Inventories, net of advances and progress billings	8,105,000,000.00	7,878,000,000.00	4,247,000,000.00
<b>Total Current Assets</b>	<b>22,983,000,000.00</b>	<b>21,906,000,000.00</b>	<b>15,100,000,000.00</b>
Customer financing, net	8,520,000,000.00	9,639,000,000.00	10,385,000,000.00
Property, plant and equipment, net	7,675,000,000.00	8,420,000,000.00	8,443,000,000.00
Goodwill	3,047,000,000.00	1,924,000,000.00	1,948,000,000.00
Prepaid pension expense		13,251,000,000.00	12,588,000,000.00
Other acquired intangibles, net	1,698,000,000.00	875,000,000.00	955,000,000.00
Deferred income taxes	1,051,000,000.00	140,000,000.00	154,000,000.00
Investments	4,085,000,000.00	2,852,000,000.00	3,050,000,000.00
Other assets, net of accumulated amortization of \$272 & \$204	2,735,000,000.00	989,000,000.00	1,340,000,000.00
<b>Total Assets</b>	<b>51,794,000,000.00</b>	<b>59,996,000,000.00</b>	<b>53,963,000,000.00</b>
<b>Liabilities and Shareholders Equity</b>			
Accounts payable and other liabilities	16,201,000,000.00	16,513,000,000.00	14,869,000,000.00
Advances and billings in excess of related costs	11,449,000,000.00	9,868,000,000.00	4,123,000,000.00
Income taxes payable	670,000,000.00	556,000,000.00	522,000,000.00
Short-term debt and current portion of long-term Debt	1,381,000,000.00	1,189,000,000.00	1,321,000,000.00
<b>Total Current Liabilities</b>	<b>29,701,000,000.00</b>	<b>28,126,000,000.00</b>	<b>20,835,000,000.00</b>
Deferred income taxes		2,067,000,000.00	1,090,000,000.00
Accrued retiree health care	7,671,000,000.00	5,989,000,000.00	5,959,000,000.00
Accrued pension plan liability	1,135,000,000.00	2,948,000,000.00	3,169,000,000.00
Other long-term liabilities	391,000,000.00	269,000,000.00	
Long-term debt	8,157,000,000.00	9,538,000,000.00	10,879,000,000.00
<b>Shareholders Equity:</b>			
Common shares issued, par value \$5.00	5,061,000,000.00	5,061,000,000.00	5,059,000,000.00
1,012,261,159 and 1,012,261,159 shares;			
Additional paid-in capital	4,655,000,000.00	4,371,000,000.00	3,420,000,000.00
Treasury shares, at cost	(12,459,000,000.00)	(11,075,000,000.00)	(8,810,000,000.00)
Retained earnings	18,453,000,000.00	17,276,000,000.00	15,565,000,000.00
Accumulated other comprehensive loss	(8,217,000,000.00)	(1,778,000,000.00)	(1,925,000,000.00)
Share Value Trust shares	(2,754,000,000.00)	(2,796,000,000.00)	(2,023,000,000.00)
<b>Total Shareholders Equity</b>	<b>13,936,000,000.00</b>	<b>22,332,000,000.00</b>	<b>22,249,000,000.00</b>
<b>Total Liabilities &amp; Shareholders Equity</b>	<b>51,794,000,000.00</b>	<b>59,996,000,000.00</b>	<b>53,963,000,000.00</b>



Analysis: Boeing Co (BA)

Recommendation: BUY

## Annual Income Statement

	12/31/2006	2005/12/31	2004/12/31
Sales of products	52,644,000,000.00	45,398,000,000.00	43,960,000,000.00
Sales of services	8,886,000,000.00	9,447,000,000.00	8,497,000,000.00
<b>Total Revenues</b>	<b>61,530,000,000.00</b>	<b>54,845,000,000.00</b>	<b>52,457,000,000.00</b>
Cost of products	(42,490,000,000.00)	(38,082,000,000.00)	(37,443,000,000.00)
Cost of services	(7,594,000,000.00)	(7,767,000,000.00)	(7,232,000,000.00)
Boeing Capital Corporation interest expense	(353,000,000.00)	(359,000,000.00)	(350,000,000.00)
Total costs and expenses	50,437,000,000.00	(46,208,000,000.00)	(45,025,000,000.00)
<b>Gross Profit</b>	<b>11,093,000,000.00</b>	<b>8,637,000,000.00</b>	<b>7,432,000,000.00</b>
Income/(loss) from operating investmetnts, net	146,000,000.00	88,000,000.00	91,000,000.00
General and administrative expense	(4,171,000,000.00)	(4,228,000,000.00)	(3,081,000,000.00)
Research and development expense	(3,257,000,000.00)	(2,205,000,000.00)	(1,879,000,000.00)
Gain on dispositions, net	(226,000,000.00)	520,000,000.00	23,000,000.00
Share-based plans expense			(576,000,000.00)
Goodwill impairment			(3,000,000.00)
Impact of September 11, 2001 recoveries			
Earnings from continuing operations	3,014,000,000.00	2,812,000,000.00	2,007,000,000.00
Other income, net	420,000,000.00	301,000,000.00	288,000,000.00
Interest and debt expense	(240,000,000.00)	(294,000,000.00)	(335,000,000.00)
<b>Earnings Before Income Taxes</b>	<b>3,194,000,000.00</b>	<b>2,819,000,000.00</b>	<b>1,960,000,000.00</b>
Income tax (expense)/benefit	988,000,000.00	(257,000,000.00)	(140,000,000.00)
Net earnings from continuing operations	2,206,000,000.00	2,562,000,000.00	1,820,000,000.00
Income from discontinued operations, net of taxes			10,000,000.00
Net gain on disposal of discontinued ops., net of taxes	9,000,000.00	(7,000,000.00)	42,000,000.00
Cumulative effect of accounting change, net of taxes		17,000,000.00	
<b>Net earnings</b>	<b>2,215,000,000.00</b>	<b>2,572,000,000.00</b>	<b>1,872,000,000.00</b>
Basic earnings per share from continuing operations	2,880,000.00	3,260,000.00	2,270,000.00
Income from discontinued operations, net of taxes			10,000.00
Net gain on disposal of discontinued ops., net of taxes	10,000.00	(20,000.00)	50,000.00
Cumulative effect of accounting change, net of taxes		30,000.00	
Diluted earnings per share from continuing operations	2,840,000.00	3,190,000.00	2,240,000.00
Income from discontinued operations, net of taxes			10,000.00
Net gain on disposal of discontinued ops., net of taxes	10,000.00	(10,000.00)	50,000.00
Cumulative effect of accounting change, net of taxes		20,000.00	
Diluted earnings per share	2,850,000.00	3,200,000.00	2,300,000.00



## Statement of Cash Flows

	2006/12/31	2005/12/31	2004/12/31
<b>Cash flows operating activities:</b>			
Net earnings	2,215,000,000.00	2,572,000,000.00	1,872,000,000.00
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Non-cash items			
Goodwill impairment			3,000,000.00
Share-based plans expense	743,000,000.00	1,036,000,000.00	655,000,000.00
Depreciation	1,445,000,000.00	1,412,000,000.00	1,412,000,000.00
Amortization of other acquired intangibles	100,000,000.00	91,000,000.00	97,000,000.00
Amortization of debt discount/premium & issuance costs	14,000,000.00	23,000,000.00	15,000,000.00
Pension expense	746,000,000.00	1,225,000,000.00	335,000,000.00
Investment/asset impairment charges, net	118,000,000.00	83,000,000.00	122,000,000.00
Customer financing valuation provision	32,000,000.00	73,000,000.00	45,000,000.00
Net loss (gain) on disposal of discontinued operations	(14,000,000.00)	12,000,000.00	(66,000,000.00)
Loss/(gain) on dispositions/business shutdown, net	226,000,000.00	(520,000,000.00)	(23,000,000.00)
Other charges and credits, net	82,000,000.00	129,000,000.00	539,000,000.00
Non-cash adjustments relating to discontinued operations			15,000,000.00
Excess tax benefits from share-based payments	(395,000,000.00)	(70,000,000.00)	(23,000,000.00)
<b>Changes in assets and liabilities</b>			
Accounts receivable	(244,000,000.00)	(592,000,000.00)	(241,000,000.00)
Inventories, net of advances and progress billings	444,000,000.00	(1,965,000,000.00)	535,000,000.00
Accounts payable and other liabilities	(744,000,000.00)	963,000,000.00	1,242,000,000.00
Advances and billings in excess of related costs	1,739,000,000.00	3,562,000,000.00	735,000,000.00
Income taxes receivable, payable and deferred	933,000,000.00	628,000,000.00	1,086,000,000.00
Other long-term liabilities	(62,000,000.00)	(476,000,000.00)	(30,000,000.00)
Prepaid pension expense	(522,000,000.00)	(1,862,000,000.00)	(4,355,000,000.00)
Goodwill			(3,000,000.00)
Other acquired intangibles		11,000,000.00	(1,000,000.00)
Accrued retiree health care	114,000,000.00	30,000,000.00	214,000,000.00
Customer financing	718,000,000.00	589,000,000.00	(421,000,000.00)
Other	(189,000,000.00)	46,000,000.00	(255,000,000.00)
Net cash provided by operating activities	7,499,000,000.00	7,000,000,000.00	3,504,000,000.00



Analysis: Boeing Co (BA)

Recommendation: **BUY**

**Cash flows investing activities:**

Discontinued operations customer financing, reductions		2,000,000.00	174,000,000.00
Property, plant and equipment, Additions	(1,681,000,000.00)	(1,547,000,000.00)	(1,246,000,000.00)
Property, plant and equipment, Reductions	225,000,000.00	51,000,000.00	268,000,000.00
Acquisitions, net of cash acquired	(1,854,000,000.00)	(172,000,000.00)	(34,000,000.00)
Proceeds from dispositions of discontinued operations		33,000,000.00	2,017,000,000.00
Proceeds from dispositions	123,000,000.00	1,676,000,000.00	194,000,000.00
Contributions to investments	(2,815,000,000.00)	(2,866,000,000.00)	(4,142,000,000.00)
Proceeds from investments	2,850,000,000.00	2,725,000,000.00	1,323,000,000.00
Other	(34,000,000.00)		
Net cash used by investing activities	(3,186,000,000.00)	(98,000,000.00)	(1,446,000,000.00)
New borrowings	1,000,000.00		
Debt repayments	(1,681,000,000.00)	(1,378,000,000.00)	(2,208,000,000.00)
Stock options exercised	294,000,000.00	348,000,000.00	98,000,000.00
Excess tax benefits from share-based pmt arrangements	395,000,000.00	70,000,000.00	23,000,000.00
Common shares repurchased	(1,698,000,000.00)	(2,877,000,000.00)	(752,000,000.00)
Dividends paid	(956,000,000.00)	(820,000,000.00)	(648,000,000.00)
Net cash used by financing activities	(3,645,000,000.00)	(4,657,000,000.00)	(3,487,000,000.00)
Effect of exchange rate changes on cash & cash equiv.	38,000,000.00	(37,000,000.00)	
Net increase/(decrease) in cash & cash equiv.	706,000,000.00	2,208,000,000.00	(1,429,000,000.00)
Cash and cash equivalents at beginning of year	5,412,000,000.00	3,204,000,000.00	4,633,000,000.00
Cash and cash equivalents at end of year	6,118,000,000.00	5,412,000,000.00	3,204,000,000.00





## Fundamental Analysis

### Valuation

Data	2001	2002	2003	2004	2005	2006	Average
EPS	2.79	2.82	1.00	1.63	2.39	3.62	2.38
P/E	18.60	14.10	33.40	29.40	25.10	22.20	23.80
CFPS	5.10	4.72	2.82	3.57	4.50	7.43	4.69
SPS	72.94	67.61	63.08	66.13	72.11	81.19	70.51
P/CFPS	10.18	8.42	11.84	13.42	13.33	10.82	11.34

### Earnings model

Earnings Model				
Estimated Price	Historical P/E Ratio	Current EPS		EPS Growth Rate
127.98	23.80	4.50	1.00	19.50%

The earning model uses an average historical P/E to compute with a current EPS. The growth rate of 19.50% is projected and thus we come with a price of around \$127, rounded down to be slightly conservative. After comparing this to the current stock price of \$93.61 (as of May 4, 2007), we can conclude that Boeing is an undervalued company at this point.

**Estimated Price = Historical Average P/E x Current EPS x (1+ Projected EPS Growth rate)**



Analysis: Boeing Co (BA)

Recommendation: BUY

**Two-Stage Dividend Model**

$D_0$	$g_1$	$k$	$T$	$g_2$
\$1.40	13.81% or 0.1381	13.47% or 0.1347	5	11.50% or 0.115

$\frac{D(0)(1+g_1)}{k-g_1}$	1	$\frac{1+g_1}{1+k}$	$\frac{D(0)(1+g_2)}{k-g_2}$
-----------------------------	---	---------------------	-----------------------------

468.62941                      1.002996    79.238579

1.015072

Stock Value                      87.49604

**Arithmetic Average**

Year	Dividend	Yearly Growth Rate
2006	1.25	19.05%
2005	1.05	23.53%
2004	0.85	25.00%
2003	0.68	0.00%
2002	0.68	0.00%
2001	0.68	15.25%
	0.59	
		13.81%

$g_1=13.81\%$  was arithmetically calculated and  $g_2$  is an estimated growth rate. (Est.' '04-'06 to '10-'12) *Value line*. It is clear that the price from this model does not meet our expectations.



Analysis: Boeing Co (BA)

Recommendation: **BUY**

## Dividend Discount Model

BOEING CO			
Ticker:	<b>BA</b>	<u>Last Closing Price:</u>	94.5600
<u>Market Cap:</u>	\$74,618.4 (mil)	52 Week High:	94.6900
<u>Shares Outstanding:</u>	789.1 (mil)	52 Week Low:	72.8000
<u>Avg. Daily Volume:</u>	4,393,593	<u>Price Change YTD:</u>	6.44%
Industry:	AEROSP/DEFENSE	<u>PE Ratio:</u>	19.91
Sector:	AEROSPACE	<u>EPS (current year estimate):</u>	<b>4.75</b>
<u>Current Dividend:</u>	<b>1.40</b>	<u>EPS (next year's estimate):</u>	<b>5.90</b>
<u>Dividend Yield:</u>	1.48%	<u>Historic EPS Growth:</u>	3.06%
<u>Historic Dividend Growth:</u>	17.73%	<u>Projected EPS Growth:</u>	<b>14.52%</b>
<u>% Return from Dividends:</u>	9.25%	<u>Expected Return:</u>	16.00%
<u>Beta:</u>	0.76		

Model:

Discount Rate: %

<u>Calculated Value:</u>	138.61
<u>Last Closing Price:</u>	94.5600
<u>Percent under/(over) valued:</u>	46.58%



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

## Ratio Analysis

Internal Liquidity						Average	Industry
	2006	2005	2004	2003	2002		
Current Ratio	0.77	0.78	0.72	1.05	0.85	0.84	1.56
Quick Ratio	0.50	0.50	0.52	0.76	0.54	0.56	0.61
Cash Ratio	0.21	0.19	0.15	0.25	0.12	0.18	
Receivable Turnover Ratio	7.78	7.24	7.62	7.21	7.10	7.39	21.16
Days sales in receivable	46.91	50.40	47.91	50.62	51.43	49.45	
Operating Performance							
ROA	4.28%	4.29%	3.47%	1.36%	0.94%	2.87%	8.09%
ROE	15.89%	11.52%	8.41%	3.37%	2.47%	8.33%	15.76%
Total Asset Turnover	0.75	0.63	0.65	0.63	0.70	0.67	2.73
Capital Intensity	0.84	1.09	1.03	1.05	0.97	1.00	
Net Fixed Asset Turnover	8.02	6.51	6.21	5.85	6.14	6.55	
Equity Turnover	5.99	3.28	3.42	4.19	4.11	4.20	
Gross Profit Margin	18.03%	15.75%	14.17%	12.15%	14.91%	15.00%	
Operating Profit Margin	4.90%	5.13%	3.83%	0.79%	6.36%	4.20%	
Net Profit Margin	3.60%	4.69%	3.57%	1.43%	0.91%	2.84%	3.20%
Return on Total Equity	21.57%	15.40%	12.19%	5.99%	3.75%	11.78%	
Return on Owner's Equity	29.18%	33.88%	24.67%	9.46%	6.48%	20.74%	
DuPont System	15.89%	11.52%	8.41%	3.37%	2.47%	8.33%	
Risk Analysis							
Debt Equity Ratio	58.53%	42.71%	48.90%	62.47%	63.12%	55.15%	0.5
Total Debt Ratio	73.09%	62.78%	58.77%	59.82%	61.90%	63.27%	
Equity Multiplier	10.93	5.43	4.78	6.51	6.80	6.89	
Interest Coverage	14.35	15.83	12.92	8.11	7.17	11.67	
Cash Coverage Ratio	20.33	20.19	20.19	14.31	14.31	17.87	
Analysis of Growth Potential							
Dividend payout Ratio	15.70%	14.47%	13.64%	14.29%	15.31%	14.68%	9.00%
Retention Ratio	84.30%	85.53%	86.36%	85.71%	84.69%	85.32%	
Internal Growth Rate	3.77%	3.78%	3.04%	1.17%	0.81%	2.51%	
Sustainable Growth Rate	15.62%	10.85%	7.70%	2.95%	2.14%	7.85%	

### Operating performance



### Return on Assets

The return on assets is a measure of the company's efficiency in using assets to generate net income. In comparison to the industry average, Boeing has not been as efficient as the other companies have in the same industry. With a 4.28% ROA, a number relatively lower than Industry average of 8.09%, Boeing is a company that requires large initial investments, and generally, these type of companies have lower return on assets.

### Return on Equity

Although many firms would want to have a high ROE, not all high ROE firms are a good investment. Unlike some industries that have high ROE because they require no assets, Boeing's ROE simply shows how it is efficient at generating profits from every dollar of stockholders' equity invested in the company, and shows how well they use investment dollars to generate earnings growth. By increasing its ROE to 15.89% from 2.47% in 2002, slightly higher than the industry that shows a ROE of 15.76%, Boeing's capacity to improving its position and better compete against its competitor.

### Gross profit margin

For every dollar generated in sales, Boeing has 18.03 cents left over to cover basic operating costs and profit. Compared to the industry, this company has the exact same Gross profit margin. The most interesting aspect is that Boeing has been able to increase its GPM in the course of few years; referring to 2003 when it only had 12.15%.

### Dividend payout ratio

While some investors prefer that a company reinvest its earnings back into the business to fuel future growth, many appreciate a generous cash dividend payment, particularly since tax legislation enacted in 2003 has given dividends a tax-advantaged status. In the example of Boeing, a ratio of 15.70% means that shareholders are only receiving 15.70 cents for every dollar the company is earning. In addition, this shows some stability into Boeing, because it pays in this case, the company is generating sufficient profits to support this compensation. The payout ratio has been consistently around 14 to 15% for the years 2002 to 2006. Boeing payment, higher than the industry average, illustrates that Boeing is not susceptible to a decline in future dividend payments.

### Internal growth rate

Boeing can expand at 3.77% without outside sources of funding; this growth was generating by cash flows retained by the company. This number has increased 4 times since 2002, showing a strong ability to manage cash.

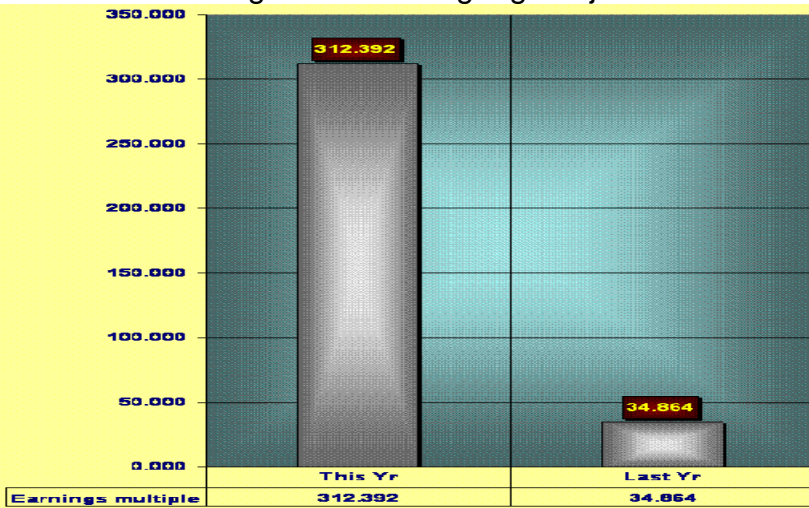
### Sustainable growth rate



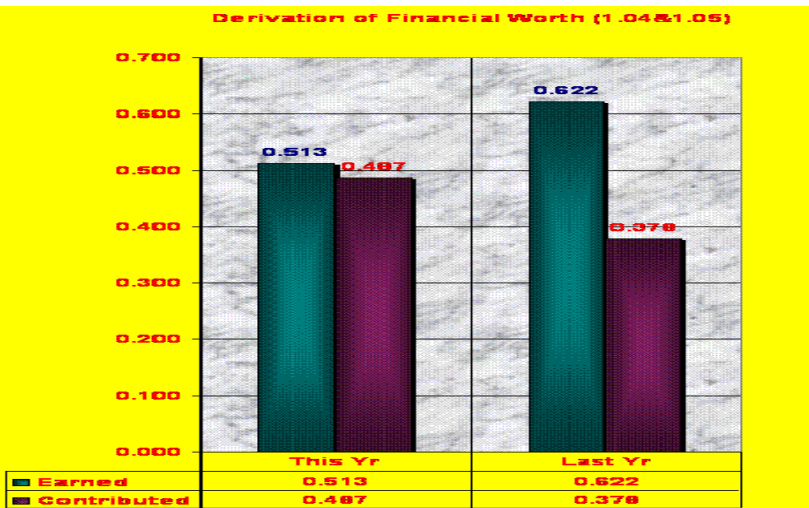
Analysis: Boeing Co (BA)

Recommendation: **BUY**

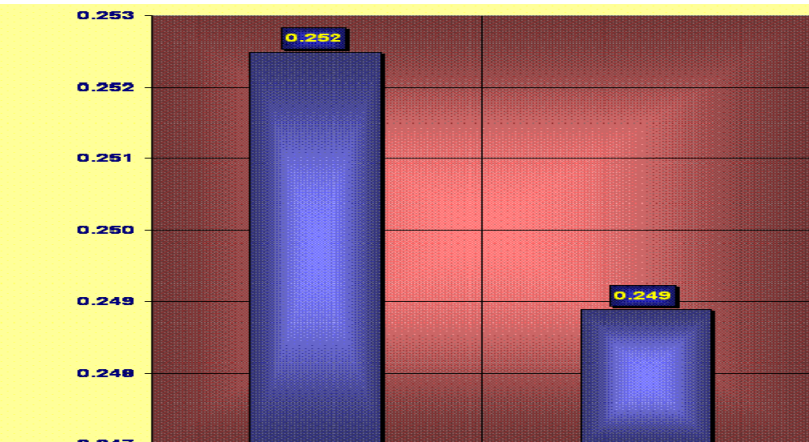
Since future growth in earning comes from the firm reinvesting in new plant and equipment and thus being able to generate more income for next year, Boeing's capacity to grow without having to increase its financial leverage has increased about 7 times since 2002. With a sustainable growth rate of 15.63% from 2.14% five years ago, management is doing a good job to limit how much they need to borrow to operate.



**Derivation of Financial Worth**  
  
**Company Earnings**  
  
 vs.  
  
**Investor contributions**



**Number of time Earnings can cover financial costs**  
  
**Derivation of financial worth**  
  
**(Boeing Earnings vs. Investors contributions)**



**Internal Financing Ability**  
  
**(Current Cash Coverage ratio)**



**Currently due debt compared to the current cash produced by operations. Increasing numbers suggest an increased ability to pay short-term debt.**

## Market Risk Factors

### Interest rate risk

Boeing Capital Corporation (BCC) conducts business in many foreign nations which leads to the risk that an investment's value will change due to a change in the absolute level of interest rates between different countries. Boeing has financial instruments that are subject to interest rate risk, primarily investments, fixed-rate debt obligations, and customer financing assets and liabilities. Historically, the company has not experienced material gains or losses due to interest rate fluctuations. BCC uses interest rate swaps with certain debt obligations to manage exposure to interest rate changes.

Every quarter Boeing uses duration based measures and analysis to estimate the impact of changes in interest rates. Potential changes in net assets and liabilities are calculated on the amount and timing of projected cash flows. These measures and sensitivity analysis are merely estimates and tools that depend on assumptions and parameters. However, these models hedge against the risk due to the experience and judgment of management.

Young companies will have a greater proportion of paid-in capital compared to earned capital. However, too much paid-in compared to earned capital for an extended period could suggest future financial disaster. Boeing does not appear to be subject to this type of risk, as the company is not "young," plus it generates a significant proportion of earned capital.

### Foreign Currency Exchange Rate Risk

Foreign exchange rate exposure is common to all who conduct international business. Buying and/or selling of goods or services denominated in foreign currencies immediately exposes a firm to foreign exchange rate risk. Boeing is subject to relating to receipts from customers and payments to suppliers in foreign currencies. BCC uses foreign currency forward and option contracts to hedge the price risk related to their ongoing international



business and financing activities. These forward currency contracts are sensitive to changes in foreign currency exchange rates. For example, in December 2005 a 10% unfavorable exchange rate movement in BCC's portfolio of foreign currency contracts would have reduced our unrealized gains by \$28.0 million. The uses of these contracts are used to neutralize the effect of exchange rate fluctuations and hedge against volatile markets. When taken into consideration, these forward contracts do not create material market risk for Boeing.

### Commodity Price Risk

Commodity risk refers to the uncertainties of future market values and of the size of the future income caused by the fluctuation in the prices of commodities. These commodities may be grains, metals, gas, electricity, etc. BCC is subject to commodity price risk relating principally to energy and metal used in production. BCC uses derivatives such as commodity purchase contracts to hedge against potentially unfavorable price changes in commodities. This contract is an agreement to buy or sell a set amount of a commodity at a predetermined price and date. Buyers use these to avoid the risks associated with the price fluctuations of the product or raw material, while sellers try to lock in a price for their products. Commodity price exposure related to unhedged contracts is not a material market risk.

## New Drivers Shaping Aviation Industry Cycles

### Geographical Balance, Business Model Innovation Reduce Risk

The aviation industry is famously cyclical. In order to gauge the strength and length of particular cycles, financial analysts often track a multitude of factors, including airline profits, yields and load factors, and airplane values and lease rates.

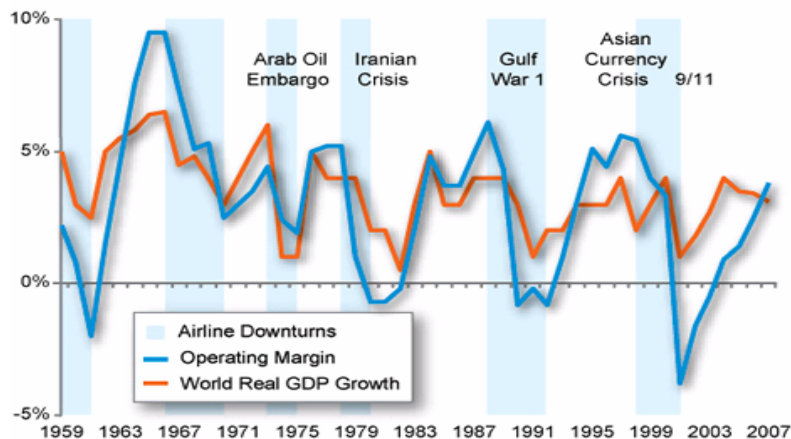
Boeing analysis stretching back more than 50 years reveals that the best barometer of aviation industry performance is world gross domestic product (GDP). Historically, airline downturns coincide with worldwide economic slumps and airline operating margins grow as world GDP recovers.







### Historical Cycles of Airline Industry and World Economy



*Air transportation has become an integral part of the world economy and reflects the ups and downs of global GDP.*

A healthy GDP is the primary driver of the current surge in commercial airplane demand, as it has been in previous upcycles. Yet several developments in the aviation business environment distinguish the current upcycle from those of the past. The GDP in the United States increased at a relatively slow annual rate of 1.3 percent in the first quarter of 2007, according to advance estimates released by the Bureau of Economic Analysis. As Boeing’s operations become more geographically diverse, its performance will not be subject to the economic slumps of just one economy.

### The Market Is Diversifying Geographically

The phenomenal economic expansion of the Asia-Pacific region has unleashed demand for air transportation in a part of the world that has been underserved, based on its population and resources. In 1970, India and China together accounted for only 5% of the world economy, on the basis of purchasing power parity, and all of Asia operated only 5% of the global commercial airplane fleet. By comparison, Europe and North America generated a 60% share of global GDP and operated 88% of the world’s commercial airplanes.

By 2000, the combined economies of India and China had grown to 17% of the global economy, on a par with the economic output of Europe. North America and Europe together still operated 71% of the world’s commercial fleet, but Asia’s share of the fleet had grown to 17%.

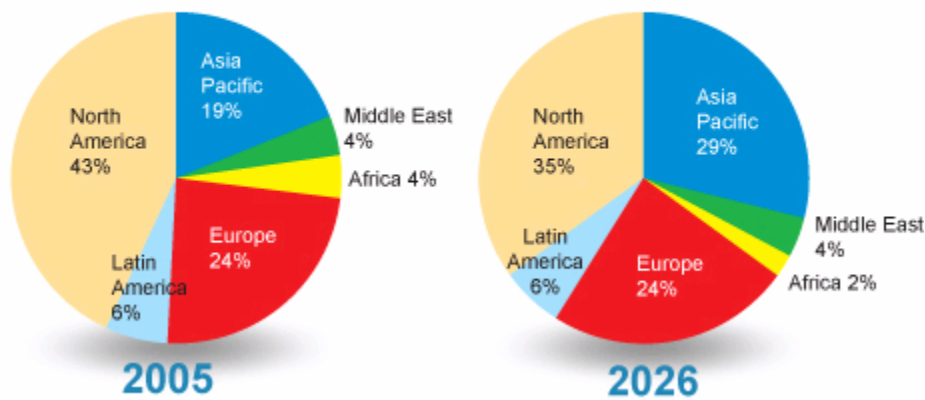


Projections for the year 2012 show China’s share of global economy pulling ahead of Europe’s to match the U.S. share at 18%. India and China together will generate more than a quarter of the world’s total economic output. Asia’s share of the world’s commercial airplane fleet will become equal to Europe’s share at 24%. Demand for airplanes will thus be shared more evenly between three major economic regions, rather than just two.

**More Balanced Global Demand and Fleet Distribution Reduces Investment Risk**

Traditionally, European and North American economies have been strongly linked, so an economic slowdown in one of these regions tended to ripple through the global aviation market, depressing demand worldwide.

Increasing Geographical Diversity of the World's Fleet



*Demand for commercial airplanes is becoming more diverse geographically, as Asia’s share of the aviation market begins to reflect the purchasing power of the region’s economy. The broadening global demand base dampens the effects of regional volatility.*

As total demand for commercial airplanes continues to rise over the next 20 years, the expansion of Asia-Pacific’s economies—particularly those of China and India —will increasingly moderate the effects of fluctuations of the North American and European economies. Asia-Pacific’s share of the new airplane market rose to 19% of global demand in 2005. That is nearly even with Europe’s 24% share. By 2026, Asia-Pacific’s share will reach 29%, surpassing that of Europe. During the same period, North America’s share of the demand will decline from 43% to 35%.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

Though Asia's economies are stimulated by the market for Asian goods in North America and Europe, the region's indigenous consumer markets are developing rapidly. Rising average income and a growing consumer economy will foster demand for air travel and transport within the region. Robust indigenous consumer markets will help sustain the region's demand for air freighters and passenger airplanes, even in the event of slack exports to Europe or North America.

As China and India move up on the list of top 10 world economies, other economies will appear on the list for the first time. By 2040, China will lead the list and India will move up to third behind the United States. Brazil will pass up Germany, Britain, and France. Mexico and Russia will join the roster behind Japan. These rapid movers are currently under-served by commercial aviation, so growth will far outpace that in the more mature economies.

Distribution of demand among a wider base of relatively independent economies buffers global demand for airplanes against the effects of regional economic shocks or cycles.

### **Airline Business Models Are Evolving and Maturing**

Liberalization has increased competition among airlines and spurred innovation in airline business models. A regulated market restricts innovation, allowing for a narrow range of business models. As a result, any economic or political disruption affects all airlines in a similar way. However, in liberalized markets, increased competition leads to a greater diversity of airline business models. Under a given set of market conditions, some business models will flourish, even as other models struggle.

This was highly evident in the recent economic downturn, when large network carriers experienced severe losses while low-cost carriers continued to thrive. Similarly, when the market for premium fares stumbles, the market for economy fares often picks up.

The increased opportunity afforded by liberalization, and the resulting growth in the diversity of airline business models, has kept the total number of airlines worldwide on an upward path for at least 20 years. Despite heavy media attention on airline bankruptcies and mergers, the number of airlines entering the market has consistently exceeded the number of companies leaving the business. Having risen steadily since 1986, the number of airlines in service around the world is at an all-time high today.

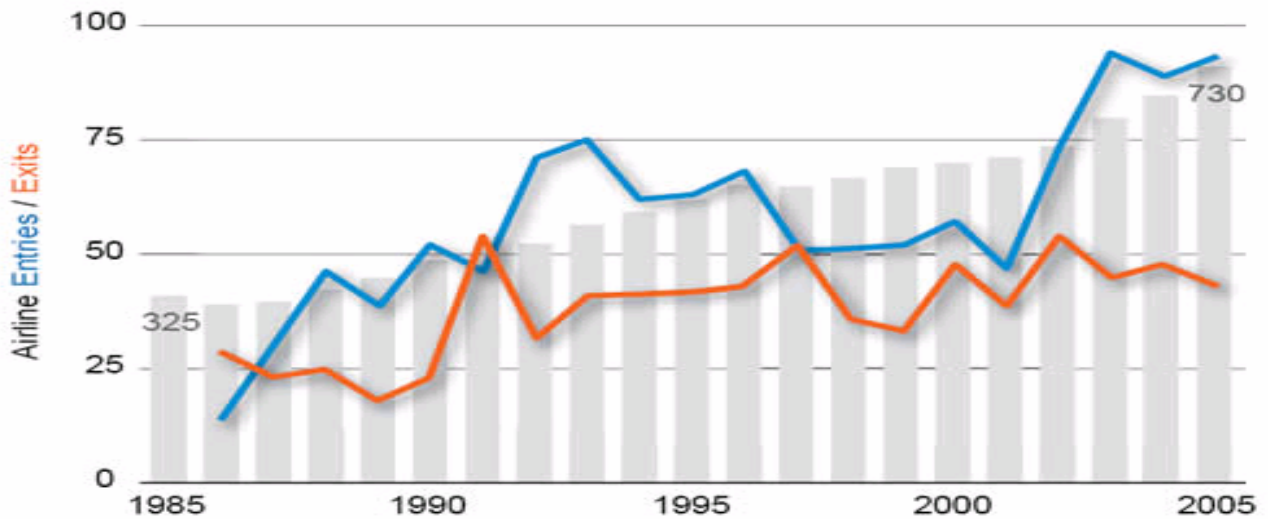


### Innovative Business Models Create Airline Opportunities

As one of the most mobile of investment assets, commercial airplanes gain significant value as a result of the geographical diversity of the aviation market and the variety of airline business models. Largely in recognition of this mobility, aircraft value has come to equal the importance of airline credit in managing airplane investment risk.

The current upswing in airplane orders demonstrates how the market's growing geographical and business model diversity counteracts demand cycles driven by U.S. and European network carriers. The record number of orders during the past two years was driven largely by low-cost carriers and requirements from emerging economies. This is reflected in the order backlog of both airplane manufacturers.

#### Liberalization and Diverse Business Models Keep Airlines Growing



*New airlines entering the market more than offset the number of airlines that leave the business through bankruptcy or consolidation. The number of airlines in the world is at an all-time high.*



### Managing Risk to Capitalize on Investment Opportunities

These developments should make global airplane demand more resilient to local shocks and disruptions, creating new opportunities to deploy or redeploy airplanes during periods of regional economic volatility.

In addition, the large size of today's installed fleet portends a looming requirement for replacement airplanes. With more than 17,000 airplanes in service around the globe, a significant number of airplanes are due to reach their economic retirement age over the next two decades. In fact, replacement requirements will drive one-third of aircraft demand over the next 20 years.

Continued high fuel prices and stringent environmental regulations will increase the pressure to replace older, less efficient aircraft. Today's load factors and airplane utilization are at all-time highs, so airlines cannot rely on increased productivity to meet growth and replacement requirements.

Growing diversification of demand is creating new ways to manage risk. The unavoidable requirement to replace aging and less efficient airplanes will sustain demand though normal business cycles. We believe that these factors will produce a more resilient and stable airplane market in the coming decades.





Analysis: Boeing Co (BA)

Recommendation: BUY

## Technical Analysis Boeing (BA)

### Bollinger Bands



Bollinger Bands are used to analyze the volatility of a market and whether relative price levels are high or low. The bands are calculated as the upper band being the SMA plus 2 standard deviations and the lower band being the SMA minus 2 standard deviations. A buy signal derived from Bollinger Bands would be when the upper band is breached because this usually indicates an upward trend in the price. When the lower band is breached this indicates a red flag to investors as a major warning sign to a possible reversing trend. As of the middle of May 2007, Boeing is right in the middle of the two bands, but seems to be trending upward towards a breach of the upper band. Investors should watch Boeing carefully as this technical analysis tool indicates an opportunity to buy.

### Parabolic SAR (Stop and Reversal)



Parabolic SAR is one of the most accurate and useful technical analysis tools during a trending period. A parabola line under the price line indicates that a bullish trend is about to occur while a parabola line above the price line indicates a bearish trend is going to occur. As of May 9, 2007, the daily price line is about in the middle of the SAR, but seems to be moving upwards above the SAR, which would lead one to believe that now is a smart time to buy.

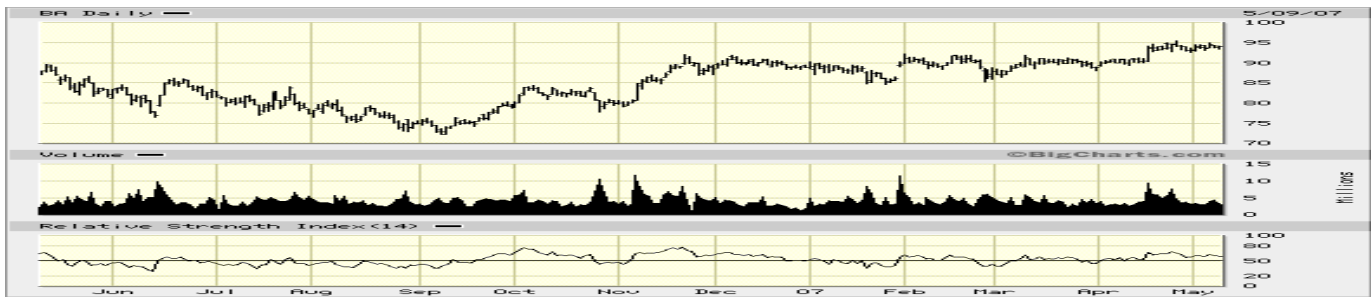


### Moving Averages



Approximately one year ago, Boeing was above both their 50-day and 200-day moving averages at about \$90 per share. Boeing then went on to drop in price, and by September 2006, the price had fallen below both moving averages to about \$72. Since that drastic drop in price the stock has consistently increased to about \$90, which has been greater than the 200-day moving average and fluctuating around the 50-day moving average. As of May 2007, the price is about \$95 which is above the both moving averages. This rise indicates a bullish market and a great time to buy Boeing.

### Relative Strength Index (RSI)



The Relative Strength Index (RSI) is used as a technical analysis indicator which compares the magnitude of recent gains to recent losses. This tool is also used to deem a stock overbought or oversold. The RSI can range anywhere from 1 to 100. However, most analysts believe that an RSI of 30 and 70 are good benchmark indicators. An RSI of 30 or lower indicates that a stock is oversold and undervalued, whereas an RSI of 70 or higher indicates that a stock is overbought, overvalued and investors should consider backing away for the time being. Boeing, as of May 2007, has an RSI of about 55 which is not helpful for an investor. After careful evaluation of the past year, it is conclusive that when the RSI increased to about 70, in both October and mid November, the stock price increased as well. The RSI looks to be on an upward trend, which may be indicating a continuous rise in the price of Boeing stock, and a good time to buy.



Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

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Analysis: [Boeing Co \(BA\)](#)

Recommendation: [BUY](#)

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