

Aviation Industry

Business aviation in today's economy

A shareholder value perspective

Executive summary

The information in this white paper is correct to the best of our knowledge and belief at the time of printing. We recommend that professional advice be sought before any action is taken.

The National Business Aviation Association (NBAA) and the General Aviation Manufacturers Association (GAMA) asked Andersen to investigate whether business aircraft contribute to better operating or financial performance and, therefore, to higher shareholder value. We designed a comprehensive study on this matter to answer a few important questions.

Can using business aircraft ...

Increase revenues by increasing customer intimacy or accelerating transactions?

Increase earnings growth by providing benefits greater than costs?

Improve asset efficiency by letting companies use fixed assets to leverage intangible assets like top talent?

Increase customer satisfaction by allowing more face-to-face contact?

Increase employee satisfaction by improving the work environment?

Today's global economy rewards knowledge integration, customer relationships, organizational agility, information, and speed. To achieve these, a company needs mobility — of executives, customers, suppliers, and specialist teams. Understanding the benefits that can be derived from using business aircraft is key to grasping how the aircraft impact the performance of an organization and influence shareholder value.

Can business aircraft be isolated from other assets in the portfolio and studied?

Because business aircraft contribute to success in ways other assets do not, we sought to isolate and examine these contributions, with the intent of understanding whether the sizeable investment required to purchase and/or operate business aircraft would really give a company unique advantages.

Andersen's research team gathered eight years of data on the economic performance of Standard & Poor's 500 companies. We eliminated from our study those industries having too few operators or non-operators, as well as any company for which performance data was incomplete. Our final sample size was 335 companies from 14 industries. Of these, 214 were operators and 121 were non operators.

Can interdependence be found among business aircraft utilization strategies, associated benefits, and drivers of shareholder value?

We devoted significant attention to understanding the different utilization strategies for business aircraft. We also detailed a range of financial and non-financial benefits that accrue to operators, as well as the associated mission profiles of each. With these we developed a framework called "Utilization - Benefit - Shareholder Value," or simply UBV.

What did we find?

Some compelling answers to be sure.

Comparing Operators versus Non-Operators

Among S&P 500 peer groups from 1992 through 1999, operators earned 141% more in cumulative returns than non-operators. According to the CFOs interviewed, aircraft helped improve performance in the areas of greatest importance in today's fast paced economy (e.g., identifying and executing strategic opportunities for new relationships and/or alliances; reaching critical meetings and closing transactions; expanding into new markets; and increasing contact with customers).

Operators also outperformed non-operators by a sizeable margin in the growth of both EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) and EBIT (Earnings Before Interest and Taxes). Increased productivity (as a result of resource deployment, process improvement, and knowledge sharing/integration) was strongly correlated to earnings growth among our study participants.

Finally, Asset Efficiency (ratio of sales to total assets) for operators declined by 5% from 1992 to 1999. The decline for non-operators was three times this amount.

Comparing New Operators versus Non-Operators (1995)

A closer examination of 32 S&P 500 companies that began business aircraft operations after 1995's brief economic slowdown showed that, on a return to shareholder basis, new business aircraft operators returned 343% to their shareholders between 1995 and 1999, versus 177% for non-operators. Moreover, the new operator group, which lagged non-operator return on equity (ROE) growth prior to 1995, surpassed non-operators thereafter, increasing ROE by 3.6% overall.

Finally, new operators (like their counterparts, long-term operators) were better able to maintain their asset efficiency. While non-operators had a 7.5% decline in the ratio of sales to total assets between 1995 and 1999, operators had only a 0.1% decline on average. In fact, the new operator group achieved 3% higher asset efficiency after 1995.

Top Skeptic — The CFO perspective

Our interviews of CFOs (and other financial executives) uncovered a strong correlation between benefits and key value drivers. Senior executives in operator organizations can visit hundreds of locations (their own facilities or those of customers/suppliers) in a year because of the flexibility inherent in being able to control the aircraft's schedules and routes. In some cases, executives said they visit four or five sites in one day, reviewing operations, efficiency, quality, and customer service. Also, the use of employee shuttles can help a company save time and reduce costs, while enabling cost-effective growth.

Our central finding is that business aircraft can make a substantial difference in how a company performs its mission, in many cases generating significant gains in the drivers of shareholder value. Increased mobility was at the core of these gains — satisfying management's need for greater organizational agility, knowledge integration and transaction speed. Our CFOs confirmed that everyone — customers, suppliers, and key employees — observed the positive impact of using business aircraft.

What might our findings mean to you?

Before you decide to purchase and/or operate business aircraft, we recommend that you carefully consider the findings in this study, which demonstrate the measurable and significant potential role this important asset can play in helping your company achieve its strategic objectives.

In times of economic uncertainty, you might think about closing your flight department. But our study shows that the decision to sell could have a negative impact on the bottom line because of the loss of today's most important competitive attribute: mobility.

Interested in exploring the potential of using business aircraft? Why not complete the survey we used to conduct our analysis, then use the data generated to assess your options and benefits. To obtain a copy of the survey, please call **Andersen** at **703 962 4201** to speak with an aviation industry professional.

Business aviation in today's economy

A shareholder value perspective

Today's economy has introduced an altered playbook — with fresh rules that challenge our thinking, business practices and even values. For example, the comfortable late 20th Century world of commerce and trade has been evolving at the speed of light. Instant marketplaces have been created through electronic globalization, and complex, highly efficient supply chains now compete for market recognition. Business alliances are assembled and then reassembled with the regularity of a Lego toy, driving management's need for greater mobility, organizational agility, knowledge integration and speed. Accelerated transaction value is evident when examining the business models of companies such as General Electric, Pfizer, Cisco Systems and Time Warner. Is it really a surprise that personal relationships are becoming more, not less, important conditions of business success?¹

¹ Margretta, Joan, Managing in the New Economy, A Harvard Business Review Book: Harvard Business School, September 1999.

Business aircraft in today's economy

We begin our discussion of business aviation in today's economy with sobering facts:

- The need for air travel continues to grow, from 465 million domestic passengers in 1990 to 650 million in 2000. By 2011, according to the FAA, some 982 million passengers will fly in the U.S., an increase by 51% from 2000.²
- Over 450,000 airline delays were reported in 2000, an increase of 47% over 1998 and an all-time U.S. record.³ The FAA's aging air traffic system may be the culprit, but hub airport congestion could overtake this in the next few years.
- A typical frequent business traveler flying from one of the 25 busiest U.S. airports can expect to lose one or more hours of productive work or personal time on the average trip.⁴ Airports and airline schedules are designed to route travelers in a way that minimizes airline costs and not in a way that optimizes traveler productivity.
- Airline business class and walk-up fares have increased dramatically (28% over 12 months), and are not being offset by a similar improvement in traveler productivity.⁵

Mounting evidence such as this is not good news. What is the likely impact of an increasingly unkind air transportation system on competition, profits and shareholder value?

Recent studies suggest organizations that operate business aircraft can financially outperform companies that do not.⁶ Top executives often recognize the strategic value of business aircraft to their bottom lines. Indications of this recognition are:

- The order books of U.S. business aircraft manufacturers have never been healthier, with total billings for 2000 topping \$8.6 billion, an increase of 9.1% over the previous year⁷ and a record high for the industry;
- The fastest growing segment of business aviation is fractional share ownership, increasing by more than 50% per year for the past 3 years;⁸
- Corporations are increasingly using private "shuttle" operations to remove key employees from the normal air transport system. And in a new twist, a new-entrant carrier⁹ now offers small executive jet services to the frequent business traveler on a "regular and frequent" basis.

While some companies have developed strategies to mitigate the adverse impacts of today's commercial air transport environment, others are even more proactive in concluding that mobility is key to success. Current economic conditions reward knowledge integration, relationships, organizational agility, information, and speed.¹⁰ These require mobility — of high value goods, information, and expertise — in a context of traditional best practices, such as those described by Tom Peters and Robert Waterman in their classic book, *In Search of Excellence*,¹¹ including

- "Hands-on Value-Driven" — business leaders create exciting environments through personal attention, persistence, and direct intervention.

² Source: U.S. Department of Transportation Aviation Consumer Protection Division.

³ Source: Federal Aviation Administration, 1999.

⁴ Sources: U.S. Department of Transportation, Office of the Inspector General. Report Number CR-2000-122, and Andersen travel productivity studies.

⁵ Ramstack, Tom, "Airlines are Almost Certain to Raise Fares", mentioned increases of 28% year over year. The Washington Times, November 30, 2000.

⁶ Rosenberg, Barry, "Business Aviation Within the S&P 500", Business and Commercial Aviation Magazine, July 2000.

⁷ General Aviation Manufacturers Association, 2001, visit www.generalaviation.org

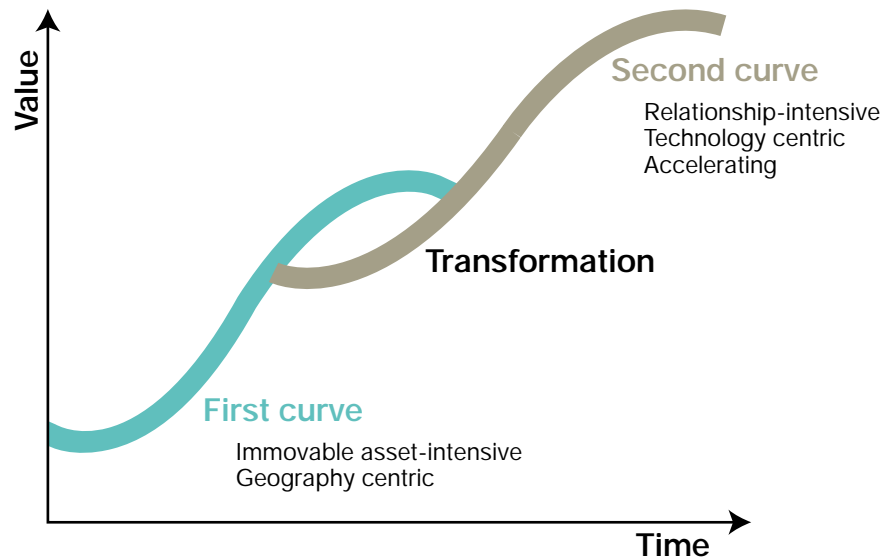
⁸ National Business Aviation Association, 2000

⁹ For further information, go to <http://www.flyindigo.com>

¹⁰ Samek, Steve et al, Arthur Andersen, *Cracking The Value Code – How Successful Businesses are Creating Wealth in the New Economy*, Harper Business Press, New York, 2000.

¹¹ Peters, Thomas H. and Waterman, Robert H. Jr., *In Search of Excellence – Lessons from America's Best Run Companies*, Harper & Row, New York, 1982

Figure 1: New rules, new business models



- “Productivity Through People” — people are a company’s most important asset; systems, styles and values allow ordinary people to achieve extraordinary results.
- “Close to the Customer” — successful companies encourage customer “intrusion” into every facet of the business.

Our research into the field of value creation, which we call Value DynamicsSM, validates certain theories about today’s economy. A so-called “Second Curve” in the time/value framework explains companies’ ability to unlock further value by being more, not less, agile (see figure 1). The Second Curve is relationship-intensive, technology- and information-centric, and accelerating.

In fact, Value Dynamics highlights the new rules that drive wealth creation for many companies:

- Intangible assets, such as knowledge and expertise, fuel the engine of wealth and increasingly determine success; and
- Companies with fewer but more appropriate physical assets generate higher returns, with less risk.

Our study

To rigorously examine the role of business aircraft in a company’s performance, the National Business Aviation Association (NBAA) and the General Aviation Manufacturers Association (GAMA) commissioned Andersen to determine the range of factors that may contribute to outstanding company performance. We were asked to investigate what impact, if any, business aircraft may have on a company’s operating or financial performance at the shareholder value level.

First, we had to isolate mobility from other characteristics that make a company great, such as:

- Industrial sector, as some sectors have consistently outperformed others over many years (for example, technology sector versus the mining sector).
- Size and the ability to wield disproportionately greater resources to gain competitive advantage.

- Management skills, including vision, leadership, experiential depth of knowledge or superior strategy (such as a propensity to invest in technology).
- Mix of other items in its fixed asset portfolio, such as technology, systems, or even real estate, and their relative contribution to overall asset efficiency.

We established three complementary methods to test whether the benefits (specifically, mobility) of operating business aircraft materially contribute to shareholder value creation:

- Analysis of a range of performance metrics of S&P 500 and S&P 600 public companies (1992 - 1999), segregated into business aircraft "Operators" and "Non-Operators."
- Comparisons of the before- and after-purchase financial performance of companies within the S&P 500 that became "Operators" during the 1992 - 1999 period.
- In-depth interviews with CFOs of companies using business aircraft, who are generally thought to be the most skeptical among their peers.

Because it was a key tenet of the project, we devoted significant attention to understanding the different utilization strategies for business aircraft. We also detailed a range of financial and non-financial benefits that accrue to operators, as well as the associated profiles of each. With these we developed a framework called "Utilization – Benefit – Shareholder Value," or simply UBV (figure 2).

We then set out to identify the correlation of linkages (strengths) between these three dimensions of business aircraft operation (UBV). This also offered a way of structuring the final analysis to prove, one way or the other, whether an "Operator Edge" exists.

"The aircraft (helps us to) increase and protect revenues."

– CFO, S&P 500 pharmaceutical company

Figure 2: Andersen UBV analysis framework

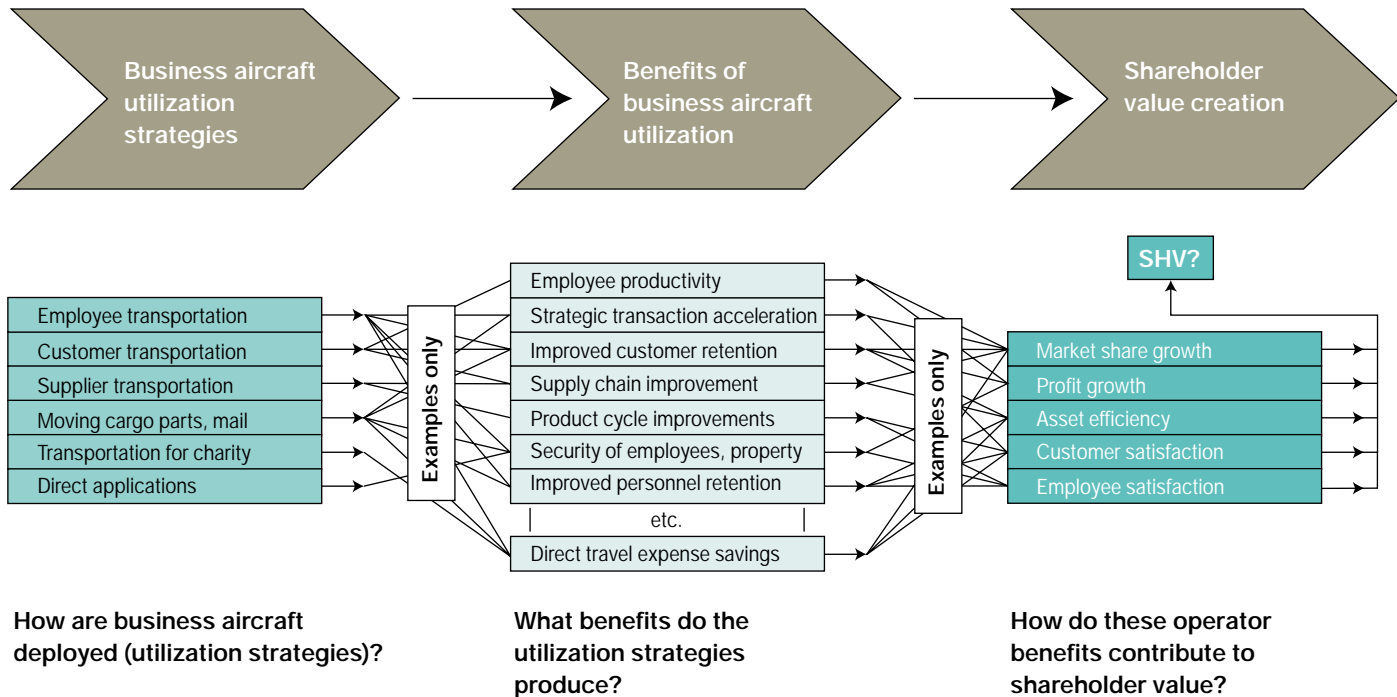
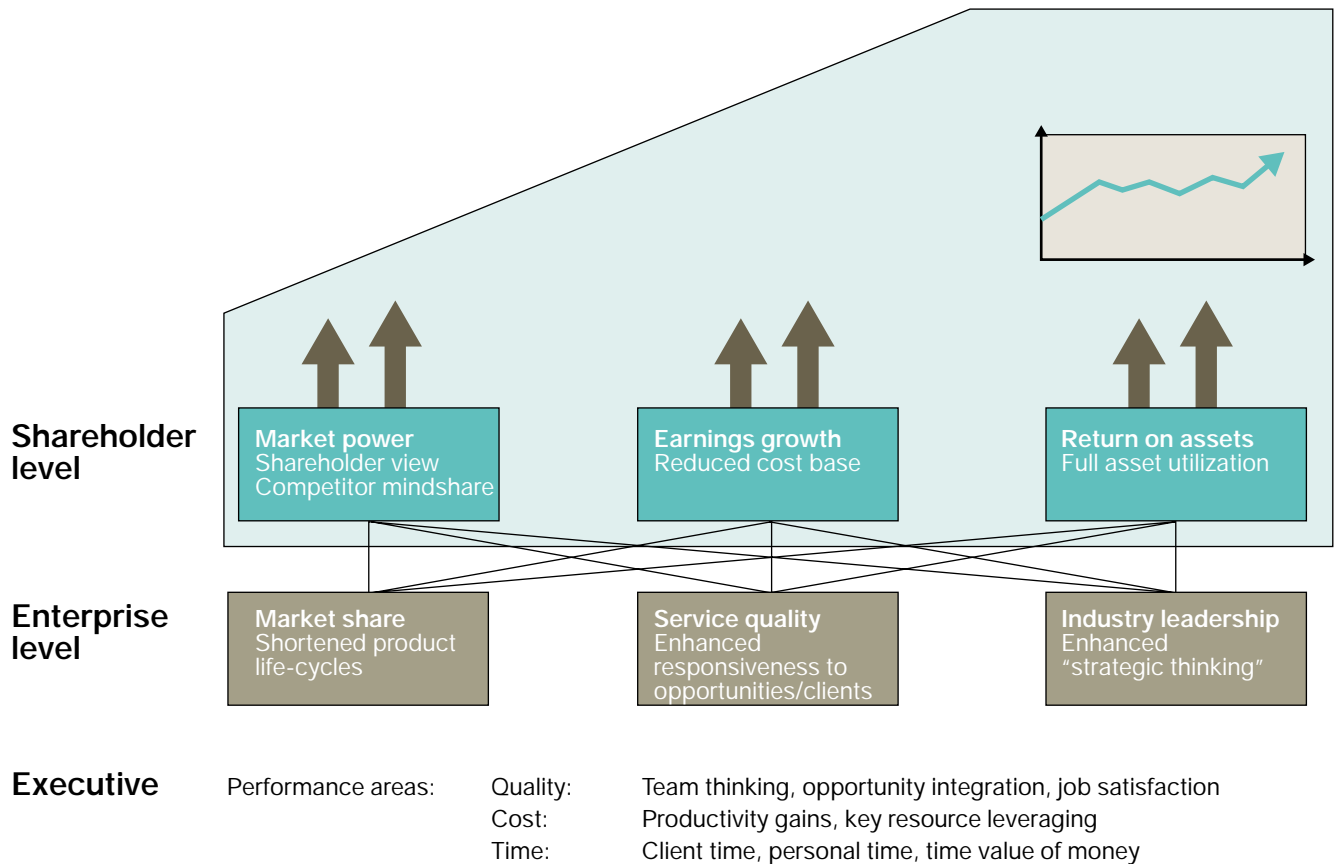


Figure 3: Contributing drivers of shareholder value



Key hypotheses

This approach called for us to develop hypotheses that could be tested:

- Business aircraft are assets whose contribution to financial and operational performance can be isolated from other assets in the organization's portfolio.
- Within the S&P groups, distinct "Operators" and "Non-operators" can be identified, allowing us to isolate the relative performance of each peer group, using information across a wide range of financial and operational indices.
- For companies experiencing rapid growth, there are no ready substitutes for business aircraft without diminishing performance or opportunity-cost exposure.
- Benefits accruing from use of business aircraft contribute directly to shareholder value creation at multiple levels (figure 3):
 - Shareholder level (e.g. market share growth, profit growth, asset efficiency, etc.).
 - Enterprise level (e.g. dimensions of improved quality, cost and time, etc.).
 - Executive or employee level, (e.g. team thinking, key resource leveraging, etc.).
- Interdependence (correlation) can be found among an organization's aircraft utilization strategies, associated benefits, and key drivers of shareholder value. While companies may differ in their "core missions," aircraft types, numbers, passenger types, etc., the UBV linkages should remain common across all industries.
- There is a visible, positive correlation between a company's underlying drivers of shareholder value, such as revenue acceleration, and its return on equity.

Business aircraft utilization strategies

Understanding the benefits that can be derived from using business aircraft is a key to grasping how the aircraft impact the performance of an organization and influence shareholder value. Utilization strategies supporting the core mission of companies became our starting point for this study. Six categories were defined:

- **Transportation of employees and executives.** The most common use of corporate aircraft is transporting the company's own employees. Corporations can maximize the efficiency of scarce human resources by better allocating their knowledge assets (the collective knowledge of an organization, including its best practices, and the wisdom and experience of its employees and executives). Strategies include facilitating strategic opportunities, exploring new markets, extending management control, and improving relations with customers, investors and the public. Moving specialist management or financial teams may be necessary to close transactions, or in the case of some companies, to move production, engineering and operations teams on a regular basis between company facilities.
- **Transportation of customers.** With increasing frequency, companies use business aircraft to transport their customers, differentiating themselves from competitors. Companies can create a sales environment en route or simply bring customers to key facilities to accelerate their comprehension, build stronger personal relationships, and ultimately close more sales transactions.
- **Transportation of suppliers.** Companies can accelerate or improve supply chain integration by transporting suppliers more efficiently via business aircraft. This may involve improving a supplier's understanding of production facilities, bringing multiple suppliers to customer meetings, or simply concluding supplier negotiations.
- **Transportation of cargo, parts, and mail.** This entails moving company cargo, machine parts, and mail between internal facilities and externally between suppliers, customers, and potential customers. Depending on volume, this practice can substantially reduce alternative overnight transportation costs. The direct shipment of parts to remote locations, or the delivery of emergency components to keep production flowing, are two examples of strategies deployed.
- **Transportation for charity.** This pertains to the benevolent applications of business aircraft. Aircraft can be very powerful tools to advance community service. Although there is no direct business impact from this practice, companies are community based and often play an important role in serving their local area. For example, many companies permit use of their business aircraft to transport non-employee patients to distant treatment centers for emergency treatment. Humanitarian and relief efforts often focus on the delivery of trained medical personnel and supplies to disaster areas sometimes only accessible by air using business aircraft.
- **Direct applications.** This utilization strategy includes using business aircraft as an aerial platform to accomplish a given task or simply as an incremental profit center. Aerial platform applications include site mapping, aerial photography, and many other direct uses. Some companies will selectively charter their aircraft to enhance the financial performance of their flight departments.

This categorization allowed us to link utilization strategies to the benefits that would accrue at the personal, enterprise and shareholder levels.

Net benefits derived from business aircraft uses

Understanding the net benefits (incremental benefits offset by incremental costs) of operating a business aircraft is key to isolating its asset efficiency and its contribution to shareholder value. But, net benefits are only one possible justification. We also found that there are certain other benefits that are very difficult to quantify and, even with the best available data, hard to capture. But the most significant net benefits are listed below:

- **Employee time savings.** An employee's time has intrinsic value. In the past, this value was thought to increase with expertise and decision-making responsibility. But now, the value of time savings can no longer be automatically associated with

levels in an organizational hierarchy. It is the preservation of any scarce knowledge resource that often makes the most compelling case for business aircraft operation. In the final tally of costs and benefits, it is often quite difficult to cost justify business aircraft operation without placing value on the time saved door-to-door. Closely linked with this, increased productivity includes being able to complete essential business tasks more quickly, thereby reducing unit costs of sales and improving time to market. Considering the value of knowledge integration and the rapid deployment of specialist teams in improving an organization's efficiency, improved productivity emerges as a key benefit derived from operating business aircraft.

“The workday can be lengthened without forcing employees to lose time with their families.”

— CFO, S&P 500 electronics manufacturer

- **Improved door-to-door and en-route productivity.** Traveling in a business aircraft can significantly improve productivity and lessen fatigue by providing a more humane travel schedule, decreasing the need for overnight “red eye” flights, enabling comfortable seating configurations conducive to team work, and including office amenities on board the aircraft. Also, avoiding the commercial air transportation system's stress-inducing processes (such as long lines at check in, baggage check, boarding by row number etc.) can make the business travel less tiring.
- **Strategic transaction efficiencies.** Rapid deployment of transaction teams or improved responsiveness to opportunities for acquisitions or alliances are of increasing value today. On the revenue and market end of the business, being better able to respond to strategic opportunities, or being able to respond faster when a competitor courts a company's customers, may be of considerable benefit in a highly competitive environment.
- **Protection of intellectual property.** While it is nearly impossible to quantify the impact of the loss of intellectual property to a company, all businesses rate this loss as one of the costliest potential scenarios. The risks include competitor intelligence gathering in public places, lost laptops and stolen property. Conducting discussions and reviewing documents in the total privacy afforded by a business aircraft is a benefit that should be fully considered.
- **Improved customer retention or capture.** Companies can increase customer satisfaction in many ways, including responding faster to customer needs, spending more time with customers, expanding relationships with existing customers, having a more focused attention to customer needs, and demonstrating new products and services to customers. Companies can differentiate their service from their competitors' in a safer, more secure, travel environment. Also, developing new products based on more customer input accelerates time-to-market.
- **Supply chain improvement.** Rapid deployment of supply chain transaction teams accelerates the business process. Being better able to conduct core meetings, reviews, etc., and having more frequent and targeted oversight of supplier operations, lead to better integrated supply chains.
- **Product and production cycle improvement.** By reducing cycle times, companies maximize revenue and reduce costs. Improving time to market entails shortening each segment in the product life cycle, including design and development, production, and after-market support. By carefully identifying components of the production cycle that could be improved by use of business aircraft (i.e. development team efficiencies, shipment of components and products that are part of the production cycle), companies can maximize these benefits.
- **Employee safety and security.** Absolute control over aircraft, crews and maintenance, can significantly reduce the risk of hijacking, cargo tampering etc. In certain cases reduced travel visibility may be a crucial benefit in executing key transactions.
- **Risk management.** Because risk is an unavoidable characteristic of life and of business, companies that undertake a serious effort to understand potential threats or hazards can develop strategies to better manage and mitigate risks. Better oversight and control of critical processes and tasks through business aircraft use may become a key element of improved risk management.

- **Direct travel expense savings.** Rental cars, commercial air travel, additional hotel nights, meals, entertainment, per diems, and other costs can often be avoided.
- **Increased personnel retention.** By using business aircraft, companies can improve their personnel retention, thereby reducing the costs of turnover and retraining. Reduced attrition results from the controlled, more effective on-the-job experience for employees with access to business aircraft, as well as shorter travel schedules and greater family time. Attracting vital new hires, who are often courted extensively, is an associated benefit.
- **Charitable missions.** Using business aircraft for this purpose produces intangible benefits such as corporate image enhancement and brand name recognition. While these are “soft” benefits, they are nonetheless important to a company’s success.
- **Charter revenues.** To help spread the cost of aircraft operation, business aircraft operators with low periodic or weekend aircraft-utilization often charter their aircraft to external organizations. External charters can be an excellent way for companies to maintain highly efficient aircraft-utilization rates and earn some money in the process.

Drivers of shareholder value

Our final directive for the study was to trace any relationship between benefits and shareholder value (including a positive impact on shareholder value drivers). We identified three key drivers capable of increasing shareholder value:

- **Revenue or market share growth.** Certain utilization strategies reap benefits that can directly increase revenues (for example, additional sales made through aircraft trips or the use of the aircraft as a charter vehicle for third parties).
- **Profit growth.** To calculate the increased earnings resulting from using business aircraft, a cost-benefit comparison must be undertaken to determine whether the quantifiable costs of operating the aircraft are less than the quantifiable benefits. The evaluation must take into account the financing strategy for the aircraft, the tax implications, the operating costs, and the tangible and intangible benefits derived. In general, if the quantifiable benefits are greater than the quantifiable costs, business aircraft utilization should be a “must” for the company.
- **Asset efficiency.** A company can increase its asset efficiency in a number of ways, including improving business processes and leveraging existing assets more effectively. Supply chain improvements fall into this category. Some specific strategies which would cause large increases in asset efficiency include cycle time reductions and key employee leverage.

Investors increasingly look to sales growth to predict which stocks will appreciate. For example, Nortel Networks announced quarterly earnings that met Wall Street expectations and promptly lost 29% of its market value in a single day, some US\$55 billion. The major factor cited by Wall Street was that the company failed to meet the revenue expectations of that quarter.¹² Other companies such as Intel Corporation and Oracle have similarly had their market capitalization trounced as investors increasingly look beyond (or behind) earnings per share to key drivers such as those listed above to determine where their portfolio companies may be headed.

UBS Warburg and Paine Webber recently conducted a study¹³ of S&P 500 companies and found that among growth stocks, those with accelerating revenue growth had returned an average of 35% in 2000 as at mid September, while those companies with decelerating revenue growth returned only 7%. Revenues are a good measure of a company’s ability to sustain earnings growth, and when combined with factors such as asset efficiency, point to a philosophy of strong reinvestment in a company’s core

¹² Kiplinger’s, Volume 55, No. 1, page 79, January 2001

¹³ UBS Warburg, 2000

business. A Credit Suisse First Boston study¹⁴ found that the 100 S&P 500 stocks with the fastest growing revenues gained 14% through November 2000, while the 100 companies with the fastest growing earnings gained just 7%.

Two intangible drivers we view as important, but have not been able to quantify other than through CFO interviews and research, are:

- **Customer satisfaction.** Studies have shown that customer relationship management (CRM) and customer satisfaction affect shareholder value.¹⁵ Keeping this in mind, many companies have begun to utilize new CRM technologies to improve their record in this area. Many are also using their aircraft with remarkable results; some of the utilization strategies result directly in increased customer satisfaction. Examples include bringing customers to a company's facilities to close key transactions; using the aircraft for sales and marketing blitzes; and deploying quick-response customer service teams.
- **Employee satisfaction.** One of the largest drivers of shareholder value, although also one of the hardest to measure, is employee satisfaction. Our research supports the fact that intangible assets (i.e. expertise, relationships, etc.) are engines of value creation. Smart companies utilize their aircraft to increase employee satisfaction by improving peoples' work environment and improving their quality of life. This translates into higher productivity returns and thus higher value.

"Our executives use the aircraft to reach meetings they couldn't otherwise attend, (closing deals that) would fund the flight department for years to come."

—CFO, S&P 500 manufacturing company

Examination of informal indices points to the fact that companies cited as "best places to work" or "best in class" in customer relationship management have, more often than not, been top stock performers. We have attempted to examine the importance of business aircraft use with these two drivers through CFO interviews conducted as part of the study. A qualitative discussion of findings has been included with the S&P 500 and S&P 600 data analysis below.

Our approach

In assessing the potential financial benefits of operating business aircraft to companies and their shareholders, we examined peer groups of companies distinguished by their use or non-use of business aircraft. Andersen pioneered such an approach in a study performed for NBAA and GAMA, published in 1993.¹⁶ The study looked at the companies comprising the Standard & Poors 500 list, which represents the largest U.S. publicly-held companies according to their market capitalization.

The appeal in using the S&P 500 as a research base for our analysis is obvious — over 1,400 business aircraft are owned or operated by these companies. Also, the S&P 500 is viewed as a barometer of the stock market itself and the overall health of the U.S. economy. Therefore, many financial and economic studies use the S&P 500 as the baseline from which to draw comparisons and conclusions. Given the frame of reference afforded by this peer group, we felt it vital to include it in our analysis.

Based on a definition of the S&P 500 as of February 2000, we classified the 500 firms into 24 industry groups. We also ascertained which of these firms currently operated aircraft, using a variety of industry sources, supplemented by Andersen's own research of corporate operations. We then evaluated each of the 24 industry groups as to the number of operators and non-operators, eliminating from consideration those industries having too few operators or non-operators. This minimized the sensitivity of the resulting overall comparisons to the performance of certain industries that were exclusively populated by operators or non-operators.

¹⁴ CS First Boston, 2000

¹⁵ Hammer, Michael, *Beyond Reengineering – How the Process Centered Organization is Changing Our Work and Our Lives*, HarperBusiness, New York, 1996

¹⁶ Lasater, David, *Business Aviation Performance Study*: Andersen & Co., 1993

We then compiled financial performance and share price information for the remaining companies for the period 1992 through 1999, eliminating from consideration those companies for which complete period data were not available. This was done to make sure that the comparisons were consistent over time in terms of the number of firms included in each year's metric. As a result, our first peer group analysis is based on a review of 334 firms from within the S&P 500.

Industry sectors included in peer group	Industry sectors excluded from peer group
Banks	Aerospace & Defense
Conglomerates	Automotive
Consumer Products	Chemicals
Discount & Fashion Retailing	Containers & Packaging
Electrical & Electronics	Food
Health Care	Fuel
Manufacturing	Housing & Real Estate
Metals & Mining	Leisure Time Industries
Non-bank Financial	Paper & Forest Products
Office Equipment & Computers	Publishing & Broadcasting
Service Industries	
Telecommunications	
Transportation	
Utilities	

Our analysis of S&P 500 firms included 240 current business aircraft operators.¹⁷ Of these firms, 185 companies operated aircraft throughout the study period, while 55 firms began operating aircraft during the period. Specifically, 32 firms became new operators during the period 1993 through 1995. Thus, we performed a second peer group analysis, pitting "new" operators against non-operators. We did this on a "before and after" basis, that is, we compared the relative performance of the two groups in the four-year period before the 32 firms became operators with the performance of the two groups in the four-year period after the 32 firms became operators. As we discuss below, this analysis provided the strongest correlations between aircraft operation and financial performance.

Stock index	Total peer group companies	Operators over entire 7 years	New operators within 7 years	Non operators over 7 years
S&P 500	334	185	55	94
S&P 600	346	86	N/A	260

Finally, we departed somewhat from previous research and examined the comparative performance of smaller companies that face the decision to operate or not operate aircraft. The total business aviation fleet is in excess of 18,000 fixed wing and rotorcraft, so the lion's share of the fleet is outside of the control of the S&P 500. Unfortunately, financial data on privately-held companies is simply not available, other than on a "one-off" basis, and stock price data are non-existent. Therefore, we examined indices of "small cap" publicly traded companies.

¹⁷ The primary resource for the operator/non-operator determination was GAMA . This was supplemented by research conducted by AvData and Andersen.

Two such indices, the Wilshire 5000 and the Russell 2000, contain many “small cap” companies. However, they were simply too numerous and encompassed too broad a range of market capitalizations to afford meaningful peer comparisons. Therefore, we settled on the S&P 600 group of companies. Not only was this a more manageable group in terms of the number of firms contained therein, it had the advantage of being based on companies that were reasonably mature and stable, rather than speculative new ventures. Thus, the S&P 600 represented our third peer group for our analyses.

Previous studies looked at basic financial metrics such as sales, market value and profit, measures that directly relate to a company's financial performance. Comparisons of these metrics between operators and non-operators have typically revealed a wide disparity of performance that favored the operators. Therefore, the studies concluded that operators perform significantly “better” than non-operators.

While interesting, the above conclusions tell only part of the story. Among the S&P 500, aircraft operators tend to be significantly larger companies than non-operators, whether measured by market value or by sales. Thus, we would expect these companies to have higher dollar averages in the above-cited metrics relative to non-operators. In fact, companies that are the very largest in this group will have a much greater impact on the average than smaller companies. Thus, it was possible for a subset of firms to drive this type of analysis, regardless of how their peer companies were performing.

Our analysis differs significantly from previous studies in that we disengaged the linkage between firm size and group averages. Thus, for sales and certain earnings measures, we looked at the change in a performance measure over time (typically in percent) and calculated the average across all companies in each group. In other cases, such as net margin (net income divided by sales) and asset efficiency (sales divided by assets), we calculated ratios that also eliminated the size effect. The resulting averages calculated across the operator and non-operator groups were characterized by each company having “equal” weight.

Previous studies used the common performance measures of sales, market value, profit, and net margin when comparing companies. We also looked at this family of performance measures, but calculated them in different ways so as to impart new insights on the comparison (see the previous discussion on averages). We also considered the potential impact of the operate/non-operate decision not just on the companies themselves but on shareholder value; that is, the financial rewards earned by shareholders in these companies. The measures we incorporated in our analysis are described below.

“We sell time (as a benefit) to our executives by executing trips in hours instead of days.”

— CFO, S&P 500 financial services company

Shareholder value

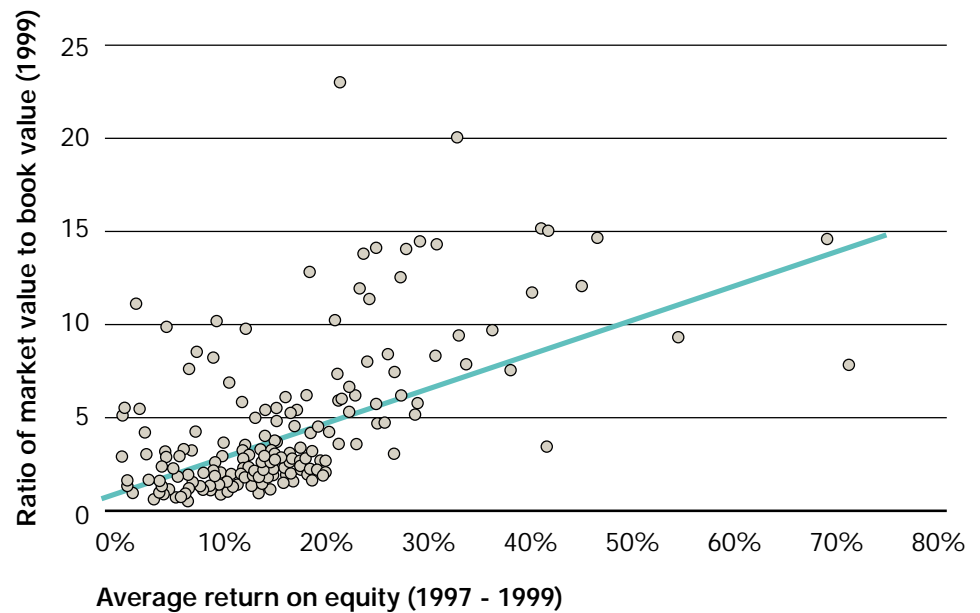
Our analysis assumed that an investor made a hypothetical investment of one dollar in each of the 334 companies on December 31, 1992. We then determined how much that basket of one-dollar investments were worth at December 31, 1999, seven years later. We considered the appreciation of the stock price (on a split-adjusted basis), as well as the value of dividends paid by the companies over that period. We assumed that dividends were reinvested into the company's stock on an annual basis, rather than retained as cash.

Drivers of shareholder value

In explaining changes in shareholder value, we identified the “drivers” of that value. We performed a statistical analysis that demonstrated a linkage between a company's financial performance and the value ascribed to it by shareholders.

We looked at the relationship between (a) the ratio of market value to book value for a company, on the one hand, and (b) the company's return on equity on the other hand. As shown in figure 4 (on the next page), there was a visible, positive correlation between the two measures, suggesting that increasing return on equity is consistent with increasing stock price. The solid line represents a mathematical depiction of the relationship between the two variables, derived using regression analysis. The regression analysis confirmed the positive correlation between the two measures and supported the hypothesis that return on equity is a primary driver of shareholder value.

Figure 4: S&P 500 firms: Relationship between market value of equity to book value of equity and return on equity



“We have cut time to market for new products.”

— CFO, S&P 500 industrial electronics

Return on equity can be further disaggregated into the following product of financial ratios:

$$\begin{aligned} \text{ROE} &= [\text{Net Income} / \text{Equity}] \\ &= [\text{Net income} / \text{Sales}] \times [\text{Sales} / \text{Assets}] \times [\text{Assets} / \text{Equity}] \end{aligned}$$

The first term, net margin, is a profitability measure. The second term, known as either asset efficiency or asset turnover, measures how well a company’s assets are performing their primary function — generating revenue. The more sales generated from a given investment in assets, the more efficient those assets are.¹⁸ An aircraft is an asset that competes for capital just like any other. Therefore, it should be theoretically possible to ascertain an association between operating aircraft and greater asset efficiency vis-à-vis non-operators. Note that sales is also a driver of shareholder value, through its association with asset efficiency.

The final term is known as financial leverage. It can be restated as $[\text{Debt} / \text{Equity}] + 1$. This term captures the mix of debt and equity used to finance a company’s operations. We did not examine this component of ROE.

S&P 500 results

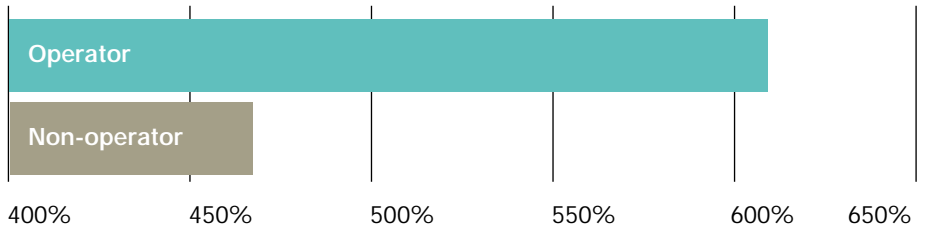
Below, we present our financial analysis of the key drivers of shareholder value for the S&P 500 peer groups. Our interviews with chief financial officers and other financial executives provided additional and highly credible support for the linkages between aircraft utilization strategies and shareholder value creation and support the findings below.

Operators versus non-operators

For the S&P 500 company peer groups, aircraft operators earned 146% more in cumulative returns than non-operators from 1992 through 1999 (609% vs. 463%), as seen in figure 5. Increased shareholder returns were primarily due to improved business performance in several areas related to transactions. A number of the S&P 500 company executives we interviewed described how business aircraft were essential *“to conduct*

¹⁸ We recognize that operators account for their aircraft “assets” in different ways, some of which have a minimal impact on their Balance Sheet. Similarly, some companies own their manufacturing facilities while others lease them, which also impacts the composition of the Balance Sheet. How a company manages its assets is a strategic decision that impacts performance; therefore, we did not attempt to control for it (assuming we could even do so).

Figure 5: S&P 500 firms—Total shareholder return (1992-1999)

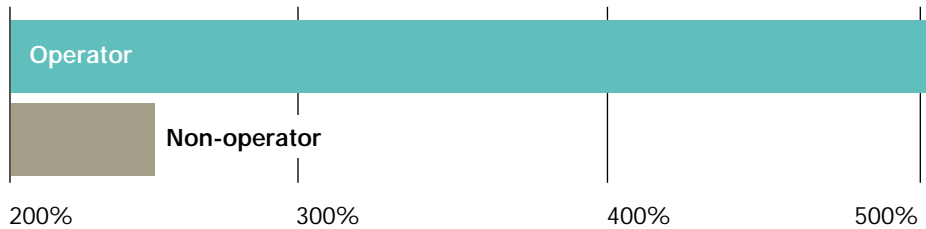


due diligence for a number of potential targets” and to “get our financial teams into and out of hard to reach locations.” We were told by a CFO of a large software company that his business would have “missed our targets” and “underperformed” when faced with transaction schedules against difficult fiscal deadlines, without business aircraft to assist in the process.

With the S&P 500 peer groups, operators achieved sales and earnings growth nearly double that of non-operators, as shown in figure 6. Key drivers of sales growth include the ability to identify and execute strategic transactions and alliances. According to a CFO for a large multinational pharmaceutical company, *“the aircraft [helps us] increase and protect revenues.”* As another finance director explained, executives often use the aircraft to *“reach meetings they couldn’t otherwise attend,”* closing transactions that *“would fund the flight department for years to come.”* Yet another company, one of the world’s largest consumer products businesses, seized control of an overseas market, *“the entire country,”* because it was able to deploy multiple aircraft to key distributor locations simultaneously and *“get our executives on the ground when and where they were needed.”*

The next value drivers we examined were tied to earnings and profit growth. EBITDA

Figure 6: S&P 500 firms—Average of cumulative sales growth (1992-1999)



growth (Earnings Before Interest, Taxes, Depreciation, and Amortization), is a strong reflection of company momentum. Key contributors toward EBITDA growth include a company’s ability to contain costs and enhance productivity and quality (see figure 7). One CFO stated that *“uniform operations across all facilities could only be achieved by deploying quality teams with”* business aircraft. The graph below indicates that operators outperformed non-operators by a sizeable margin. Similarly, EBIT growth (Earnings Before Interest and Taxes) for business aircraft operators was more than double the growth of non-operators.

Figure 7: S&P 500 firms—Average cumulative EBITDA growth (1992-1999)

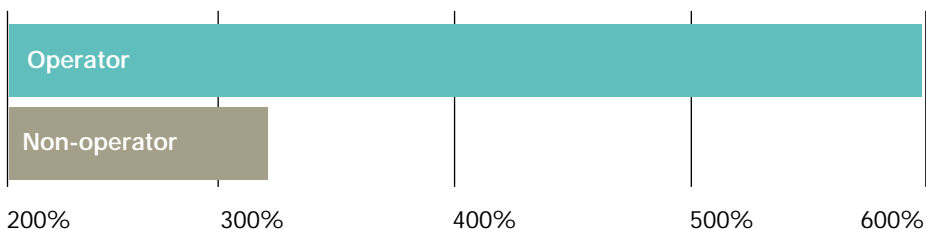
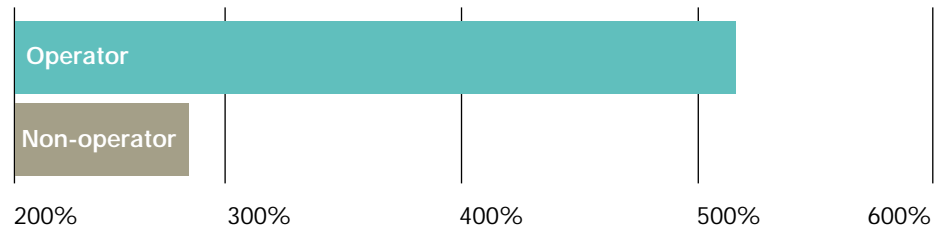


Figure 8: S&P 500 firms—Average cumulative EBIT growth (1992-1999)



“We were able to seize control of an overseas market by (using our aircraft) to get our executives on the ground when and where they were needed.”

— CFO, S&P 500 consumer products company

Increased productivity was strongly correlated to earnings growth according to the results of our CFO surveys (see figure 8). For example, financial executives we interviewed stated that business aircraft helped move specialist “productivity” teams between their companies and key suppliers. These teams concentrated upon reducing unit costs of production, or uniformly improving process efficiency, quality, and time to market. In fact, over half of our CFO respondents said that being able to rapidly assemble and deploy specialist teams (knowledge integration) greatly improved their organization’s efficiency and increased productivity. We were told by a financial services company executive that *“keeping the productivity team moving but getting it home for the weekend”* was the flight department’s major mission and allowed the specialists themselves to *“be consistently productive,”* which *“couldn’t have happened on a [scheduled carrier].”*

Quality improvements emerged as a theme that supported several drivers of shareholder value. As one CFO told us, the chairman’s methodical oversight of the company’s network made possible by using business aircraft *“sets the tone”* across the United States and around the world, helping to ensure a single level of quality. Another executive said that her company uses the fleet to *“sell time to our executives by executing trips in hours instead of days.”* As another CFO of a financial services company explained, the key profitability benefits of business aircraft derived from increased productivity and efficiency for top executives — benefits that are *“obviously there, but hard to quantify.”*

Finally, asset efficiency (ratio of sales to total assets) for operators showed less decline over the period of 1992 to 1999, some 6%, as shown in figure 9. Non-operators, on the other hand, experienced a decline of 15%. In 1999 alone, operators had higher total asset efficiency by a 5% margin.

Figure 9: S&P 500 firms—Asset efficiency ratio decline (1992-1999)



Our interviews conducted with CFOs and other financial executives of the S&P 500 peer groups found a strong correlation between benefits and drivers. Most striking were comments among the national and international retailers: business aircraft enabled the most senior executives in these organizations to visit hundreds of locations, sometimes more than once a year, by customizing schedules not possible on commercial airlines. In some cases, executives visited four or five sites in one day, reviewing operations, efficiency, quality and customer service. In one case, a company explained that its cost comparisons included consideration of the available intangible benefits of business aircraft (such as reducing the length of a trip), but that these were assessed qualitatively in granting or denying the use of business aircraft. Another company regularly made qualitative judgments regarding the importance of past trips to regularly determine whether certain transportation services could be provided differently.

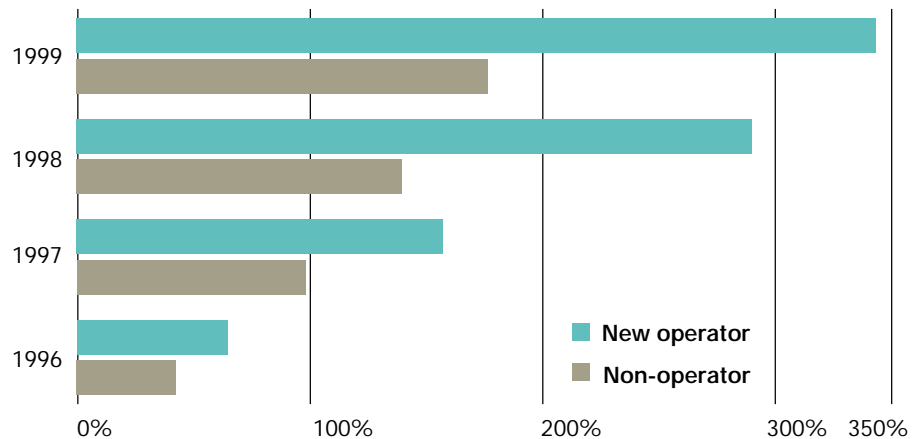
We were intrigued with the cost of aircraft operations (flight departments, etc.) and whether companies paid close attention to the expense and contribution made by these assets over time. We learned from several companies that, when a closer analysis was needed, a typical analytical approach included comparing the cost of commercial air travel against the cost of operating business aircraft. The elements of cost varied greatly by company, but most included such things as the cost of hotel stays as well as meals and entertainment. While the convenience and time savings offered by business aircraft were often recognized and used in the decision making process, the corollary cost savings were sometimes considered “soft” and not included in the quantitative analysis.

Although not typical of the average company’s use of business aircraft, employee shuttles move thousands of passengers each month between a company’s facilities and offer several benefits. According to company executives for a large midwest electronics manufacturer, these included: (1) cost savings, when a shuttle provides transportation services less expensively than commercial; (2) time-savings, because employees can move between locations on a shuttle much more quickly than they could on commercial carriers or by driving so *“the workday can be lengthened without forcing employees to lose time with their families;”* and (3) productivity gains, where *“we have cut time to market for new products.”* Interestingly, shuttles also enable rapid, cost-effective “organic” growth by reducing the importance of the location of certain facilities. One company we surveyed continues to expand at a location a few hundred miles from headquarters because it *“costs less to operate the company’s shuttle than it does to acquire additional real estate in a high-density city.”*

New operators in 1995 versus non-operators

Looking at the performance drivers on a before-and-after basis between the non-operator peer group and those operators that first deployed aircraft during the study period provided a different lens with which to view the potential shareholder and company performance benefits associated with deployment of business aircraft. The associations we have identified are, as with the broader S&P 500 operator group examined above, similarly wide-ranging and consistently in the operators’ favor.

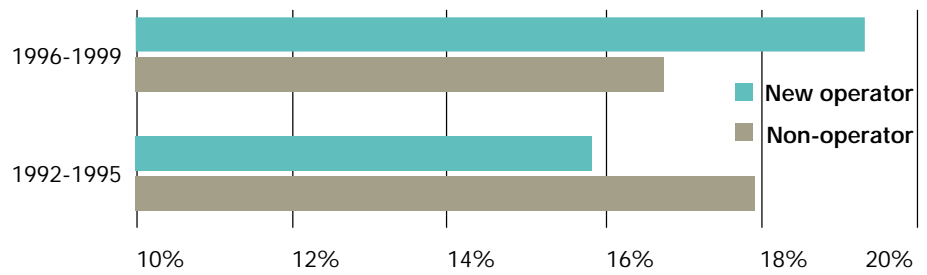
Figure 10: S&P 500 firms—Cumulative shareholder returns since 1995
new operators v. non-operators



On a return to shareholder basis, new business aircraft operators returned 343% to their shareholders between 1995 and 1999, versus 177% for non-operators (see figure 10).

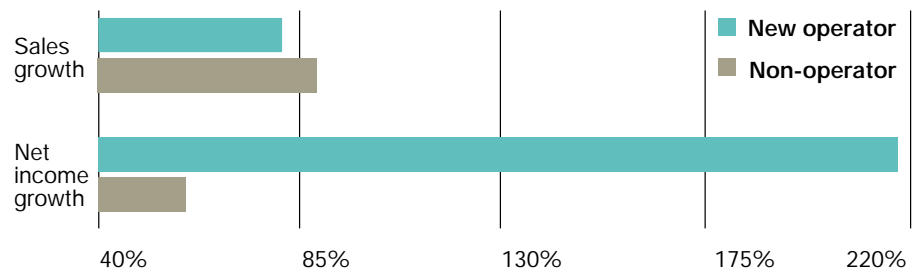
Moreover, the linkage between ROE and share price growth was quite clear. The new operator group, which lagged non-operator ROE growth prior to 1995, surpassed non-operators thereafter, increasing ROE by 3.6% overall (see figure 11 on the next page).

Figure 11: S&P 500 firms—Average return on equity, new operators v. non-operators



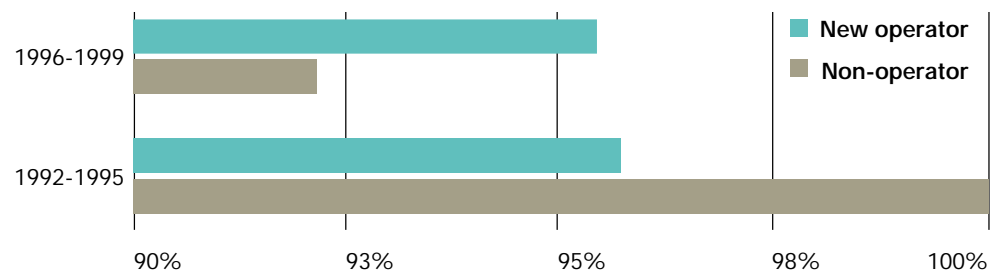
Interestingly, sales growth for the two groups was nearly equal, with non-operators earning a small edge (89% versus 81%) in the post-1995 period. However, new operators increased net income by 217% versus 59% for non-operators, more than a three-fold increase (see figure 12).

Figure 12: S&P 500 firms—Weighted average growth in sales and net income, new operators v. non-operators, 1996-1999



Finally, as in the previous S&P 500 comparison, new operators were better able to maintain their asset efficiency (see figure 13). That is, while non-operators experienced a 7.5% decline in the ratio of sales to total assets between 1995 and 1999, operators had only a 0.1% decline on average. In fact, the new-operator group achieved three-percent higher asset efficiency on average than the non-operator group after 1995.

Figure 13: S&P 500 firms—Average asset efficiency, new operators v. non-operators

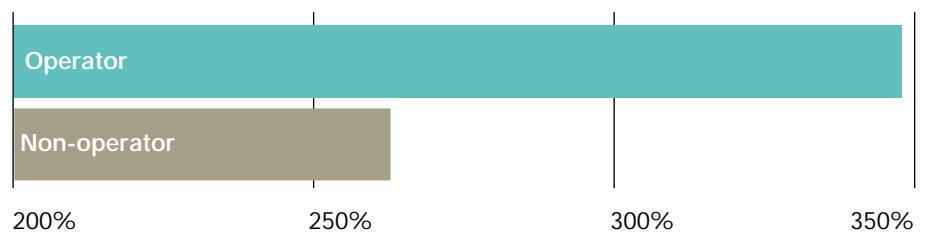


S&P 600 results

Our analysis of S&P 600 firms showed that on average operators outperformed non-operators in terms of returns to shareholders. During the period 1992 through 1999, operators in our S&P600 peer group earned on average 348% in total returns versus 252% for non-operators (see figure 14).

However, the underlying determinants of this finding can not be clearly delineated from an examination of the financial drivers of shareholder value. For example, non-operators earned sales growth over the period of 311%, versus 263% for operators. In addition, neither group had superior earnings performance when expressed as a percent of equity (i.e., ROE). However, there was a consistent advantage experienced by operators when those same earnings measures were expressed as a percent of sales. Moreover, operators consistently outperformed non-operators over the analysis period in two asset-based ratios, return on assets and asset efficiency.

Figure 14: S&P 600 firms—Total shareholder return, 1992-1999



These results are likely due to the unique nature of some of the companies we studied within the S&P 600, whose performance tend to become magnified. We observe that a few are still in the “development” or pre-operations phase of their life cycles. In fact, several of these companies generated significant losses and/or flat sales during the study period. Nonetheless, investors are ascribing significant (and growing) value in these entities. Therefore, one can infer that the value drivers for many of these companies are likely more dependent on qualitative assessments or future expectations than on historical or present day financial performance metrics.

Our study finding — operators have earned superior returns to shareholders vis-à-vis non-operators within the S&P 600 between 1992 and 1999 — is not invalidated by the above limitations in the data. Nor are the contributions of business aviation to these superior returns diminished. We simply note that at this time we are unable to show broad financial performance-based associations between aircraft deployment and increased shareholder value among the class of smaller publicly owned companies.

Summary of findings

We find that in many cases the use of business aircraft have distinguished successful companies from their peers. Evidence provided by our S&P 500 analysis and CFO surveys strongly correlate business aircraft benefits with shareholder value creation.

Our central finding is that **business aircraft can make a substantial difference in how a company performs its mission, in many cases generating significant gains in the drivers of shareholder value.** Increased mobility was at the core of these gains — satisfying management’s need for greater organizational agility, knowledge integration and transaction speed. Another key finding was that the company’s culture often determined how effectively it used and benefited from business aircraft. Similar competitors could have a different “value of mobility” style that emphasized alternate utilization strategies, perhaps yielding similar value.

“It costs less to operate the company’s shuttle than it does to acquire additional real estate in a high-density city.”

— VP Finance, S&P 500 service firm

We explain four cultural performance orientations below:

- **Strategic transaction orientation:** Being able to facilitate critical transactions was most regularly associated with direct shareholder value creation. One company was able to seize an overseas market because its fleet enabled management to be sufficiently agile and flexible. Accelerated transaction value has become a critical component to several industry sectors, especially those in consolidation.
- **Customer service orientation:** Time-sensitive requirements, such as emergency customer services, supported sales retention and sales growth and could be most efficiently met by some companies using business aircraft (no ready substitute).
- **Process and quality improvement orientation:** Being better able to manage and execute far-flung operations was found to be the most extensively cited trait. Business aircraft enabled executives to visit multiple locations, sometimes more than once a year, by customizing schedules not possible on commercial airlines. Executives were able to review operations, efficiency, quality, and customer service. We observed that benefits that accrued from use of business aircraft contributed directly to shareholder value creation at multiple levels, including profitability, asset efficiency, market share growth, and customer satisfaction.
- **Meritocracy orientation:** When a company uses aircraft to treat all employees as an important asset, they achieve uncommon results. Because the workday could be lengthened without sacrificing employee family time, shuttling employees between company facilities offered significant productivity gains. Enhanced employee safety and security, as well as the security of intellectual property, were a characteristic of this orientation.

We confirmed that business aircraft are assets whose contribution to financial and operational performance can be isolated from other assets in the organization’s portfolio. Although some of our respondents monitored aircraft or flight department performance on a direct cost basis, their intimate knowledge of the role of these assets in mission execution uniquely qualified these CFOs to correlate their business aircraft contribution to overall business performance.

Strong interdependencies were also established between an organization’s aircraft utilization strategies, associated benefits, and key drivers of shareholder value. We found through our CFO surveys that the common availability of business aircraft could influence employee and management attitudes regarding market access and business potential, workforces efficiencies and performance, and corporate culture. In short, if used wisely and aggressively, business aircraft could alter a company’s business practices and performance for the better.

Our study and findings confirmed that under the right conditions (mission, competitive market position, management style, cultural orientation, and other factors included) using a business aircraft can improve a company’s bottom line performance and the value delivered to its shareholders. In our CFO surveys more than 75% of respondents confirmed that disposing of their business aircraft could, for the same reasons, potentially harm their company’s value. For companies having certain missions, we found that there were often no ready substitutes for business aircraft without diminishing company performance or losing new business opportunities.

Before deciding to embrace or disregard the benefits often derived from operating business aircraft, management should carefully consider the factors we have outlined in this study, and understand the impact of this important asset on the company’s “core mission” and on the drivers of shareholder value.