15

Airline Financing

Chapter Checklist • You Should Be Able To:

- Describe the airlines' major sources of internal funds
- Define *debt financing* and *equity financing,* and discuss the airlines' primary sources of external funding
- List the advantages and disadvantages of leasing
- Compare and contrast *operating leases* and *capital leases*
- Define *balance sheet,* and describe the major items appearing under *assets* and *liabilities*
- Discuss the major uses and sources of funds for the U.S. scheduled airlines from 1960 to the present, and compare the cycles of business activity during this period
- Define *current ratio, long-term debt/equity ratio,* and *return on investment (ROI)*
- Summarize the general financial climate in which the U.S. scheduled airlines find themselves during this decade
- State which carriers might have the most difficult time generating funds in the money market in the future
- Discuss the importance of cash management and financial planning

INTRODUCTION

Financing billions of dollars in flight and ground equipment in the new century presents a tremendous challenge to the airline industry. Airline earnings tend to be cyclical, and industry returns on investment generally have been poor (see Table 15-1). With a few notable exceptions, airline cash flows over the long run have been inadequate to meet capital requirements. At the same time, the ratio of debt to equity for many carriers has increased to levels that have had a negative impact on their creditworthiness. Not only has this limited access by these airlines to external funds, but it has also led to larger option fees and progress payment requirements from the manufacturers—as much as 25 percent of the aircraft price in a three- to four-year period before delivery.

The advent of deregulation changed the basic rules of the game for air carriers. Deregulation has increased the demands on management for marketing skills, strategic planning, cost control, and competition with other firms. Deregulation stemmed in part from a belief that airlines, like other firms, should earn their own way in the market, not look to a public body or policy to guarantee it. It might then be appropriate to ask why, in a deregulated environment, one should be concerned with the financial condition of the airlines.

The financial condition of the industry directly affects individual firms' behavior in the short run and, ultimately, their structure and performance in the long run. In the short run, failing firms may resort to less-than-compensatory fares to generate sufficient cash to cover their fixed short-term commitments but not their long-term costs. This may threaten, in turn, the profitability and survival of other carriers in the long run. Although passengers benefit from low fares in the short run, for well-operated carriers to survive, fares must be raised eventually to recoup losses and provide a sufficient return to keep capital in the industry. Furthermore, the disruption to air service caused by the failure of a particular carrier imposes real costs on passengers, both business travelers and pleasure travelers.

In the long run, whereas the survival of any one firm is not important on a national policy basis, the failure of a significant number may lead to increased concentration and too few firms in the industry. The minimum number of firms necessary to ensure a competitive industry has been widely debated. As important as that number, however, is the degree to which the existing airlines serve the same markets and the vigor with which they compete on price and service. A small number of nationwide firms that compete with one another at all the large commercial airports may provide much stronger competitive pressure to hold down costs and fares than a large number of carriers competing in less extensive networks. The fewer the number of firms, however, the easier it is for them to form and enforce a tight oligopoly in which industry output is lower and fares are higher than would be the case in a competitive market.

SOURCES OF FUNDS

Internal Sources

Basically, the only true internal source of funds is **net earnings,** or *profits,* which are the funds left after taxes are paid to local, state, and federal governments and tax credits are taken. The company board of directors decides how much of the earnings should go to

TABLE 15-1 Net Profit (or Loss) and Rate of Return on Investment for the U.S. Scheduled Airlines, 1960–2004

Year	Net Profit (or Loss) (thousands of dollars)	Return on Investment (%)	Year	Net Profit (or Loss) (thousands of dollars)	Return on Investment (%)
1960	9,140	3.0	1983	(188,051)	6.0
1961	(37,331)	1.6	1984	824,668	9.9
1962	52,319	5.2	1985	862,715	9.6
1963	78,480	6.1	1986	(234,909)	5.2
1964	223,172	9.8	1987	593,398	7.2
1965	367,119	12.0	1988	1,685,599	10.8
1966	427,633	11.0	1989	127,902	6.3
1967	415,388	7.6	1990	(3,921,002)	(6.0)
1968	209,952	4.9	1991	(1,940,157)	(0.5)
1969	52,752	3.2	1992	(4,791,284)	(9.3)
1970	(178,930)	1.5	1993	(2,135,626)	(0.4)
1971	28,006	3.5	1994	(344,115)	5.2
1972	214,850	4.9	1995	2,313,591	11.9
1973	226,693	5.1	1996	2,824,328	11.5
1974	321,641	6.4	1997	5,119,000	14.7
1975	(84,204)	2.5	1998	4,847,000	12.0
1976	563,354	8.5	1999	5,277,000	11.1
1977	752,536	10.2	2000	2,486,000	6.4
1978	1,196,537	13.3	2001	(7,710,000)	(6.9)
1979	346,845	6.5	2002	(11,295,000)	(9.6)
1980	17,414	5.3	2003	(3,625,000)	(0.3)
1981	(300,826)	4.7	2004	(9,071,000)	(6.9)
1982	(915,814)	2.1			

Source: Air Transportation Association annual reports.

the owners (stockholders) in the form of dividends and how much should be retained in the company for investment purposes.

Two other internal sources of funds are depreciation and deferred taxes. **Depreciation** represents the airlines' largest single source of internal funds.[1] It is the allocation of an asset's cost over its estimated useful life. The provision for depreciation of fixed assets is an allowable expense of doing business. Unlike most expenses, however, it does not represent a cash outlay and so is referred to as a *noncash expense.* As a result of this accounting procedure, the company has funds in an amount equivalent to the depreciation provision. The purpose is to provide for the ultimate replacement of the depreciating asset. To the extent that this is not done immediately, the company has the use of the cash so generated for such purposes as it sees fit. In the case of airlines, with their heavy investment in flight equipment, the amount of these funds can be quite substantial.

Deferred taxes refer to certain taxes that companies are required to collect for various taxing authorities, including federal excise and state sales taxes and payroll withholding of employee income taxes. These taxes are paid to the government after periods varying

[1]Nawal K. Taneja, *The Commercial Airline Industry* (Lexington, Mass.: Lexington Books/Heath, 1976), Chap. 5.

from one month to three months from the time of receipt of the income on which they are calculated. Thus, the company has the use of these funds in the interval, and it acknowledges its obligation by an *accrual* for taxes, or a reserve. In accounting, an accrual is an expense (such as taxes) that is recognized when it is incurred but before cash is actually disbursed. Considering the tremendous cash flow of airlines, this source of funds can represent millions of dollars.

Currently, most airlines are unable to generate sufficient reserves from their depreciation charges and retained earnings to finance aircraft acquisition. Cash flows have also been affected by reductions in depreciation allowances and elimination of the 10 percent investment tax credit with the Tax Reform Act of 1986. Industrywide, cash reserves might normally provide almost a quarter of future aircraft investment needs, but these reserves are not evenly distributed among airlines, and, for some, the availability of cash for investment is virtually negligible.

Another internal source of funds in recent years has been the conversion of existing assets. This relatively new way of obtaining cash for financing aircraft is linked to the development of leasing and has some advantages when the secondhand market is buoyant. It can take the form of an outright sale of equipment or a sale and lease-back. The latter type of transaction allows airlines to use the generally appreciated value of aircraft to finance additional aircraft, to remove older aircraft from balance sheets while values are still high, to finance investment in other airlines, or to finance their own internal operations (in the case of undercapitalized airlines).

Many leasing companies have generated business through sale and lease-back transactions. Some airlines have even created their own leasing companies to which they sell their aircraft, leasing the same aircraft back from these companies. However, the current cycle of high residual value for secondhand aircraft seems to have passed its peak, and this source of financing might be much more limited in the future.

External Sources

Required funds that are not generated internally must come from outside sources, that is, the competitive money market. The nature of the business, its earnings, its financial structure, and the money market environment all have a bearing on what external sources are used. In obtaining outside funds, the airline industry must compete for the investable funds of the country (both debt and equity) with all other industries. **Debt financing** refers to the borrowing of funds from commercial banks, insurance companies, and other sources. **Equity financing** refers to the sale of stocks, bonds, and other equity in the company to the public. The *debt* portion of these external funds will be attracted, generally speaking, into situations in which the greatest relative security exists, in terms of both assets and ability to repay. The *equity* portion will be attracted into situations in which the foreseeable yield (in dividend income, capital appreciation, or a combination of both) is relatively large in relation to the risks taken. *Dividend income* refers to the distribution of earnings to stockholders (owners) of a corporation, and *capital appreciation,* as used here, refers to the value of capital stock. Thus, to succeed in the race for funds in the competitive money market, the airlines must be at least as strong as the other competing industries.

In practice, however, equity financing is available almost exclusively to "financially strong" airlines, and most airlines today remain undercapitalized. Therefore, they are unlikely to be able to raise enough in the way of equity to finance substantial orders for aircraft.

Investments today are more often debt financed than equity financed. Depending on the financial viability of a company and the perceived risk involved, debt may be either unsecured or secured by the assets concerned—hence the term *asset-based financing*. In practice, increasing debt/equity ratios and occasional bankruptcies have led to a shift toward asset-based financing in the airline industry; debt bonds and related asset-linked securities are the only public offerings that still attract much attention. The debt market is large in the United States, where insurance companies and pension funds have strong cash assets to place, but it is sensitive to the general economic environment.

Commercial Banks. Although loans can be structured to fit almost any need, they basically fall into two categories—**short-term loans** for seasonal needs and working capital and long-term loans to finance new or used equipment. Commercial banks have historically been primarily in the short-term credit business, because they obtain their funds from checking accounts and so their investments are made to conform to the pattern of their liabilities. Data are lacking to measure accurately the part played by commercial banks as a source of long-term funds. However, it has been well established that they have become a major factor in long-term lending in recent years.

How a loan is priced, structured, and presented depends on the bank's perception of a borrower's condition, as well as on the bank's perception of its exposure to risk. For example, a short-term loan (90 days) may be easy to negotiate on an unsecured basis, but a long-term loan needed to finance a significant fleet expansion may require extensive negotiations and complex documentation.

A bank will want the borrower to show that the reason for the loan request has been clearly conceived and makes sound business sense. This can be a simple task, as in the case of demonstrating seasonal cash flow variations, or it can be more complex, as in proving the need for new or additional aircraft. **Cash flow** refers to the receipt or payment of an amount of money. For accounting purposes, cash flow equals net earnings (profits after taxes) plus depreciation charges. The tenor of a loan should match its purpose. If the loan is to be used to cover seasonal cash flow variations, then it should be paid off before the next seasonal cash flow cycle starts. Repayment terms should be matched to the purpose of the loan and to the airline's best projections of its ability to repay. How much a bank charges for its loans depends on many factors, ranging from external factors, such as the bank's willingness to be competitive in a certain market or perceived risk, to internal constraints, such as the bank's loan portfolio management policy.

The usual practice is for an airline to establish a **line of credit** with a commercial bank before the time the funds will be needed. Establishment of a line of credit does not bind the bank legally to make a loan at the time requested, if conditions have changed. But the bank seldom fails to honor its agreement unless circumstances have changed drastically. Under normal arrangements, the line of credit establishes the amount and the terms on which the bank will advance funds as required. The amount may vary from several thousand dollars to several million, depending on the size of the airline and its credit status. Whatever the amount, the arrangement is a highly desirable one for the airline's corporate management, because it provides funds when needed, quickly, and without complicated financial procedures.

Most banks require collateral when they lend to airlines, because of the sensitivity of the industry to general economic cycles and the high debt/equity burdens carried by most airlines. However, most bankers are not willing to make their credit decisions strictly on the basis of *collateral* value (the value of the assets pledged in the event of default). Most

will want to make sure that their primary source of repayment is the cash flow stream generated by the company's operations. Collateral value and guarantees of repayment are viewed as secondary sources, because they are more difficult to convert into collections than is cash flow.

Aircraft equipment loans in recent years primarily have been in the form of equipment trusts. With **equipment trust financing,** a bank, or more likely a group of banks, lends the required money for the purchase of new equipment, but the title for the equipment remains with the banks, who are the trustees of the series of certificates issued with the equipment as security. The equipment trust certificates are owned by the banks doing the financing and are held by them or sold to investors, who hold them until maturity. The airline operating the equipment pays enough each year to retire a series of the certificates and to pay interest on them, as well as on those certificates in the hands of the remaining banks or investors. Maturities run from 10 to 20 years.

The big advantage to investors of equipment trust financing is security. Airline equipment does not depreciate as fast as other types of capital goods because of rigid FAA maintenance requirements. It is not unusual for a carrier to sell the equipment 5 or 10 years later and still get 75 percent of its original value. Also, as each annual payment is made, the equity behind the remaining certificates becomes greater, because the entire value of the equipment is security for the entire issue of certificates until all are paid off. In other words, the airline does not own any of the equipment until all of it is paid off.

Finance and Life Insurance Companies. Other sources of debt financing include finance and life insurance companies, which come in all sizes and have widely varying capabilities. Most of the finance companies that have been active in the airline field offer a selection of loan and lease packages. The basic finance company services include equipment financing, leasing, and, occasionally, short-term loans. In many cases, the credit packages offered by finance companies are similar to those offered by banks, as are their pricing and credit evaluation policies.

Life insurance companies became a major source of airline investment funds in the early 1970s, when the industry turned to other competitive sources in search of dollars to finance the jumbo jets. In many respects, life insurance companies are the most singularly fitted of all financial institutions to provide for the long-term capital needs of the airline industry. Because the bulk of the funds placed with life insurance companies are for extended periods of time, life insurance companies are in an ideal position to extend credit that synchronizes with their own liabilities.

Investment Banks. Investment banks provide the most formally organized machinery for the raising of funds. Indeed, it is their primary function. In a sense, they are not a source of capital, but rather serve mainly as intermediaries between investment outlets and the industry. In addition, they often serve as advisers or consultants in the development of various types of transactions, such as mergers and the placement of private loans.

Investment bankers provide private debt placement and public equity offerings. A *private debt placement* is similar to a bank loan, except that the funding source of the loan is a private party, such as an investor group, an insurance company, or another concern that is looking for long-term investments. As with bank loans, covenants and financial tests are required. These usually can be renegotiated with the lender if the company's circumstances change during the course of the loan.

Although investment banking firms are not technically sources of equity, they are experts at tapping the public equity source. The benefits of a *public equity offering* are considerable. A public offering may be the lowest-cost capital available for continued airline growth, and a successful offering is a means of reducing some of the leverage burden often associated with growth. In addition, the issue can create a market for the airline's stocks or bonds. This has two uses. First, given further corporate development and success, a market for future offerings has been created. Second, the owners of the airline have a means of valuing or selling their holdings, an important point in terms of financial planning.

An investment banking firm will usually agree to accept the responsibility for finding buyers for the stocks and bonds it plans to underwrite (select and market). In order to commit itself to the underwriting task, an investment banking firm must be confident about the airline's condition and plans. The firm will scrutinize the airline closely and base its decision to make an offer on the quality of management and the company's financial position. Once the bank has made an affirmative decision, it will provide direction for the preparatory work, which takes months to complete.

Even when everything is ready and all of the accounting, legal, and printing tasks are complete, the timing of the offering is largely up to the investment banker. The bank knows the strengths and weaknesses of the market. Consequently, an airline's top management generally develops a close working relationship with the investment banking source.

An airline that needs to supplement its capital funds by borrowing or selling stock in the open market ordinarily consults its investment bankers, who investigate the corporation's needs and recommend methods of financing. These include the following:

1. *Common stock (equity).* The ownership of the corporation is divided into a specified number of shares of **common stock,** each representing equal participation in the affairs of the firm. The owners of the company, called *common shareholders* or *common stockholders,* receive certificates of common stock or shares in proportion to their participation in the firm.

2. *Preferred stock (equity).* Like common stock, **preferred stock** is a share in the ownership of the company, but instead of equal participation in the profits, preferred shares carry fixed annual dividends that must be paid before dividends can be declared on common stock.

3. *Bonds (debt).* In formal, legal terminology, a **bond** is a promissory note under seal. However, we commonly use the word *bond* to mean a long-term debt obligation, particularly one issued to the general public.

Leasing. Leasing has become one of the most widely accepted financing tools for equipment acquisition. An important advantage to leasing is that an airline can get the use of aircraft without having to put out any of its own equity funds. Leasing conserves working capital. It also avoids **progress payments** to the manufacturer, or money payments that a carrier advances to a manufacturer on a regular schedule while the aircraft is under production. These payments can be as much as 30 percent of the cost of the aircraft.

Leasing makes it easier to replace and modernize equipment. Ownership of equipment tends to foster a make-do philosophy. When equipment is capitalized, it often becomes

awkward for a company to replace it before obsolescence. If the equipment has a long life, such as airplanes, many companies continue depreciation before replacement to avoid a heavy write-off. The result could be a loss of competitive advantage, due to not having the latest equipment, or of profits through costly maintenance.

The major disadvantage associated with leasing is the high cost. Other financing forms or outright purchase do cost less, on the surface. However, when the present value of cash flow is taken into consideration, leasing can actually be the least expensive form of financing. Another disadvantage is the loss of residual values in many cases. If the equipment is marketable at the termination of a lease, then any residual value normally goes to the lessor, not the lessee. To lessen the impact of this disadvantage, lessors frequently offer reduced rentals after lease termination. Many leasing companies can provide assistance in evaluating specific lease versus purchase options.

Leasing consists of both operating leases and capital, or financial, leases. **Operating leases** are short term (generally not more than five years) and have varying degrees of flexibility for cancellation by the airline. They generally convey no residual value in the aircraft and, from an accounting standpoint, are considered strictly as an operating cost. **Financial (capital) leases** are long term, generally 12 to 25 years. Because of restrictions on termination, their long term, and the contractual commitment to pay the total value of the lease payments, they are considered a form of capital financing. The total cost of the lease payments is amortized over the life of the lease, and a portion of the rental payments is attributed to the implicit interest cost of the financing.

Both forms of aircraft financing have become important since the mid-1970s, or roughly since deregulation. Whereas virtually 100 percent debt financing and internal financing of aircraft typified the 1960s and early 1970s, current estimates are that 50 percent of the aircraft of major carriers is under lease and that this figure might reach 70 percent in the near future. Of particular interest here is the effect that operating leases have on carriers' financial performance.

Capital leases appear as long-term liabilities on carriers' balance sheets, and the interest expense and the amortization of principal are treated in a manner similar to interest and depreciation on debt-financed aircraft. The principal advantage offered by capital leases is the lower financing costs that arise from the difference in the ability of lessors and lessees to use depreciation and other tax benefits. In leases under which the airline does not retain the residual value of the plane at the end of the lease, the opportunity for long-term capital gains may be sacrificed, especially if the expectations of the lessor (reflected in the lease terms) and the lessee differ.

Operating leases, on the other hand, do not appear on balance sheets and are sometimes criticized for providing off-balance-sheet financing of essential capital goods. The implication is that fixed capital costs are hidden, thereby presenting a rosier balance sheet picture of debt to equity investors. Nevertheless, the substitution of operating leases for other forms of financing offers advantages as well as disadvantages.

On the positive side, operating leases may provide a method of lowering the air carrier's overall cost of capital. Equity, debt, capital leases, and operating leases all have differing direct costs, risk premiums, depreciation and tax benefits, and degrees of flexibility. Relying too heavily on one source of financing likely would result in capital costs greater than those achievable with a mixed portfolio of capital sources.

Part of the lower cost that operating leases may provide to an airline's financing derives from the flexibility offered by their relatively short term. The best way to describe this aspect is by way of an admittedly oversimplified example. Suppose that an airline puts 30

percent of its operating fleet on equally staggered five-year noncancelable leases. In this case, 6 percent of its fleet is up for renewal each year. In the event of a falloff in traffic, these aircraft can be returned to the lessor and a new lease delayed until after the downturn. To the extent that equity financing of aircraft is supplanted by the contractual commitments of debt and leases (both operating and capital), the flexibility and cushion of carriers in a downturn are reduced. In this example, if that 30 percent of the fleet were equity financed, the earnings requirements of these aircraft (essentially, dividends and retained earnings) could be totally avoided in a downturn (though eventually, in an upturn, the aircraft would have to provide a return to compensate shareholders in the long run).

In summary, the move to operating leases by carriers may assist in balancing a debt portfolio. However, when changes in individual carriers and industry leverage are examined over time, specific terms of operating leases must be taken into account, because apparent leverage may be reduced by operating leases but the financial risk of the airline may not drop proportionately.

Vendor Financing. Manufacturers increasingly are offering financial support as an inducement in the competitive environment of aircraft marketing. Traditionally, aircraft manufacturers have granted support to customers through various means, including the arrangement or provision of equity financing, purchase of stock options, and guarantees for debt financing to financial institutions. With the increasing sophistication of financing techniques, manufacturers are becoming involved in complex leasing and other arrangements.

In early 1983, American was the first airline to make what was termed an "innovative arrangement" with McDonnell-Douglas and Pratt & Whitney by leasing 20 MD-80s. TWA followed shortly thereafter with a 15-aircraft order. American had studied other aircraft and had data on the MD-80 from other carriers and performance guarantees from the manufacturers that aided in the purchase decision. American planned to replace their 111-seat Boeing 727-100s with the MD-80s, with their 142-passenger seat configuration, on certain routes that were experiencing continual heavy load factors and actually turning some prospective passengers away.

Because American had $1.5 billion in outstanding long-term debt on its balance sheet and did not want to add to it, an innovative arrangement had to be devised. The lease was for only 5 years; however, an option to extend the lease was provided that could run 13 extra years, bringing the total to 18 years, the traditional term for new-jet financing. The unique feature in the arrangement between American and McDonnell-Douglas and Pratt & Whitney was profit sharing. If the operating costs of the MD-80s, with their two JT8D-200-series engines, fell below an agreed-on point, then American would share that increase in operating profit. In effect, McDonnell-Douglas and Pratt & Whitney assumed joint ownership of the $20 million aircraft. Pratt & Whitney would provide all engine overhauls.

TWA, like American, found the terms of the agreement very attractive—a way to acquire new airplanes without extending its heavy debt obligation. But the TWA arrangement did not include the profit-sharing feature. In any case, McDonnell-Douglas was anxious both to make its first sale of an MD-80 with the JT8D-200-series engines to a major carrier and to stretch out its production line, which was at risk of closing down without an order like American's and TWA's.

Venture Capital. **Venture capital** is money invested in business enterprises that generally do not have access to the conventional sources of capital previously discussed. Many of

the newer regional carriers have used venture capital to get started, and some established airlines also have tapped this source in search of new funding.

The key ingredient of venture capital firms is an entrepreneurial team. The entrepreneurs generally prepare a detailed business plan that describes the nature of the proposed business and forecasts future activities and incomes. This business plan is used to attract venture capital. Venture capital investors will invest only in situations that will ultimately produce sizable capital gains. Because the investments are made in unproven situations, venture capital investing is risky and depends on the ability of the entrepreneurs (new carriers) to turn their ideas into a successful company. The investment in the enterprise is made by buying stock (generally from the treasury), by lending money, or by combinations of both.

People Express, the innovative airline that served the eastern part of the United States with Boeing 737s, was launched when two men took their idea for a new, low-cost airline to Citicorp Venture Capital and asked for a hearing. At that time (late January 1980), People Express was only the name on a business plan; no aircraft were owned, no routes were being served, and no approvals had been requested from the FAA or the CAB.

Within two months, however, Citicorp Venture Capital was sufficiently impressed to invest $200,000, thereby launching People Express. A short time later, $400,000 was added. Although the $600,000 put forth by Citicorp Venture Capital was not even close to what was needed to create an airline, it was sufficient to pull together a management team and to formulate detailed plans for People Express. By November 1980, the airline was enough of an entity that management was able to raise $27 million in the public market by selling equity in what had been nothing but an idea less than a year before. One of the most successful airlines today, Federal Express Corporation, got its start in July 1973 when it approached a New York venture capitalist, New Court Securities. This company, a division of Rothchild's, was a merchant banking operation that managed massive amounts of capital. Some $52 million was subsequently raised, the largest private placement up to that time.

Until a few decades ago, the primary sources of venture capital were wealthy families or partnerships of affluent individuals looking for capital gains. For example, the Rockefeller family has funded several venture capital pools. It was Laurence Rockefeller who backed Eddie Rickenbacker to launch Eastern Airlines in the 1930s. J. H. Whitney supported Juan Trippe's first Pan American flights between Florida and Cuba. Since the mid-1960s, a number of professional managers of venture capital have formed firms to invest funds provided by wealthy families and insurance companies and other institutional investors. Since 1978, there has been a flurry of activity in this type of financing as major corporations, labor unions, pension funds, and even universities have allocated portions of their investment funds to venture capital management firms to locate entrepreneurs and participate in the management of new companies.

The venture capitalist's involvement with management is an essential element in agreeing to finance a start-up situation. The backer usually insists on a position on the board of directors. In this way, the venture capitalist can act quickly to effect changes in the event that business conditions change. The majority of venture capital investments are made by purchasing equity (stocks) or debt convertible to equity (bonds) in the start-up firm. Pure debt is generally secondary to equity, because such financing does not provide the opportunity to share in future growth. Furthermore, the young firm probably would not produce sufficient cash flow to service the debt.

Some venture capital firms specialize in start-up investments, while others prefer to wait until a second, third, or later round of private financing. Venture capitalists are successful only if the companies they back succeed. Then they can sell the stock they hold to the public at a higher multiple of the original purchase price or to whatever larger company acquires the now-successful operation.

Some venture capital groups have affiliated themselves with investment banking firms (or in some cases, with large commercial banks). These are generally the groups with the greatest resources. In philosophy, they are similar to private venture capitalists. In terms of capabilities, they often bring with them the management and financial resources of their affiliated companies, which makes access to debt and equity markets much easier. The principal advantages of both the private venture capital groups and the affiliated venture capital groups lie in their flexibility and ability to take risks. Unlike most other funding sources, venture capitalists will give start-up ventures serious consideration.

SOURCES AND USES OF FUNDS BY THE U.S. SCHEDULED AIRLINES

The following analysis of the sources and uses of funds by the U.S. scheduled airlines is based on data from the income statements and balance sheets provided by the Air Transport Association from its annual reports for the industry covering the period from 1960 to 2004. The industry grew significantly during these four-plus decades, following passage of the Federal Aviation Act of 1958, basically within a highly regulated environment. The twilight period of regulation began in 1978, and the 1980s ushered in a new era for the industry. During the period from 1960 to 1981, the industry experienced a complete transition in the fleet, with the first jets appearing in the early 1960s, the stretched versions in the late 1960s, and the wide-bodies in the early 1970s. By the late 1970s, the major carriers were placing their orders for the fuel-efficient equipment that began appearing in the early to mid-1980s. In the period, the airlines experienced four distinct business cycles that closely followed the overall economy's performance. The data in Table 15-1 evidence the cyclical performance. The data demonstrate four distinct lows: 1960–61, 1970–71, 1980–83, and 1989–94. The periods 1964–68, 1976–78, 1984–88, and 1995–2004 reflect the upward and downward swings of the cycle in earnings and return on investment.

Industry Balance Sheet

A **balance sheet** is merely a statement of assets and claims that summarizes the financial position of a firm—or, in this case, the U.S. scheduled airline industry—at some specific point in time. By definition, it must balance, because each and every known asset, as something of value, will be claimed by someone. It balances because assets equal claims (liabilities and net worth). In this context, **assets** are things of value that are owned—cash, property, and the rights to property. **Liabilities** are monetary debts or things of value that are owed to creditors. **Net worth,** or owner's equity, is the difference between assets and liabilities.

TABLE 15-2 Assets Portion of the Balance Sheet for the U.S. Scheduled Airlines, as of December 31, 2004

Assets	Definition	Dollars (millions)
Current assets	Cash and other resources to be realized in cash, sold, or consumed within one year	33,835
Investments and special funds	Long-term investments in securities of others inclusive of U.S. government securities; funds set aside for specific purposes; and other securities, receivables, or funds not available for current operations	14,189
Flight equipment	The total cost of property and equipment of all types used in the in-flight operations	113,591
Ground property equipment	The total cost of ground property and equipment	24,292
Other property	The total cost of other property, including land and construction work in progress	17,390
Reserve for depreciation (owned)	Accruals for depreciation of owned property and equipment	(48,091)
Leased property capitalized	Total cost to the air carrier for all property obtained under leases that meet one or more of the following criteria: (1) the lease transfers ownership of the property to the lessee by the end of the lease term; (2) the lease contains a bargain purchase option; (3) the lease term is equal to 75 percent or more of the estimated economic life of the leased property; or (4) the present value at the beginning of the lease term of the minimum lease payments, excluding that portion of the payments representing executory costs such as insurance, maintenance, and taxes to be paid by the lessor, including any profit thereon, equals or exceeds 90 percent of the excess of the fair value of the leased property to the lessor at the inception of the lease over any related investment tax credit retained by the lessor and expected to be realized by the lessor	9,020
Reserve for depreciation (leased)	Accruals for depreciation of leased property and equipment	(3,040)
Deferred charges	Debit balances in general clearing accounts including prepayments chargeable against operations over a period of years, capitalized expenditures of an organizational or developmental character, and property acquisition adjustments	2,314
Total assets		163,500

Source: Air Transport Association Annual Report, 2005.

TABLE 15-3 Liabilities Portion of the Balance Sheet for U.S. Scheduled Airlines, as of December 31, 2004

Liabilities	Definition	Dollars (millions)
Current liabilities	Obligations the liquidation of which is expected to require the use, within one year, of current assets or the creation of other current liabilities	46,178
Long-term debt	Long-term debt plus advances from associated companies and nontransport divisions less unamortized discount and expense on debt	55,174
Other noncurrent liabilities	Liabilities under company-administered employee pension plans and for installments received from company personnel under company stock purchase plans, and other noncurrent liabilities	36,758
Deferred credit	Credit balances in general clearing accounts, including premiums on long-term debt securities of the air carrier	14,021
Stockholders' equity net of treasury stock	The aggregate interests of holders of the air carrier's stock in assets owned by the air carrier	11,369
Preferred stock	The par or stated value of preferred capital stock outstanding (in the case of no-par stock without stated value, the full consideration received)	172
Common stock	The par or stated value of common stock issued (in the case of no-par stock without stated value, the full consideration received)	4664
Other paid-in capital	Premium and discount on capital stock, gains or losses arising from the reacquisition and the resale or retirement of capital stock, and other paid-in capital	17,859
Retained earnings	The cumulative net income or loss from operations of the air carrier, less dividends declared on capital stock and amounts appropriated for special purposes	(17,648)
Less:	Treasury stock — the cost of reacquired capital stock issued by the air carrier and not retired or canceled	(3,677)
Total liabilities and equity		163,500

Source: Air Transport Association Annual Report, 2005.

The claims shown on a balance sheet are divided into two groups: (1) the claims of the owners of a firm against the firm's assets, called *net worth,* and (2) the claims of nonowners, called *liabilities.* Thus:

$$\text{Assets} = \text{Liabilities} + \text{Net worth}.$$

Tables 15-2 and 15-3 include the assets and liabilities portions of the balance sheet for the U.S. scheduled airline industry for the latest available year, 2004 along with the terms we will include in our analysis.

Sources and Uses of Funds: 1960–Present

The data shown in Tables 15-4 and 15-5 were taken from the Air Transport Association annual reports from 1960 to 2000. The analysis presented in this section is based on balance sheets, income statements, and operating expenses during this period for the total U.S. scheduled airline industry, including international operations. In the "Major Uses" portion of Table 15-4, the data represent actual monies spent (except in the case of reserves for depreciation) during the particular time period. This clarification is necessary because a major portion of the funds used for equipment purchases is normally committed a number of years before equipment delivery.

Table 15-4 shows the sources and uses of funds, as evidenced by increases in the data on the balance sheets for the periods under review. Table 15-5 shows the actual depreciation and amortization (allocation of cost for each capital good's estimated life) obtained from operating expenses for this period.

Upward Side of the First Cycle: 1960–66. Bolstered by strong earnings during this period, particularly from 1963 to 1966 (see Table 15-1), increases in owned and leased property were largely financed through internal sources (see Table 15-4, under "Major Uses"). Depreciation and retained earnings represented significant sources of funding during this period. Profitability during the mid-1960s also was instrumental in securing debt financing (see "Long-term debt" in Table 15-4), which played an important role during these years. New-stock issuance played a minor role as a funding source.

Downward Side of the First Cycle: 1966–71. It was during this period that the industry placed billions of dollars in new orders for wide-bodied equipment, which arrived on the scene in the early 1970s. However, this commitment was made before the industry followed the economy into a tailspin that started during the last half of 1969 and continued through 1971. Many of the newly produced wide-bodies were parked in the Arizona desert because of lack of demand for air transportation during the early 1970s. Low profits, an uncertain future concerning earnings, inflation, and declining airline stock prices resulted in a tight supply of money for the airline industry.

Equity has supplied less outside funds for the airlines ever since they reached their high-water mark in mid-1967. The general lack of confidence on the part of investors has also affected the attitudes of the lenders who make up the debt market.

Capital in the form of debt or equity was difficult to obtain during these years, and with earnings drying up, the industry had to turn to new sources. Commercial banks had provided the greater portion of debt financing up to this point. Now the industry had to turn to different and more expensive instruments to finance its capital needs, including convertible debenture financing, largely with life insurance companies, and lease financing.

The insurance companies, in particular Prudential, Metropolitan, and Equitable, were not particularly interested in straight lending. In general terms, a **debenture** is a debt. However, financial practice has restricted the meaning of *debenture* to only those bonds that are not secured by any specific pledge of property. The debenture bond is a widely accepted mode of corporate financing. It appealed to the airlines at this time because the absence of a specific lien gives greater freedom to management and permits the reservation of secured obligations for periods of emergency. In the event of default on interest or

principal payments, the bondholders are unable to bring foreclosure proceedings to have the property sold by the court.

From the investor's point of view, the debenture bond is appealing because the general credit or financial position of the corporation constitutes the primary basis of safety. As the name suggests, *convertible debentures* give the holder the privilege of exchanging holdings for securities of a different type, usually common stock. The use of convertible debentures as a means of raising new capital depends in large measure on conditions in the capital market and the financial appeal of the issuing corporation. Stock prices were still reasonably buoyant during this period, which made the conversion privilege attractive to the insurance companies, which looked upon the airline industry as attractive in terms of long-term growth.

During the 1966–71 period, a substantial portion of the capital required was financed through long-term debt (see Table 15-4). Financing through commercial banks was expensive because of higher short-term interest rates and shorter loan periods (generally 8 to 10 years) that required renegotiation.

Leasing flight equipment came into vogue during this period of poor earnings and considerable extension of debt. The general financial position of the carriers at the end of 1970 looked very poor indeed.

Upward Side of the Second Cycle: 1971–76. Following massive layoffs in the early 1970s (industry employment dropped from 311,922 in 1969 to 289,926 by the end of 1975) in response to a sagging economy, excess capacity, and an increase in operating costs, most notably fuel prices, the industry rebounded slightly in 1971, and profits rose through 1976. A great deal of the success during this period is attributable to the severe cost-cutting measures launched by the carriers. Capital requirements during these years were met largely through depreciation, increases in current liabilities, and, to a lesser degree, retained earnings.

Downward Side of the Second Cycle: 1976–83. Growth in traffic and earnings continued through 1978, despite ever-increasing fuel costs. A number of factors boosted traffic a record 17 percent in revenue passenger miles (RPMs) during 1978. A weak dollar abroad attracted record numbers of Europeans to the United States, and substantial price cutting stimulated an elastic market for air travel. Profits of $1.2 billion were posted, and the carriers responded by ordering $9.4 billion in new planes. Traffic fell off in 1979 but still showed a 12 percent increase in RPMs.

Depreciation provided the major source of funding during this period, followed by debt financing and retained earnings resulting from the profitable years from 1976 to 1979. Leasing became so important that the capitalized leased-property dollar amount is now broken down in the Air Transport Association annual reports. Severe financial losses totaling $1.4 billion for the industry from 1981 to 1983 were largely the result of a recessionary economy, high fuel costs, severe competition, and the extended effects of the air traffic controllers' strike in August 1981.

Upward Side of the Third Cycle: 1983–88. The economy rebounded in 1983, and an upswing in airline earnings resulted in significantly improved financial performance in 1984 and 1985.

A record 418 million passenger enplanements were recorded in 1986, undoubtedly stimulated by the greatest ever decline in airfares. By 1986, the year of the mergers,

TABLE 15-4 Sources and Uses of Funds for the U.S. Scheduled Airlines as Evidenced by Changes in the Industry Balance Sheets

	1960–66 (thousands of dollars)	1966–71 (thousands of dollars)	1971–76 (thousands of dollars)	1976–81 (thousands of dollars)	1981–86 (thousands of dollars)	1986–91 (thousands of dollars)	1991–96 (thousands of dollars)
Major Uses Increase in:							
Current assets	1,051,821	698,420	1,870,811	2,786,073	4,266,827	3,296,317	7,063,725
Investments and special funds	499,814	499,075	(271,288)	242,295	1,482,525	2,489,257	3,381,380
Flight equipment	3,006,364	5,125,372	3,181,187	8,099,628	8,507,813	10,203,145	17,858,178
Ground property, equipment, and other	350,269	1,326,814	656,584	3,608,914	4,601,000	9,744,500	7,018,932
Reserve for depreciation	(1,054,328)	(2,193,040)	(2,937,712)	(3,422,868)	(3,908,016)	(7,104,246)	(7,992,046)
Leased property	Included above	Included above	Included above	6,277,646	(272,735)	933,945	1,269,718
Reserve for capitalized depreciation	Included above	Included above	Included above	(2,364,906)	752,551	(1,056,931)	(143,118)
Subtotal owned and leased property	3,356,633	6,452,186	3,837,771	17,986,188	12,836,078	20,881,590	26,146,828
Deferred charges	8,216	230,400	(41,835)	43,722	_ 1,136,429	4,577,946	(3,810,429)
Total assets	3,862,156	5,687,041	2,457,747	15,270,504	16,566,394	23,083,931	24,646,340
Major Sources							
Increases in:							
Current liabilities	575,524	1,049,020	1,522,163	5,447,666	5,124,181	9,616,726	6,717,510
Long-term debt	1,519,917	2,498,380	(534,307)	2,334,289	3,340,866	1,250,946	2,839,854
Other noncurrent liabilities	(87,780)	374,906	(147,219)	4,479,375	1,503,293	7,388,924	3,224,194
Deferred credit	424,744	569,538	384,891	51,378	1,624,154	4,345,560	3,619,559
Stockholders' equity net of treasury stock	1,429,751	1,195,197	1,232,219	2,957,796	4,973,900	481,775	8,245,223
Preferred stock	(4,835)	19,247	(14,711)	211,792	328,283	(291,434)	(249,161)
Common stock	105,258	10,040	13,137	107,992	178,882	(324,271)	401,210
Other paid-in capital	429,102	1,043,084	342,759	1,578,443	4,102,055	454,167	5,486,863
Retained earnings less treasury stock	900,226	122,826	891,034	1,059,569	364,580	643,312	2,606,311
Total liabilities	3,862,156	5,687,041	2,457,747	15,270,504	16,566,394	23,083,931	24,646,340

Source: Air Transportation Association annual reports

TABLE 15-4 *Continued*

1997 (thousands of dollars)	1998 (thousands of dollars)	1999 (thousands of dollars)	2000 (thousands of dollars)	2001 (thousands of dollars)	2002 (thousands of dollars)	2003 (thousands of dollars)	2004 (thousands of dollars)
24,074,000	24,716,000	26,847,000	28,161,000	33,261,000	29,176,000	34,890,000	33,835,000
9,658,000	12,094,000	16,157,000	14,667,000	16,437,000	19,013,000	15,109,000	14,189,000
66,523,000	75,279,000	86,269,000	97,899,000	103,508,000	106.297,000	108,554,000	113,591,000
17,643,000	19,973,000	21,826,000	21,702,000	23,092,000	24,224,000	23,408,000	24,292,000
(32,789,000)	(35,949,000)	(39,060,000)	(41,440,000)	(42,666,000)	(44,366,000)	(44,495,000)	(48,091,000)
8,597,000	9,547,000	9,657,000	9,230,000	90,053,000	8,124,000	9,304,000	9,020,000
(3,004,000)	(3,349,000)	(3,504,000)	(3,473,000)	(3,051,000)	(2,764,000)	(3,073,000)	3,040,000
11,202,000	11,290,000	11,285,000	14,241,000	15,434,000	16,174,000	18,997,000	17,390,000
3,322,000	4,551,000	4,204,000	4,488,000	3,217,000	2,308,000	2,465,000	2,314,000
105,226,000	93,436,000	133,711,000	145,475,000	158,516,000	158,186,000	165,160,000	163,500,000
30,956,000	32,404,000	33,909,000	38,326,000	42,030,000	39,556,000	42,117,000	461,780,000
15,054,000	18,689,000	24,115,000	29,805,000	41,414,000	48,662,000	52,710,000	55,174,000
19,706,000	21,763,000	23,342,000	22,695,000	26,248,000	37,535,000	38,115,000	36,758,000
11,609,000	12,935,000	14,369,000	16,837,000	17,174,000	14,943,000	14,888,000	14,021,000
27,901,000	32,361,000	37,976,000	37,812,000	31,650,000	17,490,000	17,329,000	11,369,000
0	0	1,000	235,000	466,000	334,000	347,000	172,000
636,000	667,000	813,000	821,000	1,051,000	1,116,000	1,415,000	4,664,000
15,236,000	16,537,000	17,939,000	18,303,000	19,906,000	20,579,000	16,156,000	17,859,000
12,029,000	15,157,000	19,223,000	18,453,000	14,138,000	(573,000)	3,310,000	7,648,000
133,127,000	150,513,000	171,687,000	183,287,000	158,516,000	158,186,000	165,160,000	163,500,000

TABLE 15-5 Actual Depreciation and Amortization for the U.S. Scheduled Airline Industry, 1960–2004

Year	*Depreciation and Amortization (thousands of dollars)*	*Year*	*Depreciation and Amortization (thousands of dollars)*
1960	314,193	1981	2,194,947
1961	404,708	1982	2,349,322
1962	400,829	1983	2,546,701
1963	428,379	1984	2,702,742
1964	381,543	1985	2,848,898
1965	431,228	1986	3,234,827
1966	491,578	1981–86	15,877,437
1960–66	2,852,458	1986	3,234,827
1966	491,578	1987	3,414,988
1967	612,294	1988	3,606,059
1968	742,240	1989	3,824,863
1969	868,384	1990	4,164,535
1970	952,036	1991	4,109,011
1971	959,323	1986–91	22,354,283
1966–71	4,625,855	1991	4,109,011
1971	959,323	1992	4,372,752
1972	1,002,924	1993	4,698,880
1973	1,064,441	1994	5,019,139
1974	1,101,358	1995	4,872,053
1975	1,116,607	1996	5,358,350
1976	1,132,074	1991–96	28,430,185
1971–76	6,376,727	1997	5,221,000
1976	1,132,074	1998	5,574,000
1977	1,219,914	1999	6,271,000
1978	1,554,458	2000	6,819,000
1979	1,721,648	1997–2000	23,885,000
1980	2,001,787	2001	8,418,000
1981	2,194,947	2002	6,933,000
1976–81	9,824,828	2003	6,691,000
		2004	6,834,000
			28,876,000

Source: Air Transportation Association annual reports.

almost 90 percent of passengers were flying on some form of discount. Average discounts (percentage off full fare) reached a high of 61 percent.

Industry earnings fell during 1986. Although such carriers as American, Delta, Northwest, Piedmont, and USAir reported significant net profits, Eastern, Pan Am, TWA, and United experienced large losses.

Improved earnings enabled many of the carriers to tap both the debt and equity markets for equipment financing during this period. However, leasing continued to play an important, and growing, role in meeting carriers' equipment needs. Tax reform and repeal of the investment tax credit in 1987 caused an upsurge in aircraft orders during 1986. One-third of the total jet orders in 1986 were by leasing companies. Similarly, one-third of the U.S. major airlines' fleets were leased, compared with about 21 percent in 1980.

Bolstered by a strong economy, airline revenues increased by 13 percent between 1987 and 1988. Hub-and-spoke systems grew, and net profits rose from $593 million to $1.7 billion. The major carriers placed significant orders for new jet equipment, and employment remained strong.

Downward Side of the Third Cycle: 1989–94. A greatly overexpanded economy began to show signs of slowing down in 1989, precipitated by the failure of many savings and loan associations. Fuel prices rose, and Eastern Airlines faced a long, difficult strike. The collapse of the United Airlines leveraged buyout in October 1989 and the shutdown of Braniff a month later scared away a lot of potential investors in the airline industry. Braniff's failure released 48 jets into the market and, for the first time, placed a large number of new Stage 3 Airbus A320s into the market. These factors all had a depressing effect on domestic air travel. The result was that, although several airlines had a good year financially, the industry's overall net profit was $128 million, with a net profit margin of only 0.2 percent, compared to 5.5 percent average for all U.S. industry.

The U.S. airlines lost close to $4 billion in 1990, virtually all in the fourth quarter, when the cost of fuel doubled as the result of the Iraqi invasion of Kuwait. Losses continued through 1991, as the effects of a deepening recession in the United States and a steep decline in travel abroad brought on by the Gulf War took their toll. Huge losses forced a number of carriers to cut back service severely; to sell major assets, including international routes, aircraft, and airport gates; to postpone aircraft orders; and to furlough workers. Close to 40,000 employees were laid off, including 18,000 Eastern workers when that carrier closed down in January. The depressed economy continued into 1992, which took its toll on two more carriers: Pan American, the pioneer international carrier, and Midway Airlines, a new entrant since deregulation. Thousands more airline employees were left without jobs. Three other major carriers, America West, Continental, and TWA, were operating under Chapter 11 bankruptcy by the end of 1992. USAir and Northwest Airlines were also experiencing financial difficulties.

In response, Standard and Poor's (a major bond rating agency) downgraded the debt ratings of just about all of the large U.S. carriers not already in bankruptcy. The shortage of affordable capital prompted many observers both inside and outside the industry to call for relaxation of foreign investment rules to make it more attractive for foreign airlines to acquire ownership interest in the U.S. airlines, thus providing much-needed capital infusion. Foreign ownership of U.S. airlines is currently limited to 25 percent of voting power and 49 percent of equity.

Between 1990 and 1994, the industry lost close to $13 billion. Losses dwindled in 1994 to $344 million, in large part due to lower fuel prices and the sacrifices that airline employees and airline stockholders made during industry restructuring.

Upward Side of the Fourth Cycle: 1995–1997. When the industry was losing billions of dollars in the early 1990s, the airlines took on additional debt in order to sustain their operations and remain in business. The profits earned during 1995 and 1996 were used to reduce the level of debt in the industry. Total long-term debt decreased from $17.6 billion in 1994 to $16.5 billion in 1995 and to $14.8 billion in 1996. The percentage of capital coming from debt and long-term capital leases in the airline industry in 1996 was 50.4 percent. This is a very high level of indebtedness when compared to U.S. industry overall, in which the percentage of capital coming from debt and capital leases averages only 40 percent. Because of the high level of indebtedness, airlines have high fixed charges for interest expenses. In an economic slowdown, these fixed charges do not drop with reduced operations and expose the industry to higher levels of risk as earnings decline. For this reason, most airline debt has not yet regained its investment-grade rating, preventing many banks, insurance companies, and pension funds from investing in airline securities. As additional debt is repaid, rating agencies will likely reconsider these ratings.

Some of the carriers' earnings were being used to acquire additional aircraft. Industry capacity has been growing slowly for the past several years. Airlines have been very cautious about adding capacity following the losses of the early 1990s. At the end of 1996, ATA U.S. member airlines, which carried more than 95 percent of domestic passenger and freight traffic, had 575 new aircraft on order, at a total cost of $34.3 billion. This is the lowest number of aircraft on order in many years and demonstrates a continuation of the trend toward reducing the growth rate of new capacity. Furthermore, many of the aircraft on order will be used to replace older Stage 2 aircraft, rather than to add new capacity. The relatively low number of aircraft orders suggests that capacity for the U.S. airline industry will likely grow slowly for the next several years. At the beginning of 1997, the gross book value of aircraft assets reached $67.3 billion, including capitalized leases. Aircraft are the largest category of the airlines' $95 billion in total assets.

Funding Sources in the 1990s and at Present

The balance sheet gives a picture of the financial position of a particular company or an entire industry at a certain date. To bankers and the investment community in general, it has become the crucial yardstick by which funding decisions were made in the 1990s. Before deregulation in 1978, the U.S. airline industry represented limited risks for the investment community. With routes protected by the CAB and costs passed on to the flying public through higher prices approved by the same agency, there was little to fear from an investment standpoint. Where low liquidity levels (cash reserves) and a large outstanding debt were once accepted, the financial community now demands a better balance sheet and better asset management by airlines.

Many members of the financial community increasingly are concerned with the gap that seems to be growing in many airlines between operating cash and the burdens of interest expense and cash needs based on required capital expenditures.

One of the primary indicators of a company's ability to meet its current liabilities—and, as such, its ability to seek funding in the money market—is the **current ratio.** The current ratio is a measure of liquidity obtained by dividing current assets by current liabilities. The higher the number, the more cash there is on hand for short-term needs. A low current ratio would be a signal of concern to the financial community, particularly if accompanied by an operating loss. A carrier in a weak liquidity position may experience difficulty

paying its day-to-day bills. If the current ratio is low, it may be compared with prior years to evaluate the extent of deterioration.

Another prime indicator is the **long-term debt/equity ratio,** which reflects the company's long-term borrowing power and long-term stability. It is obtained by dividing long-term debt by stockholder equity. The higher the number, the less able a company is to borrow money. Airlines that have financed their growth primarily with long-term debt (warrants, debentures, equipment loans, capital leases, and so forth) rather than equity are referred to as being highly leveraged. Furthermore, they incur substantial fixed-interest costs because of the high debt. A study of the larger U.S. carriers shows, in general, that their ratio of leverage parallels their profitability. Highly indebted firms are typically unprofitable. For example, Eastern and Pan Am were highly leveraged and consistently unprofitable. Thus, highly leveraged carriers represent a high risk because they are burdened by having to service high debt. Under these conditions, there is little equity available to absorb losses, and further borrowing is difficult and must be undertaken at an even higher rate. On the other hand, carriers like Southwest and Delta are not highly leveraged and are consistently profitable.

If the debt/equity ratio increases over a period of time, it indicates that the airline is taking on more debt to grow, entering new markets, or encountering losses. A debt/equity ratio of 2.5:1 or more indicates a highly leveraged airline and raises a red flag in the financial community. Such a ratio is particularly worrisome if operating losses are anticipated. When the ratio is moving upward and operating losses are expected, highly leveraged airlines find additional funding not only difficult to acquire but, if available, very expensive and often accompanied by restrictive provisions.

Basically, there are three tiers of major carriers in terms of balance sheet strength:

1. The few carriers in the first tier have sufficient financial strength, either through internally generated funds or favorable balance sheets, to go to the money markets for replacement aircraft. These carriers also tend to have a current fleet mix that allows them a period of time before they must refurbish their fleets. Among these carriers are American, Delta, Southwest, and Continental.

2. Airlines in the second tier, the largest part of the industry, are either capital constrained or capital short. Northwest and US Airways have such large fleet acquisition requirements that they will be constrained (US Airways filed for bankruptcy in August 2002).

3. The third tier, including airlines such as America West (merged with US Airways in 2005), won't have to go out of business (like Eastern and Pan American, which found themselves short of current assets and with an abnormally high long-term debt/equity ratio), but they must reassess their business and improve profitability to attract capital. They might also have to reassess their route structures and consider shrinkage. This should improve profitability and at the same time reduce equipment requirements. It is hard for anyone in the financial community to envision any long-term viability for this group in the absence of profitability and route restructuring.

Significant concern about the financial health of the airline industry revolves around its level of leverage. In particular, if a firm is already highly leveraged, it may not be able to finance operating losses during recessions or periods of reduced demand. The striking

dichotomy between the strong carriers and the weak ones is quite apparent. American, Delta, Continental, and Southwest have generally kept debt to less than half of their capitalization. However, in recent years, things have changed resulting in a record number of bankruptcies among major carriers. Previously strong carriers are not necessarily strong in today's environment. America West and Northwest (since the leveraged buyout in 1989) and the former TWA rely heavily on debt to finance their operations. The demise of Eastern, Pan American, and Midway was tied directly to the high cost of carrying debt. Similarly, the bankruptcies of Continental, America West, and TWA were partly a consequence of their debt structure. Certainly, the high leverage of the weaker carriers makes them vulnerable in a recession and, if they survive, makes it difficult for them to renew their fleets in the re-equipment cycle of the 1990s and early 2000s.

Return on investment (ROI) is a key measure of an industry's and individual firms' abilities to attract capital for continued growth and replacement of existing assets. It is the ratio of net profit to total assets. Whereas high leverage can kill a firm quickly when operating losses arise, continual low returns on invested capital can also lead to its demise, though generally more slowly. Eventually, access to equity markets would be lost, forcing a reliance on debt and the subsequent potential for an inability to cover fixed charges.

The industry's ROI has never been strong and consistently has underperformed the average of all manufacturing industries except for the strong years of 1978 and 1988 and the expansion years of the mid-1960s. However, as is the case for operating results and leverage, but even more so, ROIs on an industrywide basis hide the large discrepancy between a group of relatively strong airlines and a group of weaker carriers. The strong carriers have achieved, both before and since deregulation, ROIs much closer to those seen in all manufacturing industries and ones that should leave us less concerned with their future ability to attract equity investment. For the weaker carriers, the poor operating results of the last decade are reflected in the large losses to equity, primarily because of their high leverage in recent years.

Putting It All Together

We can summarize the discussion of funding sources and their implications as follows:

1. Demand for capital funds will remain strong as carriers recycle their fleets into more fuel-efficient aircraft.

2. Some carriers are in a much better financial position than others (in terms of liquidity and balance sheet) to secure funding sources in the money market.

3. Some carriers will have to retrench by selling assets and reducing their route structures to remain competitive.

4. Operating results have been somewhat weaker on an industrywide basis, though they were hardly robust before deregulation.

5. In the early 1990s, the carriers were not in a position to raise cash through their common stock. The industry needs earnings before the investment community will look at common stocks, and it needs more than just one or two years of earnings.

6. For individual firms, the industry can be divided into a group of strong performers whose results have slipped only slightly since deregulation and a larger group of weaker performers whose results have brought their continued existence into question.

7. Some increase has occurred in industry leverage, though this has tended to concentrate in certain firms.

8. ROIs are as bipolar as operating results, with the group of strong carriers achieving returns much more in line with those of other industries.

9. Interest rates will fluctuate depending on the world economy. When interest rates are high, borrowing is costly even for those who are in a position to do so. When interest rates are low, aircraft are easier to acquire, assuming the organization is in good financial standing.

10. Insurance companies are not as eager to join in the new round of lending as they were in the early 1980s. First, they haven't been paid in full for previous loans. Second, they, like other members of the financial community, were generally opposed to deregulation, because there was no CAB to keep the airline industry financially healthy. Competition may eliminate some carriers, and no long-term lender will lend unless it is reasonably sure that the airline will survive and pay back its loans.

11. Banks are in a slightly different situation than insurance companies, because on a short-term loan they can renew and re-renew. If the outlook is not good, they can recall the loan.

12. Leasing will continue to grow steadily, and airlines will be concentrating on a fleet balance of purchase and lease with an emphasis on lease.

13. Lenders and carrier management will be looking for employee commitments to their company in the form of investment programs.

The situation can be interpreted in various ways. The weak performance of the industry as a whole can be viewed as evidence of a drastic decline that is still under way and that is leading to the collapse of the industry and the concentration of airline service in the hands of a few carriers. Or the weak performance can be viewed as the necessary shaking out of weak carriers, with the result that the industry will emerge with fewer but stronger carriers that are capable of competing vigorously nationwide and, indeed, worldwide. Deregulation was meant not to improve or aid the performance of all carriers in the industry but to reward the best-managed ones.

Clearly, the industry is still in transition from the regulatory period. The failure of Eastern, Midway, and Pan American and the bankruptcies of Continental, America West, TWA, and, more recently, United, Delta and Northwest, can be traced without much difficulty to the operating and structural adjustments that have been continuing since deregulation. The industry apparently is moving toward an equilibrium of a small number of large nationwide carriers and an uncertain number of significant smaller ones. The industry's financial performance in such a world may end up on any point of the spectrum.

On the one hand, a loose oligopoly could form in which fares and service remain fairly stable and remunerative but at levels close to or equal to competitive returns. On the other hand, a tight oligopoly could arise, leading to higher than normal profits, reduced service offerings on routes, and efficiency losses to the economy.

From a financial standpoint, it is difficult to predict what the recent financial history portends. Thin operating margins offer little pricing room to avoid slipping below fares that are sustainable in the long run. The level of leverage in the industry may work in both directions. Highly leveraged firms will have incentives to control costs and produce efficiently; at the same time, the exigencies of meeting debt service may encourage initiation of or acquiescence to oligopolistic pricing behavior.

Another concern often expressed is whether the industry has the financial capacity for the re-equipment and expansion of its fleet in the foreseeable future. The ability to attract capital and provide service depends on the strength of the underlying demand for an industry's output. Few doubt that airline service will continue to be in high demand in the long run. Undoubtedly, capital will be available at some price to meet that demand. Returns in the industry may have to increase to pay that price.

Deregulation has provided firms with the ability to respond rapidly to changes in their costs and the fares offered by their competitors. In the end, the profitability and strength of airline firms will depend on how well they use those freedoms. Whether the emerging capital structure of the airlines will be a source of additional strength and profitability or will add costs from inefficient structures, excessive risks, or costs of adjustment from bankruptcies and disruptions of service cannot be predicted with the available evidence. Conceivably, some reduction in the number of carriers will reduce excess capacity in the industry and thereby improve the financial performance of the remaining carriers. The lackluster financial condition of some of these carriers, however, which might be further weakened by a recession and an increase in fuel prices, gives reason to be concerned about the number of carriers that will survive and the effect this might have on competition.

CASH MANAGEMENT AND FINANCIAL PLANNING

At several points in this chapter, we have mentioned the importance of cash holdings as part of working capital. Certainly, one of the primary reasons for the demise of Eastern Airlines was the fact that it became cash starved and simply could not pay its bills. Airlines take in and spend millions of dollars daily. Apprehensive about Eastern's financial problems, travel agencies diverted millions of dollars in ticket sales to other carriers in order to protect their customers, despite assurances from Eastern management almost up to the day they called their fleet home.

In many respects, cash is the most important item in the operation of an airline. It is both a means to and an end of the enterprise. Return on investment takes the form of a payment of cash dividends, and in the event of liquidation, cash becomes the final medium by which claims are discharged. Cash is one of the most important tools of day-to-day operation, because it is a form of liquid capital that is available for any use. Cash is often the primary factor in the course of an airline's destiny. The decision to expand may be determined by the availability of cash, and the borrowing of funds, as was stated earlier, may be determined by the carrier's cash position. There is never a time in the life cycle of an airline that cash, or the ready access to it, is not important. However, it is of particular importance for a fledgling carrier to have an adequate supply of cash. Payrolls must be

met; contracted maintenance sources must be paid; fuel suppliers will not tolerate an extension of credit in today's environment. Unexpected costs incurred as a result of poor weather and many other events require cash on hand. Lacking cash, a carrier's operations are slowed, if not paralyzed. Creditors press the collection of their claims. If payments cannot be made or adjustments effected, bankruptcy and failure follow.

Even after a company has overcome its initial financial growing pains, the daily cash position continues as a key factor in its operations. Some major carriers maintain large liquid cash balances in excess of their immediate needs and prefer to borrow little, if at all, on their current account. But other carriers are not in this position and must frequently borrow their seasonal working capital requirements. Some companies deliberately plan their financing and operations to provide their seasonal requirements from bank loans. In such cases, they must plan carefully so as to provide adequate cash to repay the current loans when due. Credit must be maintained by promptly meeting all obligations as they become due.

There is no easy formula to determine the amount of cash a company should maintain. It depends on many factors, including the business cycle, revenues produced, seasonal requirements, and current maturing debt. Management policy toward the carrying of cash in excess of immediate current needs also plays a role. The general economic outlook and the financial and banking situation are always important considerations. The matter of expansion or contraction in operations is frequently a factor. Finally, prices—their level and direction of change—influence management's judgment as to the amount of cash that should be maintained.

Cash Flow

Some financial analysts regard cash flow as a better measure of corporate success and dividend-paying ability than net income in itself. It must be remembered that noncash expenses, of which depreciation is the largest, are determined in large part by management policy. Over the period of time representing the average useful life of an airline's assets, depreciation must equal the amounts invested, or the costs of operation will be understated. Similarly, if depreciation is overstated, income will be understated and taxes reduced (at least temporarily).

The important consideration in the cash flow concept is a measure of flexibility. A large cash flow means that a carrier can fly new routes or adopt new strategies without as much (or perhaps any) new financing.

Cash flow analysis assesses a carrier's ability to generate cash from internal sources relative to the level of claims against that cash. Cash flow may be defined as funds from operations (the sum of net income, depreciation and amortization, and any change in noncurrent deferred taxes) or cash from operations, which takes into account changes in the current accounts. Current assets and current liabilities are typically a small part of the balance sheet for airlines, so the difference between the two defined values is not great. As with earnings measures, however, extraordinary items are excluded.

The key analytical ratio is cash flow divided by total debt. This shows, in theory at least, how quickly a carrier could repay debt if all cash flow were applied to that goal. Indeed, it is the mathematical inverse of a debt payback period. Examination of the debt maturity schedule is an additional and important part of this analysis.

The current ratio and working capital balances are less useful in judging an airline's liquidity than they would be for many industrial companies. Most airlines routinely run

working capital deficits, because they take advantage of the fact that airline tickets are usually paid for before they are used. The cash generated thereby is offset by an account called "air traffic liability" under generally accepted accounting principles. In contrast to most industries, a growing airline's cash flow from operations will therefore often be greater than its funds (working capital) from operations. Instead of investment in working capital, airlines generate cash from working capital when they expand. Of course, the reverse is true when an airline contracts, a situation that is most dangerous when a strike halts operations and passengers return their unused tickets.

Comparison of cash flow to capital expenditures gauges a company's ability to finance capital programs with internally generated funds. Unfortunately, reported capital spending often understates the true level of outlays, because most facilities and many aircraft are leased. If aircraft are financed using a sale and lease-back, their cost will show up in capital expenditures, but if they are leased directly, no such amount appears.

Cash Budgeting

The key to good airline cash management and financial planning is the cash forecast, or, more specifically, the **cash budget.** On a short-term basis, it is extremely important that the airline manage its finances in a manner that will permit it to make maximum use of its available cash. On a long-term basis, financial planning must be conducted in a timely and effective manner if the corporation is to achieve its long-range objectives.

Let's take a look at the nature and purpose of both short-term and long-term cash forecasts. *Short-term forecasts* generally cover a period of up to one year. For the first two or three months, estimates are normally provided on a daily or weekly basis. These can usually be made with considerable accuracy and have many day-to-day applications. This forecast is used to accomplish several things:

1. *Determine operating cash requirements.* In other words, the cash forecast ensures that cash receipts meet cash operating expenses. Such information is vital to airlines with a tight cash position. With the aid of an effective short-term cash forecast, certain expenditures, such as inventory and capital expenditures, can be timed to coincide with the availability of cash.

2. *Anticipate the need for short-term financing.* The forecast enables an airline to minimize borrowing costs (by avoiding borrowing more or borrowing for longer periods than needed) and provides the bank with reliable forecasts of the company's requirements, thus enabling the company to obtain more liberal loans.

3. *Manage the investment of surplus cash.* An accurate cash forecast helps companies select securities with appropriate maturities, avoid over- or underinvesting, and maximize profits from investments.

4. *Maintain good bank relations.* The forecast helps optimize relationships with banks by indicating the highs and lows of cash and the timing of its flow into and out of the company coffers. With this information, the company treasurer can take steps to ensure that bank balances become neither too low (to the dissatisfaction of the banks) nor too high (so that cash is lying around idle).

5. *Provide a basis for monitoring many items on the balance sheet.* This ensures achievement of goals and prudent financial administration.

Long-term cash forecasts show the effect of proposed long-range plans, new equipment requirements, debt retirement, and long-range growth on the company balance sheet 5 or even 10 years in the future. The long-range forecast is used primarily to do the following:

1. *Appraise proposed capital projects.* The forecast shows whether enough cash will be generated internally to support the working capital requirements of future operations and investments. It indicates when the company will probably run out of cash, and why. It also shows how much must be borrowed and for how long it will be needed. It thus helps management evaluate and approve, defer, change, or abandon various equipment programs or projects in light of the company's anticipated cash and invested-capital position.

2. *Provide information needed to establish a financing plan and arrange for long-term financing.* The financing plan, of course, must include careful consideration of capital structure, dividend policy, and the company's obligations to existing lenders and equity investors. Once a decision has been reached to pursue a course of action that will require long-term financing, the long-range cash projection is valuable in obtaining a satisfactory loan. A detailed long-range cash plan that shows how much money will be required, when it will be needed, and at what rate it will be repaid not only provides the lender with important information but also, if it is realistic, indicates competent financial management and helps to obtain the loan on more liberal terms.

It should be noted in closing that any forecast, whether short range or long range, must be updated periodically and monitored continually. Nothing is permanent but change, and the value of cash forecasting depends on keeping abreast of change.

KEY TERMS

net earnings
depreciation
deferred taxes
debt financing
equity financing
short-term loan
long-term loan
cash flow
line of credit
equipment trust financing
common stock
preferred stock
bond
progress payment
operating lease
financial (capital) lease
venture capital
balance sheet
assets
liabilities
net worth
debenture
current ratio
long-term debt/equity ratio
return on investment (ROI)
cash budget

REVIEW QUESTIONS

1. Discuss the relationship between profitability and financing capital needs during the 1990s and early 2000s. What is meant by *depreciation?* By *deferred taxes?* How does one distinguish between *debt financing* and *equity financing?*

2. Why have commercial banks traditionally been in the short-term lending market? What is a *line of credit?* What is an *equipment trust?* What is its major advantage?

3. Why did the life insurance companies in particular become a major lending source in the early 1970s? What are investment banks? What is the difference between common stocks and preferred stocks? How do they differ from bonds?

4. Why has leasing become such an important source of funding for the airlines? Give four advantages of leasing. What is its major disadvantage? Distinguish between *operating leases* and *capital leases.*

5. What is meant by *venture capital?* Why has this source of funding become particularly important to the newer carriers? Who provided the backing for the earlier venture capital groups?

6. Define *balance sheet, assets, liabilities,* and *net worth.* What is included under the assets portion of an airline's balance sheet? Under the liabilities portion?

7. What were the major sources and uses of funds according to the industry's balance sheets during the periods 1960–66, 1966–71, 1971–76, 1976–81, 1981–86, 1986–91, 1991–97 and 1997–2004? What is a *convertible debenture?*

8. In light of the demand for capital funds by the airlines during the 1990s and early 2000s, how does the financial community view the industry as a whole? Why was the financial community generally against deregulation? Define *long-term debt/equity ratio, current ratio,* and *return on investment (ROI).*

9. Classify the major carriers in terms of their ability to finance their capital needs in the 2000s. What are some of the alternatives for capital-constrained carriers? Summarize several of the major points regarding airline funding sources.

10. In your opinion, does the industry have the financial capability for fleet replacement and expansion in the early 2000s and beyond?

11. Why is having too much cash on hand almost as bad as not having enough? Why is the financial community concerned about the cash position of the carriers? How much cash should an airline have on hand? What is meant by *cash flow?* Give several applications of short-term and long-term cash forecasts.

WEB SITES

http://www.gecas.com

http://www.awas.com

http://www.ilfc.com

SUGGESTED READINGS

Air Transport Association of America. *Annual Report.* Washington, D.C.: ATA, various years, 1960–2001.

Holloway, Stephen. *Air Finance: Aircraft Acquisition Finance and Airline Credit Analysis.* Melbourne, Fla: Krieger, 1992.

Holloway, Stephen. *Straight and Level: Practical Airline Economics.* London: Ashgate, 1997.

Morrell, Peter S. *Airline Finance.* Aldershot, England: Ashgate, 1997.

Taneja, Nawal K. *Airline Planning: Corporate, Financial, and Marketing.* Lexington, Mass.: Heath, 1982.

Taneja, Nawal K. *The Commercial Airline Industry.* Lexington, Mass.: Heath, 1976.

Van Horne, J. S. *Financial Management and Policy* (4th ed.). Englewood Cliffs, N.J.: Prentice-Hall, 1977.

Wensveen, John. *Wheels Up: Airline Business Plan Development*. Belmont, CA: Thomson Brooks/Cole, 2005.

PART FOUR

The International Scene