How Contestable Are Airline Markets?

RICHARD V. BUTLER AND JOHN H. HUSTON*

For generations, economists' anecdotes about positive externalities have almost invariably involved bees and apple orchards. With a similar degree of regularity, the profession's current stereotypical examples of contestable markets are drawn from the airline industry. Unfortunately, as Steven Cheung [1973] showed for the tale of the bees, these comfortable examples may diverge significantly from reality. This paper shows why the stylized fact of airline contestability should be viewed with similar skepticism.

The argument that airline markets *are* contestable certainly sounds plausible. No less an authority than Elizabeth Bailey [1982], for example, argues that:

> "City pair markets are characterized both by easy entry and exit and significant economies of scale . . . potential competition may be an adequate policeman in such markets. Even if a route is flown by a single carrier, other carriers who have stations at both end-point cities can readily enter if monopoly profits become evident. Airline markets can be contestable because their capital costs, while substantial, are not sunk costs. That is, the major portion of the capital—the aircraft—can be recovered from any particular market at little or no cost."

Since entry is relatively riskless, it is argued, the threat posed by potential entrants is sufficient to produce competitive results even if the market is served by only one firm.

There is now starting to emerge an empirical literature which suggests that airline markets are indeed not perfectly contestable.[1] Though this paper contains some econometric findings which support that conclusion, its principal goal is to show *why* imperfect contestability arises, and why the degree of contestability can be expected to vary systematically across markets.

In the first section, some original data on the nature, size, and retrievability of entry costs are presented. Next is an investigation of whether the existence of scope economies at a hub could increase the sunk costs of entry into certain kinds of airline markets. Finally, a subset of airline fares is examined to see whether there is reason to suspect that market power is currently being exercised in such markets.

I. Entry and Exit Costs

As noted above, it is widely assumed that entry into a city-pair market involves only trivial sunk costs. The information needed to determine whether this is an accurate portrayal of airline markets can be obtained only from participants in the industry. To gain the perspectives of the airlines, airport management, and the business community, interviews were conducted with the San Antonio station managers of two major carriers, a strategic planning executive at the headquarters of another major carrier, the managing director of the San Antonio International Airport (which ranks about thirtieth nationally in passenger traffic), and the transportation manager of the Greater San Antonio Chamber of Commerce. The data reported below are all taken from these interviews; honoring the requests of the

*Trinity University. The authors gratefully acknowledge the help of James Mason of Sunshine Travel in obtaining fare information, and of numerous industry participants who enlightened them about the real world. The authors also wish to thank Douglas Greer, Harold Hotelling and an anonymous referee for their constructive comments on earlier drafts.

[1]See, for example, Graham, Kaplan, and Sibley [1983]; Bailey, Graham, and Kaplan [1985]; Morrison and Winston [1986]; and Moore [1986], all of whom report a statistically significant relationship between concentration and fares. (In a perfectly contestable market, fares would be at the competitive level and should, therefore, be unaffected by changes in the number of actual competitors.) Graham, Kaplan, and Sibley [1983] and Bailey and Baumol [1984] provide helpful discussions of the barriers to entering the industry and of factors which have diminished contestability during the transition from regulation.

interviewees, the attribution of specific information to particular individuals has been avoided.

In the remainder of this section, the possible scenarios for entering an airline market will be considered in the order of increasing size (and fixity) of the entry costs they entail. As one might suspect, the incremental cost of adding service in a market depends greatly on whether the airline already has stations in the two cities; if it does not, the cost of adding service will be higher. Entry costs are also sensitive to the scale at which the carrier plans to enter.

(A) Entry Which Connects Cities Already Served

If an airline already has ground facilities with excess capacity in both cities, the costs of entry at a small scale are indeed modest. Only additional promotional expenses would be directly attributable to the new service, and even in a large market these would be insignificant in comparison to the other costs of operating an airline. Since announcements of the new service could be added to the carrier's already-scheduled advertising, the only net additions to cost would arise from special promotions for travel agents and frequent flyers. Entry into such city-pair markets is thus essentially risk-free. If the route proves to be unsuccessful, the airline has lost only a few thousand dollars in promotional expenses plus the opportunity costs of the aircraft and crew used to provide the service.

This is the scenario which underlies the stylized fact of universal contestability. Since many markets have one (or more) carriers serving both endpoints but not now flying nonstop between them, it is tempting to conclude that these markets are effectively contestable. However, as the discussion in Section II shows, small-scale entry will often be economically infeasible, even for a carrier already well-established at both endpoints.

(B) Small Scale Entry to a New City

A carrier inaugurating service at a minimal level (two flights per day) may still be able to enter while incurring only minimal irretrievable costs.

The sunk costs of promotion, while greater than in the previous case, will still be less than overwhelming. Even to enter a market as large as Atlanta would cost a major carrier no more than (about) $100,000, the bulk of it for advertising. Note that an established national carrier would need to spend less than an unknown newcomer to achieve the same level of consumer awareness in the market [Levine, 1987]. Thus, the size of this sunk cost would not be the same for all potential entrants. However, given the relative insignificance of these costs, the difference is unlikely to be crucial to market performance.

At this level of service, the usage of other carriers' gates, ticket counters, baggage facilities, and the like can usually be arranged on a short-term basis. For example, Continental's entry into Jacksonville, Florida with two flights per day involved a six-month sublease of these ground facilities with a monthly term thereafter. (The cost per flight of these arrangements is higher than at a self-sufficient station; the point at which it pays to establish one's own facilities is about five flights per day.) The only nonrecoverable expense at the airport would be the cost of renovating ticket counter and office space; a typical amount for an operation of this scale would be $25,000-$30,000.

Thus, entry to a new city on a small scale requires only a minimal commitment of nonrecoverable expenses. If there is at least one carrier already serving one of the two cities which could feasibly enter the other at this scale, the market would arguably be contestable. (But note that entry at this scale would be appropriate only in low-density markets.)

(C) Entry on a Larger Scale

As suggested above, service levels of five or more flights per day raise the cost of subleasing ground facilities to the point at which it becomes cost-effective to establish a self-

sufficient station. What are the costs of opening a typical two-gate station (sufficient to handle about six to 12 flights per day)?

The one-time startup costs of such a station are spelled out in Table 1. Note that the total initial cost approximates $1 million, of which perhaps half would be recoverable should the firm exit.[2] This is a substantial investment to place at risk, though again it is not huge by airline standards.

In addition to these costs, the entering carrier must lease gates, ticket counters, and office space at the airport. The annual rental fees vary considerably across airports. In a small city, a carrier could lease two gates and the other necessary space for about $43,000 per year. At San Antonio International, the annual rental for such facilities is approximately $500,000 per year. At a major hub airport, rents would be considerably higher still.

[2]The extent of recovery depends on the existence of a second-hand market for the not-very-portable equipment like jetways. Prospects for resale are brighter at already crowded airports, especially those experiencing rapid growth.

TABLE 1

Costs of Opening A Typical Fully Equipped Station (Two gates)

	Fully Sunk Costs	Partially Recoverable	Fully Recoverable
Renovations			
Counter space	$ 30,000		
Back office and operations space	130,000		
Fixed Equipment			
Baggage conveyor		50,000	
Jetways (2)			
New		490,000	
Used (incl. renovation)		170,000	
Other Equipment			
Computer equipment			25,000
Air start truck		50,000	
Ground power unit		50,000	
Tow bars (2)			6,000
Baggage carts (16)			112,000
Multipurpose van or pickup truck			10,000
Tugs (5)		140,000	
Belt loaders (2)		60,000	
Other Sunk Costs			
Moving expenses for supervisory personnel	10,000		
Promotion costs	100,000		
Total Costs	$270,000	$520,000-$840,000	$153,000

Note also that at airports with no vacant gates, a lease must be purchased from another carrier. This payment to obtain a lease can be very large if gates are scarce. For example, when Western moved its hub from Denver to Salt Lake City in 1982, it was able to sell some of its gate leases at Stapleton Field for $4-5 million per gate. More recently, as part of its agreement to acquire PSA, USAir acquired leases on two gates at San Francisco International Airport and two at Los Angeles International Airport for a total payment of $10 million [Swartz and Hilder, 1986].

How sunk are gate lease costs? As noted above, shared use can be negotiated on a short-term basis. However, for entry at the scale now under discussion, leases of a year or more are common. At San Antonio International, carriers can choose to be signatories (a six or seven year commitment) or non-signatories (one year). According to the managing director of the airport, almost all choose to be signatories because the additional perquisites and advantages of that status make it a much better deal for the carrier. This, however, suggests that gate leases may involve substantial sunk costs, even at this relatively modest scale of operation.

The seven-year lease that Braniff signed in 1984 for facilities in the new terminal at San Antonio provides a good case in point. Shortly after signing the lease, the airline terminated service to the city. Braniff was thus committed to six-plus more years of a half-million dollar per year lease for facilities it no longer used.[3] Though Braniff has recently resumed service, for more than two years its jetways and much of its ground equipment sat unused (except for occasional charter and overflow flights). Even now, Braniff is paying for far more of a station than it needs for the one flight per day that it presently operates.

One other aspect of gate leases is worthy of mention: to some extent, these payments cannot be avoided even by filing for bankruptcy! Airports frequently require that carriers give a bond to guarantee payment of airport obligations. This increases the upfront costs of entry and, at least to some extent, insures that gate lease costs are sunk.

(D) Establishing a Hub

Entry at a scale sufficient to establish a working hub requires 10 to 25 (or more) contiguous gates. The marginal cost of some of the necessary inputs (the equipment, for example) is effectively invariant to scale; for these components of entry cost, establishing a hub raises sunk costs only in proportion to the scale of the operation. For some essential inputs, however, this is not true.

Annual rental fees per gate (and per square foot of counter space), for example, are likely to be higher at the airports at which establishing a hub makes economic sense. Capacity constraints at many of these airport terminals create large quasi-rents for current leaseholders. Industry sources suggest that acquiring an existing lease at Atlanta or Houston Intercontinental airports would cost $2-3 million per gate; the figure would surely be higher at the most crowded airports (Stapleton Field in Denver, for example). Building one's own terminal can solve that problem, but at a high cost; American's new 25-gate terminals for its Nashville and Raleigh-Durham hubs will cost $115 million and $113 million, respectively [Martindale, 1986].

Not only are the absolute entry costs much higher for a hub-scale operation; the size of the sunk costs can be contemplated with equanimity only by the confident or the

[3]Subleasing these facilities was not possible, since the only carriers to enter San Antonio subsequent to Braniff's withdrawal did so at a three-flights-per-day scale of operation and so found it more economical to share gates with active carriers (who already had the necessary labor in place to service their own flights). Even if a six-flights-per-day entrant had appeared, Braniff might not have benefitted since the airport requires that carriers initiating service to San Antonio at such a scale lease any vacant gates from the City Aviation Department before any subleasing will be allowed.

fearless. As one airline executive said, "You can always unload a couple of gates in Atlanta, but if your hub there doesn't make it, who else would want to buy it?" In this case, even some normally recoverable costs are effectively sunk.

In short, the sunk costs of establishing a hub are far too large for a prospective entrant to ignore. They surely constitute a significant disincentive to entry at that scale.

(E) Conclusion

In general, the larger the scale of entry, the larger are the sunk costs (both in dollar volume and as a proportion of total entry costs). Entry at the scale required to establish a hub—especially at a major hub airport—would involve much larger sunk costs than those presented in Table 1. Small scale entry, especially if the carrier already has a station at both ends, is much less risky. Thus, one should expect functional contestability only in markets for which the latter kind of entry is possible.[4] If the only feasible entry is at a large scale, one should expect that it will pose much less of a threat to the incumbent firm(s).

II. Economies of Scope

This section demonstrates that the existence of significant scope economies across routes and scale economies within routes may greatly increase the minimum efficient scale at which entry may occur.

For reasons of price alone, an airline planning to provide service between a competitor's hub and a smaller city would find it difficult to attract passengers connecting to other flights at the hub airport. On hub airlines, the price of a trip from spoke *A* through the hub to spoke *B* is generally considerably less than the sum of the individual fares for the two segments. Bailey, Graham, and Kaplan [1985], for example, found that passengers who interlined paid fares averaging 25 percent higher than those paid by online connecting passengers. Thus, even a significantly lower fare on one leg of the trip might not save the passenger money if he then had to purchase a more expensive ticket from the hub to his final destination.

In fact, the entrant probably would have to provide an even greater discount to offset the additional costs to the consumer of switching airlines. To make an interline connection, passengers frequently must change terminals and, in some cases, must transfer their own luggage. Carlton, Landes, and Posner [1980] estimated that interline passengers lose an average of 37 minutes compared to passengers traveling on a single carrier. Using DeVany's [1974] estimate of the value of travelers' time and adjusting for inflation, one finds the value of time lost due to interlining to be approximately $18. In addition, the likelihood of missing a connection is significantly greater when a change of airlines is involved.

As a result of these factors, new entrants into a spoke-to-hub market would generally be limited to serving those passengers who have the hub city as their ultimate destination. Indeed, the way in which carriers exploit the scope economies inherent in the hub-and-spoke network is to schedule those flights offering the most profitable connection opportunities, even if some of these flights could not be supported by local traffic alone. A new entrant attempting to compete on these routes would have great difficulty achieving a break-even load factor. For example, a Piedmont vice president stated that if another carrier attempted to enter one of the routes to its Charlotte hub "they would be very lucky to get 15 or 20 passengers on a plane" [Rotbart, 1984].

The inability to capture a significant portion of the connecting traffic places new entrants at a cost disadvantage. The scale economies at the flight level have been well documented [Meyer and Oster, 1984, p. 69; Morrison and Winston, 1986, p. 7]. With a

[4]To meet the strict definition of contestability, entry on such a scale must be sufficient to take over the entire market [Baumol, Panzar, and Willig, 1982, p. 5]. Thus, one should expect only relatively low-density markets to be even potentially fully contestable.

given size plane, the marginal costs of an additional passenger are minimal. As a result, increasing the number of passengers greatly decreases the cost per passenger. The demand-side advantages gained by offering multiple connections, combined with the economies of scale for any given route, create powerful scope economies for the hub airlines. It is, of course, precisely these scope economies that have led to the preeminence of the hub-and-spoke route structure in the deregulated airline industry.

The above argument suggests that entry into certain spoke-to-hub routes may place the entrant at a cost disadvantage unless the new airline is also willing to provide connecting service to a number of other cities. But since the costs of entering a new market are highly sensitive to the scale of entry, adding a large number of connecting flights to many cities will require a substantial investment. In addition, that investment will be largely unrecoverable should the entry prove to be unsuccessful. Thus, to the extent that the irretrievable entry costs deter potential entrants, incumbent hub firms may be able to maintain prices above the competitive level.[5]

III. Some Empirical Evidence

The preceding argument implies that routes with a hub at one end, which typically are served by few carriers other than the hub firm(s), will be far from perfectly contestable. If this is so, fares should be farther from the competitive level on routes to hubs than on routes connecting non-hub cities (which presumably could be connected—and hence contested—through many hubs).

Is this in fact the case? Unfortunately, the existing empirical literature, since it is primarily concerned with the contestability of airline markets in general, is of little help in assessing this proposition, and a definitive econometric investigation of differences in contestability across markets is far beyond the scope of this paper. This section pursues instead the much more modest goal of demonstrating that such differences in contestability seem to exist.

This is a bit more difficult than it sounds, because the two most obvious designs for such a study are unworkable in practice. Since profits in a perfectly contestable market will be at the competitive level, one obvious strategy would be to compare price-cost margins for routes having a hub at one end to those for routes between non-hub cities. This, however, is simply not practical due to the serious and fundamental problems of measuring both price and cost meaningfully for multiple classes of passenger service on individual routes.

A second possible tactic would be to examine the extent of entry into spoke-hub routes in the post-deregulation years. This approach, too, is doomed to failure because the contestability of a market depends not on actual entry but on the credibility of the threat posed by *potential* entrants. Once again, the measurement problems for the critical variable are acute.

The approach used here, which avoids these difficulties, is to search for cross-subsidies from hub routes to other routes. If a multiproduct firm sells all of its outputs in contestable markets, it will be forced to charge the competitive price in each and so will be unable to subsidize one product from the profits earned on another. Thus, differential net returns across markets would be inconsistent with universal contestability.

To avoid an improper aggregation of business and leisure passenger markets, this examination was restricted to Y-class (standard, non-discounted coach) fares—those typically paid by non-discretionary travelers (those with a low price elasticity of demand).[6] Similarly, to avoid the complexities

[5]This was the Justice Department's primary objection to the Northwest-Republic and TWA-Ozark mergers, which consolidated the only two carriers with hubs in Minneapolis-St. Paul and St. Louis, respectively.

[6]A parallel examination of discount fares (those used by discretionary travelers) yielded quite similar results. The details are not reported here in the interests of parsimony.

of deriving route-specific costs, the study was confined to a comparison of route pairs with virtually identical costs.

In essence, the experiment consists of a comparison between the fares paid by two hypothetical travelers. Traveler one buys a single ticket from non-hub city A to non-hub city C with a change of planes in hub city B. Traveler two takes the same flights but purchases separate tickets for each leg of the trip. The costs of serving these two passengers should be approximately the same since they physically take precisely the same trip,[7] so the fares charged them should not differ by much if both segments of the trip are contestable markets. While service between the non-hub cities A and C is likely to be contestable, if not already competitive (since the two points may be connected through several different hubs), the routes from A to B and from B to C may not be contestable since each contains a hub, city B, at one end. If this is true, the sum of the separate fares from A to B and B to C would be significantly greater than the through fare from A to C.

This proposition was tested for a sample of four city pairs (Boston-Phoenix, Boston-San Antonio, Philadelphia-Phoenix, Philadelphia-San Antonio), each of which lacks nonstop service but can be connected through a number of major hubs. As of September 1985, these city pairs could be connected by a total of 53 distinct routings through the relevant hub cities. Associated with each such routing were fares (obtained for September 3, 1985 from SABRE) for the spoke-to-spoke trip and for each of the two hub-spoke segments, for a total of 159 fares.

A comparison between the spoke-to-spoke fare and the sum of the fares for the two corresponding hub-to-spoke segments shows that the latter is, on average, 50.7 percent greater (with a standard error of 1.8 percent). But this simple calculation could be misleading, since spoke-to-spoke fares *via* any given hub are influenced by competition with service offered through other hubs and so may not reflect the actual costs of providing service *via* that routing.[8] In addition, the presence of low-cost, low-fare carriers may depress fares in markets served by these firms. To provide a comparison which controls for these effects, both fare measures were regressed on mileage and a dummy variable for the two low-cost carriers (Braniff and Continental) operating in the sample markets.

The results of this estimation are presented in Table 2. The linear model provides a good fit, with an R^2 of .96 in both cases. Note that the intercepts, reflecting the costs of two takeoffs and landings, are virtually identical in the two regressions. The marginal price per mile, however, is approximately 15 cents per mile (with a standard error of 2 cents) in Equation 1 but is significantly lower at five cents per mile (with a standard error of 1 cent) in Equation 2.

A test of the restriction that the intercept and slope coefficients in the two regressions are equal generates an F statistic of 691. The hypothesis that the fare formulas are the same can, therefore, be rejected at the 1 percent confidence level (for which the critical value of F is 4.98). Thus, even when variations in distance flown are accounted for, a significant difference remains between the through fare (where carriers face actual competition) and the sum of the hub-to-spoke fares (for which even potential competition is unlikely to materialize).

IV. Conclusion

It has been tempting and plausible for economists to assume that entry into airline

[7]There are undoubtedly some savings in transactions costs for the passenger buying the through ticket. However, these should be small relative to the total cost of the trip.

[8]Indeed, traditional industry pricing formulas are based upon the straight-line distance between origin and destination (regardless of the routing used). But note that the use of such a fare structure when it does not mirror costs is *prima facie* evidence that the markets in question are less than fully contestable.

TABLE 2

Fare Equations

Basic Model: $F = A_0 + B_0M + A_1L + B_1LM$

Where M refers to the minimum distance flown by any carrier providing service between the two endpoints and L is a dummy variable for the two low cost carriers in the sample (Braniff and Continental).

Coefficient	Equation 1: F = Sum of fares to each spoke from hub airport	Equation 2: F = Spoke-to-spoke fare through hub airport
A_0	310.42** (35.716)	299.47** (18.426)
B_0	.14867** (.016776)	.055804** (.00907)
A_1	−292.08** (78.826)	−132.14** (42.313)
B_1	−0.43441** (.03529)	−.04543* (.02123)
R^2	.9574	.9618
Adj R^2	.9547	.9594

(Standard errors in parentheses)
** Significant at the 1 percent level.
* Significant at the 5 percent level.

markets is relatively costless and that the bulk of the entry costs may easily be retrieved if the entry proves to be unsuccessful. The findings reported above make it plain that for many markets—especially those having a major hub at one endpoint—this description is at variance with the truth. While entry costs are not large when only a few flights are planned, they rise dramatically as the scale of entry increases.

More importantly, the irretrievability of those entry costs also increases with scale. In addition, entry into a single route serving another carrier's hub may be difficult due to the entrant's inability to attract interlining passengers. Offering connecting service, however, increases the scale at which entry must be attempted and thus greatly increases both the magnitude and irretrievability of entry costs. The fare differential between flights with a hub at one end and the much more vigorously contested spoke-to-spoke flights is—at least in the sample of markets examined here—large enough to suggest that hub carriers are in fact operating as if they have little fear of potential competitors.

Reinforcing this conclusion, it should be noted that a second assumption of contestability theory—that the incumbent is unable to adjust its price in response to entry—also lacks credibility in this industry. Since the sophisticated computer systems used by the major airlines permit them to make daily price adjustments for any flight, it is evident that incumbent carriers have substantial price flexibility even in the very short run.

Limited contestability in many markets does not, however, support the conclusion

that there is a need to reregulate the airlines. While the existence of market power may result in increased fares on some routes, it is not clear that these fares are higher than they would be under regulation. In addition, while fares on spoke-to-hub routes may be higher, there is a compensating gain to passengers. Service on many routes is more frequent and the number of destinations served is larger because of the advantages of the hub and spoke system.

Finally, even where the existence of sunk costs makes entry difficult, the entry barriers are not infinite. At some price, entry does become profitable. In particular, high fares to a hub city may attract competing service through a competitor's hub. (When this happened in the San Antonio-Atlanta market in 1985, the Atlanta hub carriers were forced to reduce fares substantially.) The recent proliferation of hubs in the eastern U.S. can only serve to increase the contestability of markets previously dominated by a single hub carrier.

REFERENCES

Elizabeth E. Bailey, Foreword to William J. Baumol, John C. Panzar, and Robert D. Willig, *Contestable Markets and the Theory of Industry Structure*, New York: Harcourt Brace Jovanovich, Inc., 1982.

_____ and William J. Baumol, "Deregulation and the Theory of Contestable Markets," *Yale Journal on Regulation*, 1, 1984, pp. 111-37.

_____, David R. Graham, and Daniel P. Kaplan, *Deregulating the Airlines*, Cambridge, MA: MIT Press, 1985.

William J. Baumol, John C. Panzar, and Robert D. Willig, *Contestable Markets and the Theory of Industry Structure*, New York: Harcourt Brace Jovanovich, Inc., 1982.

Dennis W. Carlton, William M. Landes, and Richard A. Posner, "Benefits and Costs of Airline Mergers: A Case Study," *Bell Journal of Economics*, 11, Spring 1980, pp. 65-83.

Steven N. S. Cheung, "The Fable of the Bees: An Economic Investigation," *Journal of Law and Economics*, 16, April 1973, pp. 11-33.

Arthur S. Devany, "The Revealed Value of Time in Air Travel," *Review of Economics and Statistics*, 56, February 1974, pp. 77-83.

David R. Graham, Daniel P. Kaplan, and David Sibley, "Efficiency and Competition in the Airline Industry," *Bell Journal of Economics*, 14, Spring 1983, pp. 118-38.

Michael E. Levine, "Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy," *Yale Journal on Regulation*, 4, Spring 1987, pp. 383-494.

David Martindale, "Hubs: The Airlines Change Course," *Frequent Flyer*, June 1986, pp. 60-7.

John R. Meyer and Clinton V. Oster, *Deregulation and the New Airline Entrepreneurs*, Cambridge, MA: MIT Press, 1985.

Thomas Gale Moore, "U.S. Airline Deregulation: its effects on Passengers, Capital and Labor," *Journal of Law and Economics*, 29, April 1986, pp. 1-28.

Steven Morrison and Clifford Winston, *The Economic Effects of Airline Deregulation*, Washington, D.C.: The Brookings Institution, 1986.

Dean Rotbart, "Regional Airlines Are Suggested as Alternatives When Big Boys Get Into Fare Wars Downdraft," *Wall Street Journal*, August 21, 1984.

Steve Swartz and David B. Hilder, "USAir to Acquire PSA for $400 Million To Create Seventh-Largest U.S. Airline," *Wall Street Journal*, December 6, 1986, p. 14.