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AIRLINE DEREGULATION: ANOTHER LOOK

BY

DR. EDWARD A. MORASH*

I. INTRODUCTION

SINCE OVER FIVE years have elapsed from the passage of the Airline Deregulation Act of 1978 (Act)¹ and since the Civil Aeronautics Board (CAB) went out of existence on January 1, 1985,² the time has come to take another look at the effects of airline deregulation. The Act represented the culmination of a long debate over the efficacy of CAB regulation of the airline industry, particularly in regard to rates and market entry.³ This legislation substituted a new policy of open entry and flexible pricing for the airlines while gradually phasing out the CAB.⁴ The proponents of deregulation believed that under such a policy, the airlines would become more efficient and profitable, airline labor would gain more employment opportunities, and consumers would benefit from lower fares.⁵

The initial experiences under deregulation were quite

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¹ Airline Deregulation Act of 1978, Pub. L. No. 95-504, 92 Stat. 1705 (1978) (amending Federal Aviation Act of 1958, 49 U.S.C. §§ 1301-1542 (1982)).

² Airline Deregulation Act of 1978, 49 U.S.C. § 1551(a) (1982).

³ The Autumn 1975 issue of the JOURNAL OF AIR LAW & COMMERCE was devoted to this debate. See 41 J. AIR L. & COM. 573, 573-883 (1975).

⁴ Under the "sunset provisions" of the Act, the CAB's authority over routes expired on December 31, 1981, its control over rates and mergers ended on January 1, 1983, and the CAB itself went out of existence on January 1, 1985. See 49 U.S.C. § 1551(a) (1982).

⁵ See, e.g., Rakowski & Johnson, *Airline Deregulation: Problems and Prospects*, 19 Q. REV. ECON. & BUS. 69, 77 (1979); Miller, *A Perspective on Airline Regulatory Reform*, 41 J. AIR L. & COM. 679 (1975); Simat, Helliesen, & Eicher, *The Effects of Route*

favorable.⁶ Airline load factors increased substantially following the Act, and airline profitability by the end of 1978 reached its highest level in over thirty years.⁷ Although profitability for major airlines fell off in 1979 (Table 1), the major airlines continued to institute more efficient practices and to improve load factors.⁸ Furthermore, the smaller national airlines⁹ continued to enjoy record profits through 1981 (Table 1). In fact, during this period it was also becoming apparent that the nationals were gaining significant market shares at the expense of the majors. Thus, by 1982 the nationals held 13 percent of the American market compared to 8 percent in pre-deregulation periods,¹⁰ a development which some observers considered favorable.¹¹

Despite the early successes of deregulation, the 1980's brought serious doubts about the desirability of complete deregulation.¹² Table 1 shows that although both the ma-

Restriction Removal and Discretionary Authority, REGULATION OF PASSENGER FARES AND COMPETITION AMONG THE AIRLINES 177 (1977).

⁶ AIRLINE DEREGULATION: THE EARLY EXPERIENCE (J. Meyer & C. Oster, Jr. eds. 1982); Breyer & Stein, *Airline Deregulation: The Anatomy of Reform*, in *INSTEAD OF REGULATION*, 28, 31-33 (R. Poole, Jr. ed. 1982); Cohen, *New Air Service and Deregulation: A Study in Transition*, 44 J. AIR L. & COM. 695, 697 (1979).

⁷ Breyer & Stein, *supra* note 6, at 9.

⁸ One of the efficiency-oriented developments in the aftermath of deregulation has been the evolution of air carriers toward "hub systems." See STANDARD AND POOR'S INDUSTRY SURVEYS, *Aerospace and Air Transport, Basic Analysis*, A32 (Dec. 1, 1983) [hereinafter cited as INDUSTRY SURVEYS].

⁹ As a result of the structural changes that occurred in the industry after deregulation, the CAB in 1981 altered its classification system for air carriers. For the most part, "trunk" carriers are now classified as "major airlines" while the former "local service" carriers are reclassified as "national carriers" (see Table 5 for examples). More specifically, the CAB defined "major airlines" as those with annual revenues in excess of \$1 billion while "national airlines" are those carriers with annual revenues between \$75 million and \$1 billion. For a discussion of this classification system, see AIRLINE ECONOMICS xxiv (G. James ed. 1982).

¹⁰ INDUSTRY SURVEYS, *supra* note 8, at 32.

¹¹ Graham & Kaplan, *Airline Deregulation is Working*, REGULATION, May-June 1982, at 26.

¹² See, e.g., Rose, *Three Years After Airline Passenger Deregulation in the United States: A Report Card on Trunkline Carriers*, 21 TRANS. J. 51, 57 (1981); Farris, *The Multiple Meanings and Goals of Deregulation: A Commentary*, 21 TRANS. J. 44, 49 (1981); James, *The Coming Decade in Commercial Aviation*, in AIRLINE ECONOMICS 190 (G. James ed. 1982).

TABLE 1
AIRLINE COMPOSITE FINANCIAL
PERFORMANCE BY CARRIER TYPE
(1973-1983)

	12 Major Airlines										
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982 ^a	1983
1. Passenger Load Factor (%)	52.4	54.7	53.5	55.5	55.5	60.3	62.7	58.2	58.0	58.8	60.1
2. Net Profit Margin (%)	1.5	2.1	Neg.	2.0	3.3	5.1	1.5	Neg.	Neg.	Neg.	Neg.
3. % Earned on Total Capital	3.5	4.6	1.0	5.5	8.0	10.6	4.4	.2	Neg.	Neg.	Neg.
4. Long-term debt-to-equity ^b	1.43	1.30	1.36	1.13	.91	1.06	1.17	2.14	2.66	3.41	4.02

	8 National Airlines										
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
1. Passenger Load Factor (%)	50.3	54.7	56.5	55.4	57.1	60.2	60.8	58.6	59.7	57.9	58.3
2. Net Profit Margin (%)	1.3	3.7	Neg.	3.0	3.8	5.1	5.3	4.3	3.7	Neg.	Neg.
3. % Earned on Total Capital	5.9	9.7	1.3	8.0	9.2	10.5	10.7	9.5	8.8	Neg.	Neg.
4. Long-term debt-to-equity ^b	3.6	2.8	2.9	1.41	1.35	1.33	1.44	1.81	1.42	3.0	3.4

Source: Ratios calculated from THE VALUE LINE INVESTMENT SURV., Ratings and Reports, Part III (various years).

Neg. = Negative

^aBraniff and Continental deleted for 1982 and 1983.

^bCarriers in particular financial difficulty bias the ratios upward.

jor and national carriers have continued to exhibit high load factors¹³ in the post-deregulation period, the majors have experienced four years of negative profit margins as well as negative or nonexistent earnings on total invested capital. Furthermore, for 1982 and 1983, the small nationals have also lapsed into the non-profit category (Table 1) with indications that the majors are now meeting the nationals head-on in the latter's markets.¹⁴ The most recent 1982-1983 airline performance is particularly troubling since fuel costs steadily declined during this period,¹⁵ since airlines obtained significant wage concessions from labor,¹⁶ and since the economy steadily improved.¹⁷

The recent post-deregulation period has also brought a serious deterioration in the capital structures of the major and national airlines. Thus, Table 1 shows that by 1982 and 1983, both major and national airlines had record levels of long-term debt in their capital structures. Although an airline debt to equity ratio of 1 to 1 is often considered desirable,¹⁸ in 1983 the majors (excluding Braniff and Continental) had an average ratio of over 4 to 1, while the nationals had a ratio of over 3 to 1. Furthermore, unlike the pre-deregulation period, the majors, which handle the bulk of industry traffic, now have a higher debt ratio than the nationals (see Table 1).¹⁹

¹³ Load factor is defined as the percentage of seats occupied by revenue passengers in an airplane in relation to the total seats available for loading. See Brenner, *The Significance of Airline Passenger Load Factors*, in *AIRLINE ECONOMICS* 35 (G. James ed. 1982).

¹⁴ In addition, airlines are becoming less cooperative with their computerized reservation systems. See *INDUSTRY SURVEYS*, *supra* note 8, at A34.

¹⁵ The decline in fuel prices began in the middle of 1981 and since then has declined about 20 percent to eighty-five cents per gallon as of August 1983. See *id.* at A29.

¹⁶ *Id.* at A42-A43.

¹⁷ *Id.* at A29.

¹⁸ *Id.* at A40.

¹⁹ While some observers might consider firm capital structure as a management policy variable, it is also true that managerial policy decisions are constrained by environmental conditions and available choices. See Gritta, *Bankruptcy Risks Facing the Major U.S. Airlines*, 48 J. AIR L. & COM. 89, 91-97 (1982); N. TANEJA, *AIRLINES IN TRANSITION* 176-78 (1981).

Although the data in Table 1 may be cause for concern, the data may not fully reflect the prospects of the airline industry in a deregulated environment. For example, a period of transitional adjustment could be expected to occur along with a "shakeout" of some inefficient firms.²⁰ In addition, recessionary conditions over the last several years have also undoubtedly had an adverse impact on airline finances.

A better gauge of airline prospects can be had by recourse to capital market performance. Since the "efficient markets" theory states that capital markets are both future oriented and efficient,²¹ the use of securities market data to measure the long-term effects of regulatory change is an increasingly popular methodology.²² According to the "efficient markets" concept, the price of a firm's securities fully and promptly reflects all publicly available information relevant to the firm; this price behavior is, therefore, an unbiased assessment of a firm's future risk and return potentialities.²³

The present study focuses on the capital market's assessment of the airline industry's prospects in a deregulated environment. After briefly discussing the methodology in the next section of this paper,²⁴ section III will present the results of the analysis.²⁵ Section IV

²⁰ Miller, *The Effects of the Administration's Draft Bill on Air Carrier Finances*, in REGULATION OF PASSENGER FARES AND COMPETITION AMONG THE AIRLINES 200 (1977); Gomez-Ibanez, Oster, & Pickrell, *Airline Deregulation: What's Behind the Recent Losses*, in UNITED STATES DEPARTMENT OF TRANSPORTATION, CONFERENCE ON REGULATORY REFORM IN SURFACE TRANSPORT 214A (June 1983).

²¹ There is a great deal of empirical support for this theory. See, e.g., Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383-423 (1970); R. ROBINSON & D. WRIGHTSMAN, FINANCIAL MARKETS: THE ACCUMULATION AND ALLOCATION OF WEALTH 400-02 (1974); W. SHARPE, PORTFOLIO THEORY AND CAPITAL MARKETS 77-103 (1970).

²² Schwert, *Using Financial Data to Measure Effects of Regulation*, 24 J. L. & ECON. 121-22 (1981); Cavarra, Stover, & Allen, *The Capital Market Effects of Airline Deregulation*, 20 TRANS. J. 73 (1981); Davis, Cunningham, & Tabor, *The Impact of Regulatory Reform and Other Uncertainties on the Airline Stocks: An Analysis of Recent Investor Sentiment*, 21 TRANS. FORUM 157 (1980).

²³ See *supra* note 21.

²⁴ See *infra* notes 28-36 and accompanying text.

²⁵ See *infra* notes 37-48 and accompanying text.

will then provide a discussion of the results and offer explanations for the findings.²⁶ The final two sections of the paper will present some proposals for the future, the overall conclusions, and policy implications for the airline industry.²⁷

II. METHODOLOGY

In order to evaluate investor sentiment toward deregulation and the future of the airline industry, a "before and after" research design was employed with two phases. In the first phase, airline bond yields to maturity²⁸ were compared with three composite "benchmark" indices both before and after deregulation. Bond yields were utilized since debt instruments have been the major source of external funds for the airline industry in the past and are likely to continue to be so in the future.²⁹ In an efficient market, as prospects for the airline industry improve, investors would be expected to bid up the price of airline bonds so that yields to maturity decline.³⁰ Conversely, as the future prospects for air carriers deteriorate, the price of airline bonds would be expected to fall so that yields to maturity increase. Stated alternatively, a decline in airline

²⁶ See *infra* notes 49-80 and accompanying text.

²⁷ See *infra* notes 81-112 and accompanying text.

²⁸ A bond yield to maturity can be defined as the rate of discount which makes the present value of the stream of future interest payments, plus the return of principal at maturity, equal to the current market price of the bond. It is the internal rate of return on a debt instrument held to maturity. Normally, bond yields to maturity are found by recourse to a "yield table." Alternatively, the yield to maturity (YTM) can be approximated by the following formulas:

$$YTM = \frac{\text{Annual coupon interest} + (\text{Discount}/\text{Number years to maturity})}{(\text{Current price} + \text{Par value})/2}$$

or

$$YTM = \frac{\text{Annual coupon interest} - (\text{Premium}/\text{Number years to maturity})}{(\text{Current price} + \text{Par value})/2}$$

"Discount" means the discount received for bonds purchased below par value and "premium" means the additional payment for bonds purchased above par value. See J. COHEN, E. ZINBARG, & A. ZEIKEL, *INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT* 406-07 (1973).

²⁹ *INDUSTRY SURVEYS*, *supra* note 8, at 41.

³⁰ J. COHEN, E. ZINBARG, & A. ZEIKEL, *supra* note 28, at 405-06; R. ROBINSON & D. WRIGHTSMAN, *supra* note 21, at 400.

yields to maturity implies both lower risk and lower future debt costs, while a rise in yields implies higher investor risk and consequently higher future debt costs.³¹

Because general economic conditions and the level of interest rates also affect bond yields,³² it was also necessary to compare airline yields over time to "benchmark" indices. The three indices selected were Moody's composite of all corporate bonds, a composite of motor carrier bonds, and a composite of rail bonds.³³ The selection of a general market indicator as well as two transportation indices should allow for comparison of the results and should strengthen or weaken any conclusions achieved. The resulting "spreads" were calculated between airline bond yields and the corporate, motor, and rail yields over the period 1973 through 1984. The "spread analyses"³⁴ were then evaluated for the pre-deregulation period (1973-1977), the early post-deregulation period (1978-1980), and the recent post-deregulation period (1981-1984).

The second phase of the research effort was used as a check to verify the results of the first phase. Airline bond ratings were evaluated over time for the pre-deregulation and post-deregulation periods. Moody's bond ratings range from the highest rating of "Aaa" to the lowest rating of "C." While each of the nine Moody rating categories has a distinct meaning, bonds rated below "Ba" are considered to "lack characteristics of the desirable investment."³⁵

³¹ See Melicher & Rush, *Systematic Risk, Financial Data, and Bond Rating Relationships in a Regulated Industry Environment*, 29 J. FIN. 537, 537 (1974); Hettenhouse & Sartoris, *An Analysis of the Informational Value of Bond-Ratings Changes*, 16 Q. REV. ECON. & BUS. 65, 65 (1976); West, *Bond Ratings, Bond Yields, and Financial Regulation: Some Findings*, 16 J. LAW & ECON. 159, 163 (1973); Bhandari, *What's in a Change in an Industrial Bond Rating?*, 11 J. BUS. RESEARCH 91, 103 (1983).

³² J. COHEN, E. ZINBARG, & A. ZEIKEL, *supra* note 28, at 405, 418-19.

³³ The data for the airlines and the corporate, motor, and rail indices were all obtained from the same monthly editions of MOODY'S INVESTORS SERVICE, MOODY'S BOND RECORD, vols. 40-51 (1973-1984).

³⁴ See J. COHEN, E. ZINBARG, & A. ZEIKEL, *supra* note 28, at 418-19.

³⁵ See, e.g., MOODY'S INVESTORS SERVICE, MOODY'S BOND RECORD, vol. 51 no. 6, at 1 (Aug. 1984).

The data for airline bond yields to maturity and for bond ratings were broken down for the major airlines and the national airlines. The sample of air carriers consisted of nine major airlines and six national airlines.³⁶ Only bonds which were outstanding for virtually the entire period were utilized in the analysis. When a firm had several outstanding bonds, an average yield and average rating were calculated for the individual firm for the relevant time period.

III. RESULTS: SPREAD ANALYSIS AND RATINGS BEFORE AND AFTER DEREGULATION

A. *Airline Bond Yields Compared to Corporate Yields*

Table 2 compares average airline bond yields to maturity with a composite of all corporate bond yields for the pre-deregulation, early post-deregulation, and the most recent post-deregulation periods. The "spread analysis" in Table 2 shows that initially the bond market reacted quite favorably to airline deregulation. That is, the spreads between airline bond yields and the composite corporate yields narrowed substantially during the early post-deregulation period (1978-1980). There is also an indication in Table 2 that the market reacted favorably to the 1976-1977 CAB attempts at "de facto deregulation" during the Chairmanships of Robson and Kahn,³⁷ since the airline/corporate spreads actually began to decline during the 1976-1977 period. This improvement acceler-

³⁶ The major airlines included American Airlines, Braniff International, Continental Air Lines, Eastern Air Lines, Pan Am World, Trans World, United Air Lines, U.S.Air, and Western Air Lines. The national airlines consisted of Frontier Airlines, Hawaiian Airlines, Ozark Air Lines, P.S.A., Texas International, and World Airways.

³⁷ For a historical review of this period, see Altshuler & Teal, *The Political Economy of Airline Deregulation*, in CURRENT ISSUES IN TRANSPORTATION POLICY 57 (A. Altshuler ed. 1979); P. BIEDERMAN, *THE U.S. AIRLINE INDUSTRY: END OF AN ERA* 111-13 (1982); R. KANE & A. VOSE, *AIR TRANSPORTATION* 10-11 (7th ed. 1979).

TABLE 2
 AIRLINE AVERAGE BOND YIELDS TO
 MATURITY COMPARED TO
 AVERAGE CORPORATE
 YIELDS
 (PERCENTAGES)^a

Period ^b		Majors' Average Bond Yield (A)	Nationals' Average Bond Yield (B)	Ave. Composite Corporate Yield (C)	Spread Majors' (A-C)	Spread Nationals (B-C)
		(percent)	(percent)	(percent)	(percent)	(percent)
I.	1973 June	10.53	10.29	7.69	2.84	2.60
	1974 June	11.91	11.95	8.89	3.02	3.06
	1975 June	12.89	12.47	9.55	3.34	2.92
	1976 June	11.05	11.55	9.16	1.89	2.39
	1977 June	9.84	10.18	8.38	1.46	1.80
II.	1978 June	10.26	10.54	9.13	1.13	1.41
	1979 June	10.94	11.76	9.81	1.13	1.95
	1980 June	12.08	13.00	11.64	.44	1.36
	September	13.70	13.51	12.80	.90	.71
	December	14.92	14.60	14.04	.88	.56
III.	1981 March	14.44	14.61	14.26	.18	.35
	June	15.44	14.08	14.76	.68	-.68
	September	18.49	16.44	16.18	2.31	.26
	December	17.38	15.57	15.38	2.00	.19
	1982 March	18.76	19.08	15.68	3.08	3.40
	June	19.12	18.57	15.77	3.35	2.80
	September	17.05	16.23	14.34	2.71	1.89
	December	15.08	15.76	13.02	2.06	2.74
	1983 March	13.88	14.56	12.71	1.17	1.85
	June	15.10	14.54	12.54	2.56	2.00
	September	15.03	14.90	12.91	2.12	1.99
	December	15.26	14.65	13.07	2.19	1.58
	1984 March	15.18	14.52	13.33	1.85	1.19
	June	15.80	15.30	14.40	1.40	.90
	August	16.00	15.44	13.78	2.22	1.66

Source: Calculated from MOODY'S BOND RECORD, monthly editions.

^aNonconvertible issues.

^bPeriod I. represents the pre-deregulation period, period II. indicates the early post-deregulation period, while period III. represents the most recent post-deregulation period.

ated during the early post-deregulation period and manifested itself for both the major airlines and the smaller nationals, although the nationals improved at a faster rate during the latter part of 1980 and the first part of 1981 (Table 2). It was during this period that the nationals were surpassing the majors in earnings performance, and it was becoming apparent that the nationals were gaining market share at the expense of the majors.³⁸

Despite the bond market's initial favorable reaction to airline deregulation, a reassessment apparently began to take place during the latter part of 1981. Table 2 shows that beginning in the September quarter of 1981 for the majors and the March quarter of 1982 for the nationals, the yield spreads began to deteriorate substantially. The deterioration in yield spreads continued throughout the 1981-1984 period at a time when airline fuel costs were declining,³⁹ general interest rates were falling,⁴⁰ airlines were increasingly able to bring labor costs under control,⁴¹ and airline productivity was increasing.⁴² Furthermore, during 1983-1984 the economy was making steady progress toward recovery,⁴³ so that Table 2 indicates that the bond market was not imputing any advantage from an economic upturn to the major and national airlines. In fact, an inspection of the recent yield spreads in Table 2 indicates that airline prospects have not been as dismal since the oil embargo/recession of 1973 to 1975.

In summary, these results suggest that in the recent post-deregulation period (1981-1984), the bond market is less sanguine about deregulation and the industry's future than in the period immediately following deregulation.

³⁸ Davis, Cunningham, and Tabor, *supra* note 22, at 157; Ellison, *The Structural Change of the Airline Industry Following Deregulation*, 21 TRANSP. J. 58, 67 (1982).

³⁹ INDUSTRY SURVEYS, *supra* note 8, at A29, A42.

⁴⁰ *Id.*

⁴¹ *Id.* at A28.

⁴² STANDARD & POOR'S INDUSTRY SURVEYS, *Aerospace and Air Transport, Current Analysis* A2-A3, A6 (June 30, 1983)[hereinafter cited as INDUSTRY SURVEYS, *Current Analysis*].

⁴³ *Id.* at 2, 7.

Furthermore, the economy expanded steadily during 1983-1984. These results imply that airline capital costs (debt costs) have risen sharply relative to the general market during the recent post-deregulation period.

B. *Airline Bond Yields Compared to Motor and Rail Yields*

Table 3 compares average airline bond yields to maturity with the yields for both motor carriers and rail carriers⁴⁴ for the same time periods previously examined. Although both motor carriers and rail carriers received some regulatory reform in 1980,⁴⁵ the extent of deregulation was not nearly as comprehensive as that for air carriers. Motor and rail carriers are still regulated as to rates, entry, and abandonment.⁴⁶

The results of the "spread analysis" in Table 3 are similar to the results achieved with the corporate yields in Table 2. Initially, the airline spreads declined substantially during the early post-deregulation period (1978-1980) from the pre-deregulation period (1973-1977). Although the airline improvement manifested itself in both the motor and rail comparisons, the improvement over the motor yields was somewhat greater.

In contrast, during the last two quarters of 1981, the bond market began to reassess the impact of deregulation on the airlines' prospects. Table 3 shows that beginning in the September quarter of 1981, the spreads between airline yields and both motor and rail yields increased dramatically. This deterioration in airline performance continued throughout the 1981-1984 period at a time when

⁴⁴ For the rail index, the 24 carriers in Moody's Rail Bond Yield Averages were utilized. For the motor index, a sample of motor carrier bonds was selected. See *supra* note 33.

⁴⁵ The Motor Carrier Act was approved July 1, 1980 while the Staggers Rail Act was approved October 14, 1980. See Motor Carrier Act of 1980, Pub. L. No. 96-296, 94 Stat. 793 (1980) (codified at 49 U.S.C. § 10521 (1982)); Staggers Rail Act of 1980, Pub. L. No. 96-448, 94 Stat. 1895 (1980) (codified at 49 U.S.C. § 10101 (1982)).

⁴⁶ 49 U.S.C. §§ 10701-10766, 10903-10906, 10921-10934 (1982).

TABLE 3
AIRLINE AVERAGE BOND YIELDS TO
MATURITY COMPARED TO
MOTOR, RAIL, AND
CORPORATE YIELDS
(PERCENTAGES)^a

Time Period ^b	Airline Average Bond Yields ^c	Motor Carrier Average Bond Yields	Rail Average Bond Yields	Spread Air/Motor	Spread Air/Rail	Spread Air/Corporate
	(A)	(B)	(C)	(A-B)	(A-C)	(A-Table 2)
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
1973 June	10.41	8.35	8.07	2.06	2.34	2.72
1974 June	11.93	8.93	8.89	3.00	3.04	3.04
I. 1975 June	12.68	11.77	9.40	.91	3.28	3.13
1976 June	11.30	10.15	8.88	1.15	2.42	2.14
1977 June	10.01	9.14	8.06	.87	1.95	1.63
1978 June	10.40	9.58	8.68	.82	1.72	1.27
II. 1979 June	11.35	9.80	9.44	1.55	1.91	1.54
1980 June	12.54	11.69	11.26	.85	1.28	.90
1981 March	14.53	13.32	12.72	1.21	1.81	.27
June	14.76	14.05	13.09	.71	1.67	.00
Sept.	17.47	14.53	13.71	<u>2.94</u>	<u>3.76</u>	<u>1.29</u>
Dec.	16.45	14.45	13.84	<u>2.00</u>	<u>2.61</u>	<u>1.07</u>
III. 1982 March	18.92	13.75	14.00	5.17	4.92	3.24
June	18.85	14.41	13.99	4.44	4.86	3.08
Sept.	16.64	13.41	13.69	3.23	2.95	2.30
Dec.	15.42	12.93	12.60	2.49	2.82	2.40
1983 March	14.22	12.06	12.11	2.16	2.11	1.51
June	14.82	12.05	11.78	2.77	3.04	2.28
Sept.	14.97	12.25	12.04	2.72	2.93	2.06
Dec.	15.01	12.06	12.46	2.95	2.55	1.94
1984 March	14.92	12.40	12.53	2.52	2.39	1.59
June	15.60	13.06	13.31	2.54	2.29	1.20
Aug.	15.77	13.21	13.82	2.56	1.95	1.99

Source: Calculated from MOODY'S BOND RECORD, monthly editions.

^aNonconvertible issues.

^bPeriod I. represents the pre-deregulation period, period II. indicates the early post-deregulation period, while period III. represents the most recent post-deregulation period.

^cMajor and national airlines.

airlines were becoming more efficient, fuel costs were declining, and the economy was expanding.⁴⁷ Paradoxically, the airline yield spreads between air and motor carriers (Table 3) are now more unfavorable than during the oil embargo and recession of 1973 (although air carriers are much more fuel intensive than motor carriers). These results are consistent with the earlier comparisons for the composite corporate yields in that airlines are now viewed less favorably by the capital market.

C. *Airline Bond Ratings Before and After Deregulation*

As a final check on the results, Table 4 compares airline bond ratings for the periods before deregulation with the post-deregulation period. As shown in Table 4, a majority of both the major airlines and the nationals have suffered a decline in bond ratings during the post-deregulation period. The bottom of Table 4 shows that 67 percent of the majors and 75 percent of the national/other category had a lower bond rating in 1984 than during either the 1973 oil embargo or the entire 1973-1977 pre-deregulation period. Furthermore, an inspection of the data indicates that a number of these carriers have experienced several downgradings in rating during the post-deregulation period. In fact, only one carrier, U.S.Air, has experienced a rating increase during the recent post-deregulation periods.

The results of the examination of bond ratings are consistent with the earlier "spread analyses" in that airlines are looked upon less favorably by the capital market following deregulation. Since many financial institutions use a rating of "Ba" as the minimum standard for acceptable investment risk,⁴⁸ it is apparent from Table 4 that most airlines no longer meet this minimum standard. The im-

⁴⁷ INDUSTRY SURVEYS, *Current Analysis*, *supra* note 42, at A2-A3, A6-A7.

⁴⁸ See West, *supra* note 31, at 163; Hettenhouse & Sartoris, *supra* note 31, at 65.

TABLE 4
AIRLINE BOND RATINGS BEFORE AND
AFTER DEREGULATION (1973-1984)

Carrier	1973 Rating ^a	Average Rating ^a 1973-1977	1984 Rating ^a	Rating Change
<u>Majors</u>				
American Airlines	Baa	Baa	Baa	No Change
Braniff International	Ba	Baa	Ca	Decrease
Continental Air Lines ^b	Ba	Ba	C	Decrease
Eastern Air Lines ^b	B	B	Caa	Decrease
Pan Am World	Ba	Ba	B	Decrease
Trans World Corp.	Baa	Ba	Ba	No Change
United Air Lines	Ba	Ba	B	Decrease
U.S. Air	B	B	Baa	Increase
Western Air Lines	Ba	Ba	Caa	Decrease
<u>Nationals and Others</u>				
Frontier Airlines	B	B	B	No Change
Hawaiian Airlines ^b	-	Caa	Ca	Decrease
Ozark Air Lines ^b	B	B	B	No Change
P.S.A.	Ba	Ba	B	Decrease
Texas Intl. Air	-	B	C	Decrease
World Airways	-	Ba	Caa	Decrease
Flying Tiger	Baa	A	B	Decrease
Seaboard World Air ^b	B	B	Caa	Decrease
<u>Totals</u>		<u>Majors</u>	<u>Nationals and Others</u>	
Percent No Change	22% (2)		25% (2)	
Percent Increase	11% (1)		0% (0)	
Percent Decrease	67% (6)		75% (6)	
	100% (9)		100% (8)	

^aMoody's corporate bond ratings are from highest to lowest: Aaa, Aa, A, Baa, Ba, B, Caa, Ca, C. Bonds which are rated below "Ba" are generally considered to "lack characteristics of the desirable investment."

^bConvertible bonds.

plication of these results is that deregulation has accompanied an increase in airline investment risk and therefore an increase in the airlines' future debt costs.

IV. DISCUSSION OF RESULTS

The results of this study indicate that the capital market is not enthusiastic about the prospects of the airline industry in a deregulated environment. Although the bond market initially looked upon deregulation favorably, a reassessment of airline prospects began to take place during the latter part of 1981 for both the major and national carriers. Thus, the spreads between airline bond yields to maturity and the composite indices of corporate, motor, and rail bond yields deteriorated substantially during the 1981 through 1984 period. Furthermore, as of the end of 1984, a majority of both the major and national airlines now have lower bond ratings than during the oil embargo/recession of 1973 to 1975. In sum, these results suggest that the airline industry's future under deregulation looks bleak.

Much of the recent financial difficulty of the airline industry can be traced directly to the effects of deregulation on rates and market entry. Although airlines have always used price discounts to some extent, over the last few years rate discounting has become rampant, particularly on the long-haul, high-density routes. While prior to the Act only 45 percent of all passengers travelled under discounted tickets, as of 1983 almost 90 percent of all passengers were travelling under discount.⁴⁹ Since approximately one-half of airline passengers are business travellers⁵⁰ and since this market segment is relatively price inelastic,⁵¹ the heavy use of discounts appears highly

⁴⁹ See *INDUSTRY SURVEYS*, *supra* note 8, at A28, A42.

⁵⁰ ALTHSULER & TEAL, *supra* note 37, at 54-55.

⁵¹ *Id.*

TABLE 5
 AIRLINE REVENUES PER PASSENGER-MILE
 (YIELDS)
 (YEAR-TO-YEAR PERCENTAGE CHANGES)

	1981		1982			1983
	4th Q	1st Q	2nd Q	3rd Q	4th Q	1st Q
Major Airlines						
American	- 1.7	-15.0	-11.5	- 2.6	- 7.4	- 8.6
Continental	+10.2	- 8.4	-11.1	—	—	-12.3
Delta	+12.3	- 2.1	- 0.1	+ 3.5	- 7.2	-15.5
Eastern	+ 4.6	- 1.5	+ 3.2	+ 3.1	- 3.1	- 5.7
Northwest	+ 2.8	- 4.7	- 6.6	- 2.9	-11.7	- 2.5
Pan American	- 3.9	- 4.2	+ 1.3	+ 2.2	+ 8.5	+ 2.1
Republic	- 3.2	- 8.4	-14.3	-12.8	-12.0	-18.9
TWA	+ 5.5	- 7.7	- 5.6	- 3.5	- 3.8	-13.6
United	- 0.6	-14.0	- 6.5	- 1.8	- 5.0	- 8.1
U.S.Air	+ 8.7	+ 6.3	+ 4.6	+ 6.7	- 4.3	- 6.8
Western	+ 1.4	+ 1.0	-11.4	- 2.4	-12.0	-19.3
National Airlines						
Air Florida	12.4	- 9.3	+ 9.8	+ 3.4	—	+ 4.5
Frontier	+ 1.7	- 0.8	- 9.1	- 9.2	- 9.6	-20.9
Ozark	+ 8.0	- 1.5	- 5.3	- 5.8	—	—
PSA	- 1.8	- 2.9	- 3.2	-10.9	- 5.8	- 7.7
Southwest	+ 8.6	- 4.3	- 8.7	- 5.1	—	+ 1.8

**MAJOR AIRLINES AVERAGE TON-MILE AND BREAK-EVEN LOAD
 FACTORS (1974-1982)**

	No. Total Passengers Carried (thousands) ^a (A)	No. Total Ton- Miles Passengers & Freight (millions) ^a (B)	Average Ton- Mile Load Factor Pass. & Frt. ^b (C)	Average Break-even Ton- Mile Load Factor ^{bc} (D)	Deficit (C-D)
1982	208,432	21,046	52.9%	53.8%	- .9%
1981	205,363	20,537	50.9%	52.3%	-1.4%
1980	221,979	21,199	50.5%	50.9%	- .4%
1979	211,554	21,257	54.2%	53.2%	1.0%
1978	196,073	19,712	52.6%	48.9%	3.7%
1977	172,231	17,348	48.8%	46.3%	2.5%
1976	160,451	16,171	48.3%	49.0%	- .7%
1975	147,428	14,794	46.6%	46.6%	.0%
1974	147,999	14,699	47.2%	45.0%	2.2%

Source: STANDARD AND POOR'S INDUSTRY SURVEYS, *Aerospace and Air Transport, Current and Basic Analysis*, June 30 and December 1, 1983.

^aDomestic scheduled

^bTotal operations. Braniff and Continental eliminated for 1982.

^cThe percent of available capacity that must be sold to cover all expenses for passengers and freight.

questionable as a sound business practice. Furthermore, because of such practices, complaints of predatory pricing or objectionable price discrimination abound.⁵² For example, as of 1983 it cost more to fly from Buffalo to Albany than from Buffalo to Boston via Albany in the same plane at the same time.⁵³ In such cases, the short-haul passengers are subsidizing the discounts for the long-haul passengers.

Table 5 also highlights some of these destructive pricing practices in the post-deregulation period. The top-half of Table 5 indicates the substantial decline in airline revenue yields (passenger revenue per passenger mile) over the last few years. In its essence, the upper portion of Table 5 reveals that airlines were carrying more passengers at a loss. Similarly, the bottom-half of Table 5 shows that while airlines have increased their load factors in the post-deregulation period, their breakeven load factors⁵⁴ have increased at a faster rate, resulting in deficits. The lower portion of Table 5 also suggests the unprofitable nature of much of airline pricing, which in turn is reflected by the capital market's assessment of the industry's prospects.

One question posed by the results of this research is why airlines would require some form of regulatory protection. The answer lies in the public interest nature of the industry⁵⁵ and its inherent tendencies toward instability and destructive competition because of certain eco-

⁵² Giesecking, *Cloudy Skies for U.S. Airlines*, TRAVEL HOLIDAY, July 1982 at 69; Bernstein, *Rumblings of Reregulation*, FORTUNE, January 10, 1983, at 17, 18; INDUSTRY SURVEYS, *Current Analysis*, *supra* note 42, at A3-A4. The Airline Deregulation Act prohibits predatory pricing but doesn't specifically define it. See 49 U.S.C. § 1482(d)(4) (1982).

⁵³ Bernstein, *supra* note 52, at 17.

⁵⁴ A "breakeven load factor" is the percent of available capacity that must be sold to cover all expenses. During 1982 and 1983, the breakeven load factor on some airline routes was over one hundred percent, which precludes carrier profits. See, INDUSTRY SURVEYS, *Current Analysis*, *supra* note 42, at A5.

⁵⁵ Lloyd-Jones, *Deregulation and Its Potential Effect on Airline Operations*, 41 J. AIR L. & COM. 815, 836 (1975); Russell, *The CAB and the Consumer*, 40 J. AIR L. & COM. 51 (1974).

conomic characteristics it possesses.⁵⁶ The airline industry was originally regulated because of industry instability and the potential for destructive competition.⁵⁷ As a 1938 House Report stated:

The result of this chaotic situation of the air carriers has been to shake the faith of the investing public in their financial stability and to prevent the flow of funds into the industry. Unless legislation is enacted which would give carriers reasonable assurance of the permanency of their operation and would protect them from cut-throat competition, a number of the airlines will soon be in serious financial trouble.⁵⁸

The latter statement, of course, has a contemporary and "familiar ring" to it.

Several economic characteristics of the airline industry in particular tend to promote instability and destructive competition in the absence of regulatory moderation. First, it is well known that airline demand is highly variable as to time of day, time of month, and time of year⁵⁹ and that the transportation output can neither be stored nor inventoried.⁶⁰ In addition, different travelling segments exhibit different price elasticities of demand (for example, business travel versus vacation travel);⁶¹ once a plane is scheduled, however, most of the costs are fixed in

⁵⁶ J. KNEAFSEY, J. MOLLOY, R. SIMPSON, & N. TANEJA, *THE NEED FOR STABILITY IN THE AIRLINE INDUSTRY MARKET STRUCTURE: DEREGULATION AFTER FOUR YEARS* 30-33 (1983).

⁵⁷ CIVIL AERONAUTICS BOARD, *REPORT OF THE CAB SPECIAL STAFF ON REGULATORY REFORM* 20 (July 1975) [hereinafter cited as CAB Report]. Lloyd-Jones, *supra* note 55, at 815; Beane, *The Antitrust Implications of Airline Deregulation*, 45 J. AIR L. & COM. 1001, 1002 (1980); Callison, *Airline Deregulation-Only Partially A Hoax: The Current Status of the Airline Deregulation Movement*, 45 J. AIR L. & COM. 961, 962-67 (1980); Breyer & Stein, *supra* note 6, at 10-13.

⁵⁸ H. R. REP. NO. 2254, 75th Cong., 3rd Sess. 2 (1938).

⁵⁹ For a statistical representation of this demand variability, see W. O'CONNOR, *AN INTRODUCTION TO AIRLINE ECONOMICS* 65-67 (1978). See also Thornton, *Deregulation: The C.A.B. and its Critics*, 43 J. AIR L. & COM. 641, 650 (1977).

⁶⁰ Lloyd-Jones, *supra* note 55, at 837; G. DOUGLAS & J. MILLER, *ECONOMIC REGULATION OF DOMESTIC AIR TRANSPORT: THEORY AND POLICY* 4, 45 (1974).

⁶¹ P. BIEDERMAN, *supra* note 37, at 153; S. SHAW, *AIR TRANSPORT* 154 (1982).

the short-run.⁶² Hence, airlines have a natural incentive to price incrementally or to use some form of price discrimination. To work effectively, however, competitive devices such as stand-by discounts and minimum-stay discounts, require that an airline have the ability to separate different market segments for pricing purposes. Some economists have long suggested that over time, airlines have great difficulty in effectively separating traffic and market segments in an open entry/open pricing environment.⁶³ In fact, the current situation of almost ninety percent of all passengers flying under some type of discount lends credence to this view.⁶⁴

Second, it is difficult to accurately forecast the future demand for airline services and to match future capacity to this forecasted demand. Airline demand is highly susceptible to swings in the economy,⁶⁵ and is income elastic (depends on the income levels of travelers).⁶⁶ Much travel, especially near holidays, is similar to a postponable durable.⁶⁷ Moreover, there is a long leadtime between equipment orders and their receipt.⁶⁸ For example, the wide-bodied jets were ordered at a time of optimistic demand forecasts and stable fuel prices. When the orders were finally received, neither existed.⁶⁹ The difficulty in forecasting demand alone tends to promote excess capacity in the industry which in turn can cause destructive price competition in the absence of regulatory con-

⁶² S. SHAW, *supra* note 61, at 93; Thornton, *supra* note 59, at 84; Brenner, *The Need for Continued Regulation of Air Transportation*, 41 J. AIR L. & COM. 794 (1975).

⁶³ S. SHAW, *supra* note 61, at 167; R. KANE & A. VOSE, *supra* note 37, at 10-14; N. TANEJA, *supra* note 19, at 126-31; Altshuler & Teal, *supra* note 37 at 54-55; Thayer, *Comparative Research in Transportation; Methodology Without Theory*, in 2 UNITED STATES DEPT. OF TRANSPORTATION: CONFERENCE ON REGULATORY REFORM IN SURFACE TRANSPORTATION 121, 124 (Mar. 1983).

⁶⁴ INDUSTRY SURVEYS, *supra* note 8, at A28, A42.

⁶⁵ Ellison, *supra* note 38, at 60.

⁶⁶ P. BIEDERMAN, *supra* note 37, at 18, 22; Breyer & Stein, *supra* note 6, at 8.

⁶⁷ P. BIEDERMAN, *supra* note 37, at 29.

⁶⁸ R. MANDELL, FINANCING THE CAPITAL REQUIREMENTS OF THE U.S. AIRLINE INDUSTRY IN THE 1980's at xvi, 12 (1979).

⁶⁹ See Thornton, *supra* note 59, at 643.

straints. In addition, the problem of excess capacity⁷⁰ is likely to become worse as more airport slots become available in the aftermath of the air traffic controllers' strike.⁷¹

Third, most airline markets are characterized by oligopolistic conditions in that such markets can reasonably support only a limited number of competitors.⁷² Such a situation would normally result in "sticky" prices.⁷³ But airline markets are also characterized by unusually low short-term barriers to entry which can engender excess capacity and destructive competition. Market entry is relatively easy since (1) airline transportation is largely undifferentiated in the minds of consumers (and therefore is price sensitive),⁷⁴ (2) airline productive equipment can readily be redeployed (high factor mobility),⁷⁵ and (3) second-hand aircraft are readily available (low-leasing cost or direct investment costs).⁷⁶

Given the cost structure of the industry and the absence of significant barriers to market entry, unrestrained price competition could potentially have deleterious effects on all carriers. For example, in 1982 and 1983, Delta Airlines attempted to resist widespread discounting on many of its routes. The net result was a loss of market share. Delta's pricing policy was thereafter modified to meet all competitor discounts, resulting in unprofitably low prices for this traditionally healthy airline.⁷⁷ In short, the low barriers to entry in the airline industry and the limited number of competitors which individual markets can sup-

⁷⁰ See generally Thayer, *And Now the Deregulators: When Will They Learn?*, 43 J. AIR L. & COM. 661, 671-72. (1977).

⁷¹ See STANDARD AND POOR'S INDUSTRY SURVEYS, *Air Transport, Current Analysis*, 48 (Mar. 4, 1982); Thayer, *supra* note 63, at 133.

⁷² Thornton, *supra* note 59, at 665-67; P. BIEDERMAN, *supra* note 37, at 103, 150.

⁷³ Thornton, *supra* note 59, at 656.

⁷⁴ Lloyd-Jones, *supra* note 55, at 830; W. O'CONNOR, *supra* note 59, at 5-6.

⁷⁵ S. SHAW, *supra* note 61, at 92; W. O'CONNOR, *supra* note 59, at 5-6; C.A.B. REPORT, *supra* note 57, at 120; Lloyd-Jones, *supra* note 55, at 838.

⁷⁶ BREYER & STEIN, *supra* note 6, at 8; Oster, *The New Entrant Airlines: Implications for Transportation Regulatory Reform*, in UNITED STATES DEPT. OF TRANSPORTATION, CONFERENCE ON REGULATORY REFORM IN SURFACE TRANSPORT 324-25 (June 1983); INDUSTRY SURVEYS, *supra* note 8, at 41.

⁷⁷ INDUSTRY SURVEYS, *Current Analysis*, *supra* note 42, at 3-4.

port tend to promote excess capacity and destructive price competition.⁷⁸

Fourth, other economic characteristics can also provoke industry instability. Harm can possibly be done to integrated route systems (balkanization) and interdependent industries by new non-union entrants.⁷⁹ Additionally, the "S curve phenomenon" suggests that firms will compete in terms of excess capacity because the airline with the greatest number of flights will receive a proportionally greater market share.⁸⁰ Finally, some travel agents or arrangers may have the ability to exercise leverage in obtaining revenue commissions.⁸¹ While any one of the preceding economic characteristics might occur in another industry, they are aggregated only in the airline industry. Thus, absent some limited regulation, these economic characteristics tend to promote destructive competition in an industry vested with a public interest in commerce, national defense, and safety.

V. ALTERNATIVE PROPOSALS FOR THE FUTURE

The previous section and the results of this study suggest that destructive price competition and objectionable price discrimination can be traced directly to deregulation and the unique economic characteristics of the airline industry. These economic characteristics relate to continuing tendencies toward excess capacity, low natural barriers to market entry, markets which can support only

⁷⁸ Lloyd-Jones, *supra* note 55, at 839; Oster, *supra* note 75, at 400; W. O'CONNOR, *supra* note 59, at 5-6; Heymsfeld, *An Introduction to Regulatory Reform for Air Transportation*, 41 J. AIR L. & COM. 665, 671 (1975).

⁷⁹ Lloyd-Jones, *supra* note 55, at 822, 825, 828; S. SHAW, *supra* note 61, at 93; Thayer, *supra* note 63, at 128; N. TANEJA, *supra* note 19, at 129; INDUSTRY SURVEYS, *supra* note 8, at A34.

⁸⁰ W. FRUHAN, JR., *THE FIGHT FOR COMPETITIVE ADVANTAGE: A STUDY OF THE UNITED STATES DOMESTIC TRUNK AIR CARRIERS* 126-129 (1972); P. Biederman, *supra* note 37, at 26, 48, 153, 169-170.

⁸¹ In 1982 travel agents sold approximately two-thirds of airline tickets; travel commissions represented 6.4 percent of total airline operating costs, compared to 3.5 percent in pre-deregulation periods. See AIRLINE ECONOMICS *supra* note 9, at 196, 205; S. SHAW, *supra* note 61, at 182-86; Thornton, *supra* note 59, at 658; INDUSTRY SURVEYS, *supra* note 8, at A43.

a limited number of competitors, and an inability of the airlines to segregate price sensitive segments of the market from other market segments over time. Furthermore, recessionary conditions also exacerbate industry problems. Absent some form of regulatory moderation, these economic conditions will promote destructive price competition, cross-subsidization of markets, and industry instability. As a result, the financial market is not enthusiastic about the airline industry's prospects in a completely deregulated environment.

The recent financial difficulty of the airline industry and the foregoing economic observations commend some form of regulation of airline practices. Such proposals are emanating from several sources.⁸² Two proposals which would deal directly with the problem of excess airline capacity, and thus destructive price competition, favor either a reimposition of entry controls or the collective adjustment of flight schedules by the airlines themselves. In regard to entry controls, it is unlikely that governmental policy would ever again directly limit the number of competitors by returning to the restrictive certification process of the past. It has recently been suggested, however, that the United States Department of Transportation ration or "auction-off" airport slots to eliminate congestion at airports.⁸³ This policy, of course, would limit entry and would indirectly reduce excessive price competition.

In regard to the joint scheduling of services, one recommendation would provide American air carriers with

⁸² Bernstein, *Rumblings of Reregulation*, FORTUNE, Jan. 10, 1983, at 17; Ott, *Boeing Official Decries Industry's Condition*, AV. WEEK & SPACE TECH., Oct. 31, 1983, at 28; Glines, *Deregulation, the Bomb That Exploded*, AIR LINE PILOT, Nov. 1983, at 16; Giesekeing, *Cloudy Skies for U. S. Airlines*, TRAVEL HOLIDAY, July 1982, at 69; Gregory, *Airlines in Endless Transition*, AV. WEEK & SPACE TECH., Nov. 14, 1983, at 19; *Congress May Reconsider Deregulation*, AV. WEEK & SPACE TECH., Mar. 14, 1983, at 194; *AFL-CIO Demands End to Deregulation of Air Industry and Anti-Union Acts*, TRAFFIC WORLD, Dec. 12, 1983, at 26; S. SHAW, *supra* note 61, at 235; N. TANEJA, AIRLINE PLANNING: CORPORATE, FINANCIAL AND MARKETING 6-7, 121 (1982).

⁸³ INDUSTRY SURVEYS, *supra* note 8, at A28. See also DOT on Slot Allocations, TRAFFIC WORLD, June 6, 1983, at 8; and Ott, *supra* note 81, at 29.

antitrust immunity to jointly discuss and adjust their flight departures, arrivals, and schedules.⁸⁴ Such a proposal would be similar to the Canadian airline policy of "cooperation" where competing carriers have recently been allowed to "rationalize their services" by providing joint scheduling of equipment, interconnection of flights, joint handling at airports, and cooperative marketing of the services.⁸⁵ The purported advantages of this policy to consumers are more stable prices, more direct flights to destination (yet fewer flights to choose from), and a greater selection of departure times since most airlines currently schedule flights during peak periods.⁸⁶ The disadvantages to consumers are fewer deep discounts and less price competition since fewer carriers would be competing between origin and destination points. For the airlines, the major advantages would be a reduction in destructive price competition, better capacity utilization, increased load factors, improved interconnected scheduling, and most importantly, an improvement in financial performance.⁸⁷ It is noteworthy, however, that even during the restrictive CAB regulatory periods of the past, collective reductions in capacity were not allowed.⁸⁸ Consequently, as with the proposal for regulatory entry controls, the likelihood of discussions among competing airlines over joint scheduling is not great.

An additional, and preferable, proposal relates to airline pricing practices. While rate controls would not eliminate the industry's excess capacity, they would relieve the symptomatic problems of destructive price competition, objectionable price discrimination, and the precarious financial position of the industry.⁸⁹ Although few airline

⁸⁴ *Airlines Urge CAB to Reject Antitrust Bid*, AV. WEEK & SPACE TECH., Aug. 27, 1983, at 30-31.

⁸⁵ Ellison, Simpson, & Smith, *Co-operation: A Pragmatic Response by Canadian Airlines to 'Deregulation'*, 24 TRANSP. RESEARCH F. 675 (1983).

⁸⁶ *Id.* at 679.

⁸⁷ *Id.* at 677.

⁸⁸ See *Airlines Urge CAB to Reject Antitrust Bid*, *supra* note 83, at 30-31.

⁸⁹ J. KNEAFSEY, J. MOLLOY, R. SIMPSON, & N. TANEJA, *supra* note 56, at 49-50;

observers would recommend a return to the overly restrictive price regulations of the past, one useful approach for the future would be "regulation by exceptions." Several variations of this concept exist, but essentially, such an approach would involve limited regulatory rate controls over exceptions or specific deviations from some standard, preferably cost-related base rate. Thus, rather than regulatory deliberations on all airline rate filings, consideration would only be given to serious departures from the standard or norm. After outlining a number of variations on this concept, the benefits and disadvantages of a "regulation by exceptions" approach will be addressed.

First, a "regulation by exceptions" approach might entail a "zone of rate flexibility" or "zone of reasonableness" in which airlines could raise or lower rates without regulatory interference. Such a proposal could be easily implemented. Initially, the Airline Deregulation Act provided for such a "zone" where rates could be raised 5 percent or lowered 50 percent annually without CAB approval.⁹⁰ However, even this initial zone was substantially wider than the zones established for motor carriers (up 10 percent or down 10 percent) and rail carriers (an adjustment of 6 percent) under their respective, more limited deregulation legislation.⁹¹ Now of course, there are no limitations on changes in airline pricing.⁹²

If the motor carrier "model" were adopted, the most important statutory provisions would involve the definition of the standard "base rate," limitations on changes within the zone, and adjustments for competitive and inflationary conditions.⁹³ The agency regulating motor carriers, the Interstate Commerce Commission (Commis-

Cortley, *The Industry in Crisis: The Overcapacity Paradox*, AIR LINE PILOT, Feb. 1984, at 14.

⁹⁰ Airline Deregulation Act of 1978, 49 U.S.C. § 1482(d)(4) (1982).

⁹¹ Motor Carrier Act of 1980, 49 U.S.C. § 10708(d)(1) (1982); Staggers Rail Act of 1980, 49 U.S.C. § 10707(a) (1982).

⁹² Airline Deregulation Act of 1978, 49 U.S.C. § 1482(d)(1-4) (1982).

⁹³ Motor Carrier Act of 1980, 49 U.S.C. § 10708(d)(1-4)(1982).

sion), is prohibited from interfering with a proposed rate on the basis that it is too high or too low if the rate is not more than 10 percent above or below a specified point of reference.⁹⁴ This base rate or standard is defined as the rate in effect one year prior to the effective date of the proposed rate. The limitations on the carrier changes within the zone require the carrier to notify the Commission that it wishes to have the rate considered under the "zone of rate freedom" provisions, that the carrier acts independently of other carriers, and that no antitrust immunity will cover rates set within the zone.⁹⁵ An adjustment for competitive conditions allows the Commission to increase the zone up to 5 percentage points during any one year period if it finds that there is sufficient actual or potential competition to regulate rates and that the carriers, shippers, and public will benefit from increased rate flexibility.⁹⁶ Adjustments can also be made for inflation by making the base rate (i.e., the rate in effect one year prior to the effective date of the proposed rate) reflect changes during the past year in the Producers Price Index as published by the Department of Labor.⁹⁷

If the rail "model" were followed, the relevant issues would again center around the calculation of the standard base rate, conditions for use of the zone, and adjustments for competition and inflation.⁹⁸ In the rail model, the base rate is defined as the rate in effect on the first day of an applicable five-year period.⁹⁹ This base rate is "adjusted" by a rail "cost adjustment factor" which factors in changes in the costs of material and labor over time. Carriers are allowed individual rate adjustments up to the "adjusted base rate" plus 6 percent per year.¹⁰⁰ After 1984, the zone dropped to 4 percent per year and is only

⁹⁴ *Id.* § 10708(d)(1).

⁹⁵ *Id.* § 10708(d)(4).

⁹⁶ *Id.* § 10708(d)(2).

⁹⁷ *Id.* § 10708(d)(3).

⁹⁸ Staggers Rail Act of 1980, 49 U.S.C. § 10707(a) (1982).

⁹⁹ *Id.* § 10707(a)(1).

¹⁰⁰ *Id.* § 10707(b)(1).

available to carriers with inadequate earnings.¹⁰¹ Finally, the zone of flexibility cannot be used for rates which are more than 20 percent above a threshold rate which is discussed below.¹⁰² Although the zone of flexibility does not directly deal with competitive and inflationary conditions, under another provision of the deregulation legislation, the Interstate Commerce Commission can use an "inflation index" to prescribe quarterly percentage rate increases on an industry-wide, territory-wide, or individual carrier basis.¹⁰³

Under a variation of the "regulation by exceptions" approach, like that imposed on rail carriers, a "rate floor" and "rate ceiling" could be established for airline rates. In the case of railroad deregulation, the "rate floor" was defined as "any rate which contributed to the going concern value" of the firm, while any rate greater than "variable costs" was presumed to be reasonable and to contribute to "going concern value."¹⁰⁴ The rate, however, may be challenged on grounds other than reasonableness, such as discrimination.¹⁰⁵ To determine the "rate ceiling," all rail rates initially below 160 percent of variable costs were also deemed to be reasonable.¹⁰⁶ This threshold will increase by formula over time until the Commission determines that rail carriers are earning adequate revenues.

Given the economic characteristics of the airline industry which make it difficult to define variable costs because the identification of costs that vary with changes in output is extremely sensitive to the time horizon, a more appropriate means of setting "standard fare" rates would be based on total costs. Rates would then deviate from this standard only within narrow limits. This proposal would also eliminate instances of objectionable price discrimina-

¹⁰¹ *Id.* § 10707a(d).

¹⁰² *Id.* § 10707(e)(2).

¹⁰³ *Id.* § 10712(a).

¹⁰⁴ *Id.* § 10701(c).

¹⁰⁵ *Id.* § 10701(c)(3).

¹⁰⁶ *Id.* § 10709(d).

tion. Originally, the Airline Deregulation Act provided for such a "standard fare;" however, it was not mandatory.¹⁰⁷

A final form of "regulation by exceptions" can be derived by combining several of the preceding options into one single proposal. As a specific example, Professors Kneafsey, Molloy, Simpson, and Taneja of the Massachusetts Institute of Technology have recently outlined a three-part proposal for future limited rate regulation of the airlines.¹⁰⁸ Their proposal would involve (1) mileage based base rates; (2) a 25 percent zone of rate flexibility; and (3) an "exceptions zone" requiring regulatory approval. Specifically, they propose that each airline file a distance-based fare structure for a basic service (e.g., coach). These rates must be on file for sixty days and would not be subject to regulatory investigation or suspension. Rates for shorter distances must not exceed rates for longer trips and there must be no personal discrimination or contractual arrangements. Individual market exceptions to the distance-based rates would be allowed up to some specified percentage (i.e., plus or minus 25 percent). These exceptions would be filed thirty days in advance. Any competing carrier could match the rates on short notice. Other fares outside the limits on market deviation would be filed subject to government approval. To gain approval, the carrier would have to explain why a particular market should be granted a deviation outside the prescribed deviations.¹⁰⁹

While the exact details of a "regulation by exceptions" approach can be debated, the advantages of such a proposal would be significant. By having regulation focus on rate "exceptions," the benefits of competition could be preserved while simultaneously rationalizing and stabilizing airline pricing.¹¹⁰ Although limited rate regulation

¹⁰⁷ Airline Deregulation Act of 1978, 49 U.S.C. § 1482(d)(4) (1982).

¹⁰⁸ J. KNEAFSEY, J. MOLLOY, R. SIMPSON, & N. TANEJA, *supra* note 56, at 51-52.

¹⁰⁹ *Id.*

¹¹⁰ *Id.* at 50. See also *Congress May Reconsider Deregulation*, *supra* note 81, at 195-96;

will not eliminate the industry's excess capacity, it would alleviate one of its major symptoms—destructive price competition. Furthermore, limited regulation would thwart objectionable personal discrimination and cross-subsidization between travel markets or communities since rates would be based on definitive standards such as costs or distances. Consumers would also be more certain about the level of fares, and airlines would once again earn normal profits. The major disadvantages are that some regulatory involvement would be required and consumers would not have the temporary advantage of some deep discounts which have been available in the past.

VI. CONCLUSIONS

At a time when the airlines must raise huge sums of capital to replace aging equipment,¹¹¹ this study indicates that the capital market is not enthusiastic about the airlines' prospects. Consequently, airline future debt costs have risen substantially relative to the debt costs of other businesses in the general market and relative to debt costs of other modes of transportation. Since these other enterprises have also been affected by similar economic conditions, the capital markets reflect that the airline industry will continue to face hardships in a deregulated environment. As outlined in section III of this paper, much of the recent financial difficulty of the airline industry can be attributed directly to the destructive price competition made possible by the Airline Deregulation Act of 1978. Financial problems have arisen because of the special economic characteristics of the airline industry, particularly

DOT's View of Airline Deregulation Challenged by Small Cities, Labor, TRAFFIC WORLD, June 20, 1982, at 16-17.

¹¹¹ See, e.g., *Income Uncertainty Slows Airline Fleet Replacement*, AV. WEEK & SPACE TECH., Sept. 3, 1984, at 168. It has been estimated that the airline industry must raise approximately \$90 billion in the 1980's to replace equipment. It has also been estimated that a 5 percent return on revenue (net profit margin) will be required for airlines to attract sufficient capital to accomplish this equipment replacement and for growth. Such a return has not been achieved since 1978 (Table 1). See AIRLINE ECONOMICS *supra* note 9, at xx, 114; N. TANEJA, *supra* note 19, at 178; R. MANDELL, *supra* note 68, at 111; INDUSTRY SURVEYS, *supra* note 8, at 41.

tendencies toward excess capacity, low barriers to entry, and markets which can reasonably support only a limited number of competitors.

While few industry observers would recommend a return to the comprehensive and restrictive regulatory policies of the past, the results of this study indicate that some limited form of regulation might be appropriate. As outlined in the previous section, it would be possible to reinstitute a limited form of entry controls, for example, by rationing airport slots or by controlling the frequency of airline flight departures. Alternatively, airlines could be allowed to rationalize their own services by collectively "cooperating" in adjusting their flight schedules. Both of these options would directly deal with the problem of excess capacity as well as reduce congestion at airports. Since both would involve restricting the number of competitors in certain markets, however, the desirability of these policy options are open to question.

A policy preferred by the author would involve "regulation by exceptions," emphasizing regulatory rate involvement only for significant departures from the standard or norm. Although such a policy would not directly eliminate the industry's excess capacity, it would alleviate one of its major symptoms—destructive price competition. Consequently, a "regulation by exceptions" policy would preserve the major benefits of competition while reducing excessive discounts, objectional price discrimination, and industry instability.

While the exact details of a "regulation by exceptions" approach can be debated, several variants of the concept were explored. One alternative would be to reinstitute a "zone of rate flexibility" in which carriers could adjust rates by some specified percentage without regulatory interference. Key issues to be resolved would be definition of the base rate, width of the zone, and periodic adjustments for inflation and competitive conditions. Second, a "rate floor" and "ceiling" could be defined for airline rates similar to that imposed on rail carriers. In the case

of railroad deregulation, both the "floor" and "ceiling" were related to variable costs.¹¹² Because of the difficulty of accurately defining variable costs in the airline industry, requiring that airline rates conform to a mileage-based fare structure might be more appropriate. This would also eliminate instances of objectionable personal and place discrimination. Alternatively, rates could be tied to a total cost-based "standard fare" and only be allowed to deviate from this standard within narrow limits.

Although these alternatives do not exhaust the number of possible options, some form of "regulation by exceptions" should be adopted in order to rationalize airline pricing. In fact, it would be possible to combine several of these options into one single proposal as outlined in the previous section of this paper. In the absence of some limited form of regulatory intervention, one can expect airline performance to continue to deteriorate in the years ahead. As one commentator has noted, "[t]he interest of the consumer is by no means always in opposition to that of the airlines. Indeed, it certainly can be argued that the public has a great stake in having profitable airlines that can offer safe, efficient service and have the capital to invest in new and better aircraft."¹¹³

¹¹² Staggers Rail Act of 1980, 49 U.S.C. §§ 10707(a), 10709(d) (1982).

¹¹³ W. O'CONNOR, *supra* note 59, at 80.