

Pace University

DigitalCommons@Pace

Faculty Working Papers

Lubin School of Business

6-1-1994

The effects of the airline deregulation on shareholders' wealth.

Samir M. El-Gazzar

Follow this and additional works at: https://digitalcommons.pace.edu/lubinfaculty_workingpapers

Recommended Citation

El-Gazzar, Samir M., "The effects of the airline deregulation on shareholders' wealth." (1994). *Faculty Working Papers*. 111.

https://digitalcommons.pace.edu/lubinfaculty_workingpapers/111

This Thesis is brought to you for free and open access by the Lubin School of Business at DigitalCommons@Pace. It has been accepted for inclusion in Faculty Working Papers by an authorized administrator of DigitalCommons@Pace. For more information, please contact nmcguire@pace.edu.

**CENTER
FOR
APPLIED
RESEARCH**

**WORKING
PAPERS**

No. 125 June 1994

**The Effects of the Airline Deregulation
on Shareholders' Wealth**

by

Samir M. El-Gazzar, Ph.D.
KPMG Peat Marwick
Professor of Accounting
Lubin School of Business
Pace University

and

Alexander J. Sannella, Ph.D.
Associate Professor of Accounting
School of Management
Rutgers University

**THE LUBIN SCHOOL
OF BUSINESS**

**PACE
UNIVERSITY**

THE CENTER FOR APPLIED RESEARCH

Lubin School of Business Pace University

Michael Szenberg, Ph.D., Director
Surendra K. Kaushik, Ph.D., Associate Director
Diana Powell Ward, Assistant Director and Editor

Board of Advisors

Arthur L. Centonze, Ph.D., *Dean of Lubin School of Business and Associate Professor of Economics*
John Dory, D.B.A., *Director of Doctor of Professional Studies Program and Associate Professor of Management*
Peter Allan, Ph.D., *Professor of Management*
Dan Baugher, Ph.D., *Professor of Management*
Karen Berger, Ph.D., *Undergraduate Program Chair and Associate Professor of Marketing*
Elayn K. Bernay, Ph.D., *Professor Emeritus in Residence, Marketing*
Robert Cable, Ph.D., *Professor of Accounting*
Kwang-Hyun Chung, Ph.D., *Assistant Professor of Accounting*
Rosario Girasa, Ph.D., J.D., *Undergraduate Program Chair and Professor of Law*
Peter Hoefler, Ph.D., *Associate Dean, Director of Graduate Programs, and Professor of Management Science*
Robert Isaak, Ph.D., *Professor of Management*
Rudolph Jacob, Ph.D., *Department Chair and Professor of Accounting*
Walter Joyce, Ph.D., *Department Chair, Law/Tax/Real Estate, and Professor of Law*
Warren Keegan, D.B.A., *Director of Institute for Global Business Strategy and Professor of International Business and Marketing*
Richard Lynn, Ph.D., *Department Chair and Professor of Finance*
Christian Madu, Ph.D., *Program Chair and Professor of Management Science*
Mary Ellen Oliverio, Ph.D., *Professor of Accounting*
Frieda Reitman, Ph.D., *Associate Dean, Director of Undergraduate Programs, and Professor of Management*
Peter Seldin, Ph.D., *Distinguished Professor of Management*
Martin Topol, Ph.D., *Department Chair and Professor of Marketing*
Robert Vambery, Ph.D., *Director of Center for International Business Studies and Professor of International Business and Marketing*
Andrew Varanelli, Ph.D., *Department Chair and Professor of Management*
William Welty, Ph.D., *Director of Center for Faculty Development and Teaching Effectiveness and Professor of Management*
Kevin Wynne, *Undergraduate Program Chair and Associate Professor of Finance*
Philip Young, Ph.D., *Department Chair and Professor of Economics*
Jack Yurkiewicz, Ph.D., *Director of the APC Program and Associate Professor of Management Science*

The Center for Applied Research is responsible for academic research within the Lubin School of Business. It provides organizational and editorial assistance to faculty members and students engaged in approved research and development projects.

The Center acts as liaison between the Lubin School of Business, industry, and the public sector through organized research projects, the dissemination of informative publications, and sponsorship of executive seminars and professional conferences on topical issues.

The Center for Applied Research publishes an ongoing series of Working Papers, Case Studies, Monographs, and MBA Papers of Distinction, as well as a Reprint Series of Lubin faculty articles. It also directs the activities of the Case Development Laboratory which assists faculty-student teams in researching, developing, analyzing, and writing business cases for academic use.

The Center sponsors a "Scholarly Colloquia" series which provides a forum for the presentation, discussion, intellectual sharing, and peer-critique of ongoing faculty research.

Associate Membership in the Center (\$25 annually) entitles the subscriber to free copies of all Center publications. Single copies of CFAR papers may be obtained upon request. Address all requests to:

The Center for Applied Research
Lubin School of Business
Pace University
Pace Plaza, New York, N.Y. 10038
Telephone: (212) 346-1971

**THE EFFECTS OF THE AIRLINE DEREGULATION ON
SHAREHOLDERS' WEALTH**

by

Samir M. El-Gazzar, Ph.D

and

Alexander J. Sannella, Ph.D

**Samir M. El-Gazzar, KPMG Peat Marwick Professor of Accounting, Lubin
School of Business, Pace University.**

**Alexander J. Sannella, Associate Professor of Accounting, School of
Management, Rutgers University.**

INTRODUCTION

This paper examines the effects of the Airline Deregulation Act of 1978 on the market value of shareholders' equity. The equity effects depend on the market interpretation of the expected economic consequences of the deregulation decision. Ex-ante, there had been mixed (positive and negative) expectations by market participants. The agency theory of the firm predicts that deregulation increases uncertainty and competition among the airlines which would force management to control costs and reduce consumption of nonpecuniary benefits. This behavior would lead to higher earnings for shareholders and thus higher market value. On the other hand, some analysts were concerned that airlines would lose the federal subsidy and guaranteed markets that they enjoyed under the regulated status.

In addition, the paper examines the effects of the deregulation on shareholders' wealth by measuring the market reaction to the events that led to the Airline Deregulation Act of 1978. We use a stochastic market model similar to that used by Schipper et al. (1987) in their investigation of the deregulation of the trucking industry.

The results of our study indicate that the market perceived the Airline Deregulation Act of 1978 as good news. The results show an unexpected increase in the stock prices of the airlines on the date the deregulation act was signed into law by President Carter. The average price increase ranged from .8 percent to 1.5 percent under different measuring windows and market indices.

The remainder of this paper is organized as follows. The second section describes the regulatory changes and the expected effects on the airline industry and the hypothesized market reaction to such changes. In the third section we describe the research design, selection of sample firms, and the determination of the appropriate event dates. The empirical results are presented in the fourth section. The last section contains our conclusions and some comments.

DEREGULATION OF THE AIRLINE INDUSTRY

On October 24, 1978, the Airline Deregulation Act was passed. This act deregulated the once highly regulated airline industry. Under regulation, competition was curtailed to best serve the public interest. This was based on the regulators' belief that unregulated competition would be destructive of some social benefit. For example, regulation of the airline industry ensured that there would be service on unprofitable routes. In exchange for the losses on the rural service, airlines were insulated from competition in their most profitable markets. The restriction of competition in profitable markets was a form of internal subsidy.

The regulators also believed that the airline industry was a natural monopoly that would undermine the public interest without regulation. Besides the loss of service to small or rural towns, there was a general belief that deregulation would result in a deterioration in the quality of air service and an increase in widespread waste and inefficiencies.

The Civil Aeronautics Board (CAB) regulated the airline industry from 1938 to 1978. Over its fifty years of existence the CAB regulated the industry in the following ways:

- (1) Control over the number of certified carriers and their specific routes.
- (2) Control over entry into any two-city market, whether a new or an existing carrier.
- (3) Restriction over the entry of new carriers. Specifically, the CAB did not certify a new trunk carrier from 1938 to 1976 (Kahn, 1978).
- (4) Regulation over air fares.
- (5) Exerted some control over quality of service.

Evaluation of the CAB's Performance. The regulation of the airline industry under the CAB was generally restrictive. Over the fifty years of regulation there was a downward pressure on fares. Beginning in the 1960s, the CAB used a prescribed Standard Industry Fare Level (SIFL) system that set the fares on specific routes. For example, during the mid-1960s the CAB set fares so that an airline could earn a "fair and reasonable return on investment." At that time, a "fair and reasonable return" was set at 10 1/2 percent. Because the fares could be set at different levels on different routes, the CAB could ensure service to the less profitable routes through a system of subsidies. There were both direct and indirect subsidies.

Originally, direct subsidies were used by the CAB. A direct subsidy could be in the form of direct dollar payments to cover the losses of local airlines. Another form of direct subsidy was allowing a local carrier to charge fares at a level of up to 30 percent above the SIFL. In subsequent years, a system of indirect subsidies was used. For the major carriers the internal subsidy took the form of "overcharging" passengers on dense routes to cover the losses on the thin routes. This was called "cross-subsidization." Insulation from direct competition was also a form of indirect subsidy for carriers that absorbed losses on rural routes.

With the end of direct subsidy, service to local areas tended to deteriorate as carriers focused on higher fare routes. In fact, immediately before deregulation, the CAB reinstated the direct subsidy to cover the difference between average or normal costs over commercial revenues, thus allowing for the higher fares that the carriers were demanding.

Whether the subsidy was direct or indirect, it was primarily based on the lower profits earned or losses incurred on the short haul or thinner routes. Therefore, accounting determined costs and revenues were instrumental in the determination of the direct dollar subsidy granted, the amount above the SIFL to be charged, the "fair and reasonable return" on investment, and

the extent of the excess fares on the long-haul routes needed to cover the losses on the local flights.

Under regulation, employees could earn higher wages and salaries due to the lack of competition. In a regulated environment, management became less competitive and took a more conventional outlook at their business decisions (Caves, 1970).

Expected Effects of Deregulation. During the debates preceding the deregulation of the airline industry, several negative consequences of deregulation were predicted by various interest groups (Kahn, 1978):

- (1) There would be gross inefficiencies as new and inexperienced carriers entered the market. Inefficiencies, in turn, would cause costs to increase, resulting in increased fares.
- (2) There would be market dominance and control by a few firms.
- (3) The service to small cities and thin routes would be eliminated.
- (4) Employees would be subject to great insecurities and would reduce their productivity as new carriers hired non-union employees.
- (5) Strong competition would force cost cutting, which would reduce the overall safety of air travel.
- (6) Profits would decrease, restricting firms from raising new capital needed to finance the development and acquisition of new, more efficient aircrafts.

Major certified carriers and other groups had a vested interest in continued regulation. For example, competition was restricted under regulation and even if a firm was no longer profitable, the operating certificates had a value to some other carrier which would merge with or acquire the failed carrier. The employees of the major carriers favored regulation because they were influenced by the belief that suppressed competition maintained artificially higher wages. Smaller cities receiving subsidized service supported regulation. In addition, airport operators favored regulation because their long-term leases with protected carriers facilitated raising capital. The negative share price reaction to the deregulation act was predicted to be consistent with the arguments presented above.

Despite the arguments against deregulation, the airline industry was deregulated in 1978. At that time, Congress believed that competition would be a positive force in constantly improving the efficiency of the industry, in developing innovative price structures, and in offering consumers a wide range of services. The arguments offered by Congress were supported by the economic expectations of some early proponents of deregulation.

Economic Expectations for Deregulation. Although the actual performance of the airline industry since deregulation is subject to debate, the expectations of the early proponents of

deregulation were seen as having the most significant influence on the expectations of market participants during the period leading up to the Airline Deregulation Act.

During the period immediately preceding deregulation, economists believed that the domestic airline industry would prosper under free competition. This belief was supported by the successful fare reductions and significant improvements in service that resulted from the unregulated airlines in Texas and California in the 1960s. In addition, the CAB responded to the changing political climate prior to deregulation by voluntarily relaxing regulatory restraints with substantial changes beginning in 1976 (Caves, Christensen, and Tretheway, 1983). Economists believed that there would be a rapid entry and exit from routes as demand for service increased and eroded. It was expected that the larger carriers would be reluctant to overcharge passengers because of the challenge of competition. However, the established carriers were locked into expensive labor contracts that could be avoided by new, non-union carriers. Due to the threat of increased competition by more efficient new entrants and the loss of standardized fare levels and subsidies, economists believed that deregulation would result in increased productivity and efficiency. They estimated that fares would be more closely correlated with relative costs, the quality of service would improve, and safety standards would be maintained. In the long run, it was believed that these factors would increase airline industry profitability and the wealth of shareholders.

Some empirical evidence of increased productivity of the airline industry in the era of deregulation was provided by Caves et al. (1983). They measured total factor productivity growth of the airlines for the first five years of transition from regulation to deregulation (1976-1980) and compared the performance of the industry with that of the preceding years under regulation.¹ Caves et al. (1983) found that, in general, productivity growth accelerated from 2.8 percent per year to 5.1 percent per year under deregulation. These results were reported after controlling for general economic conditions.

On the basis of these economic predictions, we could expect a positive share price reaction to deregulation. In addition, some of these predictions actually may have been realized in the 1976-1977 transition period. If this was the case, the market would react positively to the expectation of increased productivity growth under full deregulation.

Summary. On the basis of the arguments for and against deregulation existing at the time, market participants could have formed their expectations based on either theory. A negative

¹ According to Caves et al. (1983), 1976 is generally regarded as the beginning of the transition from full regulation to deregulation. The first year where there were substantial changes in CAB policies was 1976, when the CAB began allowing the airlines considerable freedom to compete on the basis of price. Caves et al. (1983) goes on to state that the CAB made new route awards, often authorizing more than one new entrant at a time.

share price reaction would be expected if the market impounded the adverse economic effects of competition as predicted by the groups with significant vested interests in regulation. These groups included most of the major carriers, unionized employees, and the airport operators. With the loss of regulation the market could perceive an elimination of monopoly rents and the inability of management to pass operating slack and other inefficiencies onto the consumer. The residual losses created by competition would be absorbed by the shareholder.

Conversely, a positive stock price reaction would result if market participants held the same expectations as the economists who predicted increased efficiency, productivity, and profitability from increased competition.

RESEARCH DESIGN

To determine the impact of deregulation on shareholder wealth, several issues had to be resolved. These issues include: the determination of the event dates, the selection of the sample firms, and the specification of the stochastic process assumed to generate share prices.

The Event Dates. To determine the events leading up to the Airline Deregulation Act of 1978, two sources were examined. The first was the *Congressional Quarterly Weekly Report*. The *Weekly Reports* were examined from January 1976 to October 1978 to determine the dates on which information relating to congressional and other actions taken towards the deregulation of the airline industry became available. Twenty-four significant events were identified. To reduce the number of events and to ensure that the events used in our empirical testing were included in usual market sources, we examined the *Wall Street Journal Index* over the same period. As a result of this search, we were able to identify seven events common to both the *Congressional Quarterly Weekly Report* and the *Wall Street Journal Index*. Thus, an event was selected for inclusion in our tests if it was announced in both the *Congressional Quarterly Weekly Report* and the *Wall Street Journal Index*. The seven significant events included in our market test and the related event dates are listed in Table 1.

TABLE 1

Description of the Events that Led to the Deregulation Act of the Airline Industry

EVENT NUMBER	EVENT CONTENT AND DATE
E1	President Carter stresses deregulation in his address to Congress (3-4-77).
E2	Early enactment of the airline bill is stalled. A tough markup fight is expected in July (6-21-77).
E3	A substitute bill is adopted by the House Subcommittee that lacks the major deregulation provisions (3-23-78)
E4	The Senate deregulation bill is passed. House action is expected but free entry is still objected (4-19-78).
E5	House Committee and Subcommittee approve a new bill that reinstates many deregulation provisions but is much weaker than the Senate bill (5-15-78).
E6	Deregulation bill is passed by the House, but the bill's future is still in doubt: There is conflict between the strength of the House and Senate versions (9-21-78).
E7	Deregulation Act is signed into law by President Carter (10-24-78).

As noted in Table 1, the House and Senate versions of the drafts of the deregulation act varied with the extent of deregulation. The proposed deregulation provisions fluctuated strongly from the initial proposal up to the point where the deregulation act was signed into law. In our study we expect the market price of airline shares to respond in a consistent fashion to the direction of the signal generated from each of these events. In addition, we expect that the statistical significance of the market's reaction should increase the closer the event is to the date the deregulation act was signed into law.

Data and Sample. Because we are conducting an industry study, we included all airline companies with complete data on the CRSP daily stock market return tapes covering the specified test period. The test period includes the two-year period (January 1, 1977 to December 31, 1978) covering the seven events that led to the deregulation of the airline industry. The CRSP tapes were examined for the test period to identify the airline firms. This examination produced 24 firms. The names of sample firms and their CUSIP codes are listed in Table 2.

TABLE 2

Names of Firms Included in the Sample

American Airlines
Airborne Freight Corp.
Alaska Airgroup, Inc.
Braniff International Airlines
Continental Airlines
Delta Airlines
Eastern Airlines
Emery Air Freight
Frontier Holdings, Inc.
Hawaiian Airlines, Inc.
National Airlines
Northwest Airlines, Inc.
Ozark Holdings, Inc.
Pacific Southwest Air (PS Group, Inc.)
Piedmont Airlines
Pan Am Corp.
Republic Airlines
Seaboard World Airlines
Southwest Airlines, Co.
Tiger International
Transway International
US Air Group, Inc.
Western Airlines
World Airways (Worldcorp, Inc.)

Return Generating Process. The return generating process used in this study modifies the traditional market model in order to capture the impact of information about the significant proposed changes in the economic environment in which the airline industry operates. Thus, the model conditions security returns on both the market index and the informational impact of these events. This results in less residual variation to be explained exogenously than in the traditional market model (Schipper, Thompson, and Weil, 1987).

Specifically, the market reaction to the events leading to airline deregulation is measured through the market model with the inclusion of a dummy variable. The dummy variable is designed to extract the effect of the events on the firm's realized returns (see Schipper and Thompson, 1983 and Hughes and Ricks, 1984). The dummy variable takes the value of one on the date of the k th event and zero otherwise.

$$(R_{jt}) = A_j + B_j(R_{mt}) + \sum_k C_{jk}(P_{kt}) + U_{jt} \quad (1)$$

$t = 1, 2, \dots, T; j = 1, 2, \dots, N; k = 1, 2, \dots, k$

where

- R_{jt} = return on stock of firm j during day t ,
- R_{mt} = return on the value or equally weighted market portfolio during day t as compiled by CRSP,
- A_j = intercept of firm j ,
- B_j = slope parameter of firm j ,
- C_{jk} = returns effect of the k th event on the j th firm stock,
 $K = 1, 2, \dots, 7$;
- P_{kt} = a dummy variable taking the value of one on event k dates [(0), (-1,0) or (-1,0,+1)] and zero otherwise, where day 0 is the common *WSJ* and *Congressional Quarterly Weekly Report* article's date commenting on the event. Thus, P_{kt} is a vector consisting of zeros in all but the one, two, or three day window,
- U_{jt} = a disturbance term for firm j on day t , and, is assumed to be $NID(0, \sigma^2)$.
The return on the equally weighted portfolio of sample firms can be generated from equation (1) as follows:

$$1/N \sum_j (R_{jt}) = \bar{A} + \bar{B}(R_{mt}) + \sum_k \bar{C}_k(P_{kt}) + U_t \quad (2)$$

There are several advantages to the model specification in equations (1) and (2) above. First, they allow efficient use of available data for estimating the model parameters A_j and B_j . Second, the t -values of the regression coefficients provide a direct test of the significance of the abnormal returns, C_k . Third, forming a portfolio of sample firms avoids bias in the standard error due to cross-sectional dependence and cross-sectional heteroscedasticity and, thus, makes

tests of significance less likely to be biased. This is because an equally weighted portfolio controls for the effect of both contemporaneous cross-dependencies and cross-sectional heteroscedasticity of the disturbance term, U_{jt} (see Hughes and Ricks, 1984).

RESULTS

The return generating process was regressed using three windows for each event: i) one-day window measuring the effect of the event on the market on the date the event was reported in the *WSJ*, which is called day zero (0); ii) two-day window which includes day zero and the day preceding it (-1, 0); and iii) three-day window which includes day zero, and the day preceding and the day following it (-1, 0, +1). The tests are conducted using the equally weighted and value weighted market indices. The estimates of the coefficients of the dummy variables which capture the market price effects of the events are reported in Table 3.

TABLE 3

Regression Estimates of the Market Reaction to the Events that Led to the Deregulation of the Airline Industry.

The Results Are Presented for Three Windows, Using Both the Value and Equally Weighted Market Indices for the Following Portfolio Market Return Model:

$$1/N \sum_j (R_{jt}) = \bar{A} + \bar{B}(R_{mt}) + \sum_k \bar{C}_{kt}(P_{kt}) + U_t$$

Event	E1	E2	E3	E4	E5	E6	E7
Index							
Panel A: One-Day Window (day 0)							
VWI	.0008 (.086)	-.0046 (-.516)	-.0005 (.056)	.0026 (.299)	-.0084 (-.944)	-.0024 (-.270)	.0109 (1.228)
EWI	.0011 (.129)	-.0045 (-.535)	-.0052 (-.625)	.0042 (.505)	-.0040 (-.484)	.0043 (.512)	.0023 (.281)
Panel B: Two-Day Window (day -1, and day 0)							
VWI	-.0018 (-.293)	-.0017 (-.279)	-.0004 (-.051)	.0049 (.793)	-.0051 (-.823)	.0010 (.165)	.0134 (2.154)*
EWI	-.0028 (-.477)	-.0031 (-.532)	-.0052 (-.623)	.0061 (1.045)	-.0021 (-.360)	.0028 (.476)	.0089 (1.526)
Panel C: Three-Day Window (day -1, day 0, and day +1)							
VWI	-.0004 (-.084)	-.0042 (-.829)	.0037 (.720)	.0053 (1.033)	-.0060 (-1.176)	-.0049 (-.966)	.0106 (2.074)*
EWI	.0002 (.044)	-.0061 (-1.279)	-.0013 (-.276)	.0052 (1.084)	-.0038 (-.801)	-.0014 (-.290)	.0145 (3.038)**

* = Significant at the .05 level.

** = Significant at the .01 level.

VWI = Value weighted market index.

EWI = Equally weighted market index.

As noted in Table 3, there were no significant market reactions to the events using a two-tailed test under any specification of the model from E1, the initial deregulation agenda noted by President Carter (3-4-77), through E6, the House passage of its version of a deregulation bill (9-21-78). After this point the significant event was identified as E7. This general observation reflects on the strong debate between the supporters and opponents of the deregulation of the airlines. This debate increased uncertainty about the ultimate outcomes, continued regulation or the act of deregulation. Therefore, the market did not react to the deliberations until the deregulation act was signed into law by President Carter.

The significant event, E7, occurs when the deregulation act is signed into law by President Carter. Except for the one-day window (0) and the equally weighted portfolio for the two-day window (-1, 0), the market's reaction to the deregulation act is positive and statistically significant at the .05 level for the value weighted portfolios using the Day (-1, 0, +1) and the Day (-1, 0) event windows. It is positive and statistically significant at the .01 level for the three-day (-1, 0, +1) window using the equally weighted market index.

From the results, it is noted that the market reaction occurred prior to Day (0). The significant influence of Day (-1) can be explained by information leakage at that point in time. Specifically, events such as press conferences announcing that the deregulation bill will be signed by the president could have occurred during trading hours on the day preceding the *WSJ* date. Thus, information leakage on the day prior to E7 provides a plausible explanation for the significant results found in event windows (-1, 0, +1) and (-1, 0).

To assure that the results are not driven by some macroeconomic news other than the deregulation act, the *WSJ Index* was examined for the three days included in the windows, i.e., day -1, day 0, and day +1. The examination did not reveal any such macroeconomic or firm-specific news other than the deregulation news. Therefore, we believe that the positive market reaction was due to the market appreciation to the deregulation act. As a matter of fact, the final version of the bill that included free competition and elimination of the CAB was met with a significant positive response by market participants.

Our empirical results, as reported in Table 3, provide some support for the hypothesis that the market favored deregulation of the airline industry. This result is interesting given the fact that the majority of the firms included in our portfolios lobbied against the deregulation bill (Kahn, 1978). It is plausible that the management and unionized employees of these firms anticipated reduced profitability (i.e., loss of monopoly rents) under competition. If management compensation is based on profit, managers of these firms would expect a reduction in compensation as a result of deregulation. Similarly, lower profits would translate into a less favorable labor contract in the future for union employees.

Although management may have signaled reduced profitability from deregulation in their voting behavior, the market may have interpreted these actions as being motivated from self-serving management behavior which would prevent the maximization of the value of the firm's shares. That is, it may have appeared that management preferred to maintain a regulated industry structure to continue to maximize their own wealth through higher salaries and the consumption of corporate resources. Further, it could have been interpreted that this self-serving behavior may have motivated management to lobby against deregulation and to use the predicted dire consequences of competition as an excuse to further their own interest.

The positive share price reaction to deregulation found in this study could have resulted from the market's failure to impound the information signals generated from management's lobbying and voting behavior. This could be true for two reasons. First, the market did not perceive management's signals as credible. Second, there was a great deal of economic analyses available that predicted increased profitability from a competitive market structure. In addition, there were the beginnings of increased productivity growth during the transition years (1976-1977) when the CAB voluntarily relaxed some of its regulatory restraints (Caves et al., 1983).

Finally, the positive stock price reaction to airline deregulation could be the result of perceived wealth transfer effects (see Galai & Masulis, 1976; Myers, 1977; and Handjinicolaou & Kalay, 1984). The announcement of deregulation and the resultant free entry and increased competition could have been interpreted as making the airlines' debt more risky for a given coupon rate. The increased risk of outstanding debt thus would reduce the market value of debt and result in an increase in equity values. That is, the increased risk of the firm's debt would transfer wealth from the bondholder to the common stockholder.

CONCLUSIONS

This paper examines the share price effects of the Airline Deregulation Act of 1978. These effects are measured using a market model modified by the inclusion of a dummy variable that captures the impact of the various events leading up to the airline deregulation. An event was selected for inclusion in the study if it was announced in both the *Wall Street Journal* and the *Congressional Quarterly Weekly Report*. All airline firms that had complete stock returns on the CRSP tapes over the test period are included in the analysis. The test period is the two-year period (January 1, 1977 to December 31, 1978) covering significant events that led to the signing of the deregulation act.

Results of the stock price reaction tests indicate that the market favored airline deregulation. The favorable stock price reaction to airline deregulation could be explained in three ways. First, the market anticipated reduced managerial consumption of corporate resources in a competitive market structure. Second, the market did not impound the adverse consequences

of deregulation as predicted by management because the market either did not perceive management's claim as a credible signal or the market was more influenced by the economic forecasts that predicted increased profitability under deregulation. In addition, there was evidence of increased productivity growth during the transition period (1976-1977) where the CAB voluntarily began to relax regulatory requirements. Third, due to increased competition deregulation would make airlines' debt more risky and would result in a wealth transfer from bondholders to common shareholders.

REFERENCES

- Caves, D.W., L.R. Christensen and M.W. Tretheway. "Productivity Performance of U.S. Trunk and Local Service Airlines in the Era of Deregulation," *Economic Inquiry* (July 1983): 312-324.
- Galai, D, and R.W. Masulis. "The Option Pricing Model and the Risk Factor of the Stock," *Journal of Financial Economics* (1976): 53-82.
- Handjinicolaou, G., and A. Kalay. "Wealth Redistributions or Changes in Firm Value: An Analysis of Returns to Bondholders and Stockholders around Dividend Announcements," *Journal of Financial Economics* (1984).
- Hughes, J., and W. Ricks. "Accounting for Retail Land Sales: Analysis of a Mandated Change," *Journal of Accounting and Economics* (1984): 101-132.
- Kahn, A. E. "Deregulation of Air Transportation," *Regulating Business: The Search for an Optimum*. The Institute for Contemporary Studies (1978).
- Myers, S. "Determinants of Corporate Borrowing," *Journal of Financial Economics* (1977): 147-175.
- Schipper, K., and R. Thompson. "The Impact of Merger-Related Regulations on the Shareholders of Acquiring Firms," *Journal of Accounting Research* (Spring 1983): 184-221.
- Schipper, K., R. Thompson, and R. Weil. "Disentangling Interrelated Effects of Regulatory Changes on Shareholder Wealth: The Case of Motor Carrier Deregulation," *Journal of Law and Economics* (April 1987): 67-100.

Listed below are some of the most recent publications issued by the Center for Applied Research. Apply to the Director, Center for Applied Research, for single copies. Associate Membership in the Center is also available (\$25 annually) which entitles the subscriber to free copies of all new Center publications.

WORKING PAPERS

- 112 Robert H. Parks
Hazardous Monetary-Fiscal Parallels: 1981-82 and 1990-93: February 1993
- 113 Peter Hoefler and Joseph Seif
A Relationship Between Bayes' Theorem and the Minimum Cross-Entropy Principle: May 1993
- 114 Christian N. Madu and Chu-Hua Kuei
Strategic Total Quality Management (STQM)-Transformation Process Overview: May 1993
- 115 Mary Ellen Oliverio and Bernard H. Newman
A Research Report -- CPAs: Participation in Work After 65: May 1993
- 116 Robert Isaak
Developing Country Recipes for Collective Learning, Economic Development & Global Environmental Responsibility: November 1993
- 117 William C. Freund
Two Anachronistic SEC Rules in an Era of Global Equities Trading: November 1993
- 118 Stephen Blank, Stephen Krajewski, and Henry S. Yu
Corporate Response to an Emerging North American Economic Space: November 1993
- 119 Suren K. Kaushik and Raymond H. Lopez
The Structure and Growth of the Credit Union Industry in the United States: Meeting Challenges of the Market: December 1993
- 120 Pelis Thottathil
Reverse Mortgage: An Alternative to the Assumption Option: February 1994
- 121 Barnard Seligman
A History of the Practice and Theory of Indexation: March 1994
- 122 Rosario J. Girasa
Protection of Intellectual Property Rights in the People's Republic of China: April 1994
- 123 Robert Isaak and Lawrence Bridwell
Partnerships for Educational Competitiveness: May 1994
- 124 Hubert Roosma
Predicting Mutual Fund Performance: An Application of Modern Portfolio Theory: May 1994

- 125 Samir M. El-Gazzar and Alexander J. Sannella
The Effects of the Airline Deregulation on Shareholders' Wealth: June 1994
- 126 Robert Weill
The Teaching of Critical Thinking Skills in Business and Law Classes: A Research Project: June 1994

CASE STUDIES

- 14 Leon Winer
Forest & Forest Motor and Control Company: May 1993
- 15 Leon Winer
The Strategic Creative Analysis (Scan) Process: September 1993
- 16 Leon Winer
Business Equipment Division: October 1993
- 17 Robert R. Cangemi and Raymond H. Lopez
Euro Disney (A) (1987): May 1994

MONOGRAPHS

Peter M. Edelstein
Faculty Guide to Cheating: May 1994

REPRINTS

- 81 Robert Isaak
Germany: Economic Powerhouse or Stalemate?: January 1993
(*Challenge, The Magazine of Economic Affairs*, vol. 35, no. 5, Fall 1992)
- 82 Donald C. Streever
Textile Rental Weathers Recession Lows: January 1993
(*Textile Rental*, vol. 75, no. 12, August 1992)
- 83 Vincent R. Barrella
Curbing IRS Efforts to Circumvent Tax Court Discovery Limitations - The District Court as the Proper Forum: April 1993
(*TAXES, The Tax Magazine*, November 1991)
- 84 Peter Allan and Eugene H. Nellen
The Motivation to Manage: Differences Between College Students of Business According to Race: May 1993
(*The Mid-Atlantic Journal of Business*, vol. 28, no. 3, December 1992)
- 85 Martin T. Topol and Myron Gable
Building Retail Stores Through Direct Response Advertising: A Field Study: May 1993
(*The Journal of Euromarketing*, vol. 2, no. 2, 1992)

- 86 Samir M. El-Gazzar
Stock Market Effects of the Closeness to Debt Covenant Restrictions Resulting from Capitalization of Leases: September 1993
 (*The Accounting Review*, vol. 68, no. 2, April 1993)
- 87 Joy A. Schneer and Frieda Reitman
Effects of Alternate Family Structures on Managerial Career Paths: October 1993
 (*Academy of Management Journal*, vol. 36, no. 4, 1993)
- 88 Roy J. Girasa
Legal Aspects of Doing Business in China: May 1994
 (*Westchester Bar Journal*, vol. 20, no. 4, Fall 1993)
- 89 Christian N. Madu and Chu-Hua Kuei
Dimensions of Quality Teaching in Higher Institutions: May 1994
 (*Total Quality Management*, vol. 4, no. 3, 1993)
- 90 Michael Szenberg
Philosophical Pattern Comparisons Among Eminent Economists: May 1994
 (*The American Economist*, vol. 37, no. 1, Spring 1993)
- 91 Martin T. Topol and Elaine Sherman
Trends and Challenges of Expanding Internationally via Direct Marketing: June 1994
 (*Journal of Direct Marketing*, vol. 8, no. 1, Winter 1994)

CENTER FOR INTERNATIONAL BUSINESS STUDIES

Working Papers

- 2 Yan Fu
The Chinese Way of Doing Business: April 1993
- 3 Nikolai Wasilewski and Roger L. M. Dunbar
Dimensions of Environmental Scanning Systems in Multinational Enterprises: May 1993
- 4 Dietfried Günter Liesegang
Environmentally-Oriented Directives for Market Economies: January 1994

MBA PAPERS OF DISTINCTION

Luiz Maia de Mello Massa
IBM's Changing Organizational Structure
 vol. XII, no. 1: May 1993

Patt Terris
Fun with Recycling
 vol. XIII, no. 1: October 1993