

# International oligopoly and stock market linkages: The case of global airlines

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## Abstract

This paper investigates the effect of oligopolistic rivalry on spillovers in financial reporting. Using an event study methodology and focusing on global airlines, we find that firms experience discernable abnormal stock price reactions at the announcement of unexpected earnings by rival airlines. The extent of the price reactions is related to the extent of rivalry between the announcing and non-announcing firms, among other factors. Our empirical evidence, which is inconsistent with the contestable markets hypothesis, confirms an association between the stock market performance of players in a global industry and the extent of inter-firm rivalry in the product market.

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## 1. Introduction

Growing globalization has resulted in increasing interdependencies among national economies. Concomitant with this rising interdependence has been an increase in the flow of financial information across national borders and a growing integration of capital markets (Firth, 1996). Such interdependence tends to create linkages in stock market returns and corporate profitability across national borders, which may be expected to be most notable among global industries. Air transport has been well known as a global industry, but one served primarily by national firms (Hanlon, 1999). As a catalyst and a facilitator of various cross-border economic activities, air transport has played and will continue to play a critical role for speeding up globalization. However, despite gradual liberalization in recent years, the ability of global airlines to conduct their business in much the same way as global firms in other transnational industries is inhibited by governmental restrictions on foreign ownership and anti-competitive bilateral air services agreements between countries (Hanlon, 1999; Rhoades, 2003). It is thus unclear whether, and to what extent, linkages in the product market result in linkages in the stock market performance of global airlines.

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The purpose of this paper is to add to the literature on international financial market linkages and equity pricing by examining the existence and determinants of transnational information transfer associated with earnings releases by global airlines. Evidence of such transfer is consistent with an efficient, integrated world capital market, at least for certain global industries. The need for, and urgency of, a move towards global harmonization of accounting and reporting standards is reduced if there is evidence that investors and financial analysts are able to interpret and extrapolate profit numbers calculated under different national accounting rules for the revaluation of shares (Firth, 1996). The existence of transnational information transfers also has implications for the contestable markets hypothesis, for research design issues in capital market studies involving global industries, and for the formulation of practical investment strategies.

Section 2 discusses related information transfer studies and some key characteristics of the global airline industry. Section 3 presents the research design and the hypotheses. Section 4 presents the results and relevant discussions. Finally, a summary and conclusions are presented in Section 5.

## 2. Background

Information transfer arises in a corporate reporting setting when an earnings announcement for firm  $i$  has an impact on the security returns of firm  $j$ . Information transfer has been reasoned to be most likely to manifest itself for firms in the same industry, and when the announcing firm's earnings are a major 'surprise' to the stock market. The existence of information transfer within national borders has been widely reported in relation to a variety of corporate information releases or industry-wide events. So far, no study has been conducted that examines earnings information transfers across multiple countries.

Firth (1996) is the only study that examines the existence and determinants of earnings information transfers in a two-country context. Based on the fact that US firms are typically industry leaders and tend to report earlier than their British counterparts for comparable fiscal year-ends, Firth (1996) hypothesizes that the magnitudes of information transfers are greater from US firms to UK firms than vice versa. He also hypothesizes that the correlation of the percentage changes in the profits of the releasing and the non-releasing firms prior to the earnings announcements is positively related to the magnitude of transnational information transfers. His empirical results support both hypotheses.

Transnational earnings information transfer is likely to be more difficult to detect than intra-country information transfer and, indeed, may not even exist, since business conditions and institutional environments differ across countries such that earnings announcements which reflect domestic conditions and environment may be irrelevant in helping predict corporate profitability in other countries (Firth, 1996). Differences in the methods for calculating profits across countries and differences in share valuation models used in different countries may also impede transnational earnings information transfer.

The economic and operational characteristics of the international passenger airline industry make it an ideal setting in which to test hypotheses about transnational information transfers. The primary advantage in focusing on the international airline industry is that it is a relatively homogeneous industry in terms of product, technology, capital structure and market conditions, and is highly international in its operations. In fact, many national airlines depend for their livelihood on international traffic because geographic and demographic factors justify significant domestic networks in only a few countries (Hanlon, 1999). Out of approximately 1200 scheduled airlines in the world as of 1997, some 300 operate on international routes; with the top 100 airlines being dominated by airlines based in North America, Western Europe, and the Asia Pacific region. Of the top 100 airlines, 62 are in 100% private (as opposed to government) ownership. In terms of sales, nine out of the top ten largest airlines in 1997 are privately owned airlines (Hanlon, 1999). Also in terms of sales, five of the ten largest airlines are registered in the United States. Many non-US airlines have their shares listed as American Depository Receipts (ADR) on the US stock exchanges.

Originally a favorite testing ground for the 'contestable markets' hypothesis, deregulated airlines are now recognized as being neither perfectly contestable nor competitive (Baumol et al., 1988). Using the reactions of incumbent airlines' stock prices to announcements of entry by People Express, Whinston and Collins (1992) find that the price reactions reveal significant route-specific profits or sunk costs and thus reject the contestable markets model. In recent years, researchers have increasingly used oligopoly theory, which emphasizes the interdependence between airlines, to analyze airline markets. Strategic alliances, which have become popular

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