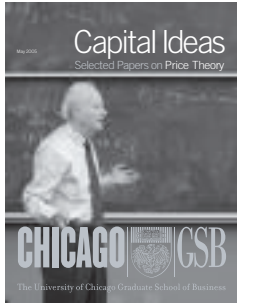




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THE THREAT OF SOUTHWEST AIRLINES

PREEMPTIVE RESPONSES TO POTENTIAL COMPETITION

By Jessamine Chan | Research by Austan Goolsbee and Chad Syverson

In the past 15 years, major airlines in the United States have suffered at the hands of low-cost carriers, with Southwest Airlines emerging as the largest and most successful of these economy carriers. How does the pattern of Southwest's expansion affect ticket prices of major airlines? From 1993 to 2002, Southwest Airlines grew tremendously, with revenues expanding to \$5.5 billion from \$2.3 billion, passenger miles growing to 45.4 billion from 18.8 billion, and service added at 21 new airports.

In the new study "How Do Incumbents Respond to the Threat of Entry? Evidence from the Major Airlines," **Austan Goolsbee** and **Chad Syverson** used the evolution of Southwest Airlines's route network to study how major airlines respond to the threat of entry from low-cost competitors, as distinguished from their response to competitors' actual entry. The authors used American, Continental, Delta, Northwest, TWA, United, and US Airways as the major carriers.



Austan Goolsbee is Robert P. Gwinn Professor of Economics. His research interests include the Internet, the new economy, and government policy.



Chad Syverson is assistant professor of economics. His research interests include competition, incentives, and market-structure effects on productivity, prices, and firm survival.

“We wanted to find out how major airlines react when Southwest threatens to enter their market, but before actual entry,” said Goolsbee. “Do the major airlines accommodate Southwest, try to deter Southwest, or do they just try to live life to its fullest before their date with destiny?”

Southwest is unique because it can start flying between nearly any pair of cities quickly thanks to its elaborate route system. Every time Southwest begins service to a new airport, it raises the threat that Southwest will offer routes connecting that airport with other airports in its network.

For example, on May 9, 2004, Southwest entered the Philadelphia market with nonstop flights from Philadelphia (PHL) to six cities in its network and one-stop service to several other cities. One route Southwest did not offer when it

Before and After Southwest

The existing network of an airline is a good predictor of entry into potential markets. The authors took that existing network as a given and looked at incumbents’ fares on the route once it became clear that Southwest is looming as a competitor.

Since Goolsbee and Syverson were primarily concerned with fare changes, they used the U.S. Department of Transportation’s DB1A files from 1993 to 2002. This data source provided a 10 percent sample of all domestic tickets sold in each quarter of the year. They combined this data into groupings of route, carrier, and quarter, with a route defined by its two endpoint airports alone. Their final sample included 838 routes between 61 airports.

The authors focused on the behavior of the incumbent airlines in the 25 quarters surrounding the initial threat of entry—the three years before and the quarter after Southwest started operating in the second endpoint of the route, as well as three years after. This baseline model examined the impact of Southwest establishing a presence at both endpoints of a route as measured by price changes in the periods

before, during, and after Southwest’s threatened entry. The model also measured how these impacts of threatened entry compared to what happened when Southwest actually entered a market; that is, when it established direct or connecting service between the route’s two endpoints.

Since Southwest typically announces services to a new airport four to six months in advance in order to begin advertising and selling tickets, and negotiations with local governments often take place prior to this, the authors expected ticket prices from the major carriers to start falling two to four quarters in advance.

The authors found a statistically significant drop in prices as soon as the incumbent learned of the threat of entry by Southwest.

As Southwest’s entry into the second endpoint airport got closer, prices began to fall rapidly. By three to four quarters before operating both endpoints of a route, incumbents’ fares had fallen by almost 11 percent. One to two quarters prior, prices had fallen 15 percent. By the time Southwest actually

started operating on both ends of a route, prices were almost 19 percent lower. The longer the delay before Southwest actually started operating a route, the more prices from incumbents fell. Once Southwest actually entered the market, prices again fell. Incumbent ticket prices upon the entry of Southwest were immediately 26 percent lower than they were before the threat, and prices had fallen by a total of 32 percent by the third quarter following entry.

“We found that two-thirds of the total fare drop among the incumbents came from the threat of competition rather than actual head-to-head competition,” said Syverson.

Predatory Pricing

According to traditional “Chicago school” price theory, incumbents should not cut prices before they have to, because doing so entails losing profits in the short-run and theoretically should have no impact on future profits.

What, then, were incumbent airlines trying to accomplish by cutting ticket prices in advance?

In examining this question, Goolsbee and Syverson ruled out several potential explanations, including the notion that incumbents lower their prices to signal to Southwest that they are also low-cost and essentially scare Southwest away from the market.

A more plausible explanation is that incumbents cut fares before Southwest entered the market in order to generate longer-term customer loyalty. By locking in a customer base before actual competition from Southwest occurs, major carriers can dampen the competitive effect of Southwest’s actual entry.

One method that airlines use to build customer loyalty is frequent flyer programs. Once customers have built up many miles on an incumbent airline, they will be less inclined to switch to Southwest, because they will be less able to use those miles that they have and will lose a lot of miles that they could have otherwise accumulated. For people at the higher-end of frequent flyer programs, such as business travelers, the opportunity costs of flying on a different airline are high.

If incumbents can induce people to fly more in the period just before Southwest’s entry, and passengers with a greater stock of miles on a particular carrier are less likely to try a new airline, this can serve as a type of long-term contract between the incumbents and their customers. The authors suggest that incumbents should direct the largest price drops to passengers enrolled in frequent flyer programs.

Goolsbee and Syverson’s results are consistent with the idea that the fare drops on threatened routes reflect efforts by the incumbent to build up switching costs among its frequent-flyer business customers prior to Southwest’s entry, either to deter entry altogether or to put the incumbent in a better position should entry occur.

“With preemptive moves such as price cuts, the major carriers are trying to increase passengers today with the hope that the improved demand will stick after the entry of Southwest,” said Syverson.

Using data from the Department of Transportation on the total number of passengers, the number of flights, and the total available seats on each segment, the authors do find a significant increase in the number of passengers flying on incumbent airlines in the time period surrounding the threat of entry by Southwest.

Tough Medicine

If the goal of incumbents is to reduce the number of passengers they lose to Southwest, one of the best ways to do it is through price cuts.

“Price cuts are tough medicine because the airlines will earn far less money,” said Goolsbee. “But this method is effective at staving off competition from low-cost carriers.”

In the end, lower ticket prices mean that the consumer is the winner of any competition between Southwest and the major airlines. The authors note that this finding is in line with price theory in general, since it is best to encourage competition as a way to help consumers rather than discouraging competition to protect the competitors.

Goolsbee and Syverson’s study counters the traditional view that firms should act only when they actually face competition.

“As economists, we should spend more time thinking about preemptive actions, and the effects of the threat of entry on competition in other industries,” said Goolsbee. ■

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—Chad Syverson

entered this market was Philadelphia to Jacksonville, Florida (JAX), which is a Southwest airport. Southwest does fly between JAX and other airports, just not JAX-PHL. Once Southwest is operating out of both endpoints on a route—here both JAX and PHL—the probability that it will soon start flying the route between those two airports goes up dramatically. With that increase in probability, the authors could look at the major carriers’ fares on the JAX-PHL route once Southwest threatened entry, but before it starts actually flying.

The authors examined the pricing of the major airlines, referred to as “incumbents,” on threatened routes in the period surrounding such events, and found that incumbents cut fares significantly when threatened by Southwest’s entry into their routes. Their results suggest that Southwest has a powerful competitive effect in the U.S. passenger airline industry. This effect is not just the result of Southwest’s head-to-head competition with major carriers. Substantial fare reductions from major carriers are induced merely by the threat of competing with Southwest.