

# Are Legacy Airline Mergers Pro- or Anti-Competitive? Evidence from Recent U.S. Airline Mergers

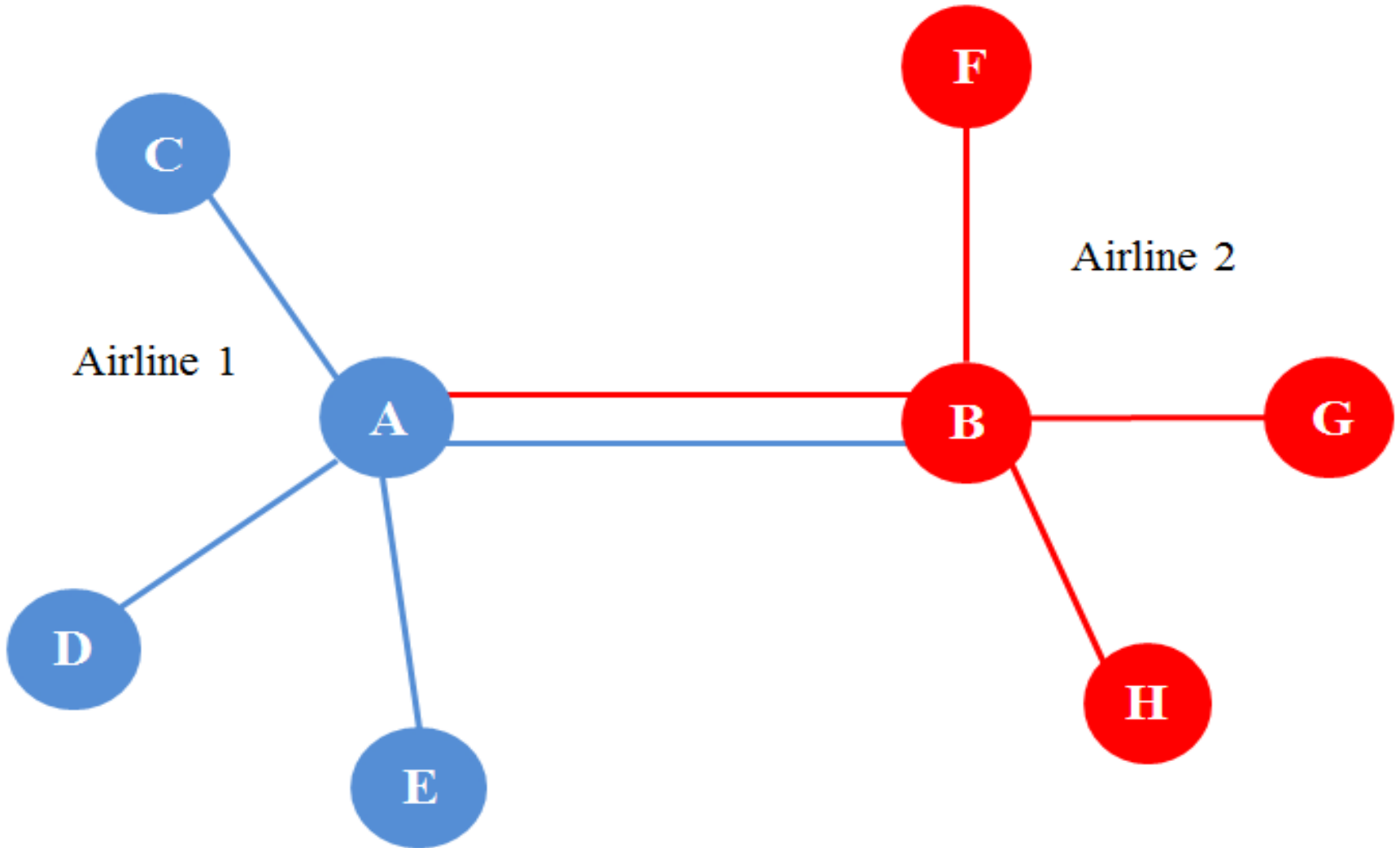
by

Dennis W. Carlton, Mark Israel,  
Ian MacSwain and Eugene Orlov

# What is special about airline mergers?

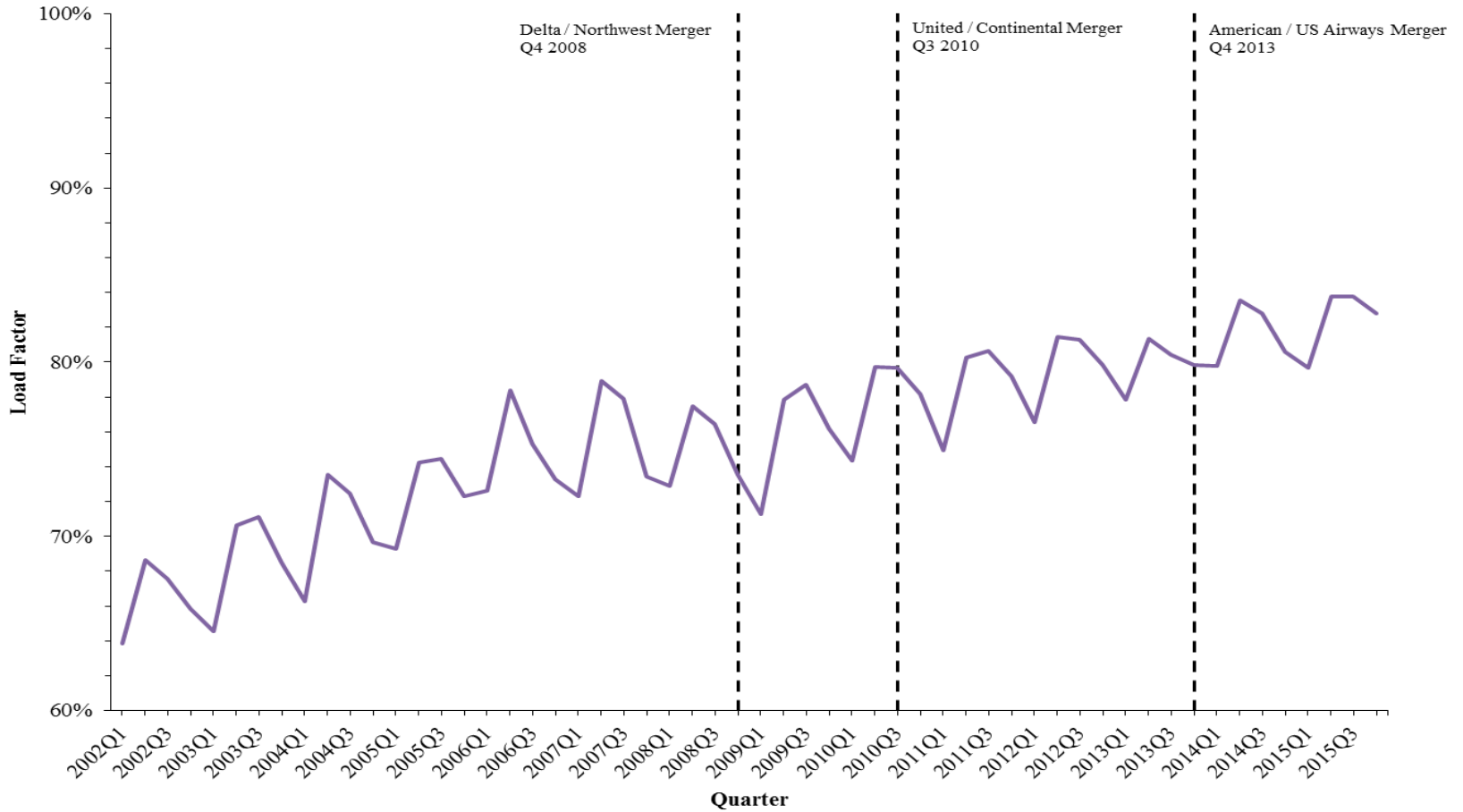
- Network industry
- Legacy airlines declined from 6 to 3
- Dissatisfaction with airline service

# Networks



# Load factors

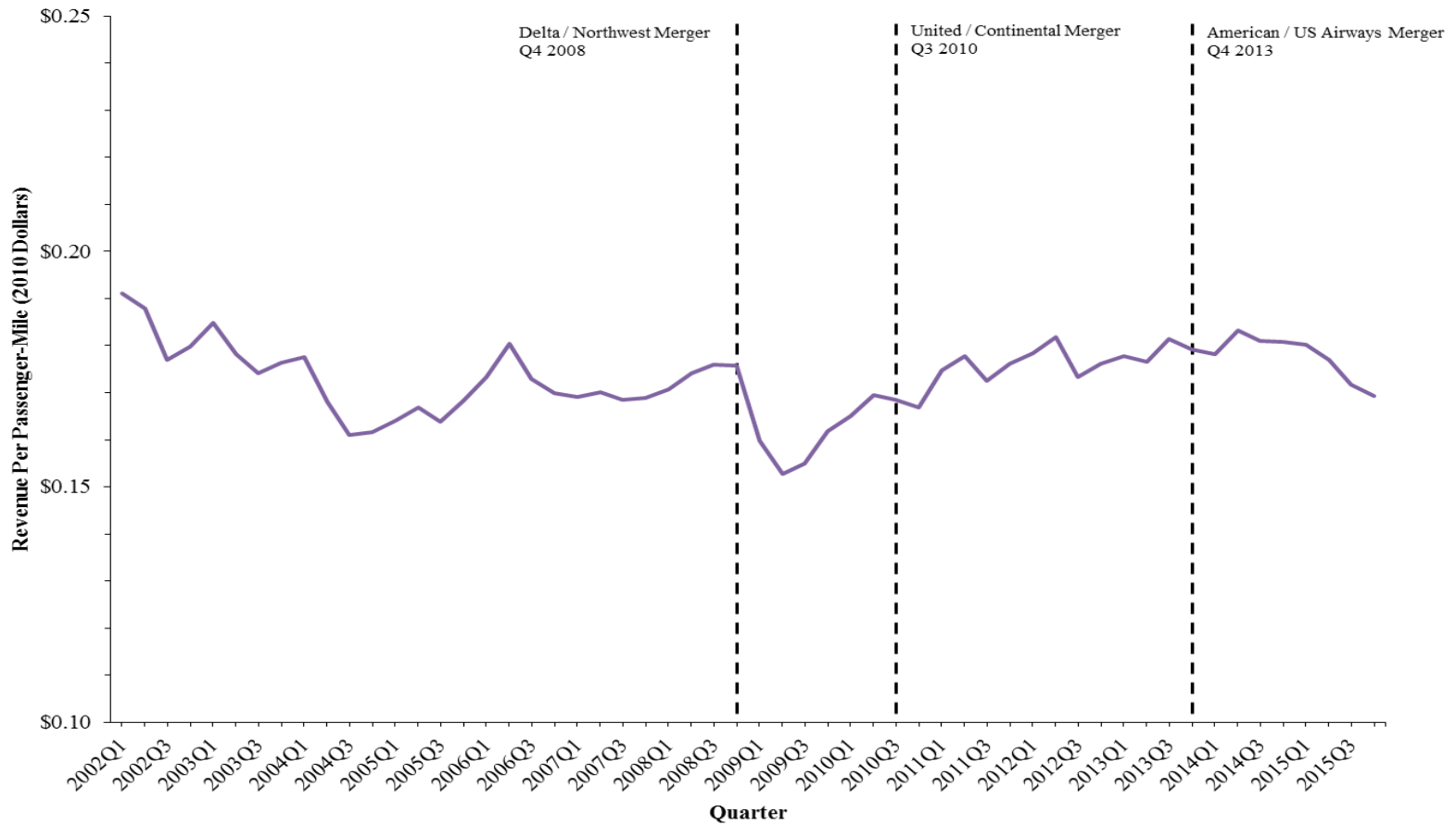
## Load Factors



Source: DOT BTS T-100.  
Notes: Load factors defined as a ratio of total number of passengers to total number of seats.

# Real fares

## Real Revenue Per Passenger-Mile



Source: DOT BTS DB1B; T-100; OAG; BLS CPI.  
Note: Revenue adjusted for CPI (2010 dollars).

# Legacy Mergers: Good or Bad?

- Must look at both fares and output measures.
- Fares are less reliable than output measures such as capacity or miles flown.
- Post-merger do you see output increases combined with fare decreases or the reverse?
- Methodology: focus on highly concentrated overlap routes-routes where the merging carriers compete and there is at most only one other competitor. That is, 2 to 1 or 3 to 2 routes. Post-merger, do output and fares on these routes behave differently than the control routes?
- This methodology is a standard one and is called difference –in – difference.

# Econometric equation

$$Y_{it} = \beta_1 \text{Merger}_i \text{Post}_t + \beta_2 \text{PercentNonstop}_{it} + \delta_i + \theta_t + \varepsilon_{it},$$

# Regression results

Table 3: Pooled Nonstop Overlap Results

Dependent Variable	Merger Effect Nonstop Overlaps
Log (Avg. Fare)	-0.063** [0.026] (18,123)
Log (90th Percentile Fare)	-0.030 [0.020] (18,123)
Log (Nr. Passengers)	0.120*** [0.032] (18,123)
Log (Nr. T-100 Seats)	0.236*** [0.033] (18,080)

Source: OAG, DOT DB1B Data, DOT T-100 Data.

Notes: Robust standard errors, clustered by route, are in brackets.

Models weighted by total passengers on route for all periods.

Nonstop overlaps defined as routes where both merging parties had at least 5 roundtrips in the week of July 9-15 of the merger year.

\*\*\*/\*\*/\* denote significance of coefficients at 1/5%/10% level of significance.



# Econometric Results: Individual Mergers

Table 5: Separate Nonstop Overlap Results

Dependent Variable	DL/NW Merger Effect Nonstop Overlaps	UA/CO Merger Effect Nonstop Overlaps	AA/US Merger Effect Nonstop Overlaps
Log (Avg. Fare)	-0.044** [0.021] (8,554)	-0.013 [0.013] (2,267)	-0.123*** [0.042] (7,302)
Log (90th Percentile Fare)	-0.023 [0.041] (8,554)	-0.020 [0.021] (2,267)	-0.057 [0.042] (7,302)
Log (Nr. Passengers)	0.066** [0.031] (8,554)	0.072* [0.040] (2,267)	0.202*** [0.061] (7,302)
Log (Nr. T-100 Seats)	0.255*** [0.070] (8,528)	0.264*** [0.027] (2,262)	0.196*** [0.057] (7,290)

Source: OAG, DOT DB1B Data, DOT T-100 Data.

Notes: Robust standard errors, clustered by route, are in brackets.

Models weighted by total passengers on route for all periods.

Nonstop overlaps defined as routes where both merging parties had at least 5 roundtrips in the week of July 9-15 of the merger year.

\*\*\*/\*\*/\* denote significance of coefficients at 1/5%/10% level of significance.