Examining the Airline Industry in the Context of the 2023 Merger Guidelines

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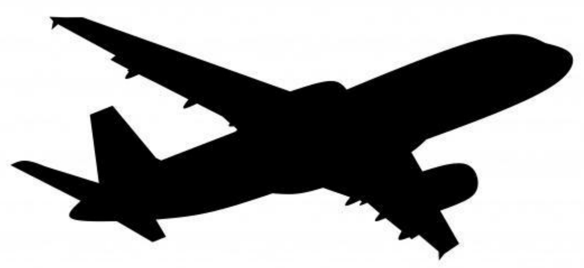

Motivation

- 2023 Merger Guidelines suggested a presumption against mergers where the merged firm has at least 30% market share or market HHI of 1800 and the merger creates an HHI increase of at least 100 points
- The 2010 guidelines had a presumption against mergers that had a market HHI of 2500+ and an HHI increase of 200 points
- This is a significant change to the guidelines, what is the effect?
  - Understanding how the new guidelines could affect consumers is important to their efficacy
- The airline industry provides unique circumstances to observe tens of thousands of “markets” with many combinations of market shares
  - Allows researchers to examine the effects of market power

Data

- US Department of Transportation Data Bank 1B Ticket Dollar Value Database
  - Contains fare, origin, destination, connection, and other important data for all flights on a certain route from a certain carrier in a certain quarter
- Filtered down data to only include observations 3 years after or 2 years before a merger involving either merging firm (about 1.8 million)

Methods

- Differences in differences model with fixed effects on route, time, carrier/merger
- Routes where only one carrier was present were used as comparison group
- Three model specifications were used defining routes differently based on the existence of a connection and the length of the connection

Results

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Model 1	Model 2	Model 3	Connecting	Nonstop
Caught2010	0.0291***	0.0114***	0.0150***	0.00746**	0.0176***
	(0.00135)	(0.00131)	(0.00130)	(0.00292)	(0.00145)
Caught2023	0.0239***	0.0226***	0.0179***	0.0233	0.0195***
	(0.00207)	(0.00204)	(0.00174)	(0.0289)	(0.00174)
Constant	5.409***	5.409***	5.410***	5.279***	5.427***
	(0.000122)	(0.000124)	(0.000126)	(0.000384)	(0.000133)
Observations	1,768,989	1,849,492	1,803,944	204,176	1,599,768
R-squared	0.760	0.748	0.751	0.813	0.733

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Results by Merger

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	AA/QQ	US/HP	DL/NW	UA/CO	WN/FL	AA/US	AS/VX
Caught2010	-0.0265***	0.0113*	0.0421***	0.0423***	0.0664***	0.0120***	-0.0589***
	(0.00418)	(0.00603)	(0.00215)	(0.00341)	(0.00433)	(0.00222)	(0.0136)
Caught2023	-0.0492***	0.0300***	0.0963***	0.0295***	0.0160	0.0412***	0.0747***
	(0.00460)	(0.00609)	(0.00360)	(0.00341)	(0.00991)	(0.00257)	(0.0209)
Constant	5.317***	5.269***	5.439***	5.483***	5.360***	5.559***	5.387***
	(0.000446)	(0.000397)	(0.000270)	(0.000279)	(0.000190)	(0.000219)	(0.000644)
Observations	176,908	206,794	349,043	248,444	229,166	373,268	34,973
R-squared	0.770	0.737	0.777	0.788	0.865	0.734	0.811

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Regression Equation

$$\ln(\text{Weighted Ticket Price}_{rtc}) =$$
$$\beta_0 + \beta_1(\text{2023Guidelines}_{rtc} * \text{PostMerger}_{rtc}) + \beta_2(\text{2010Guidelines}_{rtc} * \text{PostMerger}_{rtc}) + \alpha(\text{Route}) + \alpha(\text{Time}) + \alpha(\text{Carrier/Merger}) + \varepsilon_{rtc}$$

r - Route
t - Time
c - Carrier/Merger

Conclusions

- Markets that fall under the threshold for presumption under the 2010 guidelines see a slight increase in prices post merger
- Markets that fall under the threshold for presumption under the 2023 guidelines see a similar increase in prices post merger, but this effect is more reliant on nonstop routes than connecting routes
- Larger, more prolific mergers such as UA/CO and DL/NW see slightly higher price increases than average
- The 2010 Merger Guidelines are effective at identifying markets that see price increases post-merger
- The 2023 Merger Guidelines are effective at identifying markets that see price increases post-merger, but effect is greater on nonstop routes than connecting routes

Additional Research

- Mergers can also affect the quality and quantity of services, and more research must be done on how mergers affect those facets of air travel
- Other industries may see different effects of mergers that fall under the presumption of both the 2010 and 2023 guidelines, and more industry-specific research may lead to better estimates of how market power effects prices in mergers