

ASSESSING LOW-FARE ENTRY IN AIRLINE MARKETS

Impacts of Revenue Management and Network Flows

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The impact of low-fare entry has traditionally been evaluated using aggregate market measures

- Average fares, local market traffic, local market revenues
- Most studies have found that low-fare entry leads to increases in total market traffic and revenues
- Incumbent carriers typically see a decrease in market fares and revenues accompanied by an increase in traffic

Some incumbent pricing responses have raised the question of predation based on these aggregate measures

Focus of this research on the effects of low-fare entry and competition on traditional measures of airline performance

- Particular attention given to revenue management and flows of network passengers

1. Illustrated the limitations of using traditional measures of airline performance to assess the response of incumbent carriers to low-fare entry
2. Identified important factors affecting incumbent airline performance under conditions of entry by a low-fare airline
3. Demonstrated the individual impact and combined effects of these factors on traditional measures of performance
4. Provided policy-makers with guidance and insights on the competitive importance of previously ignored factors specific to the airline industry

Case Studies

- Survey of the effects of low-fare entry on aggregate measures of performance
- In-depth analysis of two specific markets with low-fare entry
 - Detroit-Boston and Atlanta-Orlando

Simulation

- Assess the impact of previously identified factors on individual carrier performance
- Explain the effects of entry on aggregate market measures
- Use the Passenger Origin Destination Simulator (PODS) to simulate various realistic scenarios of entry
 - Single market case of entry
 - Network simulation

NW accused of anti-competitive behavior in DTW-BOS, while DL perceived to be less aggressive in ATL-MCO

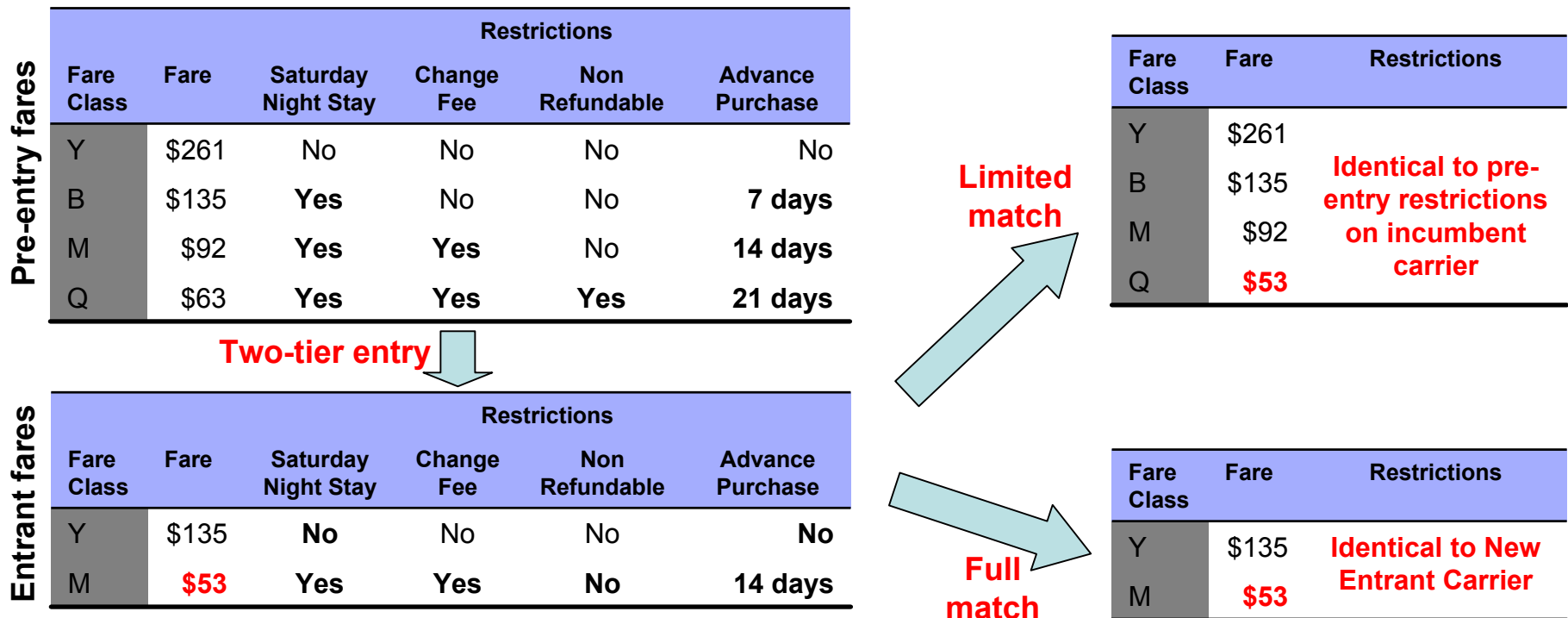
Airline	Year-Over-Year Percent Change		
	Traffic	Average Fare	Revenues
Delta ATL-MCO	+59.7%	-51.3%	-22.2%
Northwest DTW-BOS	+63.3%	-48.8%	-17.4%

Aggregate measures paint an incomplete picture of the impacts of entry and provide no information regarding the incumbents' response

- No indication regarding incumbents matching the new entrant's fares
- Predatory pricing is difficult to infer from such measures, let alone intent

Focus on the following cases of entry in a single market:

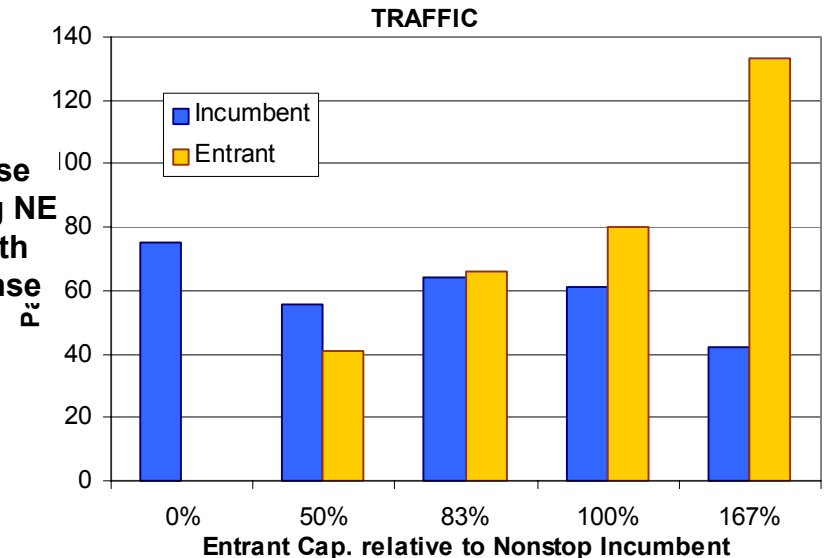
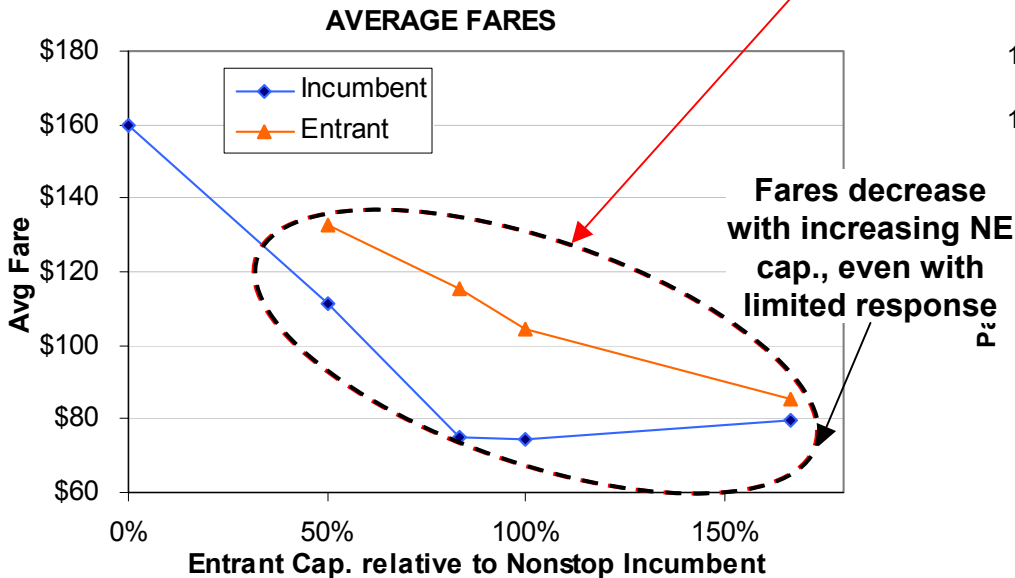
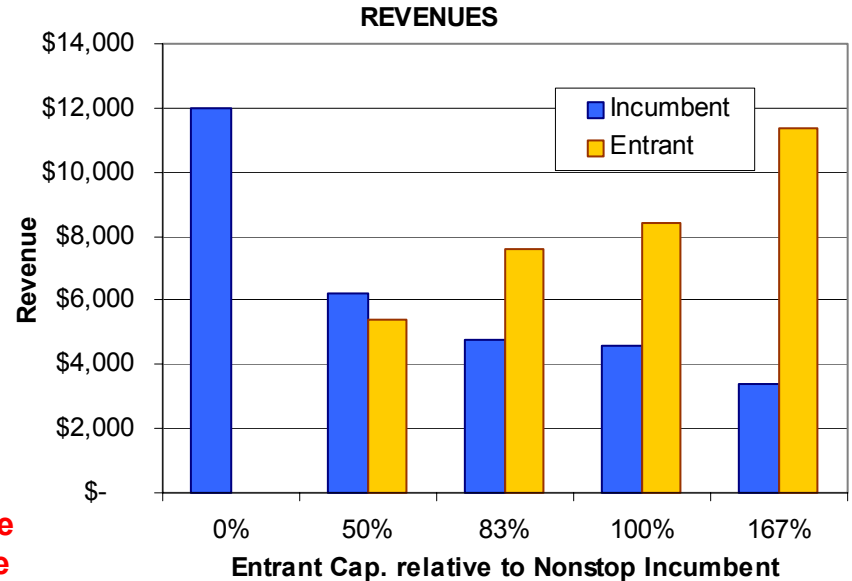
- Entry with a two-tier fare structure on the new entrant carrier
 - Limited match from incumbent carriers
 - Full match from incumbent carriers
- Variable entrant capacity and revenue management methods



LOWER AVERAGE FARES DO NOT INDICATE AN AGGRESSIVE PRICING RESPONSE

Under limited match response,
incumbent's average fare is
lower than the new entrant's

- ➔ Entrant diverts high fare business traffic from incumbent with lower unrestricted fare

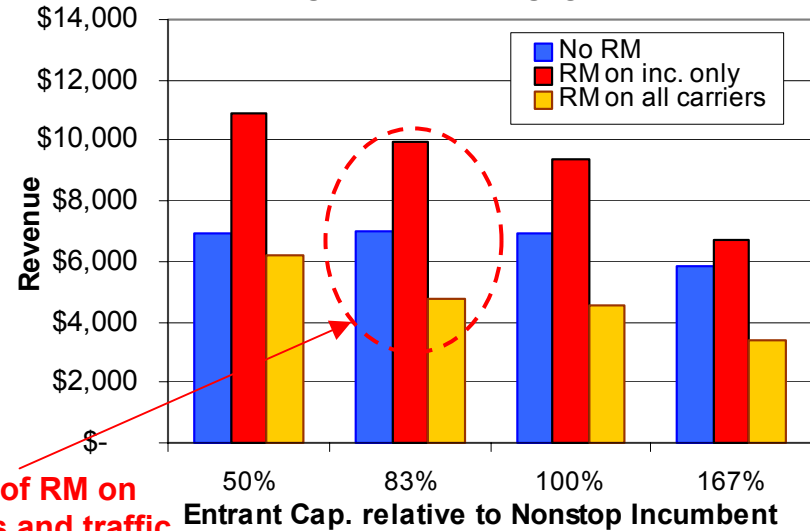


REVENUE MANAGEMENT SYSTEMS AFFECT CHANGES IN AVERAGE FARES AFTER ENTRY

Under a **limited response** scenario, the incumbent's average fare depends on

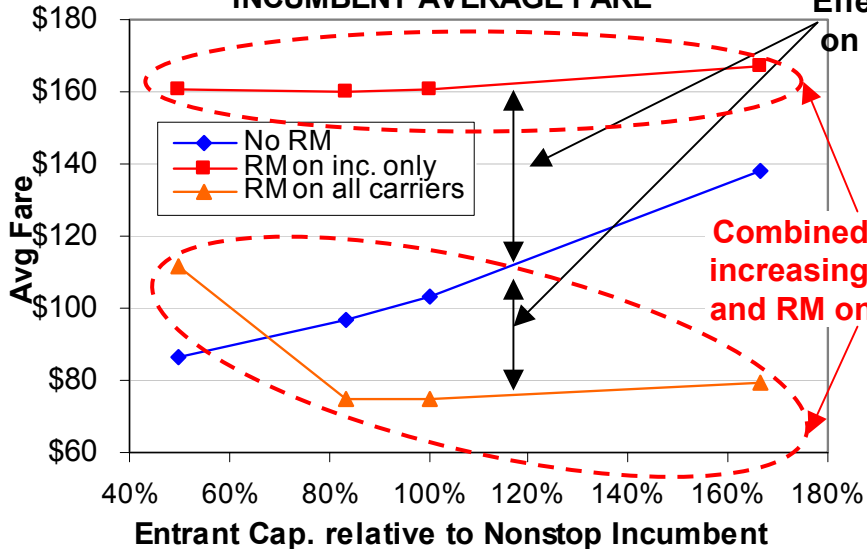
- The use of RM by the **incumbent**
- The use of RM by the **entrant**

INCUMBENT REVENUES



Effect of RM on revenues and traffic

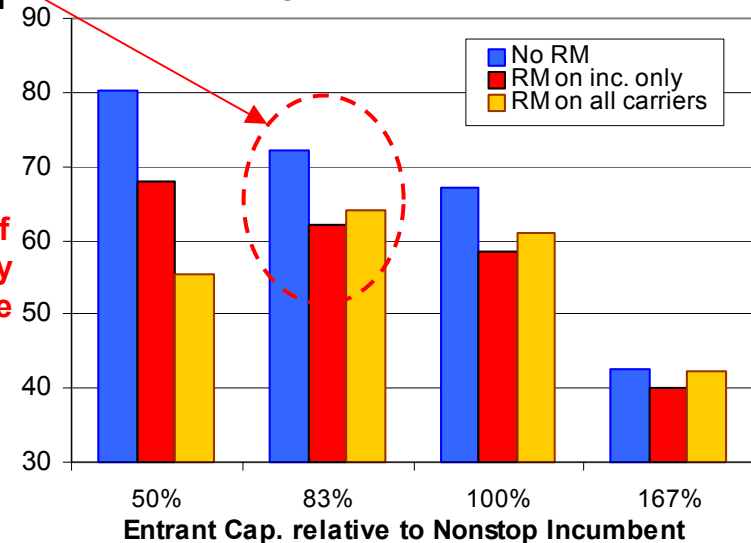
INCUMBENT AVERAGE FARE



Effect of RM on avg fare

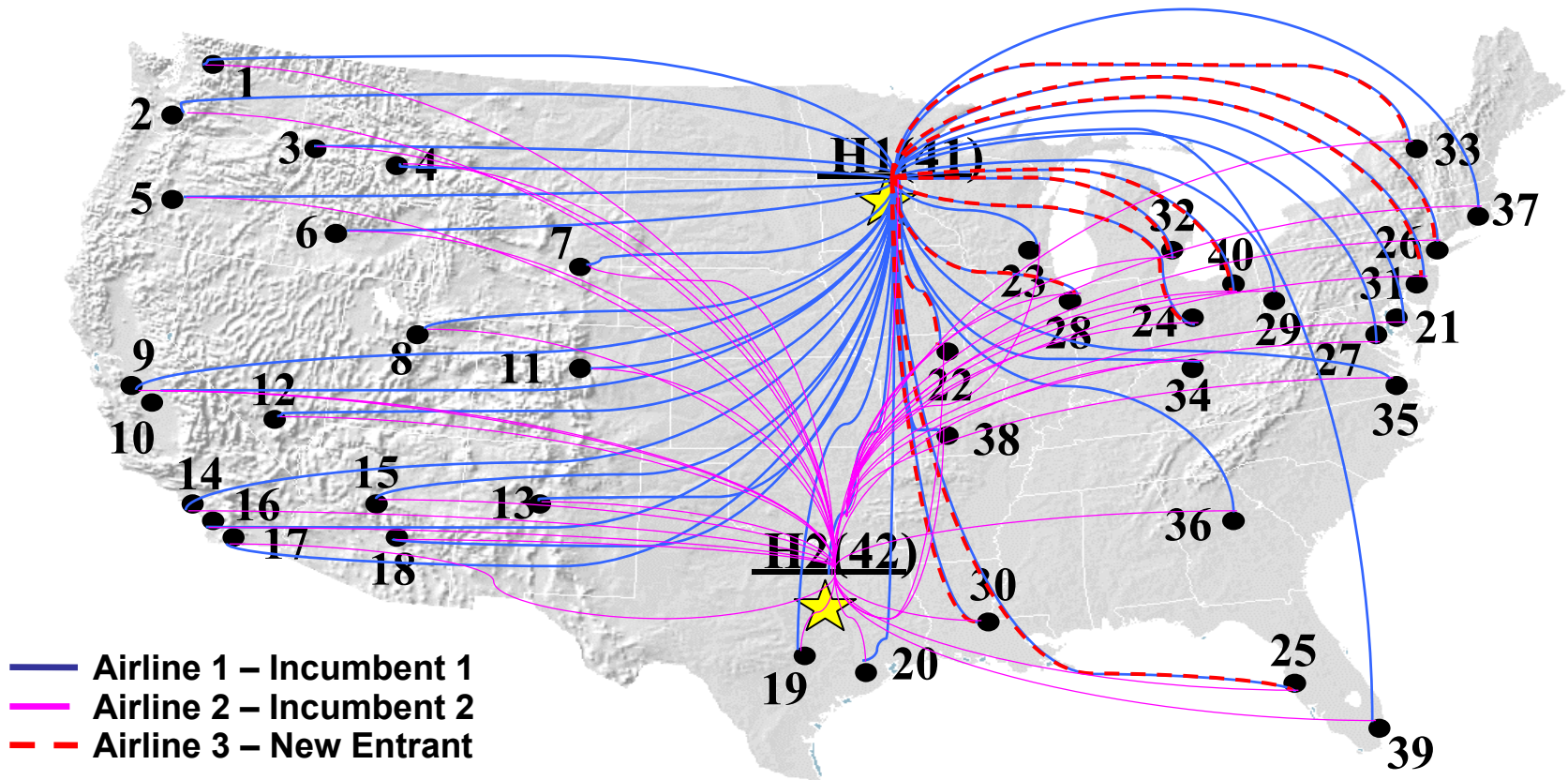
Combined effect of increasing capacity and RM on avg fare

INCUMBENT TRAFFIC



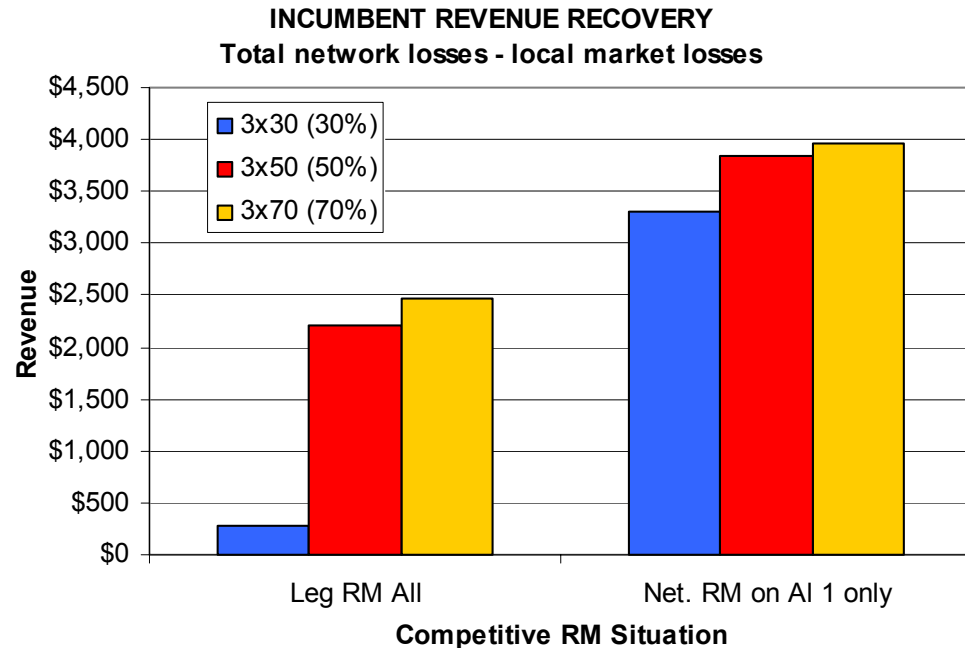
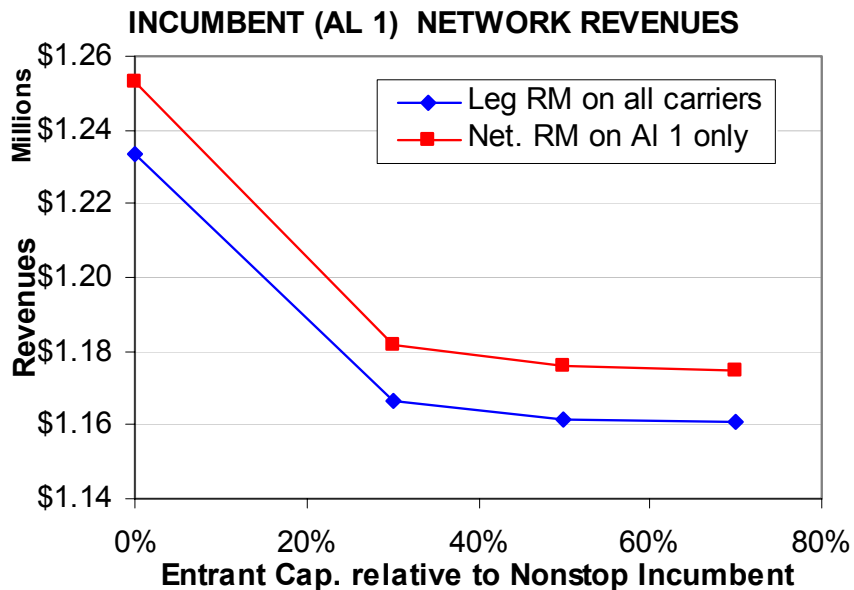
Two incumbent network carriers

- Three daily banks from west to east
- 100 seats per flight on incumbent carriers



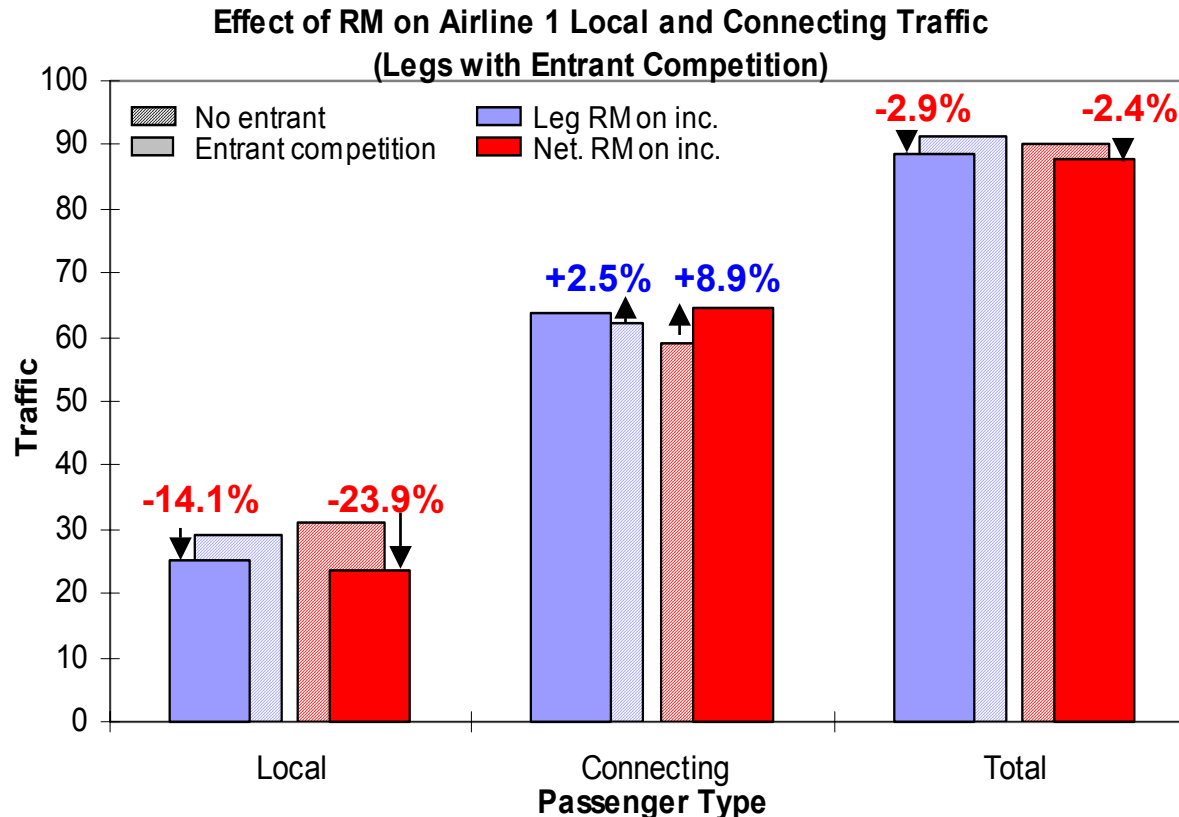
Entry still leads to incumbent network revenue losses

- Losses increase with increasing new entrant capacity
- Revenue management mitigates the extent of the revenue losses
 - Network-level revenue losses are smaller than local market losses
 - More advanced Network RM allows the incumbent to trade off local and connect passengers



Network revenue management allows Airline 1 to trade-off local passengers for connecting passengers

- This allows Airline 1 to achieve greater network revenues
- But affects local market revenues



Network flows affect measures of incumbent performance when a new entrant competes in select local markets:

1. The incumbent carrier can use Network RM methods to replace local market traffic with connecting traffic to mitigate the impact of entry on network revenues
2. The average local market fare on the incumbent carrier is less affected by entry, as the incumbent focuses on high-fare local traffic
3. Local market revenues tend to suffer more from entry than in the single market case, as incumbent foregoes low fare traffic, which reduces local market revenues

Response to entry raises suspicion when:

1. The incumbent carrier's average market fare is lower than that of the new entrant carrier
 - This is often seen as an indication of aggressive pricing response from the incumbent carrier

2. The incumbent carrier's average market fare decreases after entry
 - The decrease in incumbent average fare is assumed to reflect an aggressive incumbent pricing response

3. The incumbent carrier's local market traffic increases, but its local market revenues decrease
 - Decreasing revenues and increasing traffic are again presumed to reflect an overly aggressive pricing response leading to greater traffic but lower revenues

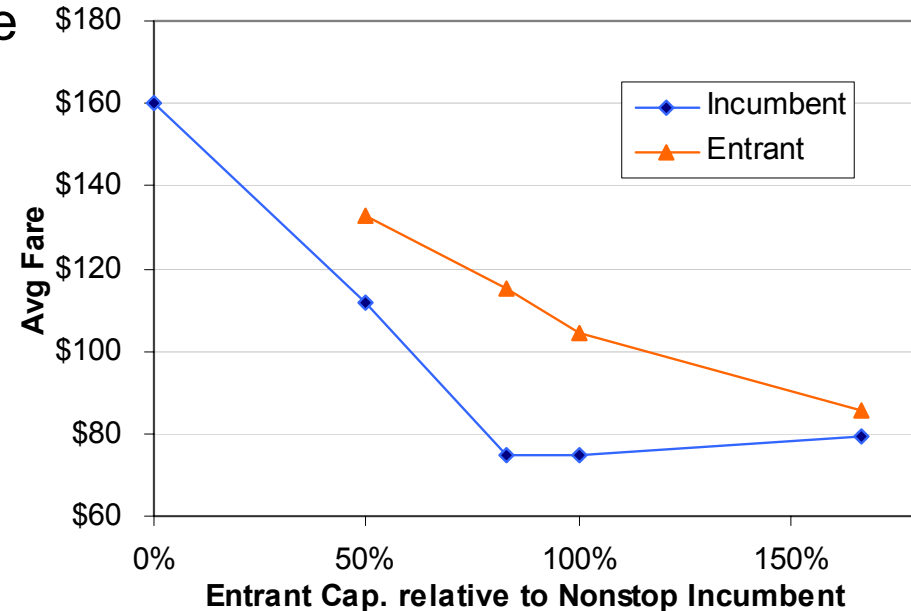
1. LOWER INCUMBENT AVERAGE FARE

Despite the limited response from the incumbent carrier, as simulated in this example,

- Incumbent average fare drops below new entrant average fare

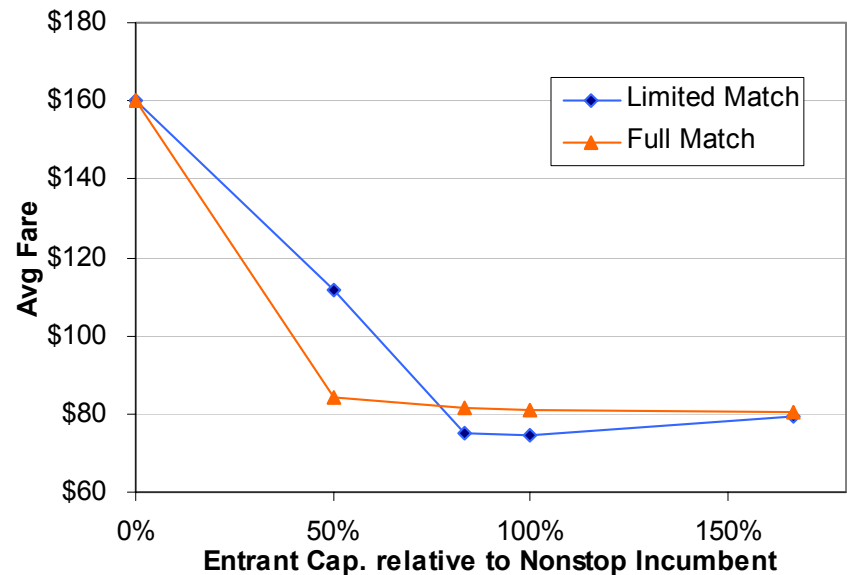
This example illustrates the combined effect of

- On the entrant
 - A differentiated fare structure
 - A lower fare structure relative to the incumbent
 - Use of revenue management to control availability
- On the incumbent carrier
 - Limited fare match
 - Use of revenue management
- This allows the new entrant to carry the high fare traffic while the incumbent only gets low-fare traffic



2. DECREASE IN INCUMBENT AVERAGE FARE FOLLOWING ENTRY

A more aggressive response to entry does not necessarily lead to a lower average fare on the incumbent carrier

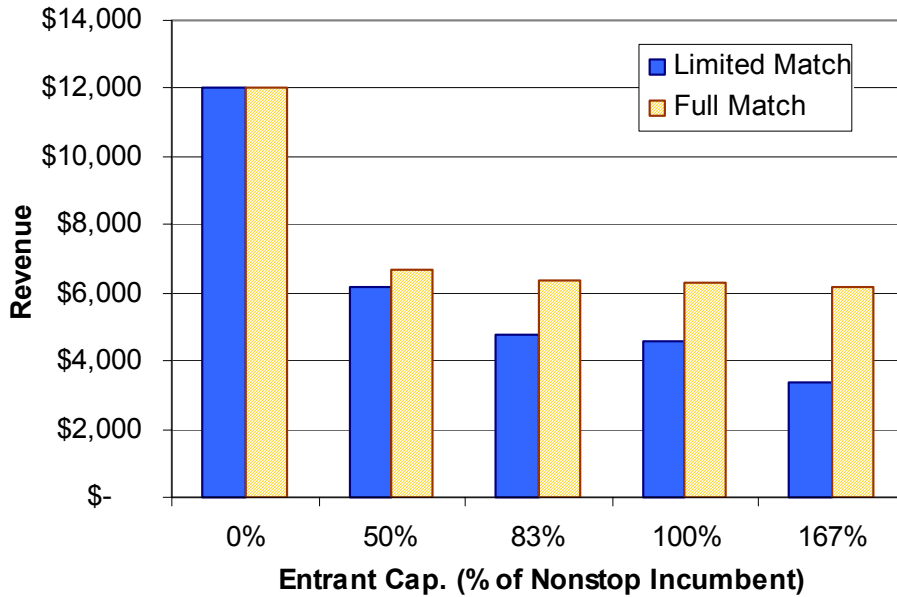


Rather, the effect on incumbent average fare is affected by

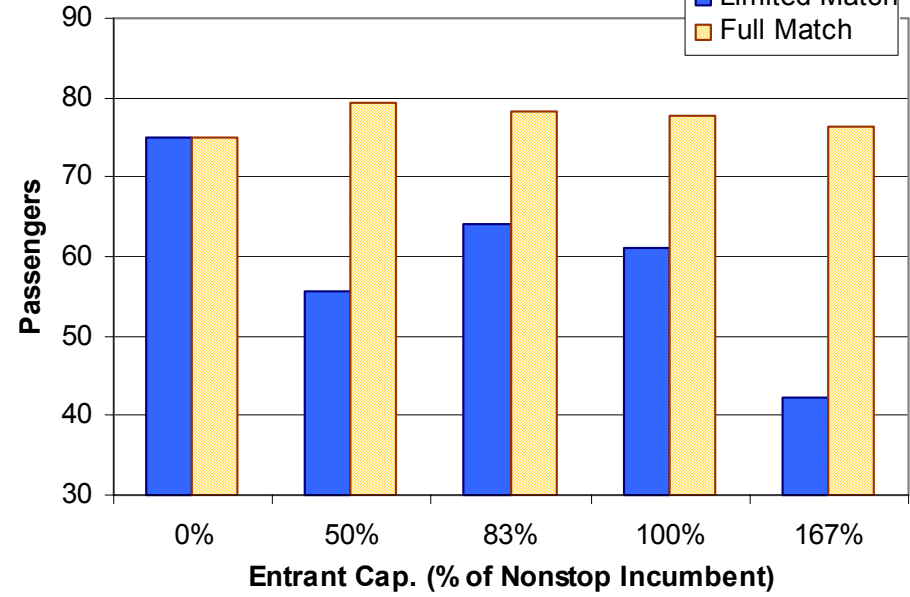
- The entrant's capacity relative to the incumbent carrier
- The competitive revenue management situation

3. COMBINATION OF TRAFFIC INCREASE AND REVENUE DECREASE ON THE INCUMBENT

INCUMBENT REVENUES



INCUMBENT TRAFFIC



The more aggressive response (full match) leads to

- An increase in traffic but a decrease in revenues
- BUT higher revenues than the limited match response

Neither simulated response implies predatory motive from the incumbent carrier

Aggregate measures of average fare, traffic and revenues provide little or no useful information regarding

- The performance of individual carriers
- The nature of the response and intent of incumbent carriers

Changes in these measures after entry are affected by a combination of

- Entrant capacity relative to incumbent carrier capacity
- Pricing strategy of incumbent and entrant carriers
- Competitive revenue management situation
- Flows of network passengers

The effects of revenue management and flows of network passengers have traditionally been overlooked in previous research of low-fare entry and incumbent response

- They should be accounted for when studying airline markets in general and the effects of entry in particular
- This research should be used as a basis for understanding competitive airline markets and for assessing the potential for predatory behavior

Evaluation of competitive responses to low-fare entry should take into account

- New entrant capacity
- Specific fare actions and entrant pricing strategy
- Use of revenue management (or not) by all competitors