

**BEFORE THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC**

In the matter of:

**Congestion Management Rule for John
F. Kennedy International Airport and
Newark Liberty International Airport**

Docket No. FAA-2008-0517

COMMENTS OF DANIEL M. KASPER AND DARIN N. LEE

JULY 21, 2008

I. ASSIGNMENT

1. We, Daniel M. Kasper and Darin Lee,¹ have been retained by the Air Transport Association of America (“ATA”) to provide an independent economic analysis of various options and proposals contained in the Federal Aviation Administration’s (“FAA”) Notice of Proposed Rulemaking, Docket No. FAA-2008-0517, in the matter of “Congestion Management Rule for John F. Kennedy International Airport and Newark Liberty International Airport” (the “NPRM”). We have also been asked to provide an independent assessment of the accompanying Initial Regulatory Evaluation (“IRE”).²

II. OVERVIEW OF THE FAA PROPOSED RULE

2. FAA recently issued two documents to explain and support a congestion management rule for New York’s John F. Kennedy (“JFK”) and Newark’s Liberty International (“EWR”) airports: (1) an NPRM outlining a set of proposed regulations that FAA believes will address congestion and delay problems at JFK and EWR and promote a more efficient allocation of scarce slot resources at those airports, and (2) an Initial Regulatory Evaluation that attempts to both justify and quantify the costs and benefits of the NPRM.

¹A summary of our qualifications are contained in Section VI. Our *curriculum vitae* are contained in Appendices A and B.

² *Initial Regulatory Evaluation, Congestion Management Rule For John F. Kennedy International Airport and Newark Liberty International Airport*, Office of Aviation Planning and Plans, Operations Regulatory Analysis Branch, U.S. Department of Transportation, Federal Aviation Administration, May 5, 2008, hereafter referred to as the “Initial Regulatory Evaluation”.

3. The NPRM (and accompanying IRE) for JFK and EWR share many of the same key elements as the FAA's recent Supplemental Notice of Proposed Rulemaking ("SNPRM") and IRE for LaGuardia airport ("LGA").³ Among the primary common features of the NPRM (for JFK and EWR) and SNPRM (for LGA) are:
- i. The establishment of a 10-year rule covering slot allocation at their respective airports;
 - ii. The maintenance of hourly caps on slots. Under the NPRM, the cap at both JFK and EWR would be set at 81 scheduled operations per hour and one to two unscheduled operations per hour. Unlike LGA, slots would be required every day of the week between 6:00 AM and 10:59 PM;⁴
 - iii. The establishment of three different types of slots: (1) "Common" or grandfathered slots that have 10-year leases and would therefore not be subject to reallocation during the term of the rule; (2) "Limited" slots that would have shorter (i.e., one to four years) leases and would be subject to reallocation using a new auction mechanism; and (3) "Unrestricted Slots", which are effectively the slots that carriers acquire under the rule's auction mechanism and are not subject to further reallocation for the duration of the rule;

³ *Supplemental Notice of Proposed Rulemaking*, Docket No. FAA-2006-25709, in the matter of Congestion Management Rule for LaGuardia Airport, hereafter "LaGuardia SNPRM", and *Initial Regulatory Evaluation, Congestion Management Rule For LaGuardia Airport*, Office of Aviation Planning and Plans, Operations Regulatory Analysis Branch, U.S. Department of Transportation, Federal Aviation Administration, April 11, 2008, hereafter "LaGuardia IRE".

⁴ Under the SNPRM, slots at LGA would not be required all day Saturday and Sunday morning.

- iv. At JFK, the initial allocation of slots varies based on two mutually exclusive proposed Options (at EWR, the only applicable option is Option 1):
 - 1. In Option 1, each carrier is allocated a baseline of up to 20 Common slots plus ninety percent of its slot holding (above the initial allocation of 20) as of January 2007. The remaining 10 percent of a carrier's slots would become Limited slots and would be divided into five equally sized tranches. One tranche would be reallocated by auction in January 2009 and the remaining four tranches would be assigned leases of 1 to 4 years respectively.
 - 2. In Option 2, each carrier is allocated a baseline of up to 20 Common slots plus eighty percent of its slot holding (above the initial allocation of 20) as of January 2007. The remaining 20 percent the carrier's slots would become Limited slots, also divided evenly into five tranches in a similar fashion as in Option 1;
- v. No designated slots for small communities and no distinction between commuter and jet slots;
- vi. A yet to be determined auction mechanism to allocate Limited slots, with the first auction scheduled for January 2009.⁵ For EWR and JFK under Option 1, proceeds from the auction would go to the FAA to offset the cost of the auction and also to provide incremental funding for New York capacity programs, including the early implementation of NextGen technologies.

⁵ See *Initial Regulatory Evaluation* at page vii.

Under Option 2 for JFK, auction proceeds would go to the holders of the confiscated slots, net of the FAA's cost of developing and administering the auction;

- vii. The continuation of the FAA's current Minimum Use (i.e., "use or lose") Requirement which requires carriers to use their Common slots at least 80% of the time during rolling two-month periods, otherwise, slots, with the exception of "unrestricted" slots (those bought at auction) must be returned to FAA and would be auctioned;⁶ and
- viii. The ability for carriers to sublease slots, either through bilateral transactions or by posting desired lease terms on the FAA's website and soliciting bids. Under both circumstances, full details of subleases (i.e., duration, consideration received, etc.) would be made public by FAA.

4. Like the SNPRM for LGA, FAA's rationale for the proposed rule is two-fold. First, it believes that its proposed rule "would result in a long-term improvement in the allocation of scarce slot resources at John F. Kennedy International Airport (JFK) in New York, NY, and Newark Liberty International Airport (EWR or Newark) in Newark NJ."⁷ Second, FAA asserts that "The need for this regulation is driven by a market failure with regard to congestion at New York area airports."⁸ FAA's justification for the NPRM is presented in the Initial Regulatory Evaluation which contains an analysis of the costs and benefits of the

⁶ Unrestricted slots are not subject to the minimum use requirement.

⁷ *Initial Regulatory Evaluation*, page iv.

⁸ *Initial Regulatory Evaluation*, page iii.

proposed rule that purports to show that the “estimated present value of net benefits of improved slot allocation is between \$256 million and \$267 million at JFK and between \$207 million and \$218 million at EWR from 2009-2019” compared to estimated costs (due to design, implementation and participation in the auction) of only \$11 and \$22 million each at JFK and EWR.⁹ Likewise, the Initial Regulatory Evaluation also purports to demonstrate that delay reductions as a result of the rule generate present value net benefits of about \$686 million at JFK and \$705 million at EWR between 2009 and 2019.¹⁰

III. SUMMARY OF CONCLUSIONS

5. In comments filed in the FAA’s LaGuardia SNPRM proceeding, we demonstrated that the FAA’s proposed rule was both unnecessary and plagued with serious conceptual flaws.¹¹ In addition, we showed that the FAA had relied on a number and critical assumptions that were unsubstantiated and, in several instances, demonstrably incorrect and that, as a result, the findings of the FAA’s accompanying Initial Regulatory Evaluation for LGA—including its cost benefit analysis—were unreliable. Unfortunately, the NPRM for JFK and EWR is plagued with virtually all of the same shortcomings.

⁹ *Initial Regulatory Evaluation*, page iv.

¹⁰ *Ibid*, page v.

¹¹ See *Comments of Daniel M. Kasper and Darin N. Lee*, Supplemental Notice of Proposed Rulemaking, Docket No. FAA-2006-25709, in the matter of Congestion Management Rule for LaGuardia Airport, hereafter “Previous Comments.”

6. As explained below, the four primary flaws in the LaGuardia SNPRM and IRE are repeated in the current NPRM and accompanying IRE with respect to JFK and EWR.¹² Specifically:
- a. Although all of the delay reduction and the associated benefits claimed by the FAA are attributable to the imposition of operational caps and are thus unrelated to the separate issue of how those limited access rights should be allocated among airlines, the NPRM improperly conflates these two issues. The effect of this is to increase the benefits the IRE seeks to claim for the proposed slot auctions.
 - b. Although the FAA explicitly acknowledges that “the best way to maximize competition is with the development of a robust secondary market”¹³ both the NPRM and the IRE assume—without providing any empirical evidence or analysis—that the allocation of slot resources at JFK and EWR produced by the existing secondary market is not efficient.
 - c. The NRPM assumes—without analysis or consideration of alternatives—that its proposal to take slots from existing slot holders for slot auctions would be less costly and less burdensome than other possible alternatives. But that assumption is unwarranted. Indeed, the unreliability of its cost assumptions is illustrated by the fact that the FAA is now considering an entirely different auction format than the one it had outlined less than a month ago.¹⁴ Raising at this late date the possibility of changing auction formats reinforces the FAA’s lack of experience with the design and

¹² A comprehensive discussion of these flaws as they apply to LGA can be found in our *Previous Comments*.

¹³ NPRM at pages 29634-29635.

¹⁴ See “Market Survey – Auction Services”, June 20, 2008, available at https://www.fbo.gov/?s=opportunity&mode=form&tab=core&id=5db50aeb21cb945fb6ad67f41ca32367&_cview=0

administration of large scale auctions and casts further doubt on the credibility of its assumptions regarding the costs of its proposed auction system.

- d. The net benefits FAA posits if the NPRM were promulgated as a final rule are grossly exaggerated, primarily because the IRE is based on a number of seriously flawed assumptions. Most notably, FAA erroneously claims that one of the “primary benefits” of the NPRM (estimated at approximately \$1.4 billion at JFK and EWR combined) is “delay reduction from the caps on operations”. In reality, however, the NPRM would have virtually no impact on congestion or delays compared to the present—and thus no benefit—because the level of (non-weather related) congestion/delay at JFK and EWR are determined by the number of hourly operations permitted. And as the NRPM notes, “both JFK and Newark are already capped under the respective Orders at 81 operations per hour”¹⁵ and “[l]ooking forward, operations at all three major airports in the New York City area will be capped.”¹⁶ Likewise, FAA has substantially overstated the purported net benefits resulting from the forced reallocation of slots by assuming that the benefits from replacing one service with another at JFK or EWR will have no impact on fares, passengers or service patterns at other New York City area airports. Finally, the IRE substantially underestimates the costs of its proposed rules, including the costs resulting from the forced reclamation and reallocation of slots via auction.

¹⁵ NPRM at page 29630. Likewise, as the NPRM itself makes clear, it is the Agency’s imposition of movement caps at JFK and EWR—and not the establishment of a slot auction mechanism for reallocating slots among carriers—that prevents excessive congestion and delay. See, for example, NPRM at page 29637 noting that that “The primary benefits of this rulemaking would be due to the delay reduction from the caps on operations...”

¹⁶ *Initial Regulatory Evaluation*, page 19.

7. In addition to the four critical flaws outlined above, the NPRM is further plagued by a number of oversights and economic misconceptions that would result in significant harm to U.S. carriers' competitiveness vis-à-vis foreign flag carriers if the proposed rule is adopted.

The most important of these additional flaws are:

- e. FAA's misguided belief that slots would be more efficiently allocated at JFK and EWR if carriers re-allocated slots currently used for domestic service to international service. This justification for the NPRM is fatally flawed because it ignores the important fact that New York City is already the largest transatlantic gateway for three of the large U.S. network carriers (Delta, Continental and American), each of whom relies heavily on domestic feeder flights in order to make their international services economically viable;
- f. A failure by FAA to acknowledge that while only one foreign flag carrier currently utilizes more than 20 daily slots at JFK or EWR,¹⁷ foreign flag carriers collectively account for a substantial and growing share of operations at these airports (especially during peak hours) and therefore share responsibility with U.S. carriers for the delay problem at those airports; and
- g. That the NPRM overlooks the fact that by effectively exempting all foreign flag carriers from the slot reclamation and auction process at JFK and EWR, FAA will tilt the playing field strongly in favor of foreign-flag carriers that compete with U.S. flag carriers at JFK and EWR.

¹⁷ As noted in the IRE, one foreign carrier currently has 22 slots at JFK. See *Initial Regulatory Evaluation*, page 10.

For the reasons summarized above and discussed in greater detail in Section IV of these comments, the IRE fails to justify the NPRM on an economic basis or to demonstrate that, if adopted, it would not unfairly harm U.S. carriers and U.S. consumers.

IV. THE FAA'S ECONOMIC ANALYSIS IS SERIOUSLY FLAWED

A. The NPRM and IRE Erroneously Conflate the Issues of Delays and Slot Allocation at JFK and EWR

8. Like the LGA SNPRM, the NPRM for JFK and EWR addresses two separate and very distinct issues: (1) Congestion and delay problems that would result at JFK and EWR airports in the absence of operational caps because of the “negative externality” that arises from carriers setting flight schedules in a way that does not fully internalize the delay costs their own flights impose on other carriers; and (2) the notion that slots at JFK and EWR are currently being allocated sub-optimally, which has prompted FAA to propose a forced re-allocation of a portion of slots at these airports by means of an untested, complex and costly auction mechanism. As was the case with its LGA SNPRM, FAA has conflated these two issues—and their perceived solutions—despite the fact that the two issues are wholly unrelated.

9. As discussed in detail in our previous comments, when demand for access exceeds available capacity and the number of flights at an airport is not capped, inefficiently high levels of congestion (relative to what is socially optimal) result. However, prior experience at

constrained airports (including JFK, LGA and others) has shown that capping the number of flights at levels consistent with runway capacity is highly effective in reducing delays and thereby provides significant benefits to both carriers and passengers. Consequently, the NPRM correctly proposes to deal with congestion and delay problems at JFK and EWR (in the short run) by capping operations at levels that are consistent with existing capacity at each airport.¹⁸

10. Although the FAA states that “The need for this regulation is driven by a market failure with regard to congestion at New York area airports,”¹⁹ the proposed “cure” goes far beyond an effort to address any market failure resulting from unrestricted access. Indeed, the NPRM’s primary focus is not on resolving the congestion/delay problem. Rather, the NPRM seeks to combine the delay issue with the wholly distinct question of how the limited access rights (i.e., slots) resulting from the cap on operations should be allocated to airline users. But in doing so, FAA goes well beyond what is necessary to resolve the congestion-related delays that are the stated basis for its proposed intervention. The FAA’s decision to go beyond congestion relief in an effort to reallocate slots is puzzling given that it has permitted slots to be bought and sold in a secondary market since 1985 and in light of the fact that carriers have subsequently invested substantial sums of money (on slots, facilities, etc.) in reliance on that authorization to obtain or expand their access to JFK. Likewise at EWR, which until recently was not subject to operating caps, Continental has invested large sums of money over the

¹⁸ In the medium to long run, the best means of solving the congestion and delay problem at airports is to increase capacity. This could be achieved by—among other things—revising arrival and departure routes to improve airspace efficiency and more importantly, building additional runways and airport facilities.

¹⁹ *Initial Regulatory Evaluation*, page iii.

past two decades on airport facilities to develop an extensive domestic and international hub (the largest in the New York City metropolitan area). These investments were made under the reasonable expectation that Continental would not be deprived of the value of those investments by the withdrawal of access rights or by being “taxed” in a discriminatory way in order to maintain access to those assets. Because the NPRM discriminates against carriers that hold relatively larger numbers of slots at EWR and JFK, such carriers are disproportionately impacted by the NPRM’s slot confiscation policy.

11. And while the NPRM acknowledges that “the best way to maximize competition is with the development of a robust secondary market,”²⁰ both the NPRM and IRE fail to provide an empirical basis to support their assumption that slots at JFK and EWR are not already allocated in an efficient manner other than asserting that “this market has not been robust.”²¹ In sum, because the FAA has provided no reliable empirical evidence that slots are not efficiently allocated, it lacks a credible economic basis for the significant changes it proposes to impose in terms of how slots are allocated.

²⁰ NPRM at pp. 29634-29635.

²¹ *Initial Regulatory Evaluation*, page 41.

B. FAA’s Assumption That The Current Secondary Market For Slots at JFK and EWR is Inefficient Lacks Foundation

12. We previously discussed how government intervention can be an appropriate solution to a market failure²² and that it is well understood that carriers operating at congested airports such as JFK may not fully bear the cost of the delay they impose on others. As a result, too many flights are scheduled leading to high (and potentially unacceptable) levels of congestion and delay and under such circumstances, it is appropriate for the FAA to restrict operations to a level consistent with the airport’s effective operating capacity. At EWR, where Continental and its regional partners operate approximately 73% of flights²³, it is probable that the carrier *internalizes* most of the delay externality,²⁴ and therefore, it is far from clear that the carrier “over-schedules” flights relative to what is socially optimal.²⁵

13. FAA asserts that the “main objective of this rulemaking is to manage demand at JFK and EWR and facilitate good allocation of slots among carriers and potential uses” and “[t]o accomplish this goal, it is important that there be a well-functioning secondary market and that holders are free to swap slots for logistical reasons. Both activities help to ensure slots

²² A market failure exists when some external factor prevents a market from establishing the appropriate price and output for a good or service.

²³ Source: Official Airline Guide, August 2008.

²⁴ See, for example, “Internalization of Airport Congestion: A Network Analysis,” by Jan Brueckner, *International Journal of Industrial Organization*, Volume 23, 599-614 (September 2005) and “Network Effects, Congestion Externalities, and Air Traffic Delays: Or Why Not All Delays Are Evil”, by Christopher Mayer and Todd Sinai, *American Economic Review*, Volume 93 (2003), No. 4, pp. 1194-1215.

²⁵ Since other carriers at that airport account for only a small fraction of total flights, they are unlikely to internalize their delay externality.

are put to their highest and best use.”²⁶ In proposing to confiscate and then re-allocate slots through an untested auction mechanism, however, the FAA assumes that some vaguely specified problems currently prevents the secondary market from efficiently allocating slots at JFK and EWR. This assumption is perplexing in light of the fact that FAA did not even hint at the existence of a potential failure in the secondary slot market when outlining its “Need for Regulation” in its own Initial Regulatory Evaluation.²⁷

14. If the secondary market had somehow failed to allocate slots efficiently to the detriment of competition and the welfare of travelers as FAA assumes, one would expect to see at least some evidence of market concentration using simple measures typically relied upon by economists. But we demonstrated that concentration of slot usage at LGA and JFK are among the lowest of large U.S. airports.²⁸ Moreover, there is no evidence of a concentration problem for the three main New York City airports as a group.²⁹ Exhibits 1 and 2 below show that New York City is among the *least concentrated* large U.S. metropolitan area both in terms of origin and destination (“O&D”) passengers and departures, which suggests that competition for New York City traffic is strong.

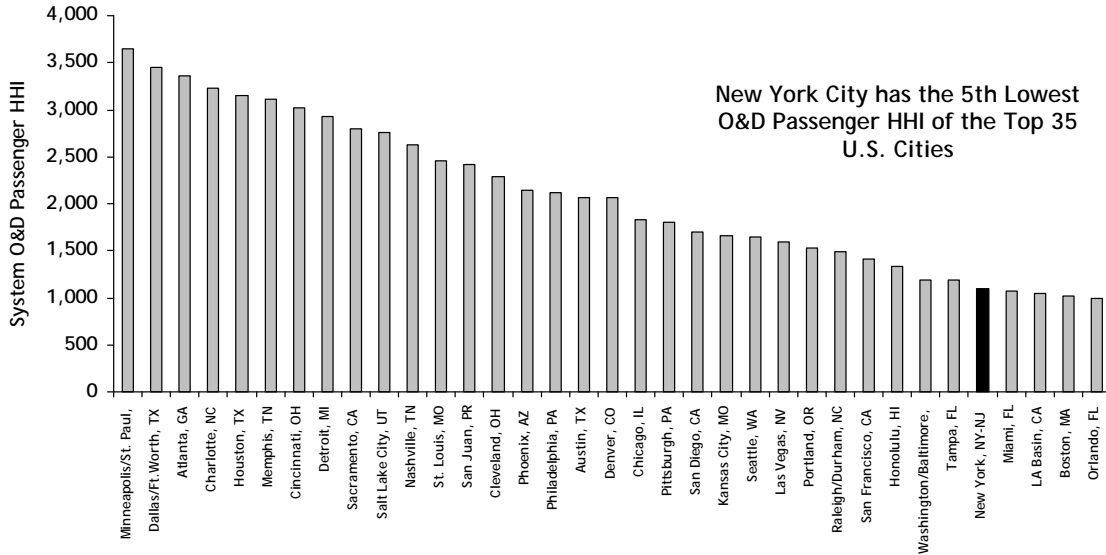
²⁶ *Initial Regulatory Evaluation* at pages 26-27.

²⁷ Moreover, in a recent letter to American Airlines in response to that carrier’s request to waive the minimum use requirements at capacity constrained airports including JFK and EWR, the FAA stated that “In the event that any air carrier does not intend to use the authority itself, there is a secondary market at each of the affected airports, permitting air carriers to lease the operating rights to another carrier for a period of time.” See *Letter from Kerry B. Long to Mr. Carl Nelson and Mr. Jeffrey A. Ogar*, Re: Docket FAA-2008-0656, July 3, 2008.

²⁸ See *Previous Comments*, Exhibit 2.

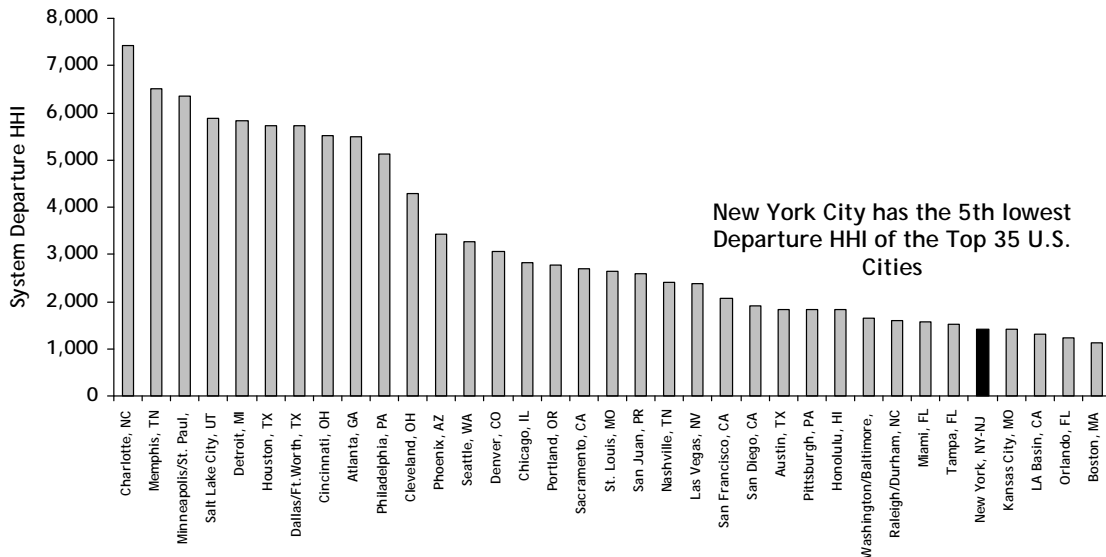
²⁹ As the IRE acknowledges, “[I]t is necessary to address congestion and delays at LGA, JFK and EWR in a systematic manner” and “congestion and delays at each of the three airports affect the other two airports.” *Initial Regulatory Evaluation*, page 17.

EXHIBIT 1: NEW YORK CITY'S HHI BASED ON O&D PASSENGERS IS AMONG THE LOWEST OF THE THIRTY-FIVE LARGEST U.S. METROPOLITAN AREAS



Sources: US DOT O&D Survey 2007; US DOT T100 database.
 Notes: Domestic and international passengers. Consolidated operations. Largest 35 U.S. cities by enplaned passengers. Airports in the following major metropolitan areas are grouped: San Francisco (SFO, OAK, SJC), New York (LGA, EWR, JFK), Chicago (ORD, MDW, GYY), Houston (IAH, HOU), Dallas (DFW, DAL), Detroit (DTW, DET, FNT), Miami (MIA, FLL, PBI), Los Angeles (LAX, SNA, BUR, LGB, ONT), Washington, DC (DCA, IAD, BWI), Boston (BOS, PVD, MHT, ORH), Orlando (MCO, SFB), Cleveland (CLE, CAK), Cincinnati (CVG, DAY), Tampa (TPA, PIE, SRQ), Philadelphia (PHL, ILG), and Fort Myers (RSW, PGD).

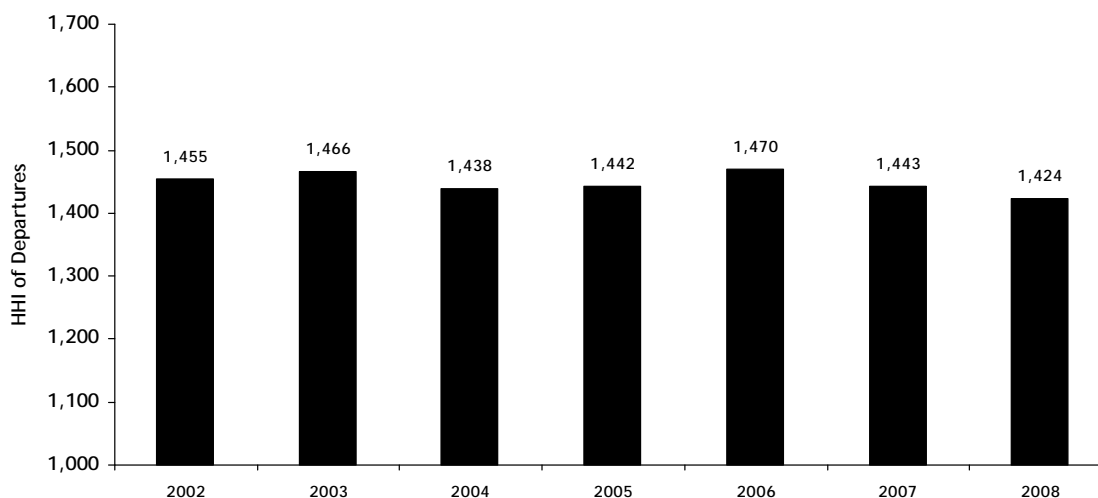
EXHIBIT 2: NEW YORK CITY'S HHI BASED ON DEPARTURES IS AMONG THE LOWEST OF THE THIRTY-FIVE LARGEST U.S. METROPOLITAN AREAS



Sources: OAG for 2008. US DOT T100 database.
 Notes: Domestic and international departures. Consolidated operations. Largest 35 U.S. cities by enplaned passengers. Airports in the following major metropolitan areas are grouped: San Francisco (SFO, OAK, SJC), New York (LGA, EWR, JFK), Chicago (ORD, MDW, GYY), Houston (IAH, HOU), Dallas (DFW, DAL), Detroit (DTW, DET, FNT), Miami (MIA, FLL, PBI), Los Angeles (LAX, SNA, BUR, LGB, ONT), Washington, DC (DCA, IAD, BWI), Boston (BOS, PVD, MHT, ORH), Orlando (MCO, SFB), Cleveland (CLE, CAK), Cincinnati (CVG, DAY), Tampa (TPA, PIE, SRQ), Philadelphia (PHL, ILG), and Fort Myers (RSW, PGD).

15. Moreover, notwithstanding the substantial growth by both JetBlue and Delta at JFK, concentration levels in the New York City metropolitan area have remained essentially flat for the past seven years.

EXHIBIT 3: THE DEPARTURE HHI IN NEW YORK CITY HAS REMAINED FLAT OVER THE PAST SEVEN YEARS



Sources: OAG.

Notes: Domestic and international departures. Consolidated operations. US Airways includes America West starting 2005 Q4. JFK, EWR and LGA are grouped.

16. Rather than promoting voluntary exchanges, as the Buy-Sell rule does, FAA’s proposal would force some carriers to reduce service so that other carriers could provide more service. Neither the NPRM nor the IRE, however, provides even the most basic empirical evidence to support FAA’s assumption that the existing buy-sell rule leads to an inefficient allocation of slots. As a result, the FAA is proposing an intrusive and untested regulatory “solution”—confiscation of slots from existing users and reallocation of those slots to other users by means of an auction—for a problem that may well not exist.

17. In order to economically justify its proposal for a forced reallocation of slots, FAA would need to demonstrate: (1) that the services likely to be added as a result of the rule would be more valuable than the services lost by the forced withdrawal of slots and (2) that the net benefits from the reallocation would exceed the costs and disruptions caused by the administrative process of reallocating operating rights. But the NPRM and IRE establish neither of these propositions.

18. We demonstrated in our previous comments that prices and traffic at the three large New York City airports are closely interrelated so that changes in service at one New York City airport affects fares and traffic at the others, and vice versa.³⁰ The IRE explicitly acknowledges this point, noting that “excluding any one of the three major New York-area airports would very likely shift the over-scheduling problem to the non-slot controlled airport as it would become attractive to carriers wanting to start or add service in the New York market.” Notwithstanding FAA’s explicit recognition that passengers and airlines view the three large New York City airports as substitutes, however, the IRE relies instead on hypothetical illustrative examples that purport to demonstrate the welfare gains from re-allocating slots at JFK and EWR but that fail to take account of competitive spillover effects between and among the three New York City airports. This failure caused the FAA to substantially over estimate the benefits of its proposal.

³⁰ See *Previous Comments*, paragraphs 25-27.

19. In summary, in claiming that competition suffers because the slots at JFK and EWR are not being allocated properly, FAA necessarily assumes that total output would be higher and prices lower if there were a different allocation of slots at these airports. This implies that prices and outputs of air services at JFK and EWR are established independently of prices and services at other New York area airports. But that assumption is clearly false.

C. Like the SNPRM, the NRPM Assumes Without Analysis or Consideration of Alternatives, That Its Proposed System For Slot Auctions Would Be Less Costly And Less Burdensome Than Other Possible Alternatives

20. We previously pointed out that even if FAA had been able to demonstrate that the secondary market was not allocating slots efficiently, the SNPRM erroneously assumed—without analysis or consideration of alternatives—that its proposed system for reclaiming and then auctioning slots would be less costly and less burdensome than other possible alternatives such as adopting a “double-blind” buy-sell market. Unfortunately, the present NPRM relies once again on this same erroneous assumption, which only highlights FAA’s lack of experience with complex, high-stakes, auction mechanisms and the unreliability of its analysis.

21. We also pointed to FAA’s belief that it could hold its first auction in January 2009 (a mere 6 months from today) as evidence of its inexperience in administering large scale auctions.³¹ In particular, we noted that this schedule was highly unrealistic in light of the fact that FAA

³¹ *Previous Comments*, paragraph 31.

had never administered an auction, had yet to draft the auction rules and had yet to retain a software firm to develop the necessary electronic platform to conduct the auction.

22. Now, less than month after confidently asserting that it would implement a cutting edge and highly complex “ascending clock auction with package bidding” by January 2009,³² FAA is apparently reconsidering the wisdom of this proclamation, having recently issued a “Market Survey” that seeks input from potential auction design and software vendors regarding the effectiveness of a “second price, sealed-bid” (rather than ascending) auction design.³³ The very fact that FAA is even contemplating abandoning its original auction format in lieu of a completely different design reinforces the FAA’s lack of inexperience at administering large scale auctions. Moreover, FAA’s apparent willingness to abandon a multiple-round ascending auction format is particularly surprising in light of what Nextor’s own auction experts have stated in comments filed in previous FAA proceedings in this matter regarding the important role of ascending auctions/price discovery in promoting the efficient allocation of slot resources:

Good market design recognizes the important role of prices and promotes price discovery, so that market participants can see and respond to good price information when making decisions. The better the information about prices, the better are the decisions of market participants. Price discovery is facilitated by dynamic auctions, which enable participants to respond to tentative price

³² *LGA Initial Regulatory Evaluation*, page 22 and *Initial Regulatory Evaluation*, page 25.

³³ “Market Survey – Auction Services”, June 20, 2008, available at https://www.fbo.gov/?s=opportunity&mode=form&tab=core&id=5db50aeb21cb945fb6ad67f41ca32367&_cview=0

A sealed bid, second price auction is a one-shot (i.e., not dynamic) auction where bidders submit their bids (for example, in a sealed envelope) and the winning bidder (the bidder with the highest bid) pays the bid of the second highest bidder.

information. The responses are both secure and rapid, which is now easily accomplished using Internet based e-commerce technologies.³⁴

23. In sum, the current NPRM for JFK and EWR re-emphasizes the fact that FAA has seriously underestimated both the complexity and costs of implementing an efficient slot auction and the time needed to develop and implement it. Moreover, FAA's rush to implement an auction by January 2009 has apparently caused it to consider a less robust auction format that lacks many of the beneficial features that Nextor's auction experts said were critical to promoting the efficient allocation of slots. In addition, FAA has provided no evidence to demonstrate that the current secondary market for slots has allocated slots inefficiently. Consequently, the IRE does not provide a credible economic justification for the FAA's proposed auction mechanism, particularly in light of the fact that any perceived inefficiency arising from the current Buy-Sell market could readily be addressed by minor adjustments, such as adopting a "double-blind" market.

D. The Cost/Benefit Analysis in the IRE Grossly Overestimates The Net Benefits Arising From Implementing the Rules In the NPRM

24. The IRE that accompanies the NPRM for JFK and EWR contains a cost/benefit analysis purporting to demonstrate substantial societal net benefits arising from the proposed rule. These are broken into two components. First, the IRE estimates that the present value of net benefits from reduced delays resulting from the proposed rule (for the period 2009-2019) are

³⁴ "Comments on Alternative Policy Options for Managing Capacity and Mitigating Congestion and Delay at LaGuardia Airport", Peter Cramton, *In the matter of Alternative Policy Options for Managing Capacity at LaGuardia Airports*, Dockets No. FAA-2001-9852, FAA-2001-9854, June 20, 2002. Professor Cramton's academic work also reinforce his comments in this Docket: "On efficiency grounds it is hard not to recommend an ascending auction." See "Ascending Auctions", Peter Cramton, *European Economic Review*, 42:3-5 (1998), pp. 745-756.

roughly \$686 million at JFK and \$705 million at EWR. Second, the IRE estimates that the present value of net benefits from improved slot allocation is between \$256 and \$267 million at JFK (also for the period 2009-2019) and between \$207 and \$218 million at EWR compared to present value costs of between \$11 and \$22 million at each airport. We previously demonstrated that the methodology used to derive these estimates is based on a number of critically flawed assumptions and that, as a result, it grossly overestimates both types of net benefits. Likewise, our previous comments discussed why the IRE underestimates the likely costs that would result from the adoption of the NPRM.³⁵

25. Perhaps the most significant flaw in the IRE’s cost-benefit analysis is its use of a completely unrealistic “base case” for estimating the net benefits arising from delay reductions. Specifically, the IRE assumes that “but for” the NPRM, there would be no cap on the level of operations at JFK or EWR. Yet the NPRM itself clearly states that “both JFK and Newark are already capped under the respective Orders at 81 operations per hour”³⁶ and “Looking forward, operations at all three major airports in the New York City area will be capped.”³⁷ Thus, a scenario where the cap on operations is maintained (i.e., the status quo), clearly constitutes the appropriate—and far more realistic—base case assumption to use when computing the expected benefits of the proposed rules. When the correct base case

³⁵ See *Previous Comments*, paragraphs 34-39.

³⁶ NPRM at page 29630. Likewise, as the NPRM itself makes clear, it is the Agency’s imposition of a movement caps at JFK and EWR—and not the establishment of a slot auction mechanism for reallocating slots among carriers—that prevents excessive congestion and delay. See, for example, NPRM at page 29637 noting that that “The primary benefits of this rulemaking would be due to the delay reduction from the caps on operations...”

³⁷ *Initial Regulatory Evaluation*, page 19. Moreover, when faced with a similar choice at Chicago O’Hare (“ORD”), the FAA maintained movement caps citing safety and operational concerns. See NPRM page 51364 and *Final Rule, Congestion and Delay Reduction at Chicago O’Hare International Airport*, Docket FAA-2005-20704.

assumption is used, virtually all of the purported delay benefits attributed to slot auctions disappear.

26. Likewise, when another flawed assumption used in the IRE is rectified, the estimated net benefits from the forced reallocation of slots under the NPRM are substantially reduced or eliminated altogether. As the FAA has acknowledged, the services and prices carriers offer among the three main New York City airports are highly inter-dependent. But notwithstanding the fact that any changes that FAA's rule has on operations at JFK or EWR are certain to affect services and prices at other New York City airports, the NPRM and IRE have completely ignored those effects in estimating costs and benefits. Hence, because the single airport calculations used in the IRE do not consider the effects on other New York City airports, the net effect of the reallocation of JFK or EWR slots on fares and traffic in New York City will likely be much different than the IRE assumes. In short, the IRE's benefit estimates are not a reliable measure of the impact of the proposed rule. Indeed, after taking account of the costs associated with disruptive effects of slot withdrawal and the costs of the auctions, the net effects of the proposed changes may not even be positive.

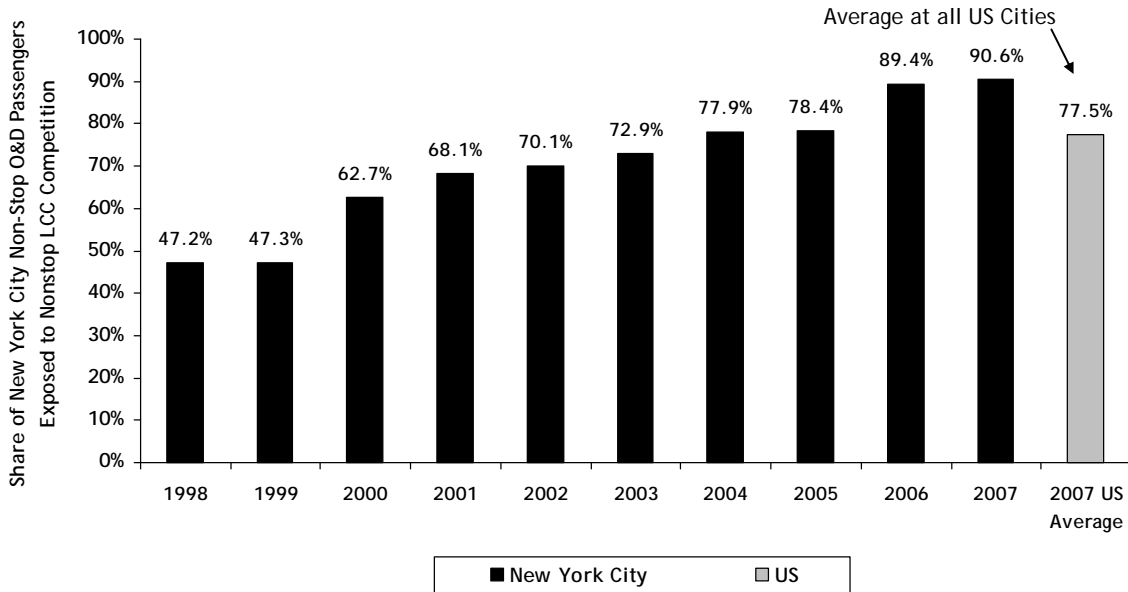
27. Under the FAA's analysis, the purported welfare improvement from reallocating JFK or EWR slots effectively comes one of two main sources: (1) replacing small aircraft (turboprop or RJ) with LCC or "Legacy Jet" operations, and (2) replacing domestic operations with international operations. With regards to the welfare improvements from a carrier up-gauging its own domestic service from a small turbo-prop or RJ to a larger

mainline aircraft, our previous comments discussed why this overly simplistic approach was (and remains) seriously flawed. And since all network carriers that operate turboprop or RJ services at JFK and EWR also operate mainline equipment at those airports, if it were more profitable for those carriers to use more large aircraft at either of these airports, they would already have strong economic incentives to do so. Yet without providing any empirical support, the FAA simply assumes without justification that carriers are not allocating their own scarce slot resources at JFK and EWR efficiently, a highly dubious assumption.

28. Likewise, reallocating slots from legacy carriers to LCCs in the New York City area is also unlikely to have a measurable effect on overall competition and economic welfare because the overwhelming majority of New York City domestic travelers already have access to non-stop LCC service. Indeed, Exhibit 8 of our previous comments (repeated here for convenience) shows that more than 90% of New York City domestic non-stop O&D passengers already travel in city-pairs with non-stop LCC service, 13 percentage points higher than the national average of 77.5%. In sum, for the reasons discussed above, it is apparent that the IRE's estimates substantially overstate the potential benefits from domestic slot reallocation contemplated in the NPRM.³⁸

³⁸ We defer our discussion of the IRE's estimates of the potential benefits from domestic-to-international slot reallocation to Sections IV (E) – IV (G) below.

EXHIBIT 4: PERCENTAGE OF NEW YORK CITY NON-STOP DOMESTIC O&D PASSENGERS TRAVELING IN CITY-PAIRS WITH NON-STOP LCC SERVICE



Source: U.S. DOT O&D Survey, OAG, U.S. DOT T100.

Notes: LCCs include: Southwest, JetBlue, AirTran, Frontier, Spirit, Sun Country, ATA, Allegiant, National, Vanguard, Access Air, Eastwind, Kiwi, Pro Air, Reno Air, Western Pacific, Independence Air (2005), Midway, Virgin America, and Skybus. Passengers on a city pair are exposed to LCC competition if an LCC had at least 45 departures in at least two quarters on that city pair during the year. Passengers include non-stop and direct. Airports in the following major metropolitan areas are grouped: San Francisco (SFO, OAK, SJC), New York (LGA, EWR, JFK), Chicago (ORD, MDW, GYY), Houston (IAH, HOU), Dallas (DFW, DAL), Miami (MIA, FLL, PBI), Los Angeles (LAX, SNA, BUR, LGB, ONT), Washington (DCA, IAD, BWI), Boston (BOS, PVD, MHT, ORH), Detroit (DTW, DET, FNT), Orlando (MCO, SFB), Cleveland (CLE, CAK), Cincinnati (CVG, DAY), Tampa (TPA, PIE, SRQ), Philadelphia (PHL, ILG), and Fort Myers (RSW, PGD).

29. The Initial Regulatory Evaluation’s estimate of net benefits resulting from the proposed rule (for JFK and EWR) is further inflated by its reliance on other equally dubious or flatly erroneous assumptions regarding the costs of its proposal, including:

- The IRE does not treat as a cost of the proposal the value of slots involuntarily taken from existing slot holders. Yet the loss of valuable landing rights would clearly be costly for existing slot holders who may have paid millions of dollars to obtain them. And in the event slot holders successfully pursue takings claims against the FAA for the seized slots, the costs—including damages and litigation expenses—borne by FAA would be real economic costs to taxpayers.

- In addition, the IRE fails to consider the adverse economic effects that the FAA’s proposal would have on carriers’ willingness to further invest in developing services and facilities at JFK and EWR, especially those carriers that operate hubs at those airports. Specifically, several carrier comments pointed out that their willingness to incur the costs necessary to develop services and facilities at an airport is based on the expectation they will be able to continue serving that airport with sufficient operations to justify those investments. But the proposed rule disproportionately affects carriers with large numbers of existing slots, and thus unfairly discriminates against carriers that have made the large capital investments necessary to support and grow their hubs JFK and EWR. Moreover, by arbitrarily limiting the duration of what are now “quasi-permanent” rights to “leases” with durations of 10 or fewer years, the proposal would discourage carriers from making investments that could not be recouped within a ten year period and thus reduce overall efficiency. Yet the IRE fails to consider these economic costs in its cost-benefit analysis.
- Likewise, the IRE failed to adequately consider the economic costs that would result from precluding a carrier from bidding for any of its slots that have been reclaimed by FAA, even when that carrier could make the most productive use of those slots (i.e., Option 2 at JFK).
- Finally, the NPRM and IRE fail to adequately consider or compare the costs of auctions to other, potentially less costly ways of improving the performance of the secondary market, including minor adjustments to the Buy/Sell Rule such as those adopted by the FAA last year at Chicago’s O’Hare International Airport.

E. FAA Erroneously Assumes That Slots Would Be More Efficiently Allocated At JFK And EWR If Carriers Re-Allocated Slots Currently Used For Domestic Service To International Service

30. The IRE suggests that “One potential motivation for upgauging of aircraft at JFK and EWR is derived from their roles as major international airports” and that under the proposed rule, we should expect to see U.S. carriers reallocate slots from domestic to international services because “Operating profits in the domestic market are currently very modest and are projected to remain so for the foreseeable future, whereas the profitability of international flights has been relatively good.”³⁹ Indeed, the IRE’s slot reallocation examples in support of the NPRM’s auction suggest the annual improvement to society from reallocating a single slot at JFK from domestic to international service could be as high as \$22 million.⁴⁰ But FAA’s assumption that an auction would somehow cause carriers “to purchase slots formerly used in domestic service, where the aircraft operated are generally smaller standard jets, Regional Jets (RJ), and turboprops, and use the slots for international flights”⁴¹ is critically flawed, because it erroneously assumes (once again) that carriers are not already deploying their current slot assets to their best economic use.

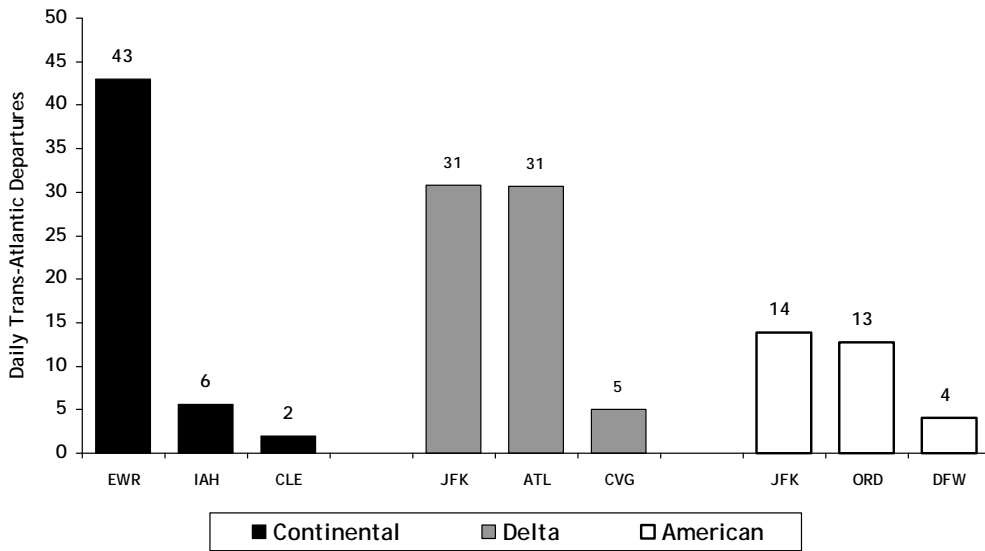
31. Likewise, FAA apparently fails to recognize is that JFK and EWR already serve as the largest transatlantic gateways for three of the large U.S. network carriers (Delta and American at JFK and Continental at EWR). This is shown in Exhibit 5 below.

³⁹ *Initial Regulatory Evaluation*, page 53.

⁴⁰ *Initial Regulatory Evaluation*, page 56. At EWR, according to the IRE, reallocating a single slot from domestic to international service could result in an annual surplus change as high as \$18.9 million. *Initial Regulatory Evaluation*, page 58.

⁴¹ *Initial Regulatory Evaluation*, page 53.

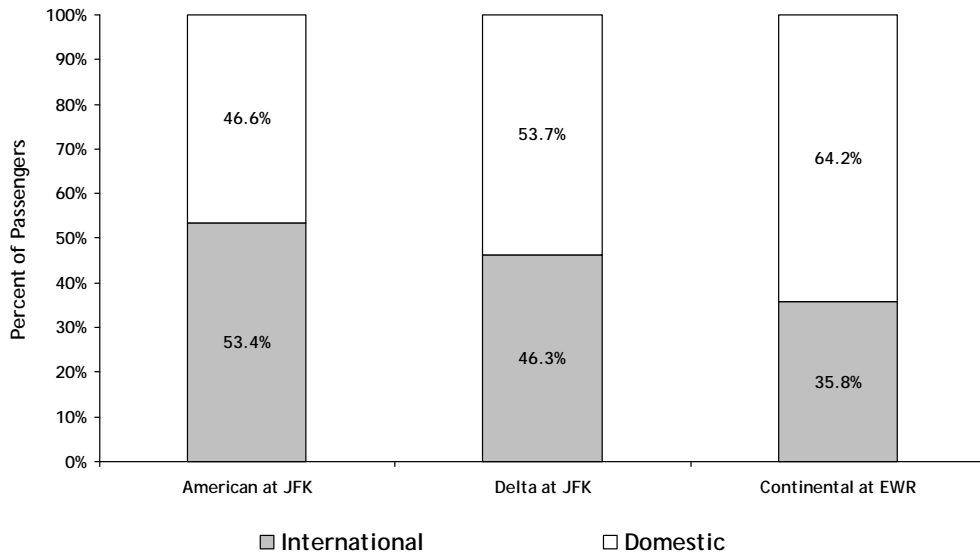
EXHIBIT 5: DAILY TRANSATLANTIC DEPARTURES, AUGUST 2008



Sources: OAG.
Notes: Includes departures to Europe, Africa, and the sub-Indian continent.

32. Moreover, approximately half of American and Delta's passengers traveling to/from or through JFK and more than one third of Continental's passengers traveling to/from or through EWR are making connections to/from these carriers' international flights, as shown in Exhibit 6.

EXHIBIT 6: PERCENTAGE OF PASSENGERS TRAVELING TO/FROM OR THROUGH JFK AND EWR, 2007



Source: U.S. DOT O&D Survey 2007.

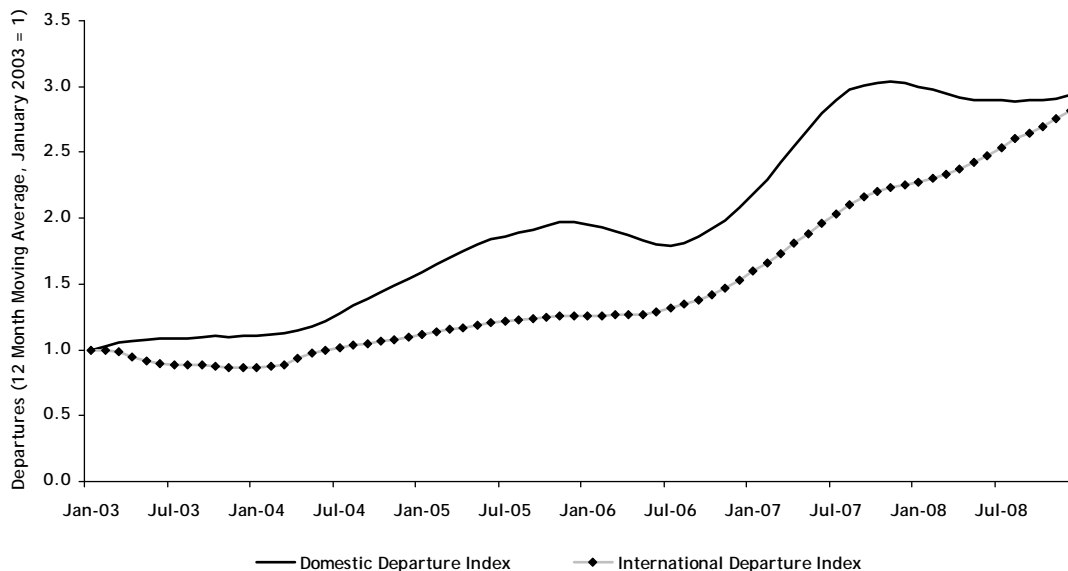
Notes: Flights marketed by each carrier. Passengers defined as traveling internationally if a segment of their journey is between JFK/EWR and an international destination.

33. One critical misconception apparently held by FAA is that a growing number of domestic flights in recent years at JFK (especially those operated by regional equipment) caused “JFK to evolve from its predominantly international role to a more mixed-use airport.”⁴² But FAA’s interpretation of the increase in domestic flights at JFK (in particular by Delta) is largely unfounded.⁴³ While it is true that Delta has approximately tripled its number domestic flights at JFK since 2003, this growth rate has matched—almost exactly—the carrier’s growth rate in international flights at that airport.

⁴² *Initial Regulatory Evaluation*, page 13.

⁴³ The other carrier that has increased its number of domestic flights at JFK significantly has been JetBlue, which did so after receiving a substantial grant of slots from FAA.

**EXHIBIT 7: INDEX OF DELTA JFK SCHEDULED DEPARTURES
JANUARY 2003-DECEMBER 2008**

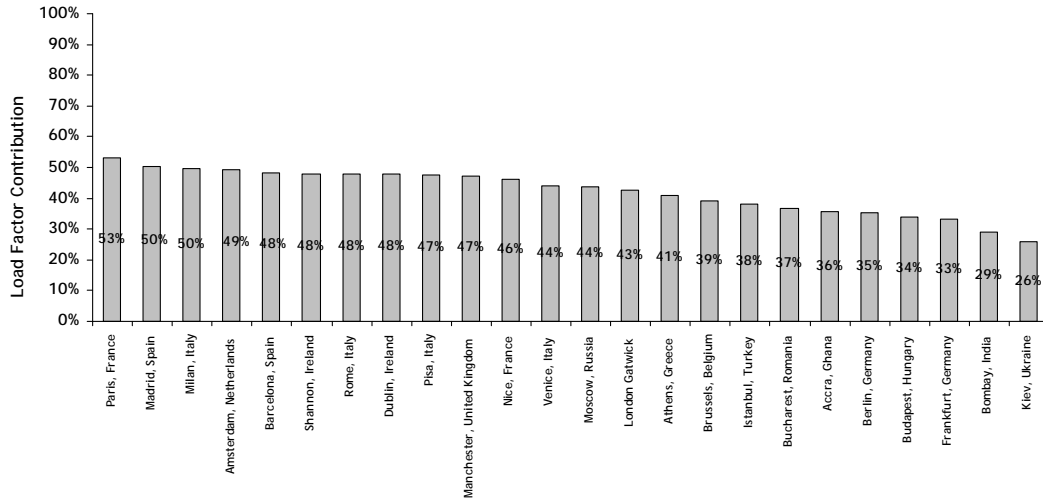


Sources: OAG.
Notes: Delta flights to/from JFK. Consolidated Operations. Departures indexed to January 2003. 12 Month moving average.

34. And while FAA assumes that carriers have an economic incentive to reallocate slots at JFK or EWR currently used for domestic services to international services because “Operating profits in the domestic market are currently very modest and are projected to remain so for the foreseeable future, whereas the profitability of international flights has been relatively good,”⁴⁴ FAA ignores the simple fact that international gateways such as JFK and EWR rely critically on domestic feed traffic to sustain the international services. As demonstrated by Exhibit 8 below, local passengers alone cannot support Delta’s transatlantic services at JFK — indeed, none of Delta’s transatlantic routes at JFK would be economically viable based solely on local passengers.

⁴⁴ *Initial Regulatory Evaluation*, page 53.

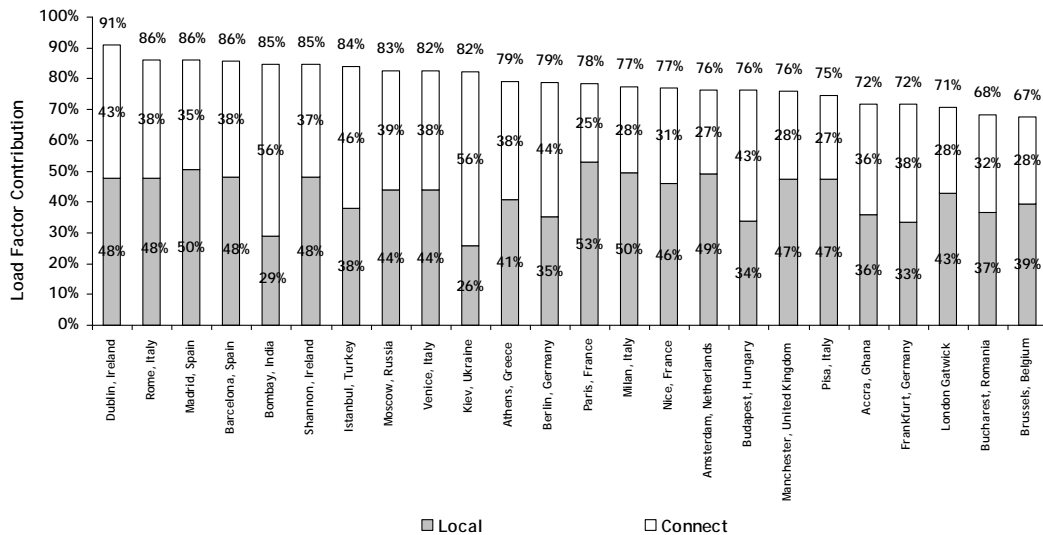
EXHIBIT 8: LOCAL LOAD FACTOR CONTRIBUTION OF DELTA TRANSATLANTIC FLIGHTS FROM JFK, 2007



Source: U.S. DOT O&D Survey 2007; U.S. DOT T100 2007.
Notes: A connect passenger makes a connection in the US.

35. Rather, as demonstrated by Exhibit 9, it is only with the contribution of connecting feed from its domestic flights that Delta’s transatlantic flights at JFK become economically viable.

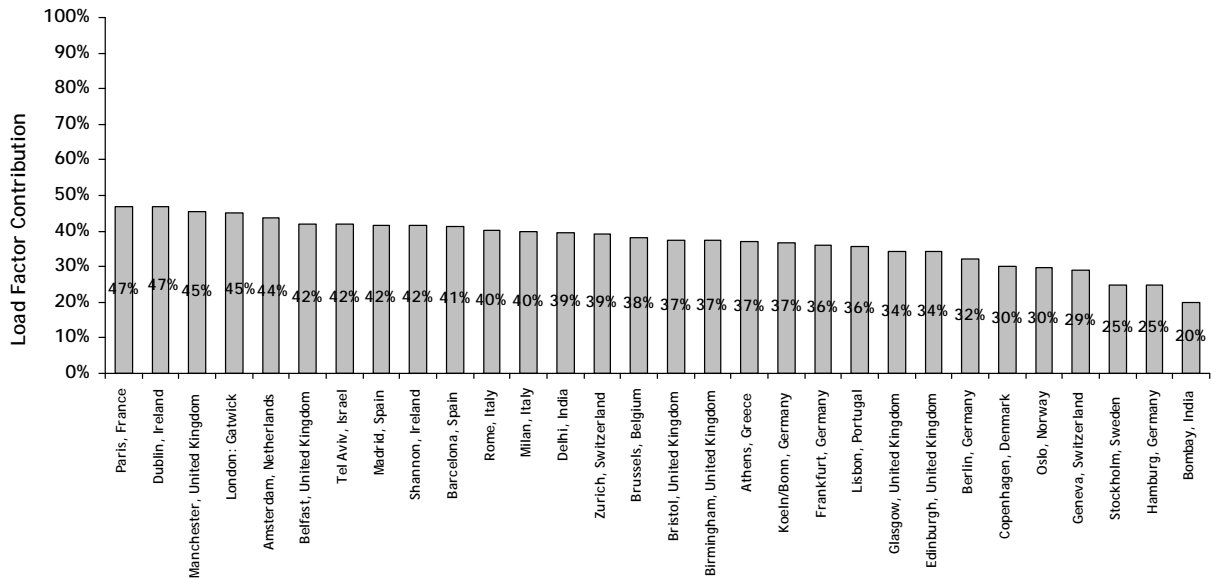
EXHIBIT 9: LOCAL VS CONNECT LOAD FACTOR CONTRIBUTIONS OF DELTA TRANSATLANTIC FLIGHTS FROM JFK, 2007



Source: U.S. DOT O&D Survey 2007; U.S. DOT T100 2007.
Notes: A connect passenger makes a connection in the US.

36. The same is also true for Continental's Newark hub. As demonstrated by Exhibit 10, local passengers alone cannot support Continental's transatlantic services at EWR.

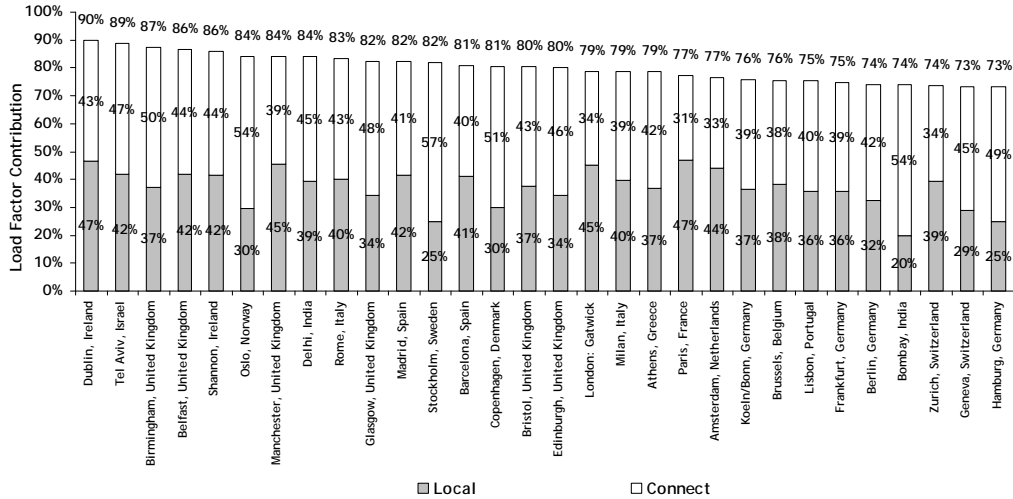
EXHIBIT 10: LOCAL LOAD FACTOR CONTRIBUTION OF CONTINENTAL TRANSATLANTIC FLIGHTS FROM EWR, 2007



Source: U.S. DOT O&D Survey 2007; U.S. DOT T100 2007.
Notes: A connect passenger makes a connection in the US.

37. However, with the contribution of connecting feed from the rest of its EWR network, Continental's transatlantic flights become economically viable, as demonstrated by Exhibit 11.

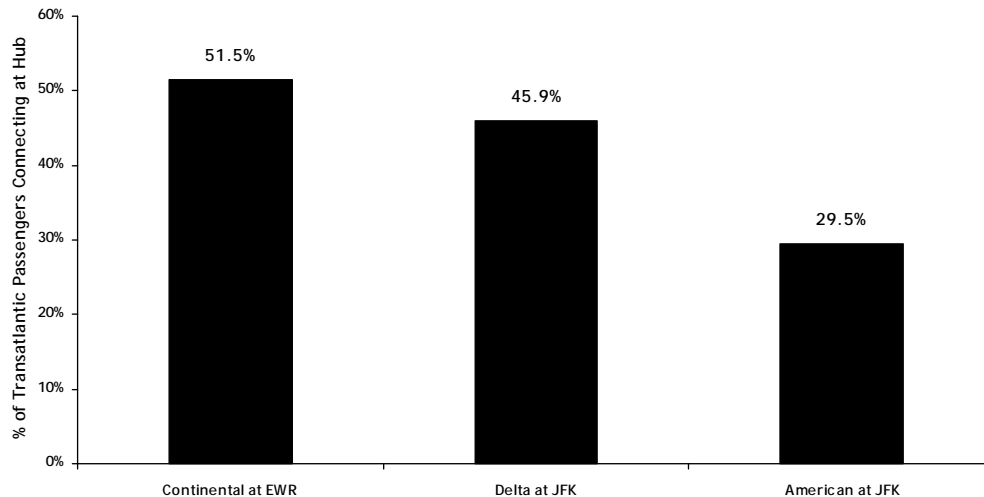
EXHIBIT 11: LOCAL VS CONNECT LOAD FACTOR CONTRIBUTIONS OF CONTINENTAL'S TRANSATLANTIC FLIGHTS FROM EWR, 2007



Source: U.S. DOT O&D Survey 2007; U.S. DOT T100 2007.
 Notes: A connect passenger makes a connection in the US.

38. In sum, the IRE attempts to justify the NPRM's forced reallocation of slots at JFK and EWR via auction by *assuming* that there would be substantial net benefits to society from U.S. carriers reallocating slots from domestic to international services, notwithstanding the fact that if such benefits existed, carriers would already have the financial incentive to unilaterally shift service. But FAA's assumption is demonstrably incorrect because it ignores the important fact that without domestic feed traffic, U.S. carriers could not economically sustain their existing transatlantic services from either JFK or EWR. Indeed, as summarized in Exhibit 12 below, approximately one half of all passengers on Continental and Delta's transatlantic flights at EWR and JFK respectively, and nearly a third of American's transatlantic passengers at JFK connect to or from a domestic flight.

EXHIBIT 12: PERCENTAGE OF TRANSATLANTIC PASSENGERS CONNECTING TO A DOMESTIC FLIGHT AT NEW YORK CITY GATEWAY, 2007



Source: U.S. DOT O&D Survey 2007.
Notes: Transatlantic passengers. Flights operated by the carrier.

Simply put, FAA’s primary justification for its forced re-allocation of slots at JFK and EWR lacks any credible economic basis.

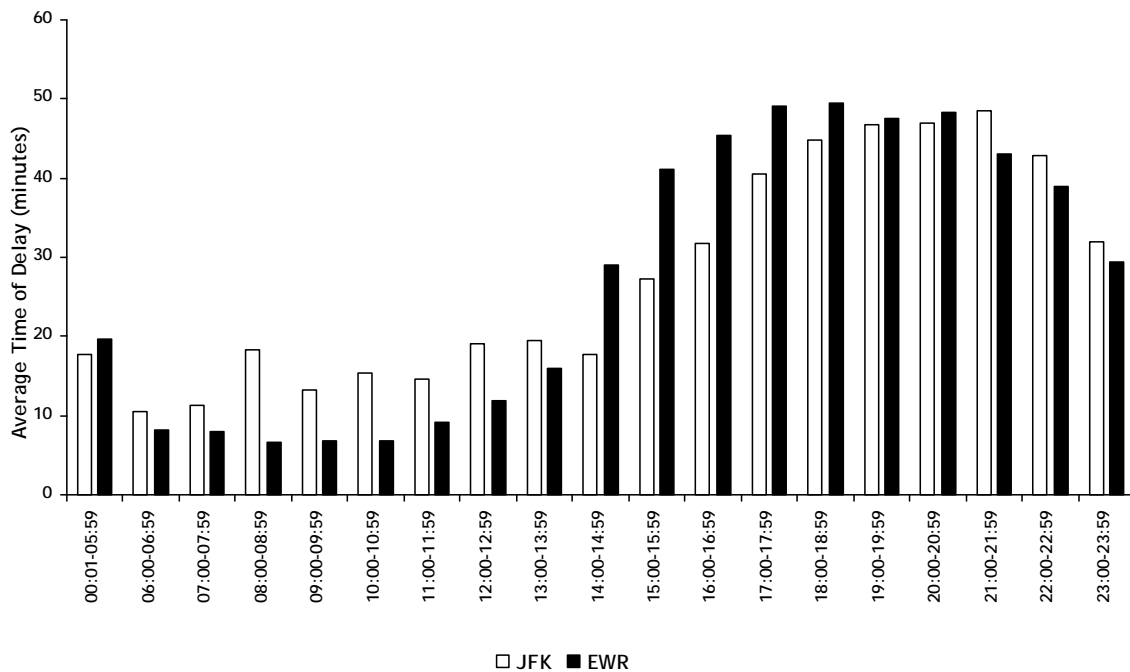
F. By Exempting Carriers With Fewer Than 20 Slots From the Reclamation Process, FAA Fails To Hold Accountable Carriers That Contribute Significantly To The Delay and Congestion Problem at JFK and EWR

39. Because only one foreign carrier holds more than the FAA’s arbitrary “baseline” of 20 slots at either JFK or EWR, foreign flag carriers are effectively exempt from having slots confiscated and reallocated via auction under the FAA’ proposed rule.⁴⁵ This is somewhat puzzling in light of the fact that: (a) the only market failure FAA has correctly identified in this rulemaking is the “negative externality [that] arises when producers are able to avoid some of the costs of production attributable to their actions while continuing to capture the

⁴⁵ Although British Airways currently has 22 slots at JFK, which is 2 above the baseline number of 20, under either of the two slot recovery options, it would still not be required to relinquish any slots. See *Initial Regulatory Evaluation*, footnote 6.

full benefits of their activities”⁴⁶, (b) as demonstrated by Exhibit 13, delays at both JFK and Newark peak during the transatlantic departure window (i.e., from about 3 pm to 9 pm) and (c) during this window, foreign flag carriers collectively account for a significant share of total airport operations.⁴⁷

**EXHIBIT 13: AVERAGE DELAY BY HOUR (IN MINUTES) AT JFK AND EWR
AUGUST, 2007**



Source: U.S. DOT Airline On-Time Performance Data.
Notes: August of 2007. Does not include cancelled or diverted flights.

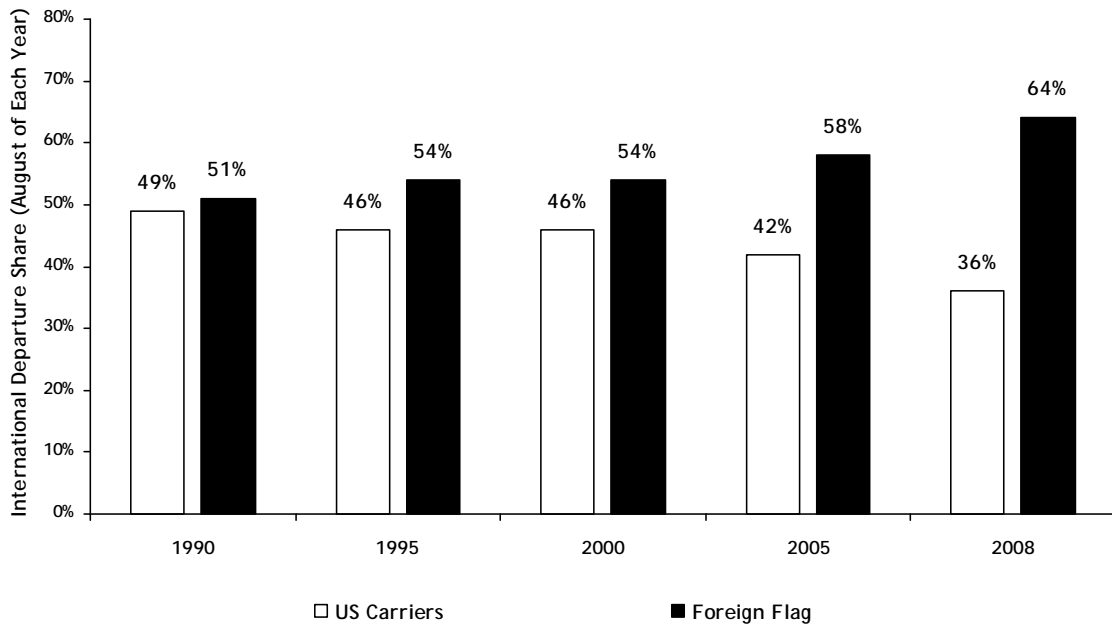
40. Moreover, FAA’s decision to exempt foreign carriers from responsibility for the externality they impose on other carriers and passengers is surprising in light of the fact that foreign carriers operate substantially more long-haul flights from JFK than from any other airport in the country and have been growing their share of long-haul departures at that airport

⁴⁶ *Initial Regulatory Evaluation*, page 11.

⁴⁷ For example, between 5 pm and 7 pm, foreign flag carriers are responsible for more than one quarter of all operations at JFK.

continually over the past two decades to the point where they now account for nearly two-thirds of all long-haul international departures at JFK.

EXHIBIT 14: JFK LONG-HAUL INTERNATIONAL DEPARTURE SHARE



Source: U.S. DOT T100 database 1990-2007, August of each year; OAG August, 2008.
 Notes: Departure Share is for August of each year. Excludes flights to Canada, Mexico, Central America, and the Caribbean.

41. Moreover, it is well-understood by economists that at airline hubs, a hubbing carrier is unlikely to “overschedule” flights from a social point of view, since the delay costs that would be generated by excess flights is predominantly borne by that carrier (i.e., the externality is internalized).⁴⁸ Thus, at EWR, where Continental operates a large hub and accounts for nearly three quarters of all flights, it is likely to be the case that carriers with fewer than 20 operations (i.e., foreign-flag carriers) are equally (or more) responsible for the

⁴⁸ See, for example, “Internalization of Airport Congestion: A Network Analysis,” by Jan Brueckner, *International Journal of Industrial Organization*, Volume 23, pp. 599-614, 2005 or “Network Effects, Congestion Externalities, and Air Traffic Delays: Or Why Not All Delays Are Evil”, by Christopher Mayer and Todd Sinai, *American Economic Review*, Volume 93, No. 4, pp. 1194-1215.

externality problem FAA has identified as Continental. Similarly, because Delta, American and JetBlue all provide some degree of “hubbing” operations at JFK, these carriers are likely to internalize more of the delay costs imposed by their own flights than the foreign-flag carriers FAA has exempted from its slot confiscation and re-auction process. So the FAA’s proposal effectively exempts the carriers most likely to cause the very delay externalities that its proposal is intended to mitigate.

G. The Proposed Rule Would Significantly Disadvantage U.S. Carriers vis-à-vis Foreign Flag Carriers

42. As demonstrated by Exhibit 15 below, U.S carriers (primarily Delta, Continental and American) compete head-to-head with foreign carriers on 34 different non-stop, long-haul international routes from JFK and EWR.

EXHIBIT 15: INTERNATIONAL ROUTES FROM JFK AND EWR WITH HEAD-TO-HEAD COMPETITION BETWEEN U.S. AND FOREIGN FLAG CARRIERS

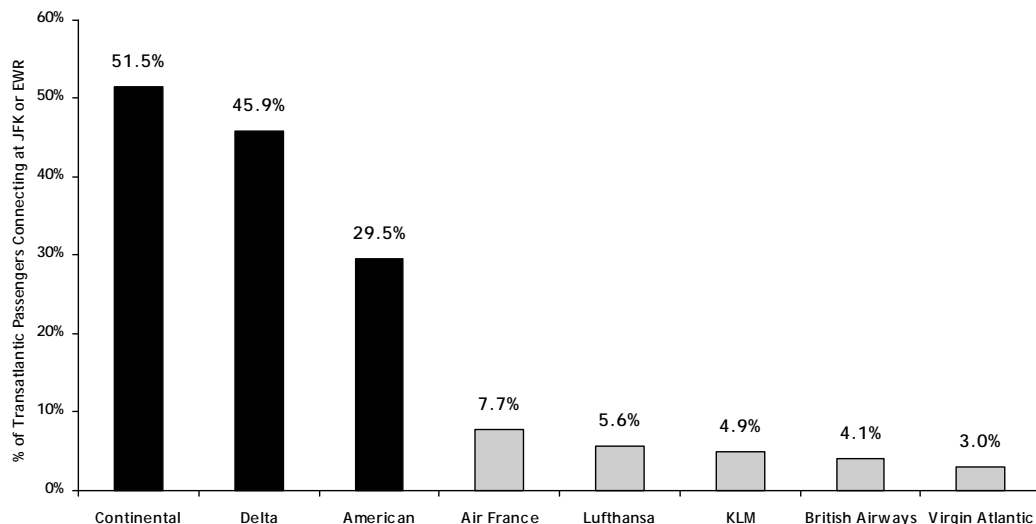
Destination from JFK/EWR	US Carriers With Non-Stop Service (Average Daily Departures)			Foreign Flag Carriers With Non-Stop Service (Average Daily Departures)			
1 Amman, Jordan		Delta (0.5)		Royal Jordanian (0.7)			
2 Amsterdam, Netherlands	Continental (2.0)	Delta (1.0)	Northwest (2.0)	KLM (2.0)			
3 Athens, Greece	Continental (1.0)	Delta (1.0)		Olympic Airways (1.2)			
4 Beijing, China	Continental (1.0)			Air China (1.0)			
5 Bogota, Colombia	Continental (1.0)	Delta (0.4)		Avianca (1.7)			
6 Bombay, India	Continental (1.0)	Delta (1.0)		Air-India (1.0)			
7 Brussels, Belgium	Continental (1.0)	Delta (1.0)	American (1.0)	Jet Airways India (2.0)			
8 Budapest, Hungary		Delta (0.7)		Malev Hungarian Airlines (1.0)			
9 Cairo, Egypt		Delta (0.7)		Egyptair (1.0)			
10 Copenhagen, Denmark	Continental (1.0)			SAS (1.0)			
11 Dakar, Senegal		Delta (0.6)		South African Airways (1.0)			
12 Delhi, India	Continental (1.0)			Air-India (1.0)			
13 Dublin, Ireland	Continental (2.0)	Delta (1.0)		Aer Lingus (2.0)			
14 Frankfurt, Germany	Continental (1.0)	Delta (1.0)		Lufthansa (4.8)	Singapore Airlines (1.0)		
15 Geneva, Switzerland	Continental (1.0)			SWISS (1.0)	Qatar Airways (0.9)		
16 Georgetown, Guyana		Delta (0.6)		Transwest Air (0.5)			
17 Hong Kong, China	Continental (1.0)			Cathay Pacific (2.0)			
18 Istanbul, Turkey		Delta (1.0)		Turkish (1.2)			
19 Kiev, Ukraine		Delta (0.7)		Aerosvit Ukrainian (0.7)			
20 Lima, Peru	Continental (1.0)			Lan-Chile Airlines (1.0)			
21 Lisbon, Portugal	Continental (1.0)			Tap-Portuguese Airlines (1.0)			
22 London, United Kingdom	Continental (4.0)	Delta (3.0)	American (4.8)	British Airways (10.7)	Virgin Atlantic (6.0)	Air-India (1.0)	Zoom (0.5) Kuwait Airways (0.4)
23 Madrid, Spain	Continental (2.0)	Delta (1.0)		Iberia (2.0)			
24 Manchester, United Kingdom	Continental (2.0)	Delta (1.0)		British Airways (1.0)	Pakistan Int'l Airlines (0.5)		
25 Milan, Italy	Continental (1.0)	Delta (1.0)	American (1.0)	Alitalia (1.0)			
26 Moscow, Russia		Delta (1.0)		Aeroflot Russian Airlines (1.0)			
27 Paris, France	Continental (3.0)	Delta (1.0)	American (2.0)	Air France (6.9)	Air-India (1.0)	L'Avion (1.0)	Avialeasing Aviation (1.0)
28 Rome, Italy	Continental (2.0)	Delta (2.0)	American (1.0)	Alitalia (3.0)	Mexicargo (0.6)		
29 Sao Paulo, Brazil	Continental (1.0)	Delta (1.0)	American (1.0)	Meridiana (2.0)	Japan Air Lines (0.4)		
30 Shannon, Ireland	Continental (1.0)	Delta (1.0)		Aer Lingus (1.0)			
31 Stockholm, Sweden	Continental (1.0)			SAS (1.0)	Malaysian Airlines (0.4)		
32 Tel Aviv, Israel	Continental (2.0)	Delta (1.0)		El Al (2.9)			
33 Tokyo, Japan	Continental (1.0)		American (1.0)	Japan Air Lines (2.0)	ANA (1.0)		
34 Zurich, Switzerland	Continental (1.0)		American (1.0)	SWISS (2.8)			
Total Daily Departures	US Carriers:	76.1		Foreign Flag Carriers:	81.6		

Sources: OAG August 2008.

Notes: City pairs where both US and foreign flag carriers offered non-stop service in August 2008. Excludes destinations in Canada, Central America, and the Caribbean.

43. Because no foreign flag carriers would be subject to the higher costs associated with having their existing JFK and EWR slots confiscated, the FAA’s proposed rule would significantly disadvantage U.S. carriers vis-à-vis foreign flag carriers on these and other routes. As demonstrated in paragraphs 31 to 37 above, JFK and EWR serve as the largest transatlantic gateways for three U.S. carriers (Delta, Continental and American), and the economic viability of the transatlantic services of each of these carriers depends critically on domestic feed passengers. In contrast—and as demonstrated by Exhibit 16 below—the overwhelming majority of passengers travelling on foreign flag carriers serving JFK or EWR either originate in or are destined to the New York City area.

EXHIBIT 16: PERCENTAGE OF TRANSATLANTIC PASSENGERS CONNECTING TO A DOMESTIC FLIGHT AT JFK OR EWR, 2007

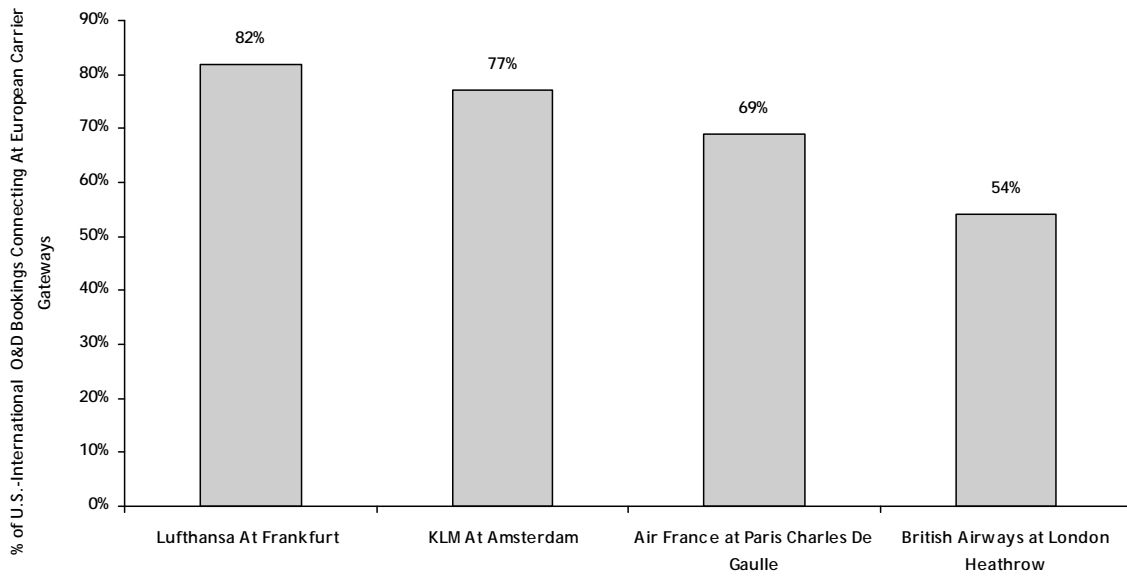


Source: U.S. DOT O&D Survey 2007; U.S. DOT T100 2007.
 Notes: Transatlantic passengers. Passengers with an international segment from JFK or EWR. Percent of transatlantic passengers to/from or connecting at JFK or EWR that are connecting at JFK or EWR. Flights operated by each carrier.

44. And while the FAA’s proposed rule would handicap U.S. carriers vis-à-vis foreign carriers by effectively “taxing” their domestic feed service, European carriers face no such

discriminatory tax at their respective hubs. As demonstrated by Exhibit 17 below, European carriers rely heavily on connecting services at their respective hubs to make their transatlantic services to New York City and other U.S. destinations economically viable. Hence, FAA’s proposal would give carriers hubbing in Europe a significant advantage over U.S. carriers competing from hubs at JFK and EWR.

EXHIBIT 17: PERCENTAGE OF PASSENGERS MAKING CONNECTIONS AT THEIR RESPECTIVE EUROPEAN GATEWAYS



Source: MIDT full year ending August 2007.

45. In sum, the FAA’s proposed rule would significantly weaken U.S. carriers’ competitiveness vis-à-vis foreign carriers by raising U.S. carrier costs and imposing a discriminatory “tax” on their feed service that foreign carriers do not face at their respective hubs. In light of the challenging economic conditions U.S. carriers already face, there is no plausible reason for FAA to further handicap US carriers by imposing a poorly conceived and costly scheme involving the forced reallocation of slots at JFK and EWR.

V. CONCLUSIONS

46. Like the earlier LGA SNPRM, the NPRM for JFK and EWR and its accompanying IRE are plagued by serious conceptual flaws and rely on assumptions that are unjustified or demonstrably incorrect. Despite these serious shortcomings, the FAA's current proposal would impose—without adequate economic analysis or support—a number of unnecessarily intrusive regulations, including a complex, vaguely specified, and unnecessary auction mechanism to involuntarily reallocate a portion of U.S. carriers' slots at JFK and EWR. In addition, key findings of the FAA's accompanying *Initial Regulatory Evaluation*—including its cost benefit analysis—are gravely flawed and unreliable. In particular, the IRE relies on a number of unrealistic (or simply incorrect) assumptions and oversimplifications that result in grossly overstating the likely benefits of the proposed rule.

47. FAA casts the current NPRM as a proposal to address the potential for increased congestion and delay at New York's JFK and New Jersey's EWR airports. But in reality the NPRM would have virtually no impact on congestion or delay compared to the present because the (non-weather related) levels of congestion and delay are determined by the cap on number of hourly operations permitted, a cap that will remain in place whether or not the proposed rule is adopted. What the NPRM would do, however, is permit the FAA to reclaim slots from U.S. carriers at JFK and EWR and to reallocate them by means of an auction. In doing so, the NPRM would impose economically costly and unnecessary regulatory framework on the

U.S. carriers serving these airports, a framework that is far more likely to reduce than to enhance overall economic efficiency and social welfare.

48. Moreover, by exempting foreign carriers from having a portion of their slot confiscated and auctioned to the highest bidder, FAA's proposed rule would undermine U.S. carriers' ability to compete with foreign flag carriers.

VI. IDENTIFICATION

49. Daniel M. Kasper is Managing Director of LECG, LLC. (formerly, The Law & Economics Consulting Group) and head of the firm's transportation practice. LECG provides expert analysis and management consulting in economics, accounting, and finance. Mr. Kasper's business address is 350 Massachusetts Avenue, Suite 300, Cambridge, Massachusetts 02319. Mr. Kasper has over 25 years of experience at LECG, Coopers & Lybrand, L.L.P., Harbridge House, Inc., and the U.S. Civil Aeronautics Board ("CAB") dealing with issues involving competition, competition policy, economics and finance in the airline (and other) industries. Mr. Kasper has also served on the faculties of the Harvard Business School and the University of Southern California School of Business Administration for a total of ten years. In 1993, Mr. Kasper was one of 15 appointed members of the U.S. National Airline Commission, a body created by Congress to evaluate and make recommendations on how to improve the performance of the U.S. airline and aerospace industries. In addition, Mr. Kasper has served as a consultant to the U.S. Departments of Transportation, State and

Defense, on various airline industry matters and has also testified as an expert on airline and aviation industry matters before courts and federal administrative agencies, as well as legislative bodies and antitrust authorities both in the United States and abroad. Mr. Kasper's *curriculum vitae* is attached as Appendix A.

50. Darin Lee is a Principal in the Cambridge, MA office of LECG, LLC and specializes in airline economics, auctions and industrial organization. Dr. Lee has over 10 years of experience providing consulting services to numerous domestic and international airlines (both passenger and cargo) as well as industry trade associations and labor organizations on a wide variety of economic and financial matters involving the airline industry including bankruptcy reorganization, alleged anti-competitive behavior, codesharing and antitrust immunity applications, mergers, labor disputes and business interruption matters. Dr. Lee has published numerous articles on various aspects of airline economics in leading, peer-reviewed, academic journals such as *The Journal of Law & Economics*, the *Journal of Labor Economics*, the *Southern Economic Journal* and the *Journal of Economics and Business* and is editor of the *Advances in Airline Economics* book series published by Elsevier. Dr. Lee has testified in U.S. Federal Court and has filed testimony before the U.S. Department of Transportation on matters related to the airline industry. In addition to his expertise in the airline industry, Dr. Lee is also an expert in auctions, having served as primary bid strategist for numerous global telecommunication and Internet firms in many of the world's largest spectrum auctions, including those in the U.S., U.K., Egypt and Nigeria. Dr. Lee received a Ph.D. in Economics from Brown University and also holds an M.A. in Economics from

Queen's University in Kingston, Ontario and a B.A. in Economics from the University of Victoria, Canada. Dr. Lee has taught graduate level courses in economics at the University of Colorado-Denver. Dr. Lee's *curriculum vitae* is attached as Appendix B.

APPENDIX A: CURRICULUM VITAE OF DANIEL M. KASPER

DANIEL M. KASPER
LECG, LLC
350 Massachusetts Avenue
Suite 300
Cambridge, MA 02139

EDUCATION

BA, Political Science, UNIVERSITY OF KANSAS
Masters in Business Administration, UNIVERSITY OF CHICAGO
Juris Doctorate, UNIVERSITY OF CHICAGO

PRESENT POSITION

LECG November 1997-present
Managing Director, Cambridge, MA Office

At LECG, Mr. Kasper has focused his practice on the transportation industry. He has provided consulting services as well as expert economic analysis and testimony for a variety of clients in both the private and public sectors in the aviation, rail, trucking and maritime industries.

PREVIOUS EXPERIENCE

COOPERS & LYBRAND, Consulting 1993-1997
Partner and Chairman Transportation Industry Program

Mr. Kasper headed C&L's Transportation Industry Program where he directed a number of engagements involving domestic and international transportation clients in both the private and public sectors. He also appeared frequently as an expert witness before Federal courts, regulatory agencies, and the Congress of the United States.

UNITED STATES NATIONAL AIRLINE COMMISSION, 1993
Member

In 1993, Mr. Kasper was appointed and served as one of fifteen voting members of the US National Airline Commission, a body established by Congress to examine and make suggestions for strengthening the U.S. airline and aerospace industries. The Commission submitted its Report and recommendations to the President and Congress in September of 1993.

HARBRIDGE HOUSE, INC. 1983-1993

Vice President, Director and Head of the Transportation Practice

Mr. Kasper managed the firm's transportation practice and was responsible for a wide array of projects involving domestic and international transportation issues. He also served as an expert witness in numerous proceedings before Federal and state courts, regulatory agencies and legislative bodies.

UNITED STATES CIVIL AERONAUTICS BOARD, 1979-1983

Director of International Aviation

From January 1980 through September 1983, Mr. Kasper served as Director of International Aviation, the Board's primary advisor and chief line officer for all matters involving international aviation. During his tenure as Director, Mr. Kasper was instrumental in developing and implementing a pro-competitive U.S. international aviation policy.

Executive Assistant to Civil Aeronautics Board Member

From July through December of 1979, Mr. Kasper served as chief staff advisor to Board Member and Vice-Chairperson Elizabeth E. Bailey. In that capacity, he was responsible for reviewing all matters pending before the Board and advising Ms. Bailey on proper disposition of those matters. Matters dealt with by the Board during that period included a number of proposed airline mergers, the allocation of takeoff and landing slots, potential barriers to entry posed by control of gates at congested airport facilities, retail marketing of air transportation, pricing policy, and a request for antitrust immunity by the International Air Transport Association.

HARVARD UNIVERSITY, BUSINESS SCHOOL, 1976-1981

Faculty

At Harvard Business School, Mr. Kasper specialized in two principal areas: the impact of alternative forms of government regulation on the management and performance of business organizations and on the study of national economic policies and strategies. Mr. Kasper authored a number of case studies on various aspects of the transportation and telecommunication industries.

While at Harvard, Mr. Kasper was a member and active participant in the Harvard Regulatory Reform Project conducted under the auspices of the Kennedy School of Government. He also consulted with firms in the telecommunications and computer industries to help them anticipate and prepare for the impact of telecommunications deregulation on their businesses.

UNIVERSITY OF SOUTHERN CALIFORNIA, 1971-1976

Faculty

While at USC, Mr. Kasper developed, administered and taught courses dealing with the control of business activities by means of direct government regulation, the enforcement of private contracts, and through the use of tort law. His research focused on the regulation of transportation, telecommunications industries and workplace safety. He also served as a member of the Faculty Senate.

BOOKS

- 1) *Deregulation and Globalization: Liberalizing International Trade in Air Services*, Ballinger Publishers, Cambridge, MA, 1988.
- 2) *The US Regional Airline Industry to 1996: Markets, Competition, and the Demand for Aircraft*, The Economist Publications, London & New York, 1987.

PROFESSIONAL AFFILIATIONS

Member of the Illinois Bar

Member of the California Bar

Member, American Bar Association

June 2008

APPENDIX B: CURRICULUM VITAE OF DARIN N. LEE

LECG, LLC
350 Massachusetts Ave., Suite 300
Cambridge, MA 02139
Tel: +1 (617) 761-0108
Fax: +1 (617) 621-8018
E-mail: darin_lee@lecg.com
Website: <http://www.darinlee.net/>

EDUCATION

Ph.D., Economics, BROWN UNIVERSITY, Providence, RI, 1998
Specialized Fields: Game Theory, Microeconomic Theory, Industrial
Organization & Bargaining Theory
A.M., Economics, BROWN UNIVERSITY, Providence, RI, 1995
M.A., Economics, QUEEN'S UNIVERSITY, Kingston, Canada, 1993
B.Sc. (Honors), UNIVERSITY OF VICTORIA, B.C., Canada, 1991

PRESENT POSITION

LECG, LLC, Cambridge, MA, July 2005 – Present
Principal, Transportation and Auction Groups

LECG, LLC, Cambridge, MA, January 2002 – June 2005
Senior Managing Economist, Transportation and Auction Groups

LECG, LLC, Cambridge, MA, January 2001- December 2001
Managing Economist, Transportation and Auction Groups

LECG, LLC, Cambridge, MA and Emeryville, CA, July 1998 - December
2000
Senior Economist, Transportation and Auction Groups

PUBLICATIONS IN REFEREED JOURNALS

- 1) “Retracting a Gift: How Does Employee Effort Respond to Wage Reductions?”, with Nicholas Rupp, *Journal of Labor Economics*, Volume 25, Number 4, October 2007, pages 725-762.
- 2) “Domestic Codesharing, Alliances and Airfares in the U.S. Airline Industry”, with Harumi Ito, *The Journal of Law & Economics*, Volume 50, pages 355-380, 2007.
- 3) “The Impact of Passenger Mix on Reported Hub Premiums in the U.S. Airline Industry,” with María José Luengo Prado. *Southern Economics Journal*, Vol. 72, No. 2, pp. 372–394, 2005.
- 4) “Comparing the Impact of the September 11 Terrorist Attacks on International Airline Demand,” with Harumi Ito. *International Journal of the Economics of Business*, Volume 12, No. 2, pages 225-249, 2005.
- 5) “Domestic Codesharing Practices in the U.S. Airline Industry”, with Harumi Ito, *Journal of Air Transport Management*, Vol. 11, No. 2, pages 89-97, 2005.
- 6) “Assessing the Impact of the September 11th Terrorist Attacks on U.S. Airline Demand,” with Harumi Ito. *Journal of Economics and Business*, Volume 57 (1), pp. 75-95, 2005.
- 7) Entry Patterns in the Southwest Airlines Route System,” with Charles Boguslaski and Harumi Ito. *Review of Industrial Organization*, Volume 25 (3), pp. 317-350, 2004.
- 8) “Are Passengers Willing to Pay More for Additional Legroom?” with María José Luengo Prado. *Journal of Air Transport Management*, Volume 10, No. 6, pp. 377-383, 2004.
- 9) “Lessons from the Nigerian GSM Auction,” *Telecommunications Policy*, Volume 27, pp. 407-416, 2003.
- 10) “An Assessment of Some Recent Criticisms of the U.S. Airline Industry’,” *Review of Network Economics*, Vol. 2(1), pp. 1-9, March 2003.
- 11) “Concentration and Price Trends in the U.S. Domestic Airline Industry,” *Journal of Air Transport Management*, Volume 9, No. 2, pp. 91 –101, 2003.
- 12) “The Core for Economies with Asymmetric Information: An Axiomatic Approach,” with Oscar Volij, *Journal of Mathematical Economics*, Vol. 38, 1, pp.43-63, 2002.
- 13) “A Note on Individualistic Foundations of the Core in Economies with Asymmetric Information,” *Economics Letters*, Volume 61, pp. 203-208, 1998.

BOOKS, BOOK CHAPTERS AND WORK IN PROGRESS

- 1) [*Advances in Airline Economics*](#), Volume 1, *Competition and Antitrust*, Editor. Amsterdam: Elsevier, 2006.
- 2) [*Advances in Airline Economics*](#), Volume 2, *The Economics of Airline Institutions, Operations and Marketing*, Editor. Amsterdam: Elsevier, 2007.
- 3) “The Impact of Domestic Codesharing on Market Airfares: Evidence from the U.S.”, with Harumi Ito, in *Advances in Airline Economics, Volume 1*, Darin Lee, Editor, pages 141-162. Amsterdam: Elsevier, 2006.
- 4) “Market Density and Low Cost Carrier Entries in the U.S. Airline Industry: Implications for Future Growth,” with Harumi Ito, forthcoming in *Low Cost Carriers – A Global Experience*. Bangalore, IBS Press, 2006.
- 5) “Incumbent Responses to Lower Cost Entry: Evidence from the U.S. Airline Industry,” with Harumi Ito, Unpublished Manuscript, November 2003.

OTHER PAPERS AND PUBLICATIONS (NON REFEREED)

- 1) DARIN LEE, “Liberalizing the U.S.- Hong Kong Air Transport Agreement: The Importance of Codesharing Opportunities,” May 2001
- 2) DARIN LEE, “Lessons from the Nigerian GSM Auction,” *LECG Perspectives*, January 2002.

UNIVERSITY TEACHING EXPERIENCE

UNIVERSITY OF COLORADO-DENVER, Department of Economics, 1994 and 1995, Visiting Lecturer

Courses in Graduate Microeconomics and Mathematical Economics.

BROWN UNIVERSITY, Department of Economics, Fall 1993 - Spring 1997
Teaching Assistant

Courses in Microeconomics, Bargaining Theory, Game Theory, Industrial Organization and Macroeconomics

PROFESSIONAL ENGAGEMENTS

Testimony & Expert Reports

- Expert report, deposition and trial testimony in *Gary H. Ramey, et. al vs. District 141, International Association of Machinists and Aerospace Workers, et. al. United States District Court, Eastern District of New York, 2007.*
- Filed expert report in *Republic/NFR & C. Parking of Louisville v. Regional Airport Authority of Louisville and Jefferson County*, Civil Action No. 3:01CV-633-S.
- Filed expert declaration in Star Alliance Application for Antitrust Immunity, Before the U.S. Department of Transportation, Dockets OST-05-22922, OST-96-1434.
- Filed expert testimony in SkyTeam Application for Antitrust Immunity, Before the U.S. Department of Transportation, Docket No OST-2004-19214.

Airline Labor Matters: Dr. Lee is an expert in labor matters regarding the airline and related industries. Over the past several years, Dr. Lee has actively advised numerous air carriers on wide range of labor matters, including:

- For several major U.S. airlines (both mainline and regional), provided expert analysis regarding labor negotiations in advance of Chapter 11 bankruptcy as well as analyses in conjunction with Section 1113(c), 1113(e) and 1114 contract relief.
- For several major U.S. airlines, provided expert analysis to support labor contract negotiations.
- For a large airline union, provided independent expert testimony in class action lawsuit brought forth by a class of its members regarding effects of September 11th on U.S. airline industry.
- For an international airline caterer, provided expert analysis to support labor contract interest arbitration.
- For several major U.S airlines, provided expert analysis in support of forced majeure labor arbitrations.
- For a major U.S. carrier, analysis of industry & economic issues in conjunction with Presidential Emergency Board regarding pilot negotiations.

Airline Economics, Competition Policy, and Financial Damages: Dr. Lee is an expert in the airline industry and has in-depth knowledge of the economics of the airline industry, airline data, regulatory and competition policy issues. Representative case experience includes:

- Provide expert consulting services to several major U.S. mainline and regional airlines in connection with Chapter 11 reorganization.
- Provide expert consulting services to several U.S. carriers contemplating potential mergers.
- Provide expert testimony and analysis for international airline alliances in support of antitrust immunity applications.
- Analysis of industry, economic & antitrust issues on behalf of three major U.S. airlines and industry group in class action suit regarding hidden city ticketing.
- Provided valuation of a major carrier's U.S. slot holdings.
- Provided valuation of a major carrier's Narita slots holdings and route authority.
- Comments on behalf of industry airline association regarding the use of market based mechanisms to reduce delay and congestion at U.S. airports.
- Analysis of industry, economic & antitrust issues on behalf of a major U.S. airline regarding the use of baggage templates at Dulles International Airport. (U.S. District Court for the Eastern District of Virginia, Civil Action No. 00-684-A).
- Provide consulting services to major industry group with regards to slot auctions and congestion pricing.
- Analysis of proposed rule making regarding demand management options at New York's LaGuardia airport.
- Industry analysis for major airline in conjunction with post 9/11 workforce reductions.
- Analysis of industry & economic issues on behalf of industry backed Internet travel agency.

- Analysis of industry & economic issues for major U.S. and European alliance partners regarding a potential immunized alliance and Open Skies.
- Analysis of discriminatory airport rates, charges and access fees by U.S. and Canadian airports for air carriers and ground transportation providers.
- Authored whitepaper on behalf of major U.S. airline in support of codesharing application with major Hong Kong airline.
- Analysis of industry & economic issues on behalf of Chamber of Commerce for a U.S. metropolitan hub city.
- Analysis of consolidation strategies for a major U.S. airline in conjunction with the proposed and realized industry mergers of 2001.
- Analysis of industry, economic & antitrust issues on behalf of United Air Lines in *United Air Lines v. Mesa Airlines and Westair Commuter Airlines*. (United States District Court for the Northern District of Illinois Eastern Division, No. 97 C4455).
- Analysis of industry, economic & damage issues on behalf of GATX/Airlog in *GATX/Airlog v Evergreen International Airlines, Bank of New York, AIA, and G.E. Capital*. (U.S. District Court, Oakland Division, No. C96-2494CW).
- Analysis of industry and economic issues on behalf of American Airlines regarding application for new service to China.
- Analysis of industry & damage issues for ValuJet/AirTran in *ValuJet/AirTran vs Sabreliner and SabreTech*. (Circuit Court of St. Louis County, State of Missouri #97CV-003725)
- Analysis of industry & economic issues for a major U.S. airline in predatory pricing suit.
- Analysis of industry & economic issues for a major U.S. airline in response of allegations of hub dominance.
- Analysis of industry, regulatory and economic issues for a major U.S. airline and Canadian holding company during negotiations regarding the potential acquisition of Canadian Airlines.

Auctions and Markets: Dr. Lee also specializes in the auctions, markets and game theory. He has served as Auction Strategist for numerous wireless telecommunication firms during spectrum auctions in the US, UK, Nigeria, Egypt, Brazil and Switzerland where he was responsible for rules analysis, development of bidding strategies, and round-by-round analysis of bidding behavior. Dr. Lee has also provided auction advice to firms in the electricity, airline and diamond industries and has published articles on auctions and game theory in policy journals such as *Telecommunications Policy* as well as leading economic journals such as the *Journal of Mathematical Economics* and *Economics Letters*. Representative engagements include:

- Chief auction strategist for a large bidder in FCC Auction #73, 2007-2008.
- For a U.S. wireless telecommunications firm (2006): Chief auction strategist during FCC auction #66 (AWS).
- For a major auction software company (2006): Provided logic and software beta testing for Illinois electric capacity auction software.
- For a major African wireless telecommunications firm (2006): Chief auction strategist during Egyptian Mobile License Auction.
- For a major auction software company (2002): Analyzed rules and tested software for Texas Electricity Capacity auction.
- Advised U.S. General Accounting Office (GAO) on matters regarding spectrum auctions.
- For an industry group representing major U.S. Airlines (2001-): Consulting services on the feasibility of airport take-off and landing slot auctions.
- For a major producer and market maker of diamond rough (2001-): Consulting services on pricing, auctions, and market microstructure.
- For a major U.S. Electric Utility (2001): Auction Design Consultant, Basic Services Generation Auction (New Jersey)
- For a major wireless provider in South Africa (2000/2001): Principal Auction Strategist, Nigerian GSM auction.

- For an international telecommunications firm (2000): Principal Auction Strategist, UK LMDS auction.
- For an international telecommunications firm (1999-2000): Principal Auction Strategist, UK 3G auction.
- Provided bid strategy advice to bidder in the Swiss LMDS auction. (2000)
- Provided analysis of the “winner’s curse” in U.S. vs. Nextwave bankruptcy settlement (U.S. C-block auction). (1999)
- Advised the Colombian government on efficient auction design for PCS service. (1998)
- Provided bid strategy advice to bidder in the Brazil B block auction. (1998)

CONFERENCE AND OTHER INVITED PRESENTATIONS

- Embraer Semi-Annual AMA’s Meeting, Sao Jose dos Campos, Brazil, May 29, 2007.
- International Industrial Organization Conference, Atlanta, April 2005.
- American Economic Association Winter Meetings, Philadelphia, January 2005.
- International Industrial Organization Conference, Chicago, April 2004.
- Southern Economics Association Annual Conference, San Antonio, November 2003.
- Federal Reserve Bank of Chicago, June 2003.
- International Industrial Organization Conference, Boston, April 2003.
- Stony Brook International Game Theory Conference, July 1997

Journal Referee For:

Journal of Industrial Economics, Southern Economic Journal, Journal of Law, Economics & Organization, Review of Industrial Organization, Journal of Urban Economics, Journal of Transport Economics and Policy, Telecommunications Policy, Journal of Air Transport Management

PROFESSIONAL AFFILIATIONS

American Economic Association
 International Industrial Organization Society
 Sloan Industry Studies Affiliate

HONORS AND AWARDS

Abramson Dissertation Prize, Department of Economics, Brown University,
1997

Stephen Ehrlich Foundation Research Grant, Brown University, 1997

Stephen Ehrlich Foundation Research Grant, Brown University, 1996