COMPETITION IN U.S. AIRLINE MARKETS: MAJOR DEVELOPMENTS AND ECONOMIC INSIGHTS

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By Germán Bet

Nearly half a century after airline deregulation in the U.S., significant consolidation has reshaped the industry, with four major airlines — American, Delta, United, and Southwest — controlling a substantial majority of the domestic market. While mergers have expanded networks, they have also sparked debates over the level of competition in the industry. This article reviews industry trends over the past two decades, including fare changes, network expansion, and market concentration, alongside recent academic insights of the industry into market power and competition. The article concludes by identifying key areas where public policy should prioritize its efforts, considering both academic findings and the industry's current challenges.

I. INTRODUCTION

Nearly 50 years have passed since the deregulation of the U.S. airline industry in 1978, ushering in an era of unrestricted price competition, market entry, and strategic behavior. The Airline Deregulation Act set public policy to promote an air transportation system driven by actual and potential competition, ensuring efficiency, innovation, and low prices while allowing the market to determine service variety, quality, and pricing. Emphasizing the significance of competition, the Act underscored the need to prevent "anticompetitive practices in air transportation, and the avoidance of — (A) unreasonable industry concentration, excessive market domination, and monopoly power; and (B) other conditions; that would tend to allow one or more air carriers unreasonably to increase prices, reduce services, or exclude competition in air transportation."[2]

The removal of regulatory price and entry controls reshaped the industry, driving a significant decline in average fares in real terms. Fare structures became increasingly complex, with greater variation across routes and even within the same route, largely due to the adoption of yield management strategies. The introduction of frequent flyer programs further segmented the market, fostering brand loyalty and enabling airlines to implement more effective price discrimination. Incumbent carriers restructured their routes and networks, giving rise to the hub-and-spoke system, where passengers are routed through designated airports for connecting flights. Service frequency increased in many markets, especially out of hub airports. Deregulation also encouraged a wave of new entrants, most notably low-cost carriers, which reshaped the airline landscape.

Most economists likely agree that deregulation has improved consumer welfare compared to the regulated era before 1978. A new debate, however, has emerged regarding the current state of competition in the U.S. airline industry. Some analysts, industry participants, and economists argue that recent consolidation, which has left the four largest airlines (American, Delta, United, and Southwest) controlling nearly 80 percent of the domestic market, has reduced competition. Others, however, contend that inflation-adjusted fares remain historically low, mergers have expanded consumer choice, and low-cost ("LCCs") and ultra-low-cost carriers ("ULCCs") continue to drive competition. While both perspectives have merit, neither fully captures the complexity of competition in the industry, and each offers an imperfect view of its extent.

This short article examines market power in the U.S. airline market through the lens of academic literature and discusses how some of the lessons therein may be relevant to inform public policy. The field of industrial organization and airline economics is vast, making a comprehensive review beyond the scope of this article. Instead, the discussion focuses on select findings, particularly those related to recent industry developments and key lessons from competition in the deregulated era that remain relevant for shaping future policy.

The next section provides a brief overview of major developments in the U.S. domestic airline industry over the past two decades, highlighting trends in some key variables. Subsequent sections examine the extent of market power in the industry and discuss the economic literature's insights on its sources and competitive issues. The article concludes by identifying key areas where public policy should focus, considering the industry's current challenges and lessons from economic research.

II. MAJOR DEVELOPMENTS AND TRENDS

Over the past 25 years, the U.S. airline industry has undergone significant consolidation. This wave of consolidation began in 2001 with American Airlines' acquisition of Trans World Airlines and continued with the 2005 merger of U.S. Airways and America West. In April 2008, Delta and Northwest Airlines — the third and sixth largest carriers at the time — announced plans to merge. Although their networks overlapped on several routes, mostly involving connecting services in competitive markets, the merging parties argued that combining their complementary networks would benefit consumers.[3] The U.S. Department of Justice ("DOJ") concluded that any potential harm would be modest relative to the benefits.[4] The merger was completed in October 2008.

In May 2010, United and Continental announced merger plans. Like the Delta-Northwest case, the merging parties argued benefits to consumers and cost savings due to the merger. The carriers' networks overlapped on 13 nonstop routes. The DOJ considered that potential

2 *Airline Deregulation Act of 1978*, Public Law 95-504, 92 Stat. 1706,1707 (Oct. 24, 1978).

3 The carriers' networks overlapped on 11 nonstop routes. See Ken Heyer, Carl Shapiro, & Jeffrey Wilder, *The Year in Review: Economics at the Antitrust Division, 2008-2009*, 35 REV. INDUS. ORG, 4, 349 (2009).

4 *Id.*

benefits from the merger would likely exceed any potential harm. However, the agency required that the merging parties transfer 36 slots and three gates to Southwest Airlines at Newark airport.[5] The merger was completed in October 2010.

In September 2010, Southwest and AirTran announced their intention to merge. The merger would allow Southwest to expand its network and service to new destinations by gaining access to AirTran's hubs in Atlanta, Milwaukee, and Orlando. Despite overlapping on 23 nonstop routes, the DOJ did not challenge the merger, noting that the affected airports were not constrained by slot or gate availability and that the new service would benefit consumers. The merger was completed in May 2011.

In February 2013, American and U.S. Airways announced a merger that would create the largest U.S. carrier. The merging parties argued that the merger was necessary to compete against larger carriers with denser networks. However, antitrust concerns emerged — not only about unilateral effects but also about coordinated effects.[6] Ultimately, the DOJ approved the merger after a settlement requiring divestiture of slots at Washington Reagan National and New York LaGuardia, as well as gates at several airports. However, concerns about reduced competition due to coordinated effects remained. The merger was finalized in December 2013.

In more recent years, the DOJ has closely scrutinized several major airline deals. In 2016, Alaska Airlines acquired Virgin America, a small and relatively new entrant with under 2 percent market share. The DOJ cleared the merger after requiring Alaska to end its code-sharing agreement with American Airlines. In September 2021, the DOJ sued to block the Northeast Alliance between American Airlines and JetBlue, arguing that it effectively merged their operations and eliminated competition. A judge ruled in favor of the DOJ in May 2023, leading to the alliance's dissolution. Similarly, in March 2023, the DOJ sued to block JetBlue's proposed merger with Spirit Airlines, announced in July 2022, citing Spirit's role as a disruptive low-cost carrier and concerns over reduced consumer choice and higher fares. The court ruled in early 2024 to block the merger. The DOJ took a more measured approach to the Alaska Airlines-Hawaiian Airlines merger, announced in December 2023. After issuing a Second Request for further information in February 2024, it ultimately allowed the merger when the review period expired in August 2024. The merger was finalized in September 2024.

Industry consolidation has significantly heightened market concentration at the aggregate national level. The four largest carriers — American, Delta, United, and Southwest — saw their combined market share (measured by tickets sold) surge from 54 percent in 2007 to nearly 78 percent by 2015, before declining slightly to 73 percent in 2024.

At the local market level, defined as a city-pair, market concentration has also increased over time. The average Herfindahl-Hirschman Index ("HHI") across markets rose from 0.46 in 2007 to 0.51 in 2015, before slightly declining to 0.50 in 2024.[7] Among the top 2,000 most traveled markets — which primarily cover city-pairs within the top 65 metropolitan statistical areas — the average HHI increased from 0.43 in 2007 to 0.48 in 2015, settling at 0.47 in 2024. In markets outside these top 2,000 city-pairs, the average HHI rose from 0.48 in 2007 to 0.53 in 2015, before decreasing slightly to 0.51 in 2024.

Market concentration also varies by travel distance. Whereas short-haul markets (i.e., less than 500 miles) have been characterized by high concentration since 2007, with an average HHI of 0.73, the average HHI in medium-haul markets (500–1,500 miles) has increased from 0.48 in 2007 to approximately 0.53 in 2015 and 2024. In long-haul markets (more than 1,500 miles), the average HHI increased from 0.37 in 2007 to 0.44 in 2015, before declining slightly to 0.42 in 2024.

Industry consolidation has decreased the proportion of passengers needing to change airlines during their trips, while enabling many airlines to offer a broader range of destination options from multiple origin airports. From 2007 to 2024, the average number of destination cities served per origin airport increased for all four major U.S. airlines, with notable growth between 2007 and 2015. American Airlines saw the largest expansion, rising from 83 in 2007 to 123 in 2015 and 130 in 2024.[8] United Airlines grew from 89 to 103 in 2015 and 108 in 2024. Delta Airlines increased from 92 to 116 by 2015, remaining steady through 2024. Southwest Airlines expanded from 57 to 70 in 2015 and 85 in 2024. Consumers value this change because it minimizes travel inconvenience and reduces associated costs.

5 A slot is a pre-allocated time window during which an aircraft is allowed to land or take off at a specific airport.

6 Carriers' networks overlapped on 12 nonstop routes. For a discussion of the case, see Steven Olley & Robert Town, *End of an Era: The American Airlines-US Airways Merger, in The Antitrust Revolution: Economics, Competition, and Policy* 448 (John Kwoka & Lawrence White eds., 7th ed. 2019); and Robert H. Porter, *Mergers and Coordinated Effects*, 73 INT'L J. INDUS. ORG. 102583 (2020).

7 These numbers represent unweighted averages across markets. Markets with less than 10 passengers per day are excluded from the analysis.

8 These numbers represent weighted averages across airports, with weights based on the total number of passengers flown by each airline at the origin airport.

While consolidation has expanded the network size and scope of merging carriers, doubts remain about whether recent mergers have significantly improved network connectivity — and, consequently, their ability to benefit consumers through higher-quality service. Ciliberto, Cook & Williams (2019) analyze industry network connectivity from 1990 to 2015, finding that, on average, each airport in a carrier's network services a greater proportion of possible routes and is fewer stops away from any given destination.[9] Additionally, the average hub is less frequently located along the shortest route between any two other airports. Crucially, they find that recent mergers, on average, are not relevant for explaining these trends, suggesting that other factors — such as technological advances, changes in demand, and broader market dynamics — might be the main drivers behind the evolution toward a more directly connected network.[10]

The research discussed above focuses on an airline's network architecture. While this is relevant to service quality, consumers also value other dimensions, such as connection quality and flight frequency, which mergers may improve. However, evidence on these factors is limited, with some studies finding no support for merger-induced improvements in on-time performance or increased flight frequency in certain major recent mergers (see Prince & Simon, 2017; Das, 2019).[11]

When examining airline fares, the average inflation-adjusted fare was $0.32 per mile in 2007, rose to $0.33 per mile in 2015, and then declined to $0.25 per mile in 2024 (all figures in 2024 U.S. dollars per mile).[12] These figures, however, do not fully reflect the average cost of travel in recent years. In 2007, most airlines included services like a checked bag in their base fare. By the second half of 2008 and early 2009, many carriers began unbundling these services. Today, airlines charge ancillary fees for previously included features such as checked bags, reservation changes, advanced seat assignments, preferred boarding, and onboard food and entertainment — none of which are accounted for in the base fare. In the U.S. domestic market, airlines collected approximately $4.6 billion in baggage fees, reservation cancellation fees, and other miscellaneous revenues in 2009, nearly $12 billion in 2015, and $14 billion in 2024 (all figures in 2024 U.S. dollars).

Federal regulations mandate that airlines advertise the full price of a ticket but do not require them to prominently disclose fees for optional products and services when airfare is initially presented to customers. As a result, the growing prevalence of ancillary fees has reduced pricing transparency, making it harder for consumers to accurately compare the total cost of travel. This practice softens price competition: even if travelers are willing to pay extra for additional services bundled with their base fare, the mere existence of these unbundled options makes price search less effective, ultimately driving airfare prices higher in equilibrium.[13]

In recent years, this obfuscation strategy has been further compounded by airlines' use of advanced technology to refine price discrimination strategies. By leveraging data on travelers' past purchases, loyalty program status, and flight search history, airlines can create personalized offers and bundles, making it even harder for consumers to navigate and compare costs effectively. Recent regulatory efforts to improve price transparency have faced strong resistance from the industry.[14]

These shifts in the base fare per mile are also reflected, albeit to a lesser extent, in broader airline revenue metrics. The passenger-mile-weighted average yield — total operating revenue per passenger mile — slightly declined from 0.26 in 2007 to 0.25 in 2015, before dropping further to 0.22 in 2024 (all figures in 2024 USD per passenger mile). A similar trend is observed in average revenue per available seat mile, a measure of revenue per unit of capacity supplied to the market, which remained at 0.22 in 2007 and 2015 before decreasing to 0.19 in 2024 (in 2024 USD per available seat mile).

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9 Federico Ciliberto, Emily E. Cook & Jonathan W. Williams, *Network Structure and Consolidation in the U.S. Airline Industry*, 1990–2015, 54 REV. INDUS. ORG. 3 (2019).

10 Modest average effects on route convenience — measured as the ratio of nonstop flight distance to itinerary flight distance — were identified for the Delta-Northwest and United-Continental mergers, with negative effects in markets where the merging firms had previously competed and positive effects where they had not. See Yongmin Chen & Philip G. Gayle, *Mergers and Product Quality: Evidence from the Airline Industry*, 62 INT'L J. INDUS. ORG. 96 (2019).

11 Somnath Das, *Effect of Merger on Market Price and Product Quality: American and US Airways,* 55 REV. INDUS. ORG. 339 (2019); Jeffrey T. Prince & Daniel H. Simon, *The Impact of Mergers on Quality Provision: Evidence from the Airline Industry*, 65 J. INDUS. ECON. 336 (2017).

12 These numbers represent passenger-weighted averages computed from ticket data (DB1B database). While the reported fare in these data includes taxes and airport charges (such as passenger facility fees), it does not account for any airline ancillary fees.

13 See, for example, Glenn Ellison & Sara Fisher Ellison, *Search, Obfuscation, and Price Elasticities on the Internet*, 77 ECONOMETRICA 427 (2009); Glenn Ellison & Alexander Wolitzky, *A Search Cost Model of Obfuscation*, 43 RAND J. ECON. 417 (2012); and references therein.

14 On April 30, 2024, the U.S. Department of Transportation ("DOT") issued a regulation to improve transparency in airline ancillary fees, requiring airlines to disclose costs for key services — checked bags, carry-ons, and reservation changes or cancellations — earlier in the booking process and with greater visibility. Most airlines opposed the rule, and Airlines for America challenged it in court, arguing it exceeded the DOT's authority. On July 29, 2024, the Fifth Circuit Court of Appeals issued a stay, temporarily blocking the regulation's enforcement.

III. MARKET POWER

The preceding discussion highlights two distinct trends: (i) airline markets are, on average, more concentrated in 2024 than in 2007, the year before a wave of major mergers that reshaped the industry; and (ii) various metrics indicate that airlines are, on average, generating less revenue per unit of output in 2024 than in 2007. Neither of these trends, however, necessarily confirms or refutes the presence of market power — defined as a firm's ability to profitably influence the price of its products and, consequently, to profitably raise prices above marginal costs — or any changes in it.[15]

It is well understood in the industrial organization literature that higher concentration, a measure of industry structure, does not necessarily imply greater market power (see, for example, Syverson, 2019).[16] Similarly, while lower average prices per unit of output today compared to pre-consolidation levels are often cited as evidence of the benefits of industry consolidation, price levels alone do not reveal how closely the industry is pricing to marginal cost — the perfectly competitive benchmark. Moreover, prices are equilibrium outcomes shaped by market primitives: demand, technology, and firm behavior. Thus, any argument for consolidation must be supported by a carefully constructed counterfactual that accounts for changes in these underlying factors. Most importantly, any merger-induced changes in these market fundamentals — with their corresponding effects on prices — carry distinct implications for public policy.

Retrospective studies on the price effects of recent airline mergers remain inconclusive, with no clear consensus on whether recent mergers have led to higher or lower prices (e.g. Luo, 2014; Carlton, Israel, MacSwain & Orlov, 2019; Das, 2019; Turner, 2022; among others).[17] While price effects likely vary by merger and its specific characteristics, part of the disagreement in the literature may stem from the challenges in constructing a reliable counterfactual — one that accurately reflects how prices would have evolved in the absence of the merger. This challenge is particularly pronounced in airline markets, where carriers' network structures create spillover effects across different routes (see Orzach & Dix, 2023).[18] Moreover, if a merger leads to coordinated effects, contamination of the control group will bias estimates downward, potentially misrepresenting an anticompetitive merger as pro-competitive.

Recent studies examine the evolution of market power in the U.S. airline industry and its underlying causes. Bet (2021) documents changes in markups — defined as the price-to-marginal-cost ratio — for the industry over the period 1990–2019.[19] His approach avoids assumptions about demand or firm conduct. Instead, it requires estimating airlines' production technology and assuming cost-minimizing behavior. His main findings indicate that dominant carriers (i.e. American, Delta, United, and Southwest) substantially increased their markups between 2013 and 2019, reaching an all-time high around 2016–2017. Additionally, the markup growth during this period does not appear to be driven by significant technological changes, such as proportionally higher fixed costs or a larger scale elasticity. To further investigate the factors behind this markup growth, he recovers estimates of air travel demand and tests whether — beyond the observed changes in demand, product characteristics, and market structure — changes in airlines' coordinated behavior (conduct) are necessary to explain the recent increase in markups. The model rejects the null hypothesis of no increase in coordinated behavior among dominant carriers but fails to reject it for smaller airlines, such as Spirit. The resulting price and consumer welfare effects from this increased coordination are estimated to be substantial.[20]

While the research discussed above identifies changes in conduct as a key driver of the recent increase in markups, it does not pinpoint the exact mechanism behind heightened coordination. Certain industry characteristics — such as airlines' ability to continuously and rapidly monitor rival prices and seat availability, along with the prevalence of multi-market contact, where airlines maintain well-defined spheres of influence around their hub operations — make the industry particularly susceptible to coordination (see Porter, 2020).[21]

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15 Market power is then reflected in the extent to which a firm's price exceeds its marginal cost at the profit-maximizing level of output. A firm that lacks the ability to influence its price faces a perfectly elastic residual demand curve, meaning it must price at marginal cost. Marginal cost is defined as the incremental cost of supplying an additional unit of output.

16 Chad Syverson, *Macroeconomics and Market Power: Context, Implications, and Open Questions*, 33 J. ECON. PERSP. 23 (2019).

17 Dai Luo, *The Price Effects of the Delta/Northwest Airline Merger*, 44 REV. INDUS. ORG. 27 (2014); Dennis Carlton, Mark Israel, Ian MacSwain & Eugene Orlov, *Are Legacy Airline Mergers Pro- or Anti-Competitive? Evidence from Recent U.S. Airline Mergers*, 62 INT'L J. INDUS. ORG. 58 (2019); Das, *supra* note 11; Douglas Turner, *Coordinated Effects in the American Airlines-US Airways Merger* (Sept. 13, 2022), available at https://ssrn.com/abstract=3917112.

18 Roi Orzach & Rebekah Dix, *Market Power Spillovers Across Airline Routes* (Jan. 25, 2023), available at https://ssrn.com/abstract=3915484.

19 Germán Bet, *Market Power in the U.S. Airline Industry* (Aug. 12, 2021), available at https://ssrn.com/abstract=3913695.

20 While the empirical analysis can detect increases in coordinated behavior, it cannot distinguish between tacit and explicit coordination. In May 2015, the DOJ launched an investigation into airline competition, and by July 2015, airline consumers filed an antitrust lawsuit against the largest carriers — American, Delta, United, and Southwest — alleging a conspiracy to fix domestic fares. Southwest settled in 2017 for $15 million and agreed to cooperate, followed by American in 2018 with a $45 million settlement, though neither admitted wrongdoing. That same year, the DOJ concluded there was insufficient evidence to pursue an antitrust case against the airline industry for collusion.

21 Porter, *supra* note 6. See also Federico Ciliberto & Jonathan W. Williams, *Does Multimarket Contact Facilitate Tacit Collusion? Inference on Conduct Parameters in the Airline Industry*, 45 RAND J. ECON. 764 (2014); and Federico Ciliberto, Eddie Watkins & Jonathan W. Williams, *Collusive Pricing Patterns in the U.S. Airline Industry*, 62 INT'L J. INDUS. ORG. 136 (2019).

Higher market concentration further facilitates coordination. In addition, the 2013 American-U.S. Airways merger raised concerns not only about unilateral effects but also about coordinated effects, as U.S. Airways was seen as a "maverick" disrupting industry-wide coordination. Unlike other legacy carriers, U.S. Airways' hub locations made it profitable to offer discounted fares ("Advantage Fares") on connecting routes where rivals provided nonstop service. The merger would consolidate the market into three relatively symmetric legacy carriers — American, Delta, and United — creating incentives for American to discontinue the Advantage Fares program. This, in turn, would enhance industry-wide coordination through cross-market initiatives (see Olley & Town, 2019; Porter, 2020).[22] The structural remedies imposed by the DOJ to approve the merger did not address concerns about coordinated effects. Recent research indicates that, in fact, the incentives to collude in the industry have increased since the merger (see Turner, 2022).[23] As a result, one or more of these mechanisms likely contributed to the rise in coordinated behavior.

In recent years, merger enforcement has increasingly prioritized unilateral effects, with coordinated effects playing a diminished role.[24] This shift is likely driven by the widespread adoption of merger simulations and other methodologies tailored to quantifying unilateral effects. However, recent advances in economic methodology, as discussed by Daubenspeck, Maxwell Koegel, Miller & Podwol (2023), offer a path forward.[25] By applying new simulation techniques, antitrust agencies and practitioners can now assess mergers with coordinated effects with the same quantitative rigor that has long been standard for unilateral effects analysis. These developments not only pave the way for a renewed emphasis on coordinated effects in merger enforcement but also enhance the ability to evaluate, for example, the role of maverick firms in assessing competitive effects.

IV. FURTHER INSIGHTS

Historically, the industry has been characterized by important barriers to entry that make it difficult the entry of new competitors and the expansion of existing competitors at selected airports (see, for example, Ciliberto & Williams, 2010; Snider & Williams, 2015).[26] These barriers include access to takeoff and landing slots, airport gates, and other airport services or facilities. These are particularly important in many of the largest airports.

Besides airport-level entry barriers, airlines face additional challenges when entering and expanding into new markets. A key lesson from deregulation is that a strong airport presence provides carriers not only with cost efficiencies but also significant demand advantages. It enhances operational efficiency, increases consumers' willingness to pay by improving service quality and product differentiation, strengthens the effectiveness of marketing tools like frequent flyer programs, raises the minimum scale required for competitive operations, and intensifies congestion issues at major airports.[27] A key implication is that if the network externalities associated with airport presence are strong enough, they may deter entry by smaller carriers (e.g. Hendricks, Piccione & Tan, 1997; Aguirregabiria & Ho, 2010).[28] In such cases, market power not only results in welfare losses due to reduced consumption but may also lead to production inefficiencies by excluding more efficient competitors.

Consolidation has increased the presence of the largest carriers at their hubs and largest airports. This shift, combined with higher switching costs driven by pricing opacity and loyalty programs, has likely raised barriers to entry for new firms and limited market expansion opportunities for smaller competitors outside the four dominant carriers. Economic theory suggests that asymmetric market positions between incumbents and entrants facilitate entry-deterring and predatory behavior — practices that have been well-documented in the U.S. airline in-

22 Olley & Town, *supra* note 6; Porter, *supra* note 6.

23 Turner, *supra* note 17.

24 Steven C. Salop & Fiona Scott Morton, *The 2010 HMGs Ten Years Later: Where Do We Go From Here?*, 58 REV. INDUS. ORG, 81 (2021); D. Daniel Sokol & Sean P. Sullivan, *The Decline of Coordinated Effects Enforcement and How to Reverse It*, 76 FLA. L. REV. 265 (2024).

25 Jamie Daubenspeck, Kate Maxwell Koegel, Nathan Miller & Joseph Podwol, *Recent Advances in Economic Methodology for Coordinated Effects*, COMPETITION POL'Y INT'L, July 2023.

26 Federico Ciliberto & Jonathan W. Williams, *Limited Access to Airport Facilities and Market Power in the Airline Industry*, 53 J.L. & ECON. 467 (2010); Connan Snider & Jonathan W. Williams, *Barriers to Entry in the Airline Industry: A Multidimensional Regression-Discontinuity Analysis of AIR-21*, 97 REV. ECON. & STAT. 1002 (2015).

27 See, for example, Severin Borenstein, *Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry*, 20 RAND J. ECON. 344 (1989); Steven T. Berry, *Airport Presence as Product Differentiation*, 80 AM. ECON. REV. 394 (1990); Steven T. Berry, Michael Carnall & Pablo T. Spiller, *Airline Hubs: Costs, Markups and the Implications of Customer Heterogeneity*, NBER Working Paper No. 5561 (1996).

28 Ken Hendricks, Michele Piccione & Guofu Tan, *Entry and Exit in Hub-Spoke Networks*, 28 RAND J. ECON. 291 (1997); Victor Aguirregabiria & Chun-Yu Ho, *A Dynamic Game of Airline Network Competition: Hub-and-Spoke Networks and Entry Deterrence*, 28 INT'L J. INDUS. ORG. 377 (2010).

dustry.[29] Therefore, the growing imbalance between dominant airlines and smaller competitors underscores the need to preserve and enhance opportunities for competitive entry in the industry.

V. CONCLUDING REMARKS

Over the past two decades, the U.S. airline industry has undergone significant transformation, marked by consolidation and a shift toward unbundled pricing, where services like checked bags and reservation changes are sold separately. One benefit of consolidation is the expansion of major carriers' networks, allowing passengers to reach more destinations within a single airline. However, evidence of merger-induced quality improvements in other areas, such as connectivity and delays, remains unclear. At the same time, evidence suggests increased market power following major mergers due to increased coordination among the largest carriers.

These transformative changes have likely increased barriers to entry for new firms and limited market expansion opportunities for smaller competitors outside the four largest carriers. Consolidation has also increased the imbalance in size between these smaller carriers and the industry's largest players. Economic theory suggests that such an imbalance incentivizes incumbents to engage in entry-deterring and predatory behavior, further limiting competition.

The challenges identified above highlight the growing need for agencies to take proactive steps in ensuring a level playing field in the airline industry. Beyond enforcing antitrust laws, efforts should also focus on addressing longstanding entry barriers — such as restricted slot and gate access — and ensuring that the largest airlines do not leverage their advantages — such as privileged relationships with airports, air traffic control, global distribution systems, and travel agents — in ways that could stifle competition and restrict entry opportunities for smaller carriers.

29 See, for example, Austan Goolsbee & Chad Syverson, *How Do Incumbents Respond to the Threat of Entry? Evidence from the Major Airlines*, 123 Q.J. ECON. 1611 (2008); Andrew Sweeting, James W. Roberts & Chris Gedge, *A Model of Dynamic Limit Pricing with an Application to the Airline Industry*, 128 J. POL. ECON. 1148 (2020); Germán Bet, *Product Specification Under a Threat of Entry: Evidence from Airlines' Departure Times*, 75 INT'L J. INDUS. ORG. 102705 (2021); Kenneth G. Elzinga & David E. Mills, *Predatory Pricing in the Airline Industry: Spirit Airlines v. Northwest Airlines (2005)*, in THE ANTITRUST REVOLUTION 307 (John Kwoka & Lawrence White eds., 6th ed. 2014).

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