*The International JetBlue Effect: Consumer Gains from Entry in Transatlantic Air Travel Markets**

Austin J. Drukker, Federal Trade Commission
Nicholas G. Rupp, East Carolina University
Kerry M. Tan, Loyola University Maryland

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JetBlue entered transatlantic air travel markets at comparable prices to competitors, which resulted in an increase in the total number of travelers and a minimal reallocation of existing shares—a phenomenon we dub the "international JetBlue effect." We estimate that JetBlue's entry into 13 transatlantic markets from its New York and Boston hubs has generated roughly $254 million per year in consumer surplus, with approximately 37% of the benefits accruing to the business class cabin. We simulate JetBlue's entry into 16 similar transatlantic markets and estimate that such entry would generate an additional $97 million per year in consumer surplus. We suspect that the international JetBlue effect could arise as other US carriers expand into international markets, such as Alaska Airlines' planned expansion into Asia from its US West Coast hubs.

Keywords: airlines, international, business class, premium products, entry, discrete choice

JEL Codes: L13, L93, R41

I. INTRODUCTION

The entry of new firms and products is a key mechanism through which markets evolve, competition intensifies, and consumers gain from greater variety and lower prices (Bresnahan and Gordon, 1997). New entrants can disrupt existing market structures, introduce innovative products, and exert downward pressure on prices, thereby enhancing efficiency and expanding consumer choice. Empirical work has found large consumer gains from the introduction of new, competing products, including minivans (Petrin, 2002), satellite TV (Goolsbee and Petrin, 2004), online booksellers (Brynjolfsson et al., 2003; Brynjolfsson and Smith, 2000), online newspapers (Gentzkow, 2007), digital music recording (Aguiar and Waldfogel, 2018), and low-cost domestic airlines (Goolsbee and Syverson, 2008).

Despite the empirical evidence for the value of new products and competitors across many different markets, international air travel markets have been stubbornly resistant to entry, even those that are governed by liberal Open Skies free trade agreements (Winston and Yan, 2015), such as the transatlantic market between the US and Europe. The transatlantic market is among the busiest international air travel markets in the world, making it an attractive market to enter because of high passenger demand, but the dominance of global airline alliances and the scarcity of airport takeoff and landing slots mean new entrants

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rarely sustain operations long term. Most member airlines of the three largest global alliances (Star Alliance, Oneworld, and SkyTeam), which combine to carry about 85% of transatlantic passengers, have been granted antitrust immunity by the US Department of Transportation to coordinate schedules, pricing, and capacity (Gillespie and Richard, 2012; Bilotkach, 2019; Little, 2025). In addition, almost all major European airports are slot controlled, meaning demand for flights significantly exceeds the airports' capacities, which increases the cost and complexity of entry for airlines that are not part of an alliance.

JetBlue's entry into the transatlantic market is an interesting case study because, seemingly against all odds, JetBlue has maintained a strong competitive position since entering despite being a low-cost, leisure-focused carrier operating only narrow-body aircraft and not being a member of one of the major global airline alliances (Mitchell, 2024). Low-cost leisure carriers have struggled to compete in the transatlantic market, with WOW Air, PLAY, and Norwegian Long Haul all ceasing operations after less than a decade. Meanwhile, demand for premium airline products has been steadily increasing in recent years (Garcia, 2023; Singh, 2025; Mitchell, 2025; Chokshi, 2025). For legacy carriers Delta Air Lines and United Airlines, premium products make up close to 50% of passenger fare revenue despite comprising only about 30% of available seats.[1] Traditionally leisure-focused airlines, including Southwest Airlines and Alaska Airlines, have been shifting their business models in recent years to focus more on premium products, and even some ultra-low-cost carriers, such as Spirit Airlines and Frontier Airlines, have been jumping on the trend, with Spirit revamping its "Big Front Seat" product in late 2024 and Frontier planning to introduce first-class seating in late 2025 (Griff, 2022; Cudahy, 2025a; Chokshi, 2025).

We quantify the benefits to consumers from entry by JetBlue Airways into the transatlantic air travel market. In August 2021, JetBlue entered the highly competitive market between New York's John F. Kennedy International Airport (JFK) and London's Heathrow Airport (LHR) with a narrow-body, 138-seat Airbus A321LR aircraft equipped with 24 ultra-premium business class suites branded "Mint." This premium product features fully lie-flat seats rivaling legacy carriers' offerings in both quality and price. Table 1 shows the 13 transatlantic markets that JetBlue has entered since August 2021. Notably, JetBlue entered these routes with Mint-equipped aircraft at the outset, which differs from JetBlue's US transcontinental rollout of Mint-equipped aircraft on routes it was previously serving without Mint-equipped aircraft (Rupp and Tan, 2025).[2]

[1] See 2024 Financial Results for Delta Air Lines and 2023Q3 Financial Results for United Airlines.
[2] For example, JetBlue began service between JFK and Los Angeles International Airport on June 17, 2009, using an Airbus A320 aircraft but transitioned to Mint-equipped Airbus A321 aircraft starting June 15, 2014. The Airbus A321LR has a range of approximately 4,000 nautical miles (4,600 statute miles). See https://aircraft.airbus.com/en/aircraft/a320-family/a321neo.

Table 1. JetBlue's Transatlantic Entry Dates

Route	US city	EU city	Start date	Season
JFK–LHR	New York	London	8/11/2021	Year-round
JFK–LGW	New York	London	9/29/2021	Summer
BOS–LGW	Boston	London	7/19/2022	Summer
BOS–LHR	Boston	London	8/22/2022	Year-round
JFK–CDG	New York	Paris	6/29/2023	Year-round
JFK–AMS	New York	Amsterdam	8/29/2023	Year-round
BOS–AMS	Boston	Amsterdam	9/20/2023	Summer
JFK–DUB	New York	Dublin	3/13/2024	Summer
BOS–DUB	Boston	Dublin	3/13/2024	Summer
BOS–CDG	Boston	Paris	4/3/2024	Year-round
JFK–EDI	New York	Edinburgh	5/22/2024	Summer
BOS–EDI	Boston	Edinburgh	5/22/2025	Summer
BOS–MAD	Boston	Madrid	5/22/2025	Summer

Notes: JFK–LGW service for 2025 was cancelled in December 2024. JFK–AMS service was changed to summer-only and BOS–AMS was changed to year-round starting November 2025, which is after our sample period. JetBlue announced summer 2026 service for BOS–MXP and BOS–BCN in November 2025, which is after our sample period.

Using proprietary data from OAG, we estimate that JetBlue's entry into the 13 transatlantic markets in Table 1 increased consumer surplus by roughly $254 million per year. We decompose the effect of JetBlue's entry into "price" and "variety" effects and find that the variety effect accounts for about 83% of the consumer surplus from JetBlue's entry. Brynjolfsson et al. (2003) and Brynjolfsson and Smith (2000) found a similar magnitude difference in their study of online bookstore entry, reporting that the consumer welfare from increased product variety at online bookstores was 7 to 10 times larger than the consumer welfare from lower prices due to increased competition for brick-and-mortar bookstores. We also decompose the effect of JetBlue's entry by cabin and find that, despite accounting for only about 17% of the available seats, about 37% of the benefits accrue to business class passengers. Finally, we simulate the effect of JetBlue's hypothetical entry into 16 transatlantic markets that are similar to those shown in Table 1 and estimate that consumer surplus would rise by an additional $97 million per year. We suspect that the international JetBlue effect could arise in other markets, such as Alaska Airlines' recently announced entry into transpacific markets from its Seattle and Honolulu hubs.[3]

A long literature has recognized a dichotomy between business and leisure *travelers*—with leisure travelers being more price sensitive than business travelers—but there has been less attention paid to the

[3] See news.alaskaair.com/destinations/alaska-airlines-launches-new-era-of-widebody-international-flying-in-seattle.

economics of business and leisure *cabins*. Even less work has studied international travel, likely due to data availability issues (Bilotkach, 2019), and almost no papers have studied the demand for international business class travel. The one paper we are aware of (Aryal et al., 2024) finds that international travelers value business class seats about 58% more than they value economy class seats.

The rest of this paper is organized as follows. In Section II, we provide relevant background on the transatlantic air travel market and JetBlue's competitive position in it. In Section III, we present a structural model of demand and pricing for international air travel. In Section IV, we discuss the proprietary data from OAG used to estimate the model. In Section V, we describe the estimation and identification strategies along with the estimation results. In Section VI, we explain how we use our model to perform counterfactual simulations to estimate the consumer surplus generated from JetBlue's entry into transatlantic markets and the consumer surplus that could be generated from JetBlue's expansion into not-yet-served transatlantic markets. Section VII provides concluding comments.

II. BACKGROUND

The modern framework for international air travel was established in 1944 at the Chicago Convention on International Civil Aviation, which codified the idea that airspace sovereignty belongs to each nation, meaning airlines cannot freely fly to or from another country without that country's permission. Bilateral treaties between nations determined which airlines could operate on which routes, under what capacity, and at what frequency, a regime that led to decades of limited entry and controlled capacity on transatlantic routes, with competition managed by bilateral negotiations rather than market forces. Liberalization of the transatlantic market began in 1993 with a bilateral agreement between the United States and the Netherlands, but came to the fore in 2007 with the signing of a comprehensive "Open Skies" air transport agreement between the United States and the European Union, which replaced all bilateral agreements between the US and EU member states and authorized any US or EU airline to fly between every US and EU city; operate without restrictions on the number of flights, aircraft, or routes; set fares according to market demand; and enter into cooperative arrangements such as codesharing, alliances, and joint ventures (US Department of State, 2007). Winston and Yan (2015) find that US-negotiated Open Skies agreements have generated at least $6 billion (2025 dollars) in annual gains to travelers.

Following liberalization, the transatlantic market consolidated around three "marketing joint ventures" that became known as "alliances" (Star Alliance, Oneworld, and SkyTeam), which today control roughly 85% of transatlantic capacity (Gillespie and Richard, 2012; Little, 2025). Members of an airline alliance typically participate in arm's-length agreements with each other, such as codesharing or interlining, whereby partners in the alliance can sell tickets for seats on each other's planes, but the operating carrier determines seat availability, each airline sets prices competitively, and all revenues go to the operating carrier. The US Department of Transportation may grant immunity from US antitrust laws to alliances members if such action is determined to be in the public interest. Antitrust immunity allows partner airlines to jointly decide on fares, schedules, and other competitively sensitive matters. Today, the three major alliances have been granted antitrust immunity on almost every transatlantic route, resulting in the lessening of competition for nonstop itineraries (Gillespie and Richard, 2012).[4]

Low-cost transatlantic entry has been sporadic and challenging due to high fixed costs, seasonal demand, and the need for long-haul aircraft. Norwegian Long Haul, arguably the most significant low-cost entrant since the US–EU Open Skies agreement, attempted to implement a low-cost model exclusively using wide-body Boeing 787 Dreamliners, but faced financial and regulatory headwinds and eventually exited long-haul operations in 2021. Similar low-cost models targeting secondary airports and leisure-oriented routes have been attempted by Norse Atlantic Airways and PLAY, the latter of which ceased operations in September 2025 (Adam, 2025). JetBlue, in contrast, exclusively operates narrow-body Airbus A321LR on its transatlantic routes and targets premium passengers with its Mint business class product on business-heavy routes from its hubs at JFK and Boston Logan International Airport (BOS).

A major structural barrier to entry in transatlantic markets is slot controls—rights to take off or land at specific times at certain airports. Airports are categorized according to the level of demand and supply imbalance, with higher levels corresponding to larger supply shortages. Almost all US airports do not have slot controls (Level 1), meaning the airport's capability is generally adequate to meet demand. A handful of US airports have the potential for congestion, so schedule adjustments are mutually agreed upon between the airport and airlines (Level 2). Only three US airports—Washington National Airport, LaGuardia Airport, and JFK (the only one with intercontinental flights)—are slot controlled (Level 3), meaning demand significantly exceeds the airport's capacity and airlines are required to have a slot allocated in order to arrive at or depart from the airport. In contrast, almost every major European airport is slot controlled, meaning competition is limited even under the US–EU Open Skies agreement.[5] Furthermore, incumbent carriers typically have grandfather rights over slots, which makes it difficult for new entrants to secure slots during peak times (Pickett and Hirst, 2020; Niemietz, 2022).

JetBlue acquired temporary slots at LHR and London Gatwick Airport (LGW) in 2020, during the COVID-19 pandemic and subsequent global demand downturn, which allowed it to launch its inaugural transatlantic service to London from JFK and BOS in 2021 (Griff, 2021). JetBlue eventually acquired slots at Paris Charles de Gaulle Airport (CDG) and launched service from JFK in June 2023, and after a lengthy dispute over slot allocation with the Dutch government launched service to Amsterdam Schiphol Airport

[4] Brueckner and Singer (2019) find that the granting of antitrust immunity to airline alliances has decreased fares on connecting itineraries through the elimination of double marginalization.

[5] See https://www.iata.org/en/programs/ops-infra/slots/coordinated-airports.

(AMS) two months later. As of January 2026, JetBlue operates year-round or seasonal service from JFK and BOS to seven European airports: LHR, LGW, CDG, AMS, Dublin Airport (DUB), Edinburgh Airport (EDI), and Madrid–Barajas Airport (MAD).[6]

III. MODEL

In this section, we specify a model of consumer demand and firm pricing for international airline products that closely resembles the workhorse models of Berry, Carnall, and Spiller (1996, 2006) and Berry and Jia (2010). Airlines offer a set of differentiated products that transport passengers between airports in a market, defined as a nondirectional airport pair at a point in time (month). Airline products are differentiated by characteristics such as price, frequency, distance, airline brand, and class of service. All products in our sample are nonstop flights from one airport to another with no intermediate stops. For example, within the market for flights between New York (JFK) and London (LHR) in June 2025, there are five available products: nonstop flights on British Airways, American Airlines, Delta Air Lines, Virgin Atlantic, and JetBlue.

A. Demand

Travelers choose products based on products' characteristics and travelers' idiosyncratic preferences, which also applies to the outside option not to travel. Within each market, airline products, which are similar to each other and not at all like the outside option, are grouped into one nest, and the outside option is grouped into another. Specifically, each month, all potential international travelers i decide which product j to purchase from market t, and the utility the traveler receives from purchasing the product is $u_{ijt} = \delta_{jt} + \nu_{ijt}$, where δ_{jt} is the mean utility that all consumers receive from product j and ν_{ijt} is individual i's idiosyncratic preference for product j. To generate a nested logit model of demand with the two nests described above, we assume $\nu_{ijt} = \eta_{it} + (1 - \lambda)\varepsilon_{ijt}$, where ε_{ijt} is independent and identically distributed type-I extreme value and η_{it} is distributed such that $\eta_{it} + (1 - \lambda)\varepsilon_{ijt}$ is distributed type-I extreme value (Cardell, 1997). The parameter $\lambda \in (0,1)$ governs the substitution patterns within the air travel nest. Specifically, a higher λ (closer to 1) implies that most product substitution is occurring *within* the air travel nest, rather than to the outside option; and a lower λ (closer to 0) implies that most product substitution is occurring *between* nests, from air travel to the outside option.[7] Since flying is a relative luxury, we expect substitution to the outside option (not flying) to be relatively high ($\lambda < 0.5$).

[6] JetBlue will add service to Milan Malpensa Airport (MXP) and Barcelona–El Prat Airport (BCN) in summer 2026.
[7] Correct interpretation of λ crucially depends on how one specifies the error term ν_{ijt}. Following McFadden's (1978) and Berry's (1994) seminal work and Conlon and Gortmaker's (2020) "best practices," we specify $\nu_{ijt} = \eta_{it} + (1 - \lambda)\varepsilon_{ijt}$. Other seminal work, including Cardell (1997), Berry, Carnall, and Spiller (1996), Berry and Jia (2010),

To facilitate identification, we normalize the utility of the outside option $j = 0$ to $u_{i0t} = \varepsilon_{i0t}$. The mean utility from product j is a function of its characteristics, $\delta_{jt} = \alpha p_{jt} + \mathbf{x}_{jt}'\boldsymbol{\beta} + \xi_{jt}$, where p_{jt} is the price of the product, $\mathbf{x}_{jt}$ is a vector of the product's other observed characteristics, and ξ_{jt} is a characteristic of the product that the consumer sees when making a purchase yet is not observable to the researcher. Although we attempt to include as many demand-relevant product characteristics and fixed effects as possible in the specification (see Section V.A), we cannot include them all (due to data limitations). Important characteristics—such as departure time, time of purchase, ticket restrictions, refundability, or travelers' demographics—are missing from the demand specification, so it is important to include the unobservable (to the researcher) characteristic ξ_{jt}. The observable characteristics in $\mathbf{x}_{jt}$ are assumed to be exogenous, meaning they are uncorrelated with the characteristic ξ_{jt}, while p_{jt} is potentially endogenous, since the characteristic ξ_{jt} that the consumer observes in the product may allow it to command a higher price. One can think of ξ_{jt} as the product's underlying quality.

As shown by McFadden (1978), the distributional assumption on the composite error term ν_{ijt} implies that the probability a potential traveler chooses to fly (i.e., does not choose the outside option) is

$$\tilde{s}_t = \frac{D_t^{1-\lambda}}{1 + D_t^{1-\lambda}} \tag{1}$$

and the probability that a traveler who has chosen to fly chooses product j is

$$\bar{s}_{jt} = \frac{\exp\left[\delta_{jt}/(1-\lambda)\right]}{D_t} \tag{2}$$

so the unconditional probability that a potential traveler chooses product j is

$$s_{jt} = \tilde{s}_t \cdot \bar{s}_{jt} = \frac{D_t^{1-\lambda}}{1 + D_t^{1-\lambda}} \cdot \frac{\exp\left[\delta_{jt}/(1-\lambda)\right]}{D_t} = \frac{\exp\left[\delta_{jt}/(1-\lambda)\right]}{D_t^{\lambda}\left(1 + D_t^{1-\lambda}\right)} \tag{3}$$

where $D_t = \sum_k \exp[\delta_{kt}/(1-\lambda)]$ for airline products k in market t. Taking the natural log of equation (3) and rearranging, we obtain

$$\ln s_{jt} - \ln s_{0t} = \alpha p_{jt} + \mathbf{x}_{jt}'\boldsymbol{\beta} + \lambda \ln \bar{s}_{jt} + \xi_{jt} \tag{4}$$

where s_{0t} is the probability of choosing the outside option in market t. Following Berry (1994), we estimate the parameters α, $\boldsymbol{\beta}$, and λ using two-stage least squares, which is made possible by assuming the

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and Train (2009), specify $\nu_{ijt} = \eta_{it} + \lambda\varepsilon_{ijt}$, so the interpretation of their λs is reversed: a lower λ (closer to 0) implies most product substitution is occurring within nests and a higher λ (closer to 1) implies most product substitution is occurring between nests.

probability s_{jt} of choosing product j is equal to product j's observed market share $\mathcal{S}_{jt}$, so all variables are observed except for ξ_{jt}, which is treated as the unobserved error term with arbitrary correlation to p_{jt}. The two-stage least squares estimator is consistent conditional on valid instruments (see Section V.A).

B. Pricing

Consistent with previous literature, we assume airlines offer differentiated products and compete on prices, which are set according to a static Bertrand–Nash pricing game, and that equilibrium markups are determined based on knowledge of the data and demand parameters.

An airline's profit π_{jt} from selling product j in market t is $\pi_{jt} = (p_{jt} - c_{jt})q_{jt}$, where p_{jt} is the price of product j in market t, c_{jt} is the marginal cost of selling product j in market t (which is unobserved to the researcher), $q_{jt} = s_{jt}M_t$ is the quantity of product j sold in market t, s_{jt} is the probability that a potential traveler in market t purchases product j, and M_t is market t's exogenous size. Stacking all products $j = 1, \dots, \mathcal{J}_t$ in market t and applying the first-order condition for profit maximization ($\partial \boldsymbol{\pi}_t / \partial \mathbf{p}_t = \mathbf{0}$) yields

$$\mathbf{c}_t = \mathbf{p}_t + \left(\mathcal{H}_t \odot \frac{\partial \mathbf{s}_t'}{\partial \mathbf{p}_t}\right)^{-1} \mathbf{s}_t = \mathbf{p}_t - \mathbf{b}_t \tag{5}$$

where $\mathcal{H}_t$ is a $\mathcal{J}_t \times \mathcal{J}_t$ "ownership matrix" with elements 1 on the diagonal and for products controlled by a joint venture and 0 otherwise and $\odot$ is the elementwise Hadamard product. The ownership matrix takes into account that the joint venture consisting of airlines j and k internalizes changes in joint profits resulting from substitution between j and k when making pricing decisions for j (or k). Element j of the right-hand side can be interpreted as product j's price p_{jt} minus a markup b_{jt}, where $\mathbf{b}_t = -(\mathcal{H}_t \odot \partial \mathbf{s}_t' / \partial \mathbf{p}_t)^{-1} \mathbf{s}_t$.

Recall from equation (3) that s_{jt} has a closed form. As shown by Mansley et al. (2019), the derivative $\partial \mathbf{s}_t' / \partial \mathbf{p}_t$ also has a closed form, with elements

$$\frac{\partial s_{jt}}{\partial p_{kt}} = \begin{cases} \dfrac{\alpha}{1-\lambda} s_{jt}\left[1 - \lambda \bar{s}_{jt} - (1-\lambda) s_{jt}\right] & \text{if } k = j \\ -\alpha s_{kt}\left(s_{jt} + \dfrac{\lambda}{1-\lambda}\bar{s}_{jt}\right) & \text{if } k \neq j \end{cases} \tag{6}$$

So the marginal cost c_{jt} for product j can be exactly computed using the data and demand parameters α, $\boldsymbol{\beta}$, and λ. Following Berry and Jia (2010), we parameterize marginal cost as

$$c_{jt} = \mathbf{w}_{jt}' \boldsymbol{\psi} + \omega_{jt} \tag{7}$$

where $\mathbf{w}_{jt}$ is a vector of exogenous cost shifters for product j in market t and ω_{jt} is an unobserved cost shock. We estimate the marginal cost parameters $\boldsymbol{\psi}$ using ordinary least squares.

IV. DATA

Our primary source of data on product-level fares, passenger counts, and carriers is OAG's Traffic Analyser module.[8] We use the US Department of Transportation's Air Carrier Statistics, Form 41, Schedules T-100 and T-100(f) database to get product-level average daily frequencies in each market. Metropolitan area populations (used to calculate market size) are from macrotrends.net.

A. Traffic Analyser

The Traffic Analyser data are derived from "marketing information data tapes" supplied by Travelport, one of the three largest global distribution systems used by travel agencies to make flight reservations (Devriendt et al., 2004). The average fare is computed by Travelport as total monthly revenue (taxes excluded) divided by total monthly passengers and is representative of tickets purchased through travel agencies.[9] After receiving the data from Travelport, OAG uses proprietary algorithms and external reference data to adjust the raw passenger counts and divides information from round-trip itineraries into directional bookings and fares (Dresner et al., 2021). Our sample includes the (near) universe of monthly passengers flying between the US and Europe from January 2013 through May 2025.

Most full-service airlines sell tickets for seats in one of three broad service classes: business, premium economy, and standard economy. Figure 1 shows a screenshot of service classes, fares, and amenities for a flight on British Airways from JFK to LHR. The standard economy class ticket includes a chosen seat with 30–31 inches of legroom (the industry standard), three bags (one personal item, one carry-on, and one checked), complimentary meals and drinks, and seatback entertainment.[10] The premium economy ticket is roughly 3½ times the price of the standard economy ticket, and includes a slightly wider seat with 38 inches of legroom in a separate section of the plane and an additional checked bag. The business class ticket is about five times the price of the standard economy class ticket, and includes two oversized checked bags, preflight airport lounge access, and a private seat that converts to a 6-foot lie-flat bed in a separate section of the plane.

Figure 2 shows a screenshot of service classes, fares, and amenities provided by JetBlue from JFK to LHR. Compared to the options for British Airways shown in Figure 1, Figure 2 shows there is less price differentiation between JetBlue's non–business class tickets. The standard economy class ticket ("Blue")

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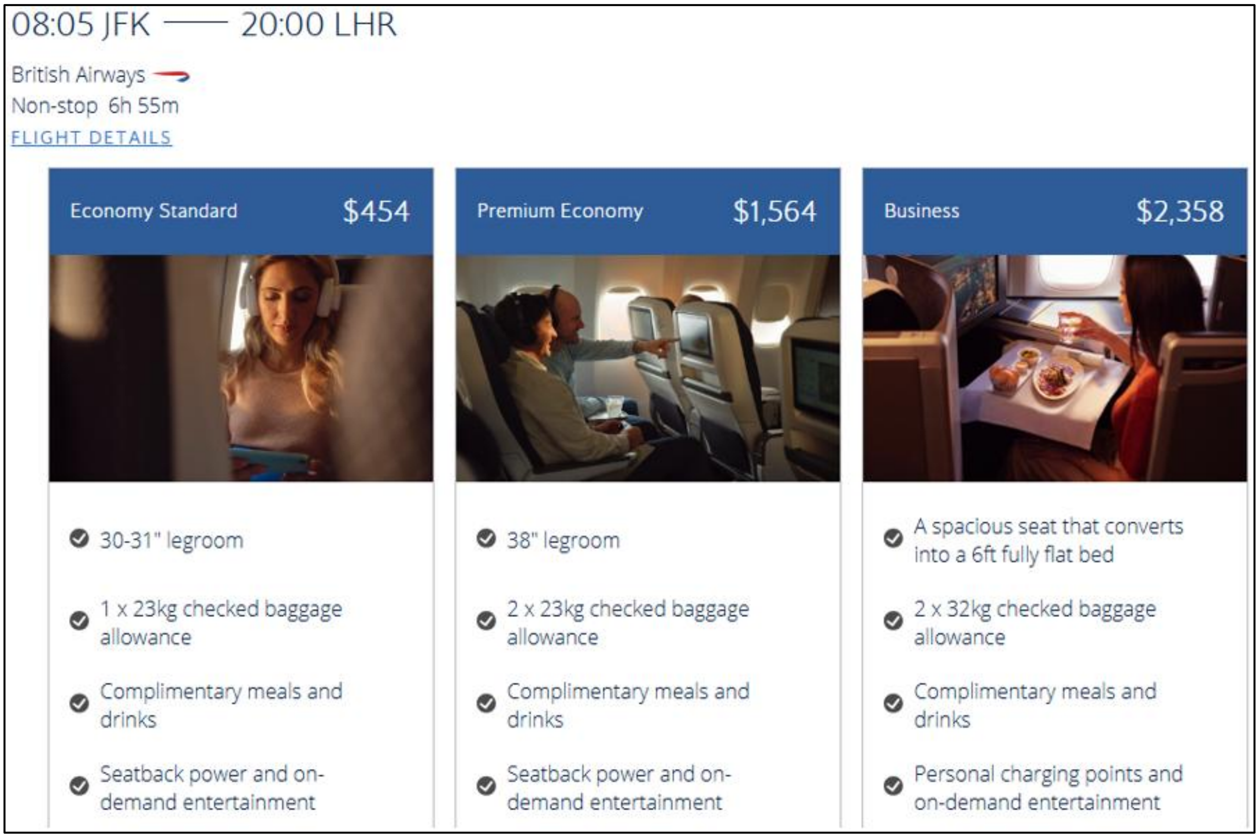
[8] See https://www.oag.com/traffic-analyser and https://knowledge.oag.com/docs/traffic.

[9] According to our conversations with the data provider, tickets sold by travel agencies (such as Booking Holdings and Expedia Group) are representative of the universe of leisure and unmanaged business travel, excluding travel on airlines that primarily (or exclusively) sell direct, such as Southwest Airlines, Ryanair, EasyJet, Norwegian Air, and Norse Atlantic Airways.

[10] A $234 basic economy fare (not shown) includes the same amenities as the standard economy fare except for seat selection and a checked bag.

includes a chosen seat with 32 inches of legroom (slightly more than the industry standard), three bags (one personal item, one carry-on, and one checked), complimentary meals and snacks, and seatback entertainment.[11] The premium economy class ticket ("EvenMore") is only 30% more expensive than the standard economy class ticket and includes 38 inches of legroom but no additional checked bag or seat width. The business class ticket ("Mint") is about five times the price of the standard economy ticket, and includes two checked bags and a private seat that converts to a 6-foot-8-inch lie-flat bed in a separate section of the plane.

Figure 1. Service Classes and Fares on British Airways from JFK to LHR



The Traffic Analyser data condenses booking classes (A–Z) into five service classes: first, business, premium economy, full economy, and discount economy. Although the International Air Transport Association (IATA) recommends a mapping from booking class to service class, most airlines apply a custom mapping. Among the five service classes available in the Traffic Analyser data, business class, premium economy, and discount economy appear to be the most consistently measured across carriers. We therefore restrict our analyses to these three cabins plus all cabins pooled.

[11] JetBlue also offers a $100-cheaper "Blue Basic" fare, which excludes a checked bag and has more restrictions than the "Blue" fare, and a $25-more-expensive "Blue Extra" fare, which has slightly more perks and fewer restrictions than the "Blue" fare.

Figure 2. Service Classes and Fares on JetBlue from JFK to LHR

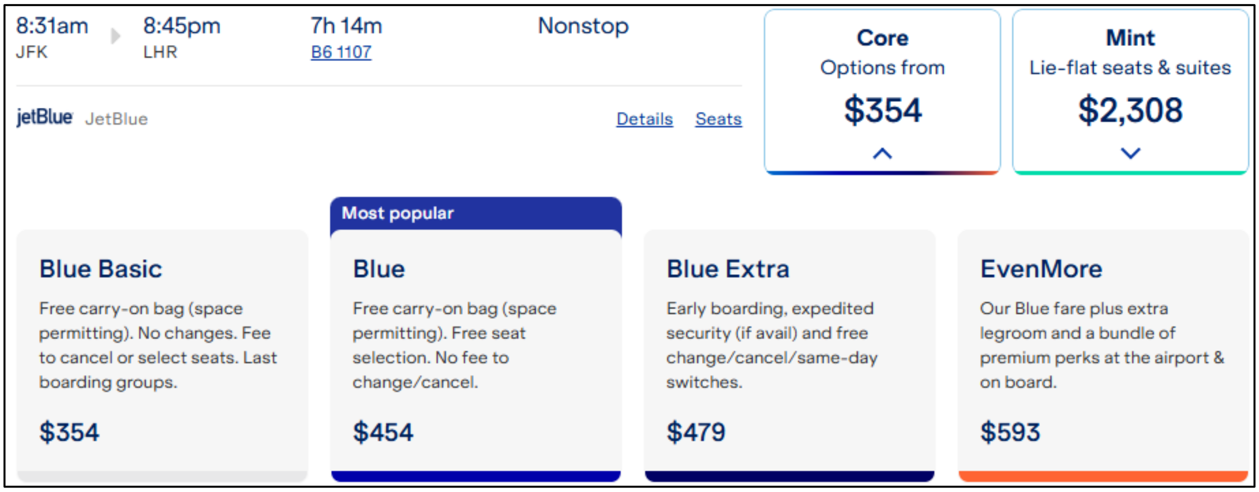


Figure 3 shows a screenshot of the trip cost breakdown for two one-way flights between JFK and LHR in JetBlue's Mint cabin. The left panel shows the base fare plus taxes and fees for the flight from JFK to LHR and the right panel shows the base fare plus taxes and fees for the flight from LHR to JFK. In addition to government-imposed taxes and fees, most international itineraries also include a "carrier-imposed fee," which ostensibly covers the cost of airline fuel. According to guidance issued by IATA (IATA Industry Accounting Working Group, 2022, p. 8), fees that are assessed by the airline and received on its own account should be counted as revenue, while fees (or taxes) that are collected on behalf of third parties (such as governments) should be excluded from revenue, which clearly suggests that carrier-imposed fees should be counted as revenue. Our examination of the Traffic Analyser data, however, strongly suggests that JetBlue's data incorrectly excludes the carrier-imposed fee from business class revenue, resulting in much-lower-than-expected prices for JetBlue's Mint product compared to other carriers' business class offerings, despite the similarity of JetBlue's all-in fare to other carriers' (compare Figure 1 and Figure 2). We therefore add route-specific carrier-imposed fees, which range from approximately $550 to $1,025 one-way, to the fare reported in Traffic Analyser for the JetBlue business class cabin.[12]

Given the relatively small number of markets and products in our estimation sample (nonstop flights between the US and eleven other countries), we manually collected taxes from airlines' websites and added them to the fares (revenue per passenger) reported in the OAG data to arrive at an approximation to the all-in price that customers paid. Neglecting to include taxes in the price customers paid would bias our counterfactual results *down*.[13] All international flights departing the US incur a flat $33.00 in taxes paid to

[12] Carrier-imposed fees are expressed in the local currency of the departing flight. As of October 1, 2025, currency exchange rates were approximately 1 pound sterling (£) to 1.35 US dollars ($) and 1 euro (€) to 1.17 US dollars ($).
[13] Neglecting to include taxes in the price passengers paid would make it appear that passengers are more sensitive to price than they actually are, which would bias the estimator for α away from zero (larger in magnitude), which in turn would bias the counterfactuals down because α appears in the denominator of the calculations (see Section VI).

the US government ($5.60 US September 11th Security Fee, $22.90 US Transportation Tax, and $4.50 US Passenger Facility Charge; see the left panel of Figure 3) and all international flights arriving in the US incur a flat $41.13 in taxes paid to the US government ($22.90 US Transportation Tax, $3.84 US APHIS User Fee, $7.00 US Immigration User Fee, and $7.39 Customs User Fee; see the right panel of Figure 3 multiplied by 1.35, the approximate £-to-$ exchange rate at the time of the screenshot).[14] Additionally, each country imposes taxes on departing flights, which range from €20.39 (approximately $24) for an economy class flight departing Barcelona–El Prat Airport to £244 (approximately $330) for a business class flight departing LHR.

Figure 3. Trip Cost Breakdown for JetBlue Mint Flights between JFK and LHR

JFK to LHR

Air transport charges	**Adult**
Base fare	$1,250.00
Taxes, fees and charges	
U.S. September 11th Security Fee	$5.60
U.S. Transportation Tax	$22.90
U.S. Passenger Facility Charge	$4.50
Carrier Imposed Fee	$1,025.00
Total price	$2,308.00 x 1

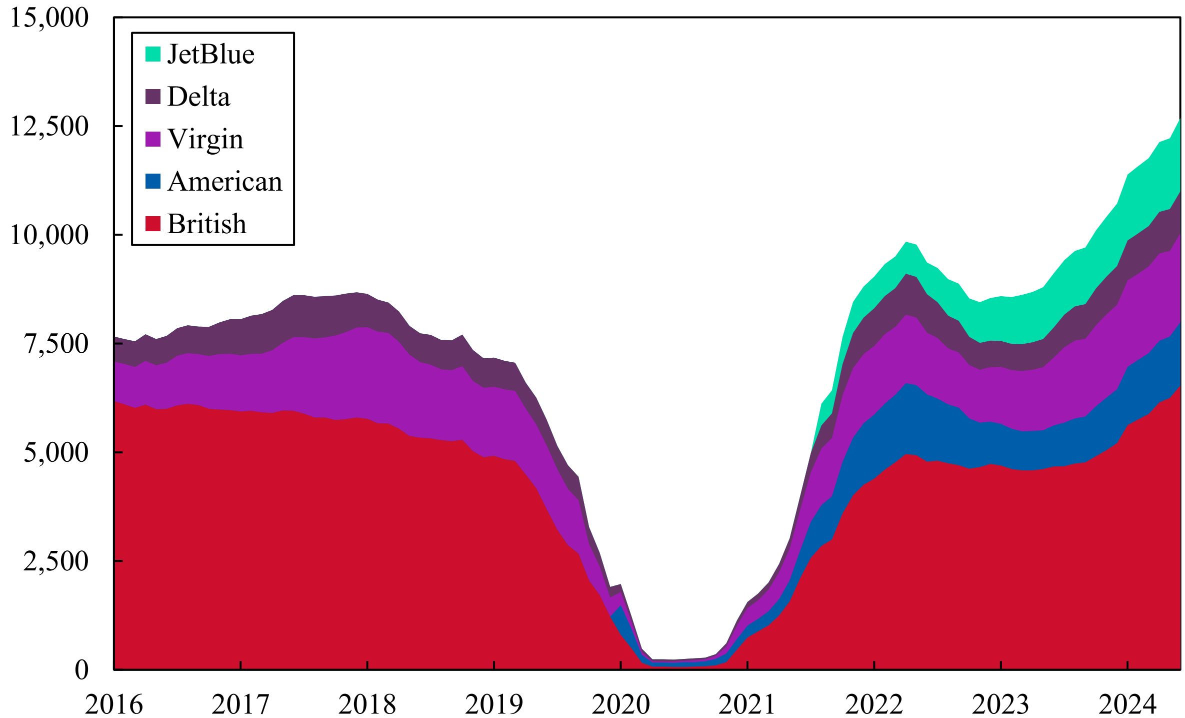
LHR to JFK

Air transport charges	**Adult**
Base fare	£1,175.00
Taxes, fees and charges	
Air Passenger Duty (APD) International	£244.00
Passenger Service Charge - International	£51.72
U.S. Transportation Tax	£17.00
U.S. APHIS User Fee	£2.90
U.S. Immigration User Fee	£5.20
U.S. Customs User Fee	£5.50
Carrier Imposed Fee	£450.00
Total price	£1,951.32 x 1

[14] See https://www.aphis.usda.gov/aqi/international-air-passenger-fee and https://www.cbp.gov/border-security/ports-entry/carriers/air-sea-passenger-user-fees-railroad-car-fee.

Figure 4 shows a stacked area graph of monthly business class passengers served by British, American, Virgin, Delta, and JetBlue in the JFK–LHR market. Aside from the catastrophic decline in international travel during the COVID-19 global pandemic, the carriers' passenger volumes have remained relatively stable. JetBlue entered the JFK–LHR market in August 2021 and steadily gained passengers without noticeably decreasing the number of passengers flying on competitors. JetBlue's passenger count grew monotonically over time from about 500 monthly passengers to about 1,700 monthly passengers, equivalent to between 8% and 16% of competitors' total business class passengers.[15]

Figure 4. Monthly Business Class Passenger Counts in the JFK–LHR Market

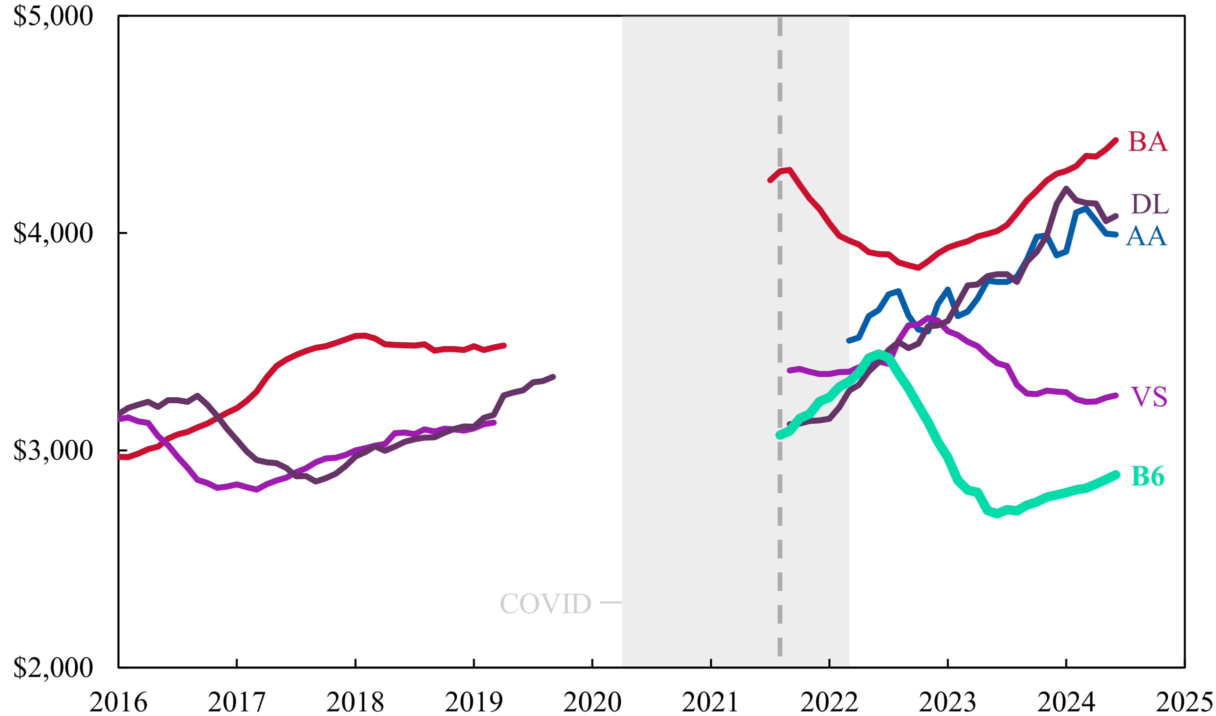


Notes: The data shown in the figure are moving averages of the current month and the next 11 months.

Figure 5 shows average monthly business class fares in the JFK–LHR market, where fares during the COVID-19 pandemic have been obscured, taxes have been added to all carriers' fares, and carrier-imposed fees have been added to JetBlue's fares, as explained above. JetBlue's Mint fare is typically slightly lower than other carriers' business class fares, and it is not clear from the figure whether JetBlue's entry had a meaningful impact on competitors' fares.

[15] At launch, JetBlue offered one daily round trip between JFK and LHR using an Airbus A321LR with 24 Mint seats, which translates to roughly 1,440 = 1 × 2 × 24 × 30 monthly Mint seats. In April 2023, JetBlue increased its daily frequency to two round trips, which translates to roughly 2,880 monthly Mint seats.

Figure 5. Average Business Class Fares in the JFK–LHR Market



Notes: The data shown in the figure are moving averages of the current month and the next 11 months. Airline abbreviations are BA = British Airways, DL = Delta Air Lines, AA = American Airlines, VS = Virgin Atlantic, and B6 = JetBlue Airways.

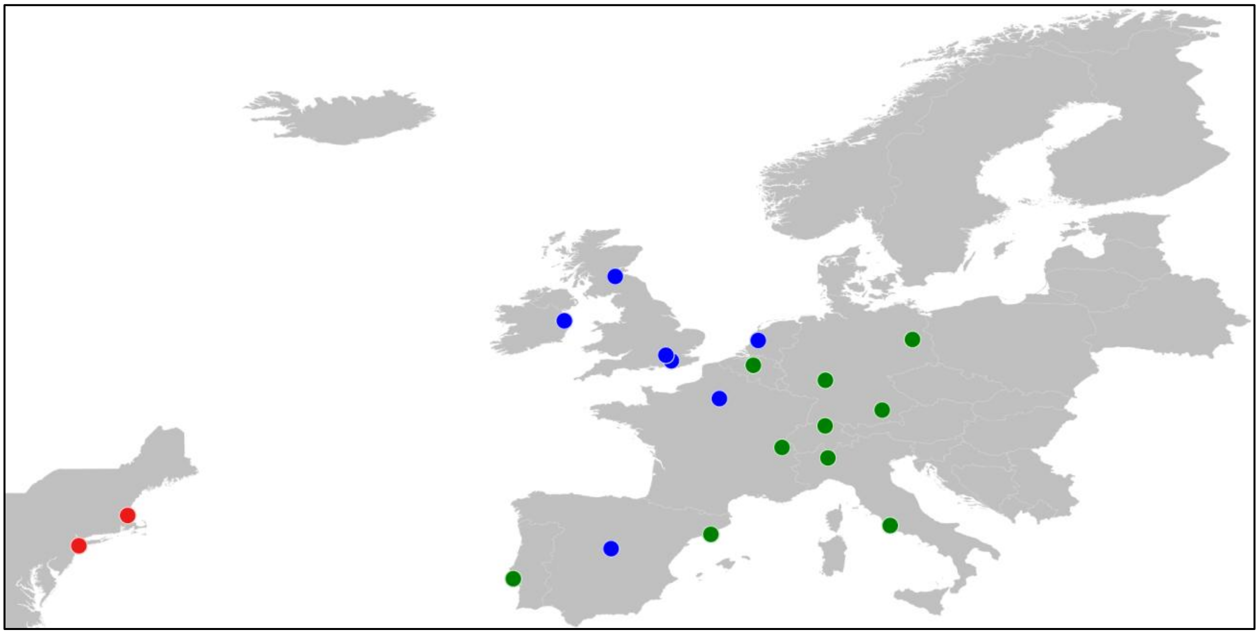
B. Estimation Sample

Our sample period includes monthly data from January 2013 through May 2025. To construct our estimation sample, we started with the 13 markets shown in Table 1 that JetBlue has entered. With an eye toward counterfactuals, we also considered a handful of European cities within the Airbus A321LR's range of approximately 4,600 miles from JFK or BOS that are similar to the cities JetBlue has already entered, which we consider as candidate markets for future JetBlue entry. To assess market similarity, we considered all European cities within the Global Financial Centres Index's recent rankings of global and established international "broad and deep" financial centers (Wardle and Mainelli, 2024, Table 7), which includes Berlin, Frankfurt, Geneva, Hamburg, Luxembourg, Milan, Munich, Rome, Stuttgart, and Zurich. We also included Brussels because it is an important European political hub; Barcelona because JetBlue already serves Madrid; and Lisbon because JetBlue is known to be actively attempting to enter Lisbon (Maharishi, 2023; Bodell, 2025b).[16] We also include nonstop flights from Newark Liberty International Airport (EWR) to all actual and candidate cities for JetBlue entry, since flights from EWR—particularly, from United

[16] On November 19, 2025, JetBlue announced service for BOS–BCN and BOS–MXP starting summer 2026; see ir.jetblue.com/news/news-details/2025/JetBlue-Announces-New-Service-from-Boston-to-Barcelona-and-Milan.

Airlines—could provide competitive pressure to carriers flying out of JFK (Drukker and Winston, 2023). We exclude flights to and from LaGuardia Airport because it does not have any transatlantic flights.

Figure 6. Airports Included in the Estimation Sample



Notes: The IATA codes for the airports included in our estimation sample are BOS, EWR, JFK; AMS, BCN, BER, BRU, CDG, DUB, EDI, FCO, FRA, GVA, LGW, LHR, LIS, MAD, MUC, MXP, and ZRH.

Figure 6 shows a map of European countries within 4,600 miles of JFK and the airports included in our estimation sample. Red dots represent JFK and BOS, blue dots represent airports currently served by JetBlue out of JFK or BOS, and green dots represent airports we assume that JetBlue could serve based on the range of the Airbus A321LR and the cities' similarity to those JetBlue currently serves. We exclude from our estimation sample airport pairs that do not currently have any direct flights from the US, which eliminates Luxembourg, Hamburg, and Stuttgart as candidate cities. All airports shown in Figure 6 are included in the estimation sample used to generate the results in Section V. For our counterfactuals in Section VI, we first analyze the airports represented as blue dots (JetBlue's actual entry) and then we analyze the airports represented as green dots (JetBlue's counterfactual entry).

The US Federal Aviation Administration requires international flights to carry enough fuel to reach the destination plus enough fuel to fly 45 minutes longer at normal cruising speed.[17] The longest route in our estimation sample—JFK to Rome Fiumicino Airport (FCO)—is approximately 4,279 miles. At the A321LR's advertised cruising speed of 515 miles per hour (386 miles per 45 minutes), a JetBlue flight departing JFK for FCO would require a range of approximately 4,665 miles, a touch outside the A321LR's

[17] See 14 *C.F.R.* § 121.639 (Fuel supply: All domestic operations).

Table 2. Summary Statistics

Variable	Mean (Std. Dev.)
Price (one way)	
Business class	\$2,940 (\$728)
Premium economy	\$1,131 (\$518)
Discount economy	\$344 (\$116)
All cabins pooled	\$810 (\$404)
Monthly passengers (thousands)	
Business class	34.8 (18.8)
Premium economy	84.4 (39.6)
Discount economy	333.0 (147.1)
All cabins pooled	503.9 (224.4)
Daily frequency	
Mean (standard deviation)	1.34 (1.14)
[minimum , maximum]	[0.032 , 8.935]
Number of airlines (choices)	
Mean (standard deviation)	2.30 (1.14)
[minimum , maximum]	[1 , 6]
Market size (millions)	
Mean (standard deviation)	6.451 (3.564)
[minimum , maximum]	[1.512 , 14.323]
Flight distance (miles)	
Mean (standard deviation)	3,638 (316)
[minimum , maximum]	[2,983 , 4,279]
Routes (total)	47
Months (total)	149

Notes: Statistics for price are weighted by passengers; all other statistics are unweighted. Daily frequency is measured as the number of departures performed in a month divided by the number of days in a month: the minimum daily frequency of 0.032 is equivalent to one departure performed in a 31-day month; the maximum daily frequency of 8.935 is equivalent to 277 departures performed in a 31-day month.

range of 4,600 miles. In practice, no Airbus A321LR currently in operation flies a route longer than 4,000 miles (Bailey, 2025), about 87% of its advertised range, implying a few routes in our sample (JFK–FCO, BOS–FCO, and JFK–MUC) would be outside the practical range of the A321LR. However, JetBlue currently has on order 11 Airbus A321XLR, with an extended range of 4,500 nautical miles (5,200 statute miles), which could easily reach FCO and other, farther-away transatlantic destinations.[18]

[18] See https://ir.jetblue.com/news/news-details/2019/JetBlue-Orders-13-Airbus-A321XLR-Aircraft-to-Support-Its-Focus-City-Strategy-with-Transatlantic-Flying-06-20-2019/default.aspx. JetBlue plans to sell the first 2 of 13 Airbus A321XLR it has on order (Schlangenstein, 2024). Safety modifications to the Airbus A321XLR, which added weight

Table 2 reports summary statistics for several key variables in our estimation sample. It is reassuring that the mean prices for each cabin class are similar to those shown in Figures 1 and 2. The average daily frequency for each airline is between 1 and 2 round-trip flights per day; the highest frequency (9 flights per day) was provided by British Airways between JFK and LHR during the summers of 2014 and 2015 (Bodell, 2025a). Potential travelers have between 1 and 6 choices to fly nonstop between the airports shown in Figure 6; the largest number of choices was available from late-2022 through late-2023, when American, British, United, Delta, Virgin, and JetBlue all offered nonstop flights between BOS and LHR. The largest markets are New York–Paris, followed by New York–London. The average flight is 3,638 miles, or about 7 hours flying at a cruising speed of 515 miles per hour. The longest market is JFK–FCO (4,279 miles) and the shortest market is BOS–DUB (2,983 miles). In all, our estimation sample includes an average of 504,000 passengers per month flying on 47 routes over 149 months.

We include a handful of key product characteristics and fixed effects in $\mathbf{x}_{jt}$, which we assume are exogenous. We include a variable for product j's monthly average daily flight frequency and, following Aguirregabiria and Ho (2012) and Yuan and Barwick (2024), assume airlines enter a market and set frequency before travelers observe ξ_{jt}, so flight frequency is exogenous from a demand perspective. We include airline fixed effects to capture market-invariant characteristics that make particular carriers more or less attractive, such as baggage fees, availability of in-flight entertainment, frequent flyer programs, and friendliness of the crew. We include year-month fixed effects to capture unobserved factors that make all markets more or less attractive at a point in time, such as seasonality, macroeconomic fluctuations, or major world events. Lastly, we include route fixed effects to capture time-invariant factors that make a particular route more or less attractive, such as the flight distance (or time), language differences between the origin and destination countries, or whether the airports are in cities that are global business hubs.

Exogenous characteristics in $\mathbf{x}_{jt}$ act as their own instruments. Combining insights from Yuan and Barwick (2024) and Ciliberto, Murry, and Tamer (2021), we include competitors' flight frequency as is (without summing or averaging) as an instrument for one's own price p_{jt}, since competitors' flight frequency is arguably exogenous (unrelated to own-product quality ξ_{jt}) and correlated with own-product price p_{jt} (better characteristics of competitors imply more price competition).[19] Following Berry and Jia (2010) and subsequent literature, we include the number of airlines serving a market as an instrument for the inside-goods choice probability term $\ln \bar{s}_{jt}$, since the number of products is arguably exogenous

to the aircraft, are believed to have reduced the aircraft's range from an estimated 4,700 nautical miles (5,400 statute miles) to 4,500 nautical miles (5,200 statute miles) (Hepher, 2023; Russell, 2025).

[19] Ciliberto, Murry, and Tamer (2021) show that including competitors' characteristics each as separate instruments captures greater variation than including the sum or average of competitors' characteristics as instruments.

(unrelated to own-product quality ξ_{jt}) and correlated with choice probabilities conditional on being an inside good (more products in the market imply smaller choice probabilities for each airline).

Because markets are nondirectional and demand for international flights can derive from residents of both the origin (leaving for a trip) and the destination (returning from a trip), we follow previous literature and define market size M_t as the geometric mean of the metropolitan populations of the endpoint cities.[20] To estimate equation (4), following Berry (1994), we calculate market shares $\mathcal{S}_{jt}$ from the data as observed sales q_{jt} of product j divided by market size M_t, $\mathcal{S}_{jt} = q_{jt}/M_t$, and assume $s_{jt} = \mathcal{S}_{jt}$. We estimate equation (4) separately for four cabin classes: business class, premium economy, discount economy, and all cabins pooled. We use the same market size M_t for each cabin-level regression, which implies substitution to other cabins is included in the outside option. While this assumption may bias our results relative to the estimation results from a unified demand model that includes all potential travelers choosing products from any cabin, the bias is likely small because the market share of the outside option is very high (above 0.99) in every market and no single product has a market share above 0.0066, which is typical in airline economics research because most potential travelers do not fly during a particular month.[21]

Following Berry and Jia (2010), we assume the network structure (entry and exit) is exogenous. While this is an admittedly strong assumption, it is reasonable in the international air travel markets we consider, where entry and exit are less common compared to in domestic markets. As noted by Berry and Jia (2010), entry decisions involve substantial fixed costs, such as acquiring gate access, airport slots, and aircraft, suggesting the number of carriers serving a market is primarily determined by long-term considerations rather than temporal demand shocks. For example, JetBlue has been attempting to acquire takeoff and landing slots at Lisbon Airport (LIS) since 2023 (Maharishi, 2023; Bodell, 2025b) and is unlikely to enter new European markets before 2030 as it awaits the delivery of 11 Airbus A321XLR that it ordered in 2019 (Schlangenstein, 2024; Cudahy, 2025b). Furthermore, assuming an exogenous network structure dramatically reduces the complexity of the model, allowing for tractable estimation and welfare analyses.[22]

B. Estimation and Identification: Pricing

After recovering estimates of the demand parameters λ, α, and $\boldsymbol{\beta}$, we turn to estimation of marginal costs and markups, which the airlines observe but we as the researchers do not observe. Following Yuan

[20] In the spirit of Zhang (2024), we experimented with different market sizes for different cabin classes but neither the estimation results nor the counterfactual results meaningfully changed.
[21] It can be shown that the bias is of order $\mathcal{O}(\mathcal{S}_t^2)$, where $\mathcal{S}_t \equiv \sum_j \mathcal{S}_{jt}$. If $\mathcal{S}_t \leq 1 - 0.99 = 0.01$, then the bias is of order $\mathcal{O}(10^{-4})$, which is negligible in our context.
[22] A major obstacle to endogenizing network structure is the existence of multiple equilibria. For models that attempt to endogenize airline network formation, see Berry (1992), Ciliberto and Tamer (2009), Ciliberto, Murry, and Tamer (2021), Li et al. (2021), Yuan and Barwick (2024), and Bontemps, Gualdani, and Remmy (2025).

and Barwick (2024) and Bontemps, Gualdani, and Remmy (2025), we estimate the model sequentially—demand then pricing—and not simultaneously. (The instruments described above for the demand estimation provide enough variation for precise estimates of the parameters of interest, so we do not feel the need to complicate the model estimation procedure by estimating demand and pricing simultaneously.) Recall from equation (5) that the profit-maximization and conduct assumptions imply marginal cost for product j is a function of observed prices and market shares

$$\mathbf{c}_t = \mathbf{p}_t + \left(\mathcal{H}_t \odot \frac{\partial \mathbf{s}_t'}{\partial \mathbf{p}_t}\right)^{-1} \mathbf{s}_t = \mathbf{p}_t - \mathbf{b}_t$$

Prices p_{jt} are observed in the data, choice probabilities s_{jt} can be set equal to the observed market shares $\mathcal{S}_{jt}$, and the derivative has a closed form that depends on observed shares and estimated demand parameters (see equation 6).

After recovering marginal costs using equation (5), we parameterize marginal cost as $c_{jt} = \mathbf{w}_{jt}'\boldsymbol{\psi} + \omega_{jt}$. We include a handful of key cost shifters and fixed effects in $\mathbf{w}_{jt}$, which we assume are exogenous. Following Yuan and Barwick (2024), we include product j's monthly average daily flight frequency since offering a higher frequency is more costly for the airline. We include airline fixed effects to capture market-invariant factors that make particular carriers more or less costly to operate, such as fleet homogeneity and fuel-hedging strategies. We include month fixed effects to capture seasonality that makes all markets more or less costly to operate during a particular month each year. Lastly, we include route fixed effects to capture time invariant factors that make a particular route more or less costly to operate, such as hub presence, flight distance, or taxes imposed at the endpoint airports. Following Yuan and Barwick (2024), we estimate the marginal cost parameters using ordinary least squares after recovering the value of c_{jt}.

C. Results

Table 3 presents estimation results for the demand model estimated separately for four different cabins: business class, premium economy, discount economy, and all cabins pooled. All product characteristics except for price are the same between the four groups (i.e., frequency, fixed effects). The coefficients are precisely estimated and have the expected signs and magnitudes. Business class passengers are the least price sensitive (smallest fare coefficient in absolute value), followed by premium economy passengers, all cabins pooled (where price is a passenger-weighted average across cabins), and discount economy passengers (largest fare coefficient in absolute value).[23] Passengers in all cabin classes value higher

[23] Own-price elasticities of demand are not useful in our context for comparing price sensitivity across cabins because of the very large price differences between cabins, which drive the elasticity calculation.

frequency at roughly the same levels, although passengers in higher-class cabins value frequency more per dollar (i.e., similar magnitude of frequency coefficients across cabins, smaller magnitude of fare coefficients for higher-class cabins). Comparing the first three columns of Table 3, the nesting parameter on the log inside goods share rises with service class, suggesting substitution to the outside option (e.g., switching cabins, not flying) is less common for passengers in higher cabin classes compared to passengers in lower cabin classes, which supports the widely held belief that business passengers (who typically fly in higher classes) have less elastic demand than leisure passengers (who typically fly in lower classes).

Table 3. Demand Model Estimates

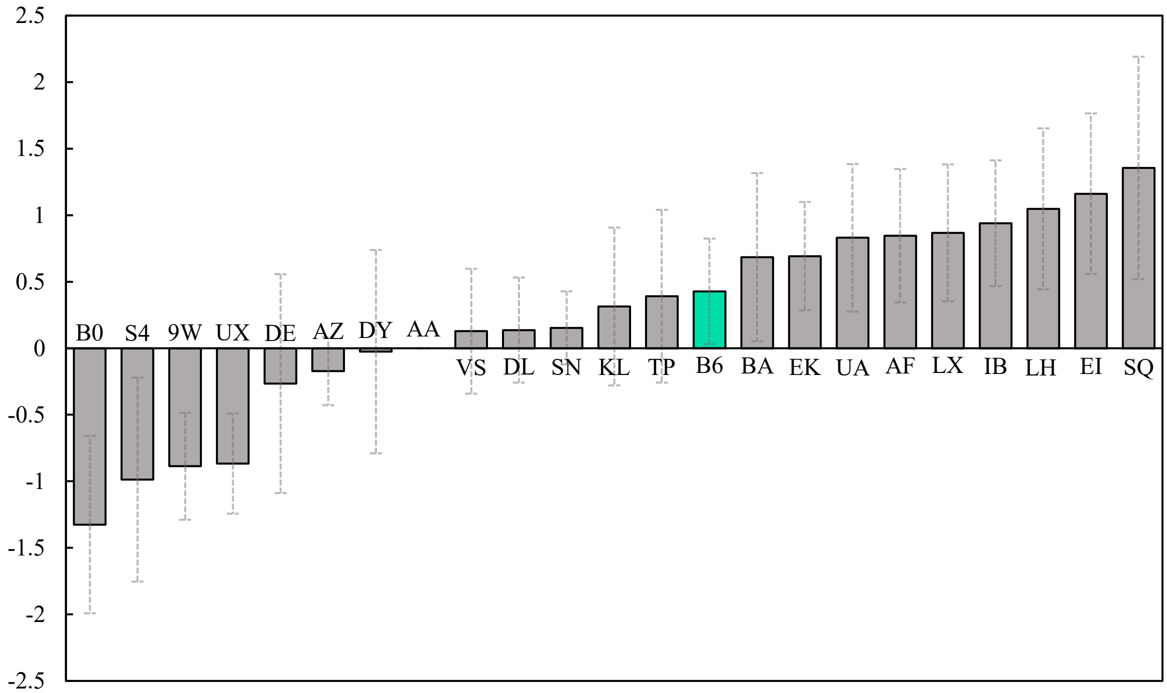
	Business class	Premium economy	Discount economy	All cabins pooled
Fare ($100)	–0.051***	–0.104**	–0.283***	–0.210***
	(0.018)	(0.043)	(0.108)	(0.061)
Frequency (daily)	0.345***	0.355***	0.314***	0.388***
	(0.047)	(0.056)	(0.043)	(0.043)
Log inside goods share	0.327***	0.238***	0.220**	0.357***
	(0.104)	(0.089)	(0.095)	(0.125)
Observations	8,993	9,543	9,583	9,585
Clusters	105	120	121	121

Notes: All regressions include carrier, route, and year-month fixed effects. Standard errors clustered at the carrier-route level are shown in parentheses. Statistical significance is indicated at the ***1 percent , **5 percent, and *10 percent levels.

Figure 7 plots the carrier fixed effects from the business class demand specification for the 23 carriers offering business class service in our sample. The magnitude of JetBlue's fixed effect suggests it's Mint product is perceived to be of similar quality to the business class offerings of KLM and TAP Air Portugal, of a slightly higher quality than the business class offerings of American Airlines, Virgin Atlantic, Delta Air Lines, and Brussels Airlines, and of a slightly lower quality than the business class offerings of British Airways, Emirates, United Airlines, and Air France.

We omit discussion of the pricing model parameter estimates because we are primarily interested in goodness of fit rather than interpretation of particular pricing model parameter estimates. Consistent with previous literature, the estimate on the coefficient for frequency is positive and statistically significant, and many of the fixed effects are also statistically significant. To demonstrate goodness of fit, Figure 8 shows, for each business class product, the model-predicted price (the blue line), the observed price (the blue dots), the model-predicted marginal cost (the green dots), a 5th-degree polynomial fit of the model-predicted marginal cost (the green line), and the implied markup over marginal costs (the purple line). Across all business class products, the average marginal cost (the green line) is about $994, the average markup (the blue line minus the green line) is about $1,727, and the average price (the blue line) is about $2,721. We further discuss goodness of fit for the pricing model in Section VI.B in the context of JetBlue's counterfactual entry into new markets.

Figure 7. Estimated Carrier Fixed Effects from the Business Class Demand Specification



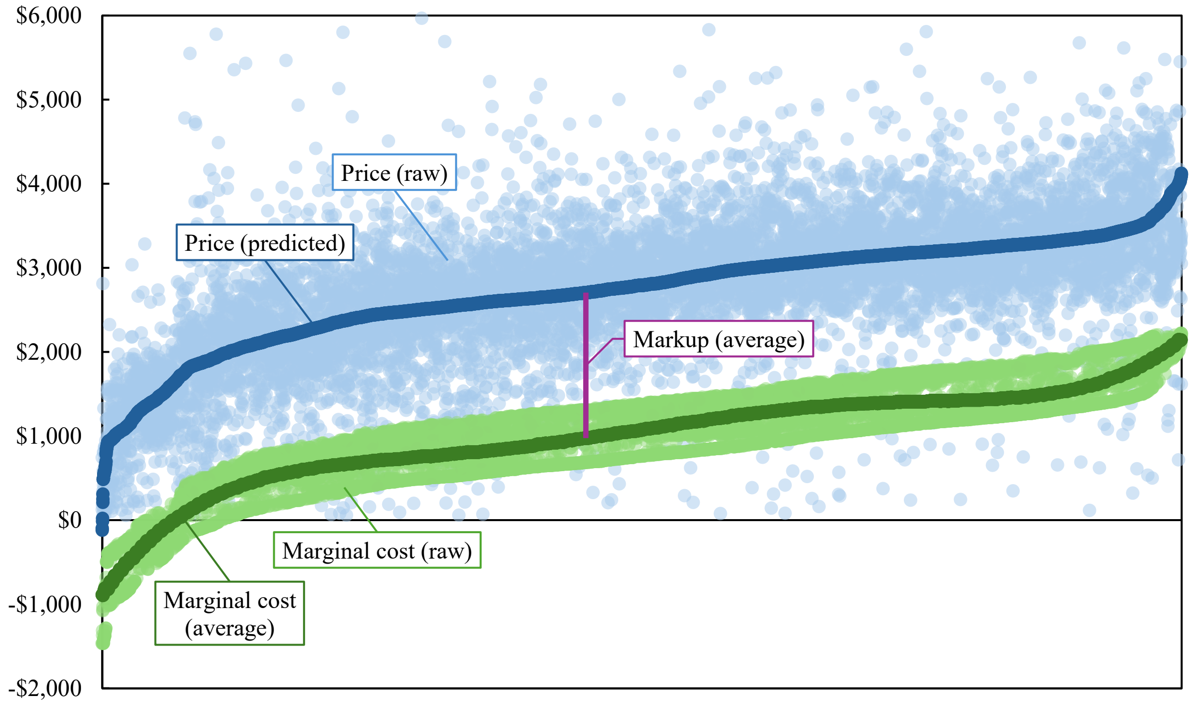
Notes: The excluded category is American Airlines. Airline abbreviations are B0 = La Compagnie, S4 = Azores Airlines, 9W = Jet Airways, UX = Air Europa, DE = Condor, AZ = ITA Airways, DY = Norwegian Air Shuttle, AA = American Airlines, VS = Virgin Atlantic, DL = Delta Air Lines, SN = Brussels Airlines, KL = KLM, TP = TAP Air Portugal, B6 = JetBlue Airways, BA = British Airways, EK = Emirates, UA = United Airlines, AF = Air France, LX = SWISS, IB = Iberia, LH = Lufthansa, EI = Aer Lingus, SQ = Singapore Airlines.

VI. COUNTERFACTUALS

In this section we use our estimated model from the previous section to analyze the consumer surplus generated by JetBlue's actual entry into transatlantic markets and counterfactual entry into new transatlantic markets. We decompose JetBlue's entry into two effects: the "variety" effect represents the change in consumer surplus from the addition of JetBlue as an option, holding competitors' prices fixed; the "price" effect represents the additional consumer surplus gained from competitors lowering their prices in response to JetBlue's entry. We sequentially apply the estimated model to decompose consumer surplus into these two components.

As noted by de Jong et al. (2007), a potential traveler's consumer surplus is the utility, in money terms, he receives from the choice situation. A potential traveler i in market t chooses the product (or the outside option) that provides the greatest utility u_{ijt}, so

Figure 8. Model-Predicted Price, Marginal Cost, and Markups for Business Class Products



Notes: All business class products are ordered, from lowest to highest, according to their model-predicted price (the blue line). Raw prices (the blue dots) and model-predicted marginal costs (the green dots) for those products are then plotted. A 5th-degree polynomial of the model-predicted marginal costs (the green line) is added to smooth the marginal cost series to help with interpretation. The gap between the blue line and the green line approximates a product's model-predicted markup (the purple line).

$$CS_{it} = -\frac{1}{\alpha}\max_j(u_{ijt}) = -\frac{1}{\alpha}\max_j(\delta_{jt} + \nu_{ijt}) \tag{8}$$

where u_{ijt} is measured in utils and α is measured in utils per dollar, so CS_{it} is measured in dollars. Given the distribution of the error term ν_{ijt}, it can be shown that individual i's expected consumer surplus (less an unrecoverable constant) from a choice situation c in market t can be written

$$E(CS_{it}^c) = -\frac{1}{\alpha}\ln\left\{1 + \left[\sum_j \exp\left(\frac{\delta_{jt}}{1-\lambda}\right)\right]^{1-\lambda}\right\} = -\frac{1}{\alpha}\ln\left(1 + D_t^{1-\lambda}\right) = \frac{1}{\alpha}\ln(s_{0t}) \tag{9}$$

where the summation is taken over all airline products j in market t.

The variety effect from JetBlue's entry is captured by the addition of JetBlue's δ_{jt} to the summation in equation (9). The price effect is captured by the change in competitors' δ_{jt}—namely, their price decrease—after JetBlue's δ_{jt} is added. The addition of a new product δ_{jt} changes the choice probabilities for competitors' products according to equation (3)

$$s_{jt} = \frac{\exp\left[\delta_{jt}/(1-\lambda)\right]}{D_t^{\lambda}\left(1 + D_t^{1-\lambda}\right)}$$

If a new product is added to the market, then $D_t = \sum_k \exp[\delta_{kt}/(1-\lambda)]$ increases, so the choice probability for product j decreases because D_t appears in the denominator of equation (3). If competitors' prices are held fixed after the addition of a new product, then all products' δ_{jt} can be added to equation (9) to compute consumer surplus and isolate the variety effect.

The addition of a new product would likely lead competitors to lower their prices. Recall that competitors' pricing is governed by equation (5)

$$\mathbf{p}_t = \mathbf{c}_t - \left(\mathcal{H}_t \odot \frac{\partial \mathbf{s}_t'}{\partial \mathbf{p}_t}\right)^{-1} \mathbf{s}_t = \mathbf{c}_t + \mathbf{b}_t \tag{10}$$

Assuming competitors' marginal costs c_{jt} are unaffected by JetBlue's entry, the addition of a new product will change choice probabilities s_{jt} through equation (3) and change the derivative through equation (6). As explained in Section VI.B, since we do not observe JetBlue's pre-entry costs c_{jt}, we use equation (7) and the estimated parameters to predict JetBlue's costs $\hat{c}_{jt} = \mathbf{w}_{jt}'\widehat{\boldsymbol{\psi}}$ of serving market t, and assume a constant markup b_{jt} (measured from the data) that differs only by the number of customers serving market t. Mechanically, if market demand is downward sloping, the addition of JetBlue to the choice set, which represents a rightward shift in the market supply curve, must decrease prices and increase consumer surplus—that is, consumers cannot be made worse off from the addition of a new product variety.

After computing individual i's expected consumer surplus for the "pre" and "post" JetBlue choice sets, we calculate the difference between the post and pre values, multiply by the market size M_t, and take the monthly average for months JetBlue operated during January 2024–May 2025. To get an annual estimate of consumer surplus for JetBlue's entry into a route, we multiply this monthly average number by 12 for year-round routes and by 7 for summer-only routes.[24]

A. JetBlue's Actual Entry

We start by computing the consumer surplus from JetBlue's actual entry into the 13 transatlantic markets shown in Table 1. Note that the observed data include both the variety effect and the price effect, so to compute the total consumer surplus from JetBlue's entry into these markets we need to remove both effects. After computing consumer surplus from the observed data (the post-JetBlue choice set), we perform the following calculations to determine the consumer surplus from the pre-JetBlue choice set:

[24] IATA's "Calendar of Coordination Activities" defines the summer season as beginning the last Sunday of March and ending the last Saturday of October, which is approximately 7 months.

0. Compute consumer surplus using the observed data and equation (9).
1. Remove JetBlue's δ_{jt} from the choice set.
2. Recompute s_{jt} for the remaining airlines using equation (3).
3. Recompute markups $-(\mathcal{H}_t \odot \partial \mathbf{s}_t'/\partial \mathbf{p}_t)^{-1}\mathbf{s}_t$ for the remaining airlines using equations (3) and (6).
4. Recompute prices p_{jt} for the remaining airlines using the recomputed markups and equation (10).
5. Recompute δ_{jt} for the remaining airlines using the recomputed prices, $\delta_{jt}' = \delta_{jt} + \alpha(p_{jt}' - p_{jt})$.
6. Compute consumer surplus using the recomputed δ_{jt} for the remaining airlines and equation (9).
7. Subtract consumer surplus computed in Step 6 from that computed using the data (total effect):
$$CS_{it}^{\text{total}} = E\left(CS_{it}^{\text{step 0}}\right) - E\left(CS_{it}^{\text{step 6}}\right)$$
8. Add JetBlue's δ_{jt} back into the choice set and recompute consumer surplus using equation (9).
9. Subtract consumer surplus computed in Step 6 from that computed in Step 8 (variety effect):
$$CS_{it}^{\text{variety}} = E\left(CS_{it}^{\text{step 8}}\right) - E\left(CS_{it}^{\text{step 6}}\right)$$
10. Subtract consumer surplus computed in Step 9 from that computed in Step 7 (price effect):
$$CS_{it}^{\text{price}} = E\left(CS_{it}^{\text{step 0}}\right) - E\left(CS_{it}^{\text{step 8}}\right)$$

Table 4 shows the estimated annual consumer surplus from JetBlue's entry into the 13 transatlantic markets shown in Table 1. The total estimated annual consumer surplus from JetBlue's entry into these markets is \$254 million, of which about \$95 million (37%) accrues to the business class cabin, despite the business class cabin accounting for only about 17% of the available seats.[25] The variety effect dominates the price effect in all markets, accounting for about 83% of the total effect of JetBlue's entry. That is, the primary benefit of JetBlue's entry into transatlantic markets is consumers' ability to choose an attractive new product (e.g., Mint) and not competitors' price responses to competitive pressure from JetBlue. Our findings are consistent with those of Brynjolfsson et al. (2003) and Brynjolfsson and Smith (2000), who found that the consumer welfare from increased product variety at online bookstores was 7 to 10 times larger than the consumer welfare from lower prices due to increased competition for brick-and-mortar bookstores. In contrast, Petrin (2002) found that the introduction of the Dodge Caravan minivan to the US automobile market in the 1980s led to about 57% of the consumer surplus accruing to minivan purchasers who had strong tastes for its characteristics and 43% of the consumer surplus accruing to non-minivan purchasers who benefited from increased price competition.

[25] JetBlue's typical seat configuration for the Airbus A321LR employed on its transatlantic routes is 24 Mint seats and 114 economy class seats.

Table 4. Annual Consumer Surplus from JetBlue's Observed Entry

		Business, premium, and discount cabins				Business cabin	
Route	EU city	Per person	Total	Variety	Price	Total	Share
JFK–LHR	London	4.37	60.0	49.8	10.1	31.9	0.53
JFK–CDG	Paris	1.99	29.4	22.5	6.8	10.4	0.35
JFK–AMS	Amsterdam	5.76	27.5	20.7	6.8	6.8	0.25
JFK–DUB	Dublin	3.49	17.4	15.0	2.4	3.9	0.22
JFK–LGW	London	1.19	16.3	16.3	--	5.5	0.34
JFK–EDI	Edinburgh	4.59	15.1	13.0	2.1	4.9	0.32
BOS–CDG	Paris	3.34	23.6	18.1	5.4	10.2	0.43
BOS–LHR	London	3.36	22.1	18.6	3.5	10.5	0.48
BOS–DUB	Dublin	5.82	13.9	11.8	2.0	3.1	0.22
BOS–LGW	London	1.57	10.3	10.3	--	2.6	0.25
BOS–AMS	Amsterdam	4.29	9.8	7.7	2.1	3.1	0.32
BOS–MAD	Madrid	0.88	4.8	3.7	1.1	1.0	0.21
BOS–EDI	Edinburgh	2.22	3.5	2.7	0.8	0.6	0.17
Total			253.7	210.2	43.1	94.5	0.37

Notes: Consumer surplus per person is measured as total consumer surplus divided by market size (geometric mean of the metropolitan populations of the endpoint cities). Per person units are dollars per person per year and all other units are millions of dollars per year. The price effects for JFK–LGW and BOS–LGW are missing because JetBlue was the only airline serving those routes during January 2024–May 2025, so the price effect is not well defined apart from the variety effect.

The market with the highest consumer surplus gain from JetBlue's entry is JFK–LHR ($60.0 million), followed by JFK–CDG ($29.4 million), JFK–AMS ($27.5 million), BOS–CDG ($23.6 million), and BOS–LHR ($22.1 million). The market with the highest consumer surplus per person (total consumer surplus divided by market size) is BOS–DUB ($5.82), followed by JFK–AMS ($5.76), JFK–EDI ($4.59), JFK–LHR ($4.37), and BOS–AMS ($4.29). For context, Maillebiau and Hansen (1995) found that the initial international air travel liberalization of the 1970s between the US and the United Kingdom, France, Germany, Italy, and the Netherlands resulted in about $13.3 billion (2025 dollars) in annual gains to travelers, or about $59 per person per year.[26] More recently, Winston and Yan (2015) found that Open Skies agreements between the US and 11 countries (the United Kingdom, Spain, Italy, Germany, Ireland, the Netherlands, Australia, Canada, South Korea, Peru, and Taiwan) had by 2009 generated about $6 billion (2025 dollars) in annual gains to travelers, or about $17 per person per year.[27] If we consider the relevant market size in our context to be residents of New York, Boston, London, Paris, Amsterdam, Dublin,

[26] In 1970, the population of the United States was about 203.4 million, and the population of the United Kingdom, France, Germany, Italy, and the Netherlands was about 252.7 million, implying a market size of about 226.7 million, and a consumer surplus per person of approximately $13.3 billion ÷ 226.7 million ≈ $59.

[27] In 2009, the population of the United States was about 306.8 million, and the population of the 11 partner countries was about 427.7 million, implying a market size of about 362.3 million, and a consumer surplus per of person of approximately $6.0 billion ÷ 362.3 million ≈ $17.

Edinburgh, and Madrid (market size ≈ 27.0 million), then our estimates imply JetBlue's entry generated about \$9.40 in consumer surplus per person per year; if instead we consider the relevant market to be residents of the United States and Europe (market size ≈ 507.4 million), then our estimates imply JetBlue's entry generated about \$0.50 in consumer surplus per person per year. Both estimates are nontrivial but considerably lower than the implied estimated consumer surplus per person from the literature for the much larger deregulatory efforts of the 1970s or the Open Skies treaties of the 2000s, which we believe lends credence to the reasonableness of our estimates.

B. JetBlue's Counterfactual Entry

We now consider JetBlue's counterfactual entry into new markets. As noted in Section IV.B, we considered a handful of European cities within the A321LR's range of approximately 4,600 miles from JFK or BOS that are similar to the cities JetBlue currently serves. In contrast to Section VI.A, the observed data is the pre-JetBlue choice set rather than the post-JetBlue choice set. Consequently, the process of calculating consumer surplus from JetBlue's entry is similar to the process used in Section VI.A but with a few extra steps. After computing consumer surplus from the observed data (the pre-JetBlue choice set), we perform the following calculations to determine consumer surplus from the post-JetBlue choice set:

0. Compute consumer surplus using the observed data and equation (9).
1. Estimate equation (4) and store the values of the relevant characteristics for JetBlue's δ_{jt}.
2. Estimate equation (7) and store the values of the relevant cost-shifters for JetBlue's $\mathbf{w}_{jt}'\boldsymbol{\psi}$.
3. Use equation (5) to estimate JetBlue's marginal costs and markups in observed markets.
4. Store the values of JetBlue's average markups b_{jt} by the number of competitors in a market.
5. Use equation (7) to predict JetBlue's marginal costs $\hat{c}_{jt}$ in counterfactual markets.
6. Compute JetBlue's predicted price in the counterfactual markets using equation (10).
7. Compute JetBlue's δ_{jt} for the counterfactual markets using its predicted prices and the stored values of its relevant demand characteristics in counterfactual markets.
8. Compute consumer surplus using competitors' observed δ_{jt} and JetBlue's counterfactual δ_{jt} using equation (9).
9. Subtract consumer surplus computed using the data from that computed in Step 8 (variety effect):
$$CS_{it}^{\text{variety}} = E\left(CS_{it}^{\text{step 8}}\right) - E\left(CS_{it}^{\text{step 0}}\right)$$
10. Compute counterfactual choice probabilities s_{jt} and markups $-(\mathcal{H}_t \odot \partial \mathbf{s}_t'/\partial \mathbf{p}_t)^{-1}\mathbf{s}_t$ for all competitors using equations (3) and (6).
11. Recompute prices p_{jt} for all competitors using equation (10) holding marginal costs c_{jt} fixed.
12. Recompute δ_{jt} for all competitors using the recomputed prices, $\delta_{jt}' = \delta_{jt} + \alpha(p_{jt}' - p_{jt})$.

13. Compute consumer surplus using competitors' recomputed δ_{jt} and JetBlue's counterfactual δ_{jt} using equation (9).
14. Subtract consumer surplus computed using the data from that computed in Step 13 (total effect):
$$CS_{it}^{\text{total}} = E\left(CS_{it}^{\text{step 13}}\right) - E\left(CS_{it}^{\text{step 0}}\right)$$
15. Subtract consumer surplus computed in Step 9 from that computed in Step 14 (price effect):
$$CS_{it}^{\text{price}} = E\left(CS_{it}^{\text{step 13}}\right) - E\left(CS_{it}^{\text{step 8}}\right)$$

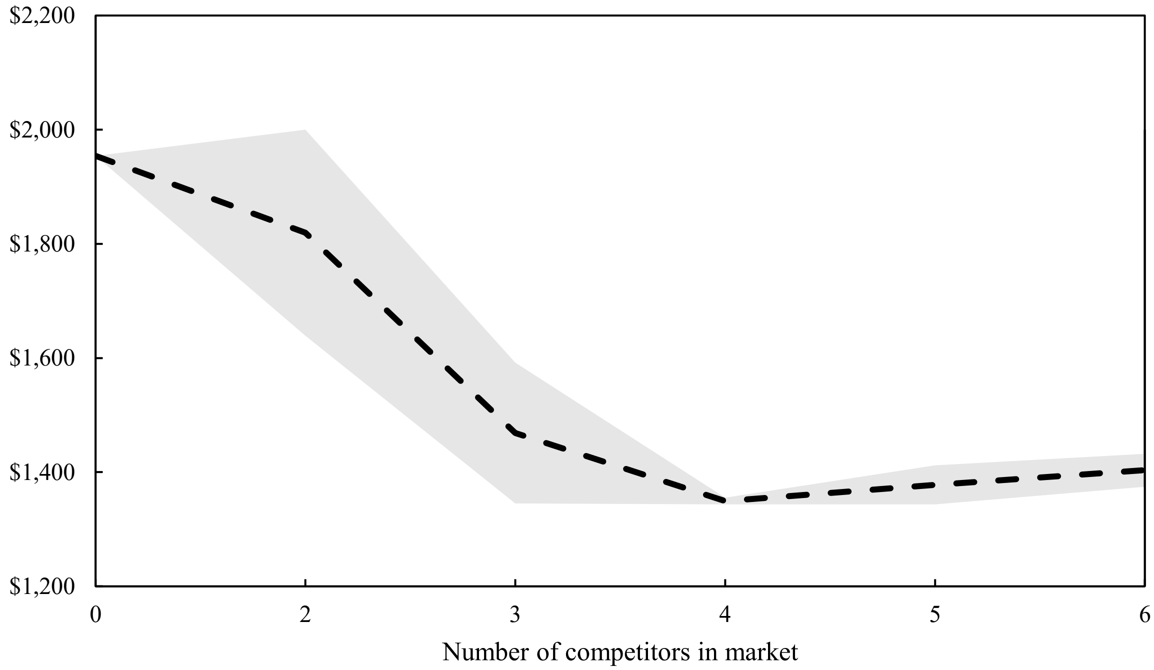
A key to estimating consumer surplus from JetBlue's counterfactual entry is accurately constructing the characteristics in δ_{jt} for the counterfactual JetBlue products. Recall from Section V.A that

$$\begin{aligned}
\delta_{jt} &= \alpha p_{jt} + \mathbf{x}_{jt}'\boldsymbol{\beta} + \xi_{jt} \\
&= \alpha(\overbrace{\underbrace{\psi_1 \text{frequency}_{jt} + \mathbf{month}_t'\boldsymbol{\psi}_2 + \mathbf{airline}_j'\boldsymbol{\psi}_3 + \mathbf{route}_t'\boldsymbol{\psi}_4}_{\mathbf{w}_{jt}'\boldsymbol{\psi}} + \omega_{jt}}^{c_{jt}} + b_{jt}) + \\
&\quad + \underbrace{\beta_1 \text{frequency}_{jt} + \mathbf{year\text{-}month}_t'\boldsymbol{\beta}_2 + \mathbf{airline}_j'\boldsymbol{\beta}_3 + \mathbf{route}_t'\boldsymbol{\beta}_4}_{\mathbf{x}_{jt}'\boldsymbol{\beta}} + \xi_{jt}
\end{aligned}$$

where we've explicitly written out the characteristics in $\mathbf{w}_{jt}$ and $\mathbf{x}_{jt}$: frequency_{jt} is the monthly average daily frequency of product j in market t, $\mathbf{month}_t$ is a vector of dummies for each calendar month, $\mathbf{year\text{-}month}_t$ is a vector of dummies for each year-month, $\mathbf{airline}_j$ is a vector of dummies for each airline, and $\mathbf{route}_t$ is a vector of dummies for each endpoint airport pair. For simplicity, we assume JetBlue's counterfactual markup b_{jt} is a constant that only depends on the number of products in market t, rather than as a (complicated) function of choice probabilities s_{jt}. Figure 9 shows the mean model-predicted markup for JetBlue's Mint product in markets that it already serves. It is reassuring to see that JetBlue's predicted markups fall as the number of competitors in the market increases—evidence of competition decreasing prices. The tight band (one standard deviation) around JetBlue's mean model-predicted markup in markets it already serves suggests JetBlue's markups would be similar in markets it does not currently serve.

The demand and pricing estimation procedures produce estimates of $\boldsymbol{\beta}$ and $\boldsymbol{\psi}$, and most characteristics in $\mathbf{x}_{jt}$ and $\mathbf{w}_{jt}$ can be reasonably assumed or are directly observable for JetBlue, even in markets it does not currently serve: $\mathbf{month}_t'\boldsymbol{\psi}_2$ and $\mathbf{year\text{-}month}_t'\boldsymbol{\beta}_2$ are carrier- and route-invariant and are identified because at least one carrier serves a route at every month and year-month in the sample; $\mathbf{airline}_j'\boldsymbol{\psi}_3$ and $\mathbf{airline}_j'\boldsymbol{\beta}_3$ are time- and route-invariant and are identified for JetBlue because JetBlue serves some markets in the sample; $\mathbf{route}_t'\boldsymbol{\psi}_4$ and $\mathbf{route}_t'\boldsymbol{\beta}_4$ are time- and carrier-invariant and are identified because at least one carrier serves all routes in the sample. Consistent with JetBlue's recent entry behavior into transatlantic markets, we assume JetBlue would serve all counterfactual markets with one daily flight ($\text{frequency}_{jt} = 1$) during the summer season only.[28] We assume $\xi_{jt} = \omega_{jt} = 0$ for counterfactual JetBlue products because ξ_{jt} and ω_{jt} are by definition unobservable and their estimates have by construction a mean of zero.

Figure 9. JetBlue's Predicted Business Class Markups in Transatlantic Markets It Already Serves



Notes: The dashed line shows JetBlue's mean model-predicted markup and the gray shading shows one standard deviation of JetBlue's model-predicted markup in transatlantic markets served by JetBlue alongside the number of competitors shown on the horizontal axis.

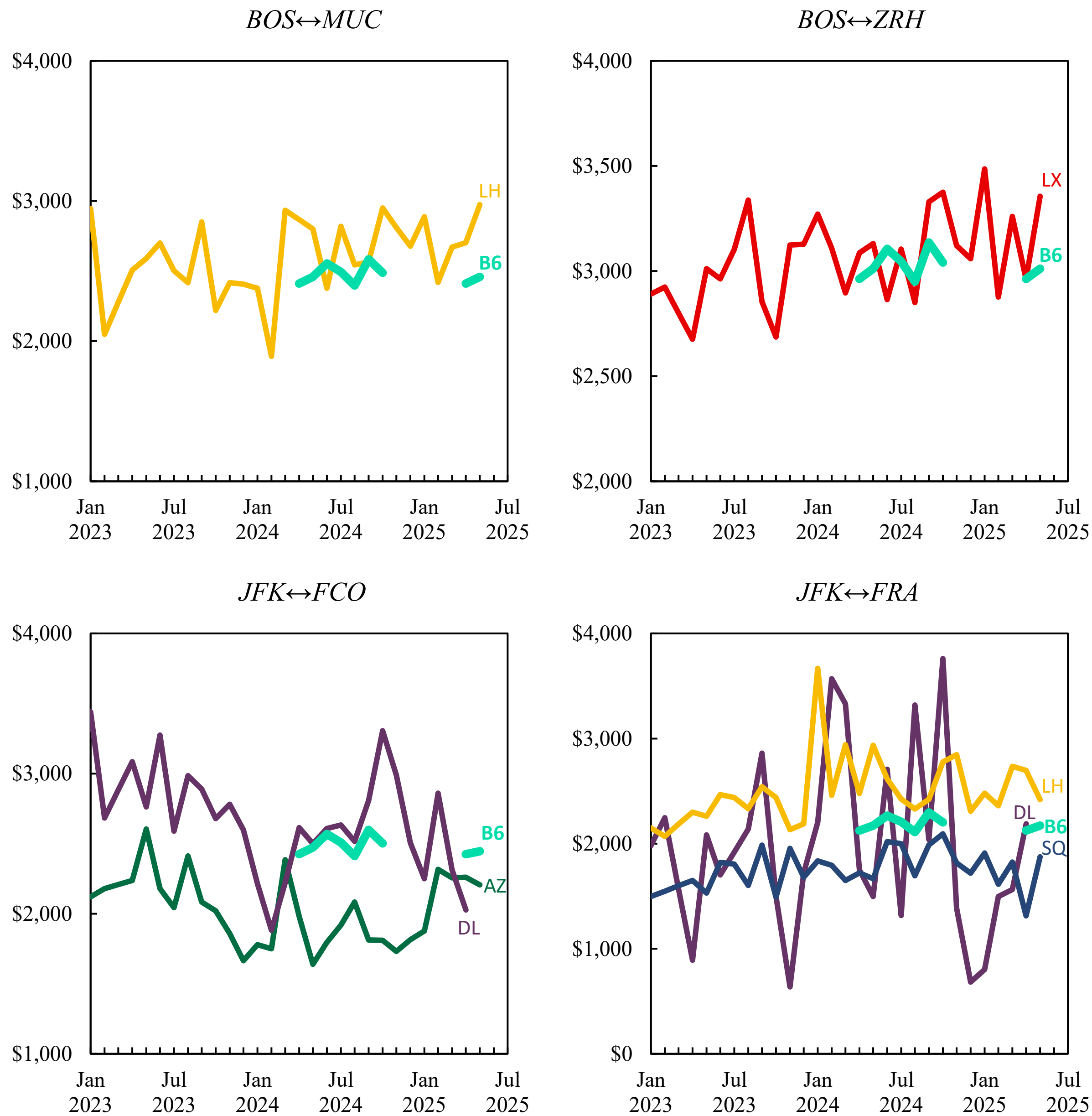
Figure 10 shows JetBlue's model-predicted Mint fares compared to incumbent carriers' observed business class fares in several markets not currently served by JetBlue. The model seems to do well in predicting JetBlue's fares in counterfactual markets: The predicted JetBlue fares are typically below incumbents' fares but of the same magnitude, which is consistent with fare patterns observed in transatlantic markets that JetBlue entered (see, e.g., Figure 5).

Table 5 shows the estimated annual consumer surplus from JetBlue's counterfactual entry into 16 new transatlantic markets. The total estimated annual consumer surplus from JetBlue's counterfactual entry into these markets with summer-only service is $97 million, of which about $25 million (25%) accrues to the business class cabin. As in Table 4, the variety effect dominates the price effect in all markets, accounting for about 84% of the total effect of JetBlue's entry. In other words, as is the case in transatlantic markets

[28] If JetBlue instead entered these counterfactual markets year-round or with a higher frequency, then our estimated consumer surplus from JetBlue's entry would be higher.

that JetBlue has already entered, the primary benefit to consumers from JetBlue's entry into new transatlantic markets would likely come from consumers' ability to choose an attractive new product and not from incumbents meaningfully lowering prices in response to new competitive pressure from JetBlue.

Figure 10. JetBlue's Predicted Mint Fares versus Incumbents' Observed Business Class Fares



Notes: Abbreviations are BOS = Boston, JFK = New York, MUC = Munich, ZRH = Zurich, FCO = Rome, FRA = Frankfurt, B6 = JetBlue Airways, LH = Lufthansa, LX = SWISS, DL = Delta Air Lines, AZ = ITA Airways, and SQ = Singapore Airlines.

Table 5. Annual Consumer Surplus from JetBlue's Counterfactual Entry

		Business, premium, and discount cabins				Business cabin	
Route	EU city	Per person	Total	Variety	Price	Total	Share
JFK–GVA	Geneva	2.96	10.4	8.8	1.6	3.3	0.32
JFK–MXP	Milan	1.19	9.3	8.3	1.1	2.3	0.25
JFK–ZRH	Zurich	1.52	8.0	6.8	1.3	2.2	0.28
JFK–BCN	Barcelona	0.75	7.9	6.6	1.3	2.2	0.28
JFK–FCO	Rome	0.75	6.8	6.1	0.6	1.9	0.28
JFK–BRU	Brussels	1.06	6.8	5.9	0.8	1.6	0.24
JFK–MAD	Madrid	0.57	6.5	5.6	0.9	1.4	0.22
JFK–FRA	Frankfurt	1.58	6.2	5.8	0.6	0.9	0.15
JFK–BER	Berlin	0.74	6.1	4.8	1.3	1.6	0.26
JFK–LIS	Lisbon	0.55	4.2	3.6	0.6	0.8	0.19
JFK–MUC	Munich	0.71	3.9	3.1	0.8	0.9	0.23
BOS–FRA	Frankfurt	2.77	5.2	4.0	1.3	1.4	0.27
BOS–ZRH	Zurich	2.02	5.1	3.7	1.5	1.7	0.33
BOS–FCO	Rome	0.96	4.2	3.6	0.6	1.0	0.24
BOS–MUC	Munich	1.32	3.5	2.6	0.9	0.8	0.23
BOS–LIS	Lisbon	0.85	3.1	2.6	0.5	0.7	0.23
Total			97.2	81.9	15.7	24.7	0.25

Notes: Consumer surplus per person is measured as total consumer surplus divided by market size (geometric mean of the metropolitan populations of the endpoint cities). Per person units are dollars per person per year and all other units are millions of dollars per year. Service is assumed to be offered in the summer season only (April–October).

The estimates shown in Table 5 are reassuring for several reasons. First, almost every estimate of consumer surplus in Table 5 is less than the estimates of consumer surplus in Table 4, suggesting JetBlue is not systematically making suboptimal entry decisions: JetBlue seems to have initially entered markets that offer the highest value for travelers. Second, JetBlue has entered markets with the highest value to business class customers (compare the business class share in Tables 4 and 5), which coincidentally are also the highest-revenue customers. Third, as shown in Figure 6, almost every counterfactual market in Table 5—with the exception of Lisbon, which JetBlue is currently trying to enter (Maharishi, 2023; Bodell, 2025b)—is farther from JetBlue's hubs at JFK and BOS than the markets they have already entered in Table 4, suggesting JetBlue chose to enter lower-cost (i.e., shorter-distance) routes first.

VII. CONCLUSION

Economists have long been interested in studying the ability of low-cost competitors to put downward pricing pressure on incumbents. Morrison (2001) and Vowles (2001) discovered the "Southwest Effect" in the early 2000s, finding that legacy incumbent carriers like American, Delta, and United significantly lowered their prices in response to Southwest's entry. More recently, Shrago (2024) found that the presence of Spirit Airlines on a route was correlated with incumbent competitors significantly lowering their low-end fares (but not their high-end fares) in response to Spirit's aggressive, ultra-low-cost pricing strategy, a phenomenon he termed the "Spirit Effect." The existing literature has mostly focused on economy class fares, presumably because they make up the majority of an airplane's seats. But while legacy carriers have experienced growing demand for premium cabins, there has been a dearth of research on this increasingly important segment of the airline industry.[29]

This paper turns the focus on JetBlue and its premium cabin offering on transatlantic flights. We find that JetBlue's entry into transatlantic markets increased the total number of passengers (*growing the pie*) with minimal reallocation of existing shares and a minimal price response from competitors. We estimate that JetBlue's entry into transatlantic markets has generated $254 million in annual consumer surplus, with the bulk of this consumer surplus being attributed to consumers' ability to choose a new product (*love of variety*) rather than competitors lowering prices in response to JetBlue's entry. Our consumer surplus estimates likely underestimate the full effect of JetBlue's entry into transatlantic markets, as we only consider nonstop flights originating at the endpoint cities, and do not consider the welfare gains to feeder traffic originating from elsewhere in JetBlue's network or to connecting passengers who would have access to a larger network of connections in Europe.[30]

Our work has important policy implications for international airline deregulation. We show that the entry of a "maverick" competitor into the crowded transatlantic market has meaningfully increased consumer welfare despite the growing influence of international airline alliances and antitrust-immune joint ventures. Our results confirm the common-held belief that increasing competition in concentrated markets is good for consumers—regardless of whether such competition influences competitors to lower prices. The implications of our work are timely given that other US airlines are currently considering overseas expansions of their route networks. Alaska Airlines, for example, is reportedly reallocating wide-body

[29] As an example of the industry's commitment to premium seats, Delta's recent order of Airbus A321neo planes will be configured with 44 first class seats, 54 extra-legroom seats, and only 66 standard economy seats (Griff, 2025).

[30] Among itineraries in the OAG data from 2018, originating in the US, arriving in Europe, involving BOS or JFK, with at most two stops, at most one US stop, and at most one non-US stop, approximately 87.5% of such itineraries originate at BOS or JFK and approximately 12.5% of such itineraries connect through BOS or JFK. Among itineraries in the OAG data from 2018, originating in the US, terminating or connecting at a European gateway airport, involving BOS or JFK, with at most two stops, at most one US stop, and at most one non-US stop, approximately 93% of such itineraries terminate at the European gateway and approximately 7% connect at the European gateway. In other words, the majority (approximately 90%) of passengers flying from BOS or JFK to Europe appear to be doing so on nonstop itineraries originating at BOS or JFK and terminating at a European gateway. We caveat that these statistics are based on itineraries observable in the OAG data, which notably omit itineraries involving major domestic carriers Southwest Airlines (US), Ryanair (Europe), and EasyJet (Europe). We therefore underestimate the total consumer surplus from JetBlue's entry—that accruing to nonstop passengers, to passengers connecting from elsewhere in JetBlue's domestic network, and to passengers to connecting at the European gateway—by at least 10%.

aircraft acquired in its merger with Hawaiian Airlines to connect its Seattle hub with Asian markets, starting with Tokyo's Narita International Airport and Seoul's Incheon International Airport.[31] Airbus's next-generation A321XLR, with a reported range of 5,200–5,400 miles (Russell, 2025) may open up more Asian markets to airlines with similar business models to JetBlue's (or to JetBlue itself) operating out of major US West Coast gateway airports such as Seattle–Tacoma International Airport, Portland International Airport, or San Francisco International Airport.[32] Meanwhile, Southwest Airlines recently established partnerships with international carriers, including Icelandair, China Airlines, EVA Air, and Philippine Airlines (Cudahy, 2025c). These interline agreements would allow Southwest passengers to travel to Asia and Europe through one of Southwest's gateway airports and better compete against airlines in one of the three major global alliances. Future research should investigate how entry by Alaska and Southwest into transpacific markets compares with JetBlue's foray into transatlantic markets.

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[31] See news.alaskaair.com/destinations/alaska-airlines-launches-new-era-of-widebody-international-flying-in-seattle.

[32] Seattle to Tokyo is about 4,770 miles, Portland to Tokyo is about 4,820 miles, San Francisco to Tokyo is about 5,130 miles, Seattle to Seoul is about 5,220 miles, and Portland to Seoul is about 5,300 miles.

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