Understanding JetBlue's Anticompetitive Conduct *

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Abstract

This paper examines the counterfactual pricing effects of the world in which the proposed JetBlue-Spirit merger had been allowed to proceed. It finds evidence of modestly anti-consumer pricing effects. Beyond this, it also examines the concurrent Northeast Alliance's effects on pricing and network structures, finding limited evidence of pro-competitive pricing effects for airports in New York City and Boston. Finally, it provides evidence that consumer demand for air travel has become more elastic in the post-pandemic period, consistent with reporting of declines in business travel.

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1 Introduction

The 2020's saw the American aviation company JetBlue Airways involved with two different actions that would be found to be anticompetitive - a "Northeast Alliance" with American Airlines and an attempted merger with Spirit Airlines. The first of these saw it coordinating operations in four major airports within the northeastern United States, resulting in a state of affairs that was only somewhat less than a merger with a nominal competitor. The latter of these saw it attempting to purchase the nation's leading ultra-low cost carrier, a key player in the space for low-income consumers.

This paper's focus is on JetBlue's attempted merger with Spirit, and specifically the estimation of counterfactual pricing in the event that the merger would have been approved. However, estimation of this counterfactual is complicated by two factors. The first of these is the aforementioned Northeast Alliance. It began in 2020 and would be ultimately dissolved in 2023 following an adverse judgment in a lawsuit brought by the United States Department of Justice and Arizona, California, Florida, Massachusetts, Pennsylvania, Virginia, and the District of Columbia. As JetBlue attempted to acquire Spirit in 2022, while this alliance was still in effect, this complicates attempts to calculate counterfactual pricing due to American's role in shaping the route structure of JetBlue during this time, which would not have been present had the merger ultimately have been approved in 2023 or later.

Unfortunately, it is infeasible to simply use data from before the Northeast Alliance began due to the ramifications of the Covid-19 pandemic. This pandemic saw large changes to travel consumption within the United States, with business travel dramatically lower following the pandemic while consumer travel spending grew. This represents a structural change to the consumer base of the market in a way that makes direct extrapolation of the pre-pandemic period to the post-pandemic period difficult.

To attempt to develop a full picture of the counterfactual world in which the merger was approved, I first analyze the impact of the Northeast Alliance on the overall operations and structure of JetBlue through a differences-in-differences approach. I find evidence for reductions in air fares of approximately 2% at the airports focused on by the alliance, with these declines especially pronounced at Newark Liberty International Airport. However, as discussed in this paper, this may be partially by changes in the presence of JetBlue and American operations at airports outside of the four covered by the agreement due to supply constraints at the time of implementation, which could have increase the air fares at airports outside of the alliance beyond which would have occurred in the counterfactual world without the merger.

Following this, I estimate a structural demand model for both the pre- and post-pandemic periods. I observe that, in the counterfactual world in which the merger had been approved, one way fares would have been on average \$X higher in the post-pandemic markets and \$Y higher in the pre-pandemic markets. Air travel would have changed by X (X) and consumer surplus would have fallen by Y (Y) in the pre-pandemic (post-pandemic) periods.

With these findings outlined, the rest of the paper is organized as follows: Section 2 briefly summarizes the literature on airline mergers; Section 3 goes into detail on the American air travel market, the Northeast Alliance, and the JetBlue-Spirit merger; Section 4 elaborates on my data sources; Section 5 contains my analysis of the Northeast Alliance and the JetBlue-Spirit merger; finally, Section 6 summarizes the findings of this paper and examines their implications for antitrust policy going forwards.

2 Literature Review

This paper analyzes the impact of JetBlue's conduct as it pertains to anti-competitive practices through an active alliance with American and through a court-blocked merger with Spirit. To accomplish this, it draws from the literature analyzing anticompetitive practices within the aviation industry and from the literature analyzing the impact of mergers within the aviation industry on consumer prices. Beyond this focus, it further develops our understanding of the role of low cost carriers and ultra-low cost carriers within the aviation industry through the analysis of more recent data.

Since deregulation, and especially since the turn of the century, the aviation industry has seen a trend towards consolidation of existing carriers through mergers. Studies such as Luo (2014) and Carlton et al. (2019) studying completed mergers of legacy airlines have generally found limited evidence of anti-competitive price effects in markets that both carriers were present in, generally attributed to the documented stronger competitive effects from low cost carrier presence within a market (such as in Morrison (2001); Goolsbee and Syverson (2008); Shrago (2024)).[1] In contrast to these papers focused on mergers of legacy carriers, this paper focuses on a proposed (but ultimately uncompleted) merger between a low cost and an ultra-low cost carrier. As part of this analysis, it conducts a simulation of the merger of these two airlines. Recently, Ciliberto et al. (2021) and Li et al. (2022) have used simulations of legacy carrier mergers to examine the implications of models which account for route entry decisions. Unlike these papers, I treat entry decisions as exogenous, owing in part to limitations from the post-pandemic changes to air travel demand.[2]

[1] An alternative explanation suggested in Le and Yimga (2019) is that efficiencies from the Delta-Northwest and United-Continental mergers were sufficiently able to offset the upwards pricing pressure from increased concentration.

[2] A working paper, Ewen (2023), finds evidence consistent with a decline in business air travel of approximately two-thirds from 2019 to 2022.

Beyond the literature on airline mergers, past research has examined anti-competitive practices within the aviation industry. Miller (2010) examined the aftermath of a 1990's case against eight airlines involving potential collusion on fares through an electronic fare database used by travel agents. The author used an event study approach to determine that there was limited evidence of long term price effects from the court case. Zou et al. (2023) examined used differences-in-differences to examine the impact of the Northeast Alliance using data from its first year of operation. Unlike their paper, mine examines evidence from the entirety of the NEA through its unwinding in 2023.

Finally, my paper touches upon the literature examining the role of low cost and ultra-low cost carriers within the aviation industry. While this literature has predominantly focused on the ability of Southwest, the largest low cost carrier, on lowering prices within a market (e.g. Windle and Dresner (1995); Morrison (2001); Goolsbee and Syverson (2008)), there has been movement in recent years to examine the effects of other low-cost carriers, such as JetBlue and Spirit, on prices. For example, Shrago (2024) finds evidence that the presence of ultra-low cost carriers within a market increases the overall range of fares present within the market. My paper examines pricing effects of an ultimately unrealized merger between an ultra-low cost and low-cost carrier, allowing for an increased understanding of the differences between these two airline structures on competitive effects.

3 Setting

Within this section, I establish key facts about the aviation industry in the United States in Subsection 3.1, then I discuss the Northeast Alliance and JetBlue-Spirit merger in more detail in Subsections 3.2 and 3.3 respectively.

3.1 United States Aviation

The American airline industry is comprised of three major types of carriers: legacy carriers, low-cost carriers, and ultra-low cost carriers. Beyond their differences in pricing, the firms within each category operate differently. As such, it is worth spending time on these differences, as they inform later analyses within this paper.

Legacy carriers are those firms that operated in the industry since before the 1978 deregulation of fares. At present, these are Delta, American, and United. The legacy carriers operate hub-and-spoke route networks which allow them to connect passengers from smaller markets through centralized hub airports to their final destinations. One consequence of this is that they operate a larger variety of aircraft within their fleets, allowing for more efficient flight operations to these smaller markets at the cost of additional crew training and maintenance expenditures.

The non-legacy air carriers are divided into two groups, the low cost and ultra-low cost carriers. Low cost carriers includes Southwest, Alaska, Hawaiian, and JetBlue, while the ultra-low cost carriers are comprised of Spirit, Allegiant, and Frontier.[3] Unlike legacy carriers, both low cost and ultra-low cost carriers favor the usage of direct flights. While this requires them to eschew smaller markets, it allows them to avoid the costly expenditures relating to operating a hub airport. Furthermore, these carriers use only a handful of aircraft models within their fleets.[4]

Ultra-low cost carriers are distinguished from low-cost carriers through the practice of "unbundling," wherein ticket prices are lower but amenities tradi-

[3] There exist a number of smaller, more regional focused low-cost carriers, such as Sun Country, which I do not refer to here. Later analyses within this paper treats products from these airlines as from a unified, "Minor Low-Cost Carrier" airline.

[4] Figure 1 graphs the average variety in aircraft models within each category of firm between 2007 and 2022.

tionally included in a fare are additional purchases. While Ryanair in Europe had operated under this model since the early 1990s, a firm would not successfully adopt the strategy in the United States until Spirit introduced fees for checked baggage in April 2010 (Bachwich and Wittman, 2017). While complaints regarding the quality of these airlines are well documented in consumer surveys and the press[5], these airlines have managed a good deal of competitive success within their segment of the market. By the later part of the 2010s, trips on ultra-low cost carriers represented over a tenth of the total air travel within the United States (Figure 2). Nonetheless, the industry is still dominated by the "big four" carriers - the three legacy carriers and Southwest. As depicted in Figure 3, approximately 75% of air travel in the United States is provided by these carriers.

As documented in Figure 10, Spirit grew its fleet from under 50 planes before adopting the ultra-low cost model to nearly 200 planes by 2022. This expansion by Spirit brought it into increasing competition with JetBlue.[6] As illustrated in Figures 12 and 13, both firms primarily operate in airports situated along the east coast of the United States in addition to a few major cities in Texas and California, with Spirit's rapid expansion leading to both firms to increasingly operate out of the same airports.

Despite these similarities in operations, both firms behaved differently in regards to competition by the 2020's. In 2020, JetBlue created the "Northeast Alliance" (NEA) with American Airlines, which saw them cooperate on setting flights originating to or departing from airports in New York and Boston.[7] Beyond the NEA, the Department of Justice has alleged that JetBlue had taken

[5]For example in Vasel (2016); Elliott (2022).

[6]Historically, very few markets had multiple low cost carriers operating within them (Kwoka et al., 2016; Ciliberto et al., 2021). However, in recent years, there are approximately half as many markets with multiple low cost carriers operating within them as there are with a single carrier, as depicted in Figure 5.

[7]Section 3.2 elaborates on this in more detail.

part in anti-competitive behavior using the Airline Tariff Publishing Company to coordinate fares with other firms.

In contrast, Spirit would compete aggressively and became a maverick firm within the industry. It has maintained a consistent pace of increasing its fleet size over the course of the 2010s and into the 2020s (as graphed in Figure 10) despite the shock to air travel caused by the coronavirus pandemic.[8] This growth in its fleet was required for its consistent expansion into new air travel markets. As shown in Shrago (2024), this entry has resulted in greater competition than results from legacy carrier entry. In particular, markets entered by Spirit had increased variance in fares as existing carriers competed for the same highly cost concerned travelers that make up Spirit's core consumer base by offering paired back, "basic economy" products.

Beyond the role of the firms within this industry, it is worth discussing the impact of the coronavirus pandemic on it as this shapes all analyses within this paper. Between quarter 4 of 2019 and quarter 2 of 2020 saw a severe drop in air travel caused by a combination of fear of contracting the novel virus and the various regulatory closures of businesses leading to less incentive to travel. Air travel would recover to 2016 levels of air travel by approximately the second quarter of 2021 but would not recover to 2019 levels of air travel until halfway into 2022 (see Figure 6).

However, this recovery in ridership was not a full return to normal consumption patterns in airfare. Historically, business travel accounted for approximately a third of air travel (examples of these estimates can be found in Berry and Jia (2010) or Bet (2021)). However, following the pandemic, business travel reportedly decreased as businesses switched to telecommunications to meet, rather than traditional face-to-face meetings (Semuels, 2021). As such,

[8] As depicted in Figure 11, JetBlue's fleet stagnated following the pandemic due to it delaying orders for aircraft (Bellamy III, 2020; Sipinski, 2020).

consumption patterns are liable different, even if the levels are similar between the pre- and post-pandemic periods.

3.2 Northeast Alliance

Prior to the attempted Spirit merger, JetBlue entered into the Northeast Alliance (NEA) with American Airlines. Finalized In January 2021, the NEA saw the two airlines coordinate operations in an attempt to act as if they were a single airline for any routes that touched upon the airports serving New York City and Boston. They jointly decided upon these routes, operate them so that consumers are indifferent between the two carriers for these routes[9], and shared revenue between the firms earned from products within the agreement. The United States Department of Justice and the states of Arizona, California, Florida, Virginia, Massachusetts, Pennsylvania, and the District of Columbia brought a lawsuit against the agreement in September 2021 alleging that it violated the Sherman Antitrust Act. Following a 2022 trial, the agreement would be found to violate the Sherman Antitrust Act in May 2023 and it was unwound in subsequent months(Rennison and Chokshi, 2023; Rains, 2023).[10] With this timeline outlined, I will now briefly discuss the features of the NEA and how it differed from traditional aviation alliances.

Alliances between aviation firms are commonplace within consumer aviation. For example, Delta is part of the "SkyTeam Alliance" and United is part of the "Star Alliance." These alliances see firms operating code sharing agreements between different carriers, in which airlines can seats on flights operated by other airline, with the ticket being under the ticketing airlines' code.[11] These

[9]With the ultimate goal of keeping only one of the two firms active on a given segment, as per the ruling by Judge Leo Sorokin.

[10]Table 1 details a timeline of key events relating to the NEA. Notably, some landing slot leases between the two airlines related to the merger experienced a gradual reversion to their original owners.

[11]This allows, for example, for passengers of the Canadian airline Westjet to book connecting flights into the United States by using Delta flights for the domestic legs of their trip.

agreements are primarily operated between domestic carriers and international carriers to allow for better access to foreign markets by consumers. Benefits to consumers include the earning of frequent flier miles across all stages of a journey, regardless of the operating carrier, and easier handling of baggage. Meanwhile, carriers benefit from being able to offer a wider variety of destinations than would otherwise be possible using only routes that they themselves fly.

Domestic aviation alliances are fairly rare. Two examples of them however include the NEA between JetBlue and American and the West Coast International Alliance (WCIA) between American and Alaska Airlines. Unlike alliances between domestic and foreign carriers, these agreements are generally unable to receive waivers from antitrust concerns through the Department of Justice.

Unlike normal alliances, the NEA was structured to act as if it was a merger between the two firms on affected routes. The two firms jointly scheduled flights within the selected cities, with the intent to minimizing overlap in routes offered, and coordinated on operations at the impacted airports.[12] Furthermore, as two of the impacted airports featured slot and gate controls,[13] the NEA saw these firms share slot permits and coordinate on sharing gates at the effected airports. The ruling against the NEA found that this reduced the incentives of each firm to sell off owned slots or gates to other firms, increasing barriers to entry for companies wishing to serve the New York City market.

As noted in the ruling by Judge Leo Sorokin, the existing alliance between Alaska and American called the WCIA serves as a direct contrast to how the NEA differed from traditional aviation alliances. Under the WCIA, fliers with one airline are able to book flights on the other. However, unlike under the

[12] One example of this coordination is the shuttle operated by the two airlines at JFK to allow customers to transfer between the terminals used by each airline without going through security a second time (Griff, 2021b).

[13] A slot controlled airport is one in which airlines are assigned landing slots to allow for better coordination of runway usage in congested airports.

NEA, routes covered by both carriers were excluded from codeshare bookings. Further differentiating it from the NEA, Alaska and American do not jointly determine scheduling nor capacity decisions across any markets. Nor do they share resources related to flight operations, such as landing and departure slots.[14]

As documented in Table 3, approximately 75% of JetBlue's routes, passengers, and revenue and 15% of American's routes, passengers, and revenue were in the markets directly impacted by the four cities within the NEA. As such, the vast majority of JetBlue's fleet was deployed in collaboration with American. The ruling against the agreement indicated concerns that this coordination lessened JetBlue's ability to compete in even markets that were not coordinated within, due to the limited ability of JetBlue to increase its fleet size.[15]

3.3 Attempted JetBlue-Spirit Merger

In February 2022, Spirit announced its intention to merge with fellow ultra-low cost carrier Frontier (Schaper and Hernandez, 2022). This prompted a counter offer from JetBlue in April for ownership of Spirit, which would lead to the attempted merger between Spirit and Frontier being called off in July amid a lack of support from Spirit shareholders (Josephs, 2022a,b). By mid-October, Spirit shareholders approved the acquisition by JetBlue (Koenig, 2022). The next year would see the United States Department of Justice, the District of Columbia, Massachusetts, and New York file suit to block the merger in March (Chokshi, 2023). Following a trial in the winter of 2023, the merger would be blocked on January 16, 2024, and the parties would ultimately decide against appealing the verdict (Chapman and Koenig, 2024). These events are summarized in Table 4.

[14] However, this should not be interpreted too strongly. Within the United States, only JFK, LGA, and DCA feature these restrictions. As such, this is less of a concern for the west coast focused alliance.

[15] As noted in the judgment, there is limited ability to fully understand the ramifications of the NEA on JetBlue's route restructuring over this time period as it is coterminous with the changes within the industry caused by demand changes following the coronavirus pandemic.

JetBlue publicly considered the acquisition of Spirit to be a top priority for the company, choosing to not appeal the ruling blocking its Northeast Alliance with American Airlines in favor of focusing its resources on overcoming the lawsuit seeking to block the merger with Spirit (Aratani, 2023). Beyond these legal resources, it directed resources towards trying to win public favor over the merger. Notably, it coordinated comment submissions to a Department of Transportation regulatory filing regarding the merger with pro-merger comments sourced from its employees.[16] Despite this, following the ruling against the merger it would ultimately choose to drop its appeals, with some financial analysts noting a significant deterioration of Spirit's financial stability between 2022 and 2024 (Sider, 2024).

I now turn my attention to the ruling by Judge Young which ultimately blocked the JetBlue-Spirit merger attempt. The judgment identifies five key cities for his ruling: Orlando, San Juan, Miami and Fort Lauderdale (termed "South Florida"), New York City, and Boston. These cities were identified on the basis that the majority of passengers in markets with competition between JetBlue and Spirit departed from these cities. These largely align with the cities in which the two firms would have the largest share of departing passengers within 2022 (Table 6). However, the cities indicates ignores the firms' role in multiple smaller markets within Puerto Rico, namely Ponce and Aguadilla, where the two firms comprise the vast majority of the market.

In section 2.F of the judgment, the potential effects of the merger are listed as decreased airline seats, increased market concentration, increased debt for JetBlue, and increased prices for consumers. Table 5 documents the aircraft in JetBlue and Spirit's fleets in 2022. Both airlines predominantly fly Airbus manufactured aircraft, with wider variety in JetBlue's fleet than Spirit's, using five

[16] Some employees went on to dispute that these comments accurately reflected their views see Birnbaum (2023); Birnbaum and Nylen (2023) In Appendix B, I use stance detection techniques to analyze comments left on this filing in more detail.

different versions of the Airbus A321 aircraft[17] Should Spirit's Airbus A320 and Airbus A321 were adjusted to the predominant seat configurations of JetBlue's aircraft, a total of 20 seats would be lost on each Airbus A320 and 69 seats would be lost on each Airbus A321, for a total of 4,799 seats lost. This would reflect a loss of approximately 13% of the seats on Spirit's aircraft.[18] These rough calculations closely track the estimate of an 11% reduction in seats accepted by the trial court in its decision.[19] Beyond the issue of seats, this paper estimates the counterfactual increase in market concentration and increase in prices in Section 5.1.

4 Data and Summary Statistics

The primary dataset used in the creation of this paper is the Bureau of Transportation Statistics's Airline Origin and Destination Survey (DB1B) dataset. This is a 10% sample of all domestic itineraries within the United States and includes data on pricing, length of air travel, carrier, and number of connecting flights. Within the literature, the DB1B has been the preferred data on air travel consumption for decades (e.g. Ciliberto et al. (2021); Berry and Jia (2010); Goolsbee and Syverson (2008); Peters (2006)).

Using this data, I define each air fare as belonging to a market defined by its originating airport, destination airport, year, and quarter. Within this definition, I use the originating and terminating airports as the determinants of a market rather than the metropolitan statistical areas that these airports reside in. This is done to account for the known phenomenon that consumers do

[17]Two of these configurations reflect solely different seat configurations. The other three configurations are on the Airbus A321neo, a revision of the earlier aircraft.

[18]If instead, Spirit's Airbus A321 were adjusted to the 200 seat configuration rather than the 159 configuration, then this would be 3500 seats lost or a loss approximately 9.9% of Spirit's seat capacity.

[19]The court further estimates a decline in annual departures of over 6.1 million. As I do not possess data on flight schedules, I am unable to assess this claim.

not necessarily treat all airports within a metropolitan statistical area as interchangeable with each other.[20] Products within a market are defined by carrier and non-stop status. Appendix A details the sample construction methodology and restrictions on markets within the sample (such as excluding markets that consist of airports that are fewer than 150 miles apart.)

Market size is defined as the geographic mean of the population of the origin and destination metropolitan statistical areas population. This is a standard assumption within this literature (such as in (Ciliberto et al., 2021)). To calculate this, I used the United State Census Bureau's annual estimates of metropolitan statistical area population. The outside good within a market is not consuming air travel between an origin and destination airport pair. As such, this includes instances where consumers choose to either not make a trip or to make the trip using an alternative method of transport, such as car or bus.

In constructing my instruments for price, I used data on the spot price for jet fuel provided by the U.S. Energy Information Administration in addition to reported expenditures on jet fuel from airlines' P-12 filings with the Department of Transportation. The difference between the reported expenditures and the national average spot price is plotted in Figure 4. The relative expenditures are fairly consistent for each airline, with the exception of Delta during the coronavirus pandemic and Southwest in 2022, with the latter deviation caused by fixed-price contracts filed in anticipation of an oil price shock due to the Russian invasion of Ukraine in 2022 (Mooney, 2022).

For the analysis of the Northeast Alliance in Section 5.1, data on state level coronavirus cases from the Centers for Disease Control and Prevention was used. Airport markets were assigned to this data on the basis of the state

[20] See, for example, Goolsbee and Syverson (2008) which observed differential impacts on pricing of prospective firm entry at the airport level than would be expected if airports were treated as interchangeable.

of the principal city within the area.[21]. State level data is used rather than county level data as this data is liable to be more accurate than county level data as coronavirus patients were able to test outside of their primary county. Furthermore, the virus saw seasonal trends that were regional in nature, with states in the American south experiencing surges in the summer but not states elsewhere in the country. Beyond this data, census bureau state-level and MSA-level estimates of personal income was collected for use in this analysis.[22]

Table 22 contains the market level summary statistics for the post-pandemic period. There are, within this period, 2,108 markets which both Spirit and JetBlue operate in, accounting for half of the markets that each firm operates within. These firms operate in markets with, on average, more products, passengers, and firms within them that the average market within the sample. This is not altogether different from the markets that they operated in within the years preceding the pandemic, which have summary statistics contained within Table 16.

Similarly, Table 21 contains product level summary at the product level. Spirit has prices which are statistically lower than those of JetBlue and legacy carriers, which is consistent with its status as an ultra-low cost carrier. Consistent with the prior discussion of differences between carrier types, nonstop itineraries makeup a larger share of the products offered by JetBlue and Spirit than they do for legacy carriers.

5 Analysis

This section is organized into four subsections. In Section 5.1, I use a differences-in-differences approach to analyze the Northeast Alliance and examine the rami-

[21]For example, the New York City market was assigned New York

[22]There is a significant delay in releases of these estimates for MSA. As such, the state-level data allows for a longer sample to be analyzed. On the shared quarters, no notable differences in the use of state and MSA data is observed.

fications of it for simulating the counterfactual world in which the JetBlue-Spirit merger was allowed to occur. In Section 5.2.1, I develop a structural model of demand for the airline industry and analyze its results. In Section 5.2.2, I develop the structural model of supply for the airline industry used in conjunction with the demand model for the counterfactual merger simulation detailed in Section 5.2.3.

5.1 Northeast Alliance

Within this section, I analyze the impact of the Northeast Alliance on three outcomes of interest: the percent of markets with itineraries consisting of flights operated by both constituent airlines, the difference in fares between each airline, and on average market fares. This is accomplished using a differences-in-differences estimation strategy.

The first of these areas of investigation is to evaluate the NEA's impact on itineraries where passengers take flights operated by both JetBlue and American within a single, unidirectional trip. Empirically, it is clear that the number of interline itineraries featuring travel provided by both providers increased following the implementation of the NEA (see Figures 8 and 9 for the number of tickets).

To analyze this, for origin-destination airport pair j at time t, I estimate the model

$$Y_{jt} = \alpha N_j + \sum_{T=-8}^{8} \delta_T P_{t=T} + \sum_{T=-8,t=8}^{8} \gamma_T N_j P_{t=T} + \epsilon_{jt}$$

where Y_{jt} is a dummy variable that is 1 if at least one itinerary was recorded that featured flights by both JetBlue and American, N_j is a dummy variable if at least one endpoint airport was covered by the NEA agreement, $P_{t=T}$ is a variable which is 1 if $t = T$ and 0 otherwise, and ϵ_{jt} is a random error term.[23] In defining

[23]Minimal controls are used in this regression as the NEA agreement is the core determinant

periods in this, and later analyses within this section, I define 2019 quarter 4 as period "-1", and 2021 quarter 2 as period "0". This excludes the entire duration of the pandemic before widespread vaccine availability.[24] Results for this estimation are included in Table 7 and the coefficients are plotted in Figure 7. As would be expected, negligible codesharing itineraries are booked before the start of the NEA, following which the probability that a market impacted by the agreement would include these itineraries rose to approximately five to seven percentage points.

Beyond the numerical significance of these estimates, these results suggest a timeline for when the agreement was most implemented, namely the fourth quarter of 2021.[25] This is despite the NEA beginning to accept codesharing bookings in February of 2021 on 80 routes (Griff, 2021a). As such, this is consistent with the concern that past research might understate the effects of the NEA as the period observed was limited to the first four quarters of operation.

I turn my attention to identifying its effects on air fare. Past literature in the aviation industry has used one of two outcomes of interest: either the average market fare or the average per-mile fare (which is called the market yield. While the literature has largely focused on fares in evaluating the effects of anticompetitive practices and mergers within retrospective studies (such as in Luo (2014); Carlton et al. (2019)), the only existing study (Zou et al., 2023) to evaluate the NEA focused on yields as its variable of interest. As such, my estimations are conducted on both fares and yields to allow for comparison with both strands of literature.

I now turn my attention to the difference in average fares within markets with itineraries listing both airlines as the ticketing carrier. I model the difference

of codesharing itineraries between JetBlue and American. As such, any codesharing itineraries will be necessarily caused by this agreement.

[24]As depicted in Figure 6, the second period of 2021 saw air travel return to 2016 levels. As such, this should represent a more typical environment for the industry.

[25]This is period 2.

between the average American and average JetBlue fares Y_{jt} for market j in period t as

$$Y_{jt} = \alpha N_j + \sum_{T=-8}^{8} \delta_T P_{t=T} + \sum_{T=-8,t=8} \gamma_T N_j P_{t=T} + \beta X_{jt} + \epsilon_{jt}$$

where N_j is a dummy variable if the market includes an endpoint covered by the NEA agreement, $P_{t=T}$ is a variable which is 1 if $t = T$ and 0 otherwise, X_{jt} is a vector of additional market level controls which includes the log of the geometric mean income of the origin and destination metropolitan statistical areas, the log of the geometric mean population of the origin and destination metropolitan statistical areas, the lagged HHI for these markets, state coronavirus rates, and the share of flights within each market that are direct. Finally, ϵ_{jt} is a random error term.

The results for this estimation are contained in Table 8 and graphed in Figure 15.[26] I estimate that after the third quarter of the NEA's operation, this difference was consistently lower by about $75 dollars within markets impacted by the NEA. This decline is consistent with the collaborating firms' stated desire for consumers to treat products offered by each firm as neutral and the timeline is consistent with my results in Table 7. I fail to observe evidence of pretrends, lending credence to the argument that the NEA reduced the price spread between American and JetBlue tickets. However, this result does not clarify if this was caused by American fares becoming less expensive or JetBlue fares becoming more expensive.

Finally, I estimate the average fare within market j at time t using the prior model, but with Y_{jt} now being this average fare across all airlines. These results are included in Table 10 and the event study coefficients are plotted in Figure

[26]Results for the average market yield are included in Table 9 and Figure 16 and follow the same trend.

17.[27] While these coefficients are statistically significant and negative outside of the first two periods of the NEA, it is difficult to draw a conclusion that this is an effect of the NEA as it aligns with average fares in most of the pre-periods.

To understand possible heterogeneity between airports, I then estimated an alternate specification where the variable for NEA membership is instead replaced by a set of four variables, one for each airport covered by the agreement. These results are plotted in Figure 18. While the results for both JFK and LGA in New York City exhibit the same pattern above, the fares at EWR are consistently lower than fares within the pre-period, suggesting that the NEA had reduced fares at this airport. By contrast, the fares at BOS. are consistently higher than the pre-period fares, suggesting that the NEA increased fares for Boston markets.

That the coefficients for Newark are negative is consistent with the evidence from Table 2 that markets with Newark as the originating airport had the least overlap between the carriers before the agreement, suggesting that possible anticompetitive effects from the merger were limited for these markets.

These results support the findings of Zou et al. (2023).

5.2 Spirit Merger

With these findings regarding the Northeast Alliance established, I now turn my attention towards estimating the effect that the JetBlue-Spirit merger would have had on prices had it been allowed to be completed. To do this, I estimate a model of demand, assume that Bertrand-Nash competition with differentiated products describes the supply side of the market, and then estimate three merger counterfactuals wherein the resulting merged firm would have inherited the least, average, and greatest marginal cost for the resulting post-merger products of the individual firms.

[27]The corresponding yield table and graph are Table 11 and Figure 19 respectively

Before beginning these analyses, it is important to consider the implications of one critical assumption used within them, namely that firms treat the overall market structure as exogenous. The largest consequence of these is that routing cannot respond to the demand shocks within a given quarter. Furthermore, this assumption does not allow for the merging firms to change which markets they operate in following the merger.

This creates a problem for proper inference of the counterfactual world in which the merger had been completed. As determined in the previous subsection, the NEA had included a reorganization of the route networks of each of the collaborating firms as part of the agreement. As such, counterfactuals using markets between 2021 and 2023 are those in which the JetBlue-Spirit merger is allowed to be completed while the NEA is in effect and without any resulting reorganization of routes.

Unfortunately, it is not possible to simply use markets from before the implementation of the NEA as this would require the usage of data from during thje worst of the covid-19 pandemic or before it. As documented in press sources and in a working paper (Ewen, 2023), air travel demand dynamics have greatly changed following the pandemic. In part thanks to the rise of telecommunications software such as Zoom, business travel has been lessened. Furthermore, as consumers were able to increase savings during the pandemic period, they are liable to have become less price sensitive following the resumption of mass travel.

To try to resolve these issues, I conduct all analyses within this section on two samples - the "pre-pandemic" sample from the first quarter of 2017 through the fourth quarter of 2019 and a "post-pandemic" sample consisting of data from the third quarter of 2021 through the end of the second quarter of 2023. By comparing the results from these two samples, a more complete picture can emerge of the counterfactual world in which the JetBlue-Spirit merger had been completed despite the issues facing each sample's overall credibility.

5.2.1 Demand

The paper's main analysis adopts the use of a random coefficient logit model to estimate demand, in line with the model originally documented in Berry et al. (1995). Each market t is defined as travel between a directional pair of airports within a given quarter. Consumer i has indirect utility from buying product j as defined by

$$U_{ijt} = \delta_{jt} + \mu_{ijt} + \epsilon_{ijt}$$

Where δ_{jt} is the mean utility across consumers in market t for product j, μ_{ijt} is the consumer's deviation from this mean utility, and ϵ_{ijt} is an unobserved consumer-level shock. In the model used within this paper, δ_{jt} is parameterized as

$$\delta_{jt} = \alpha p_{jt} + x_j \beta + F_{jt}\gamma + \epsilon_{jt}$$

where p_{jt} is the price of product j in market t, x_{jt} is a vector of observed itinerary characteristics, and ϵ_{jt} is a product level shock shared by all consumers within a market. Within this model, μ_{ijt} is parameterized as

$$\mu_{ijt} = \sigma_p p_{jt} \nu_{ip} + \sum_k \sigma_k x_{kjt} \nu_{ik}$$

with the ν parameters draws from a standard normal distribution. Finally, ϵ_{ijt} are assumed to arise from a type 1 extreme value distribution so that market shares will be of the discrete choice logit variety.

Consumer i purchases itinerary j if it has greater indirect utility than all other products in the market.[28] As such, market shares can be obtained by integrating over the consumers, resulting in the market share of each product to be defined by

$$s_{jt} = \int \frac{e^{\delta_{jt}+\mu_{ijt}}}{\sum_{j'} e^{\delta_{jt}+\mu_{ijt}}} d\nu_i$$

Within this model, x_{jt} contains the distance between the origin and destination airports within the market, a dummy variable which is one if an itinerary does not include any intermediate stops between the origin and destination airports, and the ratio of the number of destinations served out of the origin airport by the carrier divided by the total number of destinations served out of that airport. This last measure is intended to proxy for rewards program strength of the carrier at the originating airport. F_{jt} is a vector of controls which includes fixed effects for each market and each carrier. The variables included in x_{jt} are intended to be unresponsive to demand shocks - these characteristics of a product are determined primarily by a carrier's route structure and the geography between the originating and destination airports.

Estimation of this model was carried out using the two-stage approach to estimation documented in Conlon and Gortmaker (2020). In the first stage, four sets of instruments are used. The first set consists of cost shifters created by multiplying the market miles flown on an itinerary by the average gallon price of jet fuel within the quarter flown and then interacting this with both the presence of the dummy variable for a flight being nonstop and the variable for average extra miles flown over the minimum (due to layovers). These cost shifters serve to account for endogeneity in prices. The second set of instruments, employed to account for endogeneity in market shares, consists of the differentiation instruments described in Gandhi and Houde (2019) constructed from a dummy variable that is 1 for a nonstop flight, the miles covered by the

[28]All other products in the market includes the outside option of not purchasing air travel between the origin and destination airports.

itinerary, the square of the miles covered by the itinerary, and the service ratio of the carrier out of the destination airport. The third set of instruments, employed to instrument for the nesting parameter λ consists solely of the number of products within a market. Finally, all remaining exogenous regressors comprise the final set of instruments. Following the estimation of the model using these instruments, the feasible approximation to the optimal instruments are constructed and then the model is re-estimated.[29]

My results for the post-pandemic demand estimation are included in Table **??**. The portion of this table labeled "Linear Coefficients" describes the estimated impact on consumer's mean utility of all product characteristics within the model. I observe that customers are less likely to pick a flight that as it becomes more expensive, that customers prefer nonstop flights[30], and that customers increase utility from the miles flown but with diminishing returns (as the miles squared coefficient is negative). This trend in coefficients is consistent with the results from the pre-pandemic period, included as Table 18.

The results for the estimated variation in individual sensitivity to price and nonstop flight status are detailed in the portion of Tables **??** and 18 labeled as "Nonlinear Standard Deviations" I detect limited variation in consumer price sensitivity, across both periods, but detect significant variation in consumer sensitivity to the non-stop status of a flight in the post-pandemic period.

Beyond the coefficients on utility, I additionally estimate the nesting coefficient. In both periods, I estimate this as being approximately zero, indicating

[29]Other instruments for price were considered, including interactions between the gas miles variable and characteristics of the origin airport and interactions between the exogenous variables. However, the selection of price shifters used in the final model had the best performance across the tests documented in Tables 17. The final specification chosen (column 4) has the benefit of passing the Wu-Hausman test while failing the Test of Over Identification by the least amount of the tested models. As noted in Nevo (2001), provided enough observations it is virtually impossible to pass the over-identification test, and as such, I am not concerned with the result. For comparison purposes, the instrument comparison table on the main period of interest (2021 Q2 through 2023 Q2) is included as Table 23.

[30]This is evidenced by both a positive coefficient on the dummy variable for nonstop flights as well as the negative coefficient on miles beyond traveled beyond the least within the market

limited substitution of air travel with other forms of travel and the outside good.

Finally, I estimate the mean price elasticity of demand in both periods as well as the mean price elasticity of demand for products offered by JetBlue and Spirit in both periods. I estimate that the mean own-price elasticity across all products is approximately -4.73 in the pre-pandemic period and approximately -5.946 in the post-pandemic period. This is consistent with an observed decline in business travel following the pandemic as firms became used to telecommunications software such as Zoom for business meetings. As business travelers are less price sensitive than leisure travelers, it is reasonable for such a change in price elasticity to occur in such a limited time. Furthermore, the pre-pandemic price elasticity is consistent with past estimates of price elasticity, as detailed in Table 12.

Similarly to the overall change in estimated price elasticity following the pandemic, the products of both JetBlue and Spirit became more elastic following the pandemic. However, in both periods, Spirit's products are more price-inelastic than those of JetBlue, consistent with its status as the often lowest cost carrier in the market, serving as an alternate to higher priced air fares.

5.2.2 Supply Model

I assume that the consumer aviation market operates under Bertrand competition with differentiated products following the exogenous determination of quarterly route structure. This allows for recovery of marginal costs through the estimated elasticities of demand. These are included with the demand estimates for the pre-pandemic and post-pandemic results in Tables 18 and **??** respectively. I estimate a decline in observed markups of approximately five percentage points between the pre- and post-pandemic periods, which is consistent with the observed change in consumer demand elasticity.

5.2.3 Merger Simulation

I can now turn my attention to simulation of the Spirit-JetBlue merger. For each of the pre-pandemic and post-pandemic periods, I estimate four counterfactuals: one which represents the scenario in which product characteristics remain unchanged following the merger (a "basic" simulation) and three in which various levels of efficiencies are realized following the merger (the "best case", "average case", and "worst case" simulations).

Should the merger have been approved, there would have been a period of time in which JetBlue would be operating the Spirit fleet largely as is, due to factors such as the time needed to renovate aircraft from the Spirit seating configuration to the JetBlue configuration and legal delays relating to the change in ownership of permits. As such, the basic simulation provides an insight into the "short-run" pricing impacts resulting from the merger. Furthermore, in this time period, the key possible pricing effects are reflected in JetBlue's ability to internalize the price externalities from the Spirit products. As Spirit had a reputation as a maverick firm, these are able to be significant to consumer welfare, even if they make up a distinct minority of tickets in the market.

Tables 19 and 24 contain the results from this simulation. As would be expected,

With the First, using the demand estimates and the assumptions on firm conduct described above, I estimate the marginal cost of each product. Following this, I reconstruct the product data by assigning all Spirit itineraries to JetBlue, and then assuming that the combined firm's connecting products will take on the more efficient routing available, reducing the average miles flown to the lower of the two firm's within a given market. Following this, I assign these merged products the lowest, average, and greater of the marginal costs of the original products, creating three separate data sets for the examination of different levels of efficiencies resulting from the merger. These scenarios are, respectively, the best-case, average-case, and worst-case scenarios for the post-merger firm's cost structure.

The results for these counterfactual estimations on the markets in which both firms operated in are reported in Table 25 for the post-pandemic period and in Table 20 for the pre-pandemic period.

6 Conclusions

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Appendices

A Data Processing Methodology

As detailed in Section 4, the Bureau of Transportation Statistics's Airline Origin and Destination Survey (DB1B) database was the primary data set used for this research. After compiling the DB1B into a single dataset for the years 2015 through the second quarter of 2023, some observations were excluded from the sample. Itineraries with fares lower than $15 to remove air travel purchased through frequent flier rewards points (X% of fares were excluded this way.). Similarly, in line with prior work[31], fares of over $1,500 dollars were excluded to avoid fares which were erroneously recorded (X% of fares were excluded this way). Beyond fares, itineraries were excluded from the sample if they had two or more layovers[32] or if they were to outside of the continental United States.[33] Additionally, all observations from the year 2020 were excluded from the sample to avoid contamination from the onset of the coronavirus pandemic.

Beyond this excluding of individual itineraries, a number of markets were excluded from the analytic sample. This includes all markets with fewer than 500 passengers and all products with fewer than ten passengers.

In calculating out product shares, the total number of buyers of each product is considered to be ten times the number of passengers who bought it as the DB1B is a 10% sample of the data. Additionally, all markets with origin and destination airports with distance between them of 150 miles or fewer are dropped. This restriction is in line with the past-literature (such as Ciliberto and Williams (2014)) and serves to not only improve computational speed but

[31] such as Berry and Jia (2010)

[32] This itineraries reflect substantially distinct consumption behavior. A total of X% of observations were excluded this way.

[33] As noted in Ciliberto et al. (2021), these flights receive subsidies from the United States Postal Service.

also account for these markets facing stronger competition from the outside good than other, more distant markets. A total of X% of itineraries were removed and Y% of markets were removed through this. Following this, the hundred largest airports by passenger flows in the second quarter of 2022 were identified[34] and all other airports were excluded (X% percent of markets representing X% of consumers were excluded this way).

Beyond the handling of data acquired from the DB1B, data on the daily spot price of jet fuel was acquired through the U.S. Energy Information Administration. This was averaged at the quarterly level.

As part of the handling of all price data involved within this research, prices were re-expressed in terms of 2017 United States dollars. This was done to allow for the consistent expression of prices despite the early part of the 2020's having a fairly large rate of inflation.

B Merger Comments Analysis

As part of the merger proposal, JetBlue and Spirit filed an application with the Department of Transportation for the transference of operating certificates from Spirit to the combined firm, to be effective after the completion of the merger. As part of this, the public was allowed to leave public comments on the regulatory filing. Within this section, I employ stance detection techniques to analyze these comments at scale. While these comments are largely irrelevant to the result of this particular merger (namely, that it would be rejected following a suit brought by the Department of Justice), I am aware of no existing paper to use these techniques as part of the case study of a merger.

Stance detection, in brief, is the task of detecting the position held by the author of a text regarding some topic. In this context, it is to determine if

[34]This was chosen as the last quarter before the board of Spirit approved the merger.

the author of a comment left on the regulatory filing supported or opposed the proposed JetBlue-Spirit merger. This context is particularly suitable for the use of modern machine learning models as focused and direct. Therefore, an unsupervised zero shot model should be effective with minimal issues with trying to gauge potentially contradictory statements that could be found in a longer work.

The stance detection problem should not be confused with that of the sentiment analysis problem. Sentiment analysis intends to capture the emotions expressed in a text rather than the feelings held towards the text's author. As an example of how these differ, consider the comment "Competition is good for a healthy economy."[35] Using a pre-trained sentiment detection model developed for analyzing financial sentiment data, FinBERT, [36] this statement is judgment to have positive sentiment. However, it is correctly judged to oppose the merger by the stance detection model used above.

This paper uses the pre-trained model documented in Laurer et al. (2024) to detect the stances of each comment left on the docket. The use of a pre-trained model allows for significant time savings, as it does not require the researcher to manually create a training data set, but allows for the possibility of significant errors should the text being examined differ significantly from the training data. Furthermore, this model is capable of "zero-shot" classification, in which it adapts to a new classification task described in regular language that it has not been previously trained for.

Each comment is assessed for the probabilities that each comment agrees with the statements "The author of this comment {approves of, disagrees with} the merger." As these statements are mutually exclusive, the probabilities assigned for each comment sum to 1. As documented in Figure 24, most comments

[35]This is an actual comment left on the regulatory docket.

[36]Model documentation is contained in Araci (2019)

are strongly polarized, suggesting that the language model had little difficulty in assigning stances to comments. Looking over some example comments, all are sorted as would be expected based on my understanding of the text.

Table 26 contains summary statistics for these comments. Most comments approve of the merger. However, of those comments which are unique, the vast majority disapprove of the merger. On average, comments which approve of the merger are longer than those that disapprove. This table provides a helpful demonstration of the difference between the stance detection and sentiment detection problems - the majority of disapproving comments expressed their views with neutral sentiment. Finally, the table documents the state of origin for the comments.

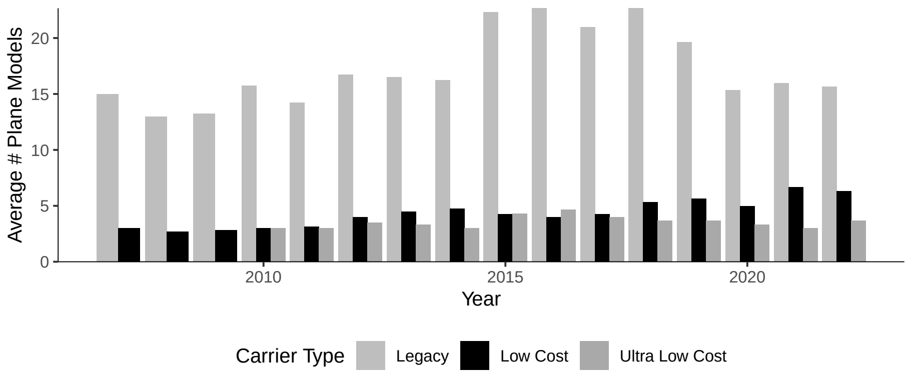
Figure 23 plots the distribution of submitted comments on each day after the regulation was available for commenting upon. In the first twenty days, virtually every comment left on the docket supported the merger. Following the twenty second day, virtually every comment left on the docket opposed the merger. This may reflect asymmetry in the the resources available to JetBlue, Spirit, and anti-merger consumer welfare organizations.[37].

[37]The exact legitimacy of the sentiments in these duplicate comments was a matter of some public debate, with some lawmakers alleging that they represented an "astroturf campaign"(Birnbaum, 2023)

C Figures and Tables

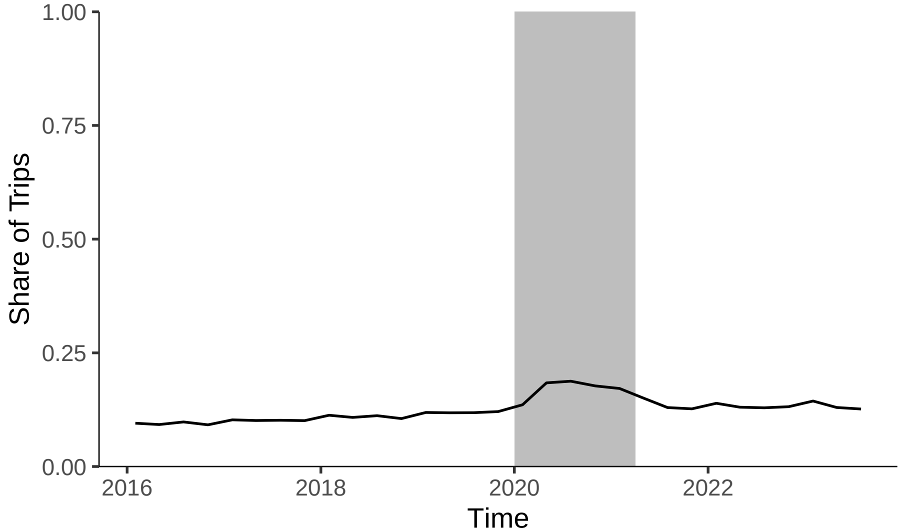
C.1 Descriptive Figures and Tables: Aviation Industry

Figure 1: Variety in Fleet Composition



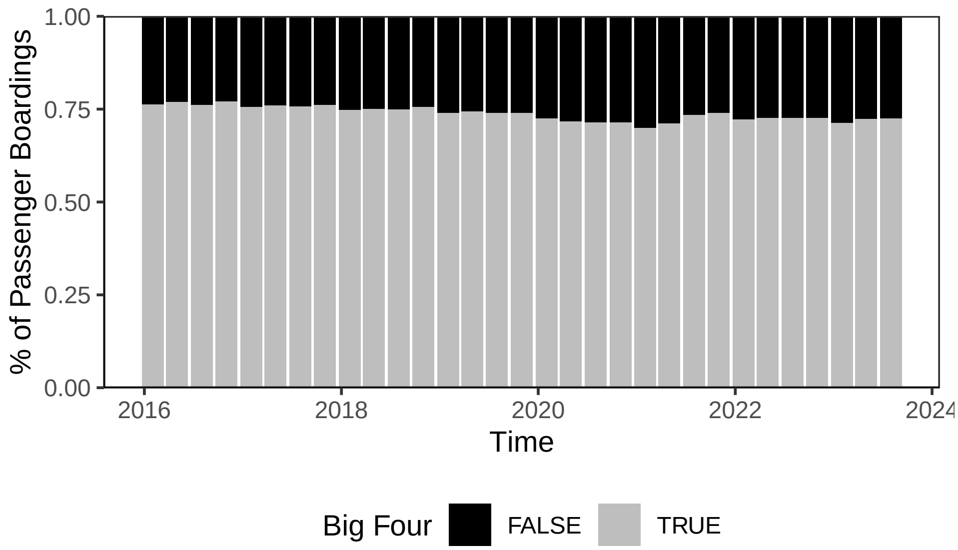
Source: B-43 Inventory Data. Legacy Carriers are Delta Air Lines, American Airlines, US Airways, and United Air Lines. Low Cost Carriers are Virgin America, JetBlue Airways, Southwest Airlines, and Alaska Airlines. Ultra Low Cost Carriers are Spirit Air Lines, Allegiant Air, and Frontier Airlines. Ultra Low Cost Carriers are included as LCC until they adopt the ULCC business model in 2010, 2012, and 2013 respectively.

Figure 2: Ultra-Low Cost Carrier Share of Trips



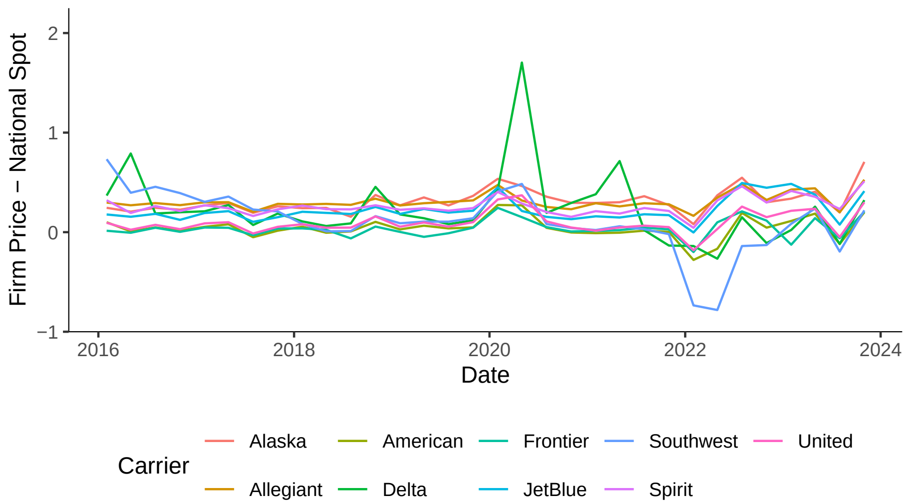
Derived from DB1B data. Ultra-Low Cost Carriers are Spirit, Frontier, and Allegiant. Shaded region depicts the duration of the coronavirus pandemic before widespread vaccine availability within the United States. Unidirectional trips are plotted, as such, a round-way trip is counted twice.

Figure 3: Big Four Ridership Over Time



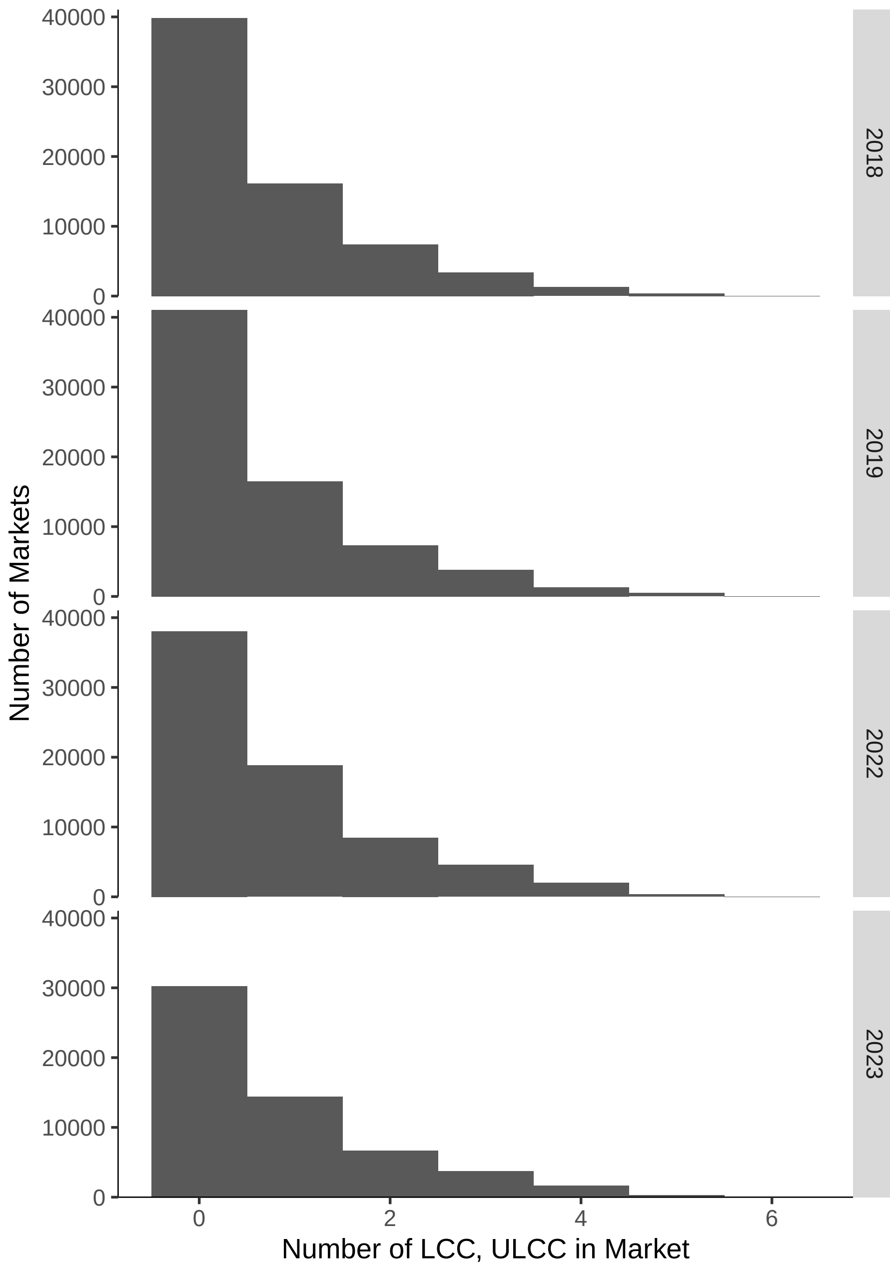
Derived from DB1B data. The "Big Four" carriers are the legacy carriers Delta, United, and American as well as the largest low-cost carrier, Southwest Airlines.

Figure 4: Jet Fuel Price, By Firm



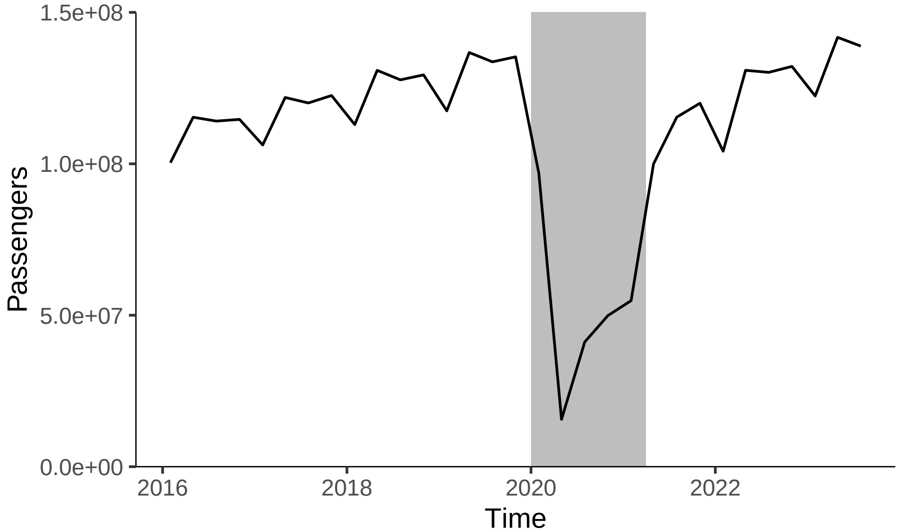
Source: Schedule P-12 Financial Filings, Energy Information Administration Jet Fuel Spot Price Time Series. Each line is the difference between the reported quarterly expenditure on fuel for each firm and the national average spot price of oil within the quarter.

Figure 5: Number of Low Cost, Ultra-Low Cost Carriers in Each Market



Source: DB1B Data. Markets are defined as a set of Year, Quarter, Origin Airport, and Destination Airport. Within this graph, only the major low-cost and ultra-low cost carriers are graphed (Southwest, JetBlue, Alaska, Hawaiian, Spirit, Allegiant, Frontier).

Figure 6: Quarterly Passengers, All Carriers



Source: DB1B Data. Shaded region depicts the duration of the coronavirus pandemic before widespread vaccine availability within the United States, namely, from the first quarter of 2020 through the first quarter of 2021.

C.2 Descriptive Figures and Tables: Northeast Alliance

Table 1: Northeast Alliance Timeline

Year	Date	Event
2020	Quarter 1-2	JetBlue and American Negotiate Alliance
	July 16	Northeast Alliance Announced
	July 22	Alliance Agreement submitted to DOT
2021	January 10	DOT Terminates Antitrust Review
	February 24	Codesharing Agreement Begins on X Routes
	May 26	Reciprocal Loyalty Earnings Begins
	Early September	NEA Shuttle at JFK Opens
	September 21	DOJ Files Lawsuit Against NEA
2022	September 27 - November 18	NEA-Trial
2023	May 19	NEA Ruled Anticompetitive
	July 5	JetBlue Drops Appeal Plans
	July 21	NEA Codesharing Ends
	October 31	JFK Shuttle Ceases Operation
	October 31	12 Slot Leases to JetBlue Terminate
2024	March 31	27 Slot Leases to JetBlue Terminate
	March 31	1 Slot Lease to American Terminates
	October 26	Remaining NEA Slot Leases Terminate

Table 2: American, JetBlue Overlap at NEA Airports

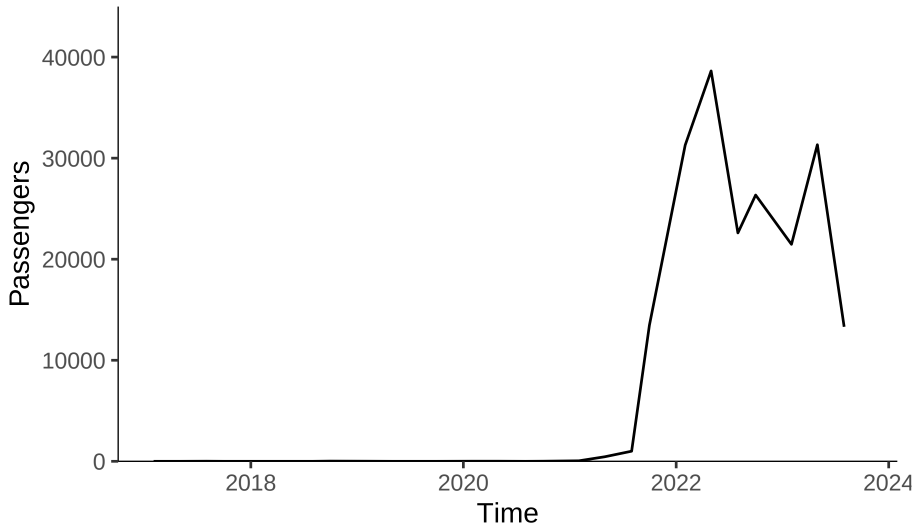
	JFK		BOS		LGA		EWR	
Year	Ticket	Operating	Ticket	Operating	Ticket	Operating	Ticket	Operating
Q1								
2023	75.4	23.7	69.1	21.4	67.3	4.2	46.7	7.7
2022	77.0	29.7	75.0	29.1	73.9	8.9	47.6	8.3
2021	18.6	24.4	26.8	21.7	50.0	33.3	9.5	13.6
2019	22.4	23.3	22.9	20.0	8.1	6.7	0.0	0.0
Q2								
2023	70.0	15.9	63.1	22.2	68.3	5.4	46.7	7.7
2022	68.3	26.5	70.3	21.9	75.0	6.4	45.5	17.4
2021	57.7	21.1	57.4	28.6	27.3	7.4	28.6	13.6
2019	21.1	21.0	21.2	25.0	8.9	5.6	0.0	0.0
Q3								
2023	69.0	16.9	63.9	19.0	61.0	4.1	40.0	7.7
2022	73.8	21.9	73.8	24.2	75.9	6.4	57.1	7.1
2021	63.6	25.9	58.9	23.1	30.4	3.2	37.5	14.8
2019	19.6	20.3	21.6	21.6	8.9	5.6	0.0	0.0
Q4								
2022	72.1	25.4	66.1	21.1	69.8	2.0	46.7	7.7
2021	71.9	25.8	73.2	23.2	75.0	4.3	43.5	7.7
2019	15.3	17.5	22.0	19.2	6.8	5.4	0.0	0.0

Each cell is the percent of markets originating from the specified airport with both carriers present in the market as ticket issuing carriers or the carrier who operated flights within the market.

Table 3: Exposure to Northeast Alliance

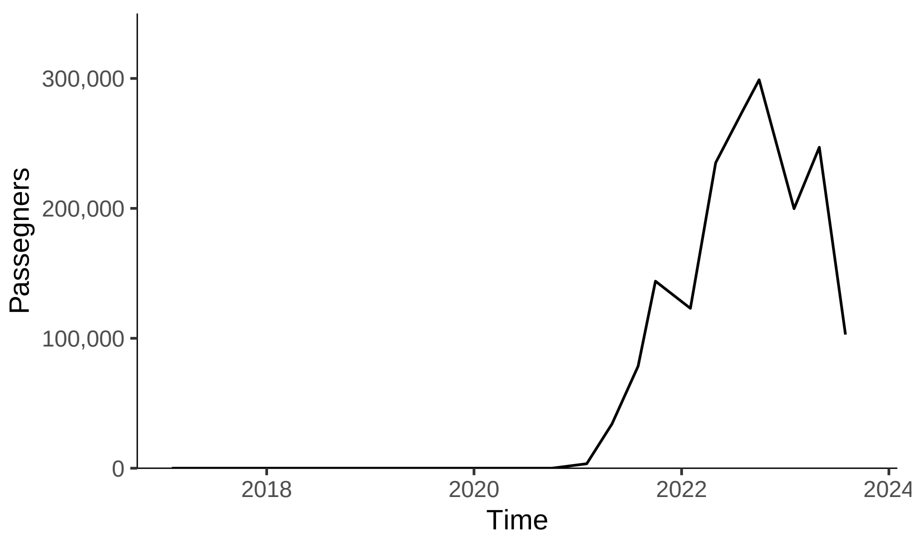
A "NEA Route" is a direct flight with either origin or destination that is BOS, JFK, LGA, EWR. "% NEA Passengers" refers to the share of an airline's passengers that had itinerary with origin, destination, or intermediate stop at one of BOS, JFK, LGA, EWR. "% NEA Revenues" is the percentage of an airline's revenue within the domestic United States generated by the aforementioned passengers, calculated by multiplying the number of passengers of an itinerary by its average fare. It does not account for inter firm transfers in the case of JetBlue and American.

Figure 7: American-JetBlue Joint Itinerary



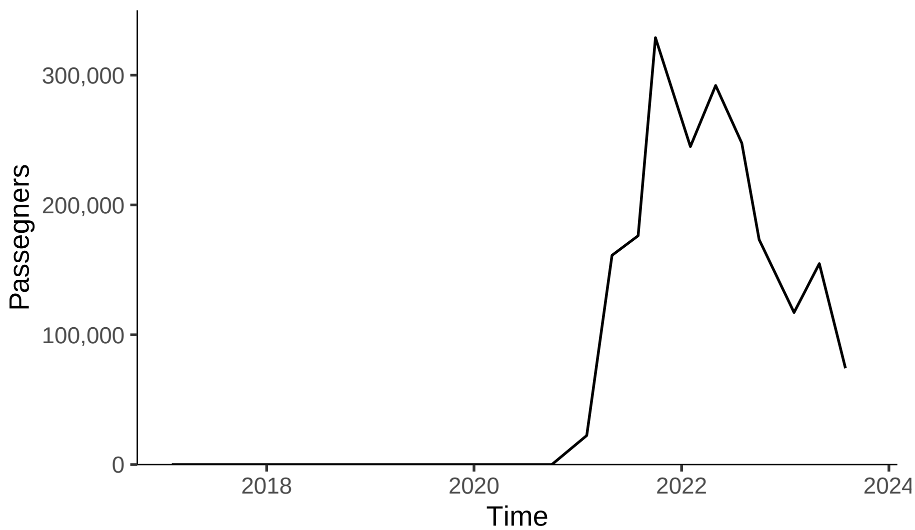
This figure plots ten times the number of passengers recorded in the DB1B who flew on an itinerary with two legs that includes both JetBlue and American as the operating carriers.

Figure 8: American Ticket, JetBlue Operated



This figure plots ten times the number of passengers recorded in the DB1B who flew on an itinerary with American indicated as the ticketing carrier and JetBlue indicated as the operating carrier for at least one leg of the journey. Only itineraries with one layover or fewer are included.

Figure 9: JetBlue Ticket, American Operated



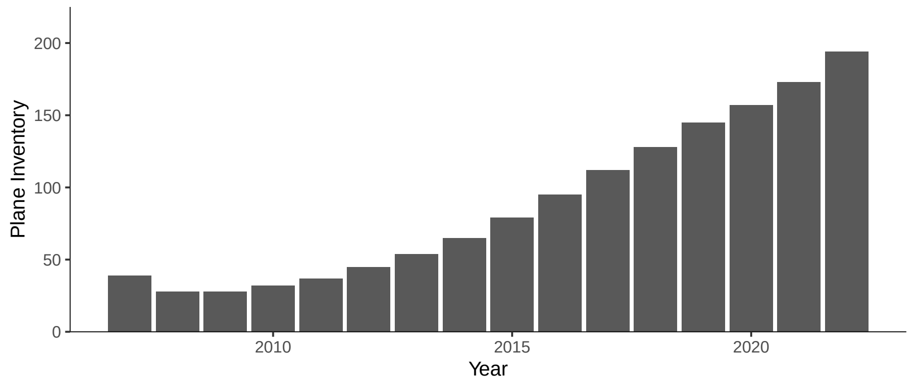
This figure plots ten times the number of passengers recorded in the DB1B who flew on an itinerary with JetBlue indicated as the ticketing carrier and American indicated as the operating carrier for at least one leg of the journey. Only itineraries with one layover or fewer are included.

C.3 Descriptive Figures and Tables: JetBlue, Spirit

Table 4: JetBlue-Spirit Merger Timeline

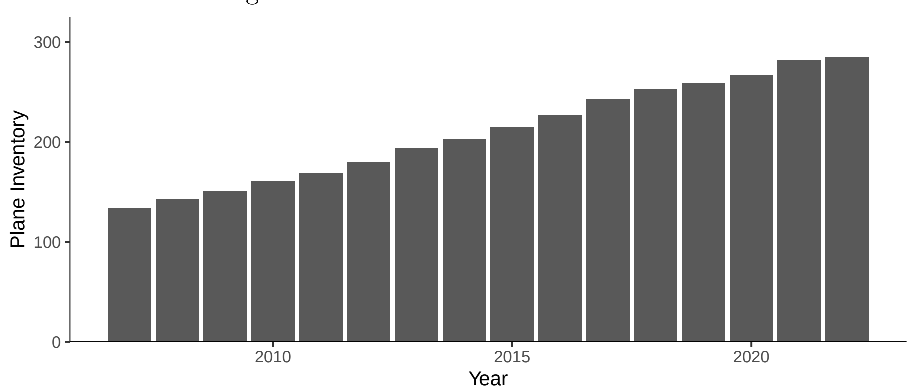
Year	Date	Event
2022	February 7	Frontier-Spirit Merger Announced
	April 5	First JetBlue Offer for Spirit Released
	May 6	Spirit Rejects JetBlue Offer
	July 27	Frontier-Spirit Merger Attempt Collapses
	July 28	Spirit Board Approves JetBlue Merger
	October 19	Spirit Shareholders Approve Merger
2023	March 7	Department of Justice Files Suit
	October 31 - December 5	JetBlue-Spirit Merger Trial
2024	January 16	JetBlue-Spirit Merger Blocked
	March 4	JetBlue, Spirit Drop Appeal Plans

Figure 10: Spirit Fleet Size Over Time



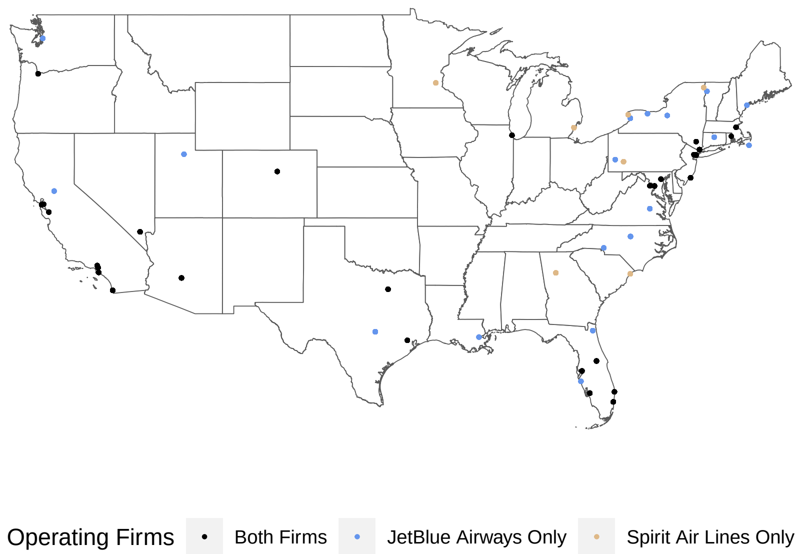
Source: B-43 Inventory Data. Each bar is the number of airplanes in Spirit's inventory within a given year.

Figure 11: JetBlue Fleet Size Over Time



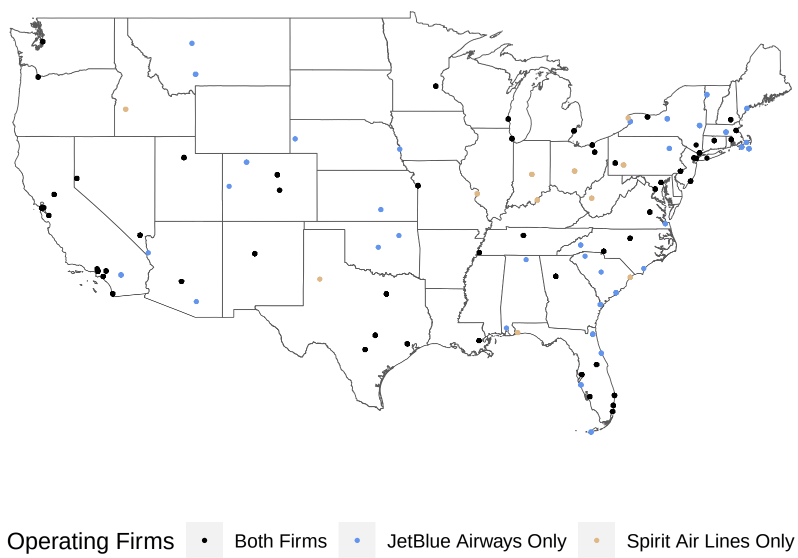
Source: B-43 Inventory Data. Each bar is the number of airplanes in Spirit's inventory within a given year.

Figure 12: JetBlue, Spirit Airports - 2012



Derived from DB1B Data. Beyond the United States mainland, both carriers operated in Puerto Rico.

Figure 13: JetBlue, Spirit Airports - 2022



Derived from DB1B Data. Beyond the United States mainland, both carriers operated in Puerto Rico.

Table 5: JetBlue, Spirit Fleet Composition - 2022

Manufacturer	Model	Seats	Count	Total Seats
JetBlue				
Airbus	A220	140	14	1960
Airbus	A320	150	11	1650
Airbus	A320	162	119	19278
Airbus	A321	159	35	5565
Airbus	A321	200	28	5600
Airbus	A321neo	138	5	690
Airbus	A321neo	160	2	320
Airbus	A321neo	200	16	3200
Embraer	E190	100	55	5500
Spirit				
Airbus	A319	145	31	4495
Airbus	A320	182	133	24206
Airbus	A321	228	30	6840

Source: B-43 Inventory Data.

Table 6: JetBlue and Spirit: Overlap Cities - 2022

City	Firm Passengers	Total Passengers	Share
Ponce, PR	106320	106320	1.000
Aguadilla, PR	251180	321170	0.782
San Juan, PR	1848180	4149260	0.445
Boston, MA	4262240	12136460	0.351
West Palm Beach/Palm Beach, FL	919690	2960650	0.311
Miami, FL	5885260	19049140	0.309
Charlotte Amalie, VI	155220	584450	0.266
New York, NY	8243150	32401400	0.254
Hartford, CT	596840	2358950	0.253
Orlando, FL	4890200	19981730	0.245
Fort Myers, FL	964970	4577540	0.211
Detroit, MI	1330090	7481070	0.178
Cleveland, OH	567000	3537960	0.160
Richmond, VA	235760	1474130	0.160
New Orleans, LA	774190	4909390	0.158
Las Vegas, NV	2783710	18384770	0.151
Tampa, FL	1371860	9955070	0.138
Pittsburgh, PA	391900	3023570	0.130
Los Angeles, CA	2839960	22400620	0.127
Philadelphia, PA	844170	7694760	0.110

Derived from DB1B Data. Cities are ordered by the combined share of passengers who used JetBlue or Spirit flights as a share of the total passengers departing from the city within 2022. Cities in which only one firm operates are excluded.

C.4 Estimation Results: Northeast Alliance

Table 7: Probability of American, JetBlue Operating Switch

	Model 1
(Intercept)	0.00017 (0.00004)***
NEA_Market	−0.00017 (0.00004)***
NEA_Market:Period-8	0.00000 (0.00000)
NEA_Market:Period-7	−0.00000 (0.00000)
NEA_Market:Period-6	0.00000 (0.00000)
NEA_Market:Period-5	−0.00000 (0.00000)
NEA_Market:Period-4	−0.00000 (0.00000)
NEA_Market:Period-3	0.00000 (0.00000)
NEA_Market:Period-2	−0.00000 (0.00000)
NEA_Market:Period0	0.00754 (0.00168)***
NEA_Market:Period1	0.01365 (0.00217)***
NEA_Market:Period2	0.08151 (0.00464)***
NEA_Market:Period3	0.10847 (0.00505)***
NEA_Market:Period4	0.10972 (0.00504)***
NEA_Market:Period5	0.07936 (0.00437)***
NEA_Market:Period6	0.09448 (0.00480)***
NEA_Market:Period7	0.08864 (0.00461)***
NEA_Market:Period8	0.11332 (0.00506)***
R^2	0.08355
Adj. R^2	0.08347
Num. obs.	198872

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Dependent variable is the probability that within a market, at least one passenger took planes operated by both American and JetBlue as part of their itinerary. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019.Standard errors are clustered at the level of origin, destination airport pairs.

Figure 14: Probability of American, JetBlue Codeshares Observed

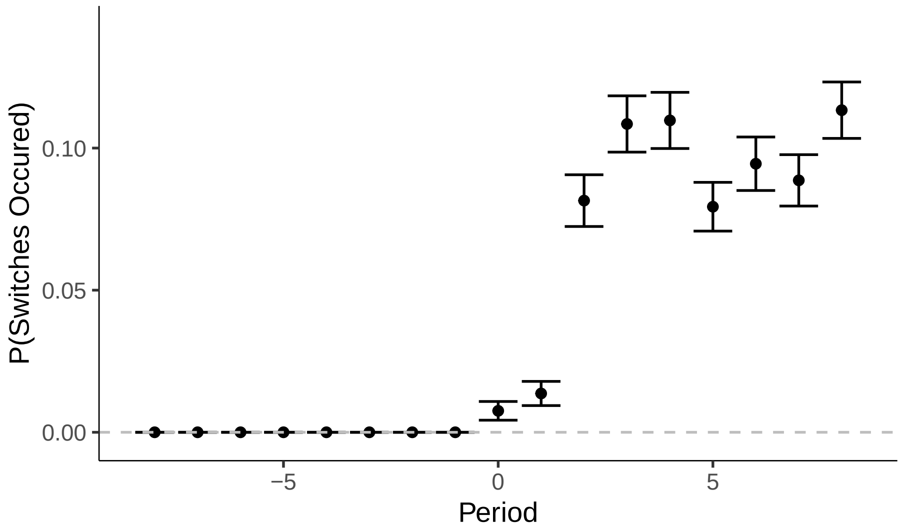


Figure plots the estimated event study coefficients from Table 7. Dependent variable is the probability that within a market, at least one passenger took planes operated by both American and JetBlue as part of their itinerary. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019.

Figure 15: American, JetBlue Fare Difference

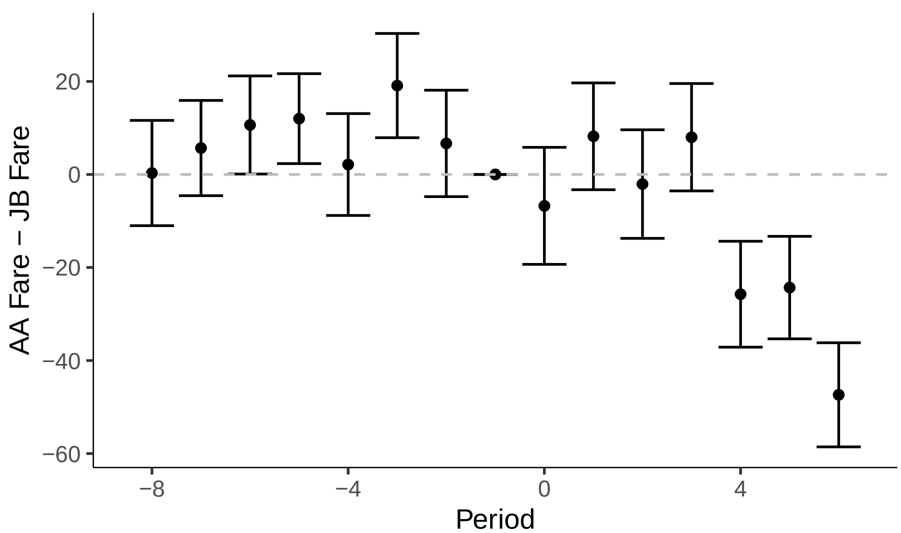


Figure plots the estimated event study coefficients from Table 8 Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019.

Table 8: American, JetBlue Fare Difference

	Model 1	Model 2	Model 3	Model 4	Model 5
NEA_Market:Period-8	−0.26906	0.30596		−0.29184	
	(5.75228)	(5.77309)		(5.75995)	
NEA_Market:Period-7	5.09132	5.67806		5.13022	
	(5.17678)	(5.22338)		(5.19612)	
NEA_Market:Period-6	10.03942*	10.63729**		10.14576*	
	(5.35652)	(5.38161)		(5.37598)	
NEA_Market:Period-5	11.76106**	12.00179**		11.84893**	
	(4.92281)	(4.93152)		(4.93757)	
NEA_Market:Period-4	2.18901	2.13655	1.98855	2.14272	1.95626
	(5.58228)	(5.58620)	(5.59391)	(5.57950)	(5.59321)
NEA_Market:Period-3	19.12171***	19.10709***	19.07312***	19.35021***	19.47877***
	(5.73553)	(5.71661)	(5.72866)	(5.75325)	(5.76216)
NEA_Market:Period-2	6.44965	6.67093	6.51433	6.53793	6.69157
	(5.83867)	(5.83683)	(5.84524)	(5.85405)	(5.85874)
NEA_Market:Period0	−7.25121	−6.75069	−7.08500	−7.16336	−7.06777
	(6.41124)	(6.41684)	(6.42156)	(6.41050)	(6.41885)
NEA_Market:Period1	7.49030	8.20226	7.10715	7.62169	6.14813
	(5.86068)	(5.85658)	(5.90042)	(5.85369)	(5.88378)
NEA_Market:Period2	−4.28124	−2.06886	−2.11545	−4.84285	−3.70597
	(5.97452)	(5.95494)	(5.93054)	(5.95360)	(5.92021)
NEA_Market:Period3	6.88578	8.00691	6.39743	6.51208	3.90301
	(5.91318)	(5.88990)	(5.93723)	(5.90607)	(5.92192)
NEA_Market:Period4	−27.21576***	−25.74536***		−27.46203***	
	(5.80239)	(5.80982)		(5.80723)	
NEA_Market:Period5	−26.01830***	−24.31807***		−26.10865***	
	(5.61729)	(5.62150)		(5.60841)	
NEA_Market:Period6	−48.46402***	−47.36784***		−48.99718***	
	(5.71876)	(5.70989)		(5.71473)	
NEA_Market:Period7	−47.09005***			−47.65451***	
	(5.89402)			(5.89024)	
NEA_Market:Period8	−45.42148***			−46.27267***	
	(5.59951)			(5.57531)	
Standard Controls	Yes	Yes	Yes	Yes	Yes
Income Data		MSA	MSA	State	State
Sample	Full	Full	Two Years	Full	Two Years
R^2	0.09762	0.07689	0.03263	0.10155	0.04425
Adj. R^2	0.09545	0.07449	0.02960	0.09933	0.04127
Num. obs.	15838	13534	6712	15838	6748

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Dependent variable is the difference of the average fare within a market of American Airlines less the average fare of JetBlue. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019. Standard errors are clustered at the level of origin, destination airport pairs.

Table 9: American, JetBlue Yield Difference

	Model 1	Model 2	Model 3	Model 4	Model 5
NEA_Market:Period-8	0.00726	0.00694		0.00725	
	(0.00579)	(0.00576)		(0.00578)	
NEA_Market:Period-7	0.01378**	0.01326**		0.01381**	
	(0.00595)	(0.00591)		(0.00594)	
NEA_Market:Period-6	0.01266**	0.01191**		0.01274**	
	(0.00549)	(0.00545)		(0.00549)	
NEA_Market:Period-5	0.00666	0.00642		0.00672	
	(0.00515)	(0.00513)		(0.00514)	
NEA_Market:Period-4	0.00219	0.00197	0.00220	0.00215	0.00234
	(0.00478)	(0.00475)	(0.00477)	(0.00478)	(0.00480)
NEA_Market:Period-3	0.00695	0.00684	0.00698	0.00712	0.00728
	(0.00463)	(0.00462)	(0.00463)	(0.00462)	(0.00463)
NEA_Market:Period-2	0.00886*	0.00859*	0.00858*	0.00892*	0.00892*
	(0.00508)	(0.00505)	(0.00506)	(0.00507)	(0.00507)
NEA_Market:Period0	0.00933*	0.00886*	0.00954*	0.00939*	0.01012*
	(0.00532)	(0.00527)	(0.00526)	(0.00532)	(0.00529)
NEA_Market:Period1	0.02109***	0.02124***	0.02080***	0.02119***	0.02065***
	(0.00537)	(0.00531)	(0.00529)	(0.00535)	(0.00531)
NEA_Market:Period2	0.01420***	0.01417***	0.01564***	0.01379**	0.01521***
	(0.00539)	(0.00536)	(0.00535)	(0.00539)	(0.00536)
NEA_Market:Period3	0.01652***	0.01754***	0.01642***	0.01624***	0.01494***
	(0.00547)	(0.00541)	(0.00541)	(0.00545)	(0.00543)
NEA_Market:Period4	−0.00850	−0.00878*		−0.00868	
	(0.00530)	(0.00529)		(0.00529)	
NEA_Market:Period5	−0.00560	−0.00544		−0.00566	
	(0.00531)	(0.00531)		(0.00530)	
NEA_Market:Period6	−0.02115***	−0.02175***		−0.02154***	
	(0.00585)	(0.00586)		(0.00586)	
NEA_Market:Period7	−0.02522***			−0.02563***	
	(0.00588)			(0.00590)	
NEA_Market:Period8	−0.01742***			−0.01804***	
	(0.00589)			(0.00592)	
Standard Controls	Yes	Yes	Yes	Yes	Yes
Income Data		MSA	MSA	State	State
Sample	Full	Full	Two Years	Full	Two Years
R^2	0.14162	0.13168	0.12855	0.14334	0.12850
Adj. R^2	0.13956	0.12943	0.12582	0.14123	0.12578
Num. obs.	15838	13534	6712	15838	6748

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Dependent variable is the difference of the average yield within a market of American Airlines less the average yield of JetBlue. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019. Standard errors are clustered at the level of origin, destination airport pairs.

Figure 16: American, JetBlue Yield Difference

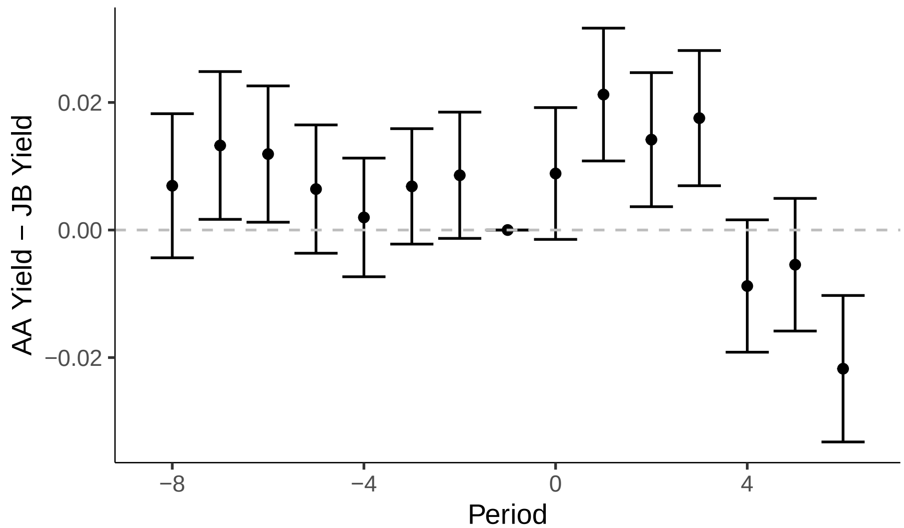


Figure plots the estimated event study coefficients from Table 9 Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019.

Figure 17: NEA Market Fare Graph

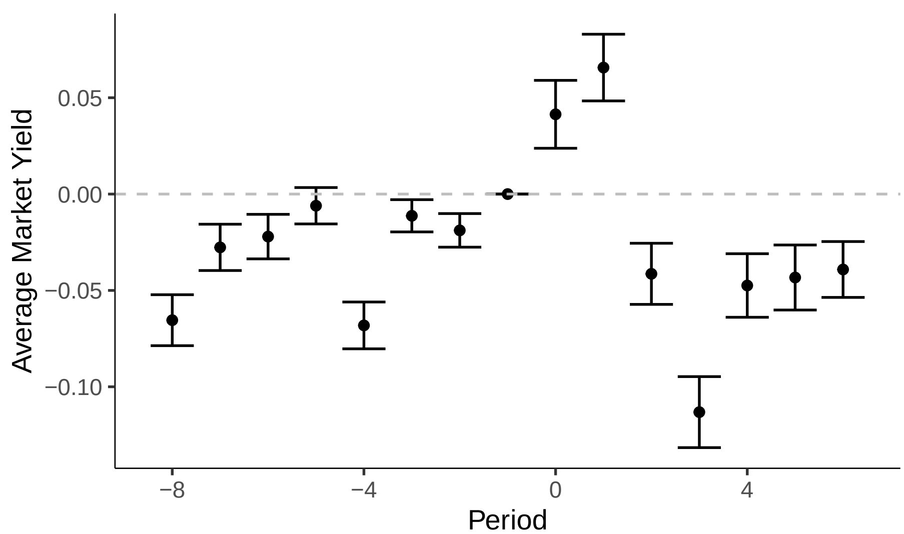


Figure plots the event study coefficients from the second column of Table 10. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded, and as such, Period -1 is the fourth quarter of 2019. Standard errors clustered at the level of origin-destination pairs are reported.

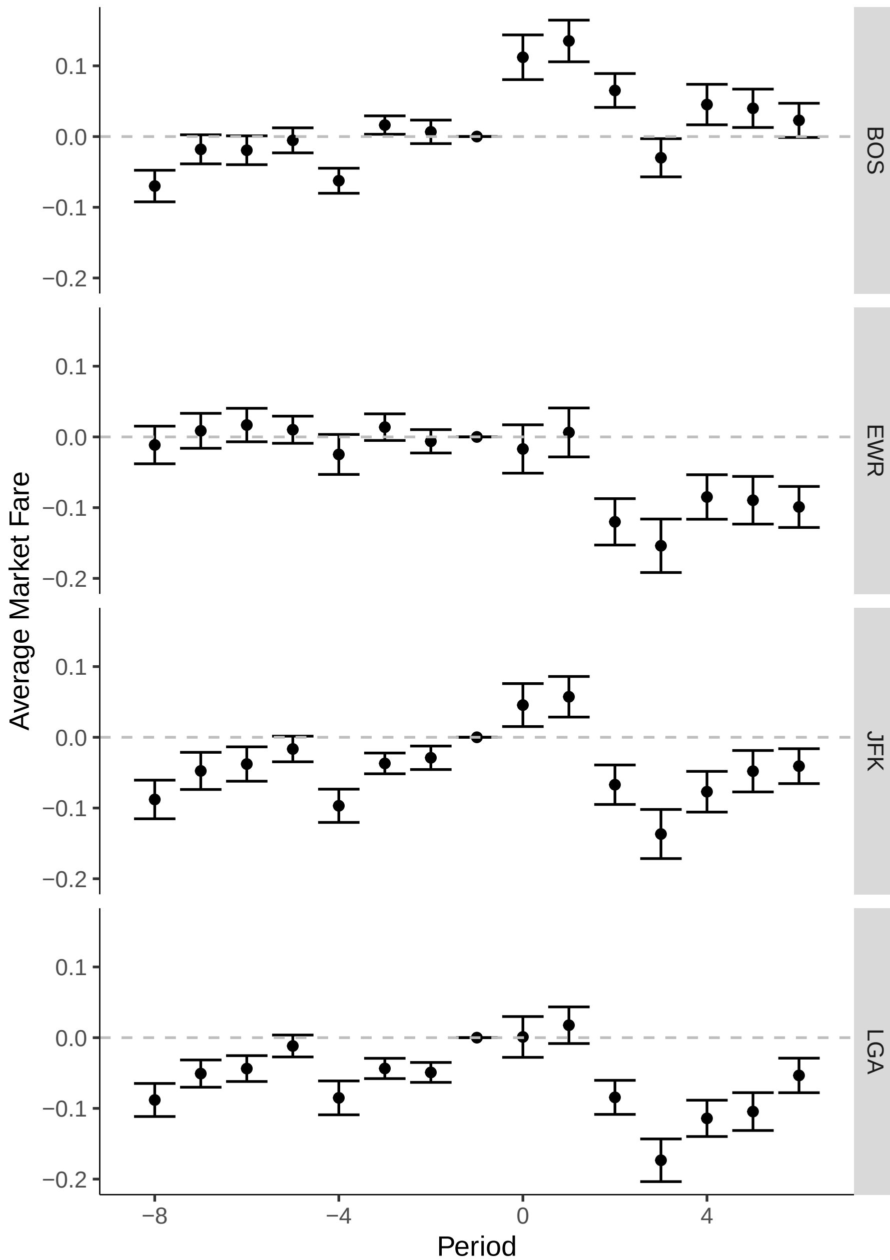
Table 10: NEA Market Fare Effects

	Model 1	Model 2	Model 3	Model 4	Model 5
Period-8:NEA_Market	-0.06093^{***}	-0.06545^{***}		-0.06149^{***}	
	(0.00664)	(0.00675)		(0.00663)	
Period-7:NEA_Market	-0.03008^{***}	-0.02766^{***}		-0.03077^{***}	
	(0.00596)	(0.00613)		(0.00598)	
Period-6:NEA_Market	-0.02430^{***}	-0.02207^{***}		-0.02500^{***}	
	(0.00568)	(0.00590)		(0.00568)	
Period-5:NEA_Market	-0.00537	-0.00605		-0.00556	
	(0.00461)	(0.00482)		(0.00462)	
Period-4:NEA_Market	-0.06602^{***}	-0.06815^{***}	-0.06869^{***}	-0.06602^{***}	-0.06684^{***}
	(0.00593)	(0.00620)	(0.00619)	(0.00593)	(0.00592)
Period-3:NEA_Market	-0.00866^{**}	-0.01127^{***}	-0.01095^{**}	-0.00908^{**}	-0.00882^{**}
	(0.00414)	(0.00426)	(0.00427)	(0.00414)	(0.00415)
Period-2:NEA_Market	-0.01608^{***}	-0.01884^{***}	-0.01884^{***}	-0.01605^{***}	-0.01589^{***}
	(0.00423)	(0.00445)	(0.00446)	(0.00424)	(0.00425)
Period0:NEA_Market	0.04131^{***}	0.04139^{***}	0.04623^{***}	0.04300^{***}	0.04780^{***}
	(0.00864)	(0.00899)	(0.00890)	(0.00864)	(0.00856)
Period1:NEA_Market	0.06181^{***}	0.06565^{***}	0.06706^{***}	0.06603^{***}	0.06476^{***}
	(0.00844)	(0.00883)	(0.00863)	(0.00848)	(0.00825)
Period2:NEA_Market	-0.03614^{***}	-0.04139^{***}	-0.03698^{***}	-0.03359^{***}	-0.02903^{***}
	(0.00772)	(0.00809)	(0.00806)	(0.00771)	(0.00769)
Period3:NEA_Market	-0.11464^{***}	-0.11316^{***}	-0.11499^{***}	-0.10779^{***}	-0.11289^{***}
	(0.00907)	(0.00940)	(0.00935)	(0.00904)	(0.00902)
Period4:NEA_Market	-0.04538^{***}	-0.04744^{***}		-0.04056^{***}	
	(0.00815)	(0.00841)		(0.00818)	
Period5:NEA_Market	-0.04386^{***}	-0.04329^{***}		-0.03753^{***}	
	(0.00823)	(0.00861)		(0.00830)	
Period6:NEA_Market	-0.04305^{***}	-0.03913^{***}		-0.03879^{***}	
	(0.00714)	(0.00739)		(0.00715)	
Period7:NEA_Market	-0.09082^{***}			-0.08535^{***}	
	(0.00841)			(0.00840)	
Period8:NEA_Market	-0.03599^{***}			-0.03165^{***}	
	(0.00761)			(0.00765)	
Standard Controls	Yes	Yes	Yes	Yes	Yes
Income Data		MSA	MSA	State	State
Sample	Full	Full	Two Years	Full	Two Years
R^2	0.35837	0.38143	0.38745	0.36193	0.37198
Adj. R^2	0.35829	0.38134	0.38734	0.36184	0.37189
Num. obs.	322253	241722	127591	322253	148797

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Dependent variable is the average log-market fare within a market. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019. "Standard controls" are the log of mean population between the origin and destination metropolitan statistical areas, prescence of Spirit and Southwest, per-capita origin and destination state-level coronavirus cases, and lagged HHI. Standard errors clustered at the level of origin-destination pairs are reported.

Figure 18: NEA Market Fare - Airport Interactions



Coefficients from a model based on the model reported in Table 10 but which includes airport-time interaction terms are reported. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded, and as such, Period -1 is the fourth quarter of 2019. Standard errors clustered at the level of origin-destination pairs are reported.

Table 11: NEA Market Yield Effects

	Model 1	Model 2	Model 3	Model 4	Model 5
Period-8:NEA_Market	-0.08000^{***}	-0.08162^{***}		-0.07753^{***}	
	(0.00882)	(0.00962)		(0.00889)	
Period-7:NEA_Market	-0.02815^{***}	-0.02162^{**}		-0.02514^{***}	
	(0.00821)	(0.00888)		(0.00823)	
Period-6:NEA_Market	-0.01493^{**}	-0.00918		-0.01187	
	(0.00739)	(0.00807)		(0.00754)	
Period-5:NEA_Market	-0.00698	-0.00511		-0.00616	
	(0.00663)	(0.00716)		(0.00674)	
Period-4:NEA_Market	-0.07518^{***}	-0.07894^{***}	-0.07924^{***}	-0.07520^{***}	-0.07604^{***}
	(0.00788)	(0.00861)	(0.00867)	(0.00800)	(0.00811)
Period-3:NEA_Market	-0.00889	-0.01389^{**}	-0.01384^{**}	-0.00704	-0.00722
	(0.00593)	(0.00639)	(0.00644)	(0.00602)	(0.00611)
Period-2:NEA_Market	-0.01290^{**}	-0.01607^{***}	-0.01600^{***}	-0.01304^{**}	-0.01287^{**}
	(0.00545)	(0.00575)	(0.00579)	(0.00556)	(0.00563)
Period0:NEA_Market	0.04640^{***}	0.05172^{***}	0.05361^{***}	0.03899^{***}	0.04138^{***}
	(0.01202)	(0.01262)	(0.01270)	(0.01213)	(0.01226)
Period1:NEA_Market	0.03369^{***}	0.02983^{**}	0.04128^{***}	0.01512	0.02947^{**}
	(0.01143)	(0.01215)	(0.01220)	(0.01149)	(0.01158)
Period2:NEA_Market	-0.03452^{***}	-0.04367^{***}	-0.04492^{***}	-0.04575^{***}	-0.04687^{***}
	(0.01043)	(0.01120)	(0.01117)	(0.01059)	(0.01057)
Period3:NEA_Market	-0.15703^{***}	-0.18626^{***}	-0.17382^{***}	-0.18717^{***}	-0.17194^{***}
	(0.01177)	(0.01276)	(0.01260)	(0.01222)	(0.01206)
Period4:NEA_Market	-0.05185^{***}	-0.07729^{***}		-0.07303^{***}	
	(0.01130)	(0.01225)		(0.01155)	
Period5:NEA_Market	-0.06236^{***}	-0.08833^{***}		-0.09020^{***}	
	(0.01101)	(0.01191)		(0.01114)	
Period6:NEA_Market	-0.04272^{***}	-0.06610^{***}		-0.06146^{***}	
	(0.01057)	(0.01138)		(0.01076)	
Period7:NEA_Market	-0.10804^{***}			-0.13213^{***}	
	(0.01153)			(0.01181)	
Period8:NEA_Market	-0.03603^{***}			-0.05512^{***}	
	(0.01071)			(0.01086)	
Standard Controls	Yes	Yes	Yes	Yes	Yes
Income Data		MSA	MSA	State	State
Sample	Full	Full	Two Years	Full	Two Years
R^2	0.15921	0.21271	0.22333	0.20110	0.21353
Adj. R^2	0.15911	0.21259	0.22319	0.20100	0.21341
Num. obs.	322253	241722	127591	322253	148797

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Dependent variable is the average log market yield within a market. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded , as such, Period -1 is the fourth quarter of 2019. "Standard controls" are the log of mean population between the origin and destination metropolitan statistical areas, prescence of Spirit and Southwest, per-capita origin and destination state-level coronavirus cases, and lagged HHI. Standard errors clustered at the level of origin-destination pairs are reported.

Figure 19: NEA Market Yield Graph

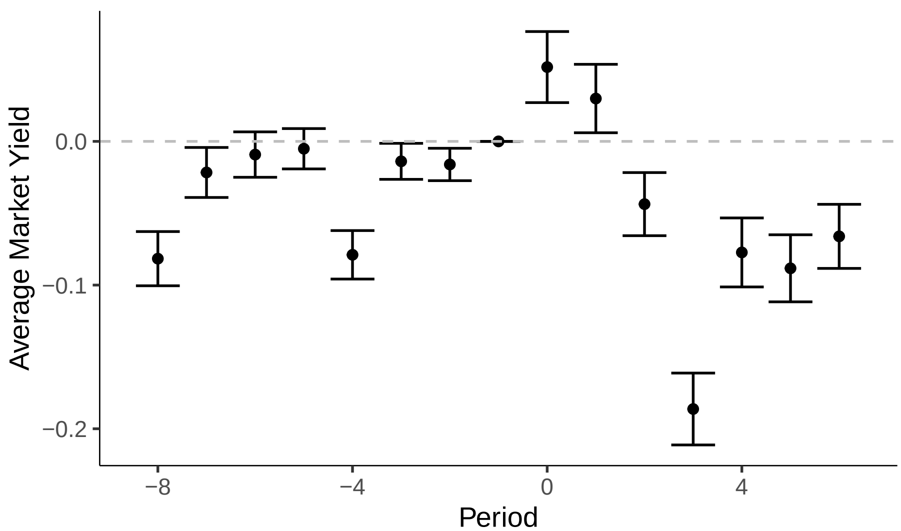
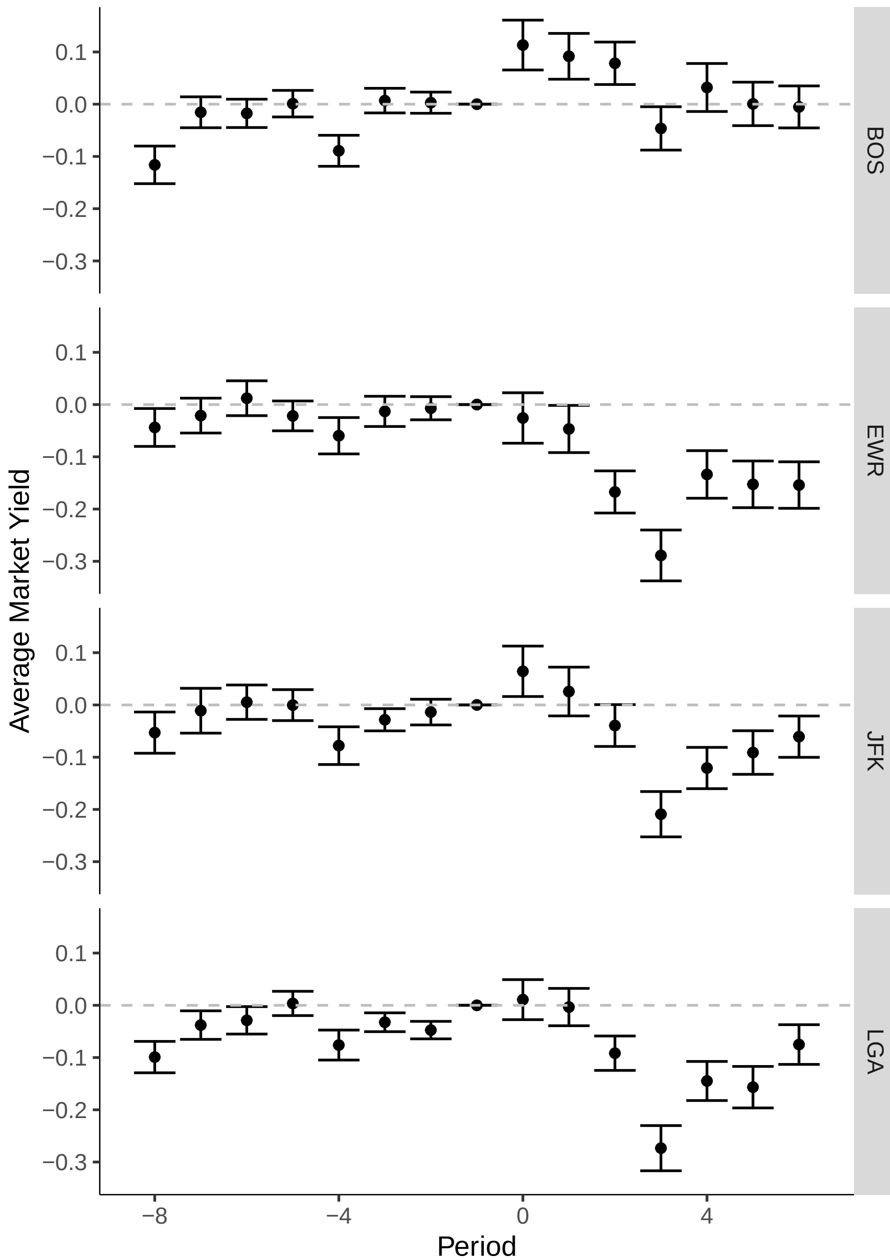


Figure plots the event study coefficients from Table 11. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded, and as such, Period -1 is the fourth quarter of 2019. Standard errors clustered at the level of origin-destination pairs are reported.

Figure 20: NEA Market Yield - Airport Interactions



Coefficients from a model based on the model reported in Table 11 but which includes airport-time interaction terms are reported. Base period is 2021 Quarter 2. All data from 2020 and the first quarter of 2021 is excluded, and as such, Period -1 is the fourth quarter of 2019. Standard errors clustered at the level of origin-destination pairs are reported.

C.5 Estimation Results: JetBlue-Spirit Merger

Table 12: Elasticity Comparison Table

Paper	Period Analyzed	Estimated Average Elasticity	Notes
Prior Literature			
Berry and Jia (2010)	1999	-1.69	
Berry and Jia (2010)	2006	-1.67	
Gayle (2013)	2006Q1 - 2006Q4	-4.72	
Ciliberto and Williams (2014)	2006Q1 - 2008Q4	-4.320	
Ciliberto and Williams (2021)	2012Q2	[-7.281, -7.063]	Median, Exogeneous
Ciliberto and Williams (2021)	2012Q2	[-4.105, -4.007]	Median, Endogeneous
Turner (2022)	2000Q3	-2.107	
Turner (2022)	2018Q3	-4.102	
New Results			
	2017Q1 - 2019Q4	-9.93	
	2021Q2 - 2023Q2	-1.687	

Table 13: Demand Estimation - Base

Variable	Post-Pandemic	Pre-Pandemic
Linear Coefficients		
Prices	-7.53***	-2.63***
	(2.5)	(0.27)
Nonstop	-2.85**	0.887
	(1.2)	(1.6)
Miles Flown	7.11***	0.846***
	(1.8)	(0.099)
Miles Flown^2	-0.749***	-0.0817***
	(0.24)	(0.022)
Extra Miles	-2.62***	-1.75***
	(0.48)	(0.078)
Tourism	-0.173	0.149***
	(0.12)	(0.022)
Nonlinear Standard Deviations		
Price	0.227	0.675***
	(0.88)	(0.083)
Nonstop	2.75***	0.716
	(0.56)	(2.4)
Nesting Coefficient		
Nesting Coefficient	0.823***	0.823***
	(0.82)	(0.01)
Summary Statistics		
Period	2017Q1-2019Q4	2021Q2:2023Q2
N Products	284830	337137
N Markets	85841	111587
Mean Elasticity	-47.404	-3.557
Spirit Mean Elasticity	-37.28	-2.23
JetBlue Mean Elasticity	-66.43	-3.5
Mean Markup	0.031	0.294

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$ Products are defined as a Carrier-Nonstop pair within an Origin-Destination-Year-Quarter market. Origin Service Ratio is the fraction of direct routes out of the originating airport operated by the carrier divided by the number of distinct direct routes out fo that airport. Extra Miles is the average additional miles flown with a connecting itinerary minus the minimum miles flown within a market. A tourist product is one that serves the Las Vegas metropolitan statistical area or an airport in Florida.

Table 14: Demand Estimation - Optimal Instruments

Variable	Post-Pandemic	Pre-Pandemic
Price	-3.113	-2.943
	(0.46)	(0.37)
Price	0.594	0.59
	(0.13)	(0.14)
Nesting Parameter	0.113	0.137
	(0.018)	(0.032)
Period	2017Q1-2019Q4	2021Q2-2023Q2
N Products	265196	307849
N Markets	70016	87363
Mean Elasticity	-5.238	-5.327
Spirit Mean Elasticity	-3.44	-3.14
JetBlue Mean Elasticity	-5.2	-5.16
Mean Markup	0.209	0.203

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$ Products are defined as a Carrier-Nonstop pair within an Origin-Destination-Year-Quarter market. Origin Service Ratio is the fraction of direct routes out of the originating airport operated by the carrier divided by the number of distinct direct routes out fo that airport. Extra Miles is the average additional miles flown with a connecting itinerary minus the minimum miles flown within a market. A tourist product is one that serves the Las Vegas metropolitan statistical area or an airport in Florida.

C.5.1 Pre-Pandemic Period

Table 15: Summary Statistics - Product Level, Pre-Pandemic

Variable	All Firms	JetBlue	Spirit	Legacy
Price (100s 2017 USD)				
Min	0.34	0.69	0.35	0.44
Median	2.39	2.1	1.19	2.6
Mean	2.37	2.13	1.23	2.61
(SD)	(0.7)	(0.62)	(0.45)	(0.6)
Max	8.11	7.24	3.85	8.11
Number of Passengers				
Min	100	100	100	100
Median	670	370	1030	540
Mean	3897.32	8108.51	6365.64	3100.94
(SD)	(9799.72)	(14798.97)	(9315.46)	(8981.32)
Max	192050	138880	66610	192050
Miles Flown (Thousands)				
Min	0.15	0.18	0.18	0.15
Median	1.26	1.37	1.46	1.25
Mean	1.4	1.69	1.52	1.38
(SD)	(0.67)	(0.91)	(0.68)	(0.66)
Max	7.57	3.87	3.52	3.63
Origin Route Share (Percent)				
Min	0.54	0.54	1.23	1.23
Median	18.92	7.32	13.91	14.29
Mean	35.21	20.26	16.94	25.5
(SD)	(30.69)	(23.97)	(11.01)	(25.93)
Max	100	100	83.33	100
Destination Route Share (Percent)				
Min	0.54	0.54	1.23	1.23
Median	19	7.84	14.05	14.29
Mean	35.22	20.54	17.03	25.49
(SD)	(30.65)	(23.91)	(11.02)	(25.9)
Max	100	100	83.33	100
Extra Miles				
Median	0.04	0.05	0.04	0.05
Mean	0.12	0.23	0.19	0.12
(SD)	(0.18)	(0.3)	(0.26)	(0.17)
Max	4.98	1.52	1.46	1.57
JetFuel * Market Miles				
Min	0.21	0.26	0.25	0.21
Median	2.3	2.59	2.67	2.27
Mean	2.56	3.11	2.81	2.52
(SD)	(2.56)	(3.11)	(2.81)	(2.52)
Max	0.21	0.26	0.25	0.21
Binary Variables				
Share Nonstop	0.25	0.39	0.46	0.17
Share Tourist Route	0.26	0.37	0.42	0.25
Observations	337103	9144	10316	212051

Data spans the period from 2017Q1 through 2019Q4. Products are defined as a one-way trip between two airports, operated as either nonstop or connecting. "Route Shares" are the share of nonstop destinations served by the ticketing carrier out of the indicated airport as a fraction of all nonstop routes that airport has service to.

Table 16: Summary Statistics - Market Level, Pre-Pandemic

	Mean	(SD)	Minimum	Median	Maximum
Number of Products	3.52	(2.11)	1	3	15
Share Nonstop Products	0.28	(0.3)	0	0.25	1
Market Size (Thousands)	2788.68	(2127.94)	244.73	2154.82	16038
Customers in Market	15012.74	(28283.47)	500	4200	406050
Direct Distance	1.18	(0.64)	0.15	1.02	2.95
Tourist Market	0.27	(0.44)	0	0	1
Delta Prescence	0.72	(0.45)	0	1	1
United Presence	0.42	(0.49)	0	0	1
American Prescence	0.65	(0.48)	0	1	1
Southwest Prescence	0.55	(0.5)	0	1	1
JetBlue Prescence	0.09	(0.28)	0	0	1
Spirit Prescence	0.09	(0.28)	0	0	1
Observations	87363				

Data spans the period from 2017Q1 through 2019Q4. Markets are defined as a combination of origin airport, destination airport, year, and quarter. A “JetBlue” market is one that JetBlue operates within; a “JetBlue-Spirit” market is one in which both firms operates within.

Table 17: Instrument Comparison Table - Pre-Pandemic

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Price	-0.43^{***}	-4.99^{***}	-0.35^{***}	-0.35^{***}	-2.14^{***}	-0.33^{***}	-2.12^{***}	-2.23^{***}	-2.20^{***}
	(0.00)	(0.09)	(0.05)	(0.05)	(0.04)	(0.05)	(0.04)	(0.03)	(0.03)
Nesting	0.56^{***}	0.44^{***}	-0.11^{***}	-0.11^{***}	0.14^{***}	-0.11^{***}	0.13^{***}	0.19^{***}	0.19^{***}
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Products in Market		X	X	X	X	X	X	X	X
Gas Instruments		X			X		X	X	X
Hub Interactions			X	X	X	X	X	X	X
Gandhi Instruments						X	X	X	X
Exog Interactions								X	X
Price Test		97946.457	91287.26	91287.26	84597.288	91204.891	84464.583	74792.52	74293.33
P-Value		0	0	0	0	0	0	0	0
Test of Over Identification		N/A	4234.92	4234.92	7260.63	4368.14	7438.25	11730.66	12115.28
p-value		N/A	0	0	0	0	0	0	0
Mean Elasticity	−0.99	−11.58	−0.81	−0.81	−4.95	−0.78	−4.92	−5.16	−5.09
Median Elasticity	−1.01	−11.76	−0.82	−0.82	−5.03	−0.79	−5.00	−5.24	−5.17
Share Inelastic Products	0.49	0.00	0.79	0.79	0.00	0.84	0.00	0.00	0.00
Share JB Inelastic Products	0.66	0.00	0.89	0.89	0.00	0.92	0.00	0.00	0.00
Share SP Inelastic Products	1	0	1	1	0	1	0	0	0
Num. obs.	307849	307849	307849	307849	307849	307849	307849	307849	307849

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Dependent variables is the difference between the estimated log-product share and the log-product share of the outside variable. Each column includes all instruments from previous columns.

Table 18: Pre-Pandemic Demand Estimation Results

Linear Coefficients			
Prices	NonStop	Miles Flown	Miles Squared
-7.13**	-1.01	5.16**	-0.955
(4.3)	(2.2)	(4.5)	(0.84)
Origin Service Ratio	Extra Miles	Tourist	
0.0198	-2.65***	-0.304	
(0.0096)	(0.66)	(0.51)	
Nonlinear Standard Deviations			
	Price	Nonstop	
Coefficient	1.14***	2.01**	
SE	(0.251)	(1.07)	
Summary Statistics			
Nesting Parameter:	0.0881	SE:	(0.26)
N Products	337137	N Markets	111587
Mean Elasticity:	-9.93	Mean Markup:	0.104
Spirit Mean E	-6.51	JetBlue Mean E	-10.4

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$ Products are defined as a Carrier-Nonstop pair within an Origin-Destination-Year-Quarter market. Origin Service Ratio is the fraction of direct routes out of the originating airport operated by the carrier divided by the number of distinct direct routes out fo that airport. Extra Miles is the average additional miles flown with a connecting itinerary minus the minimum miles flown within a market. A tourist product is one that serves the Las Vegas metropolitan statistical area or an airport in Florida.

Table 19: Pre-Pandemic Merger Simulation (Basic)

	Obseved Sample			Basic Merger	
Variable	Spirit	JetBlue	Other	Merged	Other
Passengers					
Minimum	100	100	740	210	741
Average	11300	15600	53600	26200	53600
Maximum	67000	89700	315000	129000	315000
Market Share					
Minimum	9.36e-06	6.24e-06	4.65e-05	2.18e-05	4.65e-05
Average	0.00252	0.00373	0.0103	0.00605	0.0104
Maximum	0.0202	0.0419	0.0447	0.0515	0.0447
Prices					
Minimum	0.463	0.732	0.885	0.549	0.885
Average	1.07	2.01	2.09	1.49	2.09
Maximum	2.82	4.76	3.42	3.18	3.42
Marginal Cost					
Minimum	0.153	0.411	0.543	0.233	0.543
Average	0.73	1.61	1.68	1.12	1.68
Maximum	2.42	4.25	2.91	2.71	2.91
Miles Flown					
Minimum	0.319	0.319	0.319	0.319	0.319
Average	1.58	1.65	1.48	1.54	1.48
Maximum	3.52	3.72	2.89	3.52	2.89
Origin Service Ratio					
Minimum	1.23	0.541	6.72	0.8	6.72
Average	17.5	17.2	47.3	19.8	47.3
Maximum	44.7	71.2	95.7	70.6	95.7
Number of Markets	1533	1533	1533	1533	1533

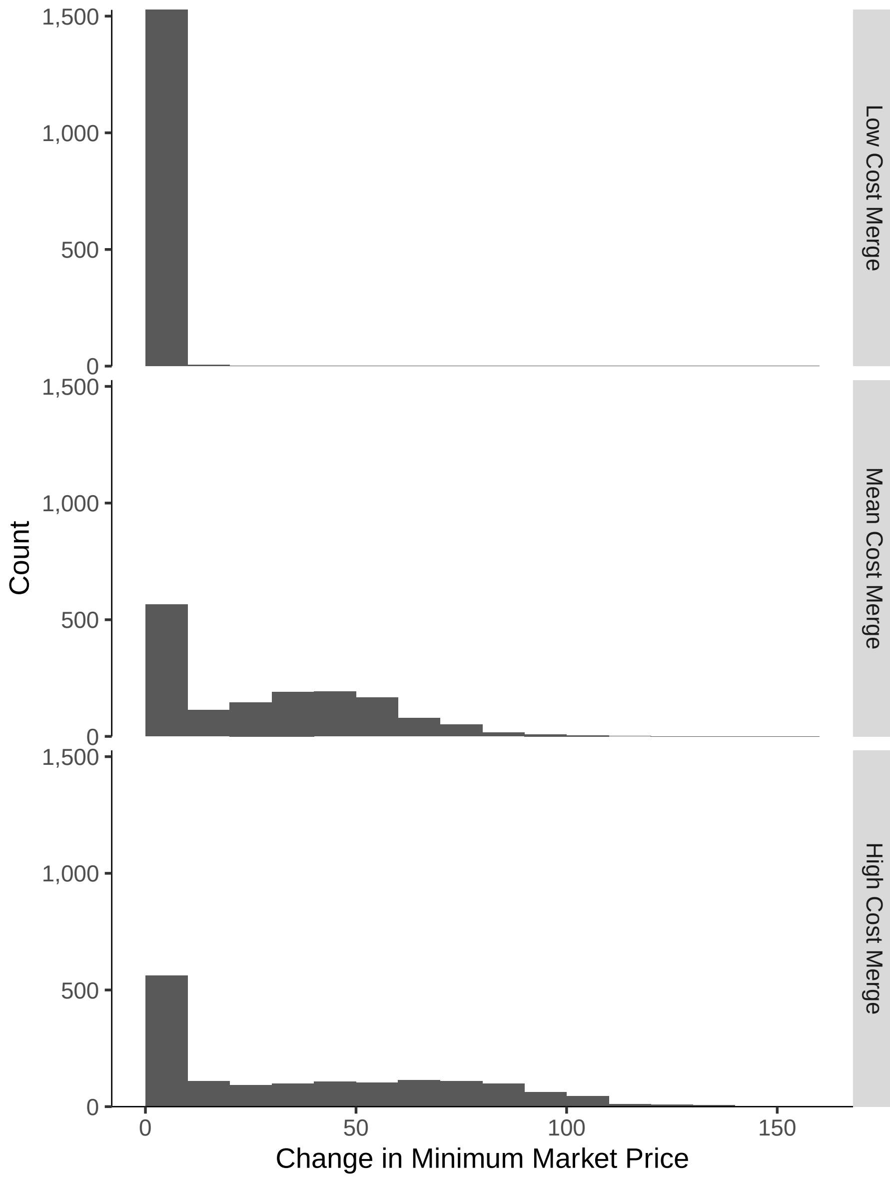
Merger simulation results for the "basic" merger simulation are reported. Only markets with both firms included are present in these estimates. This simulation assumes that product offerings do not change following the merger, and serves to capture effects resulting from the internalization of the pricing externality following the merger. Cells are market average product characteristics across firms within a category, weighted by product shares.

Table 20: Pre-Pandemic Merger Simulation, Joint Markets

	Obseved Sample			Low-Cost		Mean-Cost		High-Cost	
Variable	Spirit	JetBlue	Other	Merged	Other	Merged	Other	Merged	Other
Passengers									
Minimum	100	100	740	195	784	153	784	22	784
Average	11300	15600	53600	91900	53100	49300	53700	35300	53900
Maximum	67000	89700	315000	615000	310000	454000	310000	453000	310000
Market Share									
Minimum	9.36e-06	6.24e-06	4.65e-05	1.81e-05	4.92e-05	1.73e-05	4.92e-05	1.82e-06	4.92e-05
Average	0.00252	0.00373	0.0103	0.0208	0.0103	0.0107	0.0104	0.00746	0.0105
Maximum	0.0202	0.0419	0.0447	0.158	0.0434	0.135	0.0434	0.135	0.0434
Prices									
Minimum	0.463	0.732	0.885	0.517	0.924	0.586	0.924	0.586	0.924
Average	1.07	2.01	2.09	1.2	2.13	1.51	2.13	1.78	2.14
Maximum	2.82	4.76	3.42	3.02	3.43	3.22	3.43	4.25	3.43
Marginal Cost									
Minimum	0.153	0.411	0.543	0.153	0.543	0.217	0.543	0.217	0.543
Average	0.73	1.61	1.68	0.795	1.68	1.09	1.68	1.34	1.68
Maximum	2.42	4.25	2.91	2.51	2.88	2.68	2.88	3.62	2.88
Miles Flown									
Minimum	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319
Average	1.58	1.65	1.48	1.53	1.49	1.53	1.49	1.53	1.49
Maximum	3.52	3.72	2.89	3.52	2.89	3.52	2.89	3.52	2.89
Origin Service Ratio									
Minimum	1.23	0.541	6.72	3.48	6.72	3.48	6.72	3.48	6.72
Average	17.5	17.2	47.3	28.4	46.7	28.4	46.7	28.4	46.7
Maximum	44.7	71.2	95.7	72.6	93.9	72.6	93.9	72.6	93.9
Number of Markets	1533	1533	1533	1533	1533	1533	1533	1533	1533

Merger simulation results for the post-pandemic sample are reported. The "Other" category consists of the average other product in each market, constructed by a weighted average on the basis of estimated passengers. Then, this is averaged across all markets. The "Low-Cost Merger" ("Mean Cost Merger") ["High Cost Merger"] refers to the counterfactual scenario where the merged firm has the lowest (average) [highest] marginal cost of the two merged firms for each product.

Figure 21: Change in Lowest Market Fare, Pre-Pandemic



Plotted change in the price of the minimum fare within a market following the simulated merger, for markets included in the post-pandemic sample. The "Low-Cost Merger" ("Mean Cost Merger") ["High Cost Merger"] refers to the counterfactual scenario where the merged firm has the lowest (average) [highest] marginal cost of the two merged firms for each product. Each histogram bar covers a range of $10 increments.

C.5.2 Post-Pandemic Period

Table 21: Summary Statistics - Product Level, Post-Pandemic

Variable	All Firms	JetBlue	Spirit	Legacy
Price (100s 2017 USD)				
Min	0.24	0.61	0.29	0.55
Median	2.13	1.93	1.19	2.4
Mean	2.17	2	1.24	2.46
(SD)	(0.75)	(0.64)	(0.45)	(0.67)
Max	6.52	4.96	4.1	6.52
Number of Passengers				
Min	100	100	100	100
Median	610	670	670	520
Mean	3302.07	6893.11	5023.04	2803.36
(SD)	(8387.84)	(13383.88)	(8608.73)	(8056.87)
Max	144930	115000	68030	140870
Miles Flown (Thousands)				
Min	0.15	0.18	0.18	0.15
Median	1.27	1.5	1.49	1.28
Mean	1.41	1.75	1.54	1.41
(SD)	(0.67)	(0.95)	(0.67)	(0.66)
Max	3.86	3.79	3.58	3.61
Origin Route Share (Percent)				
Min	0.53	0.9	0.9	0.99
Median	18.18	10.87	11.32	12.77
Mean	34.11	25.46	14.25	23.67
(SD)	(30.59)	(29.02)	(10.65)	(25.48)
Max	100	100	47.37	100
Destination Route Share (Percent)				
Min	0	0.9	0.9	0.99
Median	18.18	11.36	11.39	12.77
Mean	34.13	25.65	14.36	23.69
(SD)	(30.58)	(28.95)	(10.7)	(25.5)
Max	100	100	47.37	100
Extra Miles				
Median	0.05	0	0.07	0.07
Mean	0.13	0.25	0.21	0.13
(SD)	(0.19)	(0.36)	(0.28)	(0.17)
Max	1.83	1.52	1.41	1.5
JetFuel * Market Miles				
Min	0.27	0.32	0.31	0.27
Median	3.43	4.25	3.92	3.46
Mean	3.86	4.97	4.26	3.88
(SD)	(3.86)	(4.97)	(4.26)	(3.88)
Max	0.27	0.32	0.31	0.27
Binary Variables				
Share Nonstop	0.25	0.5	0.35	0.17
Share Tourist Route	0.28	0.42	0.42	0.26
Observations	284802	7350	11463	167160

Data spans the period from 2021Q2 through 2023Q2. Products are defined as a one-way trip between two airports, operated as either nonstop or connecting. “Route Shares” are the share of nonstop destinations served by the ticketing carrier out of the indicated airport as a fraction of all nonstop routes that airport has service to.

Table 22: Summary Statistics - Market Level, Post-Pandemic

	Mean	(SD)	Minimum	Median	Maximum
Number of Products	3.79	(2.16)	1	3	14
Share Nonstop Products	0.27	(0.31)	0	0.22	1
Market Size (Thousands)	2795.51	(2142.87)	223.81	2161.62	16141.64
Customers in Market	13422.5	(25089.6)	500	3880	317410
Direct Distance	1.19	(0.64)	0.15	1.04	2.96
Tourist Market	0.27	(0.44)	0	0	1
Delta Prescence	0.72	(0.45)	0	1	1
United Presence	0.44	(0.5)	0	0	1
American Prescence	0.71	(0.46)	0	1	1
Southwest Prescence	0.66	(0.47)	0	1	1
JetBlue Prescence	0.08	(0.28)	0	0	1
Spirit Prescence	0.13	(0.34)	0	0	1
Observations	70016				

Data spans the period from 2021Q2 through 2023Q2. Markets are defined as a combination of origin airport, destination airport, year, and quarter. A "JetBlue" market is one that JetBlue operates within; a "JetBlue-Spirit" market is one in which both firms operates within.

Table 23: Instrument Comparison Table - Post-Pandemic

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Price	-0.24^{***}	-0.06	1.50^{***}	1.50^{***}	0.01	1.28^{***}	-0.00	-2.46^{***}	-0.63^{***}
	(0.00)	(0.03)	(0.16)	(0.16)	(0.03)	(0.15)	(0.03)	(0.07)	(0.03)
Nesting	0.54^{***}	-0.11^{***}	-0.26^{***}	-0.26^{***}	-0.11^{***}	-0.24^{***}	-0.11^{***}	0.15^{***}	0.01^{**}
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)
Products in Market		X	X	X	X	X	X	X	X
Gas Instruments		X			X		X	X	X
Hub Interactions			X	X	X	X	X	X	X
Gandhi Instruments						X	X	X	X
Exog Interactions								X	X
Price Test		77288.49	81853.459	81853.459	76910.107	81743.441	76883.509	66904.122	64536.553
P-Value		0	0	0	0	0	0	0	0
Test of Over Identification		N/A	1269.2	1269.2	4165.87	1453.45	4271.75	7094.09	11604.74
p-value		N/A	0	0	0	0	0	0	0
Mean Elasticity	-0.50	-0.14	3.19	3.19	0.02	2.72	0.00	-5.22	-1.34
Median Elasticity	-0.50	-0.13	3.14	3.14	0.02	2.69	0.00	-5.15	-1.33
Share Inelastic Products	1.00	1.00	0.02	0.02	1.00	0.04	1.00	0.00	0.23
Share JB Inelastic Products	1.00	1.00	0.00	0.00	1.00	0.01	1.00	0.00	0.30
Share SP Inelastic Products	1.00	1.00	0.11	0.11	1.00	0.22	1.00	0.00	0.84
Num. obs.	265196	265196	265196	265196	265196	265196	265196	265196	265196

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 24: Post-Pandemic Merger Simulation (Basic)

	Obseved Sample			Basic Merger	
Variable	Spirit	JetBlue	Other	Merged	Other
Passengers					
Minimum	100	100	1890	199	1890
Average	10100	11500	51400	21100	51500
Maximum	68500	87200	249000	116000	249000
Market Share					
Minimum	8.01e-06	6.24e-06	0.000493	2.92e-05	0.000493
Average	0.00209	0.0026	0.00974	0.00458	0.00974
Maximum	0.0164	0.0346	0.0457	0.0377	0.0457
Prices					
Minimum	0.348	0.631	0.765	0.488	0.765
Average	1.21	1.89	2.1	1.51	2.1
Maximum	3.63	4.42	4.01	3.86	4.01
Marginal Cost					
Minimum	0.0553	0.325	0.445	0.186	0.445
Average	0.874	1.52	1.7	1.16	1.7
Maximum	3.16	3.94	3.5	3.39	3.5
Miles Flown					
Minimum	0.2	0.2	0.2	0.2	0.2
Average	1.7	1.79	1.56	1.62	1.56
Maximum	3.58	3.75	2.88	3.42	2.88
Origin Service Ratio					
Minimum	0.901	0.901	6.17	1.14	6.17
Average	17.3	19.7	44.5	21.1	44.5
Maximum	41.2	79.1	97.5	78.7	97.5
Number of Markets	1554	1554	1554	1554	1554

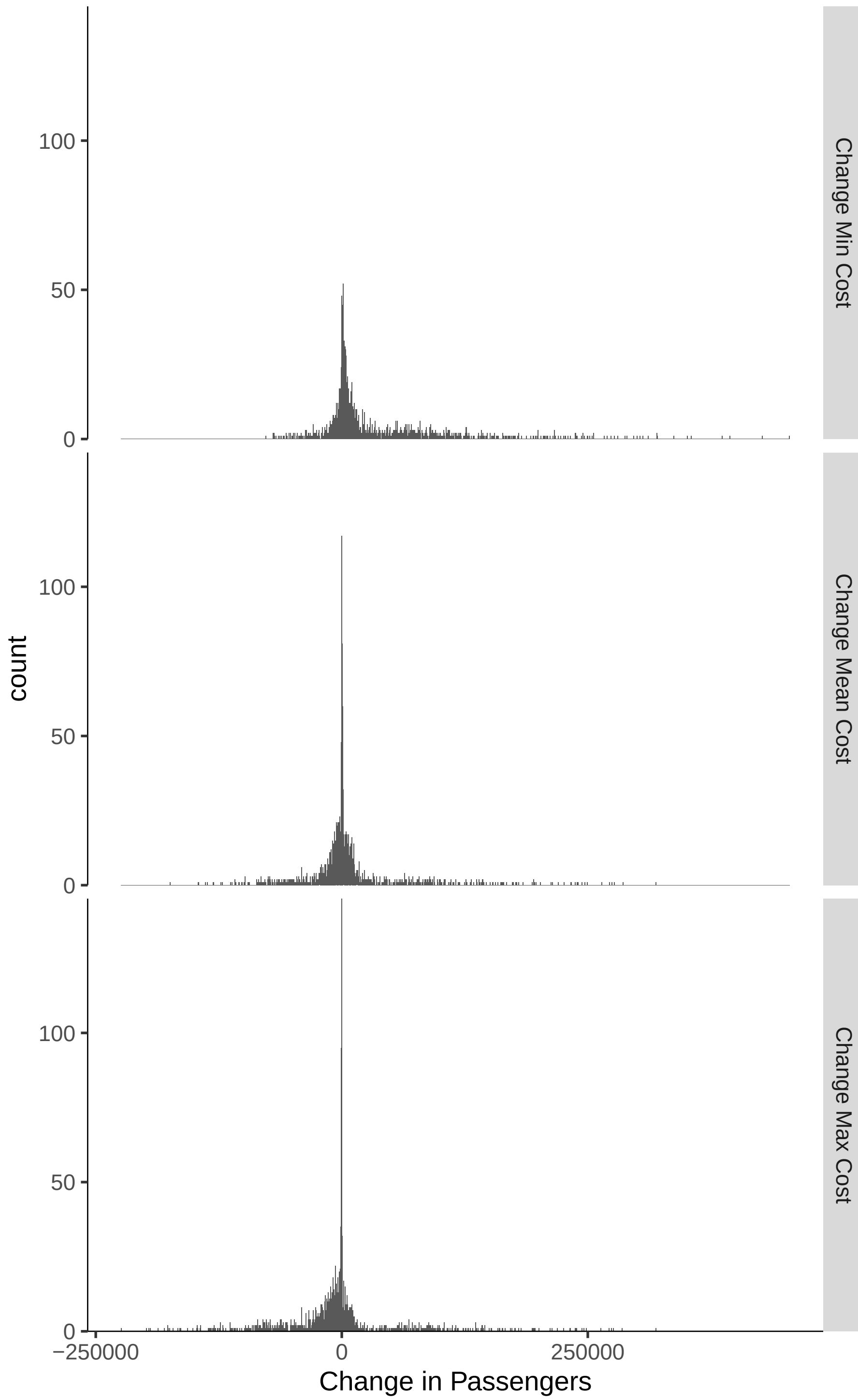
Merger simulation results for the "basic" merger simulation are reported. This simulation assumes that product offerings do not change following the merger, and serves to capture effects resulting from the internalization of the pricing externality following the merger. Cells are market average product characteristics across firms within a category, weighted by product shares.

Table 25: Post-Pandemic Merger Simulation, Joint Markets

	Obseved Sample			Low-Cost		Mean-Cost		High-Cost	
Variable	Spirit	JetBlue	Other	Merged	Other	Merged	Other	Merged	Other
Passengers									
Minimum	100	100	1890	185	2400	56.7	2400	4.14	2400
Average	10100	11500	51400	69800	70000	42800	70500	32700	70800
Maximum	68500	87200	249000	621000	344000	414000	344000	414000	344000
Market Share									
Minimum	8.01e-06	6.24e-06	0.000493	5.36e-05	0.000673	2.31e-05	0.000673	1.92e-06	0.000673
Average	0.00209	0.0026	0.00974	0.0148	0.0133	0.00914	0.0134	0.00707	0.0135
Maximum	0.0164	0.0346	0.0457	0.122	0.0633	0.111	0.0634	0.111	0.0634
Prices									
Minimum	0.348	0.631	0.765	0.446	0.799	0.573	0.799	0.607	0.799
Average	1.21	1.89	2.1	1.34	2.13	1.55	2.13	1.73	2.13
Maximum	3.63	4.42	4.01	3.89	4.11	3.95	4.11	4.55	4.11
Marginal Cost									
Minimum	0.0553	0.325	0.445	0.108	0.444	0.229	0.444	0.261	0.444
Average	0.874	1.52	1.7	0.958	1.7	1.16	1.7	1.33	1.7
Maximum	3.16	3.94	3.5	3.36	3.53	3.42	3.53	3.94	3.53
Miles Flown									
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Average	1.7	1.79	1.56	1.61	1.57	1.61	1.57	1.61	1.57
Maximum	3.58	3.75	2.88	3.11	2.88	3.11	2.88	3.11	2.88
Origin Service Ratio									
Minimum	0.901	0.901	6.17	2.7	6.74	2.7	6.74	2.7	6.74
Average	17.3	19.7	44.5	31.4	44.2	31.4	44.2	31.4	44.2
Maximum	41.2	79.1	97.5	81.4	97.5	81.4	97.5	81.4	97.5
Number of Markets	1554	1554	1554	1554	1554	1554	1554	1554	1554

Merger simulation results for the post-pandemic sample are reported. The "Other" category consists of the average other product in each market, constructed by a weighted average on the basis of estimated passengers. Then, this is averaged across all markets. The "Low-Cost Merger" ("Mean Cost Merger") ["High Cost Merger"] refers to the counterfactual scenario where the merged firm has the lowest (average) [highest] marginal cost of the two merged firms for each product.

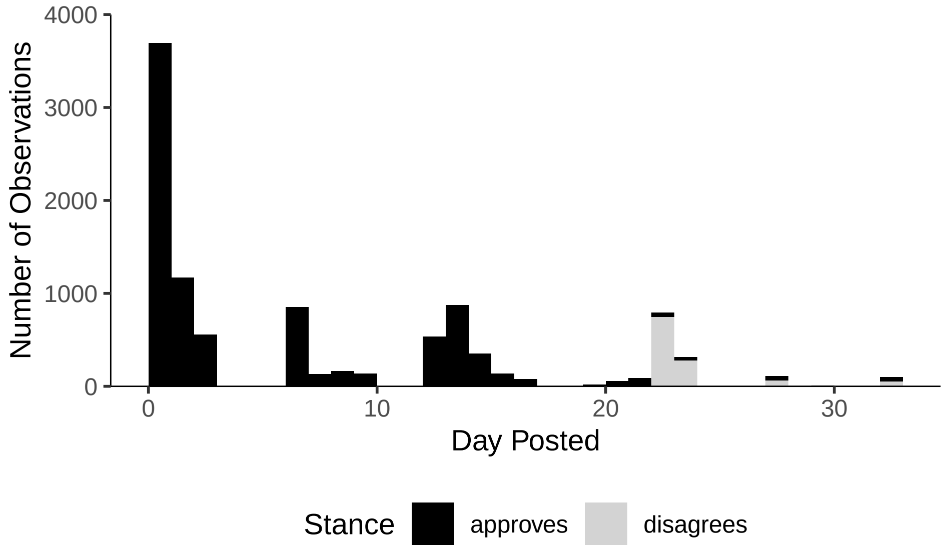
Figure 22: Change in Lowest Market Fare, Post-Pandemic



Plotted change in the price of the minimum fare within a market following the simulated merger, for markets included in the post-pandemic sample. The "Low-Cost Merger" ("Mean Cost Merger") ["High Cost Merger"] refers to the counterfactual scenario where the merged firm has the lowest (average) [highest] marginal cost of the two merged firms for each product. Each histogram bar covers a range of $10 increments.

C.6 Merger Comment Processing Figures and Tables

Figure 23: Timeline of Submitted Comments

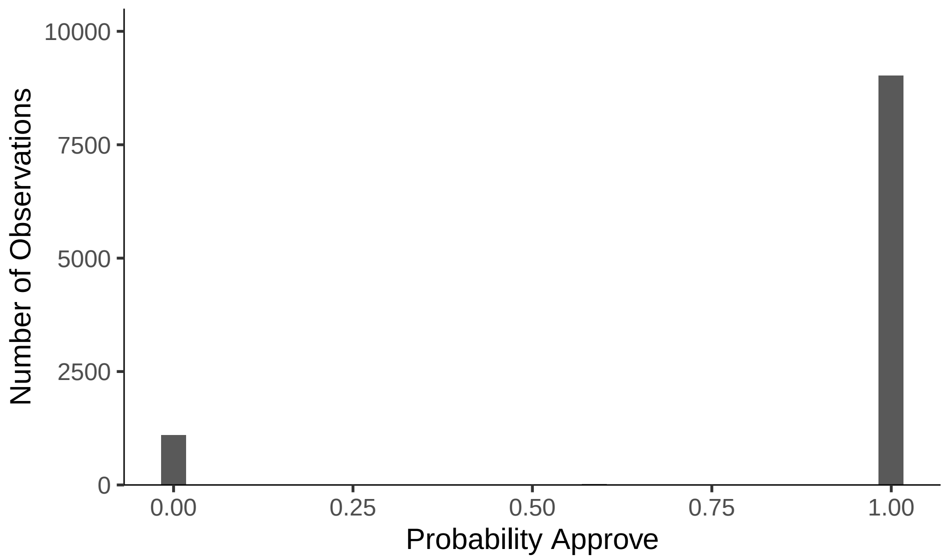


Data is sourced from the Department of Transportation regulatory filing regarding the JetBlue-Spirit merger (DOT-OST-2023-0024). Comments have the stance with the highest probability assigned to them.

Table 26: Stance Detection Summary Statistics

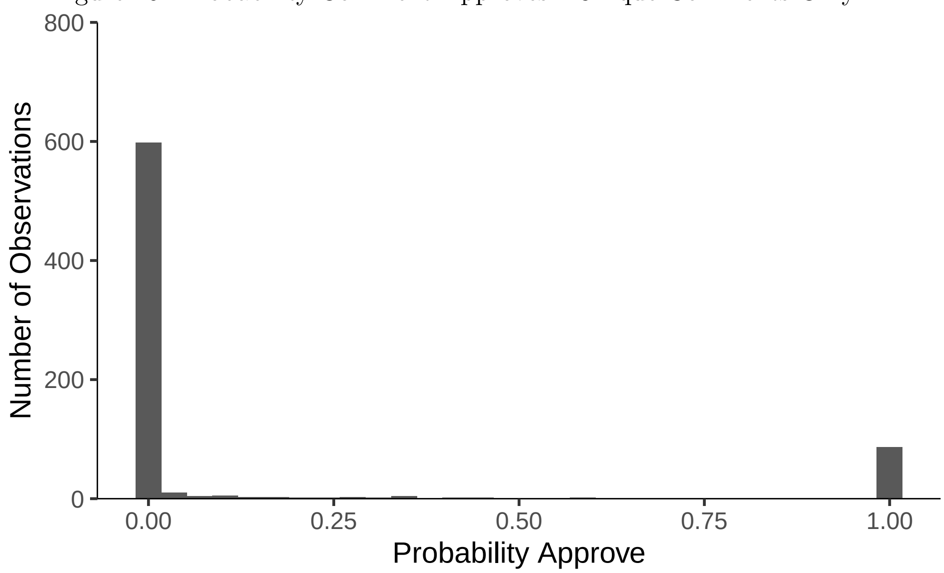
Data is sourced from the Department of Transportation regulatory filing regarding the JetBlue-Spirit merger (DOT-OST-2023-0024). Comments have the stance with the highest probability assigned to them. This is the "Stance Probability." Similarly, "Sentiment Assigned Probability" is the sentiment with the highest probability assigned to a comment by the language model. Comment length is in characters.

Figure 24: Probability Comments Approve



Data is sourced from the Department of Transportation regulatory filing regarding the JetBlue-Spirit merger (DOT-OST-2023-0024). "Probability Approve" is the probability that a comment approves of the merger.

Figure 25: Probability Comment Approves - Unique Comments Only



Data is sourced from the Department of Transportation regulatory filing regarding the JetBlue-Spirit merger (DOT-OST-2023-0024). "Probability Approve" is the probability that a comment approves of the merger.

	Obseved Sample			Low-Cost		Mean-Cost		High-Cost	
Variable	Spirit	JetBlue	Other	Merged	Other	Merged	Other	Merged	Other
Passengers									
Minimum	100	100	1890	2.3	4490	0.297	4570	0.0463	4620
Average	11000	11500	51400	75700	157000	53500	158000	43200	159000
Maximum	69000	87200	249000	1070000	1150000	592000	1150000	591000	1150000
Market Share									
Minimum	8.01e-06	6.24e-06	0.000493	5.1e-07	0.00106	6.58e-08	0.00106	1.03e-08	0.00106
Average	0.0023	0.0026	0.00974	0.0156	0.0296	0.011	0.0298	0.009	0.0299
Maximum	0.0166	0.0346	0.0457	0.174	0.183	0.173	0.183	0.173	0.183
Prices									
Minimum	0.61	0.631	0.765	0.644	0.776	0.668	0.776	0.692	0.776
Average	1.54	1.89	2.1	1.58	2.11	1.7	2.11	1.82	2.12
Maximum	5.26	4.42	4.01	3.79	4.12	4.32	4.12	5.38	4.12
Marginal Cost									
Minimum	0.338	0.358	0.479	0.338	0.46	0.361	0.46	0.384	0.46
Average	1.22	1.55	1.74	1.22	1.72	1.35	1.72	1.46	1.72
Maximum	4.78	3.96	3.57	3.27	3.61	3.81	3.61	4.78	3.61
Miles Flown									
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Average	1.71	1.79	1.56	1.62	1.57	1.62	1.57	1.63	1.57
Maximum	4.83	3.75	2.88	3.72	2.88	3.72	2.88	3.72	2.88
Origin Service Ratio									
Minimum	0.901	0.901	6.17	2.7	4.85	2.7	4.85	2.7	4.85
Average	17.5	19.7	44.5	31.4	44.1	31.4	44.1	31.4	44.1
Maximum	41.2	79.1	97.5	81.4	97.5	81.4	97.5	81.4	97.5
Number of Markets	1554	1554	1554	1554	1554	1554	1554	1554	1554