IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

IN RE DELTA/AIRTRAN BAGGAGE FEE ANTITRUST LITIGATION	)))))	CIVIL ACTION NO. 1:09-md-2089-TCB ALL CASES

AIRTRAN'S RESPONSE TO PLAINTIFFS' *DAUBERT* MOTION TO EXCLUDE THE OPINIONS AND TESTIMONY OF DR. ERIC GAIER

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Gaier-II	Dec. 8, 2010 Class Certification Surreply Report of Eric M. Gaier, Ph.D., attached herewith as Ex. 2
Gaier-III	Feb. 4, 2011 Merits Reply Report of Eric M. Gaier, Ph.D., attached herewith as Ex. 3
GAO	United States Government Accountability Office
GAO Report	U.S. GOV'T ACCOUNTABILITY OFFICE, COMMERCIAL AVIATION: CONSUMERS COULD BENEFIT FROM BETTER INFORMATION ABOUT AIRLINE-IMPOSED FEES AND REFUNDABILITY OF GOVERNMENT-IMPOSED TAXES AND FEES (2010), previously attached as Ex. 29 to AirTran's Motion for Summary Judgment (filed Aug. 31, 2012, Dkt. 353-33)
Kasper Rpt.	Expert Report of Daniel M. Kasper (Sept. 24, 2010), previously filed as Dkt. 224-1.
Lee Rpt.	Expert Report of Darrin N. Lee, Ph.D. (Sept. 24, 2010), previously filed as Plaintiffs' Exhibit 369 to their Opposition to Motions for Summary Judgment (Dkt. 556)
Pls.' Mem.	Plaintiffs' Memorandum in Support of *Daubert* Motion to Exclude the Opinions and Testimony of Dr. Eric Gaier (filed Oct. 23, 2015, Dkt. 617)
R^2	In statistics, the coefficient of determination (referred to as "R-squared"), a measure of how well a regression line approximates a set of data (*i.e.*, the percentage of a dependent variable's variation that is explained by the variables in a regression model)

Schwartz Rpt.	Class Certification Report of Marius Schwartz, Ph.D. (Sept. 24, 2010), attached herewith as Ex. 4

Plaintiffs move to exclude portions of the anticipated trial testimony of Dr. Eric Gaier, an economist who analyzed (i) how AirTran's fares changed after it unbundled first bag fees from fares in 2008 and (ii) whether the fare changes AirTran made were consistent and predictable across the class in a manner amenable to common proof. His reports demonstrate, first, that many class members realized significant benefits from the unbundling of bag fees, and second, that the effect of such fees—whether cost or benefit—varied widely based on individual circumstances, schedules, and routes. Though not challenging Dr. Gaier's qualifications as an economist or econometrician, Plaintiffs dispute the relevance and reliability of his results. Their challenges are meritless.

First, Dr. Gaier's analysis of base fare reductions resulting from the unbundling of bag fees from fares is not simply permissible evidence on injury and damages issues, it is pivotal evidence that must be considered under Eleventh Circuit law. Second, Dr. Gaier's statistical analysis, cross-checked using multiple data sets and a variety of alternative approaches, produces reliable results consistent with economic theory and independent analyses by other experts in the case. Plaintiffs' claims that Dr. Gaier's work contains errors and omits important factors are not based on any objective analysis. Rather, Plaintiffs' attack is based solely on the *ipse dixit* of Plaintiffs' proffered expert, Dr. Hal J. Singer, an

economist whose testimony has been rejected by five courts in the last four years.[1] As explained below, Dr. Singer's alternative analysis fails basic measures of statistical soundness and economic logic. The gaps in Dr. Singer's reasoning only confirm the reliability of Dr. Gaier's work.

A. Plaintiffs misstate the procedural posture of the case and this motion.

Plaintiffs, assuming that the Court has already decided to certify the proposed class and therefore must have discounted Dr. Gaier's work, urge that their motion to exclude Dr. Gaier's opinions need not be considered at this time. The assertion that the Court issued an order rejecting Dr. Gaier's opinions is false. In this *Daubert* motion, Plaintiffs erroneously describe four of *their own* arguments recounted in the Court's Vacated Certification Order (Dkt. 549) as being facts that "the Court found." (Pls.' Mem. at 1.) Plaintiffs misquote the Court's vacated order, which includes no such findings. When quoting the order, Plaintiffs omitted

[1] *See Kamakahi v. Am. Soc'y for Reprod. Med.*, 305 F.R.D. 164, 182 (N.D. Cal. 2015) (excluding opinions on class certification); *Jarrett v. Insight Commc'ns Co., L.P.*, No. 09-cv-93, 2014 WL 3735193, at *7 (W.D. Ky. July 29, 2014) (finding opinion "is not supported by the record"); *In re Photochromic Lens Antitrust Litig.*, 2014 WL 1338605, at *23-25 (M.D. Fla. Apr. 3, 2014) (finding methodology deficient and denying class certification); *In re Fla. Cement & Concrete Antitrust Litig.*, 278 F.R.D. 674 (S.D. Fla. 2012) (same); *In re Cox Enters., Inc. Set-Top Cable Television Box Antitrust Litig.*, No. 09-ml-2048, 2011 WL 6826813, at *16 (W.D. Okla. Dec. 28, 2011) (denying class certification where methodology proposed for calculating damages "rests on unstable ground").

the words the Court used to introduce Plaintiffs' arguments: "Plaintiffs argue that" and "they assert that." (*See* Dkt. 549 at 11.) The Court did not adopt the factual premises Plaintiffs treat as decided; indeed, the Court rejected the view that common proof would resolve damages in this case, finding that individual damages proof will likely be needed in this case.[2] Although Plaintiffs denied class members benefited from base fare offsets to first bag fees, the Court did not decide that issue, and held only that any variations did not create a "fundamental conflict of interest" barring adequate representation. (*See id.* at 12.)

B. Not only are base fare reductions relevant to class certification, their impact must be considered as a matter of law.

Plaintiffs, repeating an attack they made on Dr. Schwartz's opinions, dispute the relevance of Dr. Gaier's empirical proof that many class members benefited from lower fares after bag fees were unbundled from base fares. This evidence is critical evidence, since in the Eleventh Circuit, a class cannot be certified if it contains both "winners and losers" affected differently by the challenged conduct.[3]

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[2] Specifically, the Court held "it is likely 'inevitable that individualized proof will be presented' in this case." *See* Dkt. 549 at 21 (quoting *Midwestern Mach. v. Nw. Airlines, Inc.*, 211 F.R.D. 562, 572 (D. Minn. 2001)). As AirTran has argued, this need for individualized proof is another reason that a class should not be certified.

[3] *In re Photochromic Lens*, 2014 WL 1338605, at *10; *see also Valley Drug Co. v. Geneva Pharm.*, 350 F.3d 1181, 1189-91 (11th Cir. 2003); *Pickett v. Iowa Beef Processors*, 209 F.3d 1276, 1280 (11th Cir. 2000).

Rather than repeat the legal relevance analysis, AirTran refers the Court to Part II-C of its response to Plaintiffs' motion to exclude Dr. Schwartz, filed this day.

C. Dr. Gaier's opinions are reliable.

Economic theory and peer-reviewed literature suggest that when an airline unbundles and charges for a service that it had previously included in its base airfare, the airline can and likely will reduce its base airfares by some amount.[4] In fact, both sides' experts agree that this actually happens in the real world.[5] The GAO has noted the industry trend toward reducing base fares by unbundling services as fee-based options.[6] Indeed, many ultra-low cost airlines have adopted a business model of charging very low base fares and offering options like bag service on an à la carte basis.[7] Dr. Gaier analyzed whether AirTran's 2008 unbundling of first bag fees from base fares resulted in a corresponding decrease in AirTran's base airfares. More importantly for class certification purposes, he also examined whether the amount of any effect on airfares was common to the class as

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[4] Jan K. Brueckner, Darin N. Lee, et al., *Product Unbundling in the Travel Industry*, 24 J. ECON. & MGMT. STRATEGY 457 (2015) (Ex. 6).

[5] Singer Dep. Vol. 2 at 388:12-14 (stating airlines other than defendants "decreased fares on the order of two percent in response to the imposition of the bag fee"); Lee Rpt. ¶ 28 (finding first bag fees reduce average fares by 2.5-2.9%).

[6] GAO Report at 13.

[7] *See* Jack Nicas, *A Stingy Spirit Lifts Airline's Profit*, WALL STREET JOURNAL (May 11, 2012) (describing fees for bags, water, and boarding passes) (Ex. 7).

a whole or varied significantly across the class. Of course, fares change constantly and automatically in reaction to demand[8]—a fact that makes it impossible to assess the impact of fee policies on particular consumers without examining individual transactions[9]—but even at the "average" level, the task is more complicated than checking to see whether an airline consciously decided to cut fares. Understanding how unbundling affected AirTran prices requires observation of not just what AirTran's fares were before and after the adoption of bag fees, but how AirTran's fares compared to competitors whose bag fee policy did not change.

Dr. Gaier therefore conducted what is called a "difference-in-differences" analysis. He compared the difference in AirTran's average fares before and after the bag fee change to the difference in fares for the same time period charged by other airlines that were not charging bag fees. He then calculated the "difference-in-differences" to see if AirTran's fares had changed relative to the non-fee-

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[8] Airlines use sophisticated "inventory management systems" to adjust offered prices based on ticket demand. When a flight sells slower than expected, unsold seats once held back as higher-priced tickets may be made available on discount fares as the flight approaches, reducing the average price for the flight. *See* Kasper Rpt. ¶¶ 7-15; *see also* Lee Rpt. ¶ 13; Schwartz Rpt. ¶¶ 58-61.

[9] Individual fares vary widely based on how one buys, creating huge differences between last-minute ticket buyers of rush-hour flights and advance-booking red-eye travelers on the very same route. As a result, even though regression analysis can explain around 82% of the variation in *average* fares on different routes, it explains only 18% of the variation among *individual* fares. Gaier-I ¶¶ 57-59.

charging airlines. As described below, Dr. Gaier used two distinct approaches to difference-in-differences analysis (referred to in his report as the "basic" analysis and the "regression" analysis), and both are informative in this case. These difference-in-differences methods are widely used in economics to analyze market outcomes,[10] and were in fact recommended and used by Plaintiffs' expert, Dr. Singer.[11] Plaintiffs argue only with the application of the method under Dr. Gaier's two approaches. As described below, their criticisms are unfounded.

1. Dr. Gaier's use of multiple analytical approaches to determine his opinions enhances his reliability.

Plaintiffs' first attack on Dr. Gaier seeks to make a vice out of virtue. Dr. Gaier considered two distinct difference-in-differences approaches, verifying that regardless of the study method, the data consistently showed base fares fell when AirTran unbundled bag fees. Bizarrely, Plaintiffs treat Dr. Gaier's verification of his results as suggesting the results must not have been valid in the first instance.

Dr. Gaier's first step was to perform a "basic difference-in-differences" analysis. He examined how AirTran's average base fare changed on each of its

[10] Gaier-I ¶ 39 n.43 (citing examples in air transportation, gasoline, and wages).

[11] *See* Singer Dep. Vol. 1 at 143:22-44:1 (stating that one could test whether AirTran reduced fares "relative to Southwest" through a "difference [in] difference model"); Singer Dep. Vol. 2 at 483:21-84:3 (referring to the regression models as "just a sophisticated way" of performing a "difference-in-difference analysis").

200 most-traveled routes from 2008 to 2009, before and after the institution of first bag fees. He then examined how average base fares changed over the same time period and routes for Southwest and JetBlue, two competing low-cost carriers. (Gaier-I ¶ 41.) Because Southwest and JetBlue were the only carriers in the industry that did not adopt first bag fees in 2008, they served as the "control" group for purposes of testing whether AirTran's unbundling of first bag fees was associated with a change in fares. (*Id.*)

This basic difference-in-differences analysis revealed that AirTran's average airfares changed after AirTran unbundled first bag fees, but the effect on base fares was not uniform. (*Id.* ¶¶ 14, 43-44.) The effect "varied significantly" across the studied "routes and over time," even ignoring the massive variations created by individual passenger circumstances. (*Id.* ¶ 14, 57-59.) On some routes, AirTran fares fell significantly more than on Southwest/JetBlue; on other routes, AirTran cut fares, but Southwest/JetBlue cut fares more; on some routes, all airlines raised fares, but AirTran's jumped less. (*Id.* at 30 fig. 10.) The effect also varied over time, with AirTran travelers in some periods seeing larger average fare cuts than travelers in other periods. (*Id.* at 31 fig. 11.) In other words, simply by comparing average fares on a route-by-route basis, Dr. Gaier could observe that travelers on many AirTran routes benefited from unbundling, and even bag-checking, fee-

paying passengers stood to gain (or would suffer different levels of harm) depending on individual circumstances.[12] The wide variation in impact among the putative class members was to be expected, as Dr. Gaier observed that costs, demand, and the number of competitors on routes also varied widely across the class. (*Id.* ¶¶ 14, 26.)

Dr. Gaier then quantified and described the magnitude of the fare changes he had observed. Initially, he averaged the fare changes he had studied in his basic difference-in-differences analysis on AirTran's top 200 routes. AirTran had, on average, cut its fares by $35.91 from 2008 to 2009, while the control group (Southwest and JetBlue) cut their fares on the competing routes by only $22.00 on average, for an average net AirTran reduction of $13.91. (Gaier-I ¶ 42.) Dr. Gaier then went a step further and developed a regression analysis that would more specifically target the effect of bag fees; that is, the regression analysis would estimate the extent to which fares on any given route were affected by factors such as route length, carrier capacity, seasonal travel demand, the fuel market, and so forth, and separate those effects from the bag fee effect. (*Id.* ¶ 84.) The

[12] As noted in the class certification briefs, on average, repeat travelers who do not always check bags, or families that check less than one bag per passenger, benefit more from lower ticket prices than they pay in fees. *See* AirTran's Opp'n to Mot. for Cert. (Dkt. 222) at 10-14; Delta's Opp. to Mot. for Cert. (Dkt. 221) at 8-13.

regression-based difference-in-differences analysis indicated an average net fare reduction of $16.91, only slightly greater than the basic difference-in-differences analysis had suggested. (*Id.* ¶ 54.) The two analyses thus revealed comparable and significant average base fare reductions when AirTran unbundled first bag fees.

Both of Dr. Gaier's analyses assist the Court. The basic difference-in-differences analysis illustrates how unbundling affected fares *differently on each route*, showing that Plaintiffs' common evidence does not even clear the first hurdle to measuring impact or damages for individual passengers. The regression analysis, which controls for additional factors, is "preferable" as a means of accurately measuring the "the *overall* reduction" in AirTran's *nationwide average* base fares (*Id.* ¶ 15 (emphasis added)), showing that unbundling can benefit passengers, even if the effect in any individual case varies widely.

Plaintiffs, latching onto Dr. Gaier's remark that the regression analysis is preferable to the basic analysis at estimating the *overall average* base fare reductions, assume that the basic analysis is entirely unreliable, and therefore must be excluded lest it mislead the jury. (Pls.' Mem. at 7.)

Plaintiffs' argument is meritless. The basic analysis starkly reveals how, whatever the *overall average* effect of bag fees on base fares was, the effect as to any given passenger was not "average"—effects varied by route and by time

period, even before individual passenger circumstances were considered.[13] On some routes, AirTran base fares fell versus Southwest/JetBlue fares after unbundling; for others, AirTran stayed competitive with Southwest/JetBlue; for still others, AirTran fares climbed versus the competition. (Gaier-I at 30 fig. 10.) Plaintiffs do not even dispute Dr. Gaier's conclusions that AirTran's base fare changes varied considerably from route to route.[14]

Dr. Gaier's regression analysis, assembling data over many routes into a single model, confirms and validates the basic analysis. First, it showed disparities among the class members on dimensions other than what route they flew: for example, passengers traveling on more expensive fares saw bigger reductions after unbundling than did passengers traveling on less expensive fares. (Gaier-I at 42 fig. 14.) Second, the regression analysis controlled for additional factors that could not be measured using the basic analysis, and confirmed the results. That hardly

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[13] It is legally improper to measure class members' damages on an average or aggregate basis. *See, e.g.*, *In re Fla. Cement & Concrete Antitrust Litig.*, No. 09-23187-CIV, 2012 WL 27668, at *10 (S.D. Fla. Jan. 3, 2012); *Lemon v. Harlem Globetrotters Int'l, Inc.*, 437 F. Supp. 2d 1089, 1104 n.10 (D. Ariz. 2006); *Reed v. Advocate Health Care*, 268 F.R.D. 573, 590-91 (N.D. Ill. 2009). Plaintiffs' criticism of the averaging method misses the point; the important point is how much individual class members' results vary from a measure of the average.

[14] *See* Singer Dep. Vol. 4 at 823-24 (conceding his averages-based model ignores "information about variance"); *id.* at 816-19 ("I don't want to dispute" there may be "winners in the class" who paid less overall after bag fees were instituted); Singer Dep. Vol. 3 at 739 (conceding his model ignores base fare offsets by route).

makes the basic, route-focused analysis inadmissible. Even Plaintiffs' authorities recognize that courts do not exclude analyses merely because one could theoretically add more control factors to them.[15] In this case, the regression analysis confirms that, even after controlling for additional potential causes of fare effects, the basic analysis was correct—relative to non-fee-charging competitors, most AirTran fares fell after first bag fees were instituted—a powerful indicator that the results of the basic analysis are reliable.[16]

2. Plaintiffs' claim of a math error in Dr. Gaier's work is specious.

Plaintiffs next assert that Dr. Gaier made an "order of operations" error in computing the overall average fare reduction in his basic difference-in-differences analysis. (Pls.' Mem. at 8.) Courts in the Eleventh Circuit generally view alleged math errors as matters for cross-examination rather than grounds for questioning

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[15] Plaintiffs rely solely on *Phillips v. American Honda Motor Co*, 238 F. App'x 537, 538 (11th Cir. 2007) (per curiam). *Phillips* recognized that "by itself, an expert's failure to account for every alternative cause will usually 'affect the analysis' probativeness, not its admissibility,'" and found grounds for exclusion in that case only "because the number of trials … was so low" and the expert "performed no error-free test." *Id.* at 542 n.8 (quoting *Bazemore v. Friday*, 478 U.S. 385, 400 (1986) (rejecting proposition "that petitioners' regression analyses were unacceptable … because they did not include all measured variables")).

[16] *Cf. Ruiz-Troche v. Pepsi Cola of P.R. Bottling Co*., 161 F.3d 77, 84 (1st Cir. 1998) ("an unpublished, unreviewed work, standing alone, probably would be insufficient to demonstrate the reliability of a scientific technique," but "when such an article makes the same point as published, peer-reviewed pieces, it tends to strengthen the assessment of reliability").

the reliability of the method.[17] But in this case, Dr. Gaier did not make any errors. First, what Plaintiffs call an error is simply a difference in approach between Dr. Gaier and Dr. Singer in how they calculate the average fare reduction by AirTran after bag fees were instituted. (Gaier-II ¶ 6.) Second, Dr. Singer's supposedly "corrected" approach is conceptually flawed. Third, under *either* Dr. Gaier's or Dr. Singer's weighting approach, the outcome is the same: the data show that, on average, AirTran reduced its base fares when it instituted first bag fees.

First, Dr. Gaier and Dr. Singer calculated different things. Dr. Gaier calculated the average fare changes on AirTran's top 200 routes by each of AirTran, Southwest, and JetBlue, weighted by how many tickets each airline sold on each route. (Gaier-I ¶ 42; Gaier-II ¶ 13.) So, a $10 fare cut on a route traveled by 1,000 AirTran passengers would have greater weight in its average than a $10

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[17] The Eleventh Circuit holds that mathematical errors "impugn the accuracy of [an expert's] results, not the general scientific validity of his methods." *Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1345 (11th Cir. 2003). "The identification of such flaws in generally reliable scientific evidence is precisely the role of cross-examination." *Id*. at 1344-45 (affirming refusal to exclude expert where expert allegedly did not "use the proper equation"). Plaintiffs' authorities do not suggest that courts should uncritically accept allegations that an expert has made errors. *See Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1400-01 (D. Or. 1996) (stating that alleged errors should be analyzed by the court, but not excluding any testimony on that basis); *Castellow v. Chevron USA*, 97 F. Supp. 2d 780, 785-86, 788-93 (S.D. Tex. 2000) (excluding opinions on the basis of methodological flaws including the use of an untested model for measuring exposure to a chemical agent, not alleged math errors).

fare cut on a route traveled by only 100 passengers. Dr. Singer's calculation was different. He calculated the *net* fare change between AirTran (on the one hand) and Southwest or JetBlue (on the other) on each route. So, if AirTran reduced its fare from Chicago to Orlando by $27, and Southwest/JetBlue also reduced the fare on that same route by the same amount, Dr. Singer treated that route as one with no *net* fare reduction by AirTran, and he ignored that route altogether. He then averaged any net fare changes he found, weighting the net changes only by how many tickets *AirTran* sold on each route, without considering how many passengers Southwest or JetBlue flew on the routes.[18]

Second, Dr. Gaier's approach makes more sense. "Netting" the fare changes and then taking only one airline's passenger traffic into account, as Dr. Singer did, can have perverse results, allowing inconsequential competitor fare cuts to "net out" the actual changes, and thereby mask substantial fare cuts by AirTran.[19] Dr. Gaier's approach instead gives weight to fare cuts based on how many consumers actually benefit from them. This approach better reflects total consumer welfare,

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[18] Gaier Dep. Vol. 2 at 41:1-42:5.

[19] If JetBlue cut its fare by $30 on a little-traveled route for 100 passengers (reducing aggregate revenue by $3,000), and AirTran cut its fare by $29 for 100,000 passengers on the same route (putting $2,900,000 back in consumer pockets), Dr. Singer would treat AirTran's fare reduction as a $1 fare *increase* on 100,000 AirTran passengers, even though the JetBlue fare cut was irrelevant, and AirTran consumers reaped substantial benefits. *See* Gaier Dep. Vol. 1 at 120-21.

as Dr. Singer implicitly acknowledged when he developed his own regression model and switched over to Dr. Gaier's weighting approach. *See* Gaier-II ¶¶ 6, 15.

Third, and most importantly, this difference in approach makes no difference to the result—under *either* approach, the data show that AirTran reduced its fares in comparison to the non-fee-charging airlines. While Dr. Gaier initially studied AirTran's top 200 routes, Dr. Singer's "correction" studied only 61 routes, because only those routes where AirTran service overlapped Southwest or JetBlue service could produce a "net" change. (Gaier-II ¶ 14; Gaier-I ¶ 42.) But there were far more than 61 overlapping routes—Dr. Singer disregarded 700 other routes served by AirTran and another airline. If all 761 overlapping routes are included in the analysis, both weighting methods show AirTran cut fares significantly compared to Southwest and JetBlue. (Using Dr. Singer's weighting method, the AirTran fare cut would be $8.85 on average; and under Dr. Gaier's method, the fare cut is $15.66 on average.) (Gaier-II at 10 fig. 1.) Plaintiffs' claim that there is a math error is simply untrue; the "correction" to the "error" turns out to be a flawed comparison obtained only by cherry-picking data.

3. Plaintiffs have not met their burden to demonstrate that Dr. Gaier omitted any relevant variable from his regression analysis.

Plaintiffs next attack Dr. Gaier's regression analysis. As described above, Dr. Gaier developed a regression analysis controlling for a variety of factors that

affect airfares, including industry-wide fuel costs, and concluded that AirTran's adoption of a first bag fee resulted in an average net fare reduction of $16.91. (Gaier-I ¶¶ 54, 84.) Dr. Gaier validated his results using standard statistical techniques. Dr. Gaier measured the explanatory power of his regression model (described statistically as "adjusted R^2"), and found that his model, explaining 82% of the variations in average fares, was highly predictive. (*Id.* ¶ 54.)

Dr. Gaier then employed a variety of sensitivity analyses to make sure his regression results were "robust," *i.e.*, results that would hold up even if judgment calls Dr. Gaier made in formulating his model were altered. (Gaier-I ¶ 53.) For example, he checked to see whether the results would be different if he varied the time frame studied; if he removed the weighting for routes with greater passenger volumes; if he cut out business class travelers; if he studied only routes where Southwest or JetBlue flew; or if he analyzed low-end and high-end fares instead of average fares. (Gaier-I ¶ 88; Gaier-II ¶ 39.) In each case, the models showed that AirTran cut its fares by more than the other carriers after unbundling bag fees, and those cuts were statistically significant at the highest confidence level. (*Id.*)

Notably, Dr. Gaier calculated a bag-fee effect on AirTran's fares quite similar to the effect calculated by Delta's expert, Dr. Darin Lee, with respect to Delta fares—even though Dr. Gaier and Dr. Lee used different approaches and

data sets to calculate their regressions.[20] The alignment of Dr. Gaier's results with economic theory, real world results, and independent examinations of similar data powerfully demonstrates the reliability of his work.

Plaintiffs claim that Dr. Gaier's regression model omits important variables. Plaintiffs bear a heavy burden to show that the allegedly omitted variables are important and affect the outcome of the analysis, as their own case authorities conclude.[21] They have not carried that burden.

a. Plaintiffs' proposed "carrier-specific" fuel costs variable is a red herring.

Plaintiffs argue Dr. Gaier's model should include a variable for "carrier-specific" fuel costs, but Dr. Gaier's model already accounts for fuel costs in a standard fashion different from Dr. Singer's proposal. Dr. Gaier's model includes variables for "quarter fixed effects," *i.e.*, cost changes that affected all carriers

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[20] *See* Gaier-II ¶ 52 (describing how Dr. Lee's fare reduction estimate, applied to the average Delta fare on a roundtrip basis, produces a statistically significant average fare reduction quite close to Dr. Gaier's estimate for AirTran).

[21] *In re Polypropylene Antitrust Litig.*, 93 F. Supp. 2d 1348, 1359-66 (N.D. Ga. 2000) (refusing to exclude an expert when challenging party did "not offer a statistical analysis" or "proffer evidence" establishing that the allegedly omitted variable would affect the results if included). Typically, "'failure to include variables will affect the analysis' probativeness, not its admissibility.'" *Quiet Tech.*, 326 F.3d at 1346 (quoting *Bazemore*, 478 U.S. at 400); *see also U.S. v. Ala. Power Co.*, 730 F.3d 1278, 1288 (11th Cir. 2013) (concluding exclusion of expert testimony was abuse of discretion because the "possible existence of a more thorough, more complex model is not a basis for wholesale exclusion").

(including fuel market shocks), as well as for "carrier fixed effects," *i.e.*, sustained differences between carriers (including structural advantages in costs such as fuel).[22] Plaintiffs argue for the approach of their expert, Dr. Singer, who included a separate variable for each airline's "accounting cost" of fuel (*i.e.*, the actual cost of fuel net of any hedges or financial instruments used to manage the financial risk of fuel costs). Not only is Dr. Singer's approach theoretically unsound, the data shows that it makes no difference either to the predictive value of the models or the outcome of the models. At most, this is a disagreement between experts about how a regression should account for fuel costs, which does not rise to the level of undermining the reliability of Dr. Gaier's model.

Dr. Gaier looks at how fuel costs affect the entire market. As a matter of economics, products sold in a market (like air travel) are priced based on the opportunity cost of using inputs, not their accounting cost. (Gaier-II ¶ 25.) For example, an airline may have a beneficial hedge in place allowing the carrier to purchase some quantity of fuel at a below-market price. Having lower fuel costs than its competitors may improve an airline's profitability, but will not cause it to

[22] Gaier-I ¶ 84; Gaier Dep. Vol. 1 at 159-63 (describing how carriers' fuel costs are highly correlated with one another, rendering differential fuel costs both practically and theoretically irrelevant); *id.* at 186 (stating that carrier fixed effects account for systematic fuel cost differences between carriers); Gaier Dep. Vol. 2 at 115 (stating that quarter fixed effects account for market fuel costs over time).

charge below-market fares. When that airline makes decisions about what fare to charge and how many flights to schedule, that airline's decisions are still driven by the broader market demand: the airline has the option to buy the cheap hedged fuel and consume it flying passengers (who pay fares that compete with those of other unhedged airlines in the market); the airline could buy the cheap fuel and sell it for a profit on the spot market rather than consuming it; or the airline could unwind the hedge (*i.e.*, settle it financially) to take profits while buying fuel at the market price.[23] Moreover, even if an airline has hedged most of its fuel needs, the marginal cost of adding flights will often be the cost of going back to the spot market to buy more fuel than was "pre-purchased" through hedges. (Gaier-II ¶ 26 & n.35.) Therefore, at the margins where the fare choice is made, fares react to competitors' prices and passenger demand, not accounting costs.[24] The case law does not favor firm-specific data over industry data under such circumstances.[25]

Regardless of the theory, Dr. Singer does not prove that adding a "carrier-specific accounting cost" variable makes his model more reliable. Though Dr.

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[23] Gaier-II ¶ 26 & nn.35-36; Gaier Dep. Vol. 2 at 92-93.

[24] Gaier Dep. Vol. 2 at 89-91; Gaier Dep. Vol. 1 at 183-85.

[25] *See In re Polypropylene Carpet Antitrust Litig.*, No. 1075, 2000 WL 863456, at *1-2 (N.D. Ga. Apr. 27, 2000) (holding that economics, not case law, dictates what cost data should be used, and rejecting argument that a regression modeling marginal cost must employ firm-specific cost data rather than market indices).

Singer argues his variable is statistically correlated with fares, he does not demonstrate that adding the variable adds explanatory power to the model. It turns out that his variable is duplicating the predictive work that other variables are already doing, as was confirmed when Dr. Singer sought to apply his carrier-specific fuel cost variable to the regression model advanced by Delta's expert, Dr. Lee. Dr. Singer's fuel variable did not change the result of Dr. Lee's model. (The model still showed that adding first bag fees leads to a decrease in fares. (Gaier-III ¶ 44.) Moreover, Dr. Gaier's statistical analysis showed that Dr. Singer's variable was inconsequential to Dr. Lee's model—it made only a 0.03% difference in the model's power to explain the variation in average fares. (*Id.* & fig. 4.) Plaintiffs' own authorities show that where supposedly "omitted" variables do not affect the actual statistical results of a regression, there is no reason to exclude the regression model from trial.[26]

Dr. Singer's fuel cost variable made no more difference when added to Dr. Gaier's model than Dr. Lee's. It did not change the model's outcome. To the

[26] *Estate of Hill v. ConAgra Poultry Co.*, No. 94CV0198, 1997 WL 538887, at *6-8 (N.D. Ga. Aug. 25, 1997) (evidence was "insufficient to support a finding that [the expert's] regression analysis omitted major variables," when expert had "performed an additional regression analysis in which he included the two variables" allegedly omitted, and concluded that they had "no effect on the statistical implications of the model").

contrary, adding Dr. Singer's fuel cost variable to Dr. Gaier's regression suggested that AirTran's fares had been cut even further relative to Southwest and JetBlue than Dr. Gaier originally estimated, increasing Dr. Gaier's $16.91 cut after bag fees were adopted to a $20.14 fare cut. (Gaier-II ¶¶ 7, 21.)

Dr. Gaier did not adopt the higher fare cut implied by Dr. Singer's variable, of course, because adding that variable fails the robustness testing that Dr. Gaier applied to his own work. Dr. Gaier found that Dr. Singer's carrier-specific fuel cost variable rendered Dr. Singer's model unstable with only minor changes in the time period studied. While Dr. Gaier's model produces virtually the same results, with comparable statistical significance, if the time period is expanded, Dr. Singer's added variable does not. Populating Dr. Singer's model with four additional quarters of carrier-specific fuel cost data (in other words, extending the study period by six months earlier and six months later) reversed Dr. Singer's result entirely: Dr. Singer's model flipped from predicting a $14.15 fare *increase* with bag fees to predicting a $17.37 fare *cut* with bag fees. (*Id.* ¶¶ 8, 29.) When so little additional data causes Dr. Singer's model to swing from a counter-intuitive fare increase all the way to a result that is in line with Dr. Gaier's conclusions, it demonstrates how unreliable Dr. Singer's approach is.

b. Plaintiffs falsely accuse Dr. Gaier of changing his approach.

Plaintiffs, implying that Dr. Gaier's approach has been contrived for litigation, contend that Dr. Gaier incorporated carrier-specific fuel cost data in other published work. Plaintiffs are trying to sow confusion where this is none.

Plaintiffs refer to a 1999 article in *Air Traffic Control Quarterly*, in which Dr. Gaier and his co-authors modeled the cost impact of congestion-related delays on airlines. The authors developed a cost model to "explicitly calculate cost functions for different classes of airlines" by "examin[ing] historical data … to obtain estimates of airline costs by functional category."[27] The authors concluded that congestion-related delays would increase costs for the industry and ultimately constrain the amount of air travel the industry could supply. *Id.* at 140. The authors left for future researchers the task of taking these models of congestion costs and using them to inform the development of future models "to calculate other variables of interest … such as changes in fares …." *Id.* at 141.

It is no surprise that, when modeling *costs* (as opposed to fares), Dr. Gaier and his colleagues examined *costs*. Neither should it be a surprise that, as a matter of fundamental economics, the model of *individual firms' fares* in this case would

[27] Kostiuk, Gaier, & Long, *The Economic Impacts of Air Traffic Congestion*, 7(2) AIR TRAFFIC CONTROL Q. 123, 129-30 (1999) (attached as Ex. 3 to Pls.' Mem.).

work differently from a model of an *industry's supply volume* in the article. (Gaier-II ¶ 30.) Dr. Gaier's prior article did not address the task at issue in this case: predicting the impact of unbundling on airfares. It is misleading in the extreme for Plaintiffs to claim that Dr. Gaier has changed his approach to modeling airfares based on a prior analysis that did not actually model the airfare market.

c. Plaintiffs' proposed "treatment effect" variables would defeat the purpose of regression analysis.

Plaintiffs next criticize Dr. Gaier's use of a "treatment effect" variable (which they also call a "carrier-specific time trend variable") applicable to AirTran without having included a similar variable for JetBlue and Southwest. (Pls.' Mem. at 15 & n.14.) Again, Plaintiffs argue for an approach that violates basic statistical methods and would not change the outcome in any event.

First, a brief review of fundamentals. Any regression-based difference-in-differences analysis uses a "natural experiment" to predict how a particular party would have behaved under different circumstances.[28] In this case, Dr. Gaier compares AirTran's historical fares with the fares charged by a "control group" of competing low-cost carriers that did not add bag fees in 2008, Southwest and

[28] *See, e.g.*, Singer Dep. Vol. 2 at 474-75 (describing the technique as "a very nice, natural experiment that occurred here," where one carrier instituted first bag fees while comparable carriers did not).

JetBlue. The model measures how a "treatment" (AirTran's adoption of first bag fees) affects AirTran's fares by comparing AirTran's "treated" fares to the "untreated" fares charged by the control group.

Plaintiffs argue that Dr. Gaier's model ought to have included a "treatment effect" variable for the control group carriers, JetBlue and Southwest, supposedly to track whether those airlines also changed fare strategies during the study period. Tracking a "treatment effect" for a member of the control group makes no sense; the control group did not receive the "treatment" (*i.e.*, did not institute bag fees) and any fare changes by the control group are not driven by the "treatment" being studied. (Gaier-II ¶ 34.) The point of this difference-in-differences analysis is to compare changes by the treatment group under study to changes made by the control group. Adding a treatment effect for a control group member is the econometric equivalent of removing that member from the control group. (*Id.* ¶¶ 31, 35.) Plaintiffs cite no legal or economic authority for the proposition that treatment effects should be used in this way to game the control group results.[29]

[29] Gaier Dep. Vol. 2 at 137-39 (stating that Dr. Singer's approach is unprecedented in academic and professional settings). Dr. Gaier cited literature showing how "treatment effect" variables are not properly applied to individual control group members. Joseph Farrell, *Economics at the FTC: Retrospective Merger Analysis with a Focus on Hospitals*, 35 REV. OF INDUS. ORG. 369, 376 (2009). Inexplicably, Plaintiffs respond in the text of their motion that the Farrell model "control[s] for

Plaintiffs' expert, Dr. Singer, offers no credible reason why any member of the control group should be removed from the study, but Plaintiffs' motion perhaps reveals the motivation. Plaintiffs concede that Dr. Singer found that AirTran reduced its fares relative to JetBlue when AirTran instituted first bag fees, proving Dr. Gaier's point.[30] Particularly in light of Dr. Singer's previous testimony that JetBlue is a valid control group member,[31] Dr. Singer's choice to remove JetBlue from the control group is inexplicable other than as an arbitrary way of massaging the data to avoid a bad result for Plaintiffs.

Moreover, as with his fuel costs variable, Dr. Singer's "treatment effect" variables fail basic measures of statistical validity when applied to various data sets to test robustness. Adding Dr. Singer's treatment effects for each airline to Dr. Lee's model had virtually no impact on the explanatory power of Dr. Lee's model, lifting the adjusted R^2 by only 0.33%. (Gaier-III ¶¶ 44, 46.) Moreover, the carrier-

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changes in the control group," but admit in the footnote that, just as Dr. Gaier said, the Farrell model does not include treatment effect variables for individual control group members. (Pls.' Mem. at 18 & n.16.) This self-refuting response to Dr. Gaier's authority is Plaintiff's only support for their theory.

[30] Pls.' Mem. at 15; Singer Dep. Vol. 2 at 477. Reflecting the concerns about the robustness of his conclusions, Dr. Singer's model also would have shown AirTran had reduced fares relative to Southwest if he had added four quarters of data to his model, just as occurred with the fuel costs variable. (Gaier-II ¶ 29 n.37.)

[31] Singer Dep. Vol. 2 at 483-84 ("I like JetBlue and I like Southwest [as appropriate control group carriers]. I like them both.").

specific treatment variables were significantly detrimental to Dr. Singer's model. The treatment effects produced off-the-charts calculations for "variance inflation factor," a measure of the redundancy of the variables being used in a regression analysis—calculations literally hundreds of thousands times greater than the accepted guidelines in statistics literature. (*Id.* ¶¶ 48-49.) In other words, Dr. Singer's treatment effects were not variables critical to the model; they were simply extra variables that re-measured factors that Dr. Gaier's and Dr. Lee's models were already measuring. (*Id.* ¶¶ 50, 57.) Adding these duplicative variables destabilized the results and made the model less predictive overall. (*Id.* ¶ 47.) Where Dr. Gaier's results were robust, Dr. Singer's are fragile, taped together by strained assumptions and cherry-picked data. Plaintiffs' critiques of Dr. Gaier, based solely on Dr. Singer's faulty models, are meritless.

D. Conclusion

For foregoing reasons, Defendant AirTran Airways, Inc. respectfully requests that Plaintiffs' Motion to Exclude the Opinions and Testimony of Dr. Eric Gaier be DENIED.

Respectfully submitted,

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L.R. 7.1D CERTIFICATION AS TO FONT AND POINT SELECTION

The undersigned counsel hereby certifies that this Response of AirTran Airways, Inc. to Plaintiffs' *Daubert* Motion to Exclude the Opinions and Testimony of Dr. Eric Gaier, and accompanying attachments, has been prepared with Times New Roman, 14 point, which is one of the font and point selections approved by the Court in L.R. 5.1C.

/s/ Alden L. Atkins
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CERTIFICATE OF SERVICE

I hereby certify that on this the 24th day of November, 2015, I filed the foregoing Response to Plaintiffs' *Daubert* Motion to Exclude the Opinions and Testimony of Dr. Eric Gaier, and accompanying attachments, with the Clerk of Court and caused the same to be delivered via email to the following attorneys of record:

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