

4-8-2019

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Bowen, B. D., & Headley, D. E. (2019). Airline Quality Rating 2019. , (). Retrieved from <https://commons.erau.edu/aqrr/29>

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The 29th Year Reporting Airline Performance



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ABOUT THE AUTHORS

Dr. Brent Bowen is Professor and former Dean, College of Aviation, Embry-Riddle Aeronautical University, Prescott Arizona. Previously Dr. Bowen Chaired the Department of Aviation Technology at Purdue University. Bowen attained his Doctorate in Aviation Sciences from Oklahoma State University and a Master of Business Administration degree from Oklahoma City University. His Federal Aviation Administration certifications include Airline Transport Pilot (Type-rated Douglas DC-3 SIC), Certified Flight Instructor (SEL, MEL, Instrument) with Gold Seal, Advanced-Instrument Ground Instructor, Aviation Safety Counselor, and Aerospace Education Counselor. Dr. Bowen has authored/co-authored numerous successful grant proposals totaling awards exceeding \$25 million and has in excess of 500 publications, papers and program appearances to his credit. His research interests focus on aviation applications of public productivity enhancement and marketing channels, specifically in the areas of service quality evaluation, benchmarking, safety and security. Dr. Bowen is an active industry consultant, pilot, and former fixed-base operator and scheduled air carrier operator. Dr. Bowen served on the National Research Council Steering Group on the Small Aircraft Transportation System and was named by the FAA Administrator to a National Academy of Science study group on airspace optimization as a component of the Next Generation Air Transportation System. Additionally, Dr. Bowen was appointed by the FAA Administrator to serve on a National Academy of Science panel to examine the need to cultivate a future generation of transportation leaders.

Dr. Dean E. Headley is Emeritus Professor of Marketing in the Department of Marketing at the W. Frank Barton School of Business, Wichita State University. He holds a Doctorate in Marketing and Statistics from Oklahoma State University, a Master of Business Administration degree from Wichita State University, and a Master of Public Health Degree from the University of Oklahoma. Dr. Headley's research interests include methodology development for measurement of service quality, the connection between service quality and consumer behavior, consumer choice processes in service settings, and the effects of marketing activities on consumers and providers of services.

Dr. Bowen's and Dr. Headley's research on the development of the national Airline Quality Rating (AQR) is viewed by more than 75 million people each year and is annually featured by national news outlets such as ABC's Good Morning America, The Cable News Network, The Today Show, C-Span, USA Today, The Associated Press, The Wall Street Journal, Aviation Week and Space Technology, the network evening news shows, and in numerous other national and international media. Bowen and Headley have served as invited expert witnesses before the U.S. House of Representatives Committee on Government Operations and have served as invited speakers and panelists for such groups as the National Academy of Sciences/Transportation Research Board, Department of Transportation and other Congressional and Executive panels.

Their body of research has been recognized with awards from the American Marketing Association, the American Institute of Aeronautics and Astronautics, Embry-Riddle Aeronautical University, the Travel and Transportation Research Association and others.

AIRLINE QUALITY RATING 2019

**Brent D. Bowen, Embry-Riddle Aeronautical University
Dean E. Headley, Wichita State University**

Abstract

The Airline Quality Rating (AQR) was developed and first announced in early 1991 as an objective method for assessing airline quality on combined multiple performance criteria. This current report, the Airline Quality Rating 2019, reflects monthly Airline Quality Rating scores for calendar year 2018. AQR scores for 2019 are based on 15 elements in four major areas that focus on airline performance aspects important to air travel consumers over the calendar year of 2018.

The Airline Quality Rating 2019 is a summary of month-by-month quality ratings for U.S. airlines that are required to report performance by virtue of having at least 0.05% of domestic scheduled-service passenger revenue during 2018. Using the Airline Quality Rating system of weighted averages and monthly performance data in the areas of on-time arrivals, involuntary denied boardings, mishandled baggage, and a combination of 12 customer complaint categories, airlines' comparative performance for the calendar year of 2018 is reported. This research monograph contains a brief summary of the AQR methodology, detailed data and charts that track comparative quality for domestic airline operations for the 12-month period of 2018, and industry results. Also, comparative Airline Quality Rating data for 2017 are included, where available, to provide historical perspective regarding performance quality in the industry.

The Airline Quality Rating System

Many quality ratings available in the past have relied on subjective surveys of consumer opinion that were infrequently collected. This subjective approach yields a quality rating that is essentially non-comparable from survey to survey for any specific airline. Timeliness of survey-based results can be a problem in the fast-paced airline industry as well. Before the Airline Quality Rating, there was effectively no consistent method for monitoring the quality of airlines on a timely, objective, and comparable basis. With the introduction of the AQR, a multi-factor, weighted average approach became available that had not been used previously in the airline industry. The method relies on utilizing published, publicly available data that reports actual airline performance on critical quality criteria important to consumers and combines them into a rating system. The result is a rating for individual airlines with interval scale properties that is comparable across airlines and across time periods.

The Airline Quality Rating (AQR) is a weighted average of multiple elements (see Table 1) important to consumers when judging the quality of airline services. Elements considered for inclusion in the rating scale were screened to meet two basic criteria; 1) an element must be obtainable from published data sources for each airline; and 2) an element must have relevance to consumer concerns regarding airline quality. Data for the elements used in calculating the ratings represent performance aspects (on-time arrival, mishandled baggage, involuntary denied boardings, and 12 customer complaint areas) of airlines that are

important to consumers. All the elements are reported in the *Air Travel Consumer Report* maintained by the U.S. Department of Transportation. Weights were originally established by surveying 65 airline industry experts regarding their opinion as to what consumers would rate as important (on a scale of 0 to 10) in judging airline quality. Each weight and element was assigned a plus or minus sign to reflect the nature of impact for that criterion on a consumer's perception of quality. For instance, the criteria of on-time arrival performance are included as a positive element because it is reported in terms of on-time successes, suggesting that a higher number is favorable to consumers. The weight for this criterion is high due to the importance most consumers place on this aspect of airline service. Conversely, the criteria that includes mishandled baggage is included as a negative element, and is reported in terms of mishandled bags per 1000 passengers served, suggesting that a higher number is unfavorable to consumers. Because having baggage arrive with passengers is important to consumers, the weight for this criterion is also high. Weights and positive/negative signs are independent of each other.

Weights reflect importance of the criteria in consumer decision-making, while signs reflect the direction of impact that the criteria should have on the consumer's rating of airline quality. When all criteria, weights and impacts are combined for an airline over the year, a single interval scaled value is obtained. This value is comparable across airlines and across time periods. In the spring of 2002, a nationwide survey of frequent flyers was conducted that allowed a revisiting of the weighting for the AQR elements. Analysis of the sample of 766 opinions showed no appreciable difference in the relative weights for the AQR elements. To maintain comparability across the years, the weights have been held constant.

The Airline Quality Rating criteria and the weighted average methodology allow a focused comparison of domestic airline performance. Unlike other consumer opinion approaches that have relied on consumer surveys and subjective opinion, the AQR continues to use a mathematical formula that considers multiple weighted objective criteria to arrive at a single, fully comparable rating for airline industry performance. The Airline Quality Rating provides both consumers and industry watchers a means for monitoring comparative quality for each airline on a timely basis, using objective, performance-based data. Over its 29 year history, the Airline Quality Rating has often been cited as an industry standard for comparing airline performance. Currently, the AQR stands as the longest regularly published rating available for airline performance. With the continued global trend in airline operations alliances, the argument becomes even stronger for the Airline Quality Rating to be used as a standard method for comparing the quality of airline performance for international operations as well.

Table 1

AIRLINE QUALITY RATING CRITERIA, WEIGHTS AND IMPACT

CRITERIA		WEIGHT	IMPACT (+/-)	
OT	On-Time		8.63	+
DB	Denied Boardings		8.03	-
MB	Mishandled Baggage		7.92	-
CC	Customer Complaints		7.17	-
	Flight Problems			
	Oversales			
	Reservations, Ticketing, and Boarding			
	Fares			
	Refunds			
	Baggage			
	Customer Service			
	Disability			
	Advertising			
	Discrimination			
	Animals			
	Other			

Data for all criteria is drawn from the U.S. Department of Transportation's monthly *Air Travel Consumer Report*. (<http://dot.gov/airconsumer/>)

The formula for calculating the AQR score is:

$$\text{AQR} = \frac{(+8.63 \times \text{OT}) + (-8.03 \times \text{DB}) + (-7.92 \times \text{MB}) + (-7.17 \times \text{CC})}{(8.63 + 8.03 + 7.92 + 7.17)}$$

What the Airline Quality Rating Tells Us About 2018

The Airline Quality Rating industry score for 2018 shows an industry that improved in overall performance quality over the previous year. Six airlines (Delta, Hawaiian, JetBlue, Southwest, Spirit and United) showed improvement in AQR scores in 2018. Spirit had the largest improvement in their AQR score in 2018. Three airlines (Alaska, American and Frontier) all had a decline in their 2018 AQR score from the previous year. Frontier had the largest decline in AQR score for 2018.

The **overall industry** AQR score improved for 2018. Taking all 9 rated airlines together, the AQR score for the industry improved from a level of -0.79 in 2017 to -0.66 in 2018. The 2018 score is the best AQR score in the 29 year history of the rating. The industry AQR score has improved each year for the past four years (2015, 2016, 2017, 2018). Improved performance was seen in three of the four of the areas tracked. As an industry, the AQR criteria show that on-time arrival percentage was down (80.2% in 2017 compared to 79.6% in 2018). The industry mishandled baggage rate was better, decreasing from 2.46 per 1,000 passengers in 2017 to 2.43 per 1,000 passengers in 2018. Involuntary denied boardings by the industry improved to 0.14 per 10,000 passengers in 2018 from 0.34 per 10,000 passengers in 2017. The consumer complaint rate across the industry declined to 1.04 per 100,000 passengers in 2018 from 1.35 per 100,000 passengers in 2017. Of the 8,865 complaints registered with the DOT regarding all U.S. domestic carriers, 72% were for flight problems, baggage problems, reservation, ticketing and boarding issues, or customer service problems. Improvement in industry performance in three of the four areas tracked in the ratings is a positive sign for consumers and airlines alike. The 23% decrease in the rate of consumer complaints in 2018 suggests that improved performance in important areas to consumers has been noticed by the flying public.

Alaska Airlines (AS) Alaska had performance improvement in only one of the four areas tracked. Worse on-time arrival performance (82.6% in 2017 compared to 81.8% in 2018, a higher rate of mishandled baggage (1.81 per 1000 passengers in 2017 compared to 2.67 in 2018) and the same rate of complaints (0.57 per 100,000 passengers in 2017 and 2018) were negatives for Alaska. The positive for 2018 was a reduction in involuntary denied boardings per 10,000 passengers (0.32 in 2017 compared to 0.23 in 2018). With only one of four areas showing improvement in performance, the AQR score of -0.63 for Alaska Airlines for 2018 was a decline from -0.44 in 2017.

American Airlines (AA) The AQR score for the airline declined in 2018 compared to 2017. The decline in AQR score reflects better performance in only two of the four criteria measured. On-time arrivals (80.4% in 2017 compared to 78.4% in 2018) and baggage handling (2.84 per 1,000 passengers in 2017 compared to 3.83 in 2018) both declined. Involuntary denied boardings (0.38 in 2017 compared to 0.20 in 2018) and customer complaints per 100,000 passengers (1.96 in 2017 compared to 1.38 in 2018) each showed improved performance. The impact of better performance outcomes for only two criteria produce a slight drop (-1.03 in 2017 compared to -1.10 in 2018) in American Airlines' AQR score for 2018.

Delta Air Lines (DL) On-time percentage for 2018 shows a slight improvement over 2017 (85.4% in 2017 compared to 85.7% in 2018). Their rate of mishandled baggage of 1.82 bags per 1,000 passengers in 2017 is virtually the same as their 1.80 rate for 2018. A decrease in the rate of denied boardings (2017 rate of 0.05 per 10,000 passengers compared to 0.00 for 2018) helped improve their AQR score for 2018. A decrease in the rate of customer complaints (0.92 per 100,000 passengers in 2017 compared to 0.65 in 2018) combined with other improvements and steady performance combined to yield an overall AQR score for 2018 that was the best of the airlines rated. Their 2018 AQR score of -0.36 was better than their 2017 score of -0.44.

Frontier Airlines (F9) On-time performance in 2018 (69.4%) was worse compared to 2017 (78.3%). Frontier's denied boarding performance (0.63 per 10,000 passengers in 2018 compared to 0.57 in 2017) was also worse. Their mishandled baggage rate of 2.60 per 1,000 passengers for 2018 was improved over their 2.67 in 2017. A customer complaint rate of 4.02 complaints per 100,000 passengers for 2018 was worse than their 2017 rate of 2.78. Frontier's 2018 AQR score of -1.53 compared to -1.23 for 2017 was the result of performance declines in three of the four criteria. Frontier had the largest decline in AQR score of all airlines rated.

Hawaiian Airlines (HA) On-time performance (89.3% in 2018 and 88.2% for 2017) is the best of all airlines rated for 2018 and 2017. Hawaiian's involuntary denied boarding performance (0.01 per 10,000 passengers in 2018 and 0.09 in 2017) is among the best of the airlines rated and compares very favorably to the industry average of 0.14. A customer complaint rate of 1.10 complaints per 100,000 passengers in 2018 is worse than last year's rate of 0.95. Their mishandled baggage rate of 2.59 per 1,000 passengers in 2018 is better than their 2017 rate of 2.75. Hawaiian had the fifth best AQR score for 2018 at -0.65 and is one of six airlines to show an improvement in their AQR score.

JetBlue Airways (B6) On-time performance in 2018 declined slightly to 71.0% from 71.4% in 2017. Jet Blue's denied boarding performance (0.01 per 10,000 passengers in 2018 and 0.41 in 2017) is a noticeable improvement and is the most improved of the airlines rated. A customer complaint rate of 0.99 complaints per 100,000 passengers was lower in 2018 (1.14 in 2017). Their mishandled baggage rate of 1.79 per 1,000 passengers in 2018 was second best among airlines rated and was slightly higher than their 2017 rate of 1.65. JetBlue had the second best AQR score (-0.48) of the airlines rated for 2018.

Southwest Airlines (WN) An on-time arrival percentage of 79.2% in 2018 improved from 78.7% in 2017. A customer complaint rate of 0.36 per 100,000 passengers in 2018 improved from 0.47 in 2017. An involuntary denied boarding rate of 0.15 per 10,000 passengers in 2018 improved from 0.53 per 10,000 passengers in 2017. A mishandled baggage rate of 2.89 per 1,000 passengers in 2018 was slightly worse than their rate of 2.83 per 1,000 passengers for 2017. Overall, Southwest showed improved performance with an AQR score of -0.62 for 2018 compared to -0.73 in 2018.

Spirit Airlines (NK) On-time performance of 77.1% in 2017 was improved to 81.1% in 2018. Spirit's rate of involuntary denied boardings of 0.82 per 10,000 passengers in 2017 improved to 0.56 for 2018. Their mishandled baggage rate of 1.61 per 1,000 passengers in 2017 declined to 1.76 in 2018. A customer complaint rate of 5.59 complaints per 100,000 passengers in 2017 was reduced to 2.83 in 2018. Improvements in performance criteria of on-time, involuntary denied boardings and customer complaints resulted in Spirit's AQR score being the most improved of the carriers rated.

United Airlines (UA) On-time arrival performance declined from 82.1% in 2017 to 77.9% in 2018. Their mishandled baggage rate increased from 2.38 per 1,000 passengers in 2017 to 2.56 in 2018. Performance regarding involuntary denied boardings of 0.23 per 10,000 passengers in 2017 improved to 0.01 for 2018. A reduction in their customer complaint rate to 1.28 in 2018 from 1.89 per 100,000 passengers in 2017 combined with positive performance improvements in involuntary denied boardings moved United's 2018 AQR score to -0.72 from -0.86 in 2017.

Previous Airline Quality Reports

Bowen, Brent D., Headley, Dean E. and Luedtke, Jacqueline R. (1991), Airline Quality Rating, National Institute for Aviation Research Report 91-11, Wichita, Kansas.

Bowen, Brent D. and Headley, Dean E. (1992,1993,1994,1995), Airline Quality Rating Report, National Institute for Aviation Research Report Series, Wichita, Kansas.

Bowen, Brent D., and Headley, Dean E. (1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018), Airline Quality Rating Report, W. Frank Barton School of Business, Wichita, Kansas.

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Detail of Airline Performance

Since the Airline Quality Rating is comparable across airlines and across time, monthly rating results can be examined both individually and collectively. The following pages outline the AQR scores for the industry and for each airline rated by month for 2018. For comparison purposes, results are also displayed for 2017, where available. A composite industry chart that combines the airlines tracked is shown at first, with individual airline performance charts following in alphabetical order.

A change in reporting guidelines used by the Air Travel Consumer Report required that changes be made to the number of airlines included in this report. To provide the most comparable data picture, only the main airline data is reported. Branded carriers that are associated with main carriers are not included in the data used in this AQR report. The result is a consistent group of nine carriers that have all data points reported and calculated in the AQR scores for 2018.

Airline Quality Rating Scores

2018 - 2011

	2018 AQR		2017 AQR		2016 AQR		2015 AQR		2014 AQR		2013 AQR		2012 AQR		2011 AQR	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Alaska	-0.63	4	-0.437	1	-0.39	1	-0.80	5	-0.65	5	-0.69	5	-0.77	6	-0.79	5
American	-1.10	8	-1.03	9	-1.35	9	-1.73	10	-1.35	7	-1.10	9	-1.11	10	-1.24	10
Delta	-0.36	1	-0.442	2	-0.40	2	-0.49	3	-0.60	3	-0.59	4	-0.58	4	-0.80	6
Frontier	-1.53	9	-1.23	11	-2.24	12	-2.60	11	-1.48	8	-1.35	11	-0.78	7	-0.75	4
Hawaiian	-0.65	5	-0.68	4	-0.69	5	-0.67	4	-0.53	2	-0.59	3	-0.71	5	-0.59	2
JetBlue	-0.48	2	-0.58	3	-0.60	4	-0.44	2	-0.61	4	-0.42	2	-0.43	2	-0.60	3
Southwest	-0.62	3	-0.73	5	-0.88	6	-1.00	6	-1.22	6	-1.06	8	-0.81	8	-0.93	7
Spirit	-1.00	7	-1.66	12	-2.01	11	-3.18	13	N/A	-	N/A	-	N/A	-	N/A	-
United	-0.72	6	-0.86	8	-1.05	8	-1.43	8	-1.62	9	-1.43	12	-2.18	14	N/A	-
 Industry	 -0.66		 -0.79		 -0.95		 -1.21		 -1.24		 -1.07		 -1.11		 -1.08	

NOTES:

Scores and rankings for 2015 reflect the addition of Spirit to the airlines tracked.

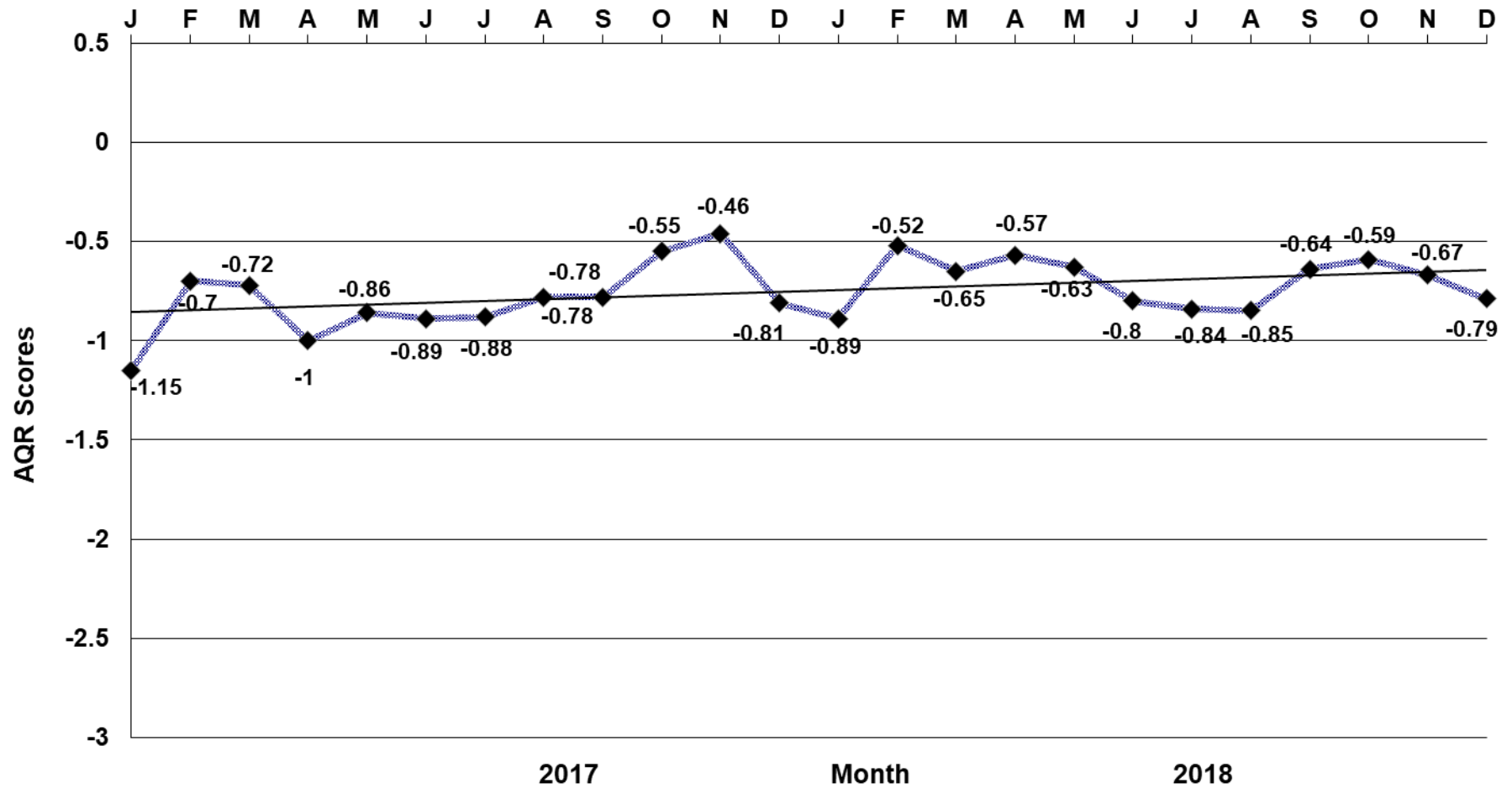
As of January 2014, data of the merged operations of American Airlines and USAirways are combined and appear only as American Airlines.

As of January 2014, data of the merged operations of Southwest Airlines and AirTran Airlines are combined and appear only as Southwest Airlines.

Scores and rankings for 2012 reflect the combining of United and Continental (appears as United).

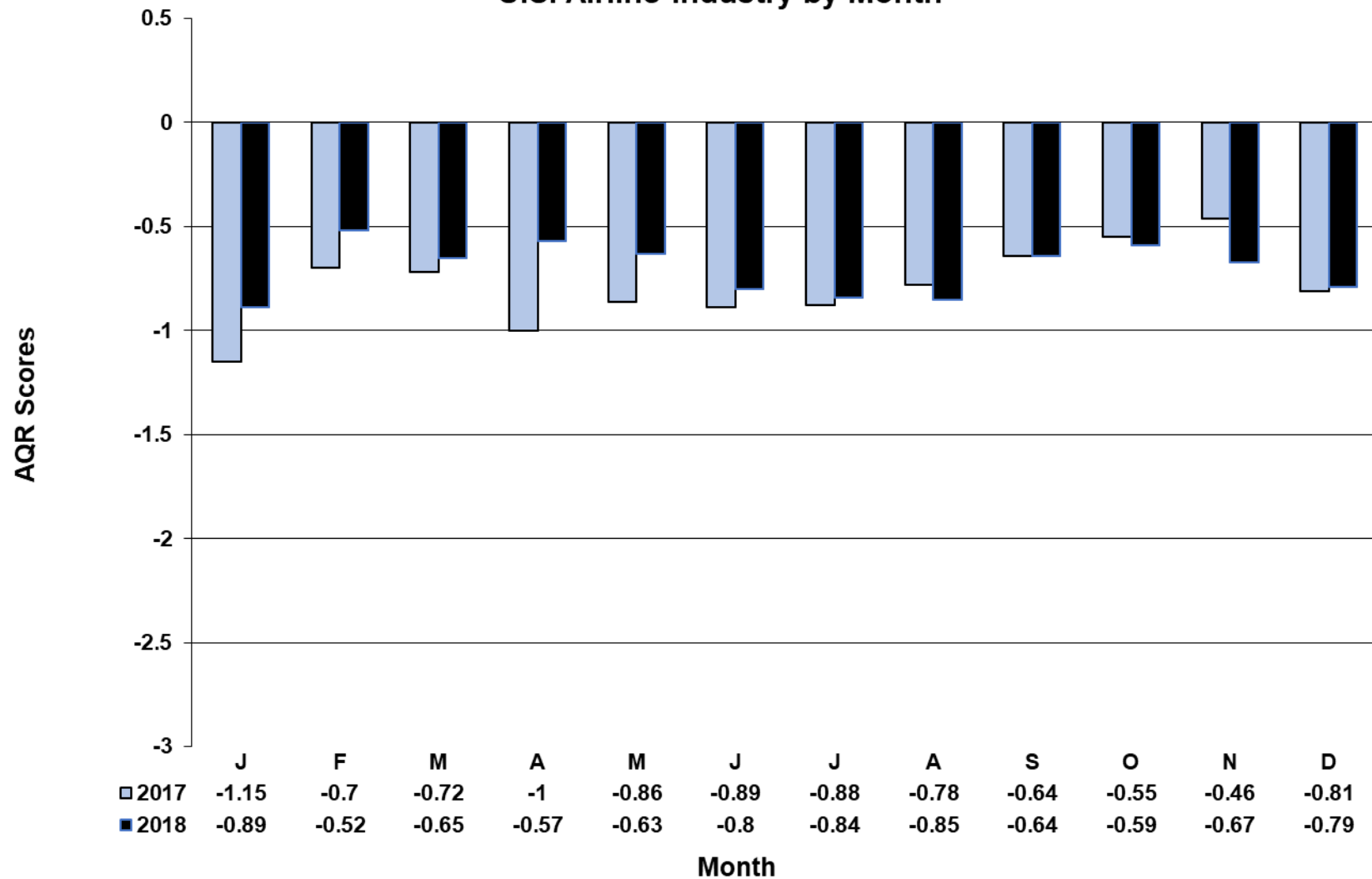
Airline Quality Rating

U.S. Airline Industry 2017 - 2018



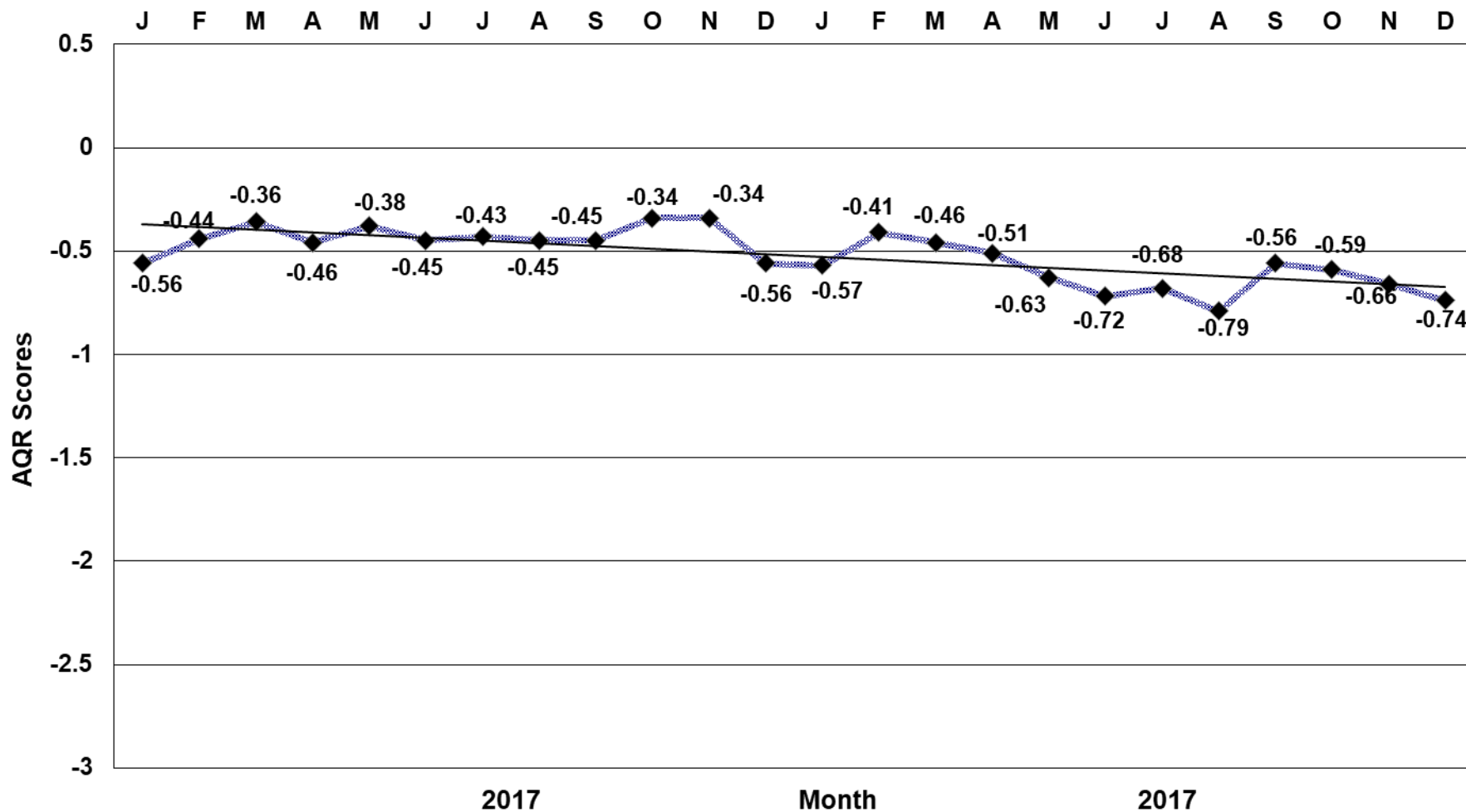
Airline Quality Rating

U.S. Airline Industry by Month



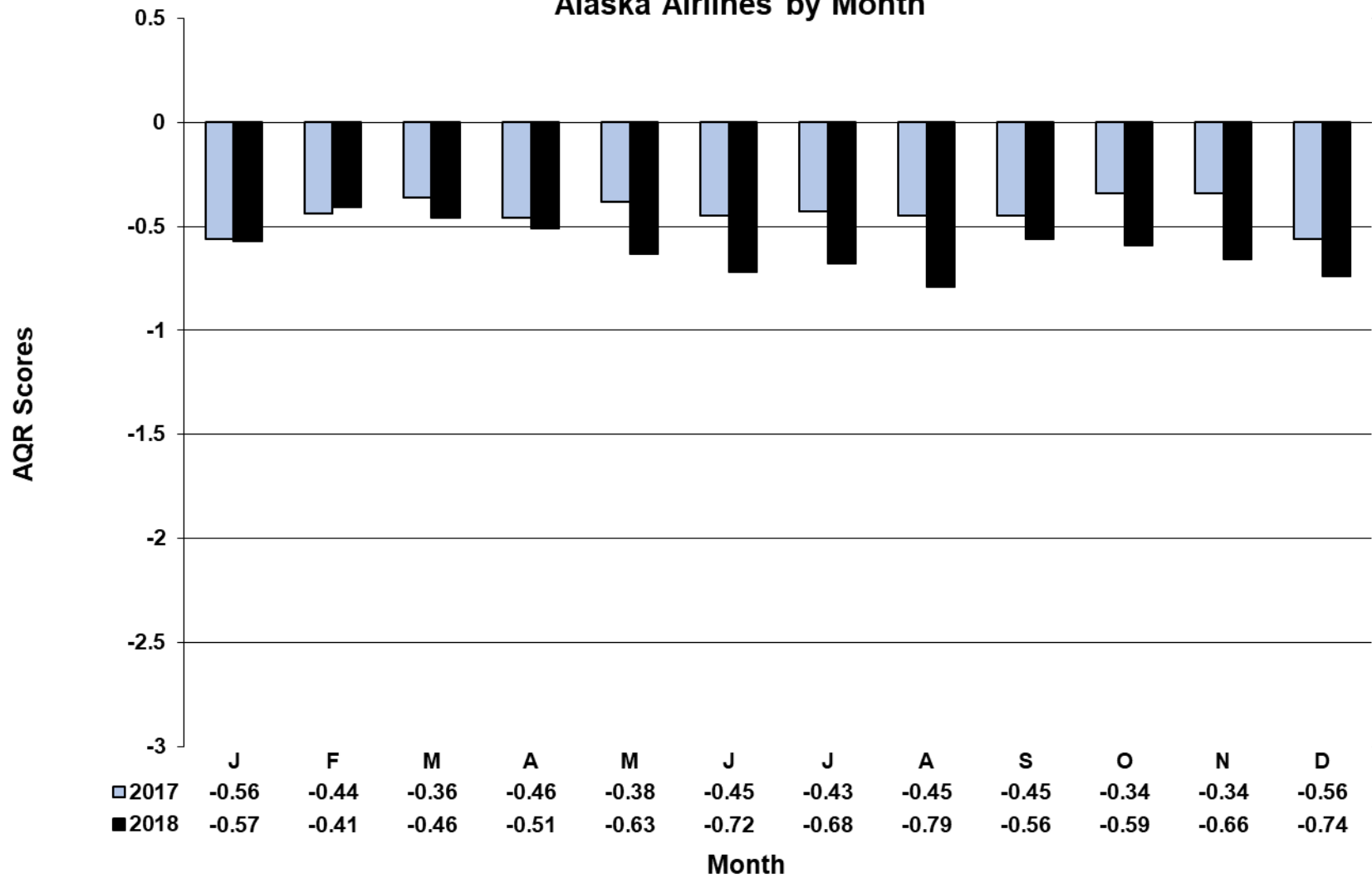
Airline Quality Rating

Alaska Airlines 2017 - 2018



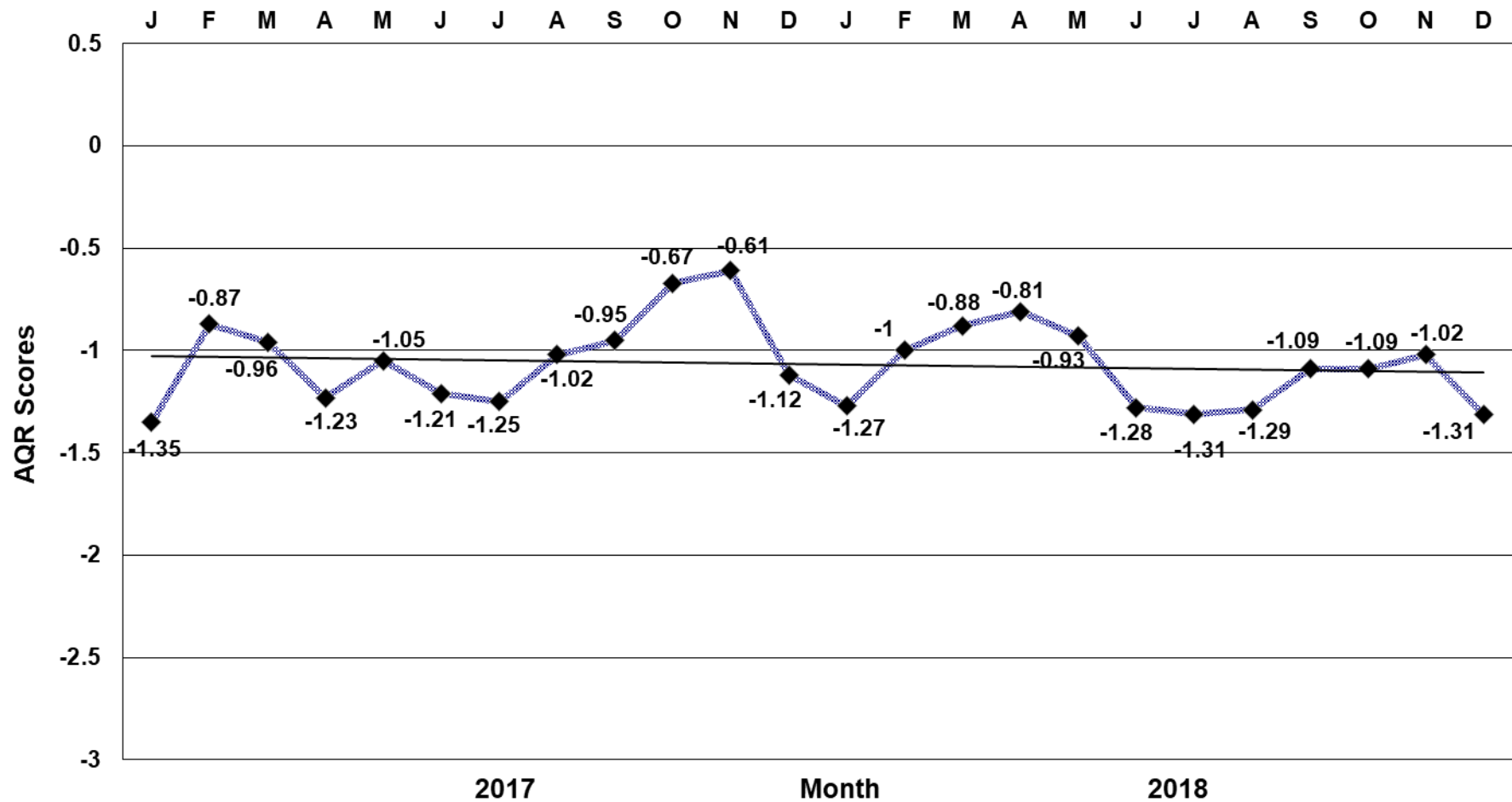
Airline Quality Rating

Alaska Airlines by Month



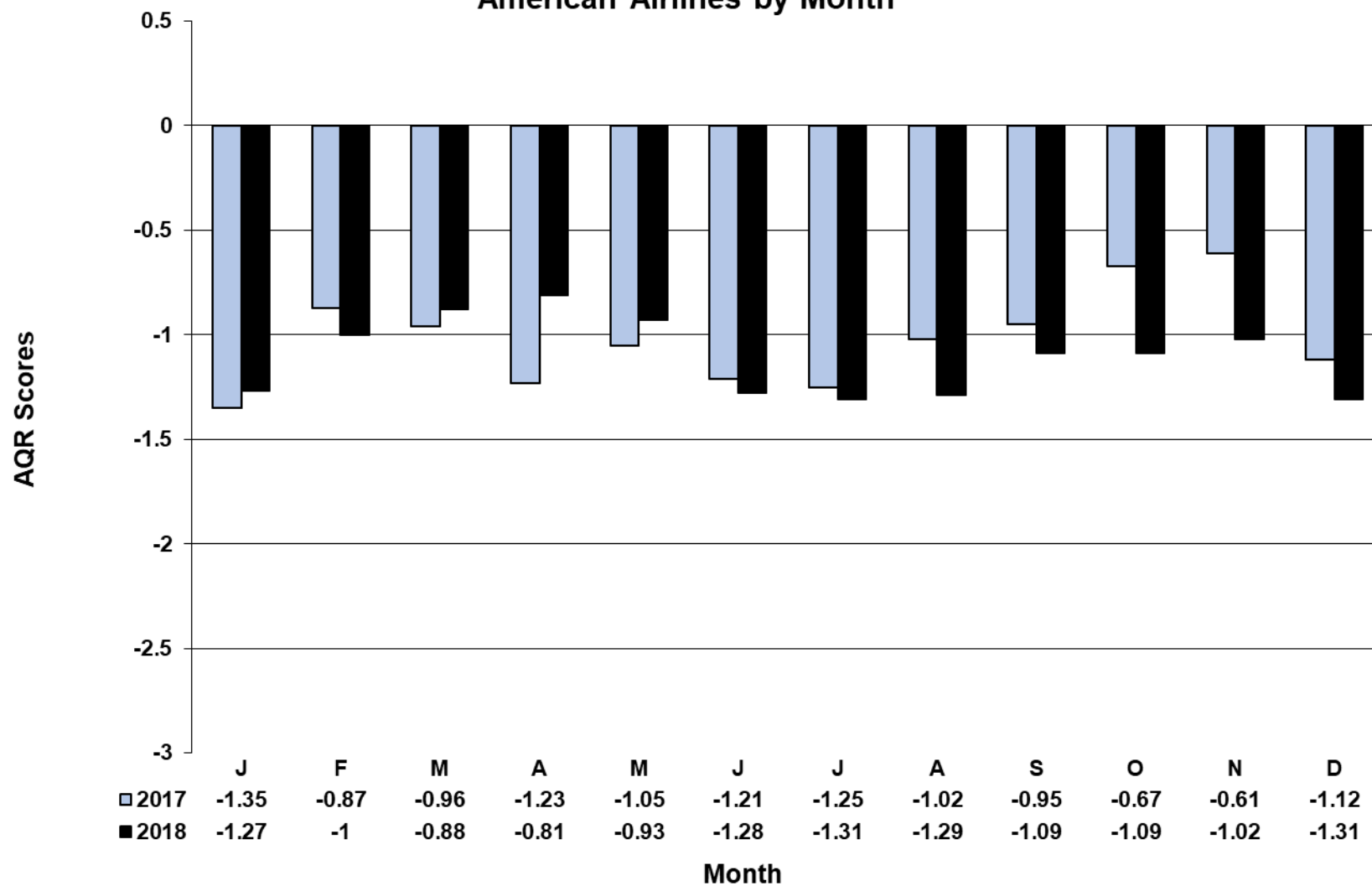
Airline Quality Rating

American Airlines 2017 - 2018



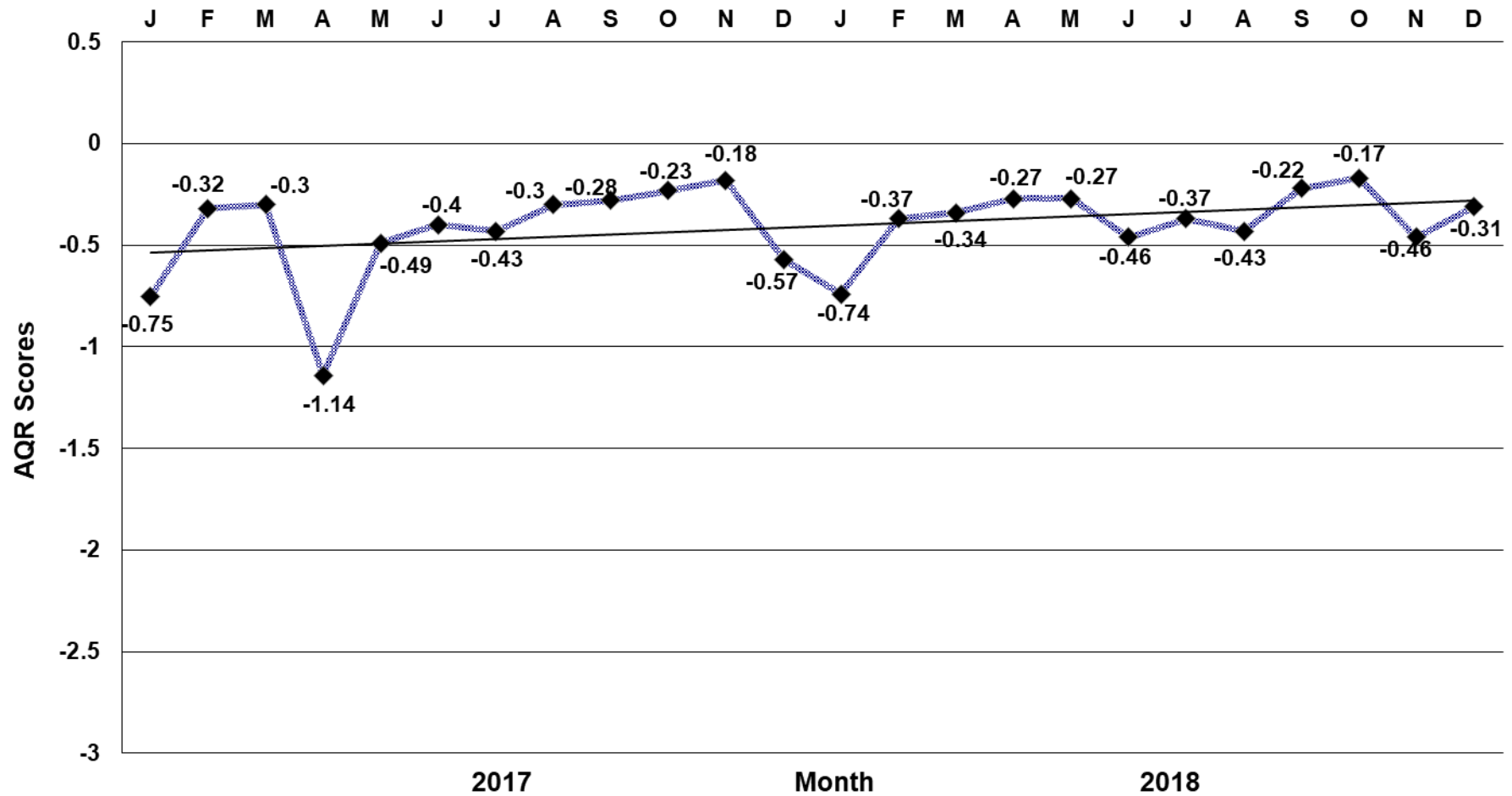
Airline Quality Rating

American Airlines by Month



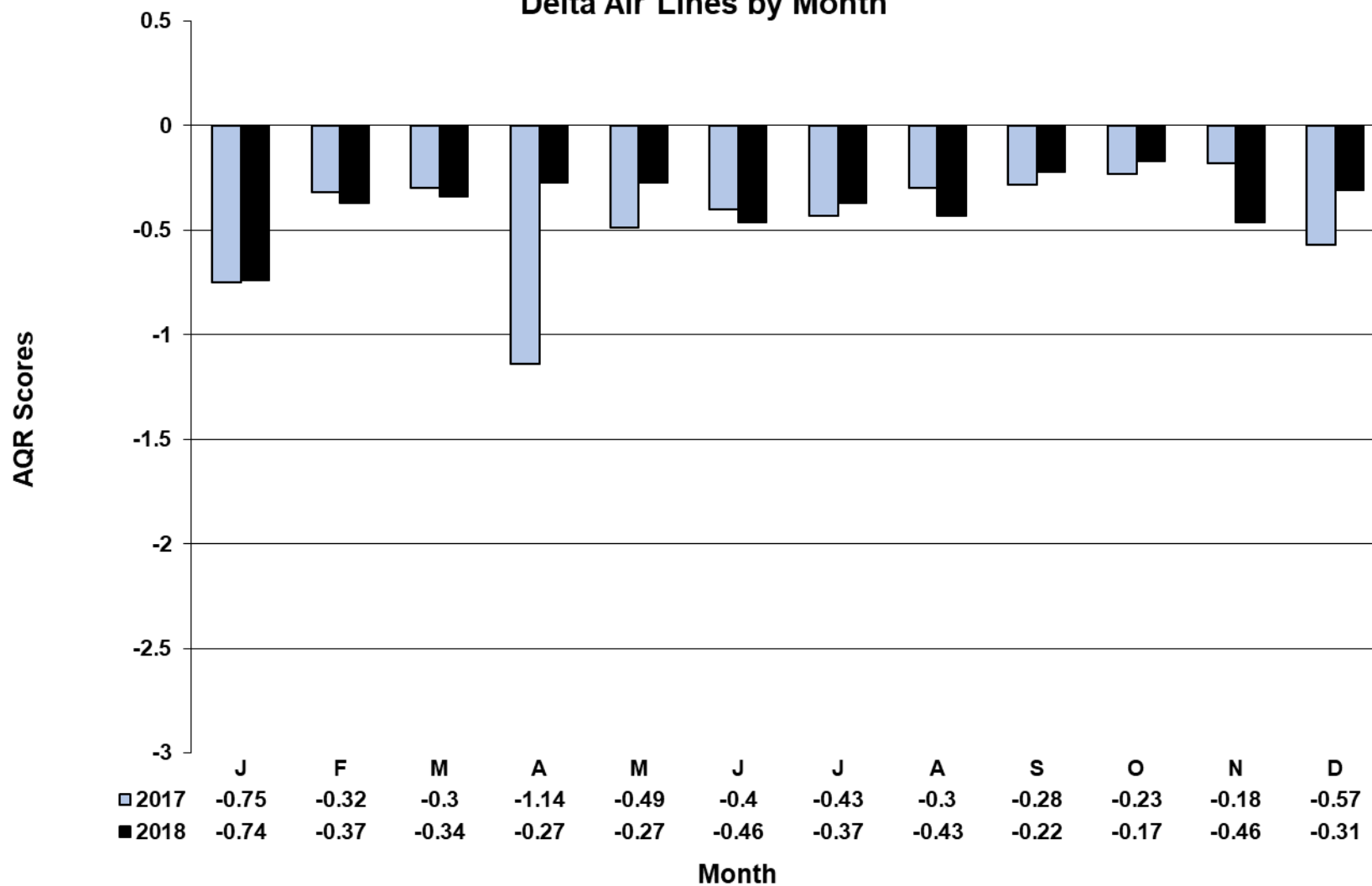
Airline Quality Rating

Delta Air Lines 2017 - 2018



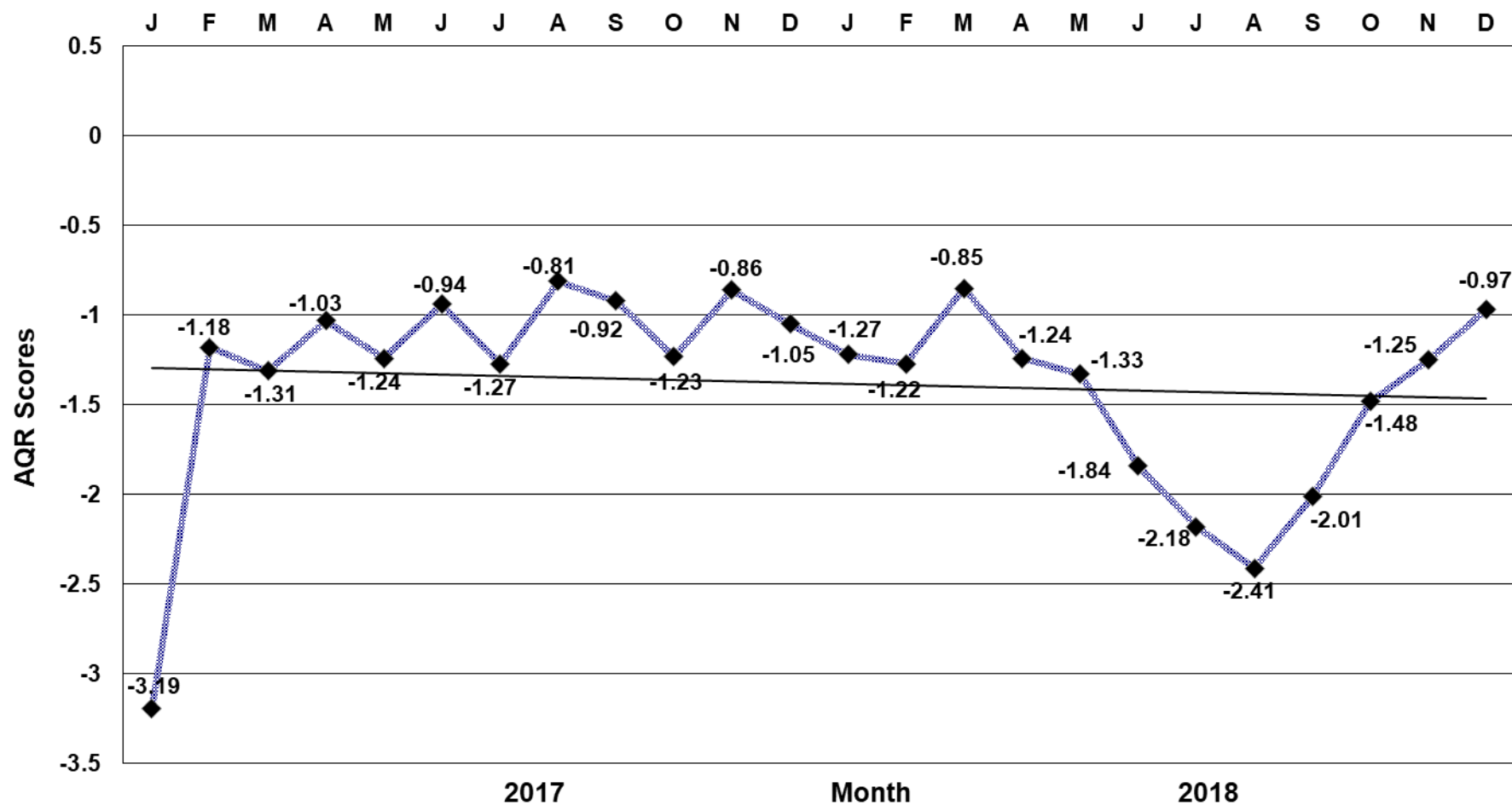
Airline Quality Rating

Delta Air Lines by Month



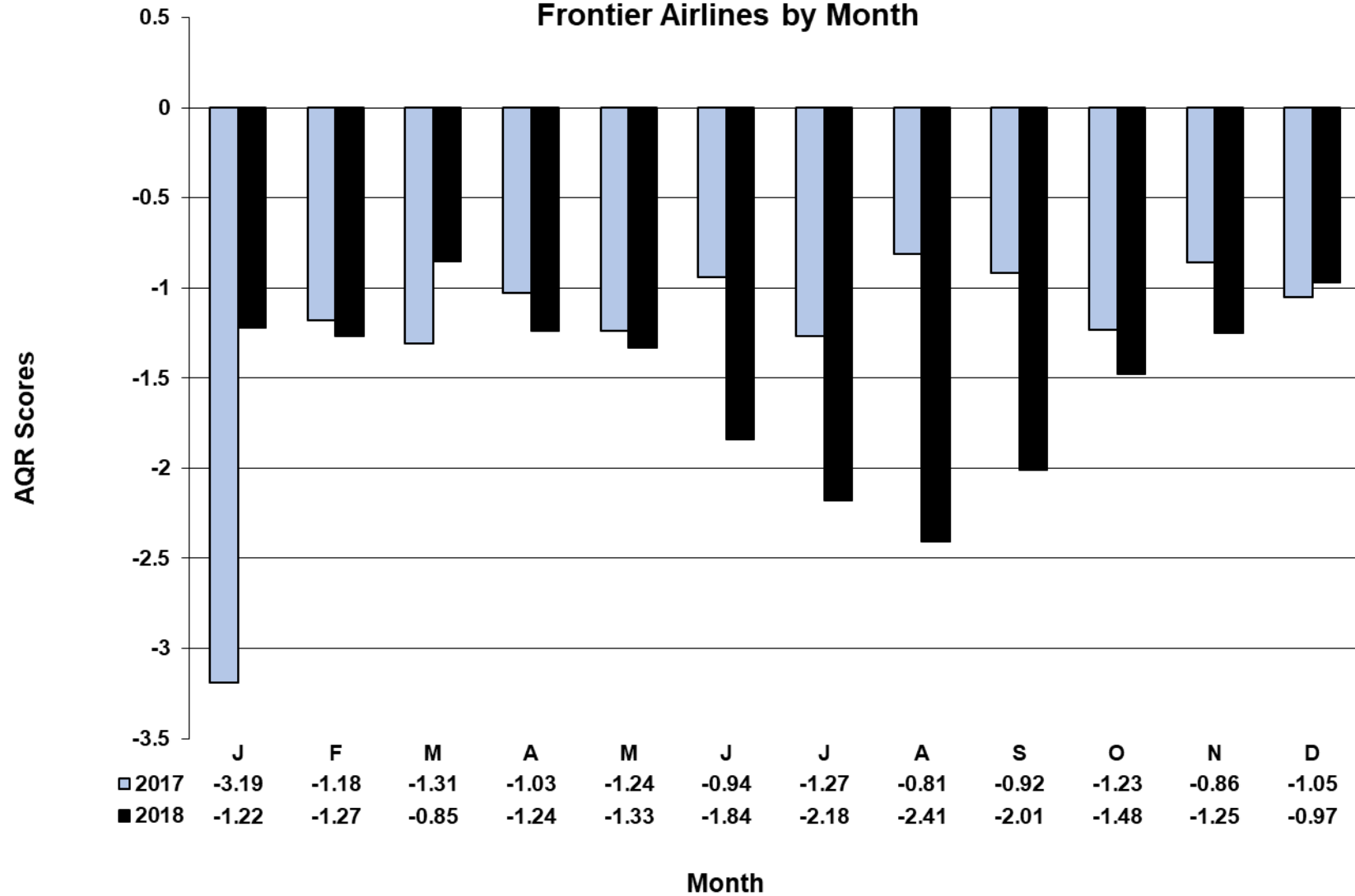
Airline Quality Rating

Frontier Airlines 2017 - 2018



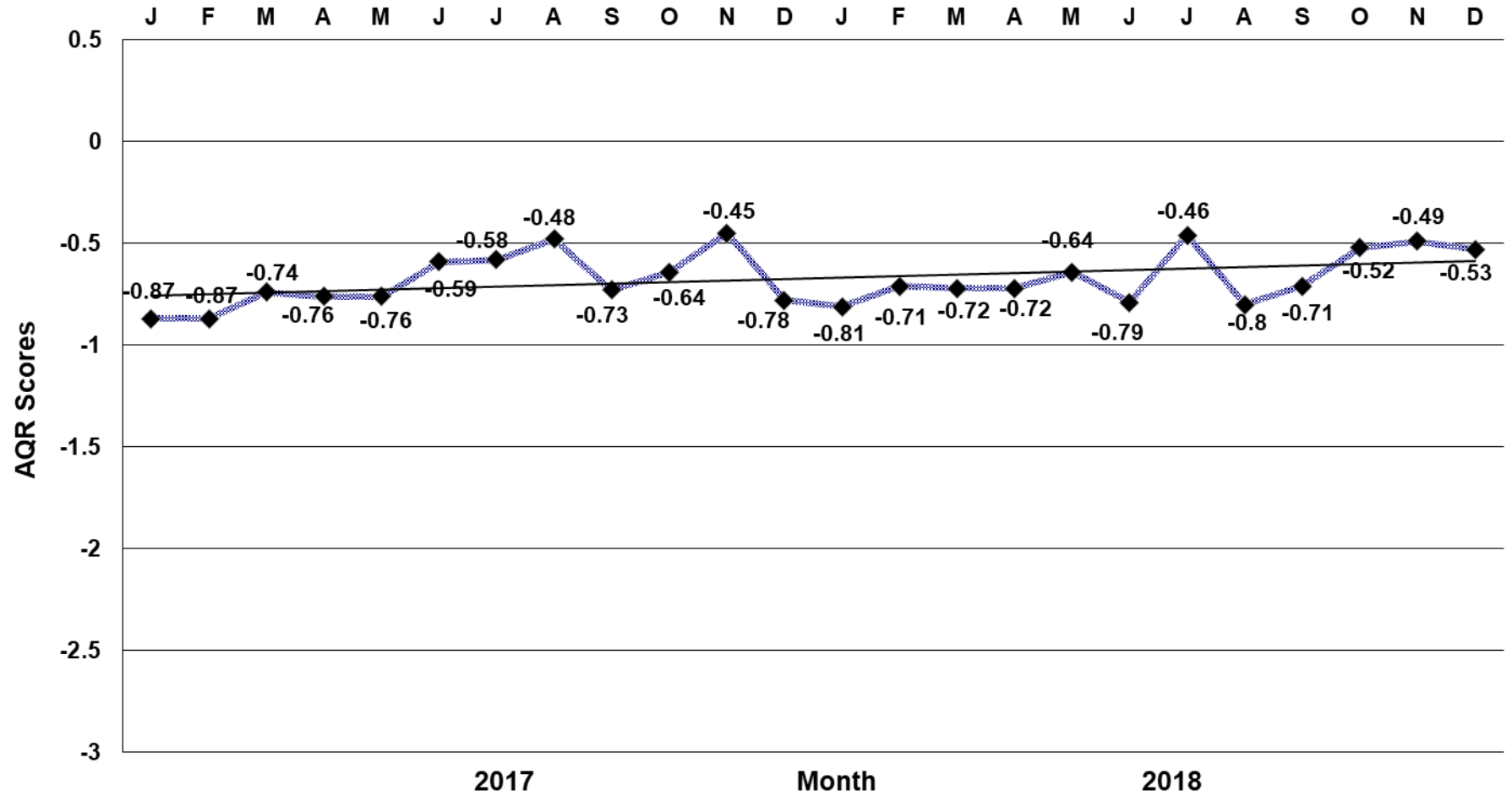
Airline Quality Rating

Frontier Airlines by Month



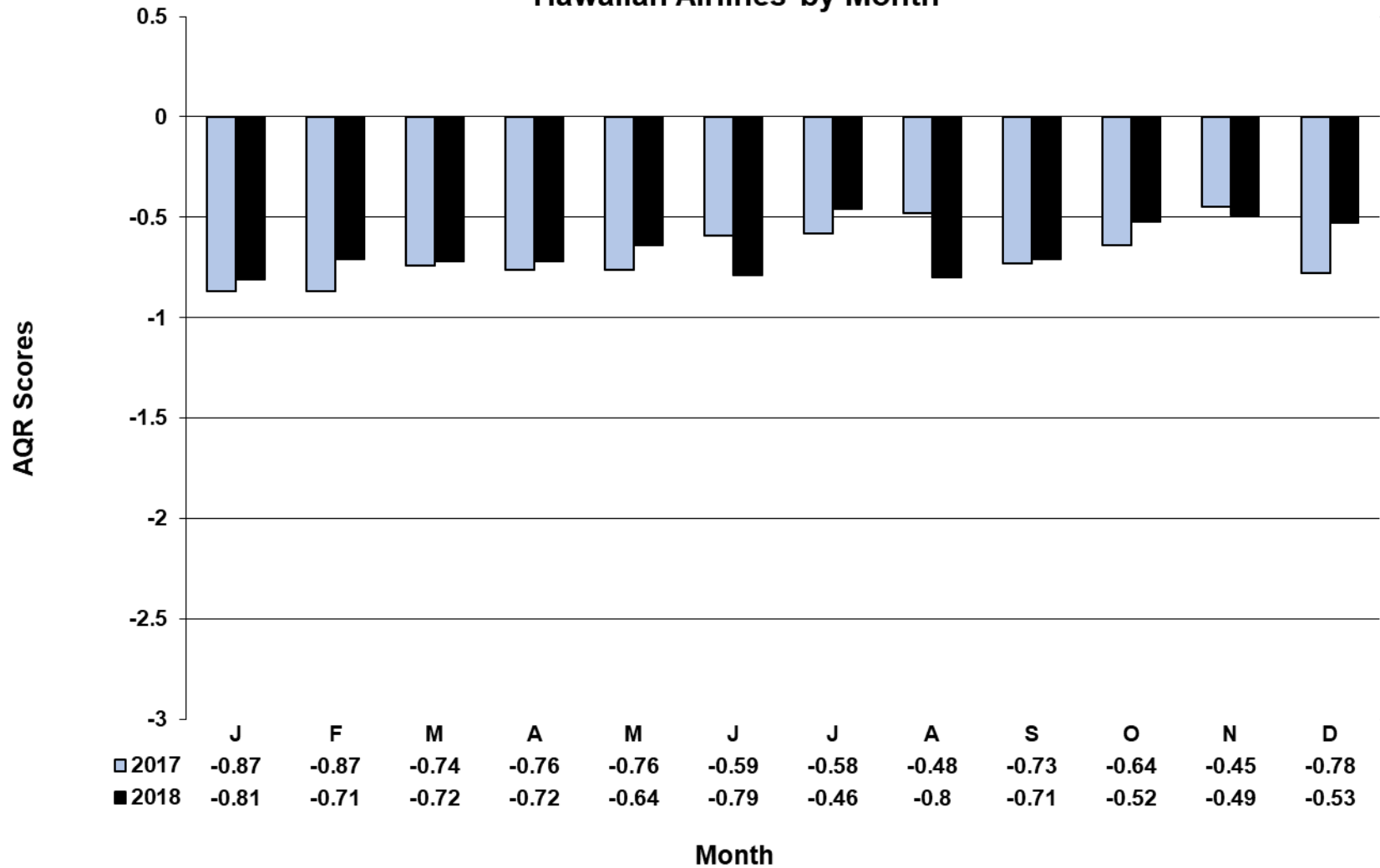
Airline Quality Rating

Hawaiian Airlines 2017 - 2018



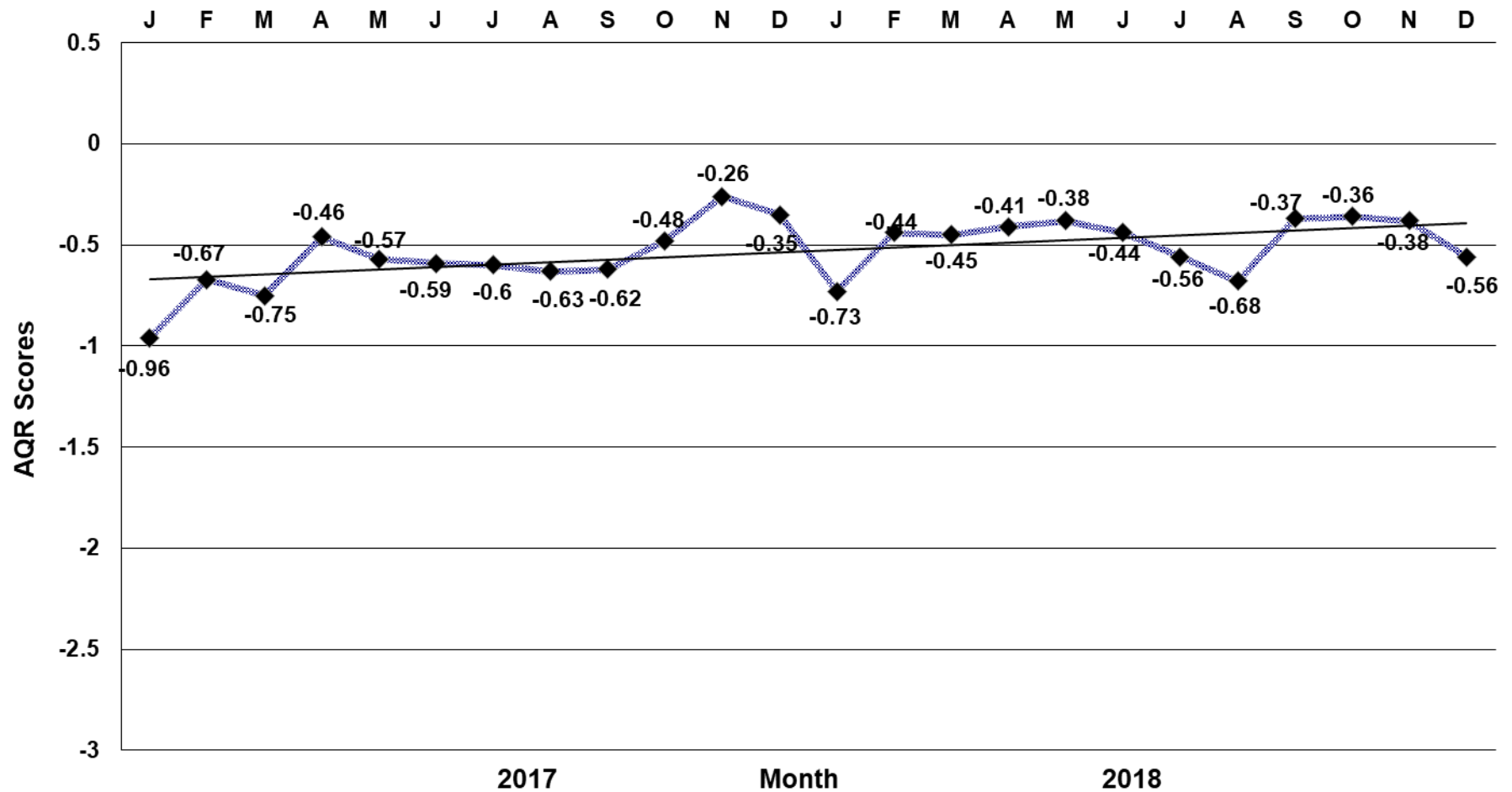
Airline Quality Rating

Hawaiian Airlines by Month



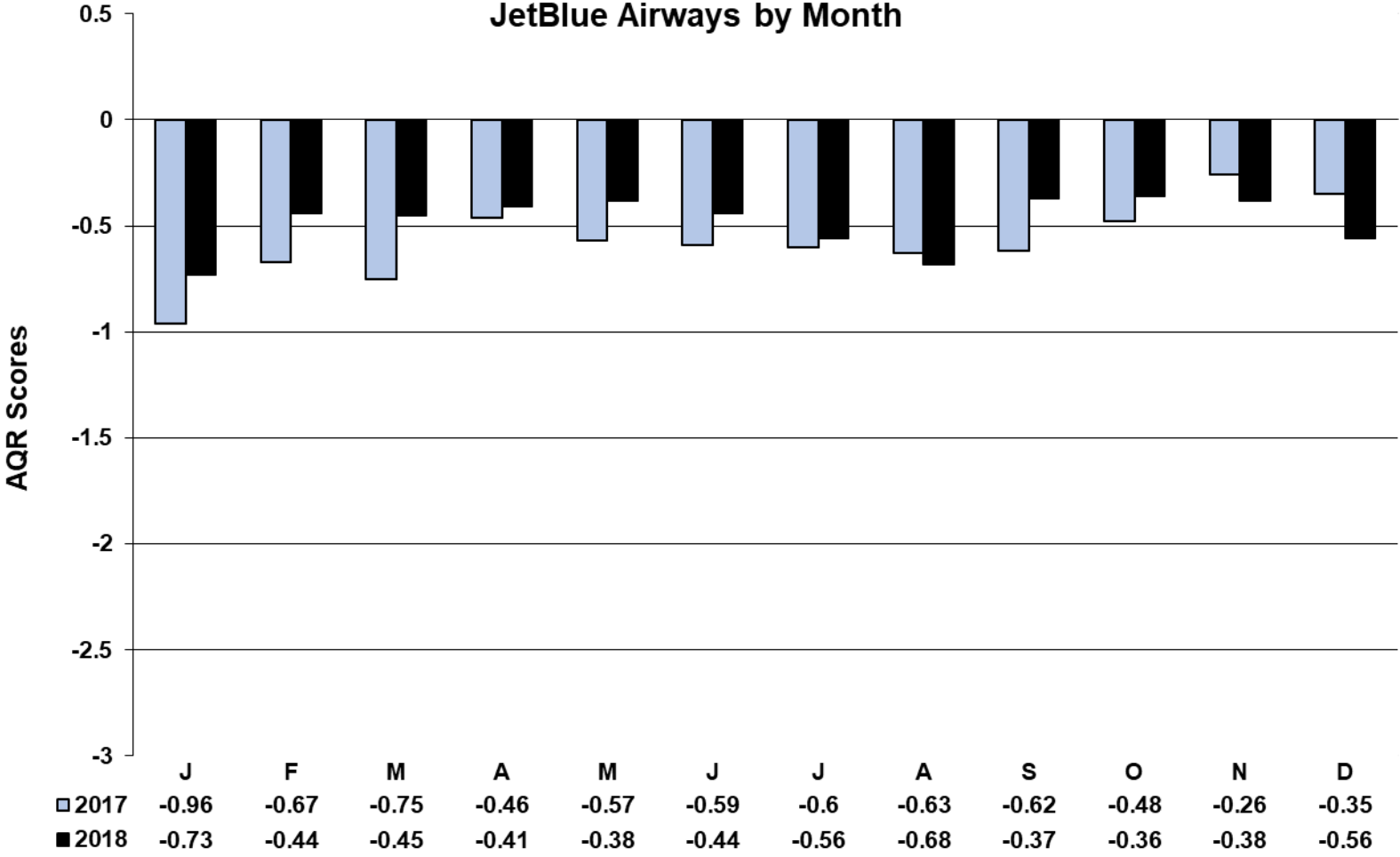
Airline Quality Rating

JetBlue Airways 2017 - 2018



Airline Quality Rating

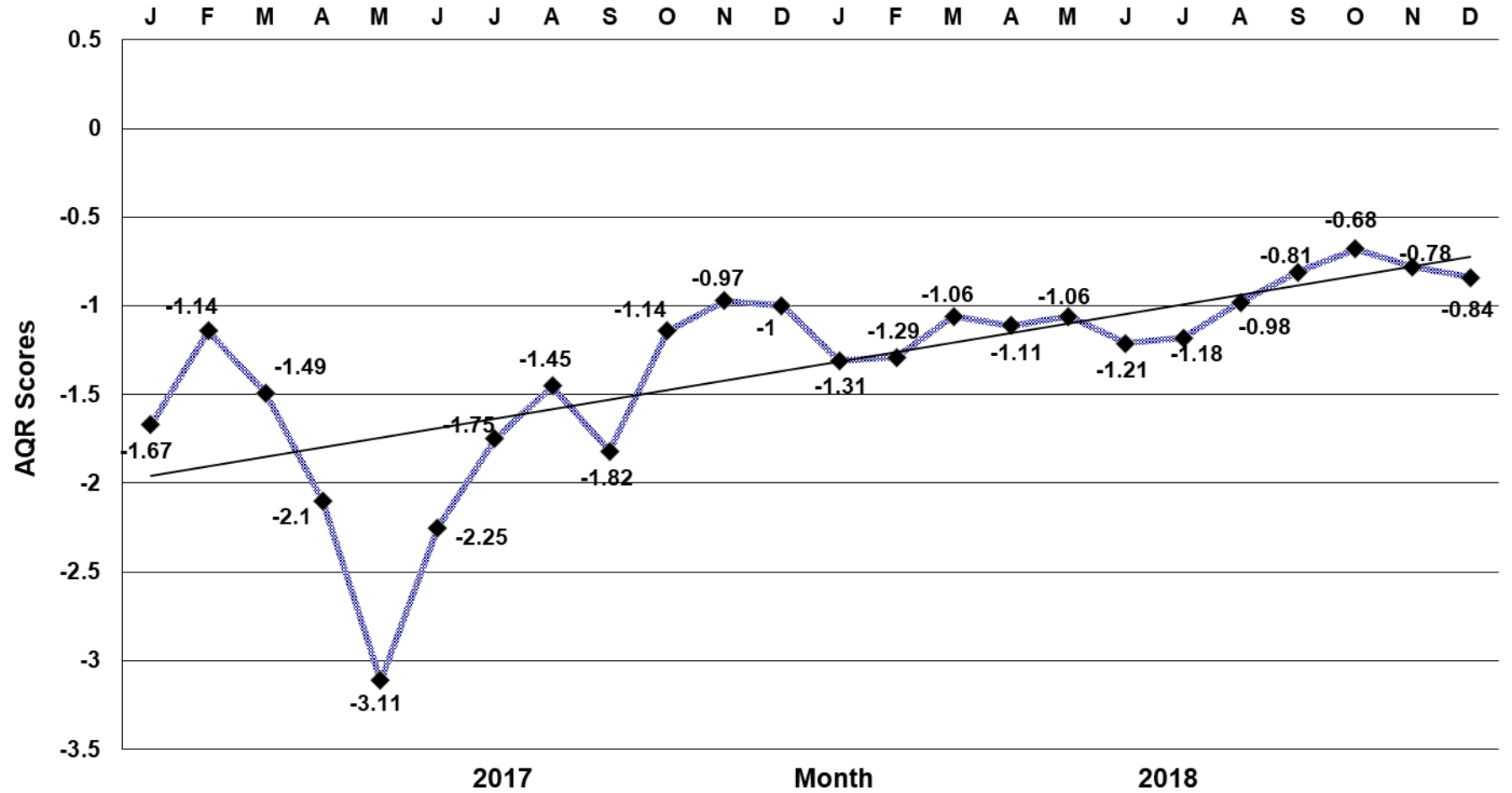
JetBlue Airways by Month



Month

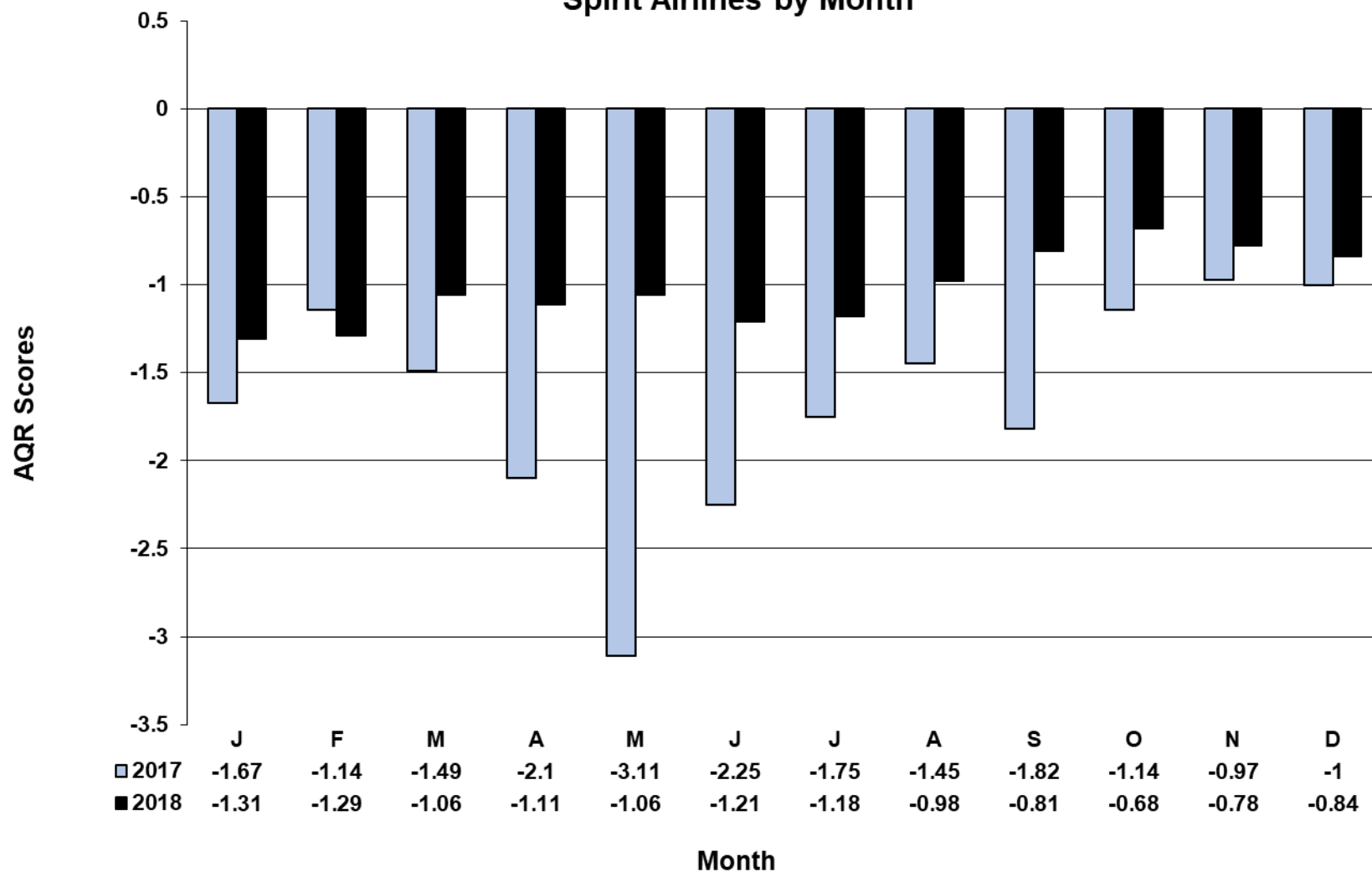
Airline Quality Rating

Spirit Airlines 2017 - 2018



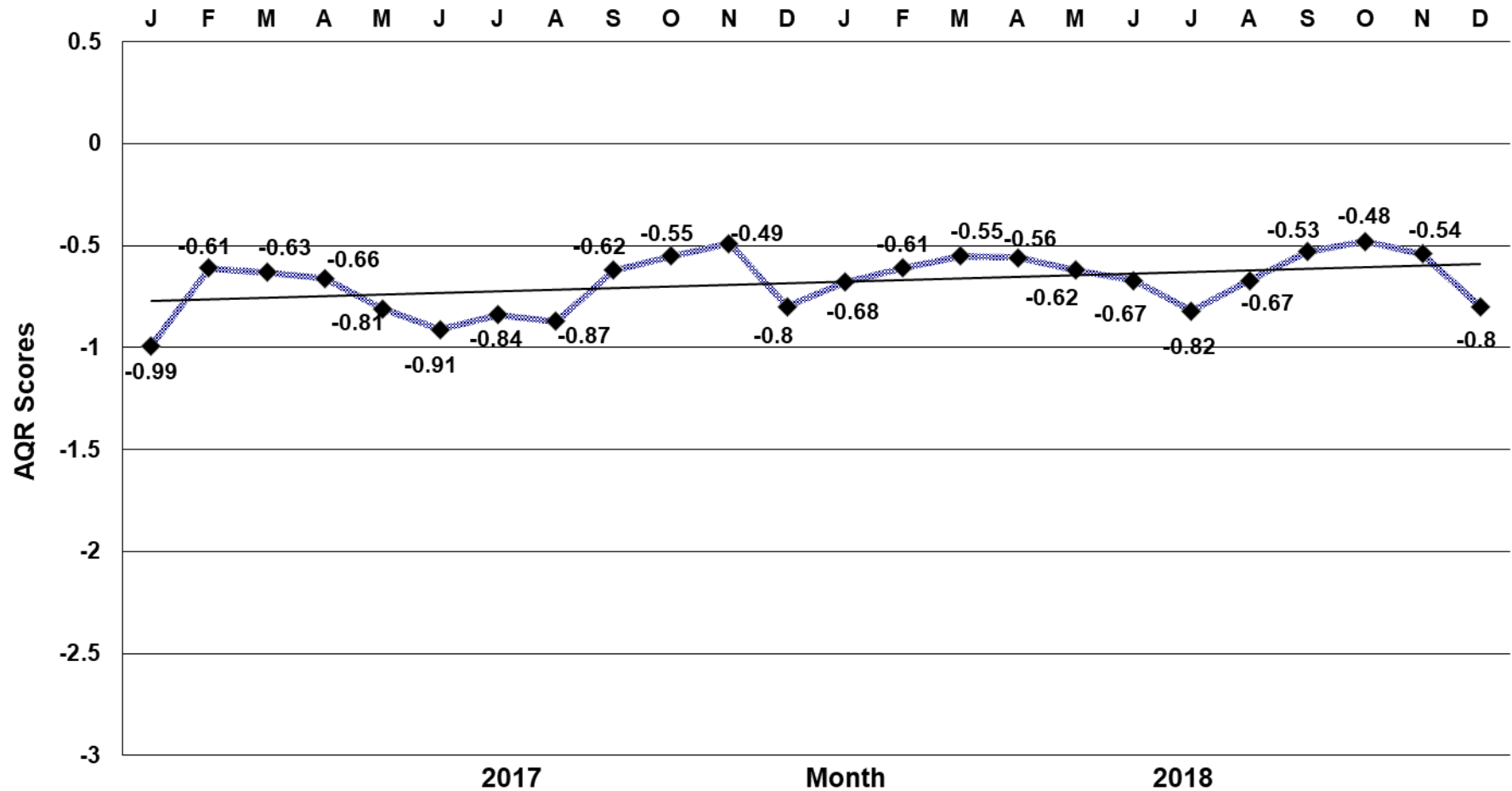
Airline Quality Rating

Spirit Airlines by Month



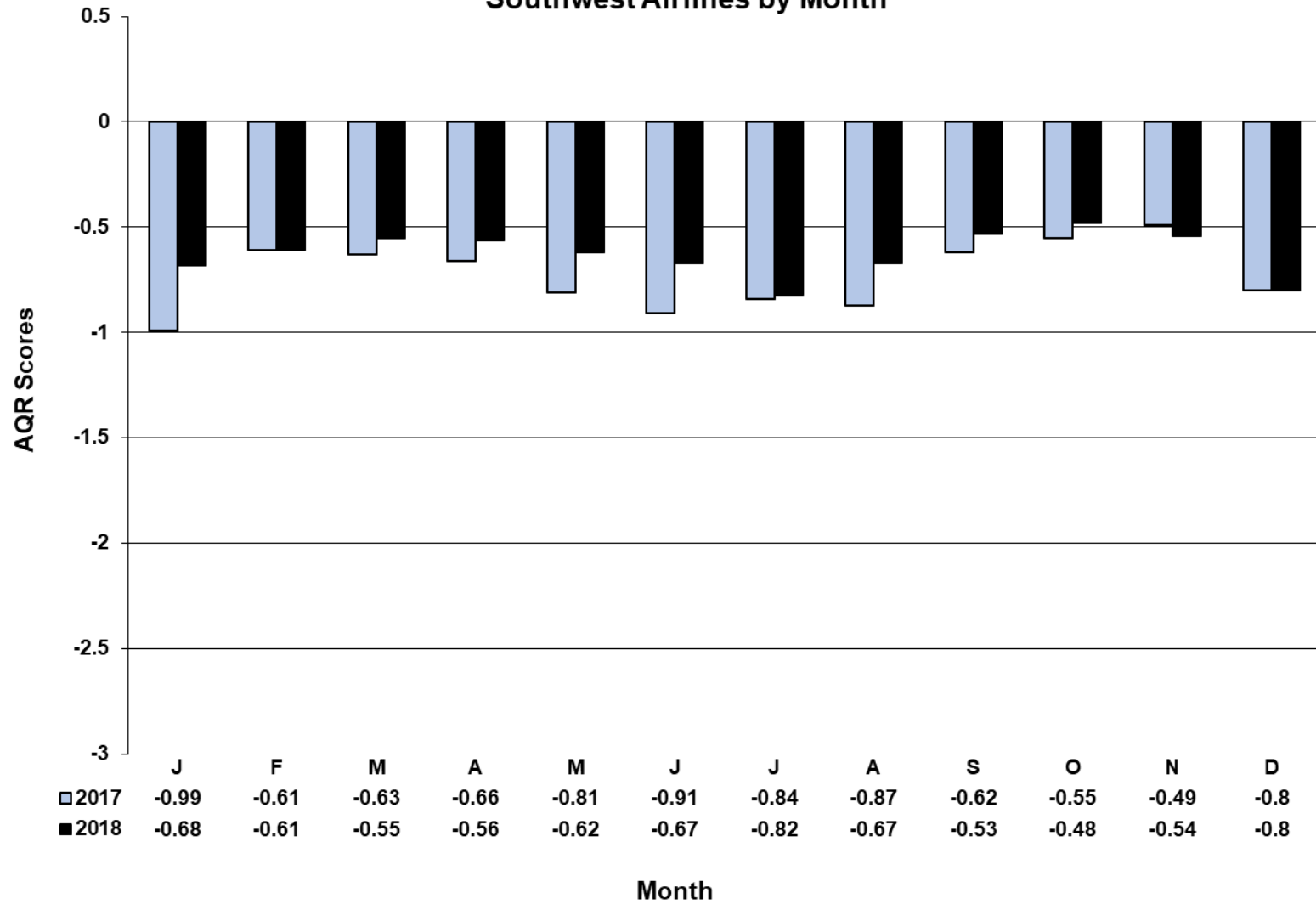
Airline Quality Rating

Southwest Airlines 2017 - 2018



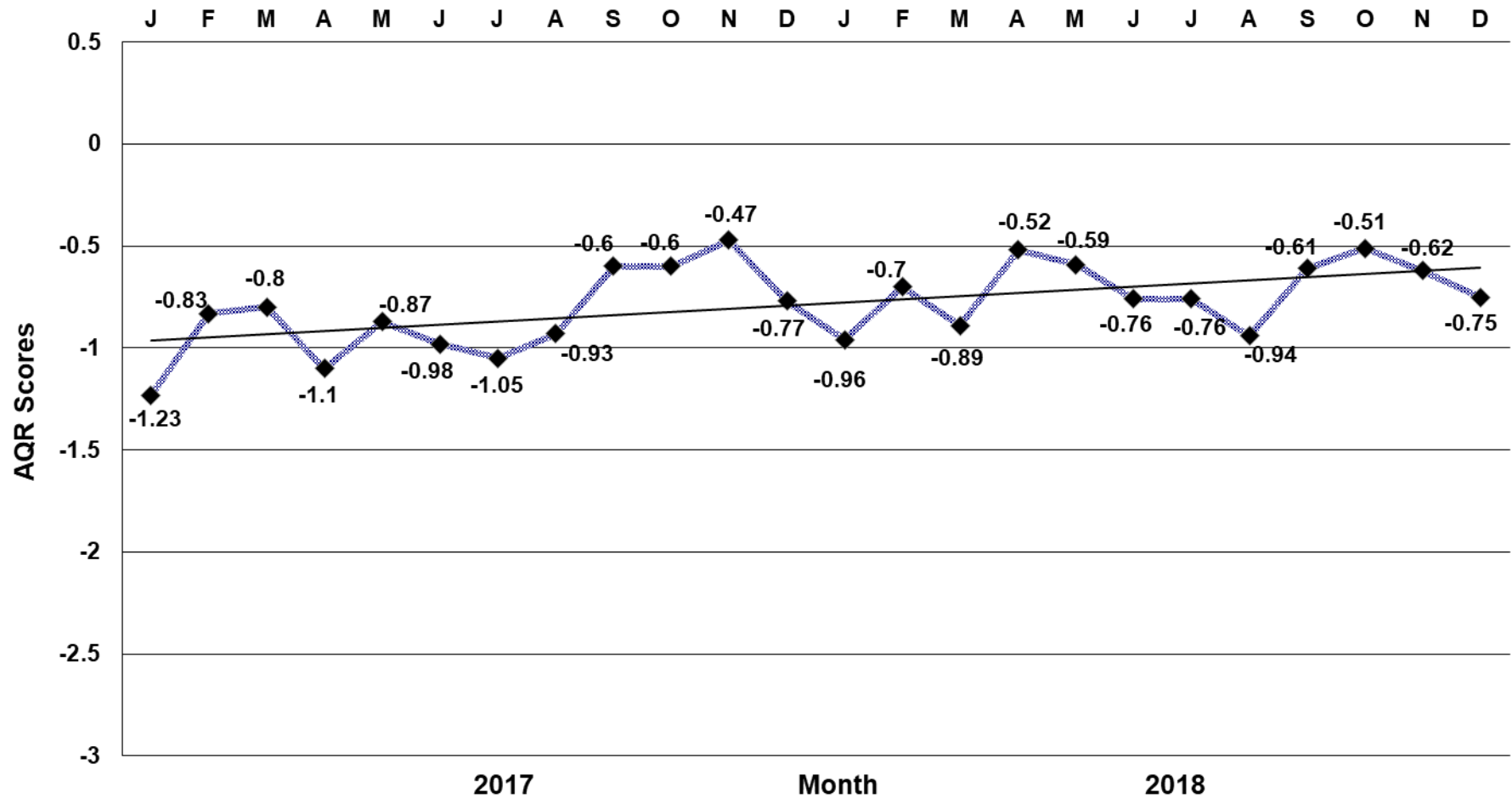
Airline Quality Rating

Southwest Airlines by Month



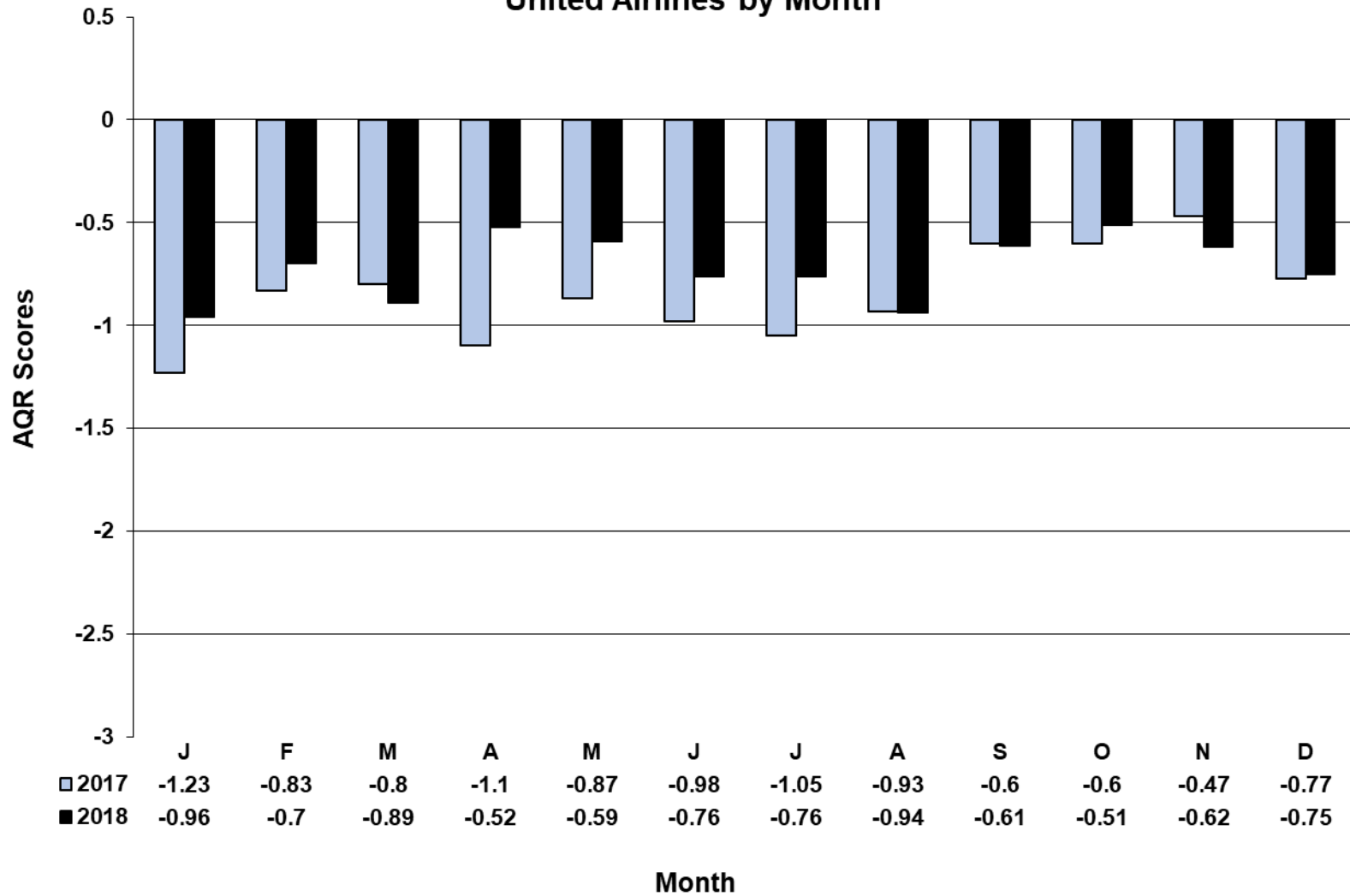
Airline Quality Rating

United Airlines 2017 - 2018



Airline Quality Rating

United Airlines by Month



Detail of Frequently Cited Airline Performance Criteria

Consumer interest remains high regarding such issues as on-time performance, mishandled baggage, involuntary denied boardings (bumping), and treatment of customers. Since these criteria are central to the AQR calculations, it is important to provide more complete data for individual airlines in these areas. The following data tables provide a detailed look at the performance of each of the 9 U.S. airlines required to report performance in the specific areas of on-time arrivals, mishandled baggage, involuntary denied boardings, and consumer complaints to the Department of Transportation in 2018. The requirement is based on the criteria that an airline handled at least 0.05% or more of the total domestic scheduled-service passenger revenues for 2018. Data were drawn from the U.S. Department of Transportation monthly *Air Travel Consumer Report*. The final pages of this report outline the Airline Quality Rating criteria definitions for reference and clarity in more fully understanding the nature of the data reported.

2018 On-Time Arrival Percentage by Month for U.S. Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Alaska (AS)	.851	.835	.784	.834	.818	.824	.829	.750	.852	.800	.808	.819	.818
American (AA)	.776	.808	.823	.839	.786	.737	.700	.725	.783	.788	.809	.796	.784
Delta (DL)	.804	.879	.870	.864	.850	.815	.834	.833	.883	.900	.833	.891	.857
Frontier (F9)	.749	.738	.784	.764	.718	.603	.597	.614	.663	.682	.701	.744	.694
Hawaiian (HA)	.883	.803	.853	.877	.908	.907	.926	.916	.911	.910	.916	.884	.893
JetBlue (B6)	.658	.746	.642	.676	.710	.738	.672	.667	.775	.788	.712	.745	.710
Southwest (WN)	.818	.771	.789	.777	.764	.777	.745	.779	.850	.835	.817	.788	.792
Spirit (NK)	.829	.819	.851	.818	.803	.768	.736	.733	.842	.890	.821	.845	.811
United (UA)	.786	.847	.839	.839	.789	.752	.751	.708	.822	.819	.778	.797	.779
Industry by Month	.817	.808	.802	.810	.794	.769	.754	.747	.820	.824	.799	.813	.796

Effective April 2018 Alaska Airlines and Virgin America are combined. Data for January, February and March have been adjusted to combine the airlines data prior to April for Alaska Airlines.
Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2017 On-Time Arrival Percentage by Month for U.S. Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Alaska (AS)	.776	.776	.798	.816	.826	.829	.857	.828	.864	.860	.832	.834	.826
American (AA)	.792	.852	.802	.787	.801	.732	.731	.777	.828	.851	.888	.820	.804
Delta (DL)	.807	.895	.869	.769	.828	.828	.831	.874	.887	.894	.937	.835	.854
Frontier (F9)	.693	.823	.793	.795	.766	.731	.752	.772	.839	.821	.860	.758	.783
Hawaiian (HA)	.857	.782	.847	.888	.897	.904	.923	.930	.940	.895	.893	.808	.882
JetBlue (B6)	.728	.723	.708	.724	.672	.606	.635	.681	.701	.796	.866	.741	.714
Southwest (WN)	.746	.824	.796	.795	.773	.733	.749	.702	.824	.846	.876	.791	.787
Spirit (NK)	.728	.816	.750	.770	.690	.683	.735	.769	.751	.871	.898	.804	.771
United (UA)	.784	.815	.810	.819	.823	.794	.787	.775	.855	.860	.886	.846	.821
Industry by Month	.760	.824	.799	.785	.791	.762	.769	.771	.836	.848	.883	.803	.802

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2018 Involuntary Denied Boardings by Quarter for U.S. Airlines (per 10,000 passengers)

	1Q	2Q	3Q	4Q	Annual
Alaska (AS)	0.18	0.30	0.21	0.13	0.23
American (AA)	0.15	0.10	0.11	0.47	0.20
Delta (DL)	0.00	0.00	0.00	0.00	0.00
Frontier (F9)	0.43	0.47	1.01	0.52	0.63
Hawaiian (HA)	0.01	0.01	0.01	0.02	0.01
JetBlue (B6)	0.01	0.01	0.01	0.01	0.01
Southwest (WN)	0.18	0.13	0.24	0.10	0.15
Spirit (NK)	1.41	1.00	0.22	0.06	0.56
United (UA)	0.01	0.01	0.01	0.01	0.01
Industry by Quarter	0.16	0.10	0.13	0.19	0.14

Effective April 2018 Alaska Airlines and Virgin America are combined. Data for January, February and March have been adjusted to combine the airlines data prior to April for Alaska Airlines.
Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2017 Involuntary Denied Boardings by Quarter for U.S. Airlines (per 10,000 passengers)

	1Q	2Q	3Q	4Q	Annual
Alaska (AS)	0.37	0.42	0.26	0.21	0.32
American (AA)	0.75	0.56	0.09	0.13	0.38
Delta (DL)	0.12	0.09	0.01	0.00	0.05
Frontier (F9)	0.47	0.49	0.39	0.89	0.57
Hawaiian (HA)	0.21	0.08	0.05	0.03	0.09
JetBlue (B6)	1.61	0.04	0.02	0.00	0.41
Southwest (WN)	0.72	0.64	0.38	0.40	0.53
Spirit (NK)	0.86	1.25	0.54	0.66	0.82
United (UA)	0.44	0.44	0.04	0.02	0.23
Industry by Quarter	0.62	0.44	0.15	0.18	0.34

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2018 Mishandled Baggage by Month for U.S. Airlines (per 1,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Alaska (AS)	2.55	2.09	2.34	2.22	2.78	2.87	2.79	3.09	2.43	2.45	2.67	3.24	2.67
American (AA)	4.62	3.65	3.33	3.05	3.36	4.42	4.39	4.34	3.58	3.34	3.39	4.53	3.83
Delta (DL)	3.01	1.72	1.81	1.53	1.54	2.15	1.83	1.94	1.39	1.30	1.75	1.80*	1.80*
Frontier (F9)	2.97	2.59	2.44	2.47	2.65	3.62	3.10	2.77	2.32	2.19	2.00	1.95	2.60
Hawaiian (HA)	3.26	2.67	2.62	2.79	2.46	3.26	2.43	2.58	2.51	2.50	1.75	2.24	2.59
JetBlue (B6)	2.30	1.58	1.80	1.59	1.62	1.76	1.96	1.97	1.60	1.45	1.63	2.24	1.79
Southwest (WN)	3.11	2.78	2.65	2.56	2.84	3.03	3.39	2.90	2.50	2.50	2.66	3.79	2.89
Spirit (NK)	1.99	1.52	1.46	1.53	1.83	2.00	2.11	1.84	1.56	1.39	1.62	2.14	1.76
United (UA)	3.31	2.52	2.42	1.98	2.33	2.77	2.77	3.15	2.08	1.96	2.33	3.10	2.56
Industry by Month	3.28	1.89	2.45	2.25	2.48	2.97	2.97	2.90	2.31	2.22	2.43	3.15*	2.43*

*Due to reporting changes, Delta Airlines December mishandled baggage rate is presented as an average of January thru November rates. This rate is also included in the industry rate.

Effective April 2018 Alaska Airlines and Virgin America are combined. Data for January, February and March have been adjusted to combine the airlines data prior to April for Alaska Airlines.
Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2017 Mishandled Baggage by Month for U.S. Airlines (per 1,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Alaska (AS)	2.21	1.73	1.38	1.41	1.60	1.85	1.79	1.96	1.78	1.62	1.81	2.63	1.81
American (AA)	3.64	2.38	2.63	2.81	2.56	3.20	3.47	2.80	2.32	2.24	2.01	3.92	2.84
Delta (DL)	3.08	1.55	1.63	3.04	1.67	1.71	1.77	1.44	1.32	1.40	1.08	2.50	1.82
Frontier (F9)	5.95	3.15	2.58	2.31	2.57	2.39	2.48	2.10	1.92	2.49	2.13	2.68	2.67
Hawaiian (HA)	3.51	2.91	2.71	2.52	3.00	2.74	2.58	2.26	2.38	3.12	2.47	2.86	2.75
JetBlue (B6)	1.92	1.37	1.60	1.50	1.66	1.83	1.81	1.79	1.53	1.58	1.37	1.77	1.65
Southwest (WN)	3.34	2.31	2.36	2.43	2.90	3.35	3.38	3.16	2.49	2.43	2.33	3.37	2.83
Spirit (NK)	1.85	1.48	1.33	1.46	1.65	1.82	1.80	1.65	1.54	1.37	1.34	1.99	1.61
United (UA)	3.31	2.22	2.42	2.12	2.12	2.47	2.86	2.50	1.76	2.01	1.77	3.00	2.38
Industry by Month	3.40	2.16	2.24	2.53	2.32	2.65	2.79	2.45	1.99	2.04	1.83	3.15	2.46

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2018 Total Complaints to the Department of Transportation by Month for U.S. Airlines (per 100,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Alaska (AS)	0.54	0.32	0.19	0.46	0.38	0.67	0.70	0.74	0.58	0.73	0.78	0.54	0.57
American (AA)	1.28	1.18	1.05	1.11	1.24	1.57	1.69	1.65	1.68	1.56	1.20	1.25	1.38
Delta (DL)	0.93	0.79	0.56	0.55	0.51	0.65	0.61	0.78	0.50	0.39	1.11	0.44	0.65
Frontier (F9)	2.55	3.16	1.55	3.15	3.30	4.34	5.82	7.23	6.00	4.37	3.60	2.47	4.02
Hawaiian (HA)	1.05	1.13	1.30	1.16	1.21	0.97	0.46	1.79	1.44	0.63	1.30	0.93	1.10
JetBlue (B6)	1.49	1.10	0.77	0.86	0.74	0.87	1.11	1.61	0.81	0.92	0.71	0.87	0.99
Southwest (WN)	0.38	0.37	0.27	0.46	0.37	0.41	0.51	0.43	0.32	0.27	0.31	0.21	0.36
Spirit (NK)	3.02	3.42	2.52	3.07	2.50	2.95	3.55	2.94	2.64	2.46	2.60	2.30	2.83
United (UA)	1.51	1.32	2.25	1.12	0.97	1.19	1.21	1.51	1.38	1.08	1.09	0.84	1.28
Industry by Month	1.11	1.03	0.98	0.92	0.88	1.08	1.20	1.33	1.12	0.95	1.03	0.80	1.04

Effective April 2018 Alaska Airlines and Virgin America are combined. Data for January, February and March have been adjusted to combine the airlines data prior to April for Alaska Airlines.
Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

2017 Total Complaints to the Department of Transportation by Month for U.S. Airlines (per 100,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Alaska (AS)	0.57	0.56	0.62	1.00	0.44	0.47	0.65	0.54	0.77	0.52	0.29	0.36	0.57
American (AA)	2.05	1.40	1.46	2.68	2.15	2.09	2.48	2.26	2.54	1.39	1.40	1.46	1.96
Delta (DL)	0.76	0.64	0.44	2.52	1.21	0.80	0.95	0.77	0.85	0.57	0.71	0.76	0.92
Frontier (F9)	7.87	2.21	3.39	2.42	3.01	1.86	3.34	1.74	2.52	2.69	1.51	1.61	2.78
Hawaiian (HA)	0.77	1.35	1.08	1.58	1.05	0.60	0.77	0.70	1.67	0.42	0.32	1.22	0.95
JetBlue (B6)	1.19	0.51	0.60	1.19	1.44	1.27	1.41	1.62	1.87	1.36	0.69	0.50	1.14
Southwest (WN)	0.77	0.32	0.34	0.50	0.59	0.50	0.44	0.77	0.55	0.31	0.22	0.31	0.47
Spirit (NK)	5.26	3.42	5.05	7.20	11.39	7.38	6.03	4.91	6.65	3.84	3.15	2.47	5.59
United (UA)	2.26	1.72	1.36	3.04	2.01	2.09	2.41	2.26	1.70	1.43	1.19	1.10	1.89
Industry by Month	1.57	1.02	1.00	2.09	1.72	1.43	1.58	1.50	1.48	1.00	0.86	0.88	1.35

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

**Monthly Count of Complaints Received by the Department of Transportation
Regarding U.S. Airlines for 2017 and 2018**

	Complaints for All U.S. Airlines		Complaints for 9 AQR Rated Airlines		Top Four Categories ¹ of Complaints for All U.S. Airlines			
	2017	2018	2017	2018	2018			
					1	2	3	4
Jan	1,005	703	834	576	FP	BG	TB	CS
Feb	595	603	499	510	FP	BG	TB	CS
Mar	718	722	611	605	FP	FA	CS	BG
Apr	1,429	691	1,201	546	FP	BG	TB	CS
May	1,264	643	1,041	547	FP	CS	TB	BG
Jun	1,115	893	906	704	FP	BG	CS	TB
Jul	1,299	964	1,053	812	FP	CS	BG	TB
Aug	1,219	1,009	950	869	FP	BG	CS	TB
Sep	971	723	810	621	FP	BG	CS	TB
Oct	740	676	593	576	FP	BG	CS	TB
Nov	585	696	493	601	FP	FA	CS	BG
Dec	<u>629</u>	<u>542</u>	<u>516</u>	<u>467</u>	FP	BG	CS	TB
	11,569	8,865	9,507	7,434				

¹ FP = Flight Problems; CS = Customer Service; BG = Baggage; TB = Reservations, Ticketing, and Boarding; RF = Refunds; FA= Fares.
Details of categories are at the back of this report.

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

**Overview of Complaints Received by the Department of Transportation for All U.S. Domestic Airlines
by Complaint Category for 2017 and 2018**

	% of all Complaints Received		Number of Complaints Received	
	2017	2018	2017	2018
Flight Problems	42.0%	36.9%	4,856	3,271
Baggage	11.0%	13.0%	1,277	1,156
Customer Service	10.6%	12.1%	1,228	1,073
Reservations, Ticketing, and Boarding	10.4%	10.1%	1,206	895
Fares	7.7%	8.7%	887	773
Disability	6.2%	7.5%	715	665
Refunds	5.5%	4.7%	635	419
Other	2.4%	3.0%	284	270
Oversales	3.0%	2.8%	350	247
Discrimination	0.7%	0.9%	81	80
Advertising	0.4%	0.3%	51	26
Animals	0.0%	0.0%	1	1
Total	100%	100%	11,571	8,876

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

Airline Quality Rating Criteria Overview

The individual criteria used to calculate AQR scores are summed up in four basic areas that reflect customer-oriented areas of airline performance. Definitions of the four areas used in this AQR 2018 (2017 data) are outlined below:

OT ON-TIME PERFORMANCE (+8.63)

Regularly published data regarding on-time arrival performance is obtained from the U.S. Department of Transportation's monthly *Air Travel Consumer Report*. According to the DOT, a flight is counted "on time" if it is operated within 15 minutes of the scheduled time displayed in the carriers' Computerized Reservations System. Delays caused by mechanical problems are included as of January 1, 1995. Canceled and diverted operations are not considered on-time arrivals. The AQR calculations use the percentage of flights arriving on-time for each airline for each month.

DB INVOLUNTARY DENIED BOARDINGS (-8.03)

This criterion includes involuntary denied boardings. Data regarding denied boardings is obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. Data includes the number of passengers who hold confirmed reservations and are involuntarily denied boarding on a flight that is oversold. These figures include only passengers whose oversold flight departs without them on board. The AQR uses the ratio of involuntary denied boardings per 10,000 passengers boarded by month.

MB MISHANDLED BAGGAGE REPORTS (-7.92)

Regularly published data regarding consumer reports to the carriers of mishandled baggage is obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to the DOT, a mishandled bag includes claims for lost, damaged, delayed, or pilfered baggage. Data is reported by carriers regarding the rate of mishandled baggage reports per 1,000 passengers and for the industry. The AQR ratio is based on the total number of reports each carrier received from passengers concerning lost, damaged, delayed, or pilfered baggage per 1,000 passengers served.

CC CONSUMER COMPLAINTS (-7.17)

The criteria of consumer complaints is made up of 12 specific complaint categories (outlined below) monitored by the U. S. Department of Transportation and reported monthly in the *Air Travel Consumer Report*. Consumers can file complaints with the DOT in writing, by telephone, via e-mail, or in person. The AQR uses complaints about the various categories as part of the larger customer complaint criteria and calculates the consumer complaint ratio on the number of complaints received per 100,000 passengers flown for each airline.

CONSUMER COMPLAINT CATEGORIES

Flight Problems

Data is available by the total number of consumer complaints pertaining to cancellations, delays, or any other deviations from schedule, whether planned or unplanned for each airline each month.

Oversales

This complaint category includes all bumping problems, whether or not the airline complied with DOT oversale regulations. Data is available by the total number of consumer complaints pertaining to oversales for each airline each month.

Reservations, Ticketing, and Boarding

This category includes airline or travel agent mistakes in reservations and ticketing, problems in making reservations and obtaining tickets due to busy telephone lines, or waiting in line or delays in mailing tickets, and problems boarding the aircraft (except oversales). Data is available by the total number of consumer complaints pertaining to ticketing and boarding for each airline each month.

Fares

As defined by the DOT, consumer complaints regarding fares include incorrect or incomplete information about fares, discount fare conditions and availability, overcharges, fare increases, and level of fares in general. Data is available for the total number of consumer complaints pertaining to fares for each airline each month.

Refunds

This category includes customer complaints about problems in obtaining refunds for unused or lost tickets, fare adjustments, or bankruptcies. Data is available by the total number of consumer complaints pertaining to refunds for each airline each month.

Baggage

Claims for lost, damaged, or delayed baggage, charges for excess baggage, carry-on problems, and difficulties with airline claim procedure are included in this category. Data is available by the total number of consumer complaints pertaining to baggage for each airline each month.

Customer Service

This category includes complaints about rude or unhelpful employees, inadequate meals or cabin service, and treatment of delayed passengers. Data is available by the total number of consumer complaints pertaining to customer service for each airline each month.

Disability

This category includes complaints about civil rights complaints by air travelers with disabilities. Data is available by the total number of consumer complaints pertaining to disabilities for each airline each month.

Advertising

These are complaints concerning advertising that is unfair, misleading or offensive to consumers. Data is available by the total number of consumer complaints regarding advertising for each airline each month.

Discrimination

Civil rights complaints by air travelers (other than disabilities); for example: complaints based on race, national origin, religion, etc. (This category was first reported in May, 2002).

Animals

This category tracks customer complaints about loss, injury, or death of an animal during air transport by an air carrier. Data is available by the total number of customer complaints regarding animals for each airline each month.

Other

Data regarding consumer complaints about frequent flyer programs, smoking, tours credit, cargo problems, security, airport facilities, claims for bodily injury, and other problems not classified above are included in this category. Data is available by the total number of consumer complaints regarding other problems for each airline each month.