Regional Aircraft: Resilience and Challenges of an Essential Market During the Pandemic

An unprecedented crisis hit the global aviation industry in 2020, as the devastating spread of the COVID-19 virus led to a near halt of passenger traffic for months, with severe ongoing impacts for industry participants, as detailed in our recent Aviation Sector Outlook One Year Into the Pandemic report. While traffic has come back to varying degrees around the world and vaccine rollouts are positive, the road to recovery remains volatile and subject to timing uncertainty.

Within the commercial aviation industry, the regional market remains a vital segment of domestic traffic (and intracontinental traffic in some regions) representing 36% and 54% of total revenue passenger kilometers (RPKs) in 2019 and 2020, respectively. Compared to the international commercial aviation market, the regional market has been less severely impacted by the pandemic. While most international travel has remained heavily restricted, domestic travel has seen a modest rebound, especially in the U.S. where vaccinations have gained momentum with positive impacts on passenger demand. According to the International Air Transport Association (IATA), RPKs for the total commercial industry were down 72% year-on-year (YoY) in January 2021, up from the peak 91% contraction in May 2020. This compares with a 47% YoY decline in January for domestic traffic, an improvement from a 78% drop in May 2020.

Figure 1: Passenger Traffic, Carrying Capacity, and Load Factors

	% of Global RPKs		January 2021 (% change YoY)		
	2020	2019	RPK	ASK	Load Factor
Total Market	100.0%	100.0%	-72.0%	-58.7%	54.1%
International	45.7%	63.8%	-85.6%	-74.4%	44.9%
Domestic	54.3%	36.2%	-47.4%	-30.5%	60.1%

Source: IATA

Kroll Bond Rating Agency (KBRA) believes that the global regional market is poised to be a leader in the overall aviation market recovery as international travel remains restricted and passengers may be more comfortable with shorter-duration regional flights before long-haul flights, especially in light of vaccine rollouts which should support domestic and regional safety concerns more immediately. This dynamic would support demand for regional aircraft in the near term, while a potential supply glut is expected to be mitigated as operators rightsize their fleets through both retirement of older and larger gauge aircraft and lower levels of new aircraft orders. Longer term, the demand for new and used regional aircraft is expected to be supported by a growing global middle-class, a wave of aircraft retirements requiring replacements, and operators' increased focus on efficiency and sustainability.

Figure 2: COVID Impact on Current Market Values
% Change from Jan 1, 2020

	5-Year Old Aircraft	10-Year Old Aircraft
ATR 72-600	-23%	-35%
Dash 8-Q400	-16%	-24%
CRJ700	-17%	-19%
E190 LR	-31%	-33%

As of February 2021.
Source: Ishka

The current crisis has caused significant declines in appraised market values for passenger aircraft, including regional aircraft. However, secondary market activity has been very limited during the pandemic and current market values are not as meaningful in the context of longer-term financings. Given the supportive role that lessors and other creditors have played during the crisis, aircraft repossessions have remained limited, which has prevented widespread forced selling. In contrast, appraiser base values, which are driven by historical and projected value trends, have not changed significantly.

Generally, regional aircraft and narrow-body market value declines have been less severe than for wide-body aircraft, with older aircraft being more impacted. That said, newer regional jets with limited in-service time have untested liquidity in secondary markets, which adds to the uncertainty regarding their current market values.

Assuming an eventual rebound in traffic, regional operators and aircraft lessors still face perennial challenges, including managing their aging fleets and corresponding maintenance costs, and the impact of volatile fuel prices. In the largest market, the United States, airlines must contend with scope clause restrictions and pilot unions, while smaller regional airlines and aircraft lessors exposed to emerging markets are more prone to volatile market-specific economic or geopolitical risks.

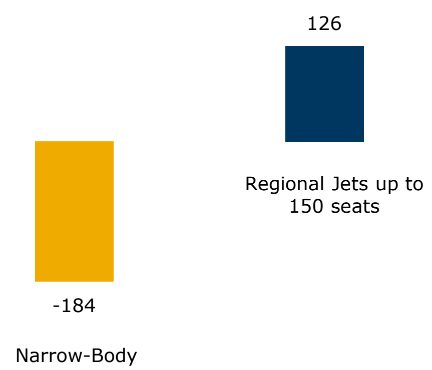
KBRA has extensive experience rating regional aircraft lessors and transactions backed by regional aircraft. KBRA rates the largest regional aircraft lessor, Nordic Aviation Capital (CCC+ issuer rating/B unsecured debt rating), DAE (BBB+ issuer rating/BBB+ unsecured debt rating) a commercial aircraft lessor with a large fleet of ATR turboprops, as well as private market secured transactions backed solely, or in part, by regional aircraft. KBRA currently rates seven aircraft ABS that have regional and/or turboprop aircraft in their collateral portfolio, including one ABS collateralized entirely by turboprop aircraft. More broadly, in the public markets, we have also seen enhanced equipment trust certificates (EETCs) issued that include regional aircraft collateral.

Regional Aircraft Demand and OEM Landscape

The regional market[1] comprises around 4,000 jets and 5,000 turboprop aircraft globally. Regional jets entered the aviation industry in the early 1990s to service longer but thinly traveled routes, filling the gap between the slower operating capabilities of short-haul turboprops and longer-range single-aisle jets. Regional turboprops, typically in the 30-80 seat range, are an important segment serving smaller niche markets, particularly in Europe and Asia. Although turboprops have slower air speeds compared with jets, they typically require lower upfront and ongoing maintenance costs (depending on the aircraft) and can operate on shorter runways, as well as more mountainous and difficult terrain.

The pandemic has hit original equipment manufacturers (OEMs) hard as airlines have sought to delay deliveries in order to reduce capital expenditure and slow the rate of capacity increase, prompting OEMs to drastically cut production and expenses. Positively, OEMs and customers worked together to defer new deliveries and limit the number of cancellations. Attesting to the resiliency of the regional market during the pandemic, compared to narrow-body aircraft, regional aircraft (up to 150 seats) had 126 net orders in 2020 (net of cancellations), while narrow-body aircraft had negative net orders of approximately 184 aircraft—although that was mainly driven by Boeing 737 MAX cancellations.

Figure 3: Net 2020 Orders



Orders net of cancellations as of Dec. 2020.
Sources: Embraer, Cirium

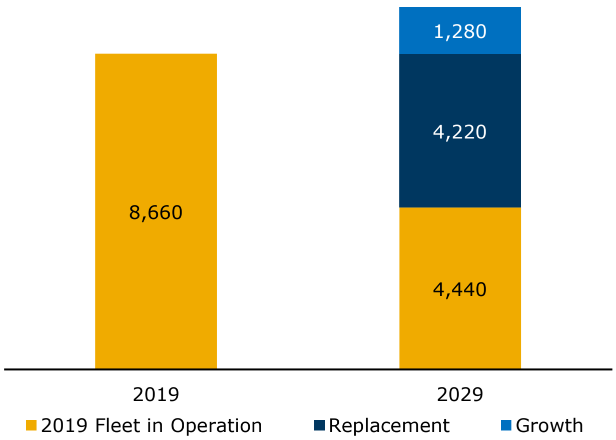
Industry Rightsizing and Replacements Support Demand Outlook

The fallout from COVID-19 is coinciding with the start of a wave of regional jet retirements globally that will shape airline fleet strategies. During the current crisis, airlines increased borrowing to boost liquidity and will enter a slower growth recovery period with high debt burdens and a need to improve cash flow. This dynamic, in a recovery led by domestic traffic, may be supportive of regional aircraft demand in the near term, with operators pursuing higher load factors and improved margins by using regional aircraft instead of 737 or A320 narrow-bodies.

Longer term, the global regional market is supported by demand in emerging economies that require more regional flights to connect new and growing cities, as well as from U.S. and European airlines seeking to maximize capacity utilization. Over the next decade, demand for new aircraft up to 150 seats will be driven by the need to replace aging regional aircraft in addition to fleet growth. In its Market Outlook published in August 2020, Brazilian OEM Embraer forecasts global demand for 5,500 new aircraft (up to 150 seats) over the next 10 years, representing a total market value of $350 billion. Additionally, the OEM sees the replacement of aging aircraft accounting for over 75% of all new deliveries compared with 25% representing market growth.

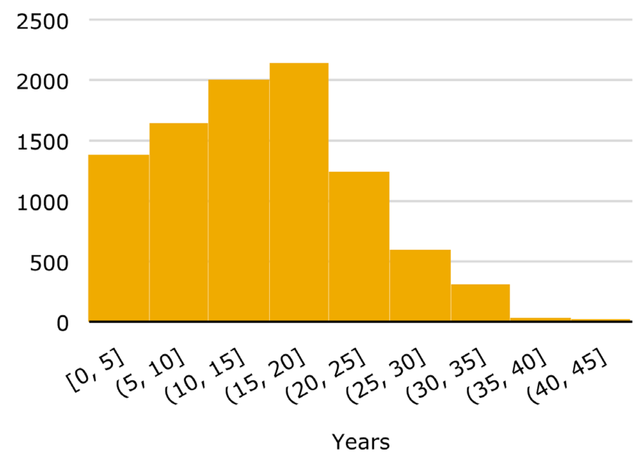
[1] KBRA includes aircraft models of up to 150 seats, which may be viewed as overlapping with smaller narrow-body aircraft. However, we include them in this report because they are used for regional or intra-regional routes in many markets.

Figure 4: Up to 150-Seat Fleet Profile



Source: Embraer

Figure 5: Age Distribution of Global Aircraft Fleet (30-150 seats)



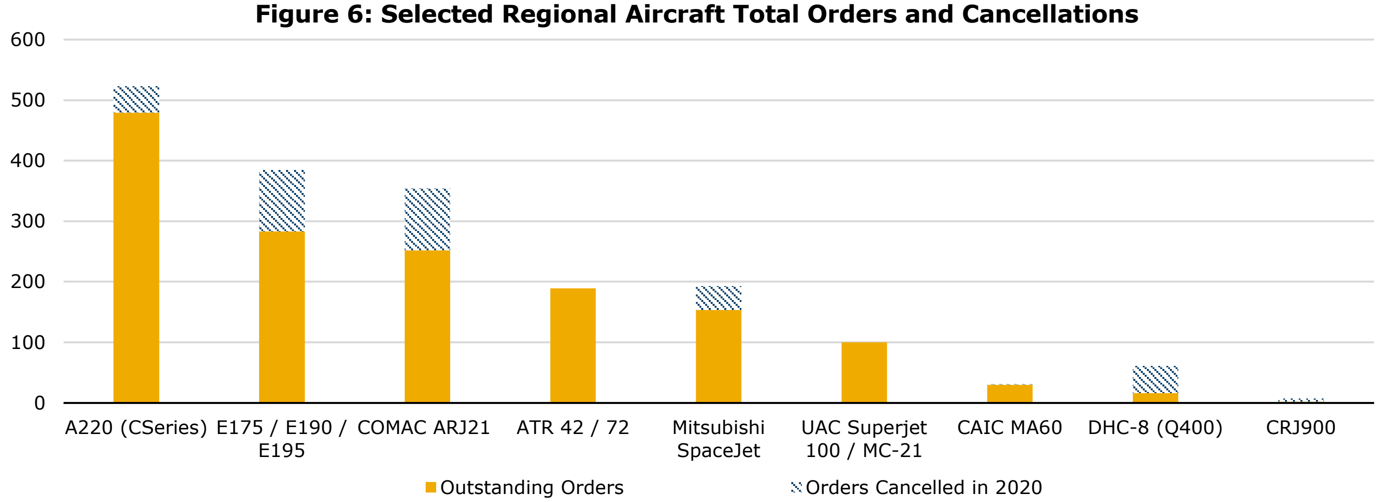
As of Dec. 31, 2020. Includes active fleet and aircraft stored in 2020.
Source: Cirium

Figure 5 shows that a significant number of regional aircraft are at the latter stages of their useful lives, which may help to explain the relatively limited number of regional aircraft order cancellations. In addition, increased focus on fuel efficiency and sustainability is expected to drive demand for next generation models. For example, Embraer's next generation E2 series has double-digit fuel consumption improvements compared to its current models.

OEM Competitive Landscape

The most dominant OEMs in the regional space (Airbus and Embraer for jets, and European company ATR for turboprops) had strong order book momentum going into the crisis and, while challenged with order delays and cancellations, are considered best positioned for an industry recovery. Airbus, the largest aircraft manufacturer, established its presence in regional jet production with its 2018 acquisition of Canadian OEM Bombardier's 100-150 seat C-Series family (renamed the A220), with Bombardier retaining a minority stake. KBRA expects Airbus will leverage its economies of scale—including its network, marketing, and after-market support capabilities—to drive the success of the A220. As of December 31, 2020, the A220 order book remained solid, at 487 aircraft, experiencing a relatively small number of cancellations in 2020. The largest customer orders are from U.S.-based carriers Delta Air Lines (95 aircraft) and JetBlue Airways (70), as well as Air France (60).

Figure 6: Selected Regional Aircraft Total Orders and Cancellations



Select regional aircraft types including 30-150 seat aircraft. As of Dec. 31, 2020.
Source: Cirium

Boeing planned to counter Airbus' entry into the regional market by taking a majority stake in Embraer's regional jet business, but the deal was terminated in May 2020 amid financial pressure from the pandemic. The joint venture with Boeing was expected to facilitate Embraer's expansion into larger aircraft, and while the collapse of the deal leaves Embraer without a large partner, the company remains the dominant manufacturer of new regional jets in the 76-seat segment, where demand is underpinned by current U.S. scope clauses. Despite some cancellations in 2020, its E-Jet order book remains strong, primarily for the E175 and E195-E2. The largest orders are from U.S.-based Republic Airways (99), AerCap (35), and Azul Brazilian Airlines (51), which has delayed its orders until 2024.

Historically, the growth of smaller manufacturers and new jet technologies has been slow. But in recent years, competitive dynamics have shown signs of a shift, particularly in manufacturers' home markets. In 2020, Bombardier closed its previously announced sale of its CRJ Series aircraft program to Japan-based Mitsubishi Heavy Industries, Ltd (Mitsubishi). The acquisition is expected to provide Mitsubishi with critically needed global service operations for its SpaceJet program, which has experienced ongoing delays. In May 2020, as the pandemic spread globally, Mitsubishi announced that it was halting flight testing of the 88-seat SpaceJet M90 and suspending development of the 76-seat M100, a design that would be an option for U.S. regionals under current scope clauses. As of December 31, 2020, the SpaceJet order book totaled 153 aircraft with the largest orders from U.S.-based SkyWest Airways (100) and Japan Airlines (32).

Chinese OEM COMAC has made strides in the production of its 90-seat regional jet, the ARJ21, which entered into service in 2016. Compared to Embraer's E190 and E190-E2, the aircraft has less range and capacity, but has mainly seen strong demand from Chinese domestic airlines and lessors, with 252 outstanding orders as of December 2020. The largest customers include China Air, China Eastern Airlines, and ICBC Leasing. While Airbus and Embraer remain dominant in the near term, rising competition from the less dominant OEMs could have important ramifications for the market supply in the long term.

Secondary Market Impact

The COVID crisis has caused market values for commercial aircraft, including regional aircraft, to decline below appraiser base values. However, secondary market trading activity has been very limited. Due to the very thin market for repossessed planes, lenders and lessors have been flexible creditors, which has limited forced selling into a temporarily depressed market. That said, certain assets have seen some trading activity. The market for pre-owned Embraer E-Jets remained active during COVID with 35 used E-Jets placed in 2020 and around 55 Letters of Intent or advanced discussions, according to Embraer. The largest of these deals was Australia-based Alliance Airlines' agreements to purchase a total of 30 E190s, previously operated by Panama flag carrier Copa Airlines and American Airlines, albeit at prices well below appraised values. KBRA notes that liquidity of next generation models remains untested. Market value declines during the pandemic have been greater for older aircraft and for aircraft types which had supply increases in recent years, including the E190 and ATR-72. The turboprop DHC8-400 (Q400) aircraft has also faced near-term supply increases with fleet exits and failures of key operators including the UK's Flybe, which had 54 DHC-8 aircraft at the time of its March 2020 bankruptcy, approximately 10% of the global fleet.

Positively, regional aircraft are expected to benefit from increased passenger-to-freighter conversion demand, driven by the explosive growth of e-commerce, with OEM's offering conversion programs as life extension for ATRs, E-Jets and DHC8-400s (Q400s). Embraer is focusing its freighter conversion efforts on the E190 and E195 models as they fill a gap between the Boeing 737-300 and smaller ATR72 models. ATR has offered freighter conversions for a number of years and recently developed quicker and less expensive conversion options, in addition to offering purpose-built regional freighters. In December 2020, FedEx Express began to take delivery of 30 ATR 72-600 freighters on firm order with the option to purchase 20 more. In 2020, Canadian OEM De Havilland launched a conversion program for its DHC8-400 aircraft with its first customer, Jazz Aviation, ordering up to 13 aircraft to be operated for Air Canada.

Turboprops Remain Key to Certain Regions

The market for turboprops is expected to remain relevant in the long term as these aircraft offer advantages over regional jets, including a longer lifespan and greater cost efficiencies. Turboprops are typically 30%-40% more fuel efficient than jets over short-haul routes (typically 500 nautical miles or less), partly due to a lower cruising altitude and, therefore, an ability to achieve cruising altitude more quickly. Consequently, turboprops expend less fuel during take-off and climb, when an aircraft's fuel consumption rate peaks. In addition, turboprops require lower maintenance costs, capital costs, as well as indirect costs such as landing fees and airport infrastructure. In addition, there are limited replacement options for turboprops in certain regions, which minimizes the likelihood of technological obsolescence. Future production remains dominated by ATR, which had 189 orders as of December 31, 2020.

Scope Clause Uncertainties and Impacts

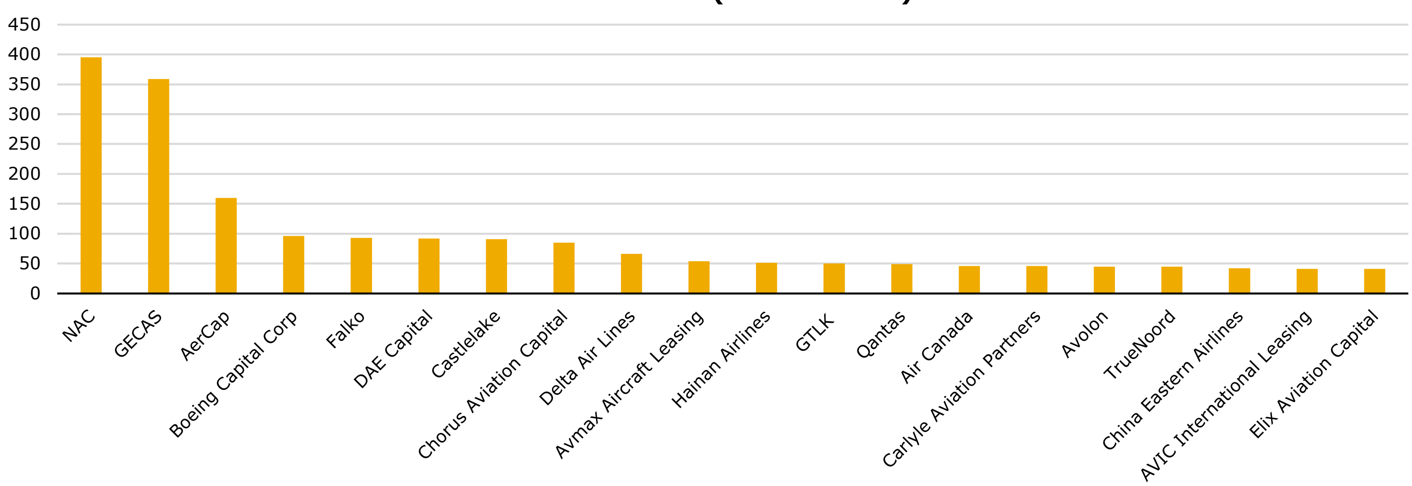
In recent years, the U.S. market trended toward larger regional aircraft, with manufacturers increasing production of model types up to 150 seats, while smaller aircraft (around 50 seats) were retired at a higher rate. But the U.S. fleet mix is balanced by current scope clauses,[2] which limit the number and size of regional jets in major U.S. airline fleets in favor 76-seat aircraft which, if not amended, will impact future aircraft purchases. KBRA believes that if scope clauses do not change in the near term, U.S. airlines may remain risk-averse and opt for less expensive scope-compliant aircraft, particularly in a slower growth environment, with regional operators typically under more margin pressure than mainline carriers.

A scope clause expansion, while unlikely in the upcoming round of negotiations, could increase demand for the Embraer E175-E2 (80 seats) and larger Airbus A220, which would increase competition for Embraer. That said, Embraer has the incumbency advantage, as U.S. regionals already operate and train pilots on E-Jets. Conversely, the status quo will likely keep the smaller E-Jets as the preferred regional aircraft. Under current scope clauses, Embraer has little competition in the near term as Bombardier ended production and Mitsubishi has suspended production of its 88-seat M90 as well as development of its 76-seat M100. With the suspension of the M100, the E175-E1 is expected to remain the only scope-compliant newbuild regional jet on the market in the near term, as both Embraer's E175-E2 and the M90 are too heavy to comply with scope clause limits. Overall, the uncertainty surrounding scope clauses remains a negative from a business perspective, as OEMs and operators are unable to project demand and pursue an optimal fleet mix.

Regional Aircraft Lessors

The pandemic has put tremendous stress on regional aircraft lessors, as airlines have required lease payment deferrals and experienced increasing defaults. Lessors have been faced with the choice of repossessing and releasing aircraft in a market where there is little demand, or having to grant ongoing deferrals to airlines, despite some being unlikely to make the catch-up payments. In July 2020, the largest regional aircraft lessor, Nordic Aviation Capital, which was facing significantly reduced lease cash flow, restructured its debt through a scheme of arrangements that allowed temporary debt payment relief and extended maturity dates. More recently, Avation PLC, a smaller regional aircraft lessor with a 46 aircraft fleet, also restructured its debt, amending and extending senior notes due in May 2021. With depressed cash flow continuing until traffic recovers, lessors with significant debt maturities due in the near term and limited access to liquidity may continue to rely on relief from lenders and/or equity support from shareholders.

Figure 7: Largest Regional Aircraft Fleets by Lessor/Operator
No. of Aircraft (30-150 Seats)



As of Dec. 31, 2020.
Source: Cirium

Regional lessor customers generally have lower overall credit quality compared to larger carriers, which presents higher default and re-leasing risk in a stressed environment. These factors mean growth and utilization rates can be more volatile than for their narrow-/wide-body focused peers. The current crisis has been particularly challenging on smaller regional and feeder carriers in the US and Europe with several small U.S. operators folding including ExpressJet (operates 84 Embraer ERJ-145s for United), Trans States Airlines (a feeder for United Airlines) and Compass Airlines (operating Embraer E175s for Delta). In Europe, notable regional carriers that have entered administration include Flybe, the largest

[2] A scope clause is negotiated in contracts between pilots and major airlines to restrict the quantity and weight/number of seats of aircraft that may be flown by the airlines' regional airline affiliates. The limits for major airlines vary and generally limit regional jets with 76+ seats.

independent regional airline in Europe with 63 aircraft and German Airways, an operator for Lufthansa's subsidiary Eurowings, which filed for administration when its contract with Eurowings was not renewed. KBRA notes that without the significant levels of government support globally and payment deferrals granted by lessors, the number of airline casualties would be much higher.

Funding Availability Steady

In 2020, aircraft lessors, airlines, and OEMs were active in issuing both secured and unsecured corporate debt to raise liquidity, while the ABS market as a source of funding slowed down. As the industry recovers, KBRA expects a healthy funding environment for new and used regional aircraft will remain, although less funding will be required in the medium term as the industry works through an oversupply. In recent years, as more capital market participants became familiar with the embedded value of regional aircraft, financing options expanded, as evidenced by a number of ABS and secured transactions involving regional jets and turboprops.

As the industry recovers, funding providers must weigh the exposure to global economic conditions, event risks, and other market-specific factors such as regulatory constraints that could cause disruption in the regional market. However, the regional aircraft market—particularly for turboprops and jets serving connecting routes to main hubs—is expected not only to remain key infrastructure for global connectivity, but also to have increasing relevance amid a recovery led by domestic traffic. No segment of the commercial passenger market has been immune to this pandemic, but the historical resilience of regional aircraft, being more economical to purchase and operate compared to narrow-body or wide-body jets and less severely impacted during market downturns, has been exhibited in the current crisis.

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