



U.S. Aerospace

Bizjet Survey Index Drops Further 7%, Down 50% from High, Foreshadows Slowdown in Manufacturers' New Order Activity

Indicator at 42: Our Barclays Business Jet Indicator (BBJI) decreased 7% from January, lowest since July 2020, indicative of worsening market conditions. Our survey index has now dropped six consecutive times, declining ~50% from its late 2021 high. Our straight up measure of overall business conditions came in at 6.1 (0-10 scale), also 7% lower from January and down 23% from late 2021 peak, albeit indicative of a still strong market on an absolute basis.

View on market: We believe the decline in our survey index foreshadows a slowing in new order activity for the manufacturers, although we expect extended backlogs (two-to-three years) will allow for further delivery growth over the next few years. We forecast new industry deliveries increasing a further ~30% through 2025 to 10-15% above prepandemic levels. This level would still only equate to new deliveries equivalent to 3-4% of the installed base.

Index components: The decline in our index reflects a 40% decrease in pricing and 4% decrease in customer interest, partially offset by a 15% increase in willingness to increase inventory and an 11% increase in 12-month outlook.

Stock market/higher interest rates: 89% of respondents now indicate a negative impact on business activity as a result of the lower stock market/higher interest rates, higher as compared to 72% in January. Meanwhile 94% expect a negative impact on business activity in the future as a result of the lower stock market/higher interest rates.

Production rates: When asked about the appropriate level of future annual production from the manufacturers, 56% of respondents indicate 600-700 aircraft per year, in a similar range to slightly higher than pre pandemic levels.

Respondent commentary (pgs 13-15): Survey participants highlighted slowing market activity amid increased uncertainty on higher interest rates, banking crisis and recession fears. Market characterized by increased buyer hesitancy, slowing charter activity, higher preowned inventory available for sale and lower pricing.

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PLEASE SEE ANALYST CERTIFICATION(S) AND IMPORTANT DISCLOSURES BEGINNING ON PAGE 16.

INDUSTRY UPDATE

U.S. Aerospace & Defense

NEUTRAL

Unchanged

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Barclays Business Jet Survey

Our Business Jet Survey is designed to capture timely insights on market conditions and sentiment. We regularly survey a group of US and international broker/dealers, manufacturers, fractional providers, financiers and others, from whom we recently received 73 responses.

Investment Conclusion

Our Barclays Business Jet Indicator (BBJI) came in at 42, 7% lower from our last survey in January. Our straight up measure of overall business conditions relative to normal came through at 6.1 (0-10 scale), 7% lower from our last survey in January.

Our pricing (-40%), customer interest (-4%), and inventory (-1%) component scores decreased in March while willingness to increase inventory (+15%) and 12-month outlook (+11%) increased.

FIGURE 1
Barclays Business Jet Indicator (BBJI)

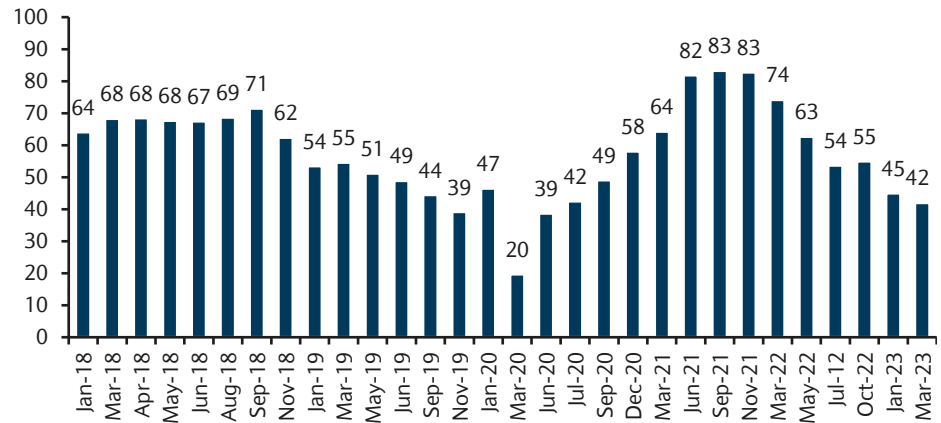
Component	Mar-23	Jan-23	Change
Customer Interest	26	28	-4%
Pricing	22	36	-40%
12 Month Outlook	24	22	11%
Inventory Levels	91	92	-1%
Willingness to Increase Inventory	46	40	15%
Composite Indicator	42	45	-7%
Young Inventory	96	95	1%
Business Conditions	6.1	6.6	-7%

Source: Barclays Research

Methodology & Results

Our proprietary Barclays Business Jet Indicator is designed to measure the total 'value' of the responses to our survey questions. We have weighted each factor in our BBJI based on our perception of its importance to overall market conditions. Our BBJI is scored on a scale of zero to 100, with 51-100 indicating incrementally strengthening market conditions and 0-49 indicating incrementally weakening market conditions (with a score of 50 indicating stable conditions). Our most recent survey registered 42, 7% lower from our prior survey in January and down ~50% from its highs in late 2021.

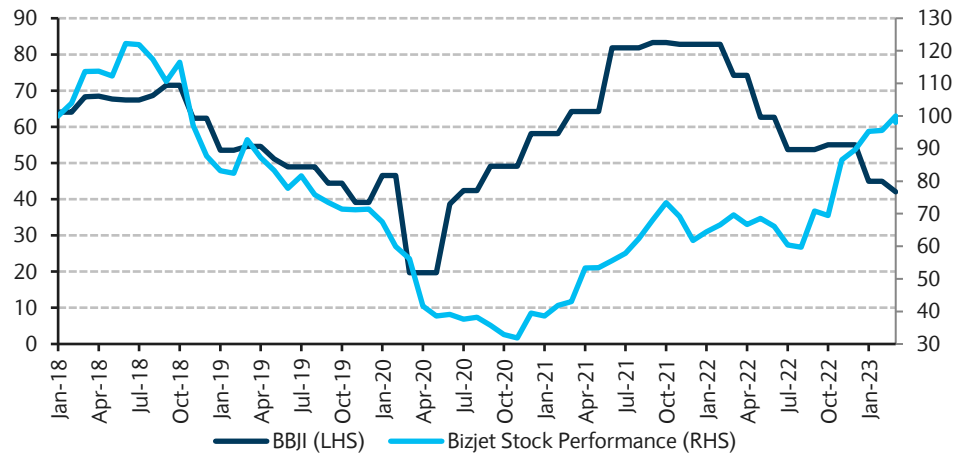
FIGURE 2
Barclays Business Jet Indicator (BBJI)



Source: Barclays Research

Our survey indicator has historically been well correlated with the relative performance of the bizjet manufacturers, although the upside seen in our survey indicator through late 2021 ran well ahead of the relative performance of the stocks on average. More recently, the bizjet stocks have outperformed on average even as our indicator has declined.

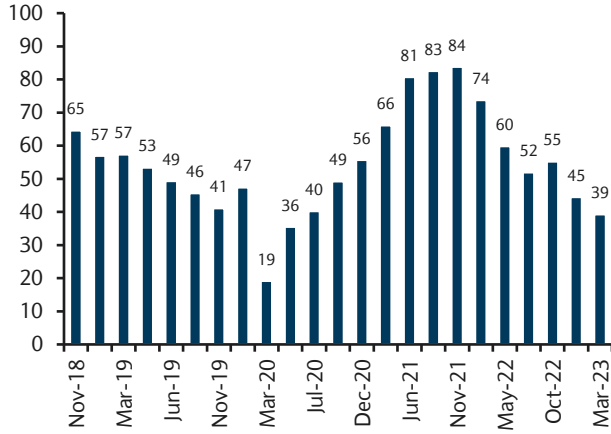
FIGURE 3
Barclays Business Jet Indicator (BBJI) vs Bizjet Relative Performance vs S&P 500 (Indexed to 100 in January 2018)



Source: Bloomberg and Barclays Research. Note: Includes BBD/GD/TXT.

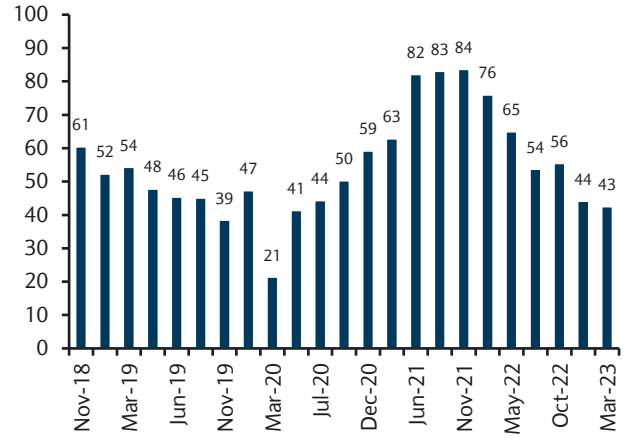
Our small cabin index decreased to 39 (-12%) in March, midsize to 43 (-4%), and large index to 42 (-8%).

FIGURE 4
BBJI by Cabin Class - Small



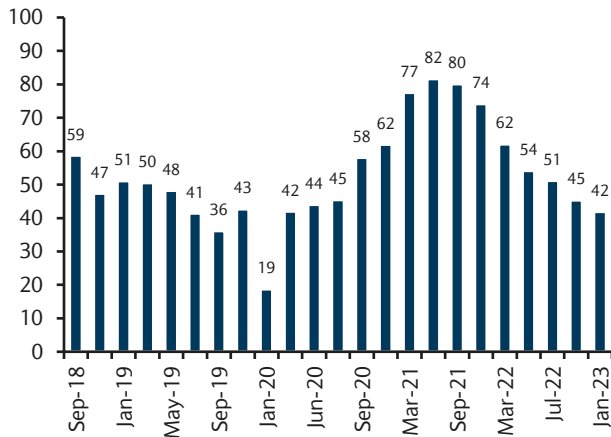
Source: Barclays Research

FIGURE 5
BBJI by Cabin Class - Midsize



Source: Barclays Research

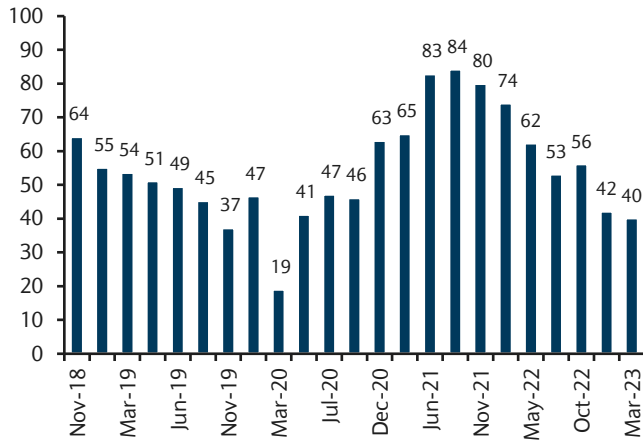
FIGURE 6
BBJI by Cabin Class - Large



Source: Barclays Research

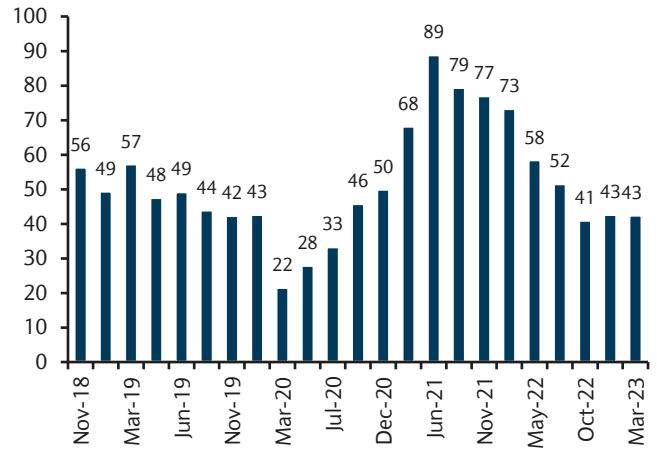
Our North America index decreased to 40 (-5%) in March, while Europe remained flat at 43.

FIGURE 7
BBJI – North America



Source: Barclays Research

FIGURE 8
BBJI - Europe

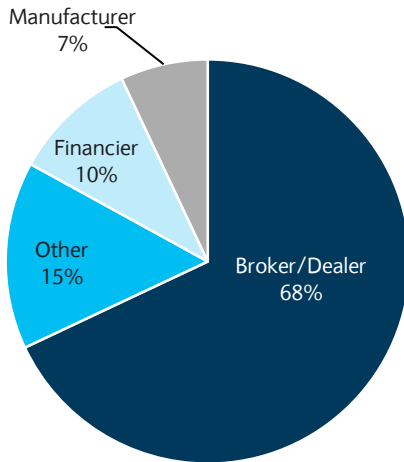


Source: Barclays Research

Participant Profile

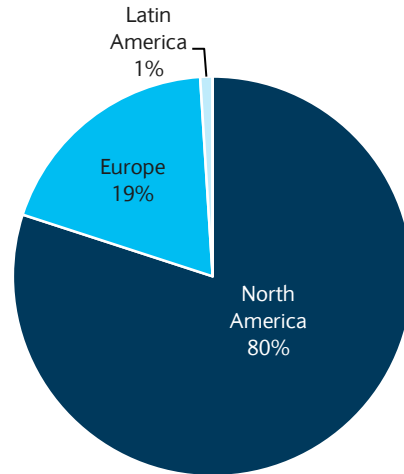
Of industry professionals that responded to our survey, the majority are broker/dealers. Broker/dealers are involved in the purchase and sale of both new (direct from manufacturer) and used aircraft. Most of our survey participants are located in North America (80%) with an additional 19% in Europe.

FIGURE 9
Participant Role



Source: Barclays Research

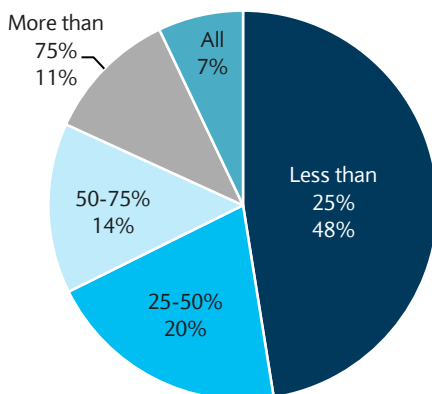
FIGURE 10
Participant Location



Source: Barclays Research

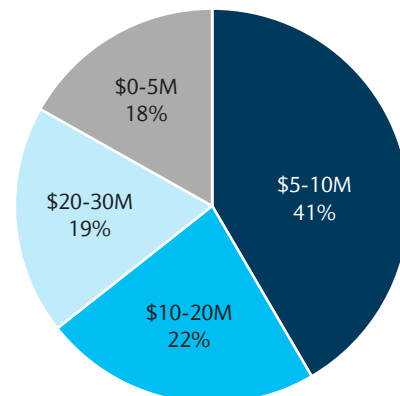
While the majority of respondents are located in the US, roughly one third transact more than half of their business with non-US customers.

FIGURE 11
Proportion of Business Transacted Outside of US



Source: Barclays Research

FIGURE 12
Average Transaction Size

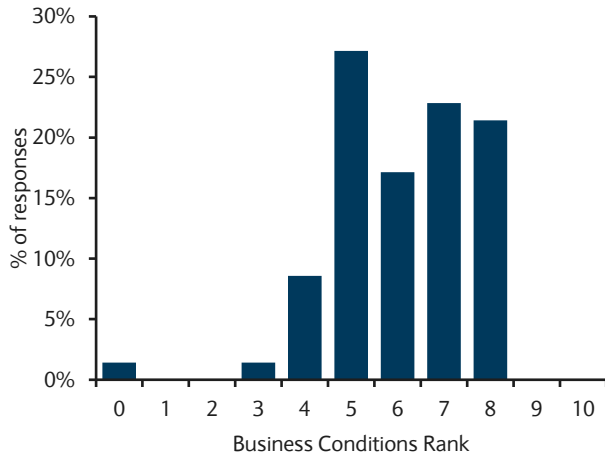


Source: Barclays Research

Overall Business Conditions

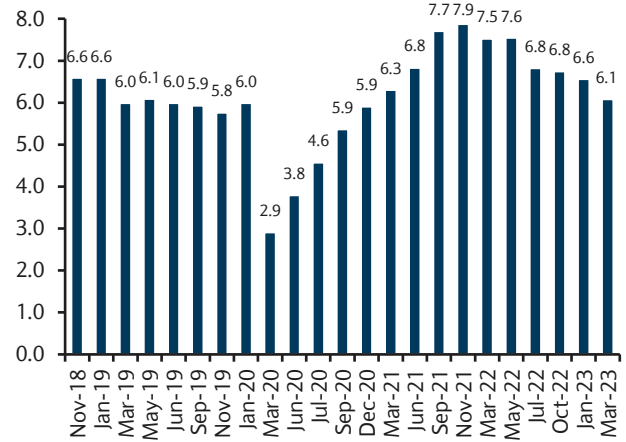
In the first question, we asked, “On a scale of 0 to 10, how would you characterize overall business conditions after factoring in typical seasonality (0=the worst ever, 10=the best ever)?” We received 70 responses to this question with scores ranging from 1 to 10. Note that while our BBJI (discussed earlier) measures incremental change from the prior period, this question is meant to measure the absolute level of business conditions. Our straight up measure of overall business conditions came through at 6.1 (0-10 scale), 7% lower from January and nearly 25% lower from its high in late 2021.

FIGURE 13
Overall Business Conditions



Source: Barclays Research

FIGURE 14
Overall Business Conditions Score

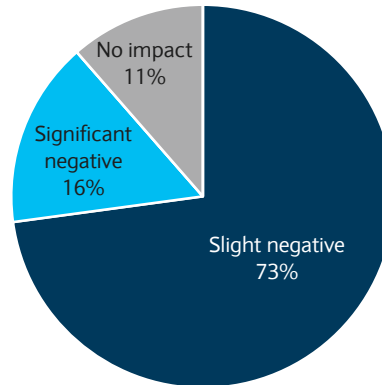


Source: Barclays Research

Current Impact of Lower Stock Market/Higher Interest Rates

We also asked “Has the stock market decline/higher interest rate environment had an impact on business activity thus far?” Of the 70 responses to this question, 73% indicated a slight negative impact, 16% a significant negative impact, and 11% no impact. This compares to our January survey when 66% indicated a slight negative impact, 6% a significant negative impact, 1% a slight positive impact, and 24% no impact.

FIGURE 15
Impact of Recent Stock Market Decline

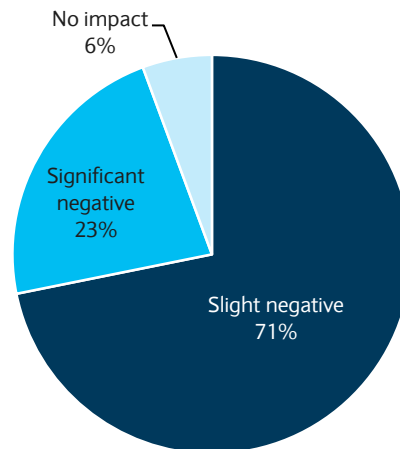


Source: Barclays Research

Future Impact of Lower Stock Market/Higher Interest Rates

We also asked “Do you expect the stock market decline/higher interest rate environment to have an impact on business activity over the next 6-12 months?” Of the 71 responses to this question, 71% indicated a slight negative impact, 23% a significant negative impact, and 6% no impact.

FIGURE 16
Future Impact of Recent Stock Market Decline

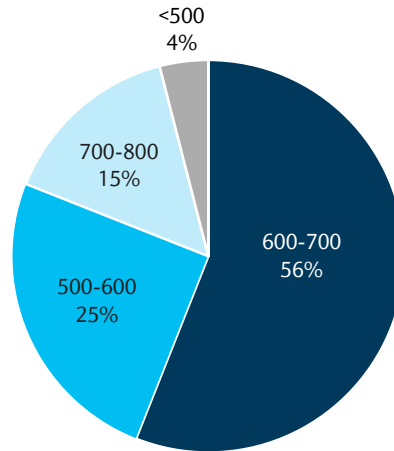


Source: Barclays Research

Appropriate Annual Level for Total New Production

We also asked “Based on demand trends and used inventory levels, what do you see as the appropriate annual level for total new production (small/mid/large combined) from the manufacturers as compared to ~600 aircraft that have been produced per year on average in the recent past?” Of the 72 responses to this question, 56% consider 600-700 aircraft as the appropriate annual level for total new production, 25% 500-600 aircraft, 15% 700-800 aircraft, and 4% <500 aircraft.

FIGURE 17
Appropriate Annual Level for Total New Production

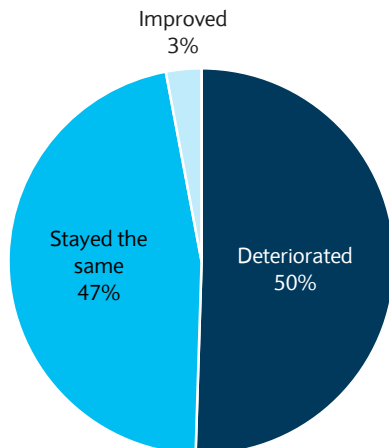


Source: Barclays Research

Customer Interest

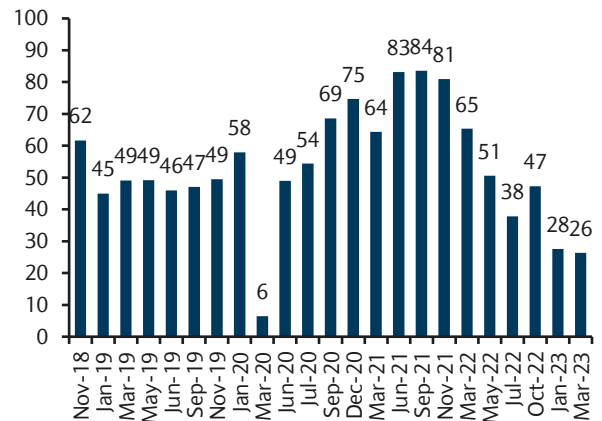
We also asked, “Since the last survey in January, has the level of customer interest improved, stayed the same or deteriorated?” Of the 72 responses to this question, 50% indicated customer interest had deteriorated, while 3% indicated customer interest had improved. The remainder (47%) indicated that customer interest stayed the same. Our customer interest score at 26 was 4% lower in March, indicative of declining customer interest.

FIGURE 17
Customer Interest



Source: Barclays Research

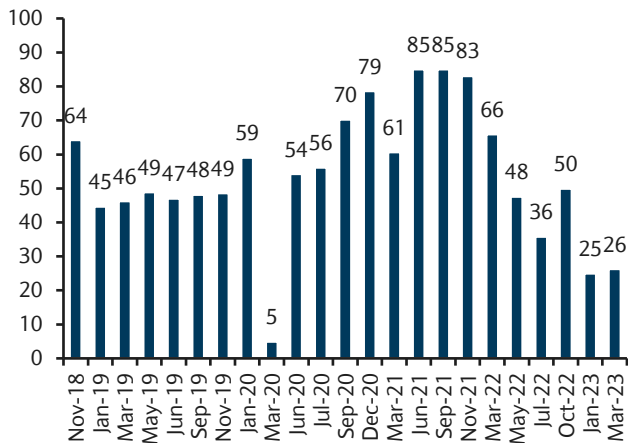
FIGURE 18
Customer Interest Score



Source: Barclays Research

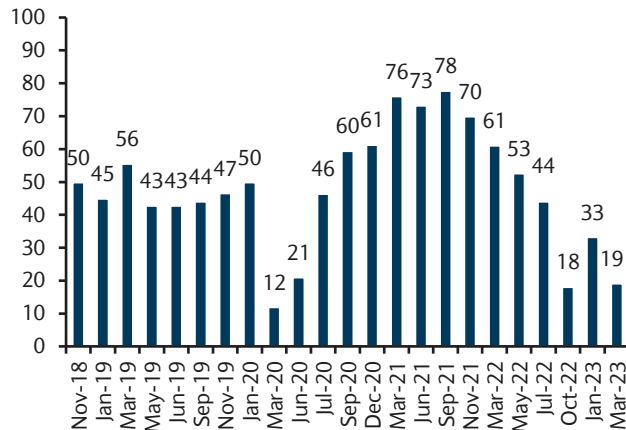
By region, customer interest continues to deteriorate in both North America and Europe.

FIGURE 19
Customer Interest – North America



Source: Barclays Research

FIGURE 20
Customer Interest – Europe

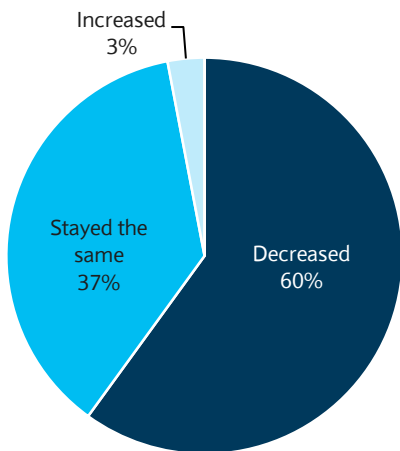


Source: Barclays Research

Pricing

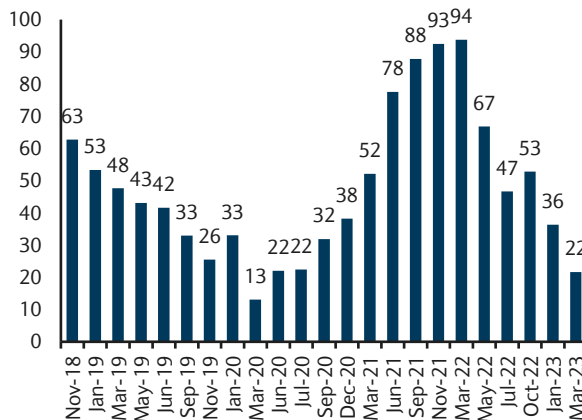
In the next question, we asked, “Since our last survey in January, have overall pricing levels increased, stayed the same or decreased?” Of the 67 responses to this question, 60% indicated pricing levels had decreased, while 3% indicated overall pricing levels had increased. The remainder (37%) indicated that overall pricing levels had stayed the same. Our pricing score decreased to 22 in March, indicative of declining pricing.

FIGURE 21
Pricing



Source: Barclays Research

FIGURE 22
Pricing Score

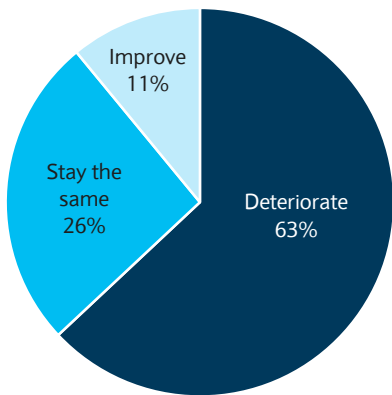


Source: Barclays Research

12-month Outlook

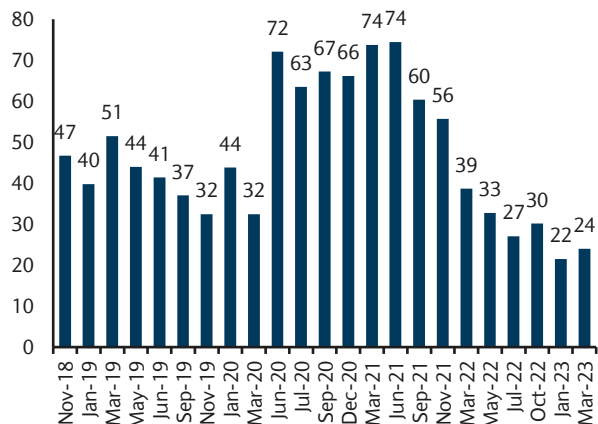
In the next question, we asked, “Over the next 12 months, do you expect overall business conditions to improve, stay the same or deteriorate?” Of the 73 responses to this question, 63% indicated they expect overall business conditions to deteriorate, while 11% expect business conditions to improve, and the remainder (26%) indicated they expect business conditions to stay the same. Our outlook score at 24 increased slightly vs January, but remains reflective of a deteriorating 12-month outlook.

FIGURE 23
Outlook



Source: Barclays Research

FIGURE 24
Outlook Score

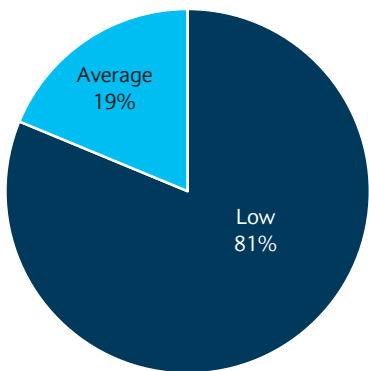


Source: Barclays Research

Inventory

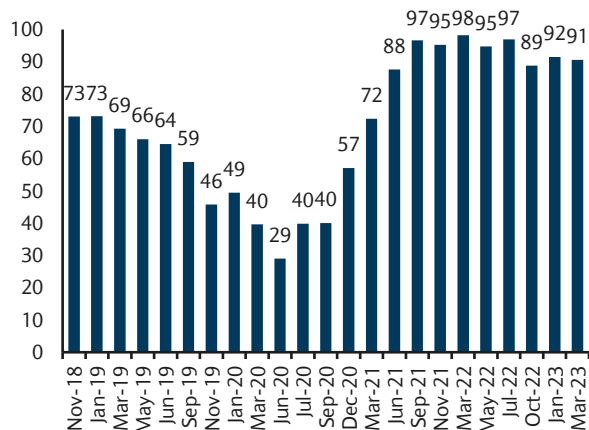
In the next question, we asked, “How would you characterize current inventory levels?” Of the 64 responses to this question, 81% indicated inventory levels are low, while 19% indicated inventory levels are in line with the historical average. Our inventory score at 91 decreased 1% from January, although continues to indicate very low overall inventory levels.

FIGURE 25
Inventory



Source: Barclays Research

FIGURE 26
Inventory Score

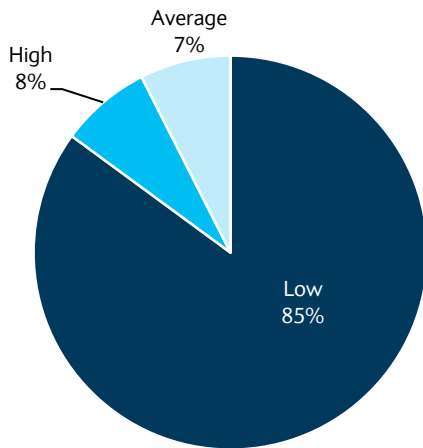


Source: Barclays Research

Young Inventory

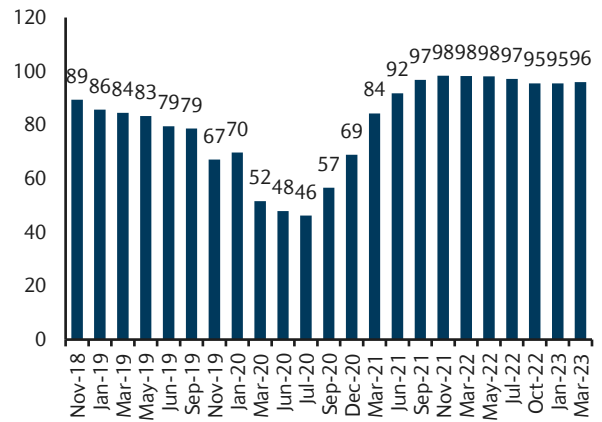
In the next question, we asked, “How would you characterize current inventory levels of relatively young (0-10 yr) used aircraft? Of the 67 responses to this question, 85% indicated young inventory levels are currently low, 8% indicated levels are high, and 7% indicated levels in line with the historical average. Our young inventory score at 96 continues to indicate very low young used inventory levels.

FIGURE 27
Young Inventory



Source: Barclays Research

FIGURE 28
Young Inventory Score

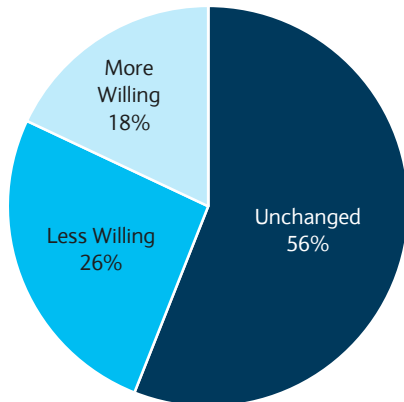


Source: Barclays Research

Willingness to Increase Inventory

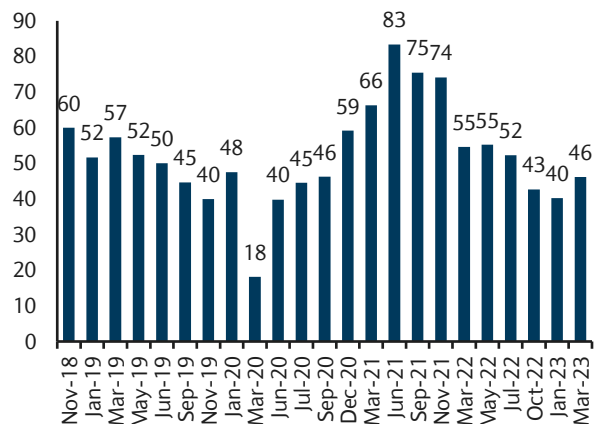
In the next question, we asked, “Over the next month, will you be more or less willing to increase your inventory?” Of the 39 responses to this question, 26% indicated they are less willing to increase their inventory, while 18% are more willing to increase their inventory, with the remainder (56%) indicating unchanged willingness. Our willingness to increase inventory score increased to 46 this month.

FIGURE 29
Willingness to Increase in Inventory



Source: Barclays Research

FIGURE 30
Willingness to Increase Inventory Score



Source: Barclays Research

Respondent Commentary

Bizjet Market Conditions

- *New and pre-owned aircraft prices and values remain elevated despite an obvious ratcheting down in demand over the past 6-9 months. OEMs have built up 2+ years of backlog on most models at strong prices and are well positioned for any prolonged downturn in demand - which is not something we expect. In fact, we believe that there has been a step-change upwards in demand that should remain in place. That said, new program certification delays will, as much as lingering supply chain recovery lags, keep a lid on accelerating delivery rates for the time being. This bodes well for higher new aircraft delivery rates, particularly in the latter half of the decade.*
- *Increase in interest rates and transaction costs are slowing down deals, but demand remains solid. Starting to see light jets being sold and replaced with high end turboprops.*
- *Looking at the usual metrics there is a feel of “returning to the mean” in the market. Transaction counts returning to normal and pricing seems to be rolling over back to economic rationality. I do not track the published inventories since there continues to be reports of many off market transactions, perhaps as high as 30%. Generally, your sentiment towards the market depends on your time horizon. Looking back a year the industry indicators are worrying, but going back before COVID they look good.*
- *The trend of gradually rising inventories has had the predictable impact of pre-owned values being down a touch. But the demand/supply dynamic is still well-balanced. We expect that dynamic to continue absent a significant macro dislocation, which we regard as unlikely under current conditions. With that said, the combined tailwinds of low rates and 100% bonus depreciation that drove the surge in transaction volume have diminished, pointing to a more “normal” market going forward.*
- *Although we don’t see it yet, it feels like the overall economic situation and global policy should have some and maybe even dramatic influence on demand for business aircraft. There are still not too many aircraft to choose from and prices remain high, however, there’s a feeling that the market has come to a halt. To start moving these aircraft, owners will have to reduce prices and offer more attractive conditions. Besides, there’s off-market aircraft popping up for sale almost every day and it won’t be long before buyers see that there’s no rush and enough to choose from in any category. There are some peculiarities, however: for example, the Legacy 600/650 is still overpriced and in high demand with people willing to pay double what they would have been worth in early 2020.*
- *Buyers see market soften, so immediately go on hold to see if can get better pricing or wait to see how the most forecast recession in history will unfold. In spite of bond and equity market turmoil, geopolitical stress, and a recession discussed daily, the general economy and the business aviation market have held up remarkably well. The only thing that is ‘different this time’ seems to be resilient employment. If inflation continues to trend lower all could turn out well – if companies other than tech begin to reduce headcount there will likely be a significant increase in aircraft listed for sale.*
- *Buyers have begun to hesitate a little. But we don’t see buyers saying I’m no longer going to buy. They’re just postponing a bit until they get back a bit of confidence*

with the bank collapse surprises of late. The interest rates have probably affected us more as an inventorying dealer than it has affected buyers specifically. Still lots of cash out there meaning financing is a nice to have, but not a have to have in many cases.

- *It feels as though the industry is pausing to see if the fallout from the banking crisis will have a material impact on demand or if the U.S., E.U. or other major economies slip into recession.*
- *There is still demand for aircraft so there are still buyers and buyer interest, some are slowing down a little watching the market, but there are still active ready buyers. There is also more interest from sellers either to just sell to downsize fleets or get out and others to transition.*
- *After a crazy 4Q22, the market seems to have tempered - waiting for the other shoe to drop relative to higher interest rates and bank failures. Prices that exceeded expectations are now starting to fall in line, at a normal balanced healthy market rate, not a dramatic change.*
- *Uncertainty driven by the banking crisis, inflation, interest rate hikes, recession fears, etc. has put a damper on market activity as most buyers are now on the fence waiting to see what happens next - the only buyers taking action are those that perceive a "deal." Although preowned inventory has steadily increased and demand has steadily decreased since 1Q-22, prices have only seen a slight to very moderate deterioration as we have yet to see any widespread market selloff and very few distressed sellers. The market is unanimous that prices are going down... question is how much and how fast?*
- *Notable uptick in (sale) activity over the last 45 days (with data to support). Market and buyers seems largely unfazed by the recent "banking issues" - supply is back to trending down again.*
- *Charter and fractional already trending down. These are leading indicators.*
- *Overall flight activity is continuing to decline through Q1 2023. Charter pricing is beginning to decline.*
- *Feels like everyone is holding their breath.*
- *More than the interest rate hikes or stock market gyrations, the bank failures have sent jitters through the aircraft resale marketplace parking some activity, causing some deals to fall out and all clients to acknowledge that the market is turning. Until now I would have said the direction of the aircraft resale marketplace is unclear, but the Ides of March have spoken and a downward trend in pricing will continue and the fallout from a cloudy global economic future is just beginning.*
- *The UK market has the additional negative of the self-inflicted damage from Brexit. Optimism is in short supply.*

Inventory Levels and Pricing

- *New backlog still substantial enough to keep used prices higher than normal.*
- *The business jet market appears to be past the peak experienced from mid-2021 through mid-2022. Since then, inventory has climbed, transactions have slowed, and prices are beginning to normalize. These factors do not mean that the market is weak, just not as strong as it was during the post-COVID recovery phase.*

- *Market is certainly starting to balance out more and inventory is coming up. Deals are now more of a regular negotiation and pre-purchase inspection process. Not seeing price declines, but they are certainly no longer going up. Interesting discussions with sellers who are concerned they are missing the strong market and buyers who are asking if they should wait longer in the hopes that more options will come to the market and prices will decrease.*
- *Inventory is increasing and prices are slightly decreasing.*
- *We have seen the market stabilize towards the end of 2022 and are now seeing a higher percentage of each fleet available for sale and prices dropping back. It will probably take 12 months or so before pricing is back to pre-COVID levels.*
- *Supply is increasing and customer interest has decreased. We are starting to see prices reducing.*

References:

Preowned Business Jet Monitor: Young Preowned Availability Up 2% Sequentially, 3% of Installed Base, Barclays Equity Research, 3/13/23

ANALYST(S) CERTIFICATION(S):

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In addition to the stock rating, we provide industry views which rate the outlook for the industry coverage universe as Positive, Neutral or Negative (see definitions below). A rating system using terms such as buy, hold and sell is not the equivalent of our rating system. Investors should carefully read the entire research report including the definitions of all ratings and not infer its contents from ratings alone.

Stock Rating

Overweight - The stock is expected to outperform the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

Equal Weight - The stock is expected to perform in line with the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

Underweight - The stock is expected to underperform the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

Rating Suspended - The rating and target price have been suspended temporarily due to market events that made coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

IMPORTANT DISCLOSURES:**Industry View**

Positive - industry coverage universe fundamentals/valuations are improving.

Neutral - industry coverage universe fundamentals/valuations are steady, neither improving nor deteriorating.

Negative - industry coverage universe fundamentals/valuations are deteriorating.

Below is the list of companies that constitute the "industry coverage universe":

U.S. Aerospace & Defense

ATI Inc. (ATI)	Boeing Co. (BA)	Bombardier Inc. (BBDb.TO)
Booz Allen Hamilton (BAH.N)	BWX Technologies Inc (BWXT)	CACI International (CACI)
General Dynamics Corp (GD)	Hexcel Corp (HXL)	Howmet Aerospace Inc. (HWM)
Huntington Ingalls Industries Inc (HII)	L3Harris Technologies Inc. (LHX)	Leidos Holdings (LDOS)
Lockheed Martin Corp (LMT)	Maxar Technologies Inc. (MAXR)	Northrop Grumman (NOC)
Raytheon Technologies Corporation (RTX)	Science Applications International Corp (SAIC)	Spirit AeroSystems Holdings (SPR)
Textron Inc (TXT)	TransDigm Group Inc. (TDG)	Triumph Group Inc (TGI)
Woodward Inc. (WWD)		

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