

# **Aerospace and Defense**

Business Jet Monthly - September 2010

This report contains our industry delivery projections plus data on market share and the used market. The industry is an important driver for many companies we cover, including Bombardier, Embraer, General Dynamics, Honeywell, Rockwell Collins, Spirit AeroSystems, and Textron.

- Demand outlook little changed, though heavy jet demand might be a bit better. Elevated used inventory, attractive used pricing, and macro uncertainty continue to hold down demand for new business jets. As a result, OEMs are eating further into their backlogs, and if these don't stabilize in the coming quarters, further rate cuts seem likely. The risk is not the same across all categories, however, and the degree to which demand for new heavy jets continues to outpace light jets—even as we move further into a cycle in which light jets took a pounding early on—is striking. Bombardier's Q2 provided further supporting datapoints as Learjet and Challenger backlogs continue to decline while the Global backlog appears to have ticked up recently and is about flat year-to-date. We're not ready to say that large business jets are out of the woods as orders remain anemic overall, and the next two quarters will be crucial in determining whether further rate cuts are necessary.
- Used inventory increased 20 bps. Inventories as a % of the active fleet increased to 11.8% in Aug from 11.6% in July. All three categories—Heavy (+30 bps), Medium (+20 bps), and Light (+20 bps)—exhibited increased inventories. We believe this increase is a bump in the road and expect that inventories—which fell ~300 bps from July 2009 to July 2010 but remain high in historical terms—will continue to decline gradually. By OEM, Hawker Beechcraft (-30 bps) and Bombardier (-10 bps) saw decreasing inventory levels, while Embraer (+170 bps), Dassault (+60 bps), Cessna (+50 bps), and Gulfstream (+30 bps) drove the increase. 14 of 23 tracked models witnessed higher inventories, 8 saw declines, and G500/550/V was flat.
- Average asking price increased 1.3% in August. Prices reached ~\$11.4 mln after staying at ~\$11.2 mln for three consecutive months. Prices are down 8% YTD. The Aug price increase was driven by Heavy jets (+2.7%), while Medium (-0.7%) and Light jets (-0.2%) saw modest price contractions. While prices are down to 1997 levels, the need for more inventory to clear means there could be some additional downward momentum ahead. 11 of 23 tracked models saw higher prices, 9 saw price contractions, and 3 were flat.
- Flight ops still growing but not convincingly. Flight ops increased 7.7% y/y in July compared to 14.3% in June. This marked the first single digit y/y growth in 2010, and comps will get tougher in 2H. On a seasonally adjusted basis, flight ops were flat sequentially and have yet to move above the March level. Business jet usage is improving slowly, and there is still a long way to go as July flight ops were 19% below peak. The pace of the recovery is likely limiting aftermarket sales somewhat, though Q2 numbers were good and the pickup in utilization we've seen should support further sales growth.

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# **Business Jet Delivery Forecast** Table 1: Aircraft Deliveries, 1995-2012E

#### JPM Delivery Forecast, 2012E-2014E 12E Total 669 851

1,086

1,161

917

w/ VLJs

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010F	2011E	2012F
Bombardier					,													
Challenger 601-3R,604	24	32	34	36	42	38	41	31	24	29	36	29	35	44	36	35	29	25
Challenger 300	_	_	_	_	_	_	_	_	1	28	51	55	51	60	33	28	21	30
Challenger 800	_	_	_	_	_	_	_	_	_	_	4	18	12	17	7	12	10	12
Global Express	_	-	-	3	32	35	30	17	14	20	14	22	25	27	25	27	24	25
Global 5000	_	-	-	-	_	-	_	-	_	4	17	18	23	25	26	26	24	25
Learjet 40	-	-	-	-	-	-	-	-	-	17	21	26	23	21	14	8	5	8
Learjet 45 / 45X	-	-	-	7	43	71	63	27	17	22	30	30	34	27	19	11	7	10
Learjet 60	23	24	32	32	35	29	17	12	9	18	15	23	23	26	13	11	7	10
Learjet 85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_
Discontinued Models	19	13	21	22	24	28	17	9	2	-	-	-	-	-	-	_	-	_
Total	67	68	79	100	173	207	180	101	70	129	188	213	226	247	173	158	127	145
Cessna (Textron)																		
Citation Mustang	_	_	_	_	_	_	_	_	_	_	_	1	45	101	125	70	70	75
Citation Jet/CJ1	42	44	63	64	59	56	61	30	22	20	18	25	34	20	14	4	6	10
Citation Jet/CJ2	-	-	_	_	_	8	41	86	56	27	23	37	44	56	21	18	20	25
Citation Jet/CJ3	_	_	_	_	_	_	-	_	_	6	48	72	78	88	40	20	20	30
Citation Jet/CJ4	_	_	_	_	_	_	_	_	_	_	-		-	-	-	15	25	25
Citation Encore	_	_	_	_	_	6	37	36	21	24	17	14	23	28	5	9	10	15
Citation Excel	_	_	_	15	39	79	85	81	48	55	62	73	82	80	44	20	15	20
Citation Sovereign	_	_	_	-	_	-	_	_	-	9	46	57	65	77	33	15	15	20
Citation X	_	7	28	30	36	37	34	31	18	15	14	12	17	16	7	4	4	4
Discontinued Models	73	78	90	91	82	66	48	41	31	25	21	18	- '	-	_	_	_	
Total	115	127	181	200	216	252	306	305	196	181	249	309	388	466	289	175	185	224
				200	2.0	202	000	000	170		217	007	000	100	207	.,,	100	
Dassault				40		40				_	_	_						
Falcon 50/EX	8	1	10	13	11	18	13	10	8	5	5	5	2	1	-			_
Falcon 900/B/C	10	8	7	5	8	6	6	4	3	3	1	-	-	-	-			_
Falcon 900DX	-	-	_		_	_	_	.=		.=	2	4	10	4	.1			
Falcon 900EX	_	3	16	15	16	23	21	17	10	15	16	16	18	19	17	16	18	20
Falcon 2000	10	21	18	14	34	26	35	35	12	11	6	6	1	3	1	-	-	-
Falcon 2000EX	-	-	-	-	-	-	-	-	16	29	21	30	33	18	3	3		_
Falcon 2000LX	-	-	-	-	-	-	-	-	-	-	-	-	-	6	23	21	23	27
Falcon 7X													6	21	32	40	41	45
Total	28	33	51	47	69	73	75	66	49	63	51	61	70	72	77	80	82	92
Embraer																		
Phenom 100	-	-	-	-	-	-	-	-	-	-	-	-	-	2	93	103	125	155
Phenom 300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	17	35	40
Legacy 600	-	-	-	-	-	-	-	8	13	13	14	27	35	33	18	14	16	20
Lineage 1000	_	_	_	_	_	_	_	_	_	_	_	_	_	_	3	3	4	4
Discontinued Models	-	-	-	-	-	2	5	-	-	-	-	-	-	-	-	-	-	_
Total	-	-	-	-	-	2	5	8	13	13	14	27	35	35	115	137	180	222
Gulfstream																		
G100 / G150	6	11	6	14	9	11	5	9	5	9	12	20	32	39	11	14	12	20
G200 / 250	-	- 11	-	- 14	1	6	25	15	19	13	14	22	27	30	8	11	11	15
G300 / 350	_	_	_	_	-	_	-	-	8	5	12	12	13	12	-	''	''-	-
G400 / 450 / G IV / IVSP	26	24	22	32	39	37	36	29	13	19	14	16	20	20	30	31	28	18
G500	20	24	- 22	J2 _		_	-	- 21	13	- 17	-	- 10	20	20	-	-	20	-
G550 / G V / VSP	_	3	29	29	31	34	35	32	28	32	37	43	46	55	45	45	42	40
G650	_	_	27	21	-	J4	-	J2 _	20	J2 _	-	43	40	-	40	43	8	20
Total	32	38	57	75	80	88	101	85	74	78	89	113	138	156	94	101	101	113
	32	30	31	75	00	00	101	03	74	70	07	113	130	150	74	101	101	113
Hawker Beechcraft																		
Premier I	_	-	-	_	_		18	29	29	37	30	23	54	31	16	10	8	8
Hawker 400XP	30	29	43	43	45	51	25	19	24	28	53	53	41	35	11	11	15	15
Hawker 800/XP	26	26	33	48	55	67	55	46	47	50	58	64	67	88	51	33	36	48
Hawker 4000	_	-	-	-	-	-	-	-	-	-	-	-	-	6	20	21	26	32
Discontinued Models	8	3	2	_	_	_	_	-	_	_	-	-	_	-	_			_
Total	64	58	78	91	100	118	98	94	100	115	141	140	162	160	98	75	85	103
Other Very Light Jets																		
Diamond D-Jet	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	10
HondaJet	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	8
Total	_	_	_	_	_	_	_	_		_				_	_			18
-																		-
Grand Total w/o VLJs	306	324	446	513	638	740	765	659	502	579	732	862		1,033	628	553	565	669
% change	14%	6%	37%	15%	24%	16%	3%	-14%	-24%	15%	26%	18%	13%	6%	-39%	-12%	2%	18%
Grand Total w/ VLJs	306	324	446	513	638	740	765	659	502	579	732	863	1,019	1,136	846	726	760	917
% change	14%	6%	37%	15%	24%	16%	3%	-14%	-24%	15%	26%	18%	18%	11%	-26%	-14%	5%	21%

VLJs include: Cessna Mustang, Diamond D-Jet, Embraer Phenom 100, and HondaJet.

Source: GAMA, Company reports and J.P. Morgan estimates.

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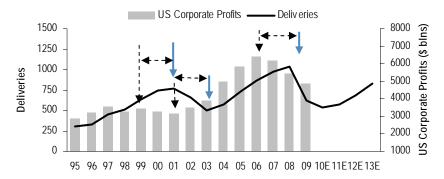
Business jet deliveries lag US corporate profits by 2 years on peak-and-trough basis.

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## **Macro Drivers & Market Cycle**

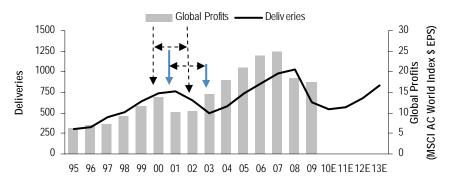
Demand for business jets is largely a function of corporate profits. During the last cycle, deliveries peaked in 2001 after US corporate profits reached a high in 1999, while deliveries bottomed out in 2003 after profits fell to cyclical lows in 2001. The downturn itself lasted for 2 years before positive growth returned in 2004 (see Figure 1). At the same time, global profits peaked in 2000 as the downturn in US profits did not fully affect global profits for a year. Global profits resumed minimal growth again in 2002, with more substantial growth following in 2003 as deliveries hit their low point (Figure 2).

Figure 1: US Corporate Profits vs. Business Jet Deliveries (# of aircraft), 1995-2013E



Source: GAMA, BEA, J.P. Morgan estimates. Excludes Very Light Jets as delineated in Table 1.

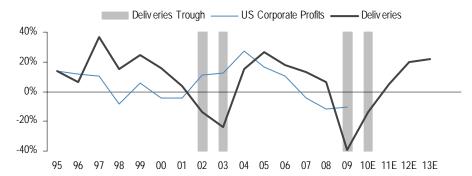
Figure 2: Global Corporate Profits vs. Business Jet Deliveries (# of aircraft), 1995-2013E



Source: GAMA, BEA, MSCI, J.P. Morgan estimates. Excludes Very Light Jets as delineated in Table 1.

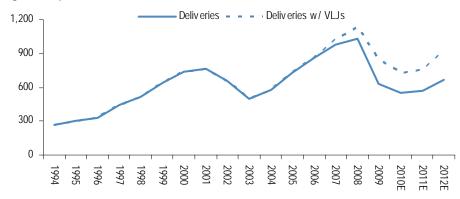
US corporate profits peaked in 2006, and business jet deliveries (excluding VLJs) peaked two years later once again, in 2008. Business jet deliveries declined 39% in 2009, steeper than last cycle's 14% initial drop-off, with OEMs cutting production rates across all categories of jets. We foresee another decline of 12% in 2010 followed by a modest increase in 2011, though visibility is limited.

Figure 3: US Corporate Profits vs. Business Jet Deliveries (% chg. y/y), 1995-2013E



Source: GAMA, BEA, J.P. Morgan estimates

Figure 4: Impact of VLJs on Total Deliveries

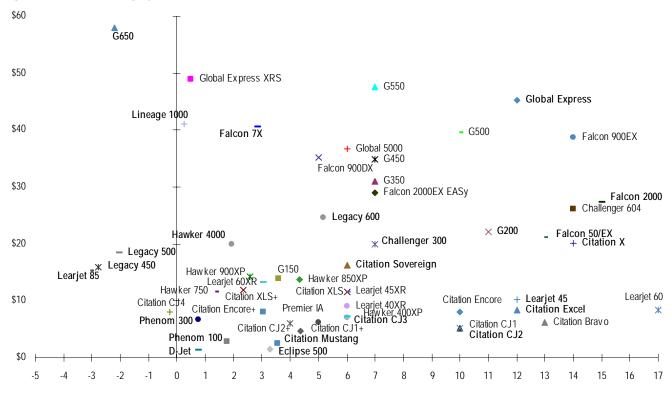


Source: GAMA, Company reports and J.P. Morgan estimates. Very Light Jets, as delineated in Table 1, include Cessna Mustang, Diamond D-Jet, Embraer Phenom 100, and Honda Jet.

#### **Competitive Positioning, New Launches**

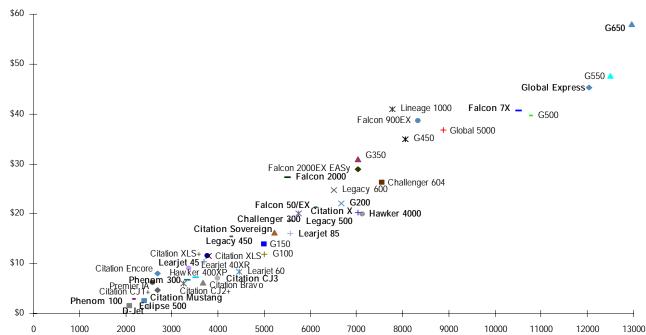
We believe companies developing new models are poised to fare better during and after the turmoil. A number of new product launches remain in the pipeline across segments, especially in the very light jet and midsize portions of the market. G650 and Lineage 1000 should help Gulfstream and Embraer gain share in the heavy jet market. In the mid-size category, a number of new products have either come to market or were recently launched, including the Hawker 4000, Embraer Legacy 450/500, G250, and (eventually) Dassault's SMS. In the VLJ segment of the market, Embraer has begun delivering the Phenom 100, while Diamond and Honda continue developing new offerings. The duration and intensity of the downturn could lead OEMs to revisit their plans for new products, however. Cessna has already canceled the Citation Columbus, though we still see a possibility this aircraft comes back.

Figure 5: Price (\$MM) vs. Age (years)



Source: JetNet, J.P. Morgan estimates. Note: **Bold** indicates clean sheet design, non-bold indicates derivative models.

Figure 6: Price (\$MM) vs. Range (km)



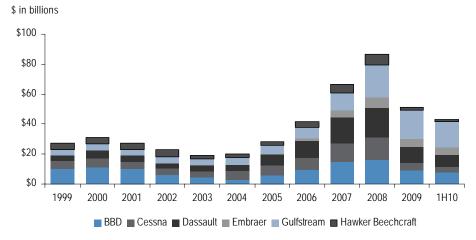
Source: JetNet, J.P. Morgan estimates. Note: Bold indicates clean sheet design, non-bold indicates derivative models



## **Industry Financial Data**

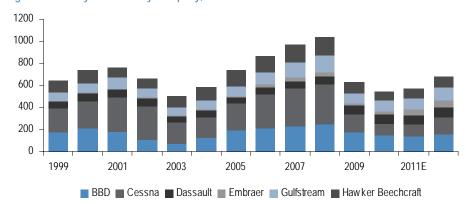
In this section we provide comparative industry data for backlog deliveries, estimated book-to-bill, and profitability.

Figure 7: Industry Backlog by Company, 1999-1H10



Source: Company data, J.P. Morgan estimates.

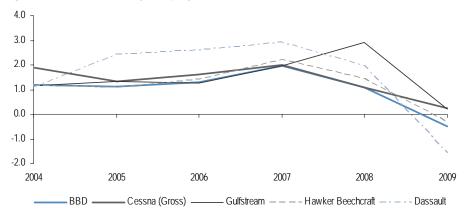
Figure 8: Industry Deliveries by Company, 1999-2012E



Source: Company data, GAMA. Note: Excludes VLJs.

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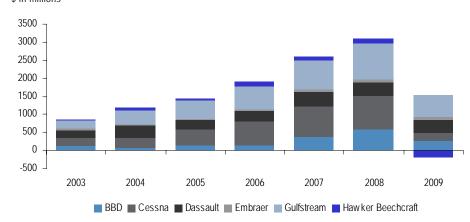
Figure 9: Book to Bill Ratio by Company, 2004 – 2009



Source: Company data, J.P. Morgan estimates. Data as available.

Figure 10: Industry EBIT by Company, 2003-2009

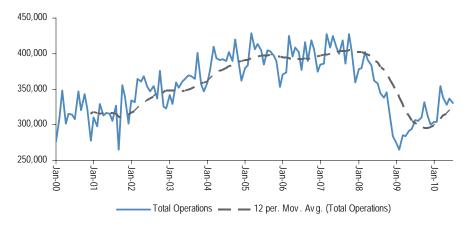
\$ in millions



Source: Company data, J.P. Morgan estimates.

Figure 11: Monthly Flight Operations – Business Jets

Takeoffs and landings

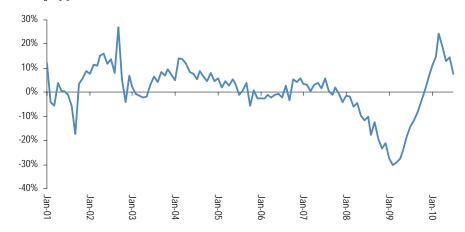


Source: FAA, J.P. Morgan estimates.

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Figure 12: Change in Monthly Flight Operations – Business Jets

% change, y/y



Source: FAA, J.P. Morgan estimates.

Table 2: Historical Fleet Size

	Total	Heavy Jets	Medium Jets	Light Jets
1988	5,331	497	1,414	3,420
1989	5,591	588	1,480	3,523
1990	5,851	649	1,550	3,652
1991	6,095	706	1,599	3,790
1992	6,347	761	1,666	3,920
1993	6,606	815	1,738	4,053
1994	6,856	868	1,809	4,179
1995	7,176	960	1,887	4,329
1996	7,475	1,043	1,962	4,470
1997	7,901	1,151	2,074	4,676
1998	8,397	1,284	2,190	4,923
1999	9,029	1,482	2,335	5,212
2000	9,780	1,722	2,496	5,562
2001	10,572	1,956	2,663	5,953
2002	11,289	2,154	2,799	6,336
2003	11,840	2,337	2,913	6,590
2004	12,440	2,511	3,055	6,874
2005	13,143	2,714	3,259	7,170
2006	13,997	2,957	3,488	7,552
2007	15,072	3,212	3,803	8,057
2008	16,342	3,476	4,260	8,606
2009	17,199	3,773	4,426	9,000

Source: JetNet.

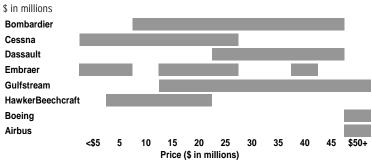
## **Quick Reference Specification Table**

Table 3: Business Jets Quick Reference Guide

Model	Make	Engine	Avionics	Range (km)	Seating	Price (\$M)
SF50*	Cirrus Design	Williams	Garmin	1,900	5-7	1.72
D-Jet*	Diamond	Williams	Garmin	2,500	2-5	1.9
Eclipse 500*	Eclipse	P&W Canada	Garmin/Honeywell/IS&S	2,084	2-4	2.15
PiperJet*	Piper Aircraft	Williams	Garmin	2,400	6	2.2
Mustang	Cessna (Textron)	P&W Canada	Garmin	2,130	4	2.5
Phenom 100	Embraer	P&W Canada	Garmin	2,148	4-6	2.9
HondaJet*	Honda	GE-Honda	Garmin	2,185	6-7	3.9
Citation CJ1+	Cessna (Textron)	Williams / Rolls-Royce	Rockwell Collins	2,696	6	4.6
Citation CJ2+	Cessna (Textron)	Williams / Rolls-Royce	Rockwell Collins	2,989	6	5.2
Citation Bravo	Cessna (Textron)	P&W Canada	Honeywell	3.685	7	6.1
Premier I	Hawker Beechcraft	Williams	Rockwell Collins	2,590	6-7	6.2
Phenom 300	Embraer	P&W Canada	Garmin	3.333	6-7	6.7
Citation CJ3	Cessna (Textron)	Williams / Rolls-Royce	Rockwell Collins	4.001	6	7.1
Beechjet 400XP	Hawker Beechcraft	P&W Canada	Rockwell Collins	3,519	7-9	7.2
Citation Encore+	Cessna (Textron)	P&W Canada	Rockwell Collins	2.696	4-6	8.1
Learjet 40	Bombardier	Honeywell	Honeywell	3.378	6-7	9.0
Learjet 45	Bombardier	Honeywell (Garrett)	Honeywell	3,704	8	10.3
					8	
Citation XLS+	Cessna (Textron)	P&W Canada	Rockwell Collins	3,805	8	11.6
Learjet 60	Bombardier	P&W Canada	Rockwell Collins	4,461	6-10	8.3
Hawker 800	Hawker Beechcraft	Honeywell	Rockwell Collins	5,560	6-14	13.8
G150	Gulfstream (GD)	Honeywell	Rockwell Collins	5,000	6-8	14.0
Legacy 450*	Embraer	Honeywell	Rockwell Collins	4260	2-8	15.3
Citation Sovereign	Cessna (Textron)	P&W Canada	Honeywell	5,222	8-12	16.2
Learjet 85*	Bombardier	TBD	TBD	5556	8	~16.0
Legacy 500*	Embraer	Honeywell	Rockwell Collins	5560	2-10	18.5
Challenger 300	Bombardier	Honeywell	Rockwell Collins	5,741	8-9	20.0
Hawker 4000	Hawker Beechcraft	Pratt & Whitney	Honeywell	5.753	8-14	20.0
Citation X	Cessna (Textron)	Rolls-Royce (Allison)	Honeywell	7.040	10	20.1
Falcon 50/EX	Dassault	Honeywell	Rockwell Collins	6,083	9-12	21.2
G200	Gulfstream (GD)	P&W Canada	Rockwell Collins	6.667	8-10	22.1
G250*	Gulfstream (GD)	Honeywell	Rockwell Collins	6,300	8-10	24.0
L · / 00	Fh	Della Davia	Hanasasall	/ 504	10	24.7
Legacy 600	Embraer	Rolls-Royce	Honeywell	6,504	13	
Challenger 605	Bombardier	GE	Rockwell Collins	7,491	12	26.2
Challenger 800 Series	Bombardier	GE	Rockwell Collins	4,683-6,546	15-90	28.0
Falcon 2000DX/EX	Dassault	P&W Canada	Honeywell	6,019-7,037	8-12	29.0
G350	Gulfstream (GD)	Rolls-Royce	Honeywell	7,038	11-14	31.0
G450	Gulfstream (GD)	Rolls-Royce	Honeywell	8,055	11-14	34.9
Global 5000	Bombardier	Rolls-Royce	Honeywell/Rockwell Collins	8,889	8-16	36.8
Falcon 900DX/EX	Dassault	Honeywell	Honeywell	7,593-8,333	8-19	37.0
G500	Gulfstream (GD)	Rolls-Royce	Honeywell	10,740	14-19	39.6
Falcon 7X	Dassault	P&W Canada	Honeywell	10,500	8-19	40.6
Lineage 1000	Embraer	GE	Honeywell	7,778	19	41.0
Global Express	Bombardier	Rolls-Royce	Honeywell/Rockwell Collins	12,038	10-24	45.3
G550 ·	Gulfstream (GD)	Rolls-Royce	Honeywell	12,500	14-19	47.6
G650*	Gulfstream (GD)	Rolls Royce	Honeywell	12,964	11-18	58.0
BBJ1	Boeing	CFM	Rockwell Collins/Honeywell	11,293	19-149	58.0
ACJ/A318 Elite	Airbus	CFM / IAE	BFE	9,630	48-134	61.5
BBJ2	Boeing	CFM	Rockwell Collins/Honeywell	10,334	19-189	69.5

Source: Company reports, Teal Group, Business & Commercial Aviation. Note: \* represents in development aircraft.

Figure 13: Product Pricing Span by Company



Source: Company data, Business & Commercial Aviation, J.P. Morgan estimates.

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# **Overall Market Trends**

### **Market Share**

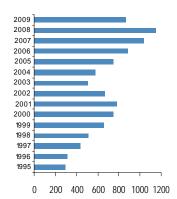
#### Deliveries decreased 14% in Q2

The six major business jet OEMs plus Boeing and Airbus delivered 191 business jets in 2Q10, down 14% from 223 deliveries in 2Q09 but 16% more than the previous quarter. Embraer gained 300 bps of market share by volume, driven by Phenom 100 (+20) and 300 (+4). Dassault gained 200 bps of market share by volume, driven by 2000LX (+8) and 7X (+7). Cessna continued losing share, falling 390 bps in 2Q10, and its market share is down about 1,400 bps in the last four quarters. Bombardier lost 110 bps due to fewer Medium and Heavy jet deliveries, while Gulfstream and Airbus gained 70 bps and 20 bps, respectively. Hawker lost 90 bps, primarily due to fewer 800s, while Boeing market share was flat.

#### Market size by value decreased 9% y/y

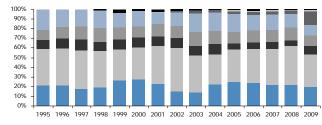
Revenues from shipments decreased 9% in 2Q10 compared to a year ago, slightly less than the 14% decrease in volumes. The reason for the smaller decline by value was a mix shift toward Heavy jets as Light and Medium jets drove the decline in volumes while higher value Heavy jet volumes were flat. On a TTM basis, Dassault, Gulfstream, and Airbus gained 330 bps, 70 bps, and 60 bps, respectively, while Bombardier and Cessna lost 220 bps and 190 bps, respectively. Embraer, whose share gains by volume (+190 bps) came from the Phenom 100 VLJs, was flat by value. Hawker lost 50 bps, while Boeing was flat.

Market Size - by Volume



Source: Teal Group, J.P. Morgan estimates.

Figure 14: Market Share by Volume, 1995-2009



Bottom to Top: Bombardier, Cessna, Dassault, Gulfstream, Hawker Beechcraft, Embraer, Airbus, Boeing

Source: Teal Group, J.P. Morgan estimates.

100% 90% -80% -70% -60% -40% -30% -

Figure 15: LTM

Source: Teal Group, J.P. Morgan est.

2Q09 3Q09 4Q09 1Q10 2Q10

#### Market Size - by Value

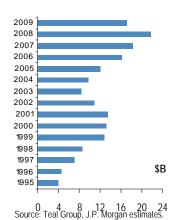
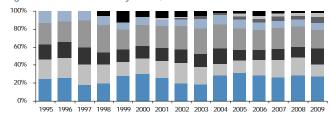


Figure 16: Market Share by Value, 1995-2009

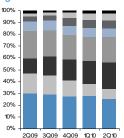


Bottom to Top: Bombardier, Cessna, Dassault, Gulfstream, Hawker Beechcraft, Embraer, Airbus, Boeing

Source: Teal Group, J.P. Morgan estimates.

Figure 17: LTM

20%



Source: Teal Group, J.P. Morgan est.

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The 2Q10 delivery mix was again tilted to larger jets, while the Medium and Light jet markets struggled. Three of the six major OEMs reported significantly fewer deliveries in 2Q10, while Dassault and Embraer deliveries increased meaningfully. Cessna remained under pressure as deliveries declined by 41 jets compared to 2Q09 to 43 aircraft but increased from 31 deliveries last quarter. The decline in Cessna was driven by fewer deliveries of all models except Encore+, while CJ4 deliveries started in 2Q10. Embraer delivered 40 aircraft (21 in 2Q09) including 35 Phenom 100s (+20) and four Phenom 300 (+4), while the company did not deliver any Legacy 600s (-5). Dassault delivered 13 more units compared to a year ago driven by 2000LX (+8) and 7X (+7). Bombardier deliveries decreased by 15 units to 35 aircraft due to decreases across models, primarily in Larger and Medium jet models. Gulfstream deliveries increased by 2 units to 28 as the company delivered 2 more mid-size jets. Hawker delivered 11 fewer jets, primarily driven by 800s (-8). Airbus (+1) and Boeing (flat) delivered 3 jets and 1 jet, respectively.

By category, for 2Q09 Heavy jets gained a substantial 320 bps of market share by volume, resulting in a 1,680 bps gain over the last four quarters. Light jets lost 160 bps of market share in 2Q10 and 1,180 bps in the last four quarters. Medium jets also lost 160 bps of share by volume, with 500 bps loss in the last four quarters. Similarly, by value, Heavy jets gained 240 bps at the expense of Medium (-150 bps) and Light (-80 bps). Heavy jets now have 77% market share by value and 52% by volume.

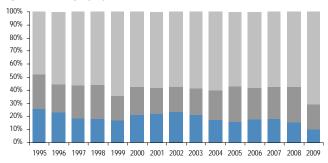
Figure 18: Category by Volume, 1995-2009

Bottom to Top: Light, Medium, Heavy Source: Teal Group, J.P. Morgan estimates

Source: Teal Group., J.P. Morgan

2009 3009 4009 1010 2010

Figure 20: Category by Value, 1995-2009



Bottom to Top: Light, Medium, Heavy Source: Teal Group, J.P. Morgan estimates

Figure 21: LTM

Figure 19: LTM

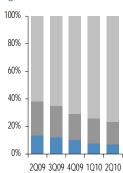
100%

80%

60%

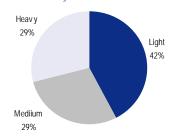
40%

20%



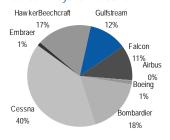
Source: Teal Group, J.P. Morgan est.

#### Active Fleet in Operation -Breakdown by Class



Source: JetNet

#### Active Fleet in Operation Breakdown by Manufacturer



Source: JetNet

Note: We only consider active platforms in this section (major OEMs)-either clean sheet designs or platforms currently out of production but that have in-production derivatives.

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#### **Used Market**

### Used jet inventories increased 20 bps, asking prices up 1.3%

- Used jet inventory, measured by 'aircraft for sale as % of active fleet,' increased 20 bps to 11.8% in August, marking the second increase in the last 13 months. Inventories remain 260 bps below the Jul-09 peak of 14.5%. All three business jet categories—Heavy (+30 bps), Medium (+20 bps) and Light Jets (+20 bps)– contributed to the increase. 14 of 23 tracked models exhibited increases in inventory levels, 8 models saw decreases, and G500/550/V remained flat.
- Average asking price increased 1.3% to ~\$11.4 mln after remaining at the ~\$11.2 mln level for the three preceding months. Prices are still very low from a historical perspective but could see further pressure with inventories remaining at an elevated level. The price increase in August was driven by Heavy jets (+2.6%), while Medium (-0.7%) and Light jet (-0.2%) prices decreased modestly. 11 of 23 tracked models witnessed increased prices, 9 models saw price contractions, and 3 remained flat.
- We believe the modest increase in inventories, after five straight monthly declines, was just a bump in an otherwise downward trend. The increase in prices was driven by Heavy jets and was a breather after multiple steep declines since Dec-08. We expect prices to continue moving down, pressured by high inventory levels, though these declines should be fairly modest. Inventories are still at historically high levels and should continue declining, though it will likely take some time to get back to more normal levels.

Figure 22: Average Asking Price and % of Active Fleet for Sale



Source: JetNet, J.P. Morgan estimates

Figure 23: % Change in Average Asking Price



Dec-96 Dec-97 Dec-98 Dec-99 Dec-00 Dec-01 Dec-02 Dec-03 Dec-04 Dec-05 Dec-06 Dec-07 Dec-08 Dec-09

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## **Used Market by Company**

### Inventories increased for most OEMs; pricing improved modestly

- All major OEMs except Hawker Beechcraft and Bombardier experienced increases in inventory levels in August. Hawker Beechcraft saw a decrease of 30 bps as all its models posted lower inventories. Bombardier inventories were down 10 bps, primarily driven by Learjet 40/45 and Global Series. Embraer Legacy 600 inventories increased 170 bps, while Dassault exhibited an increase of 60 bps as all its models reported higher inventories. All Cessna models except V/Ultra/Encore/Encore+ also saw increased inventories, driving a 50 bp increase overall. Gulfstream inventories increased 30 bps. Hawker Beechcraft continued to exhibit the highest inventories (13.0%), closely followed by Bombardier (12.5%), Dassault (12.2%), and Cessna (12.1%). Gulfstream had the lowest inventory at 8.6% and Embraer was at 11.5%.
- Business jet prices increased 1.3% in August after falling 8.2% in the four preceding months. The increase was driven by Heavy jets (+2.6%), while Medium (-0.7%) and Light jets (-0.2%) registered modest price contractions. By OEM, Hawker Beechcraft (-1.8%) was the only model to see prices decrease, while Embraer Legacy 600 remained flat. Bombardier saw a price increase of 2.4% driven by Global Series, while Gulfstream prices increased 1.5% driven by the high value G500/550/V. Dassault witnessed a price increase of 1.3%, while Cessna prices (+0.3%) were essentially flat.

Figure 24: Bombardier



Source: Jetnet and J.P. Morgan estimates.

Figure 25: Cessna



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Figure 26: Dassault



Source: Jetnet and J.P. Morgan estimates.

Figure 27: Hawker Beechcraft



Source: Jetnet and J.P. Morgan estimates.

Figure 28: Gulfstream

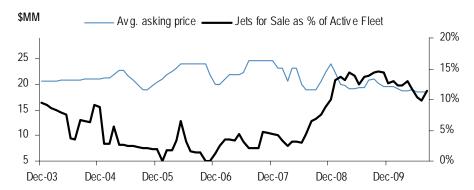


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Figure 29: Embraer

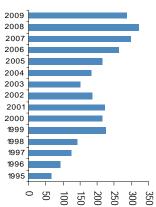


# **Heavy Jets**

## **Market Share Trends**

- 2Q10 Heavy jet deliveries remained flat at 75 compared to 2Q09 but decreased 4% compared to last quarter. The increase in Dassault deliveries was offset by Bombardier and Embraer. Dassault delivered more 2000LX (+8) and 7X (+7), while 900 deliveries decreased slightly (-2). Bombardier saw decreases in deliveries across models, including Global Series (-7) and Challenger 600 (-2), while Challenger 800 deliveries were flat. Embraer delivered 5 fewer Legacy 600s and delivered one Lineage (equal to 2Q09). Gulfstream deliveries remained flat for all models. Airbus deliveries increased to 3 compared to 2 in 2Q09, while Boeing delivered one aircraft, unchanged from 2Q09.
- By volume, on a trailing twelve months basis, Dassault (+440 bps) gained significant market share at the expense of Bombardier (-300 bps) and Embraer (-170 bps). Airbus gained 30 bps of market share, while Gulfstream and Boeing share remained flat. Cessna and Hawker Beechcraft do not participate in the Heavy jet market.
- Similarly, by value, Dassault (+390 bps) and Airbus (+50 bps) gained market share, while Bombardier (-310 bps) and Embraer (-110 bps) lost share. Gulfstream (-10 bps) and Boeing were essentially flat.

Market Size – by Volume



Source: Teal Group, J.P. Morgan estimates.

Figure 30: Market Share by Volume, 1995-2009

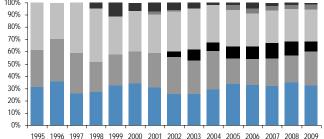
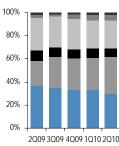


Figure 31: LTM

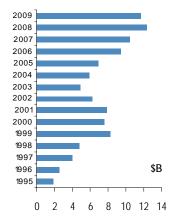


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Bottom to Top: Bombardier, Dassault, Embraer, Gulfstream, Airbus, Boeing Source: Teal Group, J.P. Morgan estimates.

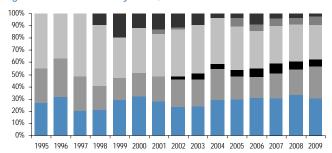
Source: Teal grp., J.P. Morgan est.

Market Size - by Value



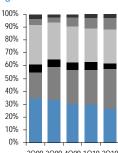
Source: Teal Group, J.P. Morgan estimates.

Figure 32: Market Share by Value, 1995-2008



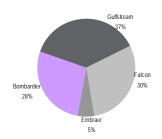
Bottom to Top: Bombardier, Dassault, Embraer, Gulfstream, Airbus, Boeing Source: Teal Group, J.P. Morgan estimates.

Figure 33: LTM



Source: Teal grp., J.P. Morgan est.

Active Fleet in Operation: Breakdown by Manufacturer



#### Source: JetNet

#### **Product Price Points**



Source: Company reports, Teal Group, Textron Fact book, Business & Commercial Aviation

Note: We only consider active platforms in this section (major OEMs)—either clean sheet designs or platforms currently out of production but that have in-production derivatives.

## **Used Market Trends**

### Used jet inventories increased 30 bps; asking prices up 2.6%.

• Used jet inventory, measured by 'aircraft for sale as % of active fleet,' increased 30 bps to 9.4% in August after declining for 12 straight months. Heavy jet inventories are still down 330 bps from the July peak of 12.7%. The increase in inventories was driven by Legacy 600 (+170 bps), Falcon 900 (+130 bps), G300/350/400 (+40 bps), and Falcon 2000 (+20 bps), while Challenger 601-3R/604/605 and Global Series saw a decline of 10 bps each. G500/550/V inventories were flat.

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- Average asking price increased 2.6% to \$20.3 mln in August and has remained in the \$19.5-20.5 mln range for the last six months. However, prices are still 33% down from the peak of \$30.5 mln in Nov-08. The August price increase was driven by Global Series (+9.1%), G500/550/V (+8.3%), and Falcon 900 (+7.2%). G300/350/400 (-5.7%) and Falcon 2000 (-4.9%) witnessed decreases in price, and Legacy 600 and Challenger 601-3R/604/605 were flat.
- Favorable: Global Series.
- Mixed: G500/550/V had increased prices and flat inventories, while Legacy 600 had flat prices and higher inventories. Challenger 601-3R/604/605 had decreased inventories and flat prices, while Falcon 900 had higher prices and inventories.
- Unfavorable: Falcon 2000 and G300/350/400.

Figure 34: Average Asking Price and % of Active Fleet for Sale



Source: JetNet, J.P. Morgan estimates.

Figure 35: % Change in Average Asking Price



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# Model Specs & Product History

Model G500/ G550

Manufacturer Gulfstream (GD)

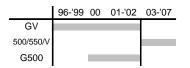
Engine Rolls-Royce

Avionics Honeywell

Range 10740/ 12500 km

Passengers 14-19

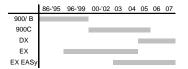
List price \$38 M/ \$47.8 M



Model Global 5000/ Express
Manufacturer Bombardier
Engine Rolls-Royce
Avionics Honeywell
Range 8889/ 12038 km
Passengers 8-16/ 10-24
List price \$35 M/ \$45.3 M

	98	99-'03	04	05	06	07
Express						
5000						
XRS						

Model Falcon 900EX
Manufacturer Dassault
Engine Honeywell
Avionics Honeywell
Range 8333 km
Passengers 8-19
List price \$35 M



#### G500/G550/V

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#### Figure 36



Source: JetNet, J.P. Morgan estimates.

## Global 5000/Express/Express XRS

Figure 37



Source: JetNet, J.P. Morgan estimates.

#### Falcon 900/900B/900C/900DX/900EX

Figure 38



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#### **Model Specs & Product History**

Model G350/ G450

Manufacturer Gulfstream (GD)

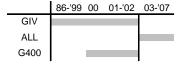
Engine Rolls-Royce

Avionics Honeywell

Range 7038/ 8055 km

Passengers 11-14

List price \$27.5 M/ \$33.5 M



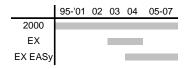
Model Challenger 604 Manufacturer Bombardier

Engine GE

Avionics Rockwell Collins
Range 7551 km
Passengers 9-18
List price \$26.2 M

	95	96	97	98-'05	06	07
601-3R						
604						

Model Falcon 2000EX
Manufacturer Dassault
Engine P&W Canada
Avionics Honeywell
Range 7037 km
Passengers 8-12
List price \$26.2 M



## G300/G350/G400/G450/IV/IVSP

#### Figure 39



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Source: JetNet, J.P. Morgan estimates.

## Challenger 601-3R/604/605

#### Figure 40



Source: JetNet, J.P. Morgan estimates.

### Falcon 2000/2000EX

#### Figure 41



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Model Legacy 600
Manufacturer Embraer
Engine Rolls-Royce
Avionics Honeywell
Range 6504 km
Passengers 13
List price \$23.6 M



## Legacy 600

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## Figure 42



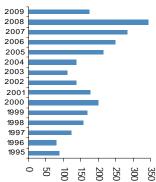
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# **Medium Jets**

### **Market Share Trends**

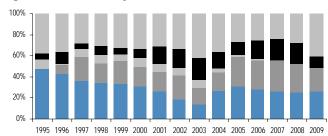
- Medium jet deliveries decreased 47% to 24 jets in 2Q10 compared to 45 a year ago and declined 33% compared to the previous quarter. All mid-size OEMs except Gulfstream reported fewer y/y deliveries in Q2. Gulfstream delivered 8 mid-size jets, two more than 2Q09. Hawker delivered 8 fewer 800XPs but 1 more 4000s resulting in 7 fewer total deliveries. Cessna delivered just 3 Sovereigns compared to 8 Sovereigns and 4 Citation Xs in 2Q09. Bombardier delivered 5 Challenger 300s only, while the company had delivered 9 300s and 2 Learjet 60s a year ago.
- On a trailing four quarter basis, by volume, Gulfstream and Hawker gained 270 bps and 90 bps of market share, respectively, primarily at the cost of Cessna, which lost 330 bps share. Bombardier also witnessed a slight decline of 30 bps.
- By value, Gulfstream and Hawker gained 310 bps and 140 bps of market share, respectively, at the expense of Cessna (-400 bps) and Bombardier (-50 bps).

Market Size - by Volume



Source: Teal Group, J.P. Morgan estimates.

Figure 43: Market share by Volume, 1995-2009



Bottom to Top: Bombardier, Cessna, Dassault, Gulfstream, Hawker Beechcraft Source: Teal Group, J.P. Morgan estimates

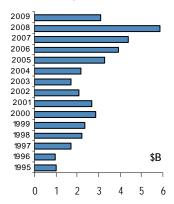
100% 80% 60% 40% 20%

Figure 44: LTM

Source: Teal Group, J.P. Morgan est.

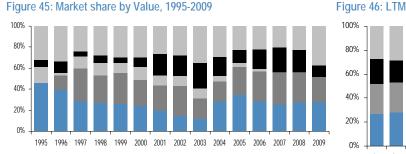
2Q09 3Q09 4Q09 1Q10 2Q10

#### Market Size - by Value



Source: Teal Group, J.P. Morgan estimates.

Figure 45: Market share by Value, 1995-2009



Bottom to Top: Bombardier, Cessna, Dassault, Gulfstream, Hawker Beechcraft Source: Teal Group, J.P. Morgan estimates.

100% 80% 60% 40% 20% 0% 2009 3009 4009 1010 2010

Source: Teal Group, J.P. Morgan est.

# Active Fleet In Operation Breakdown by Manufacturer



Source: JetNet

#### **Product Price Points**



Source: Teal Group, Textron Factbook, Business & Commercial Aviation

Note: We only consider active platforms in this section (major OEMs)—either clean sheet designs or platforms currently out of production but that have in-production derivatives.

#### **Used Market Trends**

### Inventories increased 20 bps; average asking price down 0.7%

• Used jet inventory, measured by 'aircraft for sale as % of active fleet' increased 20 bps to 13.7% in August, a bump in the road after decreasing 160 bps in the last four months. Medium jets had witnessed a decrease of about 50 bps per month in the three preceding months. Inventories are still 290 bps off the peak of 16.6% in July of last year. All medium jet models—except Hawker 800 (-40 bps) and G100/150 (-10 bps)—witnessed increases in inventory, including Citation X (+100 bps), G200 (+80 bps), Citation Sovereign (+60 bps), Falcon 50 (+60 bps), Challenger 300 (+30 bps), and Learjet 55/60 (+20 bps). Hawker 800 constitutes about one-third of total Medium jet inventories.

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- Average asking price for medium jets decreased 0.7% to \$9.7 mln in Aug, marking the 18th decrease in 21 months. Prices have fallen ~7% since Jan. Prices are still 26% off the peak of \$13.2 mln in early 2008. The price decrease was driven by G200 (-5.3%), Citation Sovereign (-2.0%), and Challenger 300 (-0.7%), partially offset by Citation X (+3.2%), Falcon 50 (+2.5%), Hawker 800 (+0.5%), and Learjet 55/60 (+0.5%). G100/150 prices were flat.
- Favorable change: Hawker 800.
- Mixed: Falcon 50, Learjet 55/60, and Citation X saw increased inventories and higher prices, which is exactly the opposite of the last month for all three models. G100/150 had lower inventories and flat prices.
- Unfavorable change: G200, Challenger 300, Citation Sovereign.

Figure 47: Average Asking Price and % of Active Fleet for Sale



Source: JetNet, J.P. Morgan estimates

Figure 48: % Change in Average Asking Price



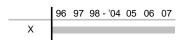
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## Model Specs & Product History

Model Falcon 50/EX
Manufacturer Dassault
Engine Honeywell
Avionics Rockwell Collins
Range 6083 km
Passengers 9-12
List price \$21.2 M



ModelCitation XManufacturerCessna (Textron)EngineRolls-Royce (Allison)AvionicsHoneywellRange7040 kmPassengers10List price\$19.6 M



Model Challenger 300
Manufacturer Bombardier
Engine Honeywell
Avionics Rockwell Collins
Range 5741 km
Passengers 8
List price \$18.3 M



#### Falcon 50/50-40/50EX

#### Figure 49



Source: JetNet, J.P. Morgan estimates.

#### Citation X

#### Figure 50



Source: JetNet, J.P. Morgan estimates.

## **Challenger 300**

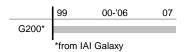
Figure 51



#### **Model Specs & Product History**

Model G200 Manufacturer Gulfstream (GD) P&W Canada Engine Avionics Rockwell Collins Range 6667 km Passengers 8-10

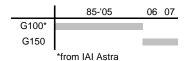
List price \$21.4 M



Model Citation Sovereign Manufacturer Cessna (Textron) Engine P&W Canada Avionics Honeywell 5222 km Range Passengers 8-12 List price \$15 M



G100/G150 Model Manufacturer Gulfstream (GD) Engine Honeywell Rockwell Collins Avionics Range 5000 km 6-7/6-8 Passengers List price \$11.9 M/ \$13.5 M



**G200** 

Figure 52



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Source: JetNet, J.P. Morgan estimates.

## **Citation Sovereign**

Figure 53



Source: JetNet, J.P. Morgan estimates. Note: Due to the inconsistent availability of data, dotted line represents last known asking price.

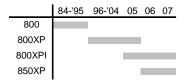
### G100/150

Figure 54

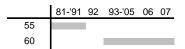


#### **Model Specs & Product History**

ModelHawker 800ManufacturerHawkerBeechcraftEngineHoneywellAvionicsRockwell CollinsRange5560 kmPassengers6-14List price\$10 M



Model Learjet 60
Manufacturer Bombardier
Engine P&W Canada
Avionics Rockwell Collins
Range 4461 km
Passengers 6-10
List price \$8.3 M



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## Hawker 800A/800B (215-800)/800XP/800XPI/850XP

#### Figure 55



Source: JetNet, J.P. Morgan estimates.

## Learjet 55/55B/55C/60/60XR

#### Figure 56



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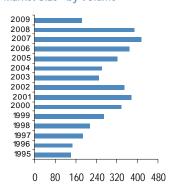
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# **Light Jets**

### **Market Share Trends**

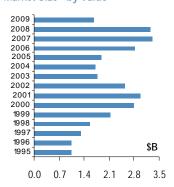
- 2Q10 Light jet deliveries totaled 32 aircraft, decreasing 36% from 46 in 2Q09 but up 167% compared to 12 in 1Q10. Cessna and Hawker delivered fewer aircraft, while Bombardier deliveries were flat. Cessna delivered just 20 aircraft, 11 fewer than in the year-ago period, primarily due to fewer Citation CJ1+ (-6), XLS+ (-5), CJ3 (-4), and CJ2+ (-3) deliveries. Cessna started delivering CJ4 during the quarter. Bombardier delivered 8 Light jets, matching the deliveries for 2Q09. Hawker delivered 4 jets, 4 fewer than in the year-ago period, including 2 fewer Premier Is and 2 400XPs.
- Light jet deliveries have improved from a dismal first quarter but remain low historically. On a trailing four quarter basis, Cessna gained 190 bps of market share despite seeing a significant decline in deliveries due to weak comps last quarter. Bombardier lost 130 bps market share and Hawker lost 60 bps. Similarly, by value, Cessna gained 230 bps at the expense of Bombardier and Hawker, which lost 190 bps and 40 bps of market share, respectively.

Market Size - by Volume



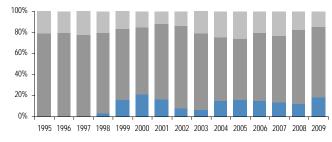
Source: Teal Group, J.P. Morgan estimates., Business & Commercial Aviation.

Market Size - by Value



Source: Teal Group, J.P. Morgan estimates.

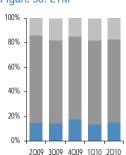
Figure 57: Market share by Volume, 1995-2009



Bottom to Top : Bombardier, Cessna, HawkerBeechcraft

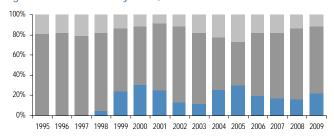
Source: Teal Group, J.P. Morgan estimates.

Figure 58: LTM



Source: Teal Group, J.P. Morgan est.

Figure 59: Market share by Value, 1995-2009



Bottom to Top: Bombardier, Cessna, HawkerBeechcraft

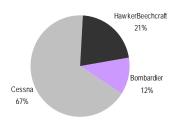
Source: Teal Group, J.P. Morgan estimates.

Figure 60: LTM

100%
80%
60%
40%
2009
3009
4009
1010
2010

Source: Teal Group, J.P. Morgan est.

Active Fleet in Operation: Breakdown by Manufacturer



Source: JetNet

#### **Product Price Points**



Source: Teal Group, Textron Factbook

Note: We only consider active platforms in this section (major OEMs)—either clean sheet designs or platforms currently out of production but that have in-production derivatives.

## **Used Market Trends**

### Inventories increased 20 bps; average asking price essentially flat

• Used jet inventory, measured by 'aircraft for sale as % of active fleet,' increased 20 bps to 12.4% in August. Light jet inventory levels have moved within the range of 12.0% and 12.5% for the last 9 months. The increase was driven by Citation CJ2/CJ2+ (+120 bps), CJ1/CJ1+ (+80 bps), Citation CJ3 (+60 bps) and Excel/XLS (+50 bps), partially offset by Learjet 40/45 (-40 bps), Premier I/IA (-40 bps), Citation V/Ultra/Encore/Encore+ (-40 bps), and Beechjet 400/Hawker 400 (-20 bps).

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- Light jet average asking price was essentially flat at \$4.0 mln in August, after falling for 24 of the last 26 months. Prices decreased about 3.3% in the last two months and are at the lowest level since Mar-99. The decrease in prices for Beechjet 400/Hawker 400 (-7.6%), Citation CJ1/CJ1+ (-2.6%), Premier I/IA (-2.3%), and Citation CJ3 (-1.1%) was almost completely offset by Citation V/Ultra/Encore/Encore+ (+4.6%), Learjet 40/45 (+1.6%), Citation Excel/XLS (+1.4%), and CJ2/CJ2+ (+0.4%).
- Favorable change: Citation V/Ultra/Encore/Encore+, Learjet 40/45.
- Mixed: Citation CJ2/CJ2+ and Excel/XLS saw increased inventory levels and higher prices, while Premier I/IA and Beechjet 400/Hawker 400 witnessed lower prices and decreased inventories.
- Unfavorable change: Citation CJ1/CJ1+, CJ3.

Figure 61: Average Asking Price and % of Active Fleet for Sale



Source: JetNet, J.P. Morgan estimates

Figure 62: % Change in Average Asking Price

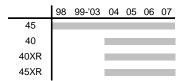


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#### **Model Specs & Product History**

Model Learjet 45
Manufacturer Bombardier
Engine Honeywell (Garrett)
Avionics Honeywell
Range 3704 km
Passengers 8
List price \$10.3 M



Model Citation XLS
Manufacturer Cessna (Textron)
Engine P&W Canada
Avionics Honeywell
Range 3805 km
Passengers 8
List price \$10.5 M

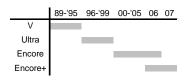
	98	99	00-03	04-06	07
Excel					
XLS					

Model Citation Encore

Manufacturer Cessna (Textron)
Engine P&W Canada

Avionics Honeywell
Range 2696 km

Passengers 4-6
List price \$8.1 M



## Learjet 40/40XR/45/45XR

#### Figure 63



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Source: JetNet, J.P. Morgan estimates.

### Citation Excel/XLS

#### Figure 64



Source: JetNet, J.P. Morgan estimates.

#### Citation V/Ultra/Encore/Encore+

#### Figure 65



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## Model Specs & Product History

Model Beechjet 400XP
Manufacturer HawkerBeechcraft
Engine P&W Canada
Avionics Rockwell Collins
Range 3519 km
Passengers 7-9
List price \$7 M



Model Citation CJ3

Manufacturer Cessna (Textron)

Engine Williams / Rolls-Royce

Avionics Rockwell Collins

Range 4001 km
Passengers 6
List price \$6.4 M



### Beechjet 400/400A/Hawker 400XP

#### Figure 66



Source: JetNet, J.P. Morgan estimates.

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### CitationJet CJ3

Figure 67



Source: JetNet, J.P. Morgan estimates.

#### **Model Specs & Product History**

Model Premier I
Manufacturer HawkerBeechcraft
Engine Williams
Avionics Rockwell Collins
Range 2590 km
Passengers 6-7
List price \$5.7 M



#### Premier I/IA

#### Figure 68



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Model Citation CJ2+ Manufacturer Cessna (Textron) Engine Williams / Rolls-Royce Rockwell Collins Avionics

NA Range Passengers 6 List price \$5.4 M



Citation CJ1+ Model Manufacturer Cessna (Textron) Williams / Rolls-Royce Engine Avionics Rockwell Collins

2696 km Range 6 Passengers List price \$4.2 M



### CitationJet CJ2/CJ2+

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#### Figure 69



Source: JetNet, J.P. Morgan estimates.

## CitationJet (Model 525)/CJ1/CJ1+

#### Figure 70



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# **Fractional Jets**

### **Provider Fleet Trends**

#### Fractional fleet increased nominally

- The total fractional fleet increased by 1 unit to 880 aircraft in July, the first increase in the last 15 months. The fractional fleet is still down by 80 aircraft from the peak of 960 in January 2009, about ~8%. Initial July numbers point to a modest decrease in the fractional fleet.
- The three-month rolling average of gross fleet additions was flat at 2.0 in July following three straight increases. The average of new jet additions decreased to 0.7 from 1.0, while the average of used jet additions increased from 1.0 to 1.3.

#### Fractional Fleet Base: Breakdown by Provider

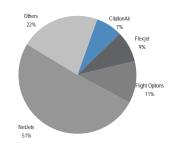
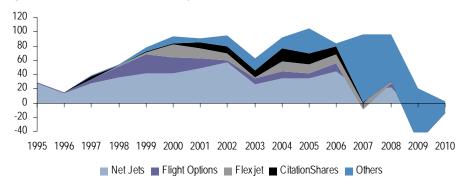
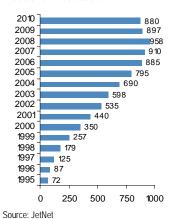


Figure 71: Fractional Fleet Additions, by Provider



Source: JetNet, J.P. Morgan estimates.

Fractional Fleet base



Source: JetNet, J.P. Morgan estimates.

Used Jets -New jets 15 12 9 6 3 Jan-00 Jan-02 Jan-03 Jan-05 Jan-07 Jan-08 Jan-99 Jan-01 Jan-06 Jan-09 Jan-10 Jan-98

Figure 72: Fractional Fleet Additions, Used and New—3-Month Rolling Average

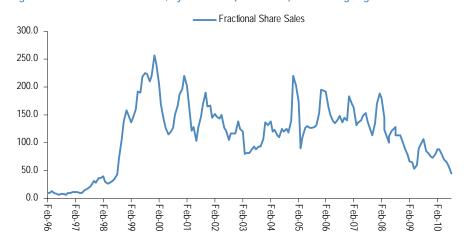
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### **Share Sales Trend**

### Share sales decline continues

- On an absolute basis, July share sales declined 70.5% y/y and 57.4% sequentially.
- On a rolling three-month average basis, share sales decreased 58.6% y/y and were down 24.9% compared to June.

Figure 73: Fractional Share Sales, by Providers (# of shares) – 3m rolling avg.



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Coverage			
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IB clients*	68%	61%	53%

<sup>\*</sup>Percentage of investment banking clients in each rating category.

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