

AIRFINANCE JOURNAL

An **Airfinance Journal**

special supplement

Leasing Top 50 2019

Top 50 managers by number of aircraft

Rank	Manager	Total		nge since t year	Turboprop	Regional jet	Narrowbody	Widebody
1	GECAS	1,201	¥	-2%	20	249	776	156
2	AerCap	1,042	+	-4%	-	3	748	291
3	Avolon	530	+	-9%	-	3	430	97
4	BBAM	510	+	13%	-	2	384	124
5	Nordic Aviation Capital	480		12%	282	191	7	-
6	SMBC Aviation Capital	421		3%	-	2	369	50
7	Air Lease Corporation	361		12%	-	2	269	90
8	DAE Capital	350	+	7%	56	-	231	63
9	BOC Aviation	337		13%	-	-	282	55
10	ICBC Leasing	329	+	23%	-	7	285	37
11	Aviation Capital Group	316	+	15%	-	-	298	18
12	Aircastle	283	+	18%	-	6	244	33
13	Carlyle Aviation Partners	240		25%	-	-	206	34
14	Castlelake	223	^	23%	15	14	160	34
15	BOCOMM Leasing	217		18%	-	10	183	24
15=	ORIX Aviation	217	+	-6%			187	30
17	CDB Aviation	215	•	13%	-	20	157	38
18	Macquarie AirFinance	194	+	-1%	_	3	181	10
19	Goshawk	171	4	49%	_	1	156	14
20	Jackson Square Aviation	158	•	5%			141	17
20	Avmax	150	+	-13%	64	71	13	2
22	China Aircraft Leasing Company	130	• •	22%	-	-	131	6
23	Standard Chartered Bank	133	•	-1%			131	9
23	DVB AAM	121	+	-2%		-	96	25
24	Falko	115		49%	17	98	-	
26	Cargo Aircraft Management	103	•	11%	-		2	101
20	CMB Financial Leasing	94	•	19%		4	75	15
28	Aircraft Leasing & Management	86	•	13%		14	60	12
29	Chorus Aviation	80		186%	68	14	-	-
30	Accipiter	77		15%	-	-	75	2
31	CCB Leasing	75	+	-3%			64	11
31	-	73		-3 %	-	- 7	55	12
33	VTB Leasing	74	 ↓	-5%	73	-	-	-
34	Elix Aviation Capital	73		26%	-	-	50	22
35	JP Lease Products & Services	72			- 1	- 30		
	VEB Leasing	70		6%	1	50	21	19
36	Fortress Transportation		⊤	8%	-	-	45	25
36=	ALAFCO	70		21%			61	9
38	State Transport Leasing Company	69 69	↑	11%	-	31	31	7
38=	FPG Amentum		+	-5%	-	-	52	17
40	MC Aviation Partners	66		-4%	-	=	62	4
41	Aviation Finance & Leasing	65	↑	23%	-	-	65	-
42	Tokyo Century Leasing	61		-34%	-	6	39	16
42=	Jetran International	61	↑	22%	7	2	50	2
44	Altavair Airfinance	60		13%	-	-	31	29
45	Seraph Aviation Management	59	↑	20%	2	6	34	17
46	GTLK Europe	58		-11%	-	-	51	7
46=	Skyworks Leasing	58		12%	4	1	30	23
48	Acumen Aviation	57	→	0%	8	42	7	-
49	GOAL	56	^	5%	8	11	34	3
49=	Sberbank Leasing	56	+	-10%	-	20	30	6
49=	Merx Aviation	56		4%	-	-	53	3
	Total	10,247	•	6%	625	868	7,135	1,619

Source: Lessors and Airfinance Journal's Fleet Tracker as of 30 June, 2019

Top 50 managers by CMV of fleet (\$m)

Rank	Manager	Total		nge since t year	Turboprop	Regional jet	Narrowbody	Widebody
1	AerCap	\$39,599		8%	_	\$104	\$20,540	\$18,956
2	GECAS	\$26,011	ŧ	-3%	\$209	\$1,460	\$16,996	\$7,347
3	BBAM	\$23,330		4%	-	\$29	\$11,738	\$11,564
4	Avolon	\$20,593	+	-4%	-	\$4	\$13,342	\$7,247
5	SMBC Aviation Capital	\$18,906	4	16%	-	\$31	\$13,296	\$5,579
6	Air Lease Corporation	\$18,280	4	14%	-	\$34	\$9,319	\$8,926
7	BOC Aviation	\$16,268		14%	-	-	\$10,562	\$5,706
8	ICBC Leasing	\$16,081		34%	-	\$335	\$11,046	\$4,700
9	DAE Capital	\$11,630	4	3%	\$797	-	\$6,384	\$4,449
10	Aviation Capital Group	\$11,252	4	28%	-	-	\$9,698	\$1,555
11	BOCOMM Leasing	\$9,319	4	14%	-	\$205	\$6,830	\$2,284
12	CDB Aviation	\$8,207	•	12%	_	\$366	\$5,599	\$2,242
13	ORIX Aviation	\$7,963	•	12%	-	-	\$5,400	\$2,563
14	Aircastle	\$7,356	•	13%	-	\$119	\$5,591	\$1,647
15	Goshawk	\$7,319	•	49%	-	\$19	\$5,810	\$1,491
16	Jackson Square Aviation	\$6,877	+	-1%	_	-	\$5,359	\$1,517
10	Nordic Aviation Capital	\$6,430	•	3%	\$2,995	\$3,227	\$208	÷.,517
18	China Aircraft Leasing Company	\$5,322	•	23%	-		\$4,958	\$364
19	Macquarie AirFinance	\$4,924	+	-8%	-	\$42	\$4,386	\$497
20	Standard Chartered Bank	\$4,855	+	-8%		-	\$4,387	\$468
21	Carlyle Aviation Partners	\$4,151	•	22%	-	-	\$3,238	\$913
22	Castlelake	\$4,106	•	41%	\$44	\$91	\$3,067	\$903
23	CMB Financial Leasing	\$4,302	•	3%	-	\$104	\$2,841	\$1,357
23	Amedeo Limited	\$3,816	+	-33%		\$104 -	\$2,041	\$3,816
25	CCB Leasing	\$3,765	+	-3%	-		\$2,691	\$1,074
26	Aircraft Leasing & Management	\$3,356	+	14%	_	\$335	\$2,063	\$958
20	ALAFCO	\$3,281	•	35%	-	-	\$2,102	\$1,179
28	DVB AAM	\$3,189	+	-8%	_		\$1,834	\$1,356
29	IAFC	\$3,087	+	-5%	_	-	\$1,244	\$1,842
30	FPG Amentum	\$3,083	+	-2%			\$1,703	\$1,380
31	JP Lease Products & Services	\$2,880	•	31%	_		\$1,163	\$1,717
32	Aviation Finance & Leasing	\$2,744		14%			\$2,744	\$1,717
33		\$2,636	 ↓	-28%	-	\$96	\$2,744	\$1,283
34	Tokyo Century Leasing Seraph Aviation Management	\$2,616	•	15%	\$15	\$107	\$637	\$1,285
35		\$2,555	 ↓	-11%	\$106	\$107	1004	\$2,356
36	Investec Accipiter	\$2,555	•	10%	\$100	-	\$2,420	\$124
37	Altavair Airfinance	\$2,545	+	-13%	<u>عد</u>		\$668	\$1,780
37	MC Aviation Partners	\$2,448	+	-13%	-	-	\$008	\$1,780
38	Doric	\$2,443	+	-10%	\$51	-	\$2,189	\$2,227
40	VEB Leasing	\$2,409	• •	-10%	\$8	\$531	\$732	\$2,227
40	GTLK Europe	\$2,408	T ↑	14%	- -	\$551	\$732	\$1,134
41		\$2,347	⊤	-24%	-	-	\$1,392	\$950
42	Novus Aviation Minsheng Financial Leasing	\$2,253	• •	-24%	-	-	\$534	\$601
43	GOAL	\$2,080	T ↑	21%	\$137	\$97	\$1,459	\$182
44	VTB Leasing	\$1,944	⊤	-5%	۶۱۵/ -	\$97	\$1,528	\$182
45	Sberbank Leasing	\$1,679	• •	22%		\$299	\$1,827	\$179
	-	\$1,679	T ↑	3%	-	\$233	\$1,107	\$273
47	Merx Aviation				-	- ¢20		
48	SPDB Financial Leasing	\$1,595	+	1%	- ¢142	\$20	\$1,248	\$327
49	Falko	\$1,461	+	89%	\$142	\$1,319	- 61.450	- ¢100
50	Wings Capital Partners	\$1,347	+	137%	- t 1 500-	- to opp	\$1,158	\$189
	Total	\$350,471	A	7%	\$4,506	\$9,082	\$215,634	\$121,249

Source: Lessors and Airfinance Journal's Fleet Tracker as of 30 June, 2019

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Top 50 beneficial owners by number of aircraft

Rank	Beneficial Owner	Total	Turboprop	Regional jet	Narrowbody	Widebody
1	GECAS	1,179	19	229	777	154
2	AerCap	949	_	3	673	273
3	Avolon	481	-	-	391	90
4	Nordic Aviation Capital	469	279	190		-
5	DAE Capital	343	56		226	61
6	ICBC Leasing	329	-	7	285	37
7	BOC Aviation	314	-	-	267	47
8	Air Lease Corporation	297		1	215	81
9	Aircastle	269	_	5	234	30
10		267		5	242	25
	Aviation Capital Group	259			242	15
11	SMBC Aviation Capital	239	-	-	208	34
12	Carlyle Aviation Partners		-			
13	NBB Leasing	218			144	74
14	Castlelake	211	9	14	154	34
15	CDB Aviation	210	-	20	152	38
16	Macquarie AirFinance	194	-	3	179	12
17	BOCOMM Leasing	185	-	5	161	19
18	Jackson Square Aviation	156	-	-	141	15
19	Goshawk	154	-	1	142	11
20	Avmax	150	64	71	13	2
21	China Aircraft Leasing Company	137	-	-	131	6
22	JP Lease Products & Services	114	-	-	79	35
23	FLY Leasing	112	-	-	100	12
24	Standard Chartered Bank	111	-	-	102	9
25	Cargo Aircraft Management	107	-	-	10	97
26	Deucalion Aviation Funds	106	-	-	86	20
27	FALKO	91	17	74	-	-
28	Chorus Aviation	80	68	12	-	-
29	Accipiter	77	-	-	75	2
30	CCB Leasing	75	-	-	64	11
31	VTB Leasing	74	-	7	55	12
32	Genesis Aircraft Services	73	-	2	69	2
33	ORIX Aviation*	72	-	-	63	9
33=	Merx Aviation*	72	-	-	69	3
35	Elix Aviation Capital	71	71	-	-	-
36	ALAFCO	70	-	-	61	9
36=	Fortress Transportation	70	-	-	45	25
38	VEB Leasing	69	1	30	19	19
38=	State Transport Leasing Company	69	-	31	31	7
40	Aviation Finance & Leasing	65	-	-	65	-
41	Jetran International	62	7	2	51	2
42	Regional One	61	5	56	-	-
43	Altavair Airfinance	60	-	-	31	29
44	Vermillion Aviation	59	-	-	56	3
45	CMB Financial Leasing	58	-	-	52	6
46	GOAL	56	8	11	34	3
46=	Sberbank Leasing	56	-	20	30	6
48	IAFC	55	-	-	30	25
49	Fuyo General Lease	52	-	6	42	4
	,					
50	GTLK Europe	51	-	-	44	7

Source: Lessors and Airfinance Journal's Fleet Tracker as of 30 June, 2019 * ORIX Aviation and Merx Aviation got credit for 50% each of the Kornerstone aircraft

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Top 50 beneficial owners by CMV of fleet (\$m)

Rank	Beneficial Owner	Total	Turboprop	Regional jet	Narrowbody	Widebody
1	AerCap	\$33,428	-	\$95	\$17,176	\$16,157
2	GECAS	\$26,067	\$204	\$1,397	\$17,147	\$7,319
3	Avolon	\$19,215	-	-	\$12,392	\$6,823
4	Air Lease Corporation	\$16,189	-	\$19	\$7,878	\$8,293
5	ICBC Leasing	\$16,081	-	\$335	\$11,046	\$4,700
6	BOC Aviation	\$15,061	-	-	\$9,912	\$5,149
7	NBB Leasing	\$12,238	-	-	\$4,971	\$7,267
8	DAE Capital	\$11,454	\$797	-	\$6,375	\$4,281
9	SMBC Aviation Capital	\$10,435	-	-	\$8,603	\$1,832
10	Aviation Capital Group	\$9,426	-	-	\$8,160	\$1,265
11	BOCOMM Leasing	\$8,439	-	\$138	\$6,319	\$1,982
12	CDB Aviation	\$7,898		\$366	\$5,432	\$2,100
13	Aircastle	\$6,927	-	\$99	\$5,386	\$1,442
13	Jackson Square Aviation	\$6,766		-	\$5,373	\$1,393
15	Goshawk	\$6,532	-	\$19	\$5,382	\$1,131
16	Nordic Aviation Capital	\$6,177	\$2,995	\$3,182	-	-
10	China Aircraft Leasing Company	\$5,073	-	-	\$4,787	\$286
17	Macquarie AirFinance	\$4,993		\$42	\$4,386	\$566
19	Carlyle Aviation Partners	\$4,217		⊉ +2	\$3,304	\$913
20	Standard Chartered Bank	\$4,116			\$3,649	\$468
	Castlelake	\$3,927	\$32	\$91	\$2,901	\$903
21 22	JP Lease Products & Services	-	, j52 -	151		
22		\$3,867 \$3,602	-	-	\$1,922	\$1,945
	CCB Leasing	-		-	\$2,529	\$1,074
24 25	FLY Leasing	\$3,418	-	-	\$2,599	\$818
	ALAFCO	\$3,281	-	-	\$2,102	\$1,179
26		\$3,087	-	-	\$1,244	\$1,842
27	ORIX Aviation*	\$2,762			\$1,945	\$817
28	Aviation Finance & Leasing	\$2,744	-	-	\$2,744	-
29	Accipiter	\$2,545	\$2	-	\$2,420	\$124
30	CMB Financial Leasing	\$2,712	-	-	\$1,973	\$739
31	Altavair Airfinance	\$2,448	-	-	\$668	\$1,780
32	Deucalion Aviation Funds	\$2,415	-	-	\$1,590	\$826
33	Doric	\$2,409	\$51	-	\$131	\$2,227
34	VEB Leasing	\$2,327	\$8	\$531	\$653	\$1,134
35	Vermillion Aviation	\$2,200	-	-	\$1,998	\$201
36	Novus Aviation	\$2,193	-	-	\$551	\$1,642
37	GTLK Europe	\$2,031	-	-	\$1,096	\$935
38	Investec	\$1,996	\$106	\$93	-	\$1,797
39	Merx Aviation*	\$1,989	-	-	\$1,774	\$215
40	GOAL	\$1,818	\$157	\$57	\$1,527	\$78
41	Fuyo General Lease	\$1,971	-	\$127	\$1,515	\$330
42	VTB Leasing	\$1,817	-	\$11	\$1,627	\$179
43	Amedeo Air Four Plus	\$1,802	-	-	-	\$1,802
44	Minsheng Financial Leasing	\$1,775	-	-	\$1,459	\$315
45	Voyager Aviation	\$1,728	-	-	-	\$1,728
46	Sberbank Leasing	\$1,679	-	\$299	\$1,107	\$273
47	Tokyo Century Leasing	\$1,459	-	\$31	\$1,119	\$309
48	Incline Aviation	\$1,447	-	-	\$956	\$491
49	Stellwagen Group	\$1,412	\$15	\$107	\$108	\$1,181
50	FPG Amentum	\$1,310	-	-	\$1,151	\$159
	Tota	\$300,903	\$4,366	\$7,039	\$189,089	\$100,410

Source: Lessors and Airfinance Journal's Fleet Tracker as of 30 June, 2019 * ORIX Aviation and Merx Aviation got credit for 50% each of the Kornerstone aircraft

Top 50 lessors' orderbooks

Rank	Lessor	Total	Turboprop	Regional jet	Narrowbody	Widebody
1	Avolon	378	-	-	333	45
2	GECAS	369	11	5	349	4
3	Air Lease Corporation	345	-	-	270	75
4	Aercap	318	-	45	246	27
5	SMBC Aviation Capital	294	-	-	294	-
6	China Aircraft Leasing Company	261	-	30	231	-
7	CDB Aviation	183	-	-	181	2
8	BOC Aviation	163	-	-	150	13
9	Aviation Capital Group	158	-	-	154	4
10	ICBC Leasing	131	-	50	81	-
11	ALAFCO	111	-	-	108	3
12	Ilyushin Finance Corporation	95	-	27	67	1
13	Aviacapital Services	85	-	-	85	-
14	Nordic Aviation Capital	64	57	7	-	-
15	Macquarie Airfinance	60	-	-	60	-
16	Jackson Square Aviation	52	-		50	2
17	China Huarong Financial Leasing	50	-	20	30	-
18	ABC Financial Leasing	45	_	-	45	-
18=	Goshawk	45	-	-	45	-
20	Timaero Ireland	38	_	_	38	_
21	BOCOMM Leasing	33	_	-	33	-
22	Everbright Financial Leasing	30	_	_	30	_
23	VEB Leasing	29	_	4	25	-
24	Aircastle	25	_	25		_
25	Accipiter	20	_		20	-
25=	Comsys Aviation Leasing	20	_	20		-
25=	Lease Corporation International	20	-	_	20	-
28	State Transport Leasing Company	18	_	18		-
29	Chorus Aviation	14	5	9	-	-
29=	Sberbank Leasing	14		-	14	-
31	Fly Leasing	13	-	-	13	-
32	Incline Aviation	12	_		12	-
33	Japan Investment Adviser	10	-	-	10	-
33=	Avation	10	9		1	-
33=	Aerolease Aviation	10	-	10	-	-
36	Hong Kong Int. Av. Leasing	7	_			7
37	GTLK Europe	6	-	-	6	-
37=	Willis Lease Finance	6	_	6		-
39	SPDB Financial Leasing	5	-	-	5	-
39=	CIB Leasing	5	-	5		_
41	Novus Aviation Capital	4	-	-	-	4
41=	Middle East Leasing	4	-	_	4	
41=	NBB Leasing	4	-	_	4	_
41=	Minsheng Financial Leasing	4	-	4		_
45	Arctic Aviation Assets	3	-		3	_
45=	DAE Capital	3	-	_		3
47	Ping An	2	-	-	2	-
47=	Aerostar Leasing	2	2	_		_
	Total	3,578	84	285	3,019	190

Source: Lessors and Airfinance Journal's Fleet Tracker as of 30 June, 2019



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Top 50 lessors' orderbooks (\$m)¹

Rank	Lessor	Total	Turboprop	Regional jet	Narrowbody	Widebody
1	Air Lease Corporation	\$31,895	-	-	\$18,879	\$13,016
2	Avolon	\$29,136	-	-	\$21,759	\$7,377
3	GECAS	\$23,987	\$115	\$110	\$23,018	\$744
4	Aercap	\$21,537	-	\$986	\$16,208	\$4,344
5	SMBC Aviation Capital	\$18,886	-	-	\$18,886	-
6	China Aircraft Leasing Company	\$14,632	-	\$660	\$13,972	-
7	CDB Aviation	\$12,013	-	-	\$11,687	\$326
8	BOC Aviation	\$11,545	-	-	\$9,276	\$2,269
9	Aviation Capital Group	\$11,025	-	-	\$10,423	\$602
10	ALAFCO	\$7,418	-	-	\$6,909	\$508
11	ICBC Leasing	\$4,332	-	\$1,056	\$3,276	-
12	Aviacapital Services	\$3,909	-	-	\$3,909	-
13	Jackson Square Aviation	\$3,696	-	-	\$3,375	\$322
14	Ilyushin Finance Corporation	\$3,450	-	\$451	\$2,971	\$28
15	Macquarie Airfinance	\$3,193	-	-	\$3,193	-
16	Goshawk	\$2,875	-	-	\$2,875	_
17	Timaero Ireland	\$2,429	-	-	\$2,429	-
18	Veb Leasing	\$1,362	-	\$69	\$1,293	-
19	Hong Kong Int. Av. Leasing	\$1,304	-	-	-	\$1,304
20	China Huarong Financial Leasing	\$1,265	-	\$440	\$825	-
21	ABC Financial Leasing	\$1,238	-	-	\$1,238	-
22	Accipiter	\$1,180	_	_	\$1,180	-
23	BOCOMM Leasing	\$1,036	-	_	\$1,036	-
24	Lease Corporation International	\$989	_	_	\$989	-
25	Sberbank Leasing	\$971	_	_	\$971	-
26	Fly Leasing	\$926	_	_	\$926	-
20	Incline Aviation	\$855	-	_	\$855	-
28	Novus Aviation Capital	\$826			4055	\$826
29	Everbright Financial Leasing	\$825	-	_	\$825	\$020
30	Nordic Aviation Capital	\$695	\$571	\$124	J 025	
30	Japan Investment Adviser	\$695	1,64	\$12 4	\$694	
32	DAE Capital	\$581			J 054	\$581
		\$497	-	\$497	-	1964
33	Aircastle	\$440	-	\$440	-	-
34 35	Comsys Aviation Leasing	\$317	-		-	
36	State Transport Leasing Company	\$302	-	\$317	\$302	-
	GTLK Europe		-	-		-
37	Middle East Leasing	\$285			\$285	-
38	Chorus Aviation	\$282	\$52	\$230	-	-
39	NBB Leasing	\$267	-	-	\$267	-
40	Aerolease Aviation	\$260	-	\$260	-	-
41	Arctic Aviation Assets	\$214	-	-	\$214	-
42	Groupe Dubreuil	\$169	-	-	-	\$169
43	Avation	\$144	\$94	-	\$50	-
44	Ping An	\$139	-	-	\$139	-
45	SPDB Financial Leasing	\$138	-	-	\$138	-
46	CIB Leasing	\$128	-	\$128	-	-
47	Willis Lease Finance	\$99	-	\$99	-	-
48	Minsheng Financial Leasing	\$36	-	\$36	-	-
49	Pearl Aircraft Corporation	\$17	-	\$17	-	-
50	Aerostar Leasing	\$6	\$6	-	-	-
		Total \$224,446	\$839	\$5,920	\$185,271	\$32,416

Source: Lessors and Airfinance Journal's Fleet Tracker as of 30 June, 2019 ' calculated as 55% of 2019 list price

Lessor firm orders

Figure 1: Firm orders by body type

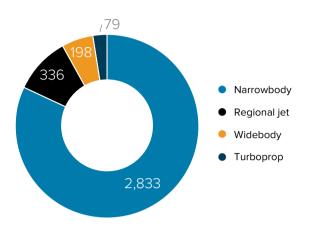


Figure 2: Firm orders by value by body type (\$m)

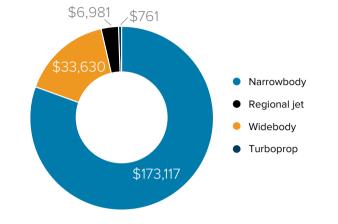


Figure 3: Firm orders by manufacturer

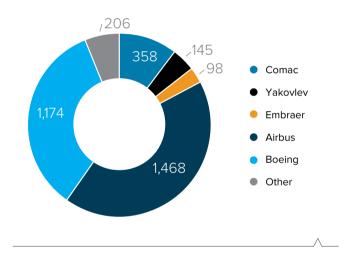
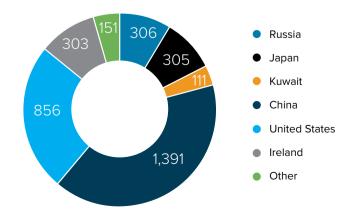


Figure 5: Firm orders by country of lessor



Source: OEMs and Airfinance Journal's Fleet Tracker

Figure 4: Firm orders by value by manufacturer (\$m)

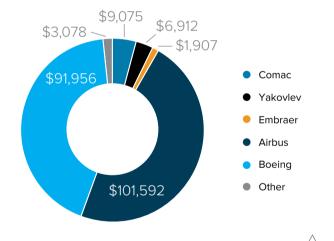
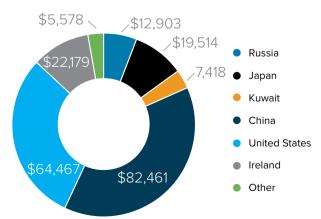


Figure 6: Firm orders by value by country of lessor (\$m)



Trend analysis – Global aircraft leasing companies' financial performance

Figure 1 - Financial highlights

\$ billion	2014/15	2015/16	2016/17	2017/18	2018/19
Revenue in survey	14.3	17.1	17.8	19.2	21.2
GECAS	5.3	5.2	5.3	5.1	4.9
Total revenue	19.6	22.3	23.1	24.3	26.1
PP&E in survey	120.5	132.8	133.8	154.9	168.2
GECAS	34.9	30.6	34.3	31.8	29.7
Total assets	155.4	163.4	168.1	186.7	197.9
Net income in survey ¹	3.1	3.2	3.4	4.6	5.1
GECAS	1.0	1.0	1.3	1.4	1.2
Total net income ²	4.1	4.2	4.7	6.0	6.3

Source: Company reports and The Airline Analyst ¹ excluding major tax credits for ALC, ACG and BOC Aviation in 2017/18 ² includes CIT Aerospace International/AWAS

n addition to the "Lessor Comparisons" analysis in the next section, we present here an analysis of the global financial trends for the industry as a whole over the last five years. The survey group includes seven of the top 10 largest lessors (the exceptions being GECAS, ICBC Financial Leasing and BBAM - though it includes FLY). DAE is included for the second time. AWAS and CIT Aerospace are included for the periods before their change of ownership and when their financials were available. Unfortunately, a number of lessors with December year-ends have not yet filed their 2018 accounts, which reduces the scope of the survey. Nevertheless, the data enables us to review the industry's growth rate, the trend in yields and financing costs, capital structure and profitability.

Growth

Firstly, growth rate. Figure 1 shows the key financials for the approx. 20 lessors whose financials have been continuously available (we have made some estimates to fill a couple of gaps) over the last five years (or were start-ups during the period). We have included certain key values for GECAS, which are available from GE annual reports and investor presentations, to get a more comprehensive view of the market's size. As can be seen its numbers show a shrinkage in 2018. We also include some key financials for Fortress Transportation & Infrastructure Investors whose portfolio has been growing rapidly over the last 2-3 years. Total property, plant and equipment assets for the population were \$197.9 billion



(up 8.6% excluding GECAS) in the most recent financial year, despite the relatively high rate of asset sales among some of the larger lessors who are included in the survey. These sales have been to other leasing companies, into structured ABS deals and sidecars.

Revenues were \$26.1 billion (plus 7.5%) and net income was a record \$6.3 billion (plus 11.1% excluding GECAS).

Yield

Figure 2 shows the yield trend over the last five years. In 2018/19, there was a continuation of the downward trend of last

Figure 2: Lease yield

year, which tells us the pricing pressure in the marketplace has started to move the aggregate needle. The 70 basis points (bps) decline from 2014/15 to the latest year is equivalent to a revenue figure of \$1.4 billion for the sample as a whole. It would therefore confirm that the large lessors have not been immune to competition in the marketplace.

Gearing

Gearing for the lessors in the survey however remains benign as shown in Figure 3. This remains a conservative capital structure supported by a significant increase in retained earnings. The typical 4x or higher leverage of the last cycle is only evident in a few cases currently, though obviously this aggregate value is comprised of some very low and some quite high levels of gearing as presented in the "Lessor Comparisons" section.

Debt Structure

There has been a major shift in favour of unsecured debt funding over the five-year period as shown in Figure 4. Secured debt has declined, while unsecured debt has more than doubled over the period and increased by \$22 billion (net) in 2018/19 alone. More than adequate liquidity chasing the sector resulted in credit spreads declining during the year.

Interest Cost

Clearly one of the objectives of the lessors is to maximise the yield-interest cost spread. As shown in Figure 5, the downward movement in average interest cost in 2017/18 was good for profitability in that year. The most recent year, despite the decline in credit spreads, witnessed a reversal of the declining trend for average interest cost due to the increase in short and medium-term interest rates of around 80 bps during the year. Assuming an average increase over the year of 35 bps applied to \$150 billion of debt, the cost to the lessors was of the order of \$525 million.

Return on Equity

As a consequence of pressure on yields and debt costs, return on equity for the group fell to 11.4% from 11.8% in the most recent period. This nevertheless is higher than experienced from 2014 to 2017 and remains an attractive risk-adjusted return which will support the continued entry of new investors to the market, especially with the turnaround of interest rates during 2019 and ample liquidity available. ∧

Companies included in the latest period are listed in Figure 1 in the next section. In addition, we included AWAS and CIT as appropriate in historic years in order to make the data as consistent as possible...

Figure 3: Gearing (Debt/equity)

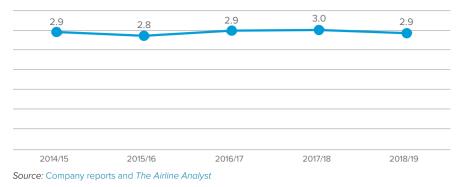


Figure 4: Debt structure

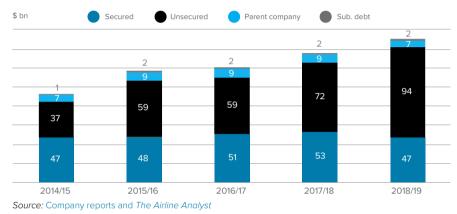


Figure 5: Average interest cost

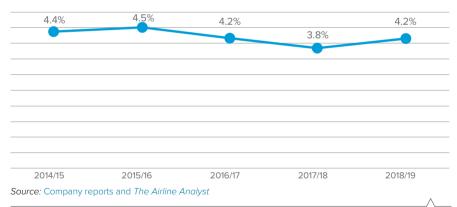
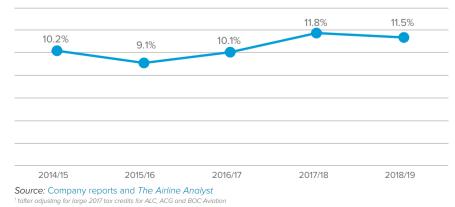


Figure 6: Return on average equity¹



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Lessor comparisons – 2018/19

This study offers a comparison of the financial performance and capital structures of the aircraft leasing companies based on their most recent available financial statements (ending either in 2018 or 2019).

To make this report as comprehensive as possible, we have reached beyond the publicly listed lessors to the public filings of privately owned lessors in Ireland, Singapore, Kuwait and the US.

Figure 1 identifies the entities included in the study. In total, we have been able to source the financials for 23 aircraft leasing companies. In addition, full financials are not available for GECAS, but some headline numbers are available in the GE annual report. Fortress Transportation and Infrastructure Investors publish financials for their overall leasing business but break out some key numbers for the aircraft leasing segment. We include Avation plc from Singapore (listed in the UK) and CALC (listed in Hong Kong). Most of the lessors in the study are incorporated in the US or Ireland though two of the largest, AerCap and BOC Aviation, are incorporated in the Netherlands and Singapore, respectively. though BOC Aviation is listed in Hong Kong.

The significant absences from our coverage include ICBC Financial Leasing. Goshawk and Macquarie AirFinance (who do not file financial information publicly other than a few headline numbers). We include DAE for the second time but financials are not available for BBAM (though we do include FLY Leasing). We have included Jackson Square Aviation Ireland for the first time and include proforma aggregate numbers for Pembroke Capital and Pembroke Aircraft Leasing. Some lessors that we have included previously are not included as they had not filed their 2018 financial statements at the date of preparing this compilation. These include AerDragon, BoComm Leasing, Vermillion and Triangle (Falko). We have included two special purpose listed aircraft leasing entities including Amedeo Air Four Plus and DP Aircraft I.

The abbreviations used to refer to the lessors through the rest of this study are indicated in Figure 1.

Among the other Chinese lessors we include the Irish leasing entities for CCB, CDB and Ping An. Interestingly Ping An has had one of the strongest financial performances in recent years with sizable gains on aircraft sales. It has been reported, however, that they plan to exit the aircraft leasing market.

Figure 1: Lessors included in the study

Lessor	Country	FYE	Abbreviation
Accipiter Holdings Limited	China/Ireland	31-Dec-18	Accipiter
AerCap NV	Netherlands/Ireland	31-Dec-18	AerCap
Air Lease Corporation	USA	31-Dec-18	ALC
Aircastle	USA/Ireland	31-Dec-18	Aircastle
ALAFCO Aviation Lease & Finance	Kuwait	30-Sep-18	ALAFCO
Amedeo Air Four Plus Limited	UK	31-Mar-19	AA4+
Avation PLC	UK/Singapore	30-Jun-19	Avation
Aviation Capital Group	Japan/USA	31-Dec-18	ACG
Avolon	Ireland	31-Dec-18	Avolon
Banc of America Leasing	USA/Ireland	31-Dec-18	BOAL
BOC Aviation	China/Singapore	31-Dec-18	BOC Aviation
CALC	China/Hong Kong	31-Dec-18	CALC
CCB Aviation Corporation	China/Ireland	31-Dec-18	CCB AC
CDB Aviation Lease Finance	China/Ireland	31-Dec-18	CDB ALF
Dubai Aerospace Enterprise	UAE	31-Dec-18	DAE
DP Aircraft I Limited	UK	31-Dec-18	DP AIRCRAFT
FLY Leasing	Ireland	31-Dec-18	FLY
Fortress Transportation & Infrastructure Investors ¹	USA	31-Dec-18	Fortress
GECAS ¹	USA/Ireland	31-Dec-18	GECAS
Jackson Square Aviation	Japan/Ireland	31-Dec-18	JSA
MCAP Europe Limited	Japan/Ireland	31-Mar-19	MCAP
Nordic Aviation Capital	Denmark	30-Jun-19	NAC
Pembroke Pro-forma	UK/Ireland	31-Dec-18	Pembroke
Ping An Aircraft Leasing Company Limited	China/Ireland	31-Dec-18	Ping An
SMBC Aviation Capital	Japan/Ireland	31-Mar-19	SMBC AC
¹ Key data only			

' Key data only

The regional aircraft sector is represented by Nordic Aviation Capital and Avation. Banc of America Leasing continues to maintain its low profile yet appears to be doing deals with \$2 billion of PP&E as of 31 December 2018.

Note that for some lessors, the entities analysed do not represent the entirety of

their global leasing business and may be impacted by internal funding arrangements and inter-company transactions. This applies particularly to some Chinese lessors, MCAP and SMBC Aviation Capital who have been heavily funded by shareholder loans so please interpret their numbers accordingly. Over the last three

years, however, SMBC AC has partially funded itself from external sources.

Adjustments

In order to enhance comparability in treatment and presentation of the financial statements we have made some adjustments as described in Figure 2. \wedge

Figure 2: Adjustments to enhance comparability

Item	Treatment
Gain on sale of aircraft	Net gain included in revenue
Recognition of "excess" maintenance reserves	Included in lease revenue but not seperately disclosed by every lessor
Maintenance and transition costs	Recognised under its own heading when disclosed, but not disclosed by every lessor
Staff cost, including stock-based compensionio	Included in SG&A expenses
Interest income	Included in other revenue

Source: Company reports and The Airline Analyst

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Profitability

Figures 3 and 4 show the lessors ranked by revenue and net income. The revenue range of the lessors in the study is from \$4.9 billion for GECAS to \$53m for DP Aircraft. Despite Avolon's acquisition of CIT Aerospace it remains just over half the size of GECAS and AerCap. BOC Aviation, ALC and DAE come in fourth, fifth and sixth position followed by SMBC AC.

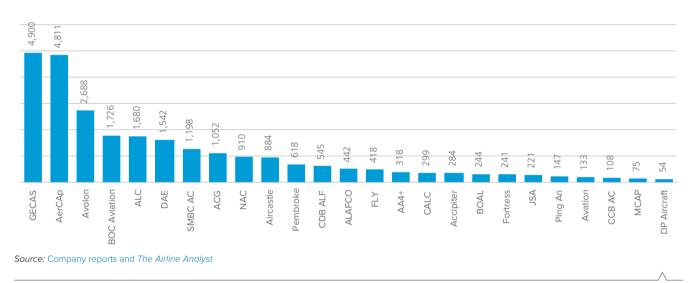
As mentioned in the previous section, aggregate yield for all lessors in the study declined to 12.1% from 12.5%. Some of the



lessors bucked the trend and squeezed some growth in yield, most notably FLY Leasing, Jackson Square Aviation (JSA), CALC and NAC. AerCap's and Avolon's yields declined by 9% and 15% year-on-year respectively. The latter may be partly caused by the timing of the acquisition of the CIT Aerospace assets in 2017.

In aggregate the profit generated by the lessors in the study (and including GECAS) was \$6.3 billion, a \$300m increase on the previous year, and up from \$4.1 billion

Figure 3: Total revenue (\$ million)



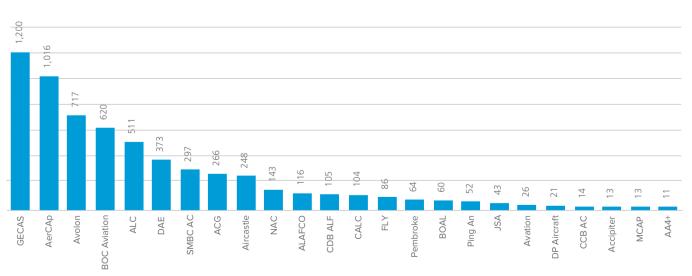


Figure 4: Net income (\$ million)

in 2014/15. Net income was headed by GECAS at \$1.2 billion (down from \$1.4 billion) followed by AerCap at \$1 billion and Avolon at \$717 million. Coming fourth in profitability were BOC Aviation followed by ALC.

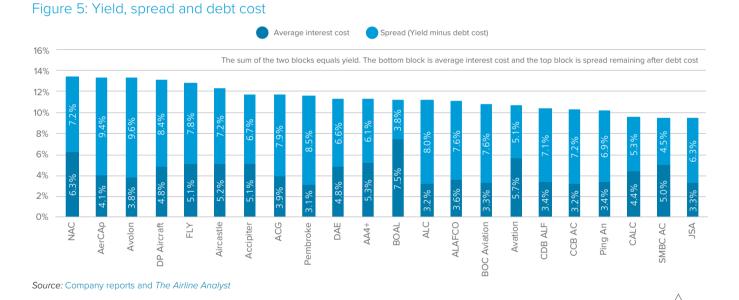
Among the key drivers of lessor profitability is the spread between lease yield and debt cost of funds. Figure 5 shows all three, ranked in descending order of yield.

NAC, AerCap and Avolon are the leaders on yield with Avolon number one on spread and AerCap number two. Among other things, this demonstrates the power of their franchises and scale. FLY and Aircastle also generate attractive yields but their relatively high debt costs result in lower spreads. The stand-outs in terms of lowest cost of (externally provided) funds are ALC at 3.2% and BOC Aviation at 3.3%. Some of the other lessors with low debt costs are heavily funded by their parents on attractive terms.

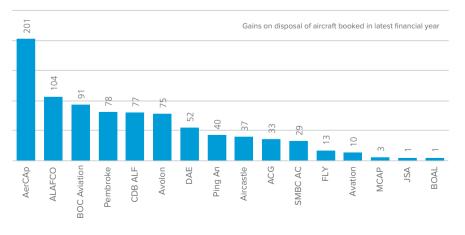
Gains/losses on sales

Aggregate plant, property and equipment for the lessors in the study (including GECAS and Fortress) is \$198 billion. Gains booked were \$891 million, 26% up on 2017/18, and 15% of reported profit before tax. Gains from aircraft sales made a significant contribution to the profitability of a number of lessors as shown in Figure 6.









Impairments

Impairments totalled \$257 million, down from \$537 million the prior year. They were not universal but significant amounts were reported by Avolon, ACG, AerCap and SMBC AC, as shown in Figure 7. Overall, however, they were only 0.2% of opening net book value. In previous years any GECAS impairments were reported in the GE annual report but this was not the case for 2018. We cannot ascertain whether this means "zero", "not material" or the figure was simply not disclosed. ∧



Financial flexibility

We assess four elements of financial flexibility – leverage as measured by the debt/equity ratio, level of secured debt relative to tangible assets, EBITDA interest coverage and liquidity.

Leverage

The debt/equity ratio is the simplest measure of capital structure and is universally understood. Some of the lessors use significant amounts of inter-company debt which results in high nominal leverage. The chart in Figure 8 shows leverage calculated assuming inter-company debt is debt and also assuming inter-company debt is equity. As the chart shows, the majority of lessors are in a range of 2x-4x on this latter measure with CALC significantly above this range. FLY and Avation are just above the 4x threshold.

Debt Structure

Borrowing unsecured has many attractions, being more flexible and having lower transaction costs than borrowing on a secured basis, though at the cost of higher coupons or margins. The ratings agencies generally cite low levels of secured debt as being a key consideration in granting investment grade ratings to lessors. Lessors with investment grade ratings are

Source: Ratings Agencies - 9 October, 2019



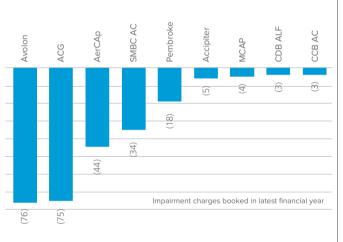


Figure 9: Lessor unsecured credit ratings						
	Fitch	Moody's	S&P	Kroll		
AerCap	BBB-(stable)	Baa3(pos)	BBB(stable)	-		
Air Lease Corp	BBB(stable)	-	BBB(stable)	A-(stable)		
Aircastle	BBB-(stable)	Baa3(stable)	BBB-(stable)	-		
Avation PLC	BB-(stable)	-	BB-(stable)	-		
Aviation Capital Group	BBB+(evolving)	-	A-(neg)	A(N/A)		
Avolon Holdings Limited	BBB-(stable)	Baa3(stable)	BBB-(stable)	BBB+(stable)		
AWAS Aviation Capital Limited	-	Ba2(stable)	BB+(stable)	-		
BOC Aviation	A-(stable)	-	A-(stable)	-		
Dubai Aerospace Enterprise	BBB-(stable)	Ba1(stable)	BB+(stable)	BBB+(stable)		
Fly Leasing	-	Ba3(stable)	BB-(stable)	BBB(stable)		
ILFC (Part of AerCap)	BBB-(stable)	Baa3(pos)	-	-		
Park Aerospace Holdings	BBB-(stable)	Baa3(stable)	-	-		
SMBC Aviation Capital	A-(stable)	-	A-(stable)	-		

Source: Company reports and The Airline Analyst

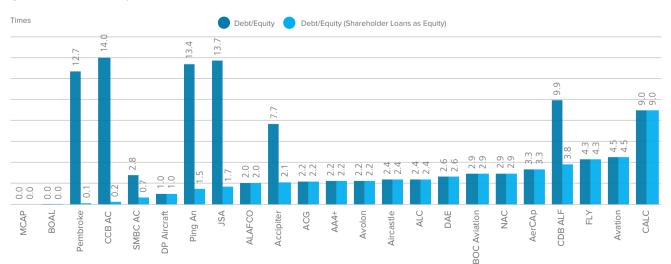
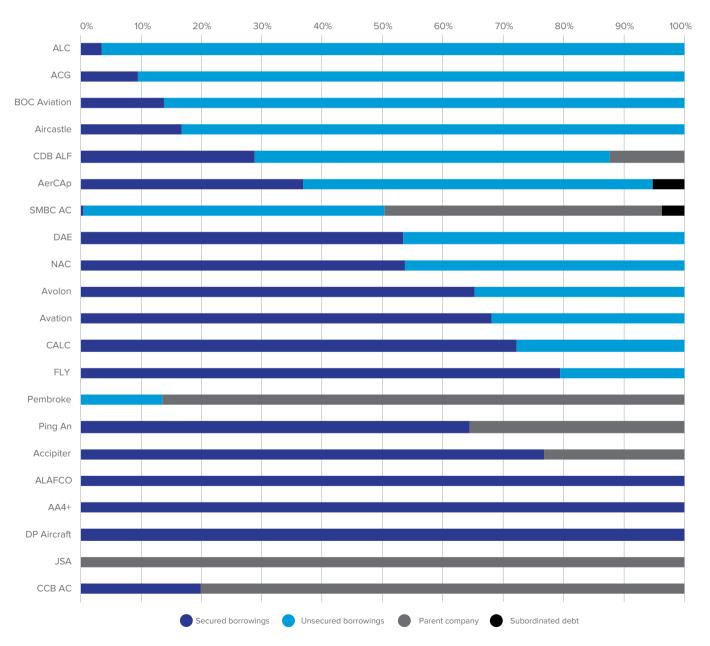


Figure 8: Debt/equity ratio

Aircastle, ALC, SMBC AC, Avolon, DAE, ACG (who have benefited historically from their ownership by Pacific Life but are now under review due to the imminent sale to Tokyo Century) and BOC Aviation who, in addition to very strong financials, benefit from their Bank of China ownership. Figure 10 shows the debt structures on a proportional basis for the lessors ranked in order of the highest proportion of unsecured debt at the top to least at the bottom. The chart also shows shareholder loans and other loans. As discussed in the previous section there has been a significant increase in unsecured funding by the industry as a whole, reaching 63% of total debt in 2018/19. The lessors with the highest percentage of external unsecured funding are ALC, ACG, BOC Aviation and Aircastle.

Figure 10: Debt structure



Financial flexibility

Figure 11 shows secured borrowing as a percentage of tangible assets, which indicates the level of protection available for unsecured creditors. The data for MCAP, Pembroke, BOA Leasing and SMBC AC reflects their heavily shareholder funded debt structures. The other lessors on the left of Figure 11 represent the strongest position for unsecured creditors, led by ALC, ACG and BOC Aviation with their significant unsecured funding programmes. Those at the right hand side demonstrate the least protection for unsecured creditors.

Interest Coverage

Interest coverage measured as EBITDA/

finance costs is another key aspect of financial flexibility. From Figure 12 we see that the majority of lessors covered by the study have a healthy coverage of at least 2x and many have much better coverage than that, particularly DP Aircraft, ALAFCO, ALC and BOC Aviation. The main outlier on the weaker side is CALC with coverage of 1.3x.

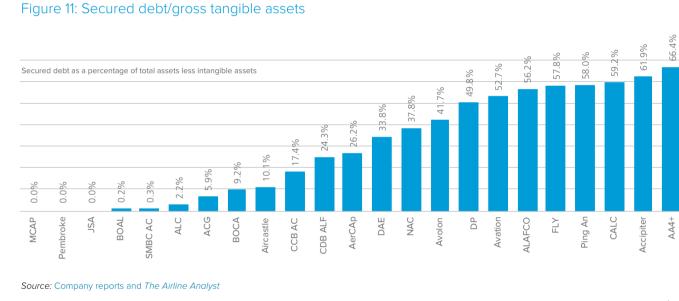
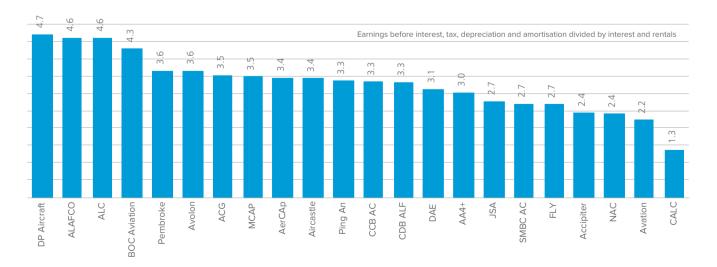


Figure 12: Ebitda/total finance costs



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Financial flexibility

Liquidity

Figure 13 shows unrestricted cash liquidity as a percentage of total borrowings. At the extremes of the range were BOAL at 59.8% and CCB Aviation at 0.3%. The latter has access to inter-company funding. The next four strongest are all Chinese-owned lessors. For the remainder, this measure ranges from a low of 2% for BOC Aviation, DAE, ALC, Aircastle and AerCap. All of these lessors additionally have substantial committed revolving credit facilities. A



Figure 13: Cash/total debt

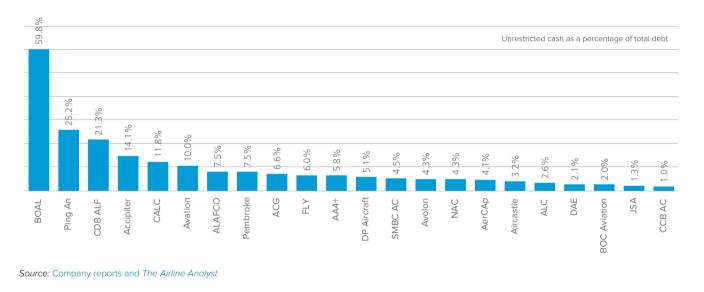
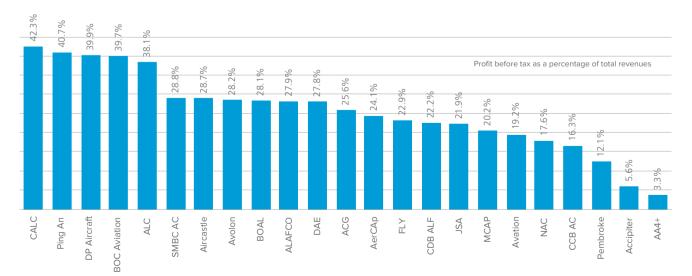


Figure 14: PBT margin



Returns

Profit before Tax

As an overall measure of profitability, we have assessed profit before tax as a percentage of total revenue as shown in Figure 14. This suggests that the lessors at the left side of the chart have a favourable combination of lease yield, funding cost, SG&A costs and leverage – as well as factors not assessed in this study like fleet utilisation and maintenance/transition costs. The larger lessors with high margins were BOC Aviation, ALC, SMBC AC, Aircastle and Avolon. At the other end of the scale were Pembroke and Accipiter.

CALC and Ping An generate high returns but both carry significant amounts of leverage.

Tax Charge

One of the drivers of net profitability is the tax rate on profits. Figure 15 shows that, with two exceptions, tax charges were all below 20% of profit before tax. So it is not just Ireland and Singapore that would appear to offer attractive fiscal regimes for aircraft operating lease companies. With the US corporation tax reform of two years ago, even the US is looking competitive.

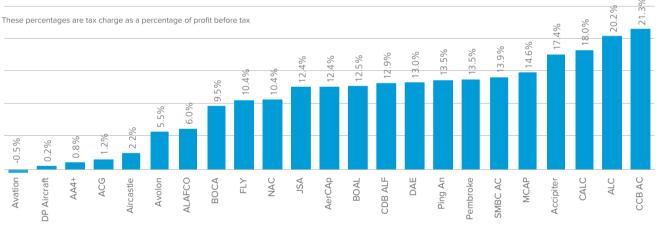
Return on Equity

Return on average of opening and closing equity is shown in Figure 16. More than two-thirds of the lessors delivered a return on equity in excess of 10%. BOC Aviation with 16.3% arguably generated the best returns of the group for those lessors with a more normal balance sheet structure though Pembroke's performance is also creditable.

Conclusion

This study has shown some of the key dynamics affecting aircraft lessors' business models which are more varied than would appear the case at first inspection. Lease yield, debt cost, asset selection, asset utilisation and re-marketing capabilities are all critical components of the aircraft operating leasing business. Get these right, and the aircraft leasing business can offer substantial "LIBOR-plus" returns to equity investors as demonstrated by most members of the study group. And they can do this with less volatility than many other asset classes. Please direct any questions or comments to **mduff@theairlineanalyst.com.** ∧

Figure 15: Tax rate



Source: Company reports and The Airline Analyst

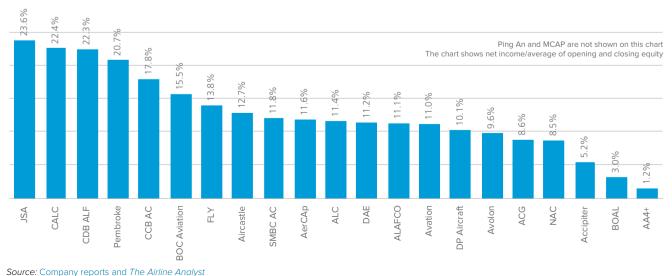


Figure 16: Return on average equity

Analysis of the **global leased fleet**

The Airfinance Journal Fleet Tracker database includes 11,545 aircraft, leased by 128 commercial lessors with at least 10 aircraft to 836 airlines in 154 countries (data as of 30 June, 2019). Aircraft leased by "captive" lessors such as Synergy, Sunrise Asset Management, Arctic Aviation Assets, Aircraft Purchase Fleet and by the OEMs are excluded. Aggregate orders by the commercial lessors total 3,578 aircraft. The average age of the existing leased fleet is 10.7 years and 863 aircraft (7.5%) are reported as being in storage.

The industry is heavily concentrated. The top 10 lessors (4,987 aircraft) account for 43.2% of the total fleet count and 48.7% by value (top 10 value – \$172.8 billion). Nevertheless, the smaller lessors provide value to the market place in dealing with older or more specialised aircraft. They also may be prepared to do business with some of the more challenging regions of the world or have leading positions in their niche markets.

Airlines with the most leased aircraft

Figure 1 shows the top 20 lessees by number of aircraft. Just as the leasing industry is heavily concentrated in a relatively small number of players, the airlines to whom they are leasing are forming increasingly concentrated groups. Such concentration could reduce the ability of the lessors to diversify their portfolio risks due to concentrations of exposure. American Airlines is far-andaway the largest lessee resulting from the merger with US Airways. The other US majors are also significant lessees but there is geographic diversity too across emerging markets such as India, Hungary, China and Brazil.

Geographic distribution of leased aircraft

The geographic distribution of leased aircraft is shown in Figure 2. While the chart shows Europe in the lead, this is because we split Asia-Pacific into sub regions given their varying dynamics. The territories of Hong Kong and Macau are included in the China segment. We also decided to show Russia and the CIS as a segment separate from Europe.

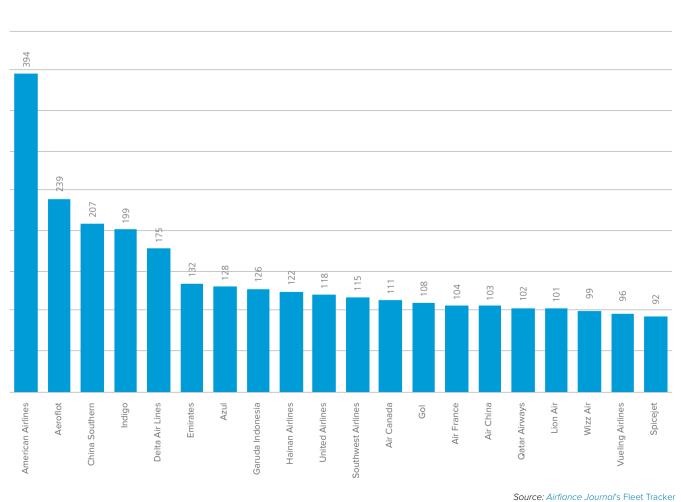


Figure 1: Biggest lessees by number of aircraft

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As can be seen, GECAS remains the largest player despite its significant fleet reductions over the last few years. Nordic Aviation Capital comes in second place, having increased its fleet to nearly 200. Falko and

TrueNoord have been investing and

increasing their exposure to this

Turboprops are a significant niche

market, dominated by one lessor,

Nordic Aviation Capital. However,

other lessors have a presence, as

shown in Figure 5, attracted by high

yields. Leading the way in terms of

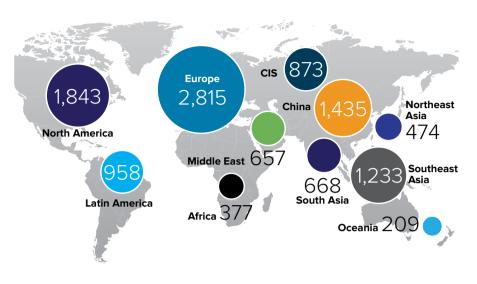
new investment is Chorus Aviation Capital. The other major players in the segment are shown on the chart. \wedge

Regional Jets

segment.

Turboprops

Figure 2: Geographic distribution of leased aircraft



Source: Airfinance Journal's Fleet Tracker as of 30 June, 2018

Breakdown of Leased Fleet

Figure 3 shows a breakdown of the leased fleet by body-type of aircraft. A full 67% of the leased fleet is in the narrow body category split mostly between the Airbus A320 and Boeing 737 families. Only 16% is widebody, though in value terms their share would be much more significant, especially with the A350 and 787 finding a lot of favour among lessors.

Figure 3: Leased aircraft body type

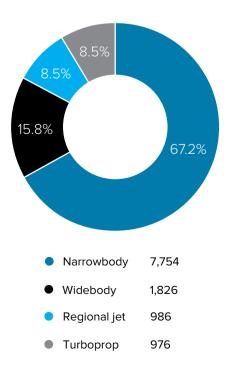


Figure 4: Top 10 lessors of regional jets

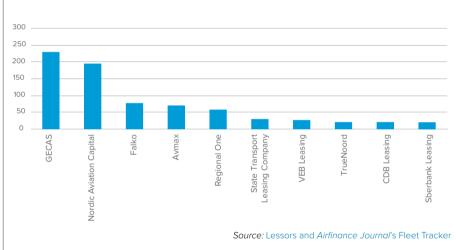
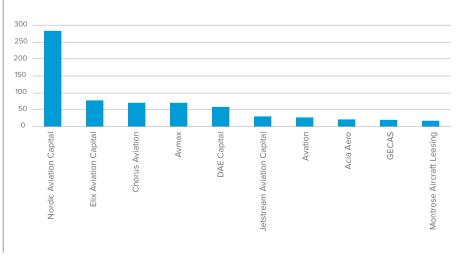
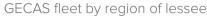


Figure 5: Top turboprop lessors



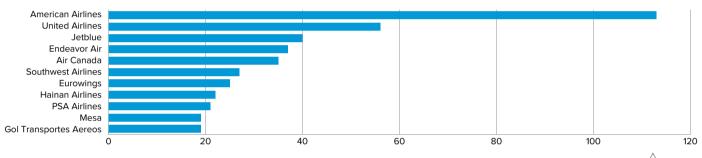
1 GECAS

GECAS fleet by aircraft type





GECAS top lessees

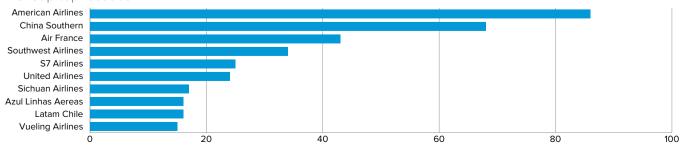


2 AerCap

AerCap fleet by region of lessee



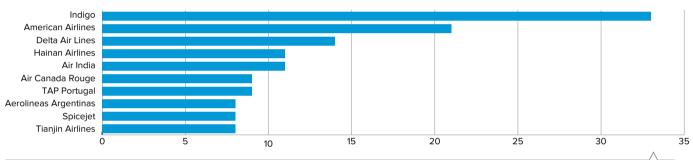
AerCap top lessees



3 Avolon

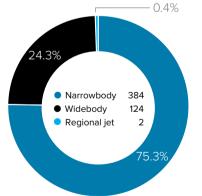


Avolon top lessees

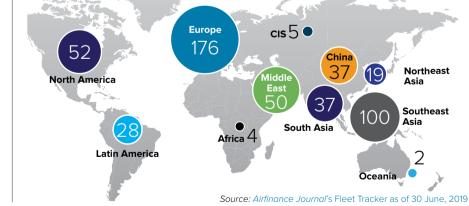


4 BBAM

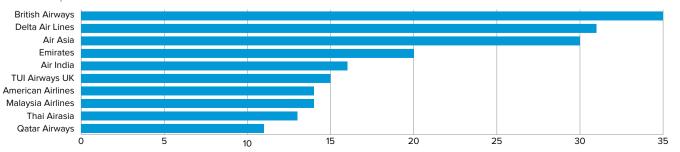
BBAM fleet by aircraft type



BBAM fleet by region of lessee



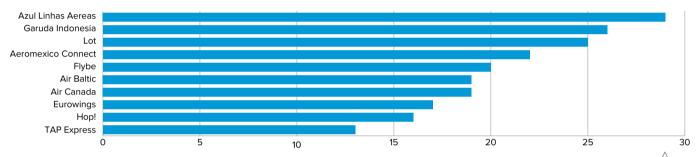
BBAM top lessees



5 Nordic Aviation Capital



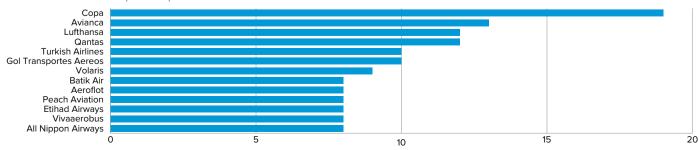
Nordic Aviation Capital top lessees



6 SMBC Aviation Capital



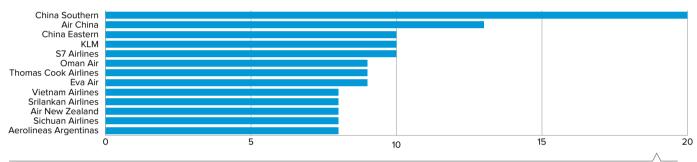




7 Air Lease Corporation



Air Lease Corporation top lessees



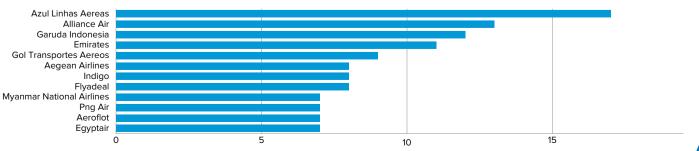
8 DAE Capital

DAE Capital fleet by aircraft type

DAE Capital fleet by region of lessee



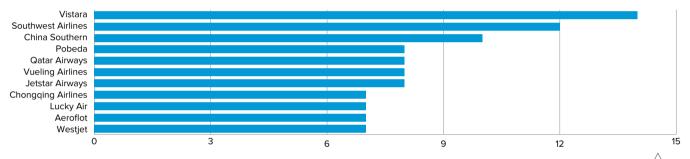
DAE Capital top lessees



9 BOC Aviation



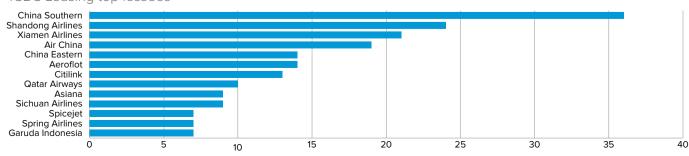
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10 ICBC Leasing







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