

Volotea: Niche LCC Seeking Investment

VOLOTEA has established itself as an attractive LCC operating in an unusual market — thin routes connecting secondary and tertiary cities. Battered by the pandemic, it needs to rebuild its balance sheet by attracting new capital and, maybe an airline partner.

Volotea was founded in 2011 by Carlos Muñoz and Lázaro Ros, who had previously set up Vueling. The two remain major shareholders in Volotea, along with private equity investors.

Carlos Muñoz who is CEO is a high-profile figure, adept at promoting his enthusiasm and vision for the airline and persuading industry investors, most of whom have been American, of its potential: Greg Brenneman, ex-President and COO of Continental was a founding investor; David Siegel, senior aviation advisor to Apollo Global Management, ex CEO of Frontier and AWAS is currently chairman of Volotea (and Sun Country Airlines); Mark Dunkerly, ex-CEO of Hawaiian Airlines has a small stake in Volotea.

Last year Aegean Airlines invested in Volotea (more below), and this year additional capital has been agreed from PAR Capital Management and Hill City Capital, an investment of €100m in total. PAR Capital is a Boston-based hedge fund, with over €3bn of assets under management (AUM) and investments in United, Expedia, Delta and Ryanair. Hill City, also based in Boston, is an investment firm with \$1.6bn of AUM which recently participated in the buy-out of Atlas Air. So what is the attraction of Volotea for these investors?

The model

The route map on page 3 gives the impression of a substantial airline operating across the continent with a southern focus, though the carrier remains relatively small — 11.4m passengers in 2024.

Volotea is a niche LCC, focusing on routes that are too thin for the Networks, LCCs and ULCCs. It connects 110 small and medium-sized cities, where 330m or two-thirds of the Western European population live. Its offer is direct service between these points, nearly 450 routes in total, avoiding the need to connect at a central metropolis. The target market is VFR and leisure travellers.

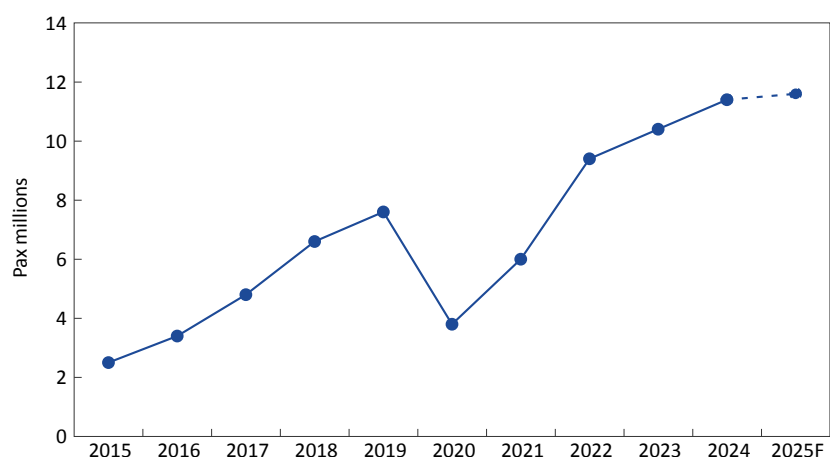
The airline has a total of 20 bases,

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which means an average of just two aircraft per base. France has 10 bases — Bordeaux, Brest, Lille, Lyon, Lourdes, Marseille, Nantes, Rodez, Strasbourg and Toulouse. Despite

VOLOTEA PASSENGER TRAFFIC



Aviation Strategy

Aviation Strategy

ISSN 2041-4021 (Online)

This newsletter is published at least six times a year by Aviation Strategy Limited. Our editorial policy is to analyse and cover contemporary aviation issues and airline strategies in a clear, original and objective manner. Aviation Strategy does not shy away from critical analysis, and takes a global perspective — with balanced coverage of the European, American and Asian markets.

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Aviation Strategy Ltd
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6 Langside Avenue
London SW15 5QT
VAT No: GB 162 7100 38
ISSN 2041-4021 (Online)

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being headquartered at Barcelona, Volotea's Spanish bases are Asturias and Bilbao. In Italy there is Bari, Florence, Naples, Olbia, Palermo, Venice and Verona. There is also a base at Athens which is due to be closed following the agreement with Aegean.

France, which is very Paris-centric, is the largest market, with domestic and international services accounting in 2025 for about 50 % of Volotea's seat capacity. Italy represents 27% of Volotea's capacity; there may be growth potential here from slot divestment following Lufthansa's purchase of ITA. Spain accounts for about 23% of capacity, though this may increase this year as Volotea expects to take over services abandoned by Ryanair in the wake of a baggage charging dispute. However, a proposed joint venture with the South American Abra Group, the parent company of Avianca and GOL, to exploit divested Madrid slots, was cancelled when IAG gave up on its takeover of Air Europa.

The German market is served in a joint venture/codeshare agreement with Eurowings covering 150 routes, 46 operated by Volotea and 104 by Eurowings, which was finalised in 2023. For example, the agreement links Berlin, Düsseldorf, Hamburg, and Stuttgart directly with Volotea bases at Bordeaux, Lyon, Nantes, Florence and Verona.

Efficiencies

Operating a network comprised almost entirely of thin routes — average route density at Volotea is 28,000 seats per year, in contrast to around 100,000 at easyJet and 80,000 at Ryanair — poses some challenges to the traditional LCC model, in terms of minimising unit operating and capital costs and maximising both seat load

VOLOTEA FLEET

In Service	
A319-100	20
A320-200	25
Total	45

factor and aircraft utilisation.

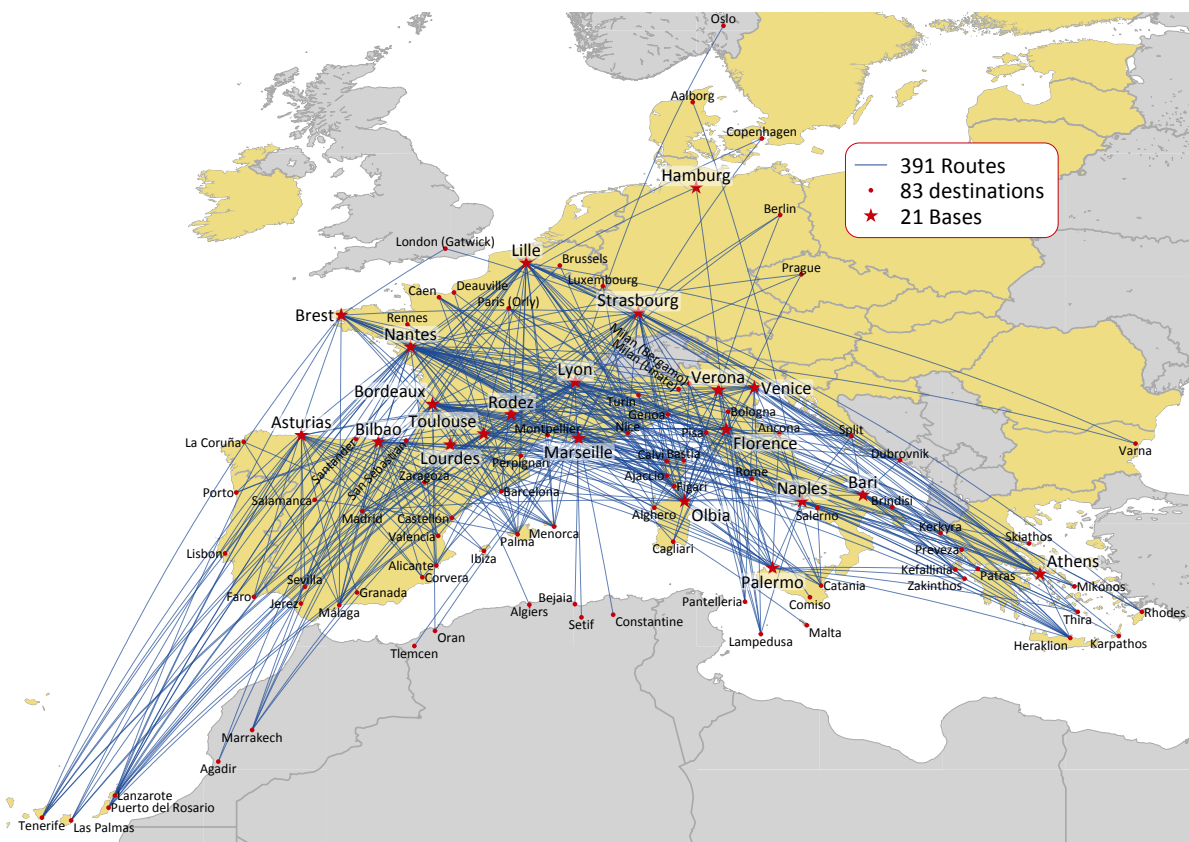
Volotea's original fleet strategy was to use a fleet of Boeing 717s (a 125-seat McDonnell Douglas orphan, also known as the MD-95) bought from Southwest when it took over AirTran. These aircraft had relatively low capital costs compared to operating costs so it was feasible to ground the aircraft at low-demand times in order to maintain load factors and unit revenues — a strategy that worked for some time at Allegiant in the US. But, as at Allegiant, Volotea found that the economics of the 717 became untenable, and by 2022 it had transitioned to a A320 family fleet. As at early 2025 the airline has a fleet of 20 156-seat A319s and 25 180-seat A320-200s, with no aircraft on order.

To illustrate the operational efficiency challenge, the following table on the next page compares Volotea with the ultimate LCC benchmark, Ryanair. (The comparison is not to imply that Volotea and Ryanair are direct competitors — they're not at all, and in fact Volotea has no direct competitors on half its routes — but to indicate the type of KPIs needed to produce profitability in the European low-cost sector.)

Volotea has got its load factor up to very close to Ryanair's, but Ryanair's average aircraft size is 192 seats as against Volotea's 169. On aircraft utilisation, estimated from the Skailark analytical database, Volotea

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VOLOTEA ROUTE MAP



gets 25% fewer hours per day per aircraft than Ryanair. The contrast in financial ratios is stark.

However, Volotea can claim that that these operational statistics do not tell the full story. Volotea has a very good reputation for customer service, regularly picking up industry awards. According to Skytrax in its global passenger satisfaction survey, Volotea was the “Best Low-Cost Airline in Europe” in both 2023 and 2024. It has won “Europe’s Leading Low-Cost Airline” at the World Travel Awards in 2021, 2022, and 2024.

According to a glowing report by the aviation analytics company Cirium: “Volotea’s strategic focus extends beyond just on-time departures to encompass efficient turn times and judicious use of spare aircraft. This comprehensive approach

ensures minimal disruption, reduced cancellations, and keeps operational costs in check, allowing the airline to offer high value at the lowest possible cost as their customers demand. Such operational excel-

lence directly correlates with positive passenger experiences, as evidenced by Volotea’s commendable NPS (Net Promoter Score). Volotea’s passenger experience is further underscored by exceptional review

ULCC vs NICHE LCC COMPARISON

	Ryanair	Volotea
Pax total (m)	184	11.4
Load factor	94%	92%
Total Revenue per Pax	€ 73.20	€ 71.20
Flights per Aircraft per Day	5.1	4.8
Block Hours per Aircraft per Day	11.4	8.6
Operating Margin	15%	5%
Net Profit Margin 2024	14%	na
Net Profit Margin 2023	12%	-14%

Sources: Company Reports, Skailark
Note: 2024 aircraft utilisation data refers to 12 months to Sept 2024

across independent sources”.

This service superiority has, however, not yet translated into a revenue advantage. In 2024 Volotea’s revenue (including ancillaries) per passenger was about €71, marginally below Ryanair’s.

Moreover, Volotea has an imminent re-fleeting decision to make. Its A319s are on average 20 years old, and its A320s 16 years old. In interview in *Skift* last year, Carlos Muñoz, observed that 180-seaters are perfect for 75% of the airline’s market, while the other 25% could be served by A220s or Embraer E2s. Placing an order for new aircraft would be a big step for Volotea — its fleet strategy has been to take second-hand aircraft on operating leases — and it would almost certainly require an injection of new funds.

Financials

The financial results for 2024, published in February, were delivered with an air of optimism by Carlos Muñoz, who reported “the strongest financial performance since 2012” and noted that “the outlook for 2025 is very promising, and we anticipate another substantial improvement in margins”.

Passenger volume in 2024 at 11.4m was 50% above prepandemic 2019, but there will be almost no

growth this year. Across its entire network, the airline is planning for just a 1% capacity increase.

Revenues were up by 17% to €811m while operating profit (EBIT) was reported as €35m and EBITDA as a record €148m. Volotea is a private company, and its annual financial press releases tend to lack some detail. Year-on-year comparisons are not always clear, and the company tends to focus on EBITDA, which can be a flexible metric, and omits the bottom line, net profit. However, full accounts are filed with the Registro Mercantil, Spain’s official registry of companies, the latest being for 2023.

The table below summarises the latest financials for Volotea, using both sources. 2024 indeed shows a strong recovery in the operating result — from a loss of €(53)m in 2023 to a profit of €35m — and we would tentatively estimate that at the net level Volotea broke even in 2024, or was marginally positive, compared to a net loss in 2023 of €(97)m, a margin of -14%.

The big problem for Volotea is the balance sheet, re-emphasising the need for new capital.

As at the end of 2023 Volotea had total assets of €462m (including €71m in intangibles such as the loyalty programme, Megavolotea) and total liabilities, including provisions,

of €885m, meaning that the shareholders’ equity in the airline was very negative, to the tune of €(423)m.

Put another way the negative equity was the result of accumulated losses of €(485)m over the airline’s history, mostly but not totally caused by the pandemic.

The extent of Volotea’s negative net worth might have triggered company dissolution under Spanish commercial law had it not been for emergency Covid legislation and intervention by SEPI (Sociedad Estatal de Participaciones Industriales, a Spanish state-owned holding company that has a role supporting and restructuring strategic sectors of the Spanish economy by providing financial assistance to companies in difficulty).

SEPI in effect allowed Volotea to adjust its official negative equity by excluding €139m of losses in 2020 and a further €75m in 2021, which by the end of 2023 brought the adjusted shareholders’ funds up to €(209)m.

VOLOTEA FINANCIALS

	€m	2022	2023	2024
Total Revenues		544	694	811
EBITDA		79	96	148
EBIT		(161)	(53)	35
Net Result		(162)	(97)	b/e est

Sources: Company Release and Registro Mercantil

VOLOTEA BALANCE SHEET (€m)

	End 2023
Fixed Assets	279
Other Assets	128
Cash and equivalents	55
Total Assets	462
Long term Debt	322
Short term Debt	59
Other Liabilities	504
Total Liabilities	885
Shareholder Equity	(423)
Equity Covid Adjustment	214
Adj Shareholder Equity	(209)

New debt and equity

Volotea suffered badly during the pandemic, with traffic more than halving in 2020 and 2021; and when traffic recovered in 2022 Volotea was impacted badly by the escalation in fuel prices, with no hedging in place. It was obliged to take on very substantial state-guaranteed debt:

✈ A €200m loan from SEPI, due in 2029, with interest based on a variable component plus a margin, and an additional variable component contingent on positive net results.

✈ A €145m syndicated loan by a group of six Spanish banks and the ICO (Instituto de Crédito Oficial, a state-owned institution) which guaranteed 70% of the total.

Importantly, in 2024 Volotea reached a agreement for a €100m convertible loan from Aegean Airlines (50%) and other investors, including Carlos Muñoz himself and the management team plus PAR and Hill City equity funds (50%). The first tranche was paid last year and the second tranche is due in the first half of this year. The loan matures in 2034 and interest is composed of a fixed component and a variable component based on Volotea pre-tax profit. It is subordinate to the SEPI and ICO loans.

According to Volotea, if Aegean's contribution from the first tranche is converted into shares, this would translate into a 13% stake in Volotea. If the second tranche is also converted, Aegean's overall stake in Volotea could reach 21%. This implies a total value for Volotea of €192-238m; for comparison, Aegean's stockmarket value is €925m.

Carlos Muñoz has stated that his preference for a capital raise would be an IPO. But it is not clear that

market conditions are right for an IPO, and the company's balance sheet might be a difficult sell to retail investors. The sales message to industry investors is clearer: Volotea's negative book value is almost all due to the pandemic, it has spent over 12 years building its unique network and attractive brand, and is now poised to convert its potential into financial success.

Aegean has not only injected cash into Volotea it has also added to its credibility and investability. But what is Aegean's perspective?

Aegean: Niche Hybrid Investing in New Projects

Aegean is also a niche carrier, a financially very successful one — a hybrid full-service/ LCC carrying 16.3m passengers in 2024. Under the long-term leadership of CEO Dimitrios Gerogiannis and chairman Eftichios Vassilakis, Aegean has developed a reputation for a laser-like focus on shareholder returns, avoiding distractions from its core strategy — operating A320s on short/medium-haul intra-European services from its Athens base to primary and secondary cities in addition to extensive inter-island services using A320s and turboprops. It is the antithesis of the former flag-carrier Olympic Airlines, which it bought in 2011 from

Marfin Capital, two years after its privatisation.

The company is quoted on the Athens stockmarket with about 56% of its shares in free float, valuing the company at around €925m as at early 2025. The Vassilakis family owns about 35%, and other Greek entrepreneurs the remainder.

Aegean was badly hit by the pandemic in 2020 when traffic dropped by two thirds and it lost €228m, though it managed to break even the next year. It received €120m in state aid, with the Hellenic Republic being granted warrants worth €85m giving the state the right to own 11.5% of the airline. Aegean was able to buy back the warrants in 2024, clearing the company of any government liabilities.

Prepandemic, Aegean vied with Ryanair for the mantle of Europe's most profitable airline, and it was able to stage a strong recovery after the market reopened, achieving net profits of €169m in 2023, a 10% margin on revenue. 2024 are expected to be a bit down — €127m, a 7% margin, according to a research report by Barclays. This is mainly attributed to the grounding of aircraft, nine currently, due the GTF engine problems.

The balance sheet is solid, with total assets of over €2.5bn, including €500m of cash and equivalents, exceeding total liabilities of €2.0bn, and giving the company a net book value

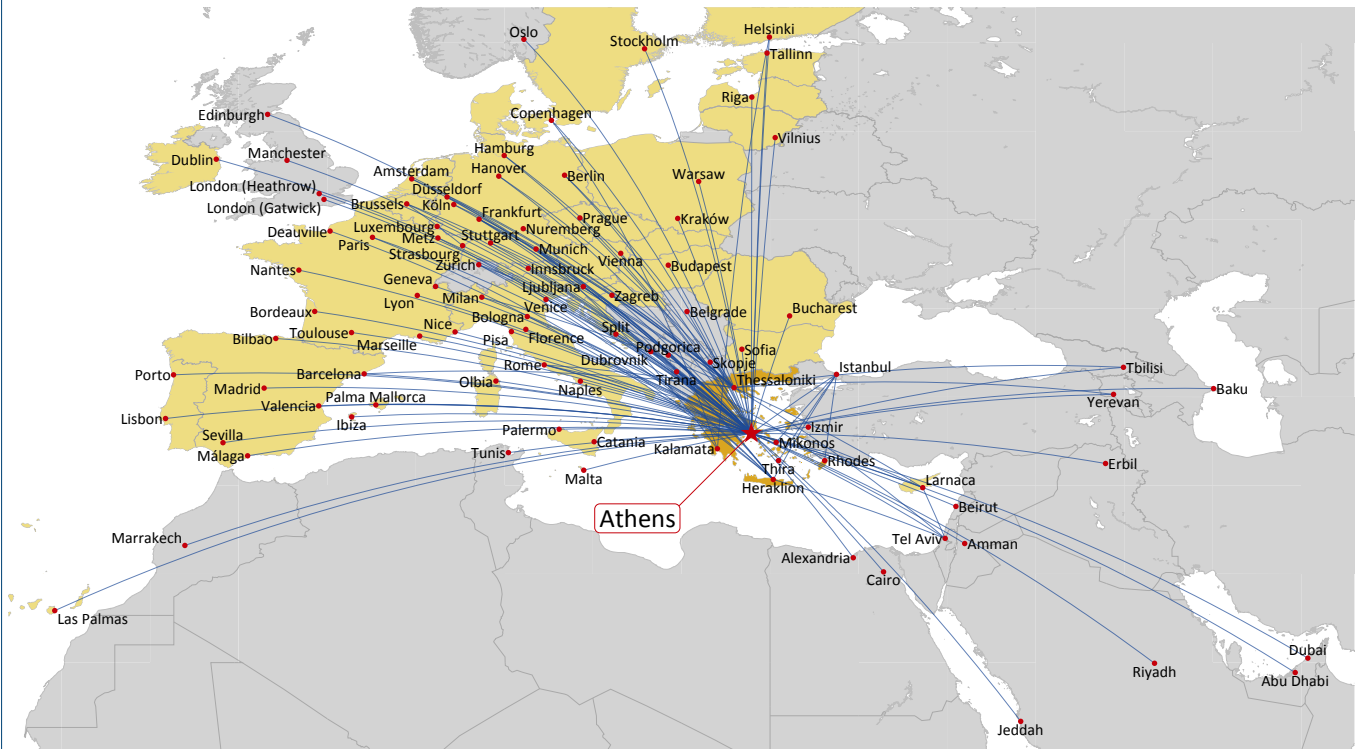
AEGEAN FINANCIALS

	€m	2022	2023	2024 Est
Total Revenues		1,337	1,693	1,751
EBITDA		275	400	376
Operating Result (EBIT)		147	246	199
Net Result		107	169	127

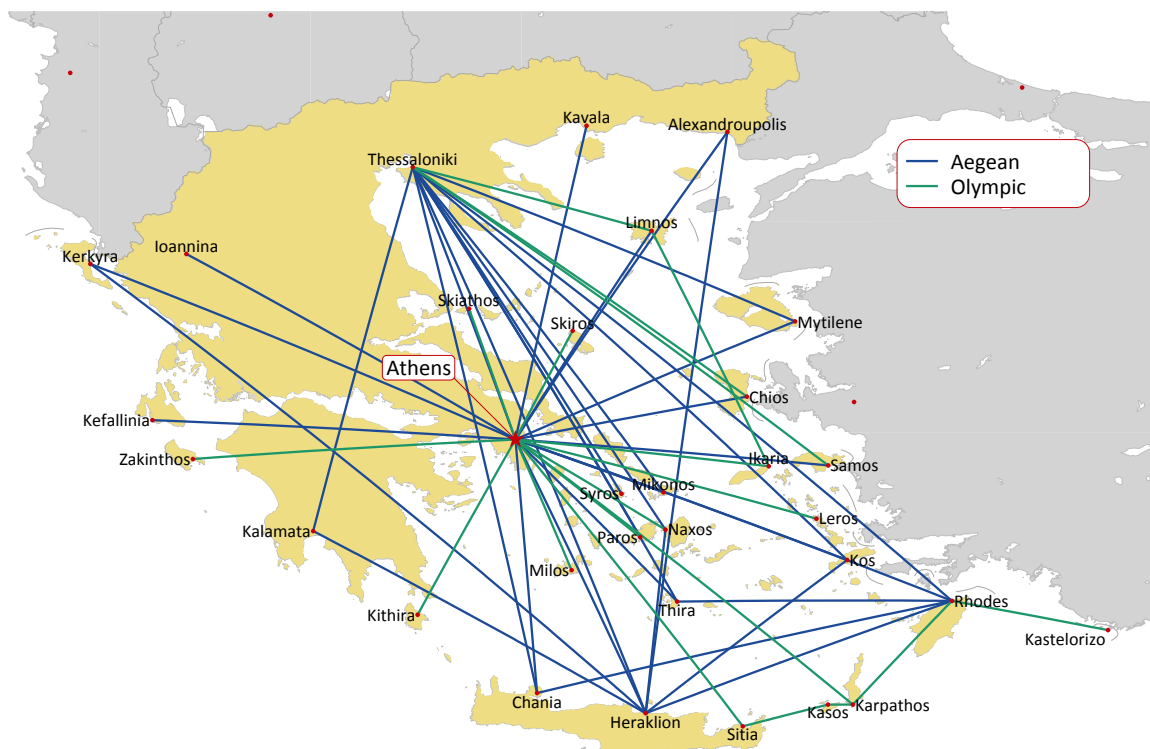
Sources: Company Reports and Barclays

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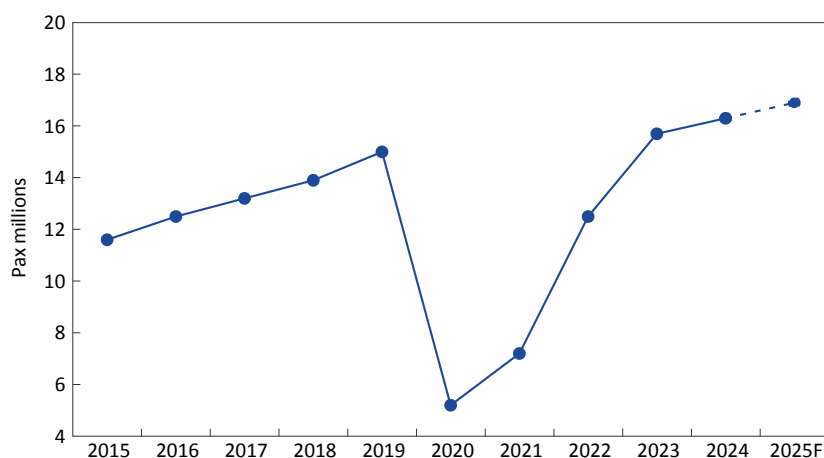
AEGEAN: INTERNATIONAL ROUTE MAP



AEGEAN: DOMESTIC ROUTE MAP



AEGEAN PASSENGER TRAFFIC



of about €545m at the end of 2024.

Aegean has succeeded in fending off major incursion by LCCs and ULCCs into the Greek market. Its 2024 market share of seats offered is estimated at 31% by Barclays, compared to 9% for Ryanair and 6% for easyJet. A new entrant, Sky Express, has grown rapidly to 12%; it has attempted to duplicate Aegean's strategy, but there is uncertainty about its sustainability, given its opaque finances.

Given Aegean's operational and financial strength, the investment in Volotea would appear to be low risk

with perhaps a strong upside. In a presentation to its own investors at the end of last year, Aegean explained its rationale.

✈️ Aegean is providing Volotea with convertible debt, an investment of €50m in two tranches which could convert into 21% of Volotea's equity, but it is not obliged to convert into equity.

✈️ The investment is linked to the existing codeshare agreement between the two carriers, enhancing cross-selling and distribution through their respective websites.

✈️ There is the potential to jointly develop international services from Greek regional airports like Heraklion, Chania and Rhodes to significant source markets like France, Italy, and Spain.

✈️ More generally, the partnership will improve Aegean's presence in Spain, Italy, and France, and the two airlines will aim to combine resources and expertise.

✈️ Aegean will provide MRO and Flight Simulator services to Volotea.

Aegean's hub and network strategy is very different to Volotea's. It is centred on Athens International Airport (AIA), where it bases some 50

aircraft. It is mostly point-to-point, but there is a significant domestic/international connecting operation. There are 156 destinations, 31 domestic and 125 international. There is a second, much smaller hub at Thessaloniki in the north of Greece.

As with Volotea, Aegean is planning on low overall capacity growth. Unlike Volotea it has a fleet plan in place — 17 A321neos are on order, configured with 220 seats, except for four which have been converted to a lower density long-haul version

The A321neo LR does represent a somewhat different direction for Aegean. Deliveries are scheduled to start in 2026, and the aircraft are expected to be deployed to new markets in the Arabian Gulf, India and Africa, with flight times of up to 7.5 hours. The market appears to be rich tourists and business travellers: there will be lie-flat Business class seats and an enhanced product in Economy.

Aegean's investment on the A320neo LR operation is probably in the order of €230m, and there is the risk that if the market does not develop as expected it will be difficult to re-deploy these aircraft within Europe. So the A320neo LR project may be the priority for Aegean's management.

AEGEAN BALANCE SHEET

€m at end	2024E
Fixed Assets	1,465
Other Assets	563
Cash and equivalents	505
Total Assets	2,533
Debt	969
Other Liabilities	1,019
Total Liabilities	1,988
Shareholder Equity	545

AEGEAN FLEET

	In Service	On Order
A320ceo	29	
A321neo	19	
A321ceo	5	
A321neo	14	17
Turboprops	17	
Total	84	17

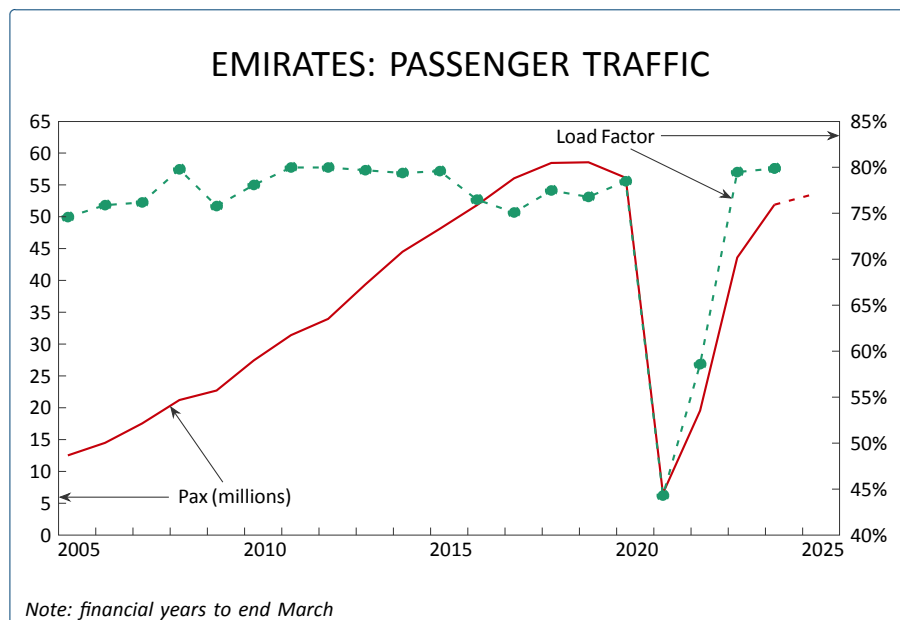
Emirates: Frustrated despite Soaring Profit

EMIRATES celebrates its fortieth birthday this year. Over the past four decades it has grown to become the world's largest international airline (measured in international RPK) flying to 139 destinations in 77 countries across six continents with a fleet of 264 widebody aircraft. It has achieved many accolades including "World's Best Airline" from Skytrax in 2016 and "Best Airline in the World" from the prestigious ULTRAs 2024 awards.

Emirates has been consistently, if moderately, profitable. In the decade leading up to the 2020 pandemic, even while the numbers of passengers carried grew by a compound annual average 12%, and it suffered intense competition from close neighbours Qatar and Etihad — both trying to emulate Emirates' success — it returned an average 6% operating margin and 4% net.

Coming out of the two disastrous years of the Covid-19 crisis, the airline has recovered reasonably quickly, although it has not quite returned to the peak level of activity pre-pandemic: the number of passengers carried in its financial year to end March 2024 reached 51.9m, still 12% below the numbers for 2019 (see chart right).

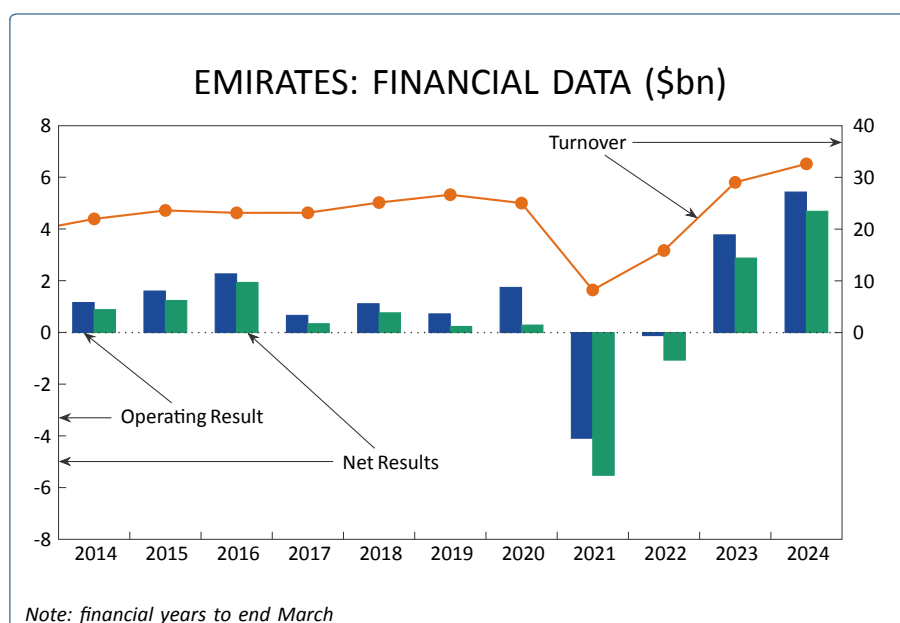
However, its financial returns have soared: revenues for the year to end March 2023 were 10% higher than the pre-pandemic peak, and those for 2024 24% higher at 121bn dirhams (US \$33bn). The operating margin jumped to 13% in FY 2023 and a 17% in FY 2024. It was able to report a record net profit of 17.2bn



Dhs (\$4.7bn) for FY 2024 reflecting 14% of revenues. This strength of result enabled it to declare a dividend to its owner (the Emir of Dubai) of 4.5bn Dhs, four times higher than the last dividend in 2019 and due recompense for the 15bn Dhs equity

he injected during the crisis.

Records continue to be broken. For the six months to end September 2024, total seat capacity was up by 4%, passenger numbers increased by 3%, revenue grew by 5% and pretax profits (Emirates does not report op-



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erating profits in its half year results) 2% higher at AED 9.7bn (\$2.6bn). The pretax margin of 16% compares with a 15.8% margin reported for the same period in the prior year. Net profit declined by 7%: but this was because 2024-25 is the first year that UAE corporate income tax applies to the Emirates Group financial reporting.

Why so profitable all of a sudden?

Emirates' great strength is that it was the first to target and exploit the geographical advantage provided by a sixth freedom hub based in the Persian Gulf — providing access to 80% of the world's population within reach of an eight-hour flight. A large reason behind its success is the support of the Group's founder and Chairman, HH Sheikh Ahmed bin Saeed Al Maktoum and his pursuit of the UAE's long term Vision 2030 to diversify its economy away from oil — in this case through aviation and tourism.

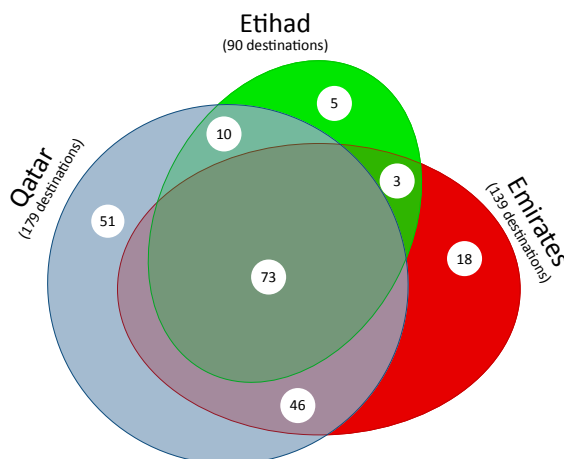
It helps that, besides being the Chairman and CEO of the Emirates Group (which includes ground and catering services operated by dnata) as well as 737 operator Flydubai (run independently from Emirates, but sharing the same owner), the Sheikh is President of Dubai's Civil Aviation Authority; Chairman of Dubai Airports, Dubai World and Dubai Aviation City; Chairman of Dubai Duty Free; and Chairman of Dubai Aerospace.

Qatar based in Doha and Etihad from Abu Dhabi followed Emirates' strategy — although without the same devotion to the A380 — and through the 2010s provided substantial competition; and the three airlines' route networks provided a significant level of directly competing overlap (see chart right). (Note that both Qatar and Etihad operate nar-

DUBAI AVIATION: ONE MAN IN CHARGE



SUPERCONNECTOR OVERLAP



Aviation Strategy

rowbody equipment which inflates the raw destination numbers: in revenue terms Emirates is 50% larger than Qatar; and five times the size of Etihad.)

Rationalisation may help to explain the current profitability. Qatar scrapped 20% of its A380 fleet in early 2020, and Etihad 30%; Emirates scrapped seven in the same year al-

though this only accounted for 5% of its fleet. All have been subject to the supply chain issues plaguing the OEMs and the delay in new aircraft deliveries may have helped in restricting capacity as demand has returned.

More pertinent may be geopolitics, and a result of Russia's February 2022 invasion of Ukraine. Unlike their European and US competitors,

the Gulf carriers have not been excluded from using Russian airspace, which gives Emirates and its neighbour competitors some advantage for flights to the USA, notably Los Angeles, San Francisco and Seattle but also New York and Midwestern destinations.

Maintaining operations into Russia helps to provide nationals of

EMIRATES: ROUTE NETWORK



Note: azimuthal equidistant map projection centred on Dubai (great circle routes from the centre appear as straight lines).

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EMIRATES AIRLINE FINANCIALS (AED bn)

FY to March 31	2020	2021	2022	2023	2024	At end March	2024
Revenues	100.0	30.2	58.3	106.7	119.9	Fleet assets (inc lease rights)	97.6
Net result	1.4	(20.3)	(3.8)	10.6	17.2	Investments etc	8.9
Operating Cashflow	22.8	(4.5)	24.4	44.3	37.6	Cash and short term deposits	42.9
Capex	(10.7)	(4.3)	(7.5)	(6.7)	(8.4)	Other current assets	14.6
Other Income (Expenditure)	0.6	0.5	0.2	0.5	1.9	Total Assets	163.9
Free Cashflow	12.7	(8.3)	17.1	38.1	31.2	Long term debt	50.1
Net increase (decrease) in debt	(9.3)	(8.4)	(14.8)	(21.6)	(20.9)	Other liabilities	6.1
Equity raised	0.0	11.4	3.5	(0.0)	0.0	Current liabilities	61.3
Dividends	(0.1)	(0.1)	(0.1)	(0.0)	(4.5)	Total Liabilities	117.5
Total Cashflow	3.3	(5.4)	5.7	16.5	5.7	Shareholders' Equity	46.5

Note: US\$1=AED3.67

the beleaguered country with means to access treasured tourist destinations (such as Dubai): Emirates serves Leningrad and Moscow (while Flydubai serves these and 12 other destinations in Russia).

It also strengthens competitiveness of their offerings for one-stop flights from Europe to China, North and South East Asia.

For the European carriers has proved very difficult to compete against Chinese carriers (who also are permitted to use Russian airspace). There is a natural cost disadvantage

for the Chinese carriers, but this is exacerbated by the longer routes necessary for the Europeans to avoid the war-torn nations.

The route for Lufthansa to fly from Frankfurt Beijing avoiding Russian airspace is 1,400km longer; that for BA from London 1,700km; and Finnair's flight from Helsinki to Shanghai needs another 3,700km, four hours and 20t fuel.

Further, Europe-China route demand is predominantly domestic China originating, giving the Chinese carriers a major marketing advantage

against foreign airlines.

Emirates, currently flying to three destinations in mainline China (apart from Hong Kong and Taipei), recently announced plans to start services to Shenzhen, Hangzhou and Chengdu, (incidentally helping provide China with transport connections to its investments in Africa).

It is also expanding services into SE Asia with routes (tagged on from Bangkok) to Da Nang in Vietnam and Siem Reap in Cambodia.

Fleet dilemma

As the airline with the largest fleet of A380s, the decision by Airbus to kill production of the model came a blow to Emirates — it received the last of the type in 2021. Tim Clark, Emirates' President, has repeatedly pressed for a re-engined model, and although Airbus has not officially ruled it out, it is highly unlikely that Airbus would retool to build a new version of the super-jumbo.

This leaves Emirates with a dilemma. The A380 is a key element of its business plan: feeding huge quantities of passengers through its Dubai hub. The seven A380s it

EMIRATES: FLEET

	In Service	Average Age	On order
A380	116	10.2	
A350	3	0.3	62
777-200	10	16.8	
777-300ER	120	11.8	
777X			205
787-8			15
787-10			15
Total Passenger	249	11.1	297
777F	10	7.1	13
Total Fleet	259	11.0	310

scrapped in 2020 were only 10-12 years old at the time (it sensibly is using their bits as spare parts). Its current fleet has an average age of just over ten years.

The airline has over 300 aircraft on order, including 62 A350s, 205 777Xs and 30 787s, and has been frustrated by the delivery delays from both manufacturers. The 777X, announced in 2013 and originally targeted for entry into service by 2020, might not now be certified until 2026: Emirates now seems to suggest they expect to receive the first in the second quarter of 2027. Had Boeing been able to deliver the 777-9 on time, the airline points out, it would have had 85 of the next generation aircraft in its fleet by now.

Emirates took delivery of its first A350 in November last year. It originally ordered 50 of the type in 2019 (along with 30 787s), and added a further 15 in 2023. This is its first new aircraft type since it took its first A380 in 2008.

At the press conference celebrating the aircraft's arrival in Dubai, Emirates Airline President Sir Tim Clark said: "We are expansionist and we've had our wings clipped because of Covid and supply chains. We are a frustrated entity because we need aeroplanes, and we need them now. We're champing at the bit to try to activate our network and grow it considerably more than it is today. These aircraft coming into us are vital."

But as a result of these delays, Emirates seems to be considering keeping the A380s into the late 2030s and extending the lives of the 777-300s. It has set up a \$4bn programme to retrofit 191 aircraft in the A380 and 777-300 fleet with its new cabin interior design, "including its latest 4-class Boeing 777 that feature a new 1-2-1 layout of lie-flat seats with

personal minibars in Business Class, and the popular Emirates Premium Economy".

Flydubai

Dubai's hybrid low cost carrier, Flydubai, is officially independent from Emirates although they have the same owner, and cooperate closely.

Flydubai has a heavily modified LCC model, operating all its aircraft with a premium class and offering a full-service connecting facility at Dubai, both for its own network and on most of Emirates' routes; last year 15% of its passengers were connecting on its code-share with Emirates. Emirates' loyalty programme, Skywards, is applicable on Emirates/flydubai connecting flights, as is lounge access for higher-tier Skywards members flying on the flydubai network. For Emirates, flydubai has a dual strategic role: providing feed onto its own flights and securing a defence against the influx of LCCs into the Middle East market.

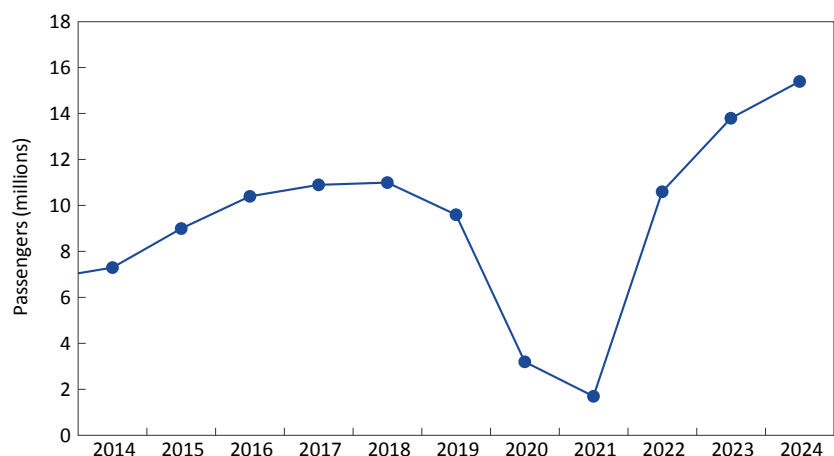
Flydubai is a 737 operator with 88 aircraft in operation with an average age of 5.7 years, and

127 737MAX8/9s on order. It was hit badly by the grounding of the 737MAXs in 2019 even before the pandemic. These started to come back into service from 2021, but it too has been plagued by Boeing's delivery delays: the company received four new aircraft in the first half of 2024, but they had been delayed from the backlog of previous years. The airline received none of the aircraft that had been contractually scheduled to be delivered in 2024 (and as a result extended the leases on four 737NGs that it had planned to return to lessors).

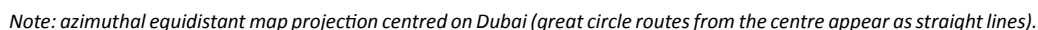
It too has instituted a retrofit programme to upgrade 25 of its 737NGs with the installation of the carrier's flagship lie-flat Business Class seats and the new generation of its Economy Class seats that mirror the cabin product on its newer aircraft.

At the 2023 Dubai airshow the airline announced an order for 30 787s, which it hopes will be delivered from 2026 onwards. Ghaith Al Ghaith, CEO of flydubai, was quoted as saying: "The primary objective of the Boeing 787 will be to extend our reach into new markets. I envision

FLYDUBAI TRAFFIC



FLYDUBAI: ROUTE NETWORK



For the year ended December 2022 passenger numbers had just about recovered to the 11 million carried in 2018. In 2023 the airline saw a year-on-year 30% growth in pas-

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FLYDUBAI FLEET

	In service	Age	Orders
737-800	29	9.9	127
737 MAX8	56	3.5	
737 MAX9	3	6.2	
737 MAX10			
787-9			30
Total Fleet	88	5.7	127

senger numbers and followed this in 2024 with a further 12% increase to give a full year total of 15.4m.

In February it was able to report the strongest financial results in its 15-year history. Revenues grew by 15% year-on-year to AED12.8bn (\$3.5bn) — more than double the revenues achieved in its peak pre-pandemic year — and pretax profits reached AED2.5bn (\$674m) — ten times that recorded in its previous best year in 2014.

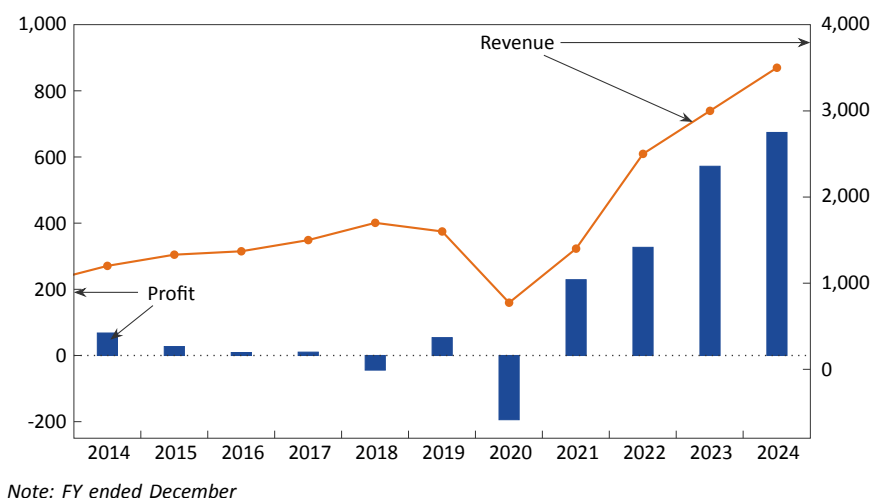
Neighbours doing well too

For comparison purposes we show the results history of Qatar Airways and Etihad below, and their current route maps on the following pages.

Both have broken into profitability since the pandemic.

Qatar Airways (probably) had not produced a positive operating result

FLYDUBAI: FINANCIAL RESULTS (\$m)



in any of the ten years (ending March) preceding 2022. It had additional problems resulting from a diplomatic crisis with the Arab League in 2017: it was prohibited from using Emirati, Saudi and Egyptian airspace. The restriction was lifted in 2021.

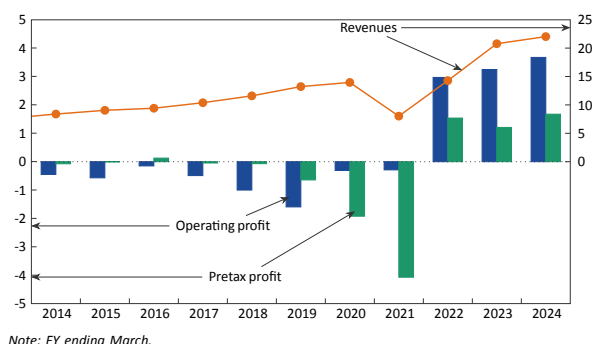
For the year ended March 2022 it burst into resounding profitability, mostly thanks to its freighter operations. Although passenger demand remained well below prepandemic levels it transported a record 3m tonnes of cargo (it proudly boasted that it transported 600m doses of Covid-19 vaccines over the course of the pandemic) and cargo revenues accounted for 50% of turnover. It an-

nounced an operating profit margin of over 20%.

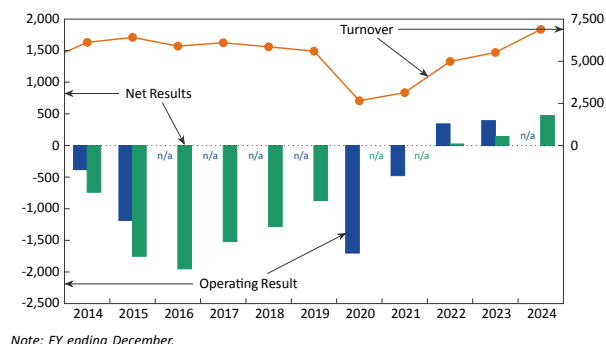
For FY 2024 it reported figures showing passenger numbers 24% higher than the number carried in 2019-20, revenues 60% higher at QAR80.4bn (\$22.0bn) and operating profits of QAR13.4bn (\$3.7bn). (It has neglected to provide an update for the six months ending Sep 2024.)

It too claims to be the World's Best Airline — an accolade bestowed on it once again in the 2024 Skytrax awards. Unlike Emirates it is a member of a Global Branded Alliance. It joined oneworld in 2012 and since then had pursued closer equity and operational involvement with certain

QATAR AIRWAYS: FINANCIAL DATA (\$bn)



ETIHAD AIRWAYS: FINANCIAL DATA (\$m)



Aviation Strategy

members. It has a 25% in IAG, (and the Qatari Investment Authority has a major 20% stake in London's Heathrow airport) and has a 10% stake in Cathay, 3.4% in China Southern, and 10% in LATAM (even though no longer in oneworld). In 2017, it even attempted to acquire a 10% stake in American.

It has recently been granted approval to acquire a 25% stake in Virgin Australia.

Etihad had also pursued a strat-

egy of airline investments in the 2010s under the "hunter strategy" (invest in a basket-case because it is available) employed by then CEO James Hogan — Air Berlin, Air Serbia, Air Seychelles, Alitalia, and Virgin Australia. He was sacked in 2017 to be replaced by Tony Douglas. In the decade before the onset of the pandemic, Etihad had reported total net losses of \$8.6bn, representing an average net margin of negative 17%.

Douglas managed to get the oper-

ation under control, and started reorganising it as a mid-sized carrier concentrating on point-to-point services. In 2022 the airline produced its first operating profit in a decade: \$343m on revenues of \$5bn, a modest 7% margin, even though passenger numbers were still 45% below the pre-pandemic peak.

Douglas left when, in 2022, the Abu Dhabi government transferred ownership of Etihad Aviation Group to the emirate's sovereign wealth

QATAR ROUTE MAP



Aviation Strategy

fund, ADQ. The reason given for the change in ownership was that it formed part of its efforts to “transform Abu Dhabi into a global aviation hub”. (Tony Douglas moved across the border to help create Saudi Arabia’s new super-connector, Riyadh Air).

So it was left to his successor, Antonoaldo Neves (formerly CEO at TAP, and previously Azul) to be able present the airline’s strongest annual results in its history for 2024.

Passenger numbers jumped 32% year-on-year to 18.5m — reaching the level last seen in 2017. Revenues grew by 25% to \$6.9bn (some 13% higher than the prepandemic peak) and net profits (the airline neglected to mention operating profits) reached \$476m compared with \$143m in the previous year.

Reuters has reported rumours (using insider sources) that Etihad is planning a \$1bn IPO of 20% of its shares on the Abu Dhabi stock

exchange this year. Neves has the experience: he led Azul to its IPO on NYSE in 2017 (although left shortly afterwards to join TAP).

ETIHAD ROUTE MAP



Urban Air Mobility: Innovation takes time and burns money

IT TAKES a long time, much effort, and a lot of money to design and build a new aircraft from scratch, and bring it into commercial service. The problems escalate when the propulsion system is unconventionally innovative.

In the last decade a lot of effort has been put into developing electrical vertical take-off and landing (eVTOL) aircraft. There was a splurge of pandemic-induced investment activity four years ago, all in the interest of Urban Air Mobility (see *Aviation Strategy*, Feb 2022), with a bundle of players coming to the stock-market through (then fashionable) SPAC deals.

2025 could see these battery-powered helicopters enter commercial service.

Front-runners

US start-ups Joby and Archer Aviation — who between them have raised funds of \$6bn for development — both received part 135 certification

from the FAA for their respective eVTOL models last year, and continue the lengthy process to obtain full type certification to allow them to provide commercial services in the US — each targeting 2025 or 2026.

Archer's aircraft has room for one pilot and four passengers (maximum payload 0.5t) has twelve electrically powered propellers (six of which tilt for vertical lift), a maximum speed of 240kph and a 100km range.

In February, Archer announced that it had signed up Abu Dhabi Aviation (ADA) as its first *Launch Edition Program* partner. This programme will allow Archer to deploy its Midnight aircraft in early adopter markets worldwide to generate revenue.

Archer's Founder and CEO, Adam Goldstein in the recent 2024 results call said: "These early adopters are more than just customers. They are true partners... These partnerships will have two components. First, we will supply them with a small fleet of

Launch Edition aircraft to showcase and operate in their countries over the next 18 to 24 months as well as a services component where we will provide an operational support team of pilots, technicians, engineers and local leadership. These arrangements will be tailored, based on the partner and their strategic goals, but we are aiming for each one to generate tens of millions of revenue and be margin positive."

It needs the revenue — it is burning through \$100m a quarter in development spending. In February it raised an additional \$300m equity funding, giving it cash reserves of over \$1bn.

Joby's aircraft has a similar capacity: one pilot and four passengers. It has a slightly longer range of 160km and is faster with a speed of up to 320kph. There are six battery powered tilting propellers.

Joby, plans to build and operate its aircraft as an airborne taxi service provider. It is in the process of devel-

ELECTRIC URBAN AIR MOBILITY HOPEFULS

	Country	Model	Range (km)	Speed (kph)	Crew	Pax	Funds raised (\$m)	Certification?	Orders*	Market Cap \$bn
Archer Aviation	USA	Midnight	100	240	1	4	3,360	2025	1,141	5.2
Beta	USA	Alia 250	450	270	1	5	1,400	2025	559	n/a
eHang	China	EH216-S	32	100	none	2	100	2024	1,300	1.7
Eve Air Mobility	Brazil	Eve	100	200	1	4	554	2026	2,900	1.3
Joby Aviation	USA	Joby S4	160	320	1	4	2,600	2025	n/a†	5.6
Lilium	Germany	Lilium Jet‡	300	300	1	6	1,400	2026	782	—
Vertical Aerospace	UK	VX4	160	240	1	4	535	2028	1,500	0.4
Volocopter	Germany	VoloCity	36-65	110	1	1	725	2025	82	—
Wisk	USA	Wisk Gen 6	140	190	none	4	1,000+	late 2020s	unclear	n/a
Zuri	Czech Republic	ZuriS	700	300-350	1	4	6			n/a

Notes: * Inc options and LOI; † To operate as air taxi service on behalf of partners; ‡ Fixed wing; § Hybrid battery + SAF. Lilium and Volocopter insolvent.

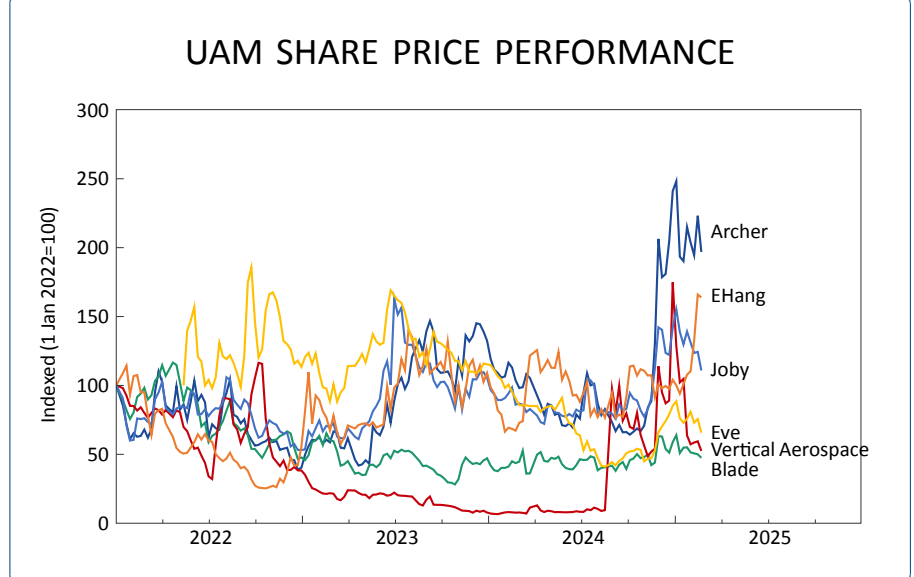
opening the first vertiport in its planned network — at Dubai Airport in partnership with Dubai Roads and Transport Authority and Skyports. By the middle of this year, it plans to deliver the first aircraft to Dubai and begin in-market testing with the intention of carrying their first passengers in the Emirate in late 2025 or early 2026. It too burned through \$450m in 2024, but after raising an additional \$350m finding ended the year with just short of \$1bn in cash. It is anticipating \$550m of this to fly out the door in the current year.

Failures

The two German hopefuls in the sector, Lilium and Volocopter, went insolvent at the end of 2024.

Volocopter (founded in 2011) had only raised a modest \$725m in funding, and pursued what it proudly called the lowest cash burn rate in the industry. Despite achieving design organisation approval from EASA, it nevertheless ran out of cash before it could bring its aircraft to certification. The company blamed an “unfavourable financial climate and delayed funding rounds”. It could also have been something to do with the aircraft design: one pilot, one passenger a range of less than 65km and speed of 110kph.

Lilium’s journey was even more disastrous. The Munich-based firm, founded in 2015, filed for insolvency last October after failing to secure a €50m loan guarantee from the German government. This filing triggered the insolvency of its subsidiaries which had raised \$1.4bn from private investors. A rescue deal was agreed in December 2024 with a consortium called the Mobile Uplift Corporation to provide \$200m to acquire all Lilium’s assets in Germany, but the money never arrived and



Lilium filed for (this time terminal) insolvency a second time in February.

The Lilium Jet would have been interesting: one pilot, six passengers; a range of up to 300km and max speed of 300kph; a fixed wing design with canard wings, and 36 vectored thrust fans for propulsion.

A close thing

UK-based **Vertical Aerospace** (founded in 2016) was close to insolvency in 2024 as its cash reserves dwindled to £25m. In November it received a lifeline of \$50m from vulture fund Mudrick Capital (its largest creditor), and then in January successfully raised \$90m (increased from the initial \$75m target) in equity and warrants with a further \$25m injection from Mudrick and over \$60m from new investors. The warrants if exercised would provide another \$100m. This accompanied an investment agreement that included the conversion of \$130m debt to equity. The company also recently announced it had appointed aviation industry veteran Dómhnaí Slattery as chairman.

Vertical is some way behind rivals Archer and Joby. It has raised barely

a quarter of the funds the US companies have done, and it is targeting achieving type certification in 2028. But it does have 1,500 orders.

The company’s VX4 design comprises a capacity of one pilot, four passengers (450kg payload); a top speed of 240kph and range of 160km. Propulsion is provided by eight battery-powered propellers on a high wing: the four on the leading edge tilting; those on the rear permanently vertical and only used for take-off and landing.

Others

✈ **Eve Air Mobility** (founded 2020) is majority owned by Embraer and arose from the Brazilian manufacturer’s innovation division. In this it is strongly helped by the parent company’s expertise in bringing aircraft into service. This may explain why it has only raised \$554m in funding. The production aircraft (Eve) again has capacity of one pilot (with a future aim of autonomous flying) and four passengers; a cruising speed of 200kph and range of 100km. Unlike its competitors, Eve has concentrated on simplicity: it has eight propellers for lift and two pusher propellers

(none of these tilt); but it also has helicopter-like skids, rather than its rivals who have gone for tricycle landing gear. But it does have 2,900 orders under its belt. Certification is anticipated in 2026.

➔ **Beta** (founded 2017) is an outlier: it remains a private company, despite having raised a reputed \$1.4bn. Its Alia 250 aircraft is designed to carry four passengers with one pilot; a range of 450km at a max speed of 270kph. Like Embraer's Eve it has gone for a fixed propulsion system: four dedicated VTOL propellers and one push propeller. The company seems to be focusing on a cargo version (also targeting medevac organ transport) perhaps as a simpler way to certification, aimed for 2025. The company is also planning a battery-powered conventional

take-off aircraft (dubbed the CX300) using the same airframe. It has 559 aircraft on its order book (including 150 from UPS).

➔ **EHang** (founded 2014) was the first eVTOL producer to receive certification for one of its aircraft in 2023 from the CAAC. The Guangzhou based company has produced an autonomous model EH216-S with a capacity of two passengers (no pilot), a 220kg payload, a range of less than 35km and a max speed of 100km. Propulsion is provided by 16 propellers fitted to eight under fuselage arms.

It boasts orders of 1,300 units, but may struggle to gain international certification because of the lack of a pilot. However, it is reputed to be expected to be on sale at around \$40,000 a unit (compared with the

expected \$4-\$5m for its competitors' offerings).

In January it completed an inaugural demonstration flight in downtown Shanghai, and has launched regular trials of eVTOL sightseeing flights from Longhua airport.

➔ **Blade Urban Air Mobility** is not an eVTOL developer, but is rather seeking first mover status as an UAM provider. It is currently focused on providing time efficient transportation (ie helicopters) on congested routes primarily in Northeast US, and has recently expanded its efforts into the medevac services transporting organs for transplant. It also has an associate business in Western India. The company operates an asset-light model, and does not own any aircraft. Blade partners with third-party

Boom does not go BOOM

At another end of the aircraft spectrum another innovator, Boom Supersonic, is in the process of developing the world's first independently built supersonic commercial passenger jet.

The company, founded by Blake Scholl in 2014, and with \$600m investment raised (so far) aims to bring its Overture model into service by 2029. This is being designed to have 64-80 seats, fly at Mach 1.7 (more than 2,000kph), at an altitude of 60,000ft, and have a range of 7,800 km.

Propulsion will come from four proprietary Boom Symphony medium-bypass turbofans optimised (to gain credibility for sustainability) to burn 100% SAF. The engine is expected to start core testing towards the end of 2025.

Overture has an order book of

130 orders and pre-orders from American, United, and JAL, representing the first five years of production.

In January the company proudly announced that its XB-1 demonstrator aircraft — built to "prove key technologies and materials for efficient supersonic flight" — had successfully flown at supersonic speeds in the Mojave desert. And, importantly, while it broke the sound barrier three times it did so without generating a sonic boom that reached the ground.

This was achieved by breaking the sound barrier at a high enough altitude, and favourable weather conditions, to take advantage of Mach cutoff — where the sound wave is refracted by atmospheric temperature gradient before it reaches the ground.

For Overture, this could open US transcontinental supersonic services. To the company's aid rode Elon Musk, the man behind the throne in Washington. He suggested that Trump's new administration plans to "get rid of all regulations that make no sense" like FAA regulation 14CFR 91.817, which states that "no person may operate a civil aircraft in the United States at a true flight Mach number greater than 1".

Some cynics might suggest that Musk is more interested in avoiding FAA complaints against SpaceX for the sonic booms generated by the launch of his own Starships.

Of more concern may be that with Trump's denial of climate change, there may not be enough SAF by 2029.

operators to arrange flights for its customers. Blade has partnerships nominally in place with both Wisk and Eve — initially to operate on existing routes and targeting to add 5-10 new markets per year from 2027. It expects to be able to report positive operating earnings some time in 2025.

✈ **Wisk** (founded in 2019) was a joint venture between Boeing and Google founder Larry Page's Kitty Hawk Corp. Boeing took full control in 2023. The company is developing Wisk Gen 6 with a capacity of four passengers (no pilot); a range of 140km and top speed of 190kph; propulsion provided by 12 battery powered propellers, (six tilting and six fixed). Since the absorption as a subsidiary, news flow has been muted (but Boeing has had other problems to hand). Because it is designed as a pilotless vehicle, the company expects certification to be a very lengthy process and it is unlikely to enter service before the end of the decade.

✈ **Zuri** (founded 2017) is a Czech company developing a hybrid-electric VTOL passenger and cargo aircraft. Again targeting a four passenger seating capacity (with one pilot) it is unusual in proposing a 700km range and a cruise speed of up to 350kph. Propulsion involves eight tilting propellers mounted on a high wing and v-shaped tailplane. To get the range, there is a turbine to provide electricity during flight and to charge battery packs. It has apparently only raised \$6m in funding so far — which seems a bit under the odds — founder Michal Illich states it has the advantage of being based in a country with very low employment costs. The company is years away from certification. Illich asserts: "It's too late to start now — it takes too

long. We've been at this for seven years and are only halfway there."

Tesla meets Uber in 3D

Electric vertical takeoff and landing air taxis could offer a green solution to congested ground transport in densely populated areas: emission free, quiet, (hopefully) safe and fast air transport. They might deliver the electrification revolution that Tesla brought to the automobile, combined with the ride sharing transformation from Uber while escaping the congestion of two dimensions.

The sector was given a psychological boost in November when the FAA introduced a Special Federal Aviation Regulation (SFAR) to establish requirements for the safe, efficient integration of eVTOL aircraft into the USA's aviation system. It had to do this because the eVTOLs represent the first really new category of aircraft in 80 years.

A new pilot-training and qualifications rule was needed because existing regulations did not address eVTOLs, which can take off and land vertically like a helicopter and fly like an airplane during cruise flight. The rule provides a comprehensive framework for certifying the initial cadre of powered-lift instructors and pilots.

The SFAR went into effect on 21 January. And then in March the FAA backtracked announcing the temporary suspension of the application of the new rule to allow the provisions to be reviewed by the Donald Trump administration.

The eVTOL participants that have come to the markets have made very similar investor presentations. They each show that their design is the best. They each compare their market rating favourably with their competitors. They each try to show that their

aircraft will be able to operate ride-sharing trips at costs comparable, or better than existing premium ground transportation (and especially Uber).

A comparison of the eVTOL business models for ridesharing with that of Uber is dubious. Uber is generally asset-light — a booking platform for its corpus of independent drivers with their own cars. And its drivers do not need (or have to pay for) the infrastructure. Owning a \$3m aircraft, which needs power to fight gravity, to operate a taxi service at a cost competitive with a road car may be like buying an electric Rolls-Royce Spectre for \$500,000 and accepting rides for the same price as an Uber.

The business model is yet to be proven.



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