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Economic and aviation cycles: Are we at the peak yet?

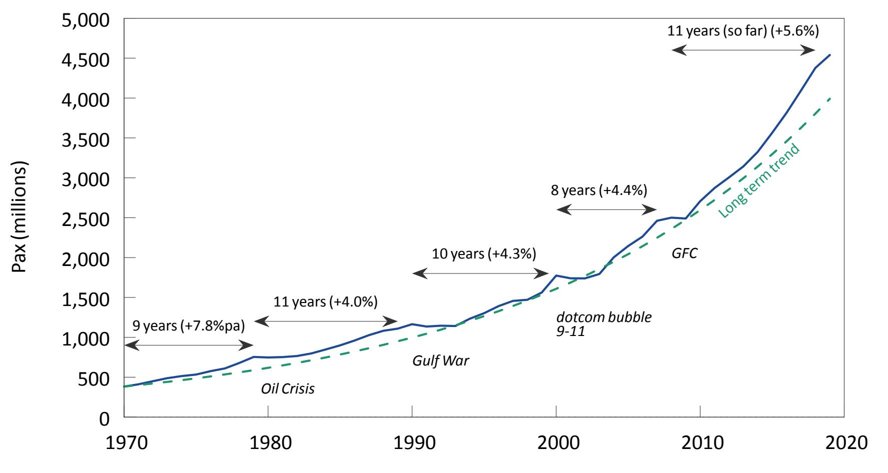
After an unprecedented eleven years of above-trend growth in the airline industry there are signs of demand weakness emerging that might give support to those who think it is time for a slowdown. The IMF in its October *World Economic Outlook* again downgraded its estimate for GDP growth in 2019 — by 30 basis points — to 3.0%, noting that the pace of economic activity remains weak and pointing out that the momentum in manufacturing has fallen to levels not seen since the global financial crisis. An uptick to 3.5% in 2020 is expected, however.

The rise of protectionist attitudes, particularly in the USA, and the trade war with China are likely to mean that the top four economic areas (US, China, Japan and Euro area — which between them account for half of global GDP) will see economic growth moderate further in the medium term. A large part of the organisation's forecast for global economic uptick in 2020 comes from a recovery in emerging markets that had slowed in 2019, notably Brazil and India, or those emerging markets which had been under severe stress (such as Venezuela, Argentina and Iran) which may have bottomed out. It also highlights the severe risks on the downside — and the recent geopolitical tensions in the Gulf between Iran and the USA is a case in point — and that the outlook is "precarious".

Meanwhile, IATA, in its biannual review of airline economic performance, published in December, downgraded its forecasts for annual profits in the industry. It suggests that the industry could end up with an operating profit of $42.5bn (10% lower than its April forecast and representing a margin of 5.1%) down from $45.9bn in 2018 on revenues up by 3% and traffic (in terms of RPK) up by only 4.2%. If so, this would be 30% down from the recent peak level of profitability achieved in 2015. At the net level it is forecasting profits of $25.9bn, a margin of 3% and equivalent to $5.70 per departing passenger.

During 2019 passenger demand moderated. For the past five years industry RPKs had been growing at an annual rate of 7-8%, well above the historic long term trend. In July, the

AIRLINE PASSENGERS AND PEAK-TO-PEAK CYCLES



Source: ICAO, IATA

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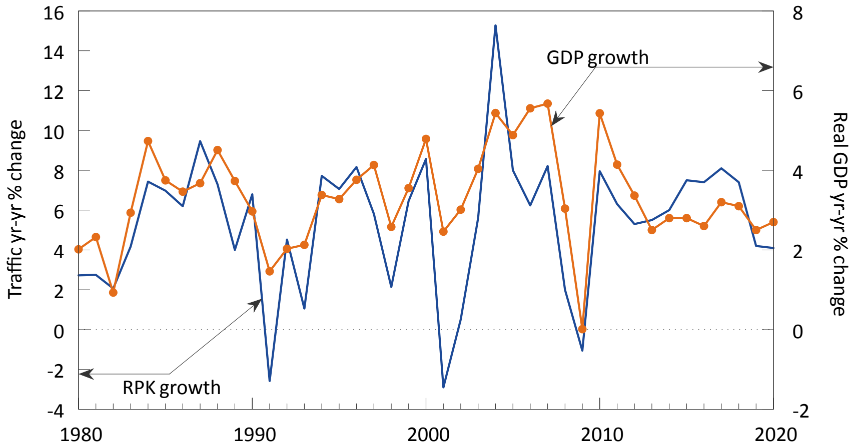
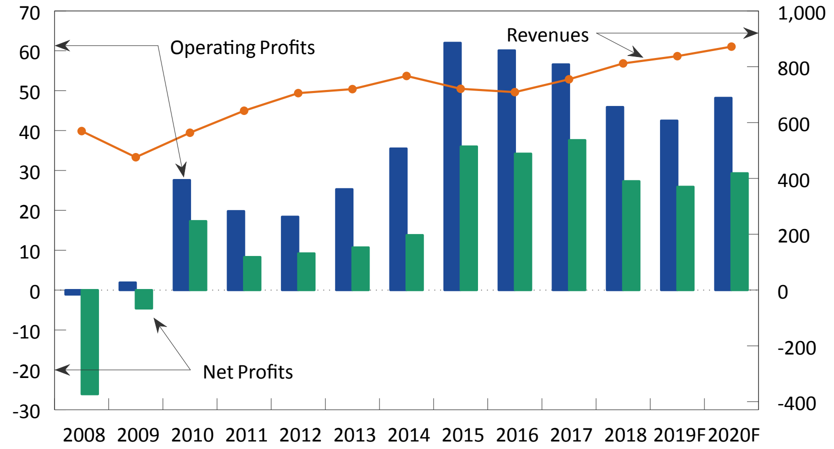
GLOBAL AIRLINE INDUSTRY DEMAND AND GDP



Source: IATA

GLOBAL INDUSTRY PROFITS ($bn)



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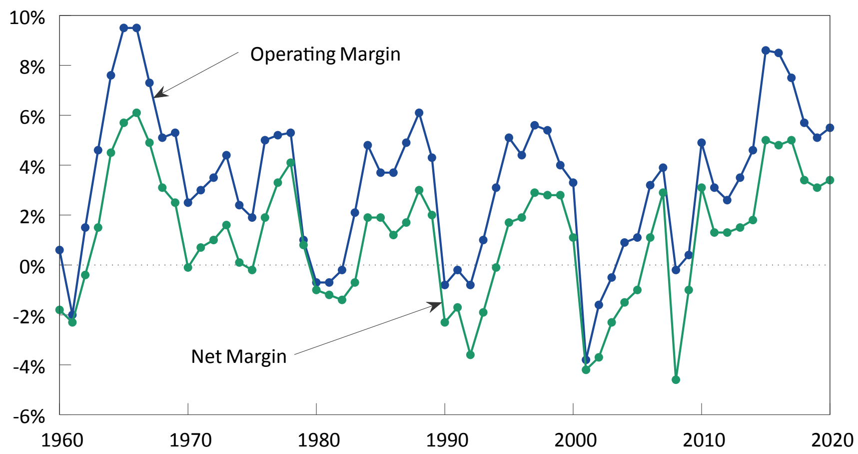
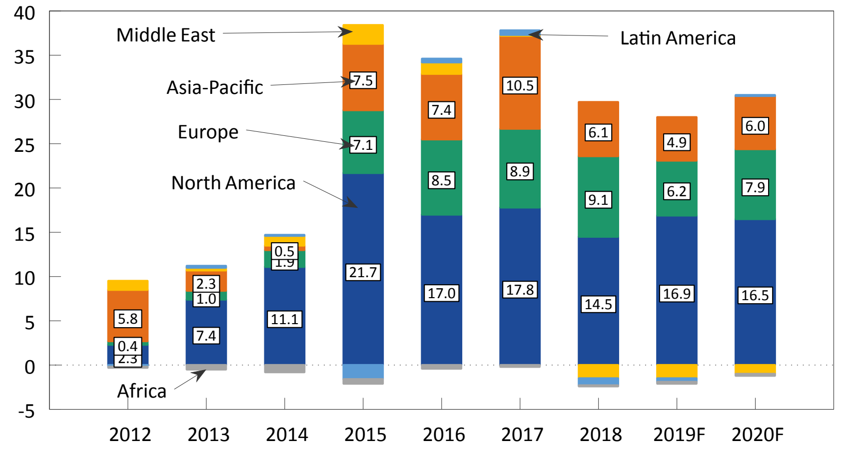
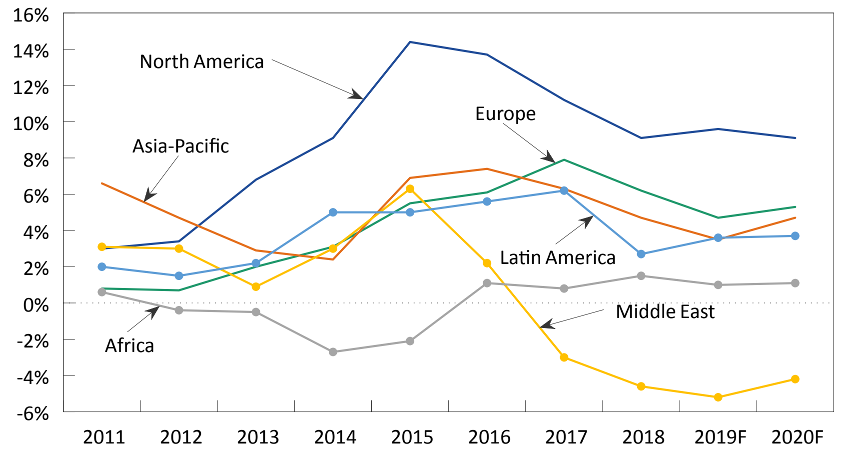
GLOBAL INDUSTRY MARGINS



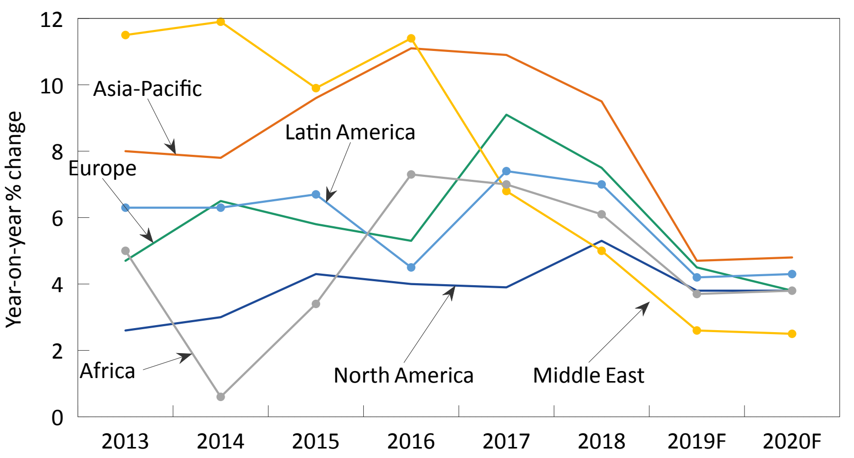
GLOBAL INDUSTRY NET PROFITS BY REGION ($bn)



OPERATING MARGINS BY REGION



TRAFFIC GROWTH BY REGION



northern hemisphere's peak season, the industry registered growth of a just 3.7% (and 2.7% on international services) and since then growth in RPKs has remained muted. But capacity growth has also been a little slow, and IATA is forecasting that global passenger load factors will have risen to a record 82.4% worldwide.

Part of the reason behind this slowdown lies withthe grounding of the 737MAX fleet and the lack of deliveries of new aircraft from Boeing (see following article). Part may be due, particularly in Northern Europe, to the "Greta" effect, increasing awareness of the environmental impact of aviation and the growth of the *flygskam* movement. A large part may be due to reduced consumer confidence. IATA is forecasting a further slowdown in 2020 to growth in RPK of only 4.1%.

Cargo has suffered this year. Total freight traffic in RTKs is expected to be down by 3.3% with cargo yields down by a further 5% year on year.

On a regional basis, there appears to have been a slowdown in growth rates in all areas. With domestic Chinese traffic registering annual growth of "only" 8.5% for the ten months to October, down from 12.5% in 2018, RPK growth among carriers in the Asia Pacific region is expected to halve to an annual 4.5%.

Growth among the Middle East carriers meanwhile has slumped to 2.6%, with the carriers in the region paying their passengers 5% of their revenues at the operating level to fly.

IATA is forecasting resonable levels of profitability for the North American and European airlines but notes that under its forecasts the industry as a whole, with returns on invested capital of only 5.7%, has returned to the normal state of destroying shareholder value.

MAX crisis: Two scenarios

Not quite the nadir for Boeing as we suggested in the last issue. 737 MAX production has now been suspended, the recertification process is still unclear, second quarter 2020 at earliest it seems, and Dennis Muilenburg was sacked as CEO.

Boeing ended 2019 (up to end November) with net orders of just 56 and deliveries of 345 commercial jets. Not that it was a particularly good year for Airbus either: 212 cancellations brought the net order total down to 718, and there were just 715 deliveries up to end-November against an original target of 960 for the year.

The ramifications of the MAX crisis extend far beyond the immediate performance of the two OEMs. There are two basic scenarios (with lots of gradations in between).

Scenario One implicitly underlies the various traffic forecasts made by IATA — that the 737 MAX operational issues are resolved, and production and deliveries resume, at least at some point in 2020. In the medium term the damage to Boeing's reputation is contained, with confidence in the FAA's role in certifying aircraft restored.

Boeing and its insurers will bear the large majority of the costs of the MAX grounding. Airlines and lessors will receive compensation for delivery delays allowing expansion plans to be resumed. Public confidence in the MAX may take some time to come back but, with rebranding and incident-free operations for some years, memories of the MAX accidents and the grounding will fade, as they did with historical problems afflicting the 727, DC-10, etc.

In summary, painful lessons will be learnt but the impact of the 737 MAX grounding will probably not be perceptible in the long-term perspective.

Scenario two is at the opposite extreme. Unable to remedy the MCAS faults to the satisfaction of its customers and the regulatory bodies, Boeing is forced to cancel the MAX programme, which would have nightmarish financial and strategic impacts.

As well as the compensation due relating to the two accidents and delays — $10bn? — the manufacturer would face the prospect of returning deposits and Pre-Delivery Payments (PDPs) taken from orderers (and which are calculated as percentages of the list price not the discounted actual price) plus the costs of cancelling parked MAXes — in total $50bn as a guess. But Boeing, having used most of the debt it has raised over the past year to pay dividends and make share buy-backs, has a weakened balance sheet, in fact negative equity of about $3.8bn as at the end of the third quarter (*Aviation Strategy*, November 2019).

The implication, bizarre as it may seem, is that the US government would have to have to intervene to organise a financial restructuring, maybe splitting Boeing up into component parts. Apart from the military implications for Washington, there is also the boost that this catastrophe would give to the nascent Chinese airframe manufacturing industry.

BOEING ORDERS AND DELIVERIES 2019

	737	747	767	777	787	Total
Orders	68		26	38	111	243
Cancellations	-119			-41	-27	-187
Net orders	-51		26	-3	84	56
Deliveries	121	7	40	40	137	345
Backlog	4,591	17	97	388	569	5,662
Net orders 2018	*580*	*6*	*27*	*48*	*145*	*806*

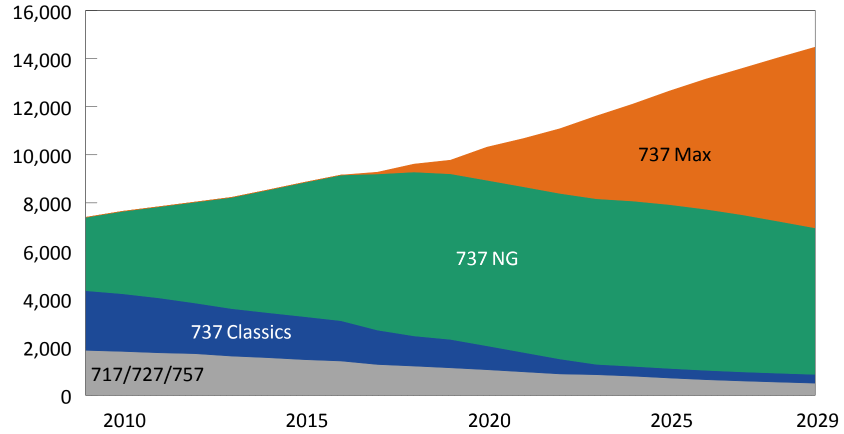
Note: to end November 2019

AIRBUS ORDERS AND DELIVERIES 2019

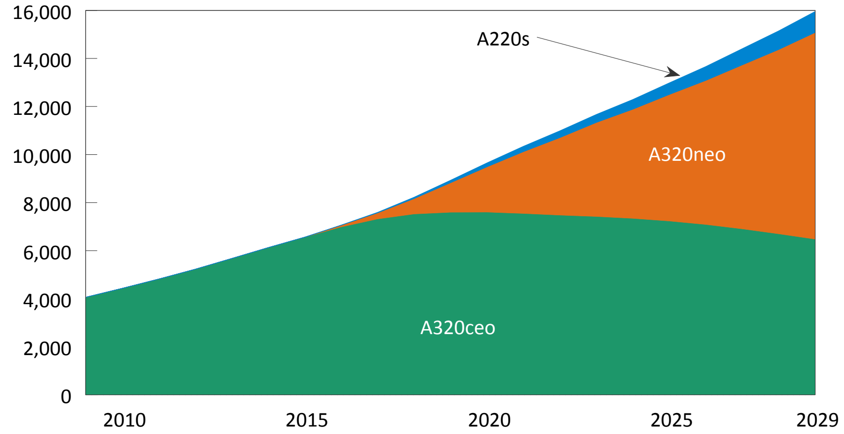
	A220	A320	A330	A350	A380	Total
Orders	12	751	64	113		940
Cancellations	-5	-91	-8	-48	-70	-222
Net orders	7	660	56	65	-70	718
Deliveries	31	537	45	96	6	715
Backlog	432	6,193	306	628	11	7,570
Net orders 2018	*20*	*626*	*49*	*93*	*12*	*800*

Note: to end November 2019

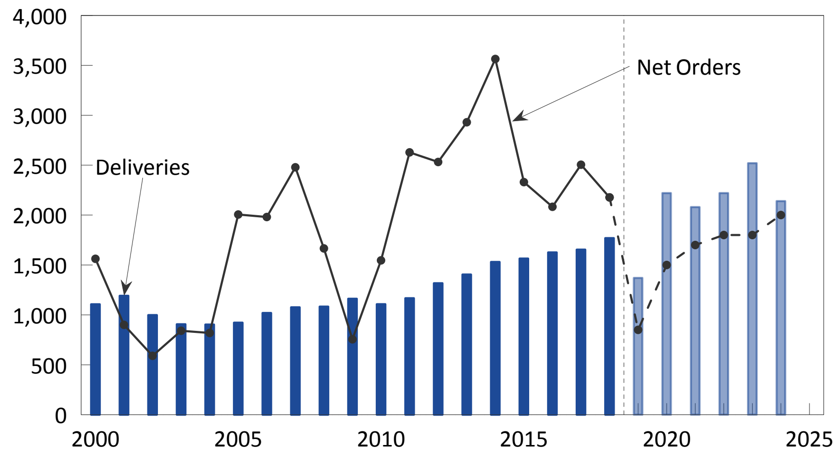
PROJECTED BOEING NARROWBODY FLEET



PROJECTED AIRBUS NARROWBODY FLEET



JET AIRCRAFT ORDERS AND DELIVERIES



Source: ESG Airline Monitor

As for the airline and lessor customers, would they have to worry not only about compensation but also recovering their PDPs? All-Airbus operators might suddenly find themselves in a very favourable position, but how could the industry as a whole achieve its growth plans? According to the projections shown on this page MAXes were expected to account for over half of the operating Boeing narrowbody fleet, and a quarter of the global narrowbody fleet, by 2029.

An all-new Boeing model will take, maybe, ten years to certification, while Airbus does not look as if it can fill the production gap. This means retention of older types in the global fleet, which means, among other things, that carbon emission targets will be much harder to meet.

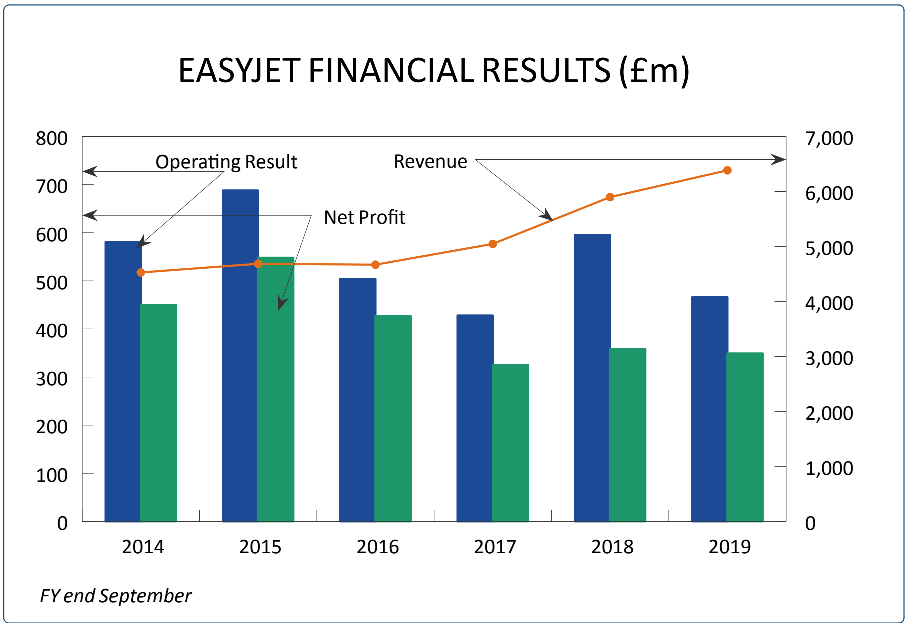
Apologies for this unseasonal speculation. Scenario one is still much more probable than two, but the latter has to be considered.

The evolution of easyJet

EASYJET and Ryanair were both children of wrath. Or at least September 11 2001 transformed the prospects of the two barely-established new entrants. As traffic collapsed, orders were cancelled and traditional carriers teetered, the two manufacturers turned their attention to the new LCCs, suddenly desperate to strike deals.

Both easyJet and Ryanair negotiated and placed mega-orders at hugely discounted unit prices, locking in a long-term critical cost advantage as the purchase contracts included price guarantees that were carried through to future orders. Ryanair choose the maximum seat capacity available — the 189-seat 737-800 — while easyJet eventually opted for the 156-seat A319 rather than the 737-700. The Airbus/Boeing decision was extremely close, and no single factor was decisive, but easyJet went for Airbus, switching from its previous 737-300 fleet policy, bringing an unforeseeable advantage 17 years later. EasyJet management at the time had no precise idea of where the 240 new A319s would operate but there was belief in the operating model, which has generally been justified.

Ryanair has never deviated from its original concept (except maybe with its recent multi-branding experiment — see *Aviation Strategy*, August 2019), and has always been led by Michael O'Leary, sometimes brilliant, usually irascible, sometime amusing, sometimes obnoxious, religiously following his version of the ultra low cost model. EasyJet, on the other hand has tried to move away from the pure LCC model, positioning itself somewhere between the ULCCs and the Legacies, whose short-haul product has become over the years more like easyJet's.



Continuity of top management has been a feature of the Ryanair approach while easyJet has gone through several management regimes — first, under Ray Webster, the architect of easyJet's successful expansion, then under Andrew Harrison when the carrier seemed to lose its way, followed by Carolyn McCall who came from an unlikely media background, and since December 2017 under Johan Lundgren, a Swedish national who was previous Deputy CEO of TUI.

The founder Stelios Haji-Ioannou soon tired of jokey pictures of himself with specs drawn on, and retreated to Monaco from where he berated the underperformance of the airline, which is still 35% owned by himself and close relatives, under Andrew Harrisons's management. He was soothed by the escalation in share price under Carolyn McCall, and has remained (ominously?) quiet about Johan Lundgren's regime.

EasyJet has been polishing its ESG (Environmental and Social Governance) credentials. It measures customer satisfaction (not too good, rated 74% in 2019 against 80% in 2015), on time performance (again down to 75% in 2019 from 80% in 2015), is open about the detailed criteria used to establish directors' remuneration, and is very keen on environmental issues.

In fact easyJet has announced that from December 2019 it will be a zero carbon emissions airline. It has achieved this by by buying carbon offsets from two companies that invest in carbon neutralisation, planting trees among other projects. This will cost easyJet just £25m or 25p per passenger, though this is in addition to the estimated £100m-plus easyJet has to spend on buying carbon credits under the European Emissions Trading Scheme (ETS). Still for a small outlay, easyJet has undoubtedly enhanced its brand.

Branding mysteries

Branding is a curious process, but one that easyJet (and the other easyGroup companies) has always taken very seriously; we turn to some quotations from Lis Blair, Chief Marketing Officer at easyJet, in a recent interview with *Campaign,* the publication for media and advertising types, which summarises easyJet's current positioning — how a LCC markets itself without mentioning price.

"A brand surviving on rational proof-points alone (and predominantly price) in a highly competitive market would surely find itself in a race to the bottom. We needed to elevate the brand from price alone — to create an emotional connection with our customers. To come of age…

"So we set out to appeal on a more emotional level to increase affinity and drive brand consideration — aiming to reawaken a love for travel by taking customers on a flight of imagination.

"To drive this change, we needed to make some subtle but fundamental changes to our advertising, starting with our pan-European brand campaign.

"It was a thing of beauty…. A sense of calm, taking the listener into a dream-like state, instantly evoking that flight of imagination.

'Imagine where we can take you. EasyJet. Europe from £29.99.'

"But I had a hunch. A hypothesis that the price message was superfluous, telling people what they already knew, maybe even holding us back.

"And guess what? It turns out with the price message there, that's all people recall from the ad. When you remove it, other messages are appreciated and remembered. Including value — so we still convey value without talking about price. Low-cost travel is so strongly associated with easyJet that people still take it out as a key message without us even needing to mention it."

The financials

Back from marketing exuberance to some uncreative financials.

In FY2019 (to September 30) easyJet grew capacity by 10.3% to 105.0m seats while passengers booked increased by 8.6% to 96.1m, causing a slight decline in load factor to 91.5%. With unit revenue dipping by 1.8% to £60.8/seat, total revenue rose by 8.3% to £6.4bn.

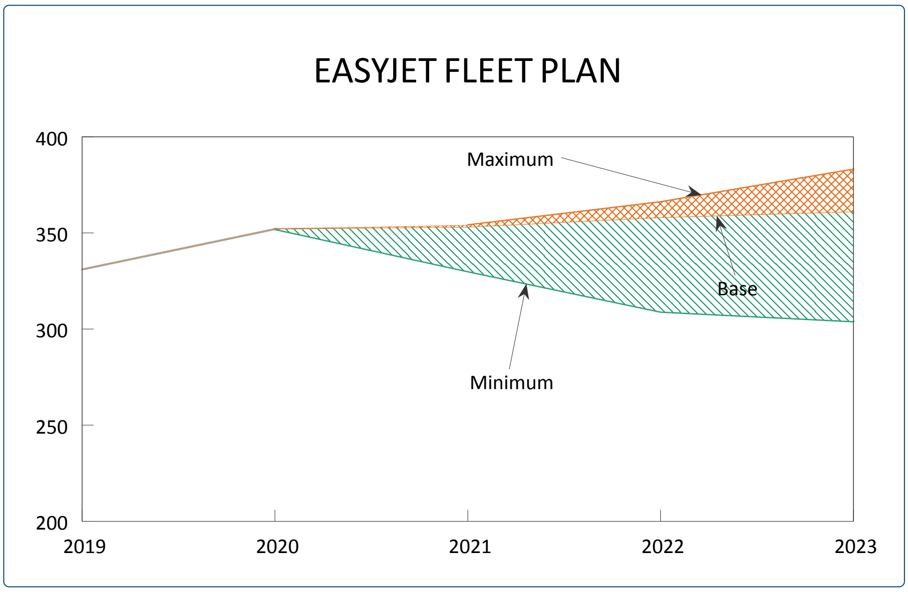
Unit costs rose by 1.6% to £56.7/seat, but would have declined if has not been for an escalation in fuel prices. Total operating costs rose by 11.7% to £5.9bn. To contain costs and reduce the operational problems that afflicted the airline in recent years easyJet has invested in data-based tools to predict and remedy operational problems, crewing issues and ATC delays. These seem to be working as the number of "disruption events" was down by 30% in FY2019 compared to 2018.

Operating profit fell to £466m from £595m in the previous year while net profit after tax was down to £349m from £466m.

The balance sheet remains solid with £8.2bn of assets, including £1.3bn of cash, against total liabilities of £5.2bn, giving shareholders' equity of just under £3bn. Its credit rating is high for an airline, BBB+.

The financial outlook for easyJet is positive in the short/medium term. For FY2020 the Bloomberg consensus is an improvement in operating profit to £494m, up 6%, which may be too cautious if easyJet can seize the opportunity offered by its rivals' MAX problems.

Because of that marginal fleet selection decision made back in 2003 easyJet does not have the 737 MAX headache today. Both Ryanair's and TUI's growth plans are dependent on MAX deliveries resuming in the second quarter of next year, which is



looking increasingly uncertain, and they in the meantime have unproductive capital tied up at Boeing and management attention diverted to negotiating compensation payments. Easyjet has its own problems with Airbus and delays to A321 deliveries, but on nothing like the same scale.

EasyJet's flexible fleet strategy is shown in the chart on the preceding page. Its base plan is to increase the fleet by only 30 units between 2019 and 2023 (though the mix will change with more neos in the fleet). In dire circumstances It could reduce its 2023 fleet by 48 units from the planned 2020 level by retiring aircraft at 16 years, or it could add 31 units by extending leases if the market is better than expected.

Given easyJet's commitment to low capacity growth — 3% planned for FY 2020 — it seems unlikely that it will take advantage to an extension of the MAX crisis by boosting capacity. Its aim is to push unit revenues up, which is the story that it is presenting to investors, but is a strategy that has hardly ever worked for LCCs (see Ryanair comparison below).

EasyJet's network strategy has in recent years concentrated on building capacity at its main bases, including buying slots out of airline bankruptcies (notably, Thomas Cook slots at Gatwick and Bristol for £36m and investing €40m in taking over the leases of 25 A320s and Berlin Tegel slots from Air Berlin). It is aiming to gain increased pricing power from maximising market shares at its bases and boosting frequencies between its bases in preference to adding new points.

The airline is the largest carrier at each of its five most important bases — Gatwick, Tegel, Geneva, Luton and Milan Malpensa — and it is also number one at the next three airports of Nice, Bristol and Basel while achieving second position at Paris CDG and Amsterdam, the global hubs for Air France/KLM. The graph below of easyJet's top 20 routes shows the strong preponderance of connections between its main bases. It also indicates the increasingly business-orientated nature of the network, for which frequency is usually a major demand factor. Only Gatwick-Barcelona and Luton-Nice are predominantly leisure routes, and these are not traditional mass market holiday destinations. VFR still plays an important role in routes like Belfast-Gatwick.

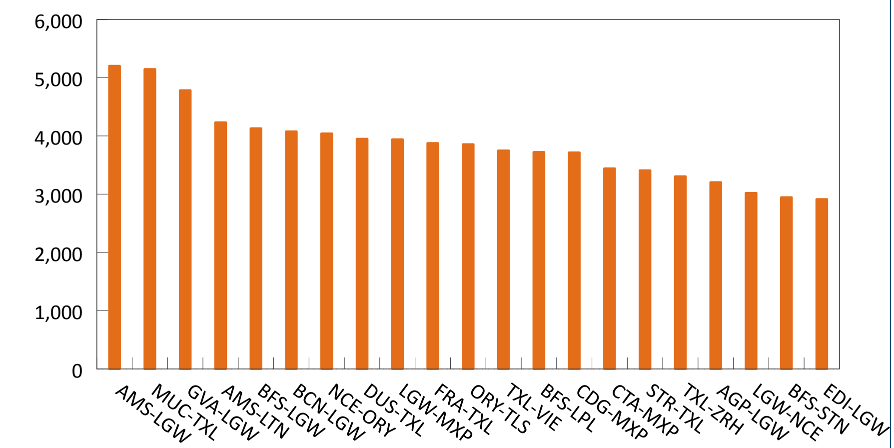
EasyJet has always been strong in yield management, using dynamic pricing techniques in advance of its LCC and Legacy rivals. In the 2019 results presentation management emphasised how the airline is "innovating with data", with a "shift in algorithms towards predictive demand management". What this means is that it has succeeded in pushing up the yield curve for close-to-flight bookings; In the German market, for example, yields in the final week before departure in August 2019 were 37% higher than those in the same month in 2018.

easyJet vs Ryanair

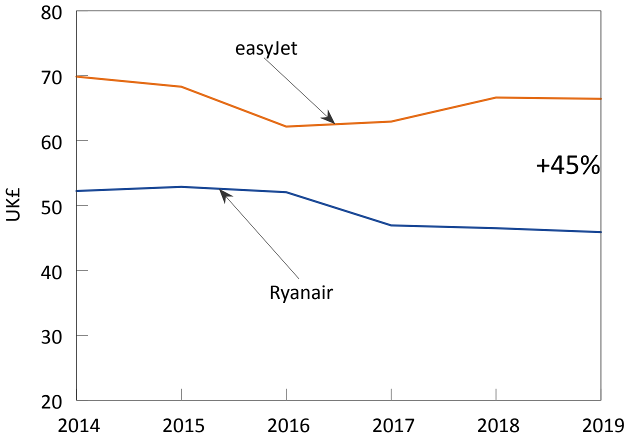
However, there is little evidence as yet that the data innovations have translated into improving yields on a systemwide basis. In FY2019 easyJet's total revenue per passenger at £66.50 was marginally down on 2018; excluding ancillaries, the average fare was down 1.6% to £52.10. Chart 1, the first in a series of six comparing easyJet with Ryanair over FY2014-19, shows easyJet's unit revenue declining by an average of 1.0% pa over this period, though the gap with Ryanair has broadened as its unit revenues have fallen by 2.6% pa. In 2019 easyJet unit revenues were 45% above those of Ryanair.

Unit costs tell a very different story. Although there was a slight convergence on 2019, easyJet's operating costs, excluding fuel, were 74% higher than Ryanair's. This presumably was a factor behind the decision to recruit Peter Bellew, Ryanair's COO. Bellew's appointment was highlighted in the results presentation in October but he has been trapped in a law suit alleging breach of contract, with Ryanair attempting to block his

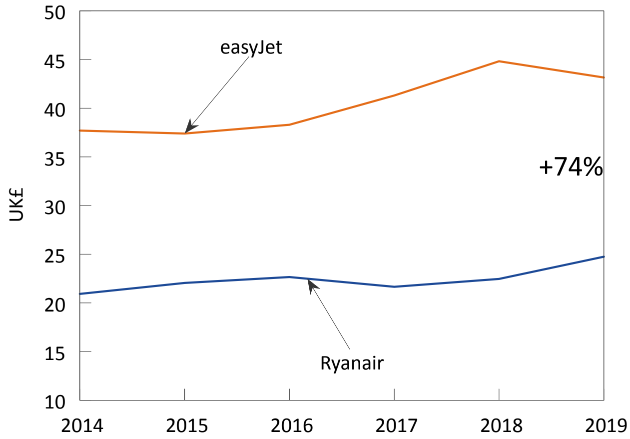
EASYJET: TOP 20 ROUTES BY FLIGHTS



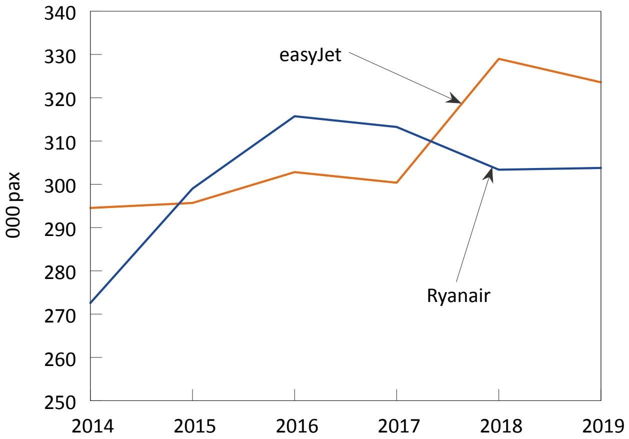
TOTAL REVENUE PER PASSENGER



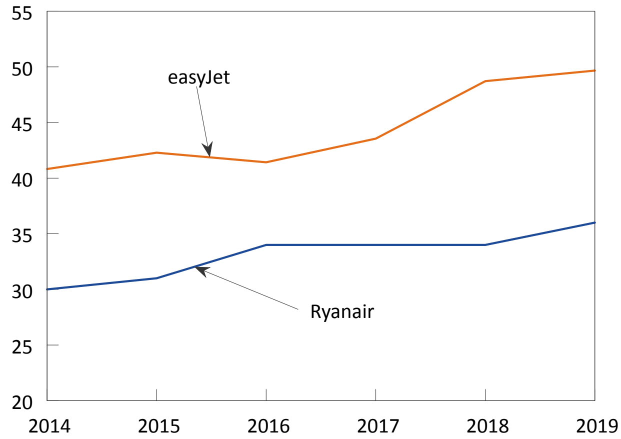
OPERATING COSTS PER SEAT EX-FUEL



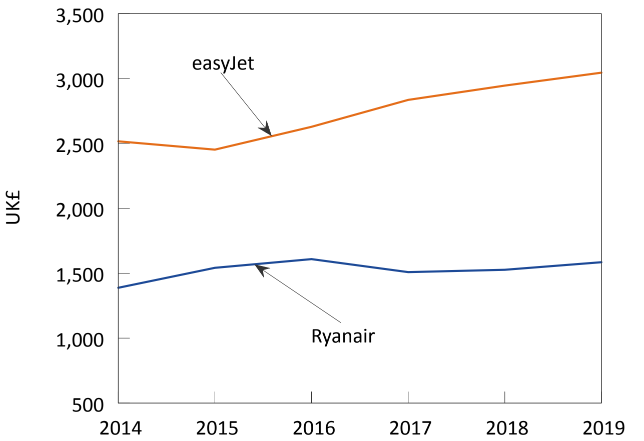
PASSENGERS PER AIRCRAFT PER YEAR



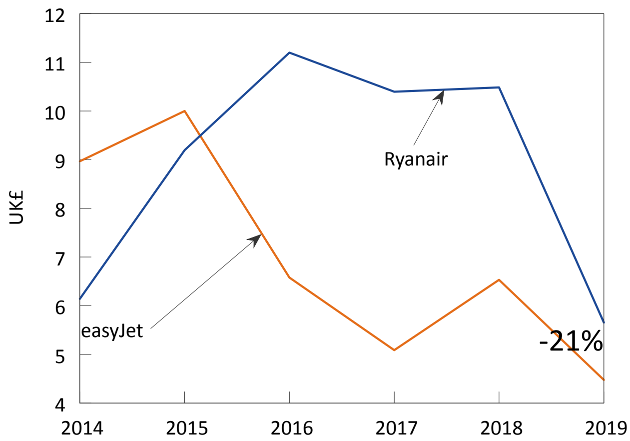
EMPLOYEES PER AIRCRAFT



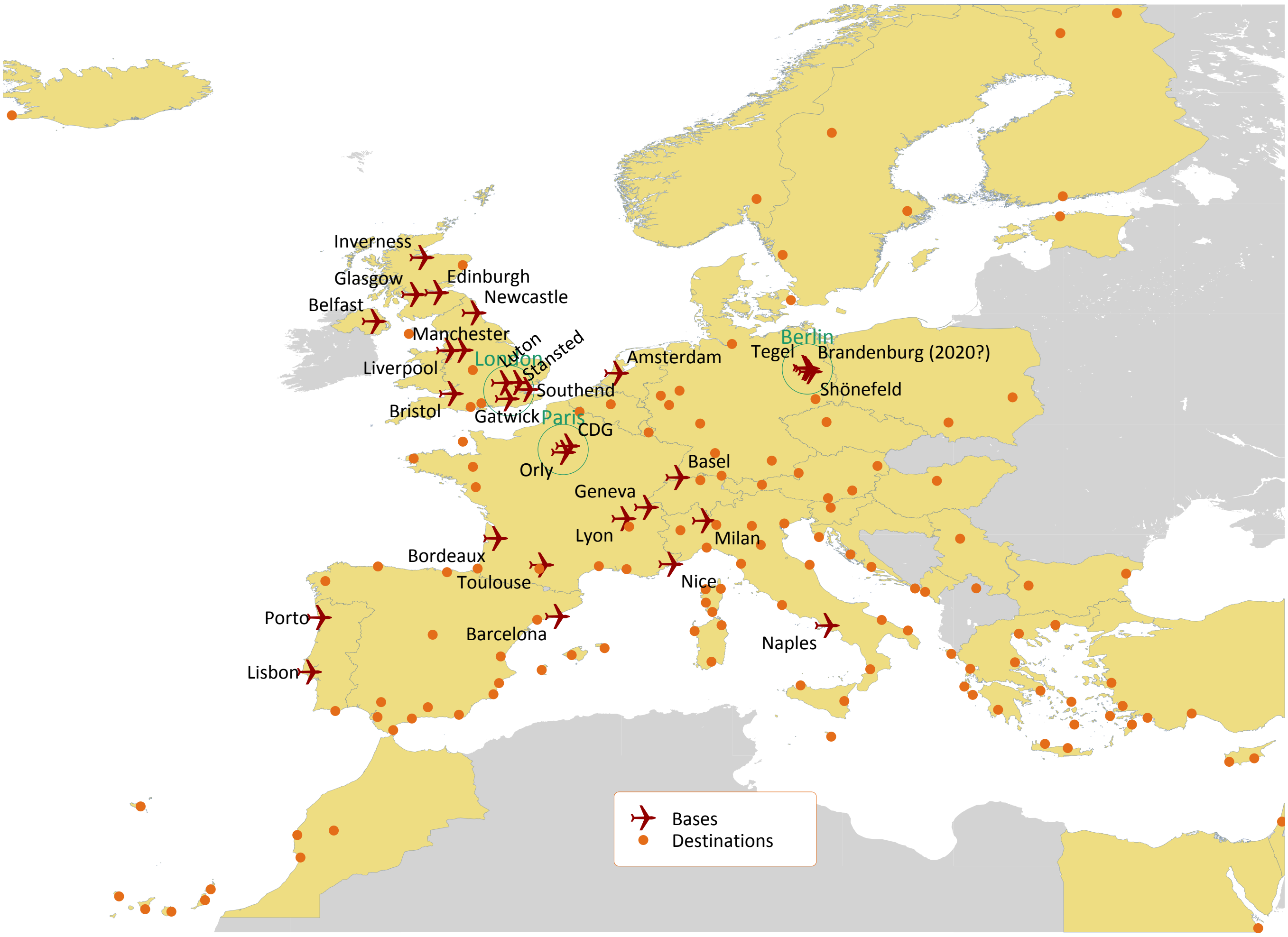
AIRPORT AND HANDLING COSTS PER SECTOR



PRE-TAX PROFIT PER PASSENGER



EASYJET BASES AND DESTINATIONS



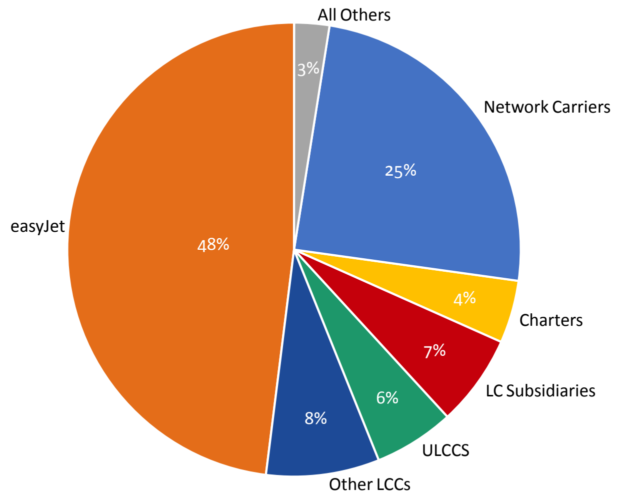
move to a rival airline. Just before Christmas an Irish court found that the non-compete clauses of Bellow's employment contract were invalid, as the terms were too broad, but this is not the end of this painful tale as Ryanair has launched an appeal.

In terms of fleet operational efficiencies easyJet can claim to be ahead of Ryanair, as illustrated by the simple measure of passengers per aircraft: easyJet now carries 7% more than Ryanair. Load factors for both carriers are extremely high — 92% for easyJet and 95% for Ryanair — but easyJet achieves a much higher utilisation — 10.9 block hours/day compared to Ryanair's 9.0 hours. EasyJet's focus on building frequencies between its bases has brought scheduling benefits which are reflected in the higher aircraft utilisation, counterbalancing the effect of longer turn times at congested airports. Also, easyJet has been increasing its average seat capacity — as it has shifted from A319s to A320/21 neos. It now averages 175 seats per aircraft and the addition of more neos will push the average close to Ryanair's 189 by 2023.

Interestingly, in the course of the court case, Bellow made the point that many of Ryanair's cost strategies could not be transferred to easyJet or other carriers as they were unique to Ryanair. Graphs 4 and 5 illustrate cost/efficiency elements that are fixed in the two carriers' models. EasyJet evidently needs more employees to deliver its service than Ryanair — in 2019 about 50 employees per aircraft against Ryanair's 36. The focus on primary airports and the fact that easyJet does not have the opportunity to negotiate volume-based discounts at its airports (Gatwick vs Stansted) results in a major difference — 150% higher for easyJet — in average airport/handling charges per turn.

Finally a reminder that, in terms

EASYJET NETWORK: COMPETITOR PROFILE



of the bottom line, Ryanair is more profitable than easyJet — by 26% on a pre-tax profit per passenger basis in 2019 — though the gap between the two carriers has narrowed as both carriers' profitability has declined in recent years.

The competition

Comparison with brutally efficient Ryanair is a check on how the two original European LCCs have diverged specifically in cost terms. But easyJet, as emphasised above has moved away from pure price competition. The pie chart below encapsulates easyJet's direct competition — seat capacity by airline type on easyJet's network (admittedly a narrow definition as it only covers airport to airport markets as opposed to city to city).

Nevertheless, the analysis is illuminating. In its own network market easyJet provides just under half of seat capacity and all other LCCs another 20%, but ULCCs, ie Ryanair and to a lesser extent Wizzair, only account for 6%, the rest being the likes of Eurowings, Transavia, Norwegian, Vueling and Jet2.

Network or Legacy carriers represent by some margin the biggest competitor group — 25 % of seat capacity on easyJet routes. This breaks down into: Air France/KLM, 10%, reflecting easyJet's number two position at CDG, Orly and Schiphol; Lufthansa Group, 6%; IAG, 4%, which understates the competition between Heathrow and Gatwick services; and other smaller flag-carriers, 5%.

The direct competition from charter/AIT airlines was limited to about 4% of easyJet's network in 2018 when Thomas Cook/Condor and TUI each accounted for roughly half of this share.

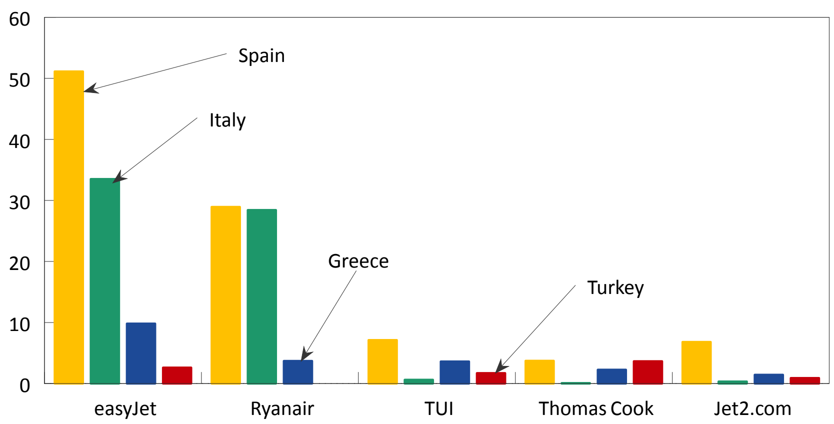
Re-inventing AIT

Following the demise of Thomas Cook easyJet has decided to make a major expansion into Air Inclusive Tours (AITs). Why does it think that it can succeed in this sector where so many others have failed, and which has been written off by its LCC competitors?

The company appears to be adapting the IT model to the 21st century. Firstly, it is offering maximum flexibility, giving vacationers the opportunity to construct their own trips and hotel stays around their own timeframes. It can do this simply because of the frequency and breadth of its schedule. To illustrate: the graph below shows the London to Mediterranean country destinations in 2018 when Thomas Cook was still in business. The volume of easyJet

LONDON TO MEDITERRANEAN MARKETS:

AVERAGE RETURN FLIGHTS PER DAY



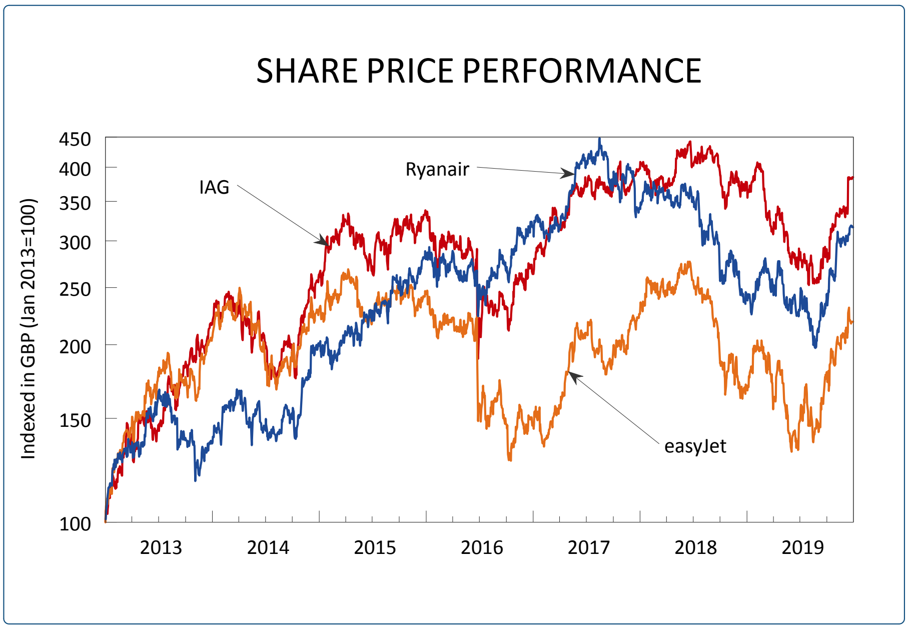
Note: Flights from all London airports; based on 2018 schedules flights dwarf those of the charter/AIT companies — it can offer 3-4 flight per day in summer whereas the charter carriers might only have only 3-4 a week. EasyJet also has the edge on Ryanair which has retreated from the Ryanair Holidays product it introduced three years ago and is much larger, in this market, than the package holiday specialist Jet2.

Second, the scale of its operation will, easyJet claims, enable it to negotiate attractive hotel room prices and short cancellation conditions. It will minimise on-site administration costs by using only hotels that are 4 or 5 star rated by TripAdvisor (though seasoned travellers are justifiably sceptical about some of these ratings).

Third, the technology used will be "best in class". Certainly, the website (www.easyjet.com/holidays) does appear to be very clear, flexible and user-friendly.

One problem easyJet may have is moving the model into the German market. Unlike the UK and Scandinavia where internet holiday booking has become the norm, Germany is highly traditional, still using high street travel agencies and printed brochures (only 13% of TUI's German bookings are made online). A large part of the reason is German retail law which is designed to protect local shops — holidays have to offered at the same price online as on the high street.

In total easyJet estimates its market opportunity to be the 20m passengers who fly easyJet for a holiday and book accommodation elsewhere. This is essentially ancillary revenue for easyJet — it will be attaching hotel rooms to existing flight schedules not changing schedules to accommodate hotel demand — and the impact on operating profit may be relatively modest. Analysts at Bernstein estimate a £30m accretive potential, which compares to 2019 EBIT of £466m. Johan Lundgren has promised transparency for this new enterprise which will have it own specialised management and P&L.



Longer term speculation

The obvious path for easyJet to follow is the one that it is currently on — refining its position between the ULCCs and the Legacies, growing capacity conservatively and producing reasonable but not industry-leading profit margins. The persistent problem for easyJet it that it has tended to underperform both Ryanair and IAG in terms of the stockmarket — see chart above.

There might be a radical opportunity — take advantage of a possible collapse of Norwegian by taking over selected long-haul routes at Gatwick, using A321LRs. It has already experimented with short/long haul connection through its Worldwide by easyJet product offering assisted self-connections at its major bases, although Worldwide did not get a mention in the FY 2019 presentation. But in an environmentally-conscious era, easyJet might have a unique proposition — 80% of aviation carbon emissions come from just 20% of the global fleet, mostly long-haul aircraft; easyJet could not only market its zero emission credentials but also promote the fact that its high-density long-haul would drastically cut emissions per passenger.

LATAM Airlines: Rewriting Alliance Strategies

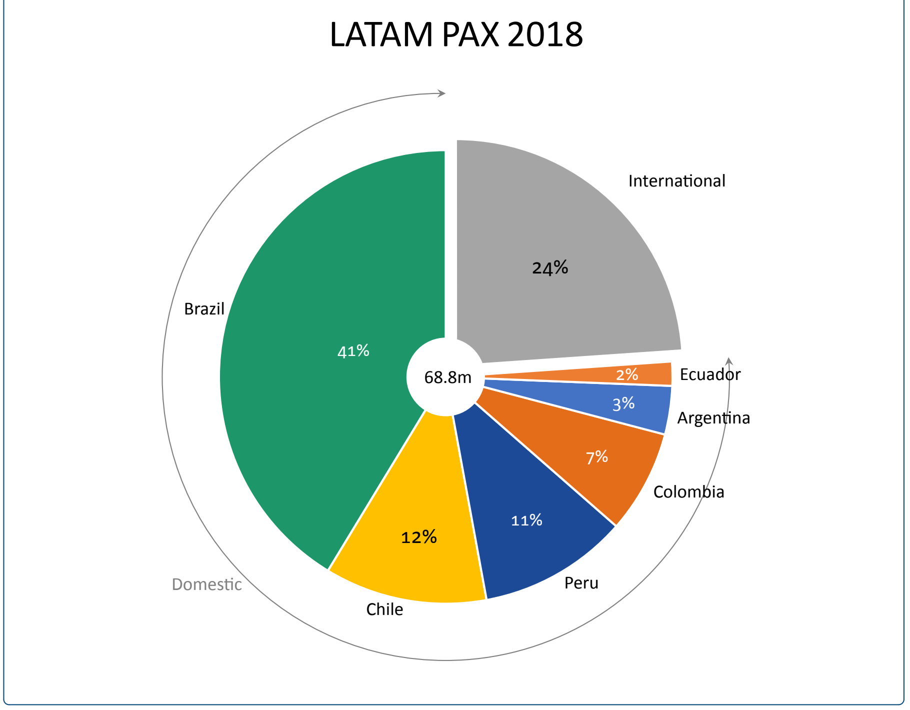
"IT WAS an offer we couldn't refuse." So said LATAM's outgoing CEO Enrique Cueto when remarking on the approach by Delta to take a 20% stake, remove some embarassingly unwanted A350s and persuade South America's largest airline to switch alliance from oneworld to SkyTeam.

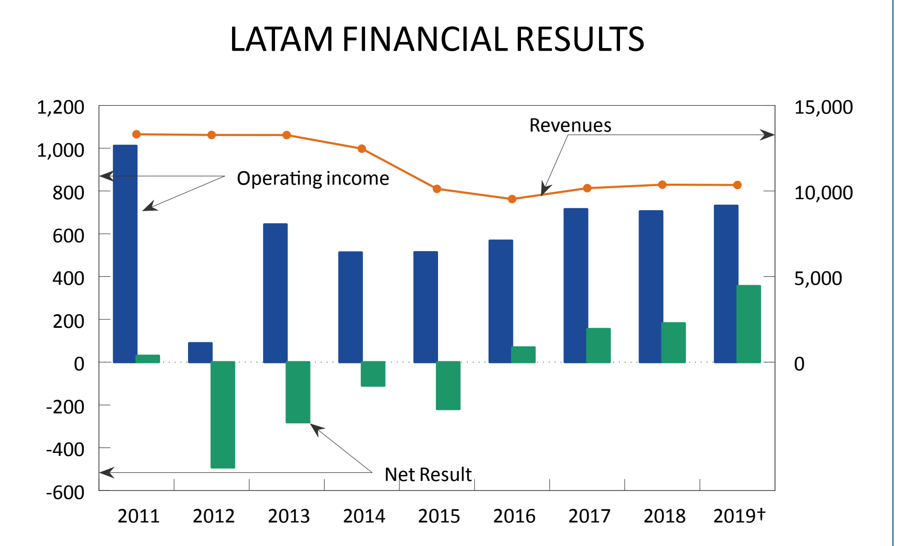
The previous strategy had been stymied by the courts in Chile: LATAM had passed all the other hurdles to enable it to set up an immunised JV operation with American Airlines to the US and with Iberia and British Airways on the South Atlantic. But the Chilean Supreme Court, on appeals from Chilean tourism groups and consumer associations against regulatory approval from the competition authority, was not convinced by the arguments of double marginalisation which underpin the US DoT approval of joint ventures. It stated that the proposed joint ventures would result in the airlines acquiring a market position that would be "difficult to challenge" in an industry that already has high barriers to entry. This led to a major rethink of strategy.

LATAM Airlines is the largest airline group in South America. It was formed from the merger between LAN Chile and its Brazilian rival TAM Airlines in 2012, and operates to 143 destinations in 26 countries with a fleet of 330 aircraft, carrying around 70m passengers a year.

It has a third of the market among airlines of the South American continent in terms of seats (and a quarter in terms of the number of flights). It it twice the size of its nearest competitors, GOL Linhas Aéreas Inteligentes, Avianca, Azul and Aerolíneas Argentinas.

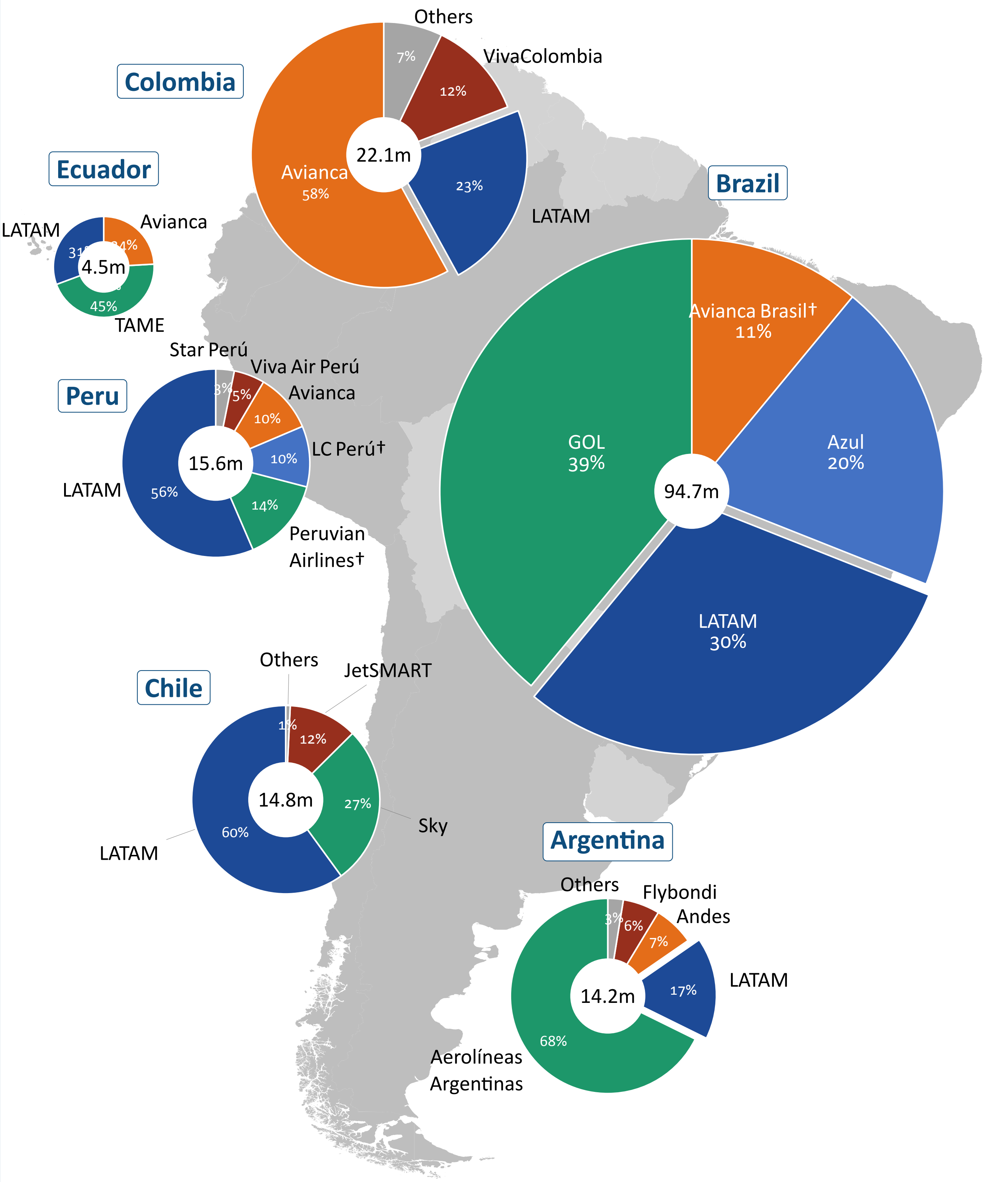
Three quarters of its traffic is carried on domestic routes (see chart above), a little over half of which is accounted for by Brazil — the largest market in the region — in which it is





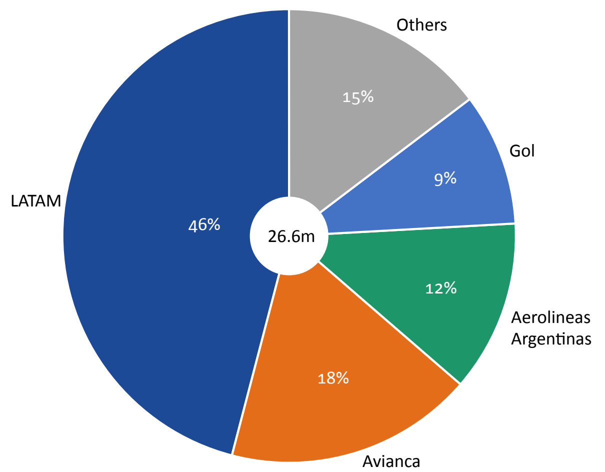
Note: † trailing twelve months to September 2019. IFRS16 implemented Jan 2019.

SOUTH AMERICA: DOMESTIC MARKET PASSENGERS



Notes: †ceased operations: Avianca Brasil, Jun 2019; LC Perú, Dec 2018, Peruvian Airlines, Oct 2019

INTRA SOUTH AMERICA SEATS 2018



the second largest player with a 30% market share in 2018 (before the failure of Avianca Brasil in June 2019). The other principal domestic markets — which the group combines in its reports as the domestic markets of Spanish Speaking Countries (SSC) — include Chile and Peru (where it is the dominant player with 60% and 56% of the market respectively), Colombia, Argentina and Ecuador.

About 24% of its traffic is carried on international routes (two thirds of which we estimate to be within South America, where it has nearly half the market) from the main capital cities of Santiago, São Paulo, Buenos Aires, Lima and Bogotà.

Following the merger, the erstwhile economic buoyancy in the region evaporated. Brazil fell into a deep recession in 2015 and 2016 with real GDP declines of 3.5% in each year (see table below), while from 2017 the region was badly impacted by the rise of US protectionism, the US dollar and decline in local currencies. The Brazilian economy has been recovering, but growth rates are well below levels in the 2000s. Argentina has also slipped into a severe recession with hyperinflation producing a significant devaluation of the Argentinian peso. And then towards the end of 2019, civil unrest in Chile, originating from an increase in public transport fares, has undermined confidence in the Chilean peso and provoked fears for the direction of that country's economy.

Despite this background LATAM has done well. It went through a severe cost cutting and rationalisation programme after the merger. It cut domestic operations in Brazil by a quarter (in ASK terms) between 2012 and 2017, but saw load factors rise by nine percentage points to 82.7%. In the SSC domestic markets over the same period it increased capacity by an average annual 5% with demand climbing by 6% and load factors improving by 3.4 percentage points to 82%. International operations grew at a slower rate of 3% a year, but here too load factors grew by two percentage points to 84.3%. Group revenues have fallen by 20% from the peak $13.3bn in 2011.

While this restructuring led to some deep losses at the net level — the Group lost a total of $1.1bn between 2012 and 2015 — LATAM in the last four years has been generating modestly good operating margins of between 5% and 7% and gradually improving net profits: for the rolling twelve months to end September 2019 it reported an operating

SOUTH AMERICA AND ECONOMICS

	2018				Real GDP Growth (%ch)							
	GDP ($bn)	Population (m)	GDP per capita (PPP)	Trips per capita	2015	2016	2017	2018	2019e	2020e	2021e	2022e
Argentina	519	44.6	20,551	0.7	2.7	-2.1	2.7	-2.5	-3.1	-1.3	1.4	2.3
Brazil	1,868	208.5	16,146	0.6	-3.6	-3.3	1.1	1.1	0.9	2.0	2.4	2.4
Chile	298	18.8	25,700	1.3	2.3	1.7	1.3	4.0	2.5	3.0	3.2	3.3
Colombia	331	49.8	14,936	0.8	3.0	2.1	1.4	2.6	3.4	3.6	3.7	3.8
Ecuador	108	17.0	11,760	0.5	0.1	-1.2	2.4	1.4	-0.5	0.5	1.6	2.7
Peru	225	32.2	14,242	0.8	3.3	4.0	2.5	4.0	2.6	3.6	4.0	4.0

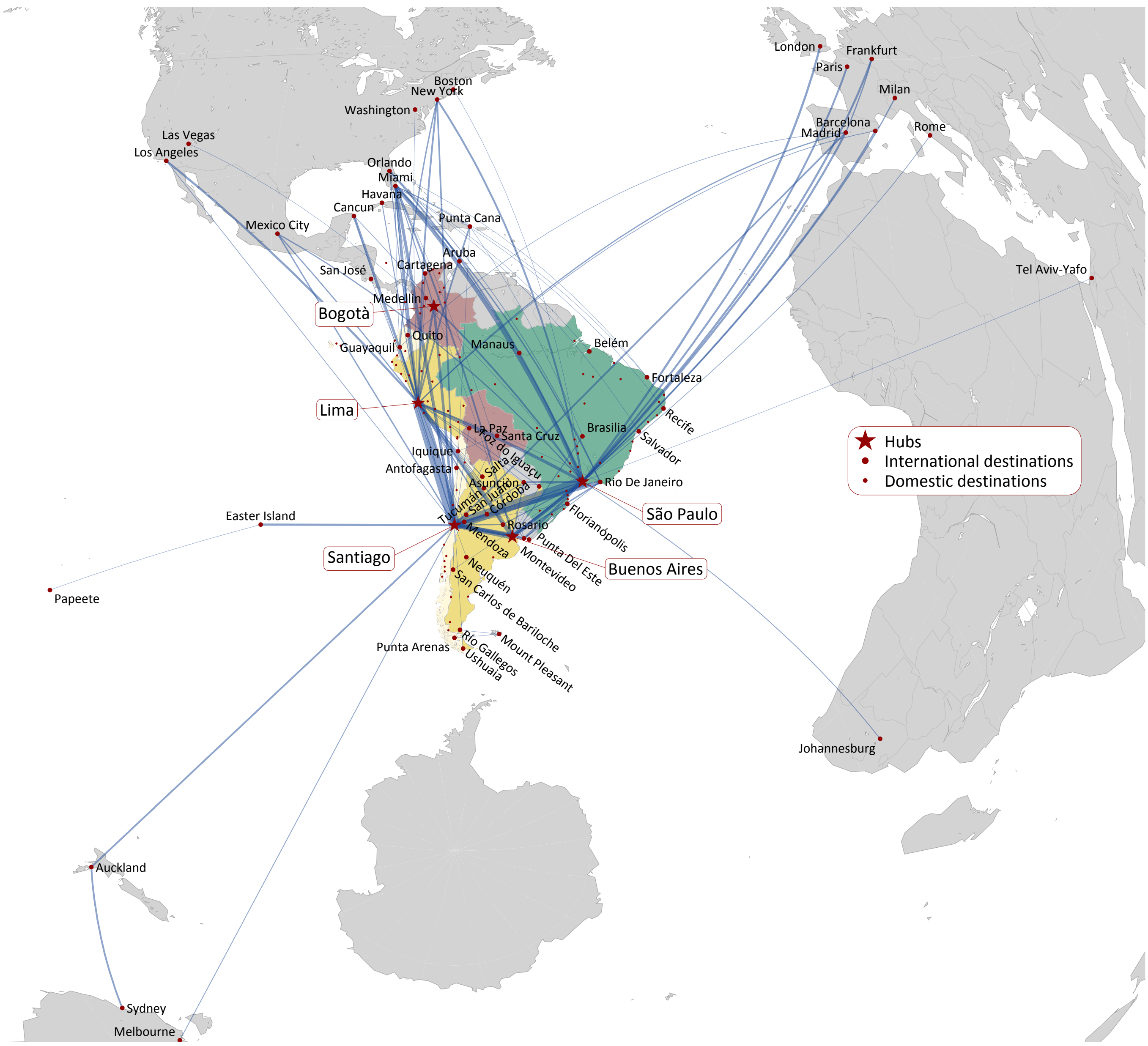
Source: IMF

margin of 7.1% and a net income of $356m (a margin of 3.4%) — the best performance since the merger.

One of the reasons behind this is that the structural reforms it put in place to generate synergies from the merger seem to be working. In 2018 it finalised a massive IT undertaking to coordinate all the reservation and ticketing systems across the group. All operating subsidiaries now work under the LATAM Airlines brand and under the "LA" IATA code (except for LATAM Brasil which still for the moment uses TAM's "JJ" code for flights to the USA). It has successfully introduced a simple four category pricing structure with various levels of unbundling (to allow passengers to pay for what they want) to enable it to compete more effectively with the incursion of ULCCs into the market.

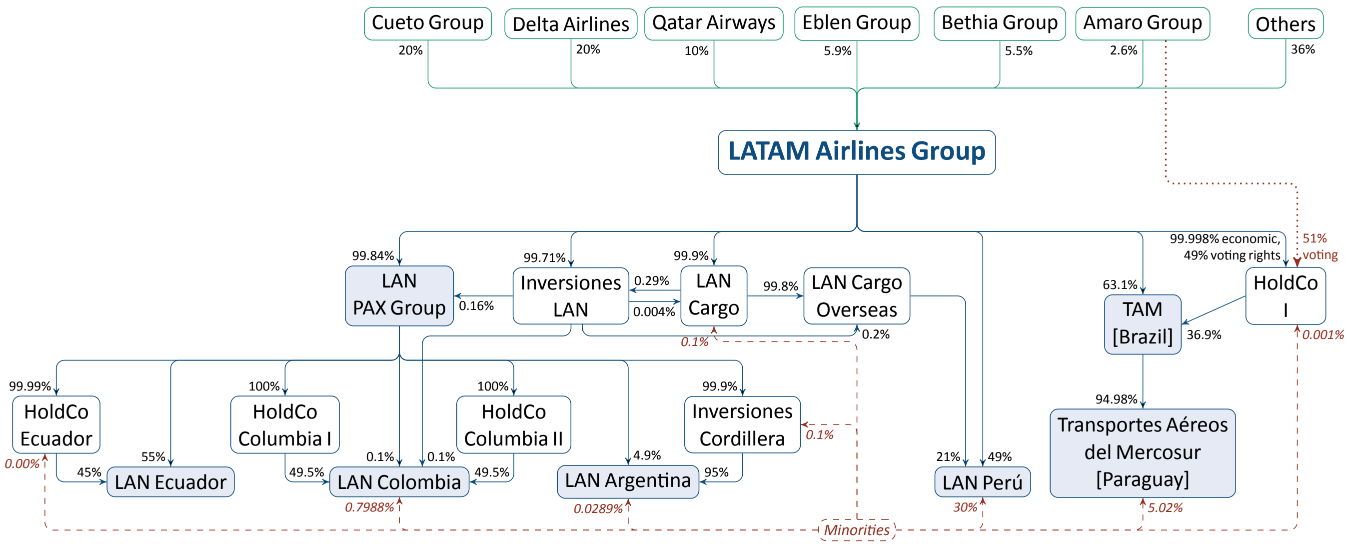
One of the other reasons for recent good performance is consolidation in the region — through airline failures. Avianca Brasil (which had 11% of the Brazilian domestic mar-

LATAM ROUTE MAP



Notes: equidistant map projection based on Santiago (great circle routes appear as straight lines); thickness of lines proportional to number of seats.

LATAM AIRLINES CORPORATE STRUCTURE (Simplified)



LATAM FLEET PROFILE

	At year-end:	2015	2016	2017	2018	2019E	2020E	2021E	2022E
	Passenger aircraft								
narrowbody	A319-100	50	48	46	46	46	41	41	41
	A320-200	154	146	126	126	136	138	134	138
	A320neo		2	4	4	13	18	24	29
	A321-200	36	47	47	49	49	49	49	49
	A321neo						4	9	13
	Total narrowbody	**240**	**243**	**223**	**225**	**244**	**250**	**257**	**270**
widebody	A330-200	10							
	767-300	38	37	36	35	31	29	28	28
	A350-900	1	7	5	7	8	10	9	9
	777-300ER	10	10	10	10	10	10	10	10
	787-8	10	10	10	10	10	10	10	10
	787-9	7	12	14	14	16	18	20	20
	Total widebody	**76**	**76**	**75**	**76**	**75**	**77**	**77**	**77**
	Cargo aircraft								
	777-200F	3	2	2					
	767-300F	8	8	8	9	11	11	11	11
	Total cargo	**11**	**10**	**10**	**9**	**11**	**11**	**11**	**11**
	OPERATING FLEET	**327**	**329**	**308**	**310**	**330**	**338**	**345**	**358**
	Aircraft leased out								
	A320-200			5	5	5	5	5	5
	A350-900			2	2	3	1		
	777-200F	1							
	767-300F	3	3	1	1	1	1	1	1
	Total subleases	**4**	**3**	**8**	**8**	**9**	**7**	**6**	**6**
	TOTAL FLEET	**331**	**332**	**316**	**318**	**339**	**345**	**351**	**364**

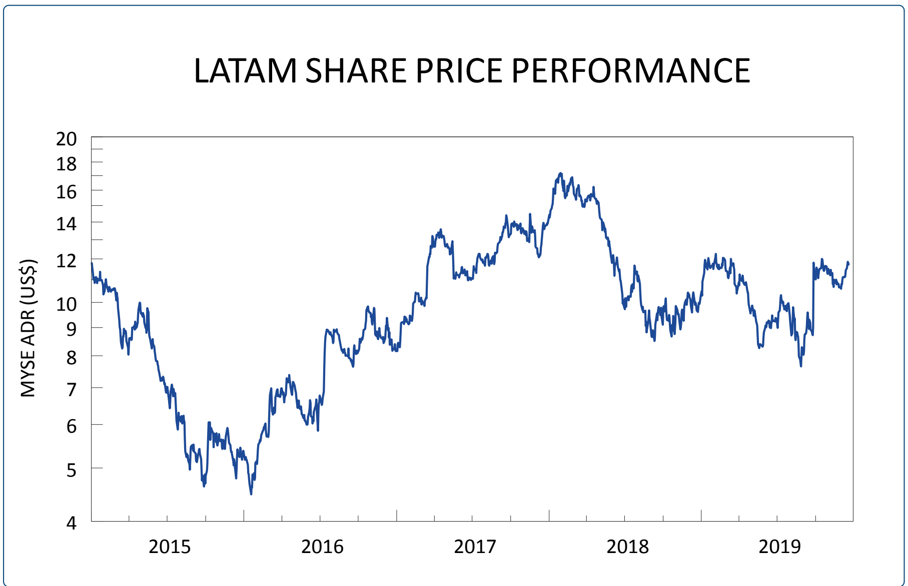
Source: LATAM Airlines Group.
Fleet plan excludes the Airbus A350 aircraft to be assigned to Delta

ket) fell into cash flow difficulties and finally expired in June 2019: in the six months to end September LATAM saw unit revenues in Brazil jump by 20% year on year. In Peru two carriers with 24% of the domestic market between them went out of business — LC Perú in December 2018 and Peruvian Airlines in October 2019.

Delta to the rescue

At the time of the merger between LAN and TAM the former had been in the oneworld alliance, the latter in SkyTeam. The new group decided to align with oneworld as a natural fit: cultural links with Iberia and Spain for the SSC in LATAM's portfolio (and weakness for Iberia into Brazil); good fit with American, the largest player in South America among the US carriers, with excellent links through its major hub in Miami.

When the Chilean Supreme Court denied the approval of a joint business agreement (particularly with American) the Group may have considered going ahead with the JV but excluding the LAN Chile passen-



ger operation, as every other country concerned had approved the JV, but this would have led to a significant level of complexity. Not that LATAM is unused to the idea of complexity (see chart on the previous page).

Strategically for Delta it is an excellent move. They offered a full joint business deal between South America on routes into the USA, $350m assistance in the cost of moving from the oneworld alliance, to acquire four A350s from LATAM and assume LATAM's commitment to acquire 10 additional aircraft that LATAM has on order for delivery from 2020; and to cement the deal a promise to acquire 20% of the LATAM equity (for c$1.9bn) through a public tender on the open market. For this they get route access into the one remaining continent where its presence was weak.

The public tender offer closed on 26th December 2019 — successfully. Delta now controls 20% of the share capital of the LATAM Airlines Group, while the Ceuta Group (the former controlling shareholders of LAN) have sold down some of their stake to an equal 20%.

It will be interesting to see if the new ownership causes a problem for Qatar Airways who bought in a 10% stake in LATAM as part of its strategy of investing in oneworld airlines — probably not.

The Amaro Group (former controlling shareholders of TAM Airlines) have gradually sold down their interest, and it looks as if the Brazilian family now only own 2.6% of the shares. Their presence in the ownership structure had been essential. At the time of the original merger, Brazil had a policy that a Brazilian airline could have no more than 20% foreign ownership, and the deal was structured so that they had 80% of the voting rights in the LATAM subsidiary (HoldCo I) that assumed the ownership of TAM Airlines. Brazil subsequently revised its laws to allow up to 49% foreign ownership and then in the last year both removed foreign ownership restrictions entirely (in the hope of keeping Avianca Brasil alive), ratified an open-skies agreement with the USA, and intiated full open-skies agreements with other members of the Mercosur trading bloc.

However, this does mean a complete shift in alliances in the region. Delta will be selling its stake in GOL and will probably tell Air France-KLM to sever its links with GOL (including its shareholding and abandoning an idea of a join AFKL-GOL hub in Recife). This may leave GOL, the second largest player on the continent open to a link with either IAG/American (oneworld) or United/Lufthansa (Star Alliance) — except that United has recently taken effective control of Avianca. But then IAG recently announced an agreed takeover of Air Europa, while Azul's stake in TAP Air Portugal is rumoured to be in doubt.

The LATAM development may have a couple of more general implications. First, Global Branded Alliances (GBAs), offering mainly marketing and some operational cooperation, are vulnerable to defections by important regional powers, if another major carrier can offer the huge benefit of an antitrust immunised agreement. Second, no alliance, even if bonded with equity, is immutable in the long term.

Virgin Australia = (Velocity + Domestic) – (International + Tiger)

VIRGIN Australia, Australia's second airline, has been pursuing for the past ten years the aim of establishing itself as a genuinely effective competitor to Qantas. It hasn't found this journey particularly profitable.

Since the global financial crisis, the airline industry has enjoyed a strong uptrend and reasonable levels of profits on a global basis, but Virgin Australia has managed to lose a total of A$2bn (US$1.5bn) at the net level since 2012.

Even at the operating level, only its domestic operations and its loyalty programme have produced positive results: its low cost subsidiary Tigerair Australia, and the international operations have been heavily loss-making.

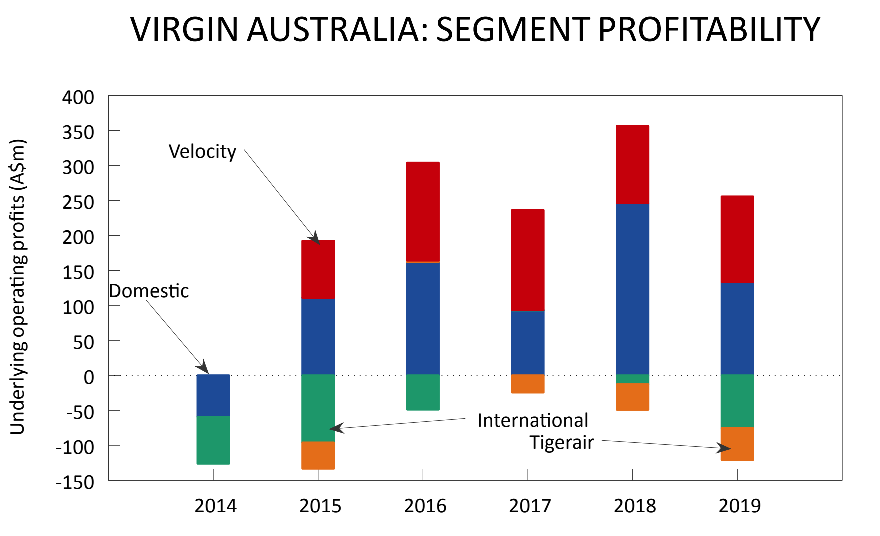
Weak results

In March, the architect of the plan to move the airline to a multi-brand platform, CEO John Borghetti, was replaced by Paul Scurrah (formerly DP World Australia, Queensland Rail and Ansett). His first set of results, the full year figures for the year to end June, do not make encouraging reading. The group produced operating profits of A$90m (down by two-thirds from the prior year period) on revenues of A$5.8bn (up by 7%). This was on the back of a modest 2% growth in passenger numbers (to 25.5m) and 5.3% increase in capacity in ASK terms.

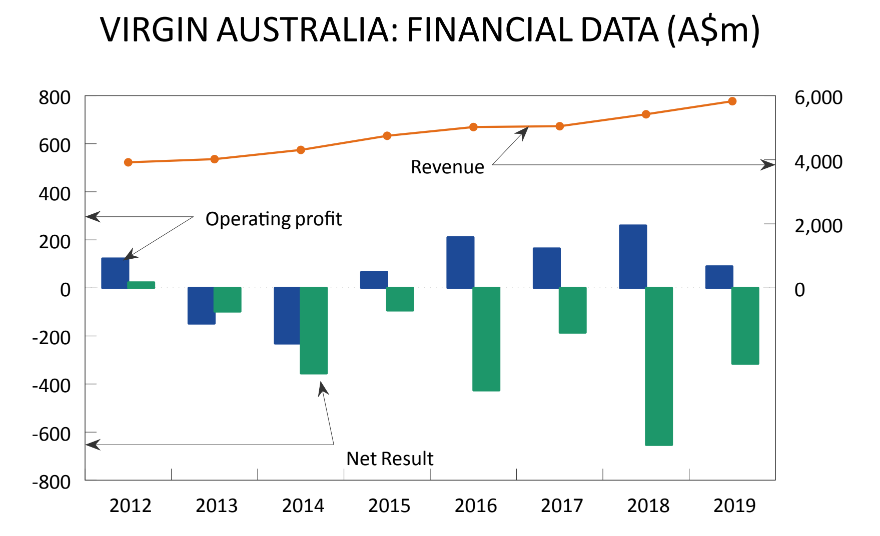
After writing off the remaining goodwill attached to Virgin Australia International (A$48m) and Tigerair Australia (A$105m), and applying restructuring charges of A$234m the Group reported a statutory net losses of A$315m, halved from 2018's A$653m.

Operating profit in the domestic operation nearly halved to A$133m, representing a margin of 3.4%. But Tigerair Australia increased its operating loss by a quarter to A$45m, equivalent to 8% of revenues, and the international operations plummeted further into the red with an operating loss of A$76m (5.8% negative margin) compared with loss of A$13m in the prior year.

The one bit of good news was



Note: FY end June



Note: FY end June

that the group's frequent flier programme, Velocity, reported impressive growth — in loyalty programme participation, to 9.8m members (45% of Australia's population), in revenues (up by 10% to A$411m) and operating profits (up by 10% to A$122m) giving an operating margin of 30%.

At least this is what we believe might have happened. The Group has a habit each year of restating prior year results making it difficult to analyse consistent trends.

Restructuring essential

The new CEO's first task has been the inevitable restructuring programme. On the day he took office he emphasised that returning to profitability — not winning market share against Qantas — is his priority.

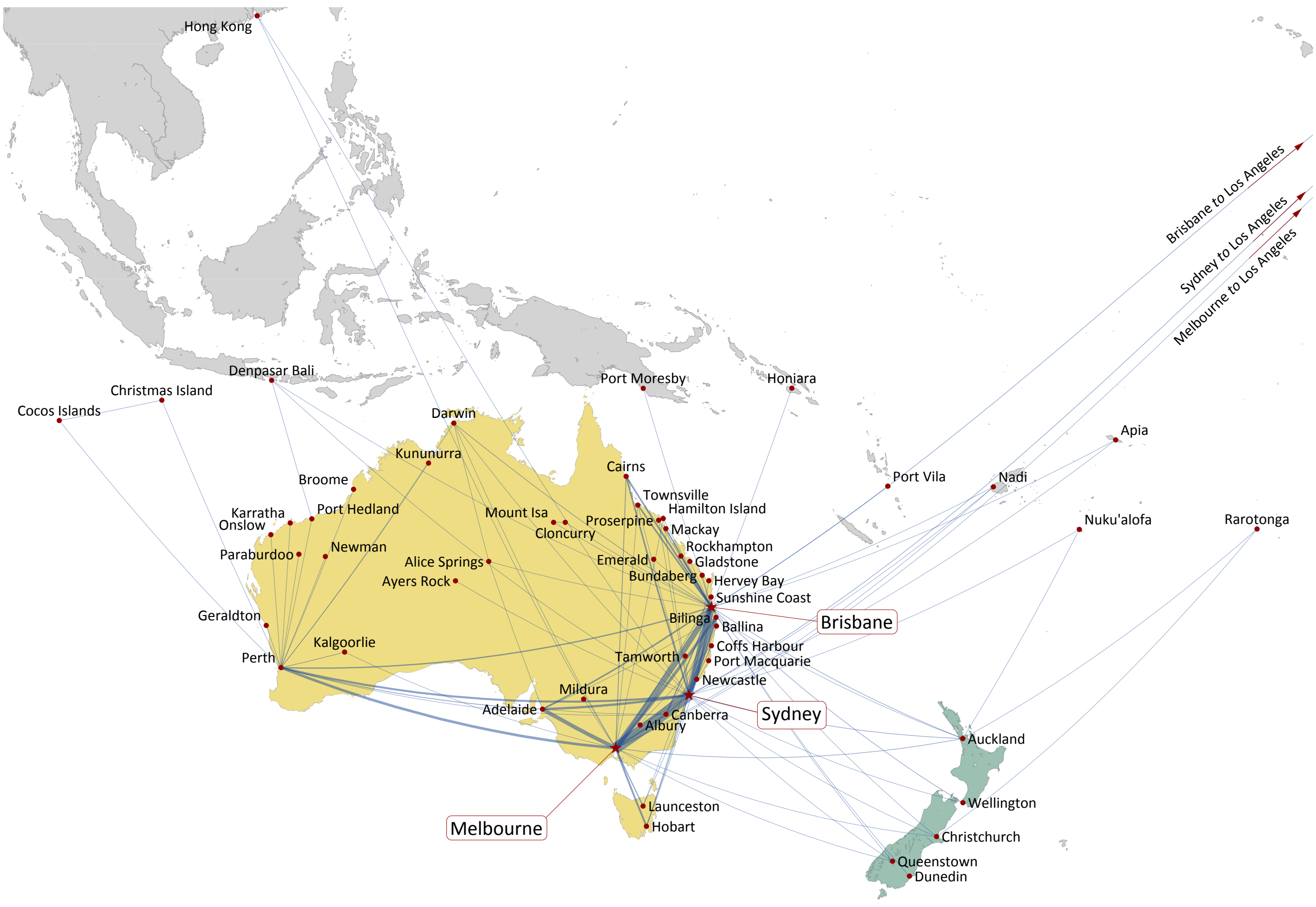
And his problem is highlighted by the company's own figures. Virgin Australia Domestic achieved an ex-fuel unit cost in the year to end June of 8.9A¢/ASK, 6% higher than that at Qantas Domestic, but yields per RPK were 22% and unit revenues per ASK 20% lower than those of the market leader.

There are two traditional strategems in the industry to achieve the goal of widening the gap between unit revenues and unit costs: to try to *grow* rapidly into unit cost savings hoping that unit revenues will not fall as fast; or the far harder task to try to *shrink* to improve unit revenues and battle to cut out unnecessary costs.

Following an initial review, he announced that he is taking the second option. Head office will lose 750 positions by the end of 2020 (a third of the administrative complement) to save an annual A$75m. The airline has 40 737MAX on order, originally destined for delivery to start in November 2019. He has delayed introduction of its first 737MAX10 until 2021 and the first 737MAX8 to 2025, while converting 15 of the 737MAX8s orders to 737MAX10s. In addition he announced a target annual saving of A$50m from a renegotiation of supplier contracts.

At the same time he brought in

VIRGIN AUSTRALIA ROUTE NETWORK



VIRGIN AUSTRALIA: BALANCE SHEET ITEMS (A$m)

		Velocity impact		AASB16 Impact	
	end June 2019 A$m	***change***	**Proforma (1)**	***change***	**Proforma (2)**
Fixed assets	3,202		3,202	*1,100-1,300*	4,402
Intangible assets	581		581		581
Other	520		520		520
Cash	1,740	*(376)*	1,364		1,364
Creditors	269		269		269
Other	157		157		157
Current assets	2,165	*(376)*	1,790		1,790
ST Debt	(772)	*570*	(202)		(202)
Debtors	(929)		(929)		(929)
Advance sales	(1,263)		(1,263)		(1,263)
Other	(273)	*8*	(265)	*(90-100)*	(360)
Current liabilities	(3,237)	*578*	(2,659)		(2,754)
Net Current Liabilities	(1,072)	*203*	(869)		(964)
Long Tern Debt	(2,257)	*(932)*	(3,189)	*(1,850-2,050)*	(5,139)
Other liabilities	(356)		(356)	*(350-450)*	(756)
Net Assets	**619**	***(730)***	**(111)**		**(1,356)**
Share capital	2,239		2,239		2,239
Reserves	118	*(682)*	(564)		(1,809)
Retained earnings	(1,766)	*(19)*	(1,785)		(1,785)
Shareholders' equity	590	*(701)*	(111)		(1,356)
Minority interests	29	*(29)*			
Total Equity	**619**	***(730)***	**(111)**		**(1,356)**

Source: Company Prospectus
Notes: Proforma (1) after repayment of Nov-19 US$ notes, issuance of US$425m and A$325m unsecured loans and acquisition of the Velocity minority. Proforma (2) company estimates of the effect of accounting for leases.

VIRGIN AUSTRALIA GROUP FLEET

@30 June	2017	2018	2019	Avg Age	Orders
737-700/800	80	85	85†	9.1	
737MAX					40
A320	16	15	15*	11.8	
E190	7				
A330	6	6	6	6.8	
777	5	5	5	10.3	
ATR72	13	8	8	6.6	
F100	14	14	14	27.4	
Total	**141**	**133**	**133**	**11.1**	

*Notes: †six 737 and *nine A320 operated by Tigerair Australia*

an all new top management team and announced plans for a new simplified organisational structure to unwind the legacy complexities developed by his predecessor.

In November the group further announced a significant series of culls of loss-making routes, including Melbourne to Hong Kong and Sydney to Christchurch, reducing the group's network capacity by 2 per cent.

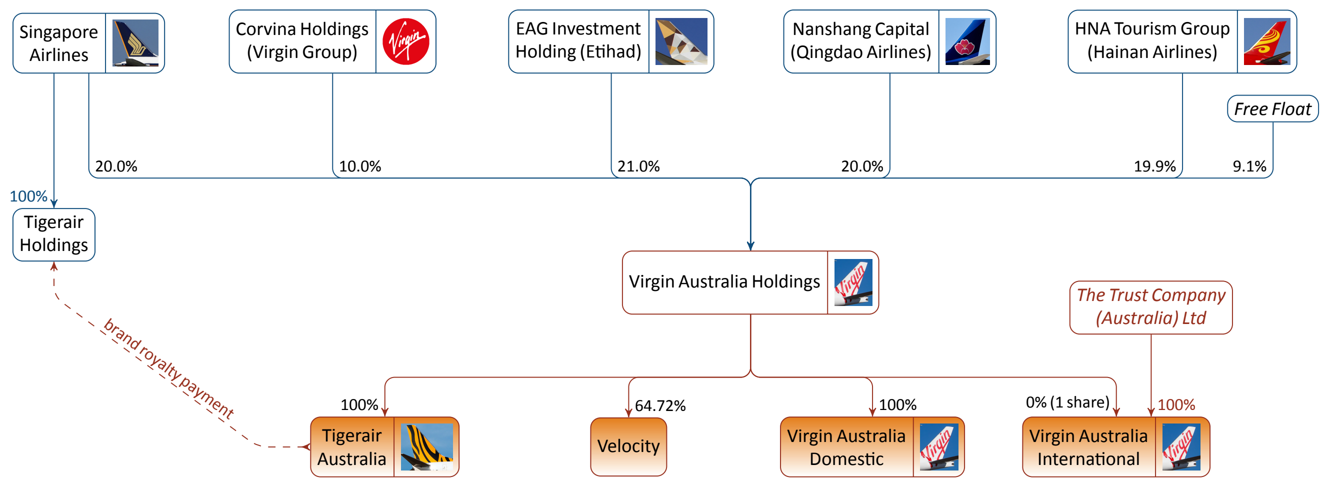
"I think it's the start of the way we're going to do business", says Scurrah, "We won't fly everywhere and particularity won't fly where it's not profitable to do so".

And yet, Virgin Australia is still willing to open new international routes, the area where it has been bleeding money. The group recently hauled in Richard Branson for a publicity stunt on a baggage carousel on the announcement of its new Tokyo Haneda route granted in time for next year's Tokyo Olympics (even though airlines rarely make anything but publicity from flying during an Olympic season to the host country). The group has a trans-Pacific ATI joint venture with Delta, and recently signed a deep cooperation agreement with Virgin Atlantic (covering joint pricing, inventory management, scheduling coordination, network planning and marketing) for the kangaroo route through either Hong Kong or Los Angeles.

Velocity buyback

However, to pile on the financial pressure, private equity group Affinity (the minority shareholder in Velocity) announced its desire to sell its stake. Virgin Australia was virtually forced to buy back in the 35% interest it did not own for around A$700m. To do so it is raising US$425m and A$325m in unsecured loan notes at an 8% interest rate. Part of these funds will

VIRGIN AUSTRALIA GROUP SHAREHOLDING STRUCTURE



be used to repay an existing A$570m loan that became due in November.

The result of this move will be to wipe out what little shareholders' equity remained on the balance sheet. In the table on the preceding page we show the proforma impact of the fund raising and acquisition of the minority stake. Long term debt would increase by nearly A$1bn to A$3.2bn, net current cash would increase a little, the minority interest of A$29m would disappear, but the balancing item of the acquisition would come out of reserves. This would produce a negative shareholders' equity of A$(111)m. However, the group claims that the acquisition is expected to generate synergies of A$20m at the EBIT level.

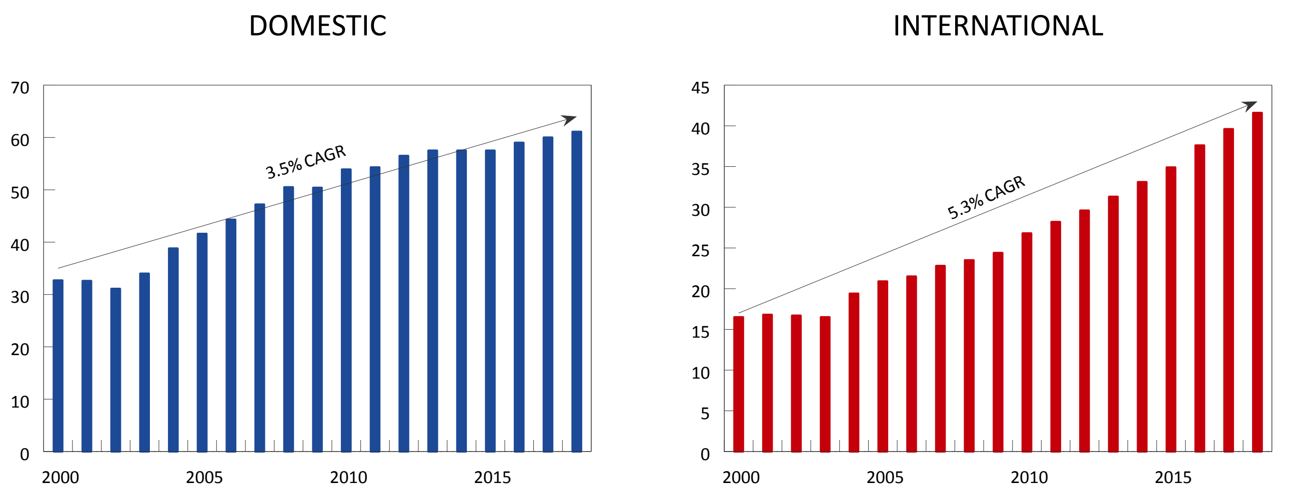
It is worth noting that Virgin Australia has yet to adopt IFRS/AASB16 (which brings operating leases on to the balance sheet — see "No accounting for leases", *Aviation Strategy* April 2016), although it is doing so in the current financial year to end June 2020. We attempt to show the proforma impact on the June 2019 balance sheet. The group has guided that the accounting change could add A$1.1-1.3bn to the fixed assets as "Right-of-use assets" but that the debt portion of the capitalised leases could increase long term liabilities by between A$1.85 and A$2.05bn, maintenance portion a further A$350-A$450m and various other liabilities of A$90-100m. As a consequence, taking the mid-point of this guidance, shareholders' equity could fall to a negative A$(1,356)m.

As the group's chairman Elizabeth Bryam points out, shareholder's equity "is just an accounting mea-

VIRGIN AUSTRALIA v QANTAS

	Domestic		International		LCC			FFP	
	Virgin Australia	Qantas	Virgin Australia	Qantas	Tigerair	Jetstar		Velocity	Qantas Loyalty
Revenues	3,915	6,106	1,305	7,425	563	3,961	Revenues	411	1,654
Operating profit	133	740	(76)	285	(45)	370	Operating profit	122	374
Margin	3.4%	12.1%	-5.8%	3.8%	-8.0%	9.3%	Margin	29.7%	22.6%
ASK	27,240	33,866	17,763	69,571	6,200	47,993	Members	9.8m	12.9m
Load factors	79.5%	77.8%		86.0%		86.1%			
Yield	18.11¢	23.18¢							
RASK	14.40¢	18.03¢							
CASK	13.88¢	15.84¢							
CASK ex fuel	8.90¢	8.37¢							
Fleet	96	159	22	55	15	94			
Destinations	39	56	15	26	12	39			

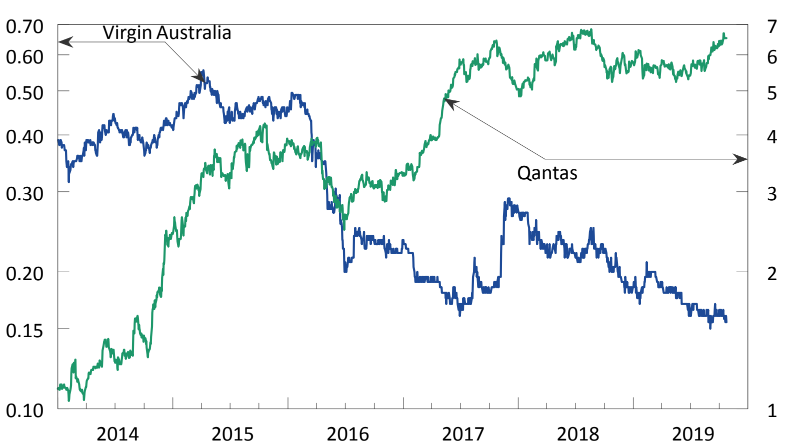
AUSTRALIA: AIR PASSENGER TRAFFIC (m PAX)



sure" and the group's shares have a market capitalisation of A$1.3bn. A quick back-of-the-envelope calculation might suggest that with the group ascribing a value of A$2bn to Velocity, the market is valuing the group's airline operations at a negative A$(700)m.

However, the Australian Stock Market's assessment of the shares may be irrelevant: there is less than 10% of a free float. In the chart on the preceding page we show a simplified view of the Virgin Australia corporate structure. Unusually, Australia places no limit on foreign shareholdings in domestic airlines. Over 90% of the ordinary shares are tightly held by foreigners: founder Richard Branson's Virgin group still has 10% through a Bermuda-based Corvina Holdings, while 20% each are held by other airlines — SIA, Qingdao, Etihad and Hainan — all of which would no doubt like to see some benefit from their shareholding (the latter two currently also financially challenged). An Australian *international* airline still has to be majority owned by Australian nationals, and Virgin Australia Holdings only owns one share (out of over 2m) in the international operations (which encompass both the Virgin and Tigerair brands' international flights).

VIRGIN AUSTRALIA SHARE PRICE PERFORMANCE



Australia — a two airline market

Australia is an unusual airline market. The continent has a huge land mass of 7.7m km², but a population of only 25.5m (a density of just over 3 people per square kilometre). There is a lot of empty space. It is highly urbanised: 65% of the population live in the four main cities of Sydney (population 5.2m), Melbourne (4.9m), Brisbane (2.5m), Perth (2.1m) and Adelaide (1.35m). Distances between the main urban centres are large, with limited realistic transport alternatives to air travel.

In the context of the Asia-Pacific region these population centres are tiny (see *Aviation Strategy* Sept/Oct 2019) and Sydney, the largest metropolis, is smaller than the 20th largest in China.

The domestic air system is characterised by a "golden triangle" of routes between Melbourne, Sydney and Brisbane. Indeed Melbourne to Sydney is the second largest route in the world by number of flights offered (and fourth largest in terms of seats). Moreover 44% of all domestic air trips touch Sydney.

Domestically it is a two airline market, and has been for decades. Virgin Australia has a 36% share of the total number of seats compared with the Qantas Group's 57%. Traffic growth has been modestly good over the last 20 years growing at a compound rate of 3.5% a year in passenger numbers (although a more modest 2% a year since the last peak, and an annual average 0.7% in the last five years).

Internationally it is more complex. The country has 20 designated international airports, but 90% of international traffic is concentrated on the four main cities. However, the centres to which passengers really want to fly are a long way from anywhere. Qantas has its "Sunrise" project targeting ultra-long haul non-stop services: it is operating Perth-London (14,500km) and has plans for Sydney-London (17,000km) and Sydney-New York (16,000km). But on the whole (excluding the important trans-Tasman operations to New Zealand which account for 18% of international seats) inter-regional routes to Australia have to stop somewhere, while intra-regional routes are subject to intense in-bound competition.

The new CEO has a tough job ahead of him to get the airline operations to a sustainable level of profitability. Virgin Australia, playing second fiddle to flag carrier Qantas, is in a difficult position. But it does have Richard Branson and the Virgin brand. And it does have Delta Airlines as a friend. But it will need to tap its shareholders for new funds.

Background

Virgin Australia started operations as low cost carrier Virgin Blue in 2000. Helped by the failure of Australia's then second airline Ansett in 2002, it had a good period of growth through the early noughties culminating in a peak level of profitability in the year to end June 2007: an operating profit of A$324m, and net of A$216m, on revenues of A$2.2bn and 15.2m passengers.

In that year it announced plans to start international long haul flights, finally launching V Australia in February 2009 on routes from Sydney and Brisbane to Los Angeles.

In 2010 the group appointed John Borgetti as CEO. A former General Manager at Qantas, he implemented a new business strategy, the "Game Change" programme, to transform the group into a full service carrier — almost as a mirror image of the flag carrier Qantas. In 2011 the group renamed itself to Virgin Australia, and then in 2013 acquired regional carrier Skywest Airlines (to be renamed Virgin Australia Regional).

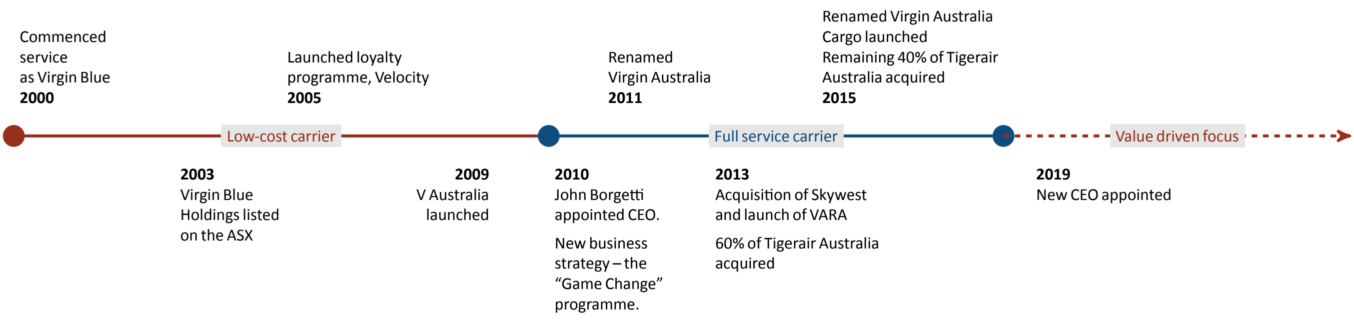
As part of its competitive reaction to the success of Virgin Blue, Qantas had established Jetstar as a low cost subsidiary in 2004. Originally perhaps seen as a union-bashing exercise, this low-cost subsidiary turned out to be quite successful in its own right, and Qantas has turned out to be one of the first legacy carriers to have established a complementary low cost brand in its home country.

Virgin had to follow suit and bought an initial 60% stake in Tigerair Australia in 2013, subsequently taking out the remaining minority in 2015. The thought may have been that if Qantas can be a multi-brand airline, Virgin could too.

The Virgin Australia Group consists of four main divisions:

- ✈ Virgin Australia Domestic (including Virgin Australia Regional), operating to 39 destinations in Australia with a fleet of 96 narrowbody, widebody and turbo prop aircraft;
- ✈ Virgin Australia International flying to 15 destinations across New Zealand, Pacific Islands, North America and Asia with a fleet of 22 widebody aircraft;
- ✈ Tigerair Australia, its low cost brand, flying to 12 destinations within Australia using a fleet of 15 A320s and 737s;
- ✈ Velocity, its FFP loyalty programme, with a diverse base of 90 programme partners who reward their customers with Velocity points for loyal spending behaviour. 70% of Velocity points are earned by members with partners other than Virgin Australia.

VIRGIN AUSTRALIA'S HISTORY



Freighter Values and Lease Rates – October 2019

THE FOLLOWING tables reflect the current values (not “fair market”) and lease rates for cargo aircraft. Figures are provided by The Aircraft Value Analysis Company (see below for contact details).

The values and rates reflect AVAC’s opinion of the worth of the aircraft in the present market. In assessing current values, AVAC bases its calculations on many factors such as number of type in service, number on order and backlog, projected life span, build standard, specification etc. Lease rates are calculated independently of values and are all market based.

FREIGHTER VALUES (US$m)

	New	5 years old	10 years old	20 years old
A300-600RF			19.2	11.5
A330-200F	75.5	59.4	43.3	
737-300QC				5.6
737-400SF				8.3
737-800CF			27.2	17.7
747-400F			34.1	20.3
747-400ERF			35.4	
747-8F	166.2	125.6	88.9	
757-200PF				12.0
767-300F	46.7	39.2	32.0	1.4
777-200F	139.3	108.7	78.0	
MD-11F				3.2

FREIGHTER LEASE RATES (US$000)

	New	5 years old	10 years old	20 years old
A300-600RF			163	141
A330F	655	544	433	
737-300QC				77
737-400SF				102
737-800CF			258	240
747-400F			451	305
747-400ERF			477	
747-8F	1,427	1,132	845	
757-200PF				114
767-300F	365	330	299	219
777-200F	1,148	955	770	
MD-11F				71

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