Aerospace

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Rising stakes: an AirAsia aircraft prepares to depart Singapore's Changi airport. The Kuala Lumpur-listed carrier is the region's low-cost, short-haul market leader, but it faces increasing competition Getty

Optimism tempered by jitters

Hopes and fears are focused on the crucial Asian market, writes *Andrew Parker*

Asia's growing middle classes and their desire to travel are making the region home to some of the world's fastest expanding aviation markets.

For example, Airbus expects China to replace the US as the most valuable market in the world for passenger jet deliveries by about 2030, and several other Asian countries – including India and Indonesia – have huge potential for aircraft orders.

But at the Singapore air show, which starts today, this optimism about the long-term future of Asia's aviation markets will be tempered by concerns about slowing economic growth and currency turmoil, and whether this could result in the region's airlines cancelling orders with Airbus and Boeing.

The last strong year for Asian airlines was 2010, when the continent overtook North America to become the largest source of passenger traffic, having overtaken Europe several years earlier.

By 2030, 49 per cent of all traffic will originate in Asia, compared with 37 per cent currently, according to Boston Consulting Group.

BCG estimates 1bn people in Asia will have annual earnings of at least $15,000 by 2030, and will therefore be able to afford to fly. "The vast majority of these 'next billion' travellers will come from China, India, Indonesia, Japan and South Korea," says Vincent Lui, a BCG partner.

However, these attractive long-term growth prospects contrast with recent performance. The International Air Transport Association (Iata) estimates that Asian carriers have seen net profits fall from $11.1bn in 2010 to $3.2bn in 2013.

The biggest factor behind Asian carriers' declining earnings has been the weak state of the air cargo market since the onset of the global financial crisis.

After a brief rebound in 2010, the cargo market has been shrinking and this hit Asian carriers hard because they account for about 40 per cent of the world's freight traffic by value, as their cargo fleets fly high-priced products made in the region to western countries.

Asian carriers' average freight charges – called yields – have been pushed down by excess capacity, in part as a result of airlines expanding their passenger fleets.

"Yields for cargo have been falling quite sharply partly because of the success of the passenger business, which has brought on new aircraft to serve passenger markets with cargo capacity in the hold," says Brian Pearce, chief economist at Iata.

"That has led to more and more capacity chasing less and less cargo volume, forcing prices down and damaging profitability in [the cargo] part of the business."

But it would be wrong to think of Asia as one homogeneous travel market.

Rather, it is a series of discrete – mainly country-specific – markets that are expanding at different rates.

Iata estimates that China's domestic passenger traffic increased 11.7 per cent last year, reflecting robust, albeit slowing, economic growth. This was well ahead of global traffic growth of 5.2 per cent.

By contrast, Indian domestic traffic increased by 4 per cent, as growth slowed markedly and the country's airlines struggled with poor infrastructure and high fuel taxes. Kingfisher Airlines, which was grounded by regulators in 2012, is seen as emblematic of the financial problems affecting Indian carriers.

"The Indian market has huge potential, but has been a bloodbath for carriers for several years," says Andrew Herdman, director-general of the Association of Asia Pacific Airlines.

> The biggest factor behind Asian carriers' declining earnings is the weak state of the air cargo market

Countries in the Association of Southeast Asian Nations (Asean), whose members include Indonesia, Malaysia, the Philippines, Singapore and Thailand, have taken several steps towards a liberalised aviation market that supports more flights between big cities. This initiative has underpinned the emergence of AirAsia as the region's largest low-cost short-haul carrier.

But Kuala Lumpur-listed AirAsia, founded by Tony Fernandes, the flamboyant entrepreneur, faces intensifying competition from other budget airlines. Last year, Lion Air, a low-cost carrier based in Indonesia that has placed large orders with Airbus and Boeing for short-haul passenger jets, started a business in Malaysia.

Rising competition in Asia is not confined to short-haul routes. Some airlines that focus on long-distance routes are also under pressure.

Singapore Airlines spoke of "intense competition" as it reported a 3.5 per cent fall in average fares in the first half of its 2013-14 fiscal year compared with 2012-13. This competition involves fast-growing Gulf carriers, led by Emirates Airline, which are flying between Asia and Europe.

Andrew Lobbenberg, analyst at HSBC, says Singapore Airlines is the company "most exposed" to Gulf carriers because of its large Europe-Australia business, but he also highlights Malaysia Airlines and Thai Airways as vulnerable.

With more liberalisation in the offing, there are likely to be more entrants in Asian aviation markets. And the liberalisation will not just be within the region – through the proposed completion of the single aviation market between Asean members – but also on routes outside Asia.

For example, the European Commission, the EU's executive body, is hoping to negotiate an agreement with the Asean countries that will enable EU carriers to do more flying to this bloc.

Consultants say that, in the long term, there is a compelling case for consolidation involving Asian airlines, but they acknowledge that it will probably be contingent on some governments being willing to relinquish control of their flag carriers – and even letting some of them go out of business.

Alex Dichter, a director at McKinsey, the global consultancy, says: "While we admit that the cultural, political and regulatory barriers to consolidation in Asia are significant, we see no way round this end-game.

"The combined pressures of Mid-East carrier growth and intra-Asia market liberalisation, alongside increases in labour costs, airport charges and fuel, will eventually be too much to bear."

Meanwhile, some analysts are questioning whether Airbus and Boeing may have to cut production of their aircraft – several of which are being made at record rates – if emerging-market economies suffer a crunch similar to the Asian financial crisis of the late 1990s.

Asia accounts for a third of manufacturers' order backlogs – larger than any other region – and analysts say any drawn-out crisis could reduce air travel and force some airlines to cancel orders or defer deliveries.

Nick Cunningham, analyst at Agency Partners, does not see the current weakness in developing countries' financial markets as being likely to lead to reduced production by Airbus and Boeing in the short term.

Rather, he sees as a more plausible scenario that reduced Asian economic growth will accentuate a predicted slowdown in orders for the aircraft makers, that, in the medium to long term, could result in production cuts.

"If we are going to see the impact of any significant [short-term] weakness in Asia or emerging markets generally," he says, "it will be as a weakening of order intake rather than an impact on [aircraft] deliveries."

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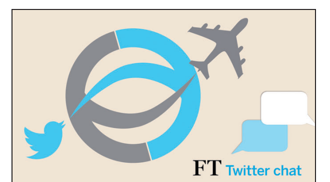

Tensions in Asia help keep sales buoyant

Defence

Rivalries are driving a regional arms race, says *Carola Hoyos*

Even before he retired last month, the former head of Raytheon's international business talked frankly about what drives the sales of the US defence company's Patriot defensive system, which shoots down enemy missiles.

"When North Korea threatens, it helps our sales," Thomas Culligan said, noting that when Pyongyang test-fired missiles last year, Congress received expressions of interest from countries intending to buy or upgrade Patriot missile systems.

North Korea is one of several threats stoking Asia's arms race, to the advantage of western defence contractors such as Raytheon, non-western suppliers such as Russia, and emerging competitors from Singapore to South Korea.

Regional rivalries, the need to keep shipping lanes open, disputes over resource-rich territories, and China's growing military heft have contributed to Asia's defence spending spree – as has the growing wealth of its countries.

For western defence companies hit by declining budgets at home, Asia has become a prime target. China, however, remains out of bounds as a customer because of US and EU sanctions that have restricted arms sales to Beijing since its bloody Tiananmen Square crackdown on demonstrators in 1989.

In 2013, Asia spent $322bn on military budgets, up from $262bn in 2010, with China growing more dominant. Military spending in China grew 43.2 per cent from 2008 to 2013, according to data this month from the International Institute for Strategic Studies.

Asia's outlays "are fuelling heightened military procurement in a region replete with conflicting territorial claims as well as longstanding potential flashpoints," the IISS warns in its annual review of the world's military balance.

The dispute between the six nations that claim the oil-rich Spratly Islands in the South China Sea has been a catalyst, especially for ships and submarines, analysts say.

In 2011 – after Chinese patrol boats attacked Vietnamese oil exploration ships and China's navy staged live fire drills near the Spratlys – Benigno Aquino, president of the Philippines, told his Chinese counterpart: "When we have these incidents, does it not promote an arms race within the region? And when there is an arms race, does not the potential for conflict increase?"

Acknowledging that his country was no match for China, he warned that international incidents around the islands might force Manila to upgrade its arms. However, its military spending grew just 4 per cent from 2011 to 2012.

By contrast Vietnam, another party to the Spratlys dispute, has ratcheted up its spending, doubling it since 2005 to $3.4bn in 2012, according to the Stockholm International Peace Research Institute. In the past two months, it has received two of six Kilo-class diesel-electric submarines ordered from Russia.

Russia has benefited from its close trade ties with Vietnam, and still sells one in every four military aircraft in the region.

Meanwhile, China and Ukraine are making inroads in areas such as vehicles, where two-thirds of southeast Asian defence budgets went to non-western suppliers between 2008 and 2012.

On guard: a Vietnamese sailor on duty in the Spratlys Getty

Europe and the US still dominate the region in general defence sales. But they are especially dominant as suppliers of sophisticated equipment, with three-quarters of Asia's market for high-tech equipment such as radar, sonar, communications systems and complex weapons, according to IHS Jane's, the analysts.

Executives and analysts expect their dominance to continue as they try to compensate for declining domestic sales.

But there are rivals on the horizon, and some are working hard to be able to offer more sophisticated and valuable equipment.

When South Korea sold its KAI T-50 fast jets to the Philippines, and Singapore Technology supplied military communications systems to Thailand, the countries revealed themselves as two of the biggest threats to western dominance in Asia.

Asian countries are also forcing suppliers to offer economic benefits – or offsets – along with their military hardware.

"The days of grabbing ad hoc benefits by relying on low-value counter-trade – such as chickens for aircraft and palm oil for submarines – are largely over," says Guy Anderson, an analyst at IHS Jane's.

"Buyers in southeast Asia are asking for – and increasingly getting – partnership status in the joint development of military equipment."

Asian governments are using this access to technological knowhow to help domestic businesses grow.

If Asia's governments get this approach right in the long term, their companies also stand to benefit from threats such as North Korea's missiles and regional territorial disputes.

Pace of airport building set to increase rapidly

China

Boom will help feed sales of aircraft, reports *Tom Mitchell*

Last May, bad weather forced a China Southern Airlines Airbus A380 airliner to make an unscheduled landing.

The airliner was halfway through its journey from Beijing to the southern city of Guangzhou and the only nearby airport with a runway long enough to accommodate the superjumbo was Wuhan's Tianhe International Airport.

The runway at the next big airport along the route, Huanghua in Hunan's provincial capital, Changsha, was too short.

Currently, just nine airports in China can handle an Airbus A380. Another eight that have long enough runways are designated as alternate landing sites in case of emergency.

At present, these emergency sites lack the necessary facilities to handle regular flights. However, in another example of China's continuing aviation construction boom, by 2016 Huanghua will be able to accommodate the world's largest passenger aircraft.

Marc Allen, Boeing's outgoing China head, says: "When you realise how many large cities in China are going to have major airports built in the 2008 to 2018 timeframe, it's going to be important that an aeroplane that arrives in 2020 to 2025 fits the current infrastructure.

"We're not talking about one so-called national airport, such as a Heathrow, we're talking about a country that's going to have 20, 30 major airports."

> 'We're talking about a country that's going to have 20, 30 major airports'
> Marc Allen, Boeing

According to the Chinese government's 12th five-year plan, the total number of airports is set to expand from 175 in 2010 to 230 in 2015.

One of the biggest on the planning board is an international hub that will be built on Beijing's southern outskirts. The capital's current international airport is located northeast of the city.

With a planned area of more than 15,000 square kilometres, the four-runway facility will be bigger than Bermuda and is scheduled for completion by 2018. At least 116,000 people living in the area will have to be relocated.

The expansion is not just happening in large cities. "The number of new flights and airports in second- and third-tier cities will increase rapidly," says Ren Haoning, an analyst at the CIC Industry Research Center.

He adds: "Combined with a decline in government intervention in the sector, the industry will see a surge in competition."

The construction boom will feed – and feed off – a surge in aircraft sales, although these remain carefully regulated.

"The government is clear on what the overall macro objectives are for China's aviation sector," says Mr Allen.

"It is important to avoid the excess capacity that has been a problem in other industries, so the ministries and the regulator are all very careful to think at

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Entrepreneurs venture along bumpy flight path

India

The potential is huge and the hurdles high, says *Amy Kazmin*

Since New Delhi decided to allow foreign airlines to own stakes in Indian domestic carriers 17 months ago, Etihad, AirAsia and Singapore Airlines have unveiled plans to capitalise on what they see as the untapped potential of India's aviation industry.

Indian entrepreneurs are also hoping for a slice of the action. An Andhra Pradesh-based private carrier, Air Costa, began operating in October and two more aim to lift off soon.

Entrants face a bumpy ride. Operating costs are among the world's highest and potential passengers are very price sensitive. In 2012, this combination forced Kingfisher Airlines, owned by Indian liquor baron Vijay Mallya, out of the skies. Most remaining Indian carriers are lossmakers and the industry has a combined debt burden of about $20bn.

Analysts are not expecting a substantive improvement quickly. Kapil Kaul, chief executive for south Asia of the Centre for Asia Pacific Aviation (Capa), says: "The domestic airline business in India is not viable. Luckily, we have [owners] who are very brave and continue to absorb massive losses and keep the system alive structurally."

India's domestic airline industry has huge potential; just 61m domestic flights were taken last year by a population of 1.3bn.

But local airlines are weighed down by policies rooted in New Delhi's old socialist-era vision of flying as an elite luxury, rather than as an essential building block of a modern economy.

States still subject jet fuel to punitive taxes as high as 30 per cent, making prices among the world's highest. Airport charges are also high, as infrastructure developers finance glittering airports after years of delay.

Indians have shown themselves to be highly sensitive to even small fare increases. This makes it hard for carriers when fuel costs rise or the rupee depreciates.

Pressures on carriers have been exacerbated by Air India, the unpopular, lossmaking state-owned airline, which has been kept aloft by a seemingly endless flow of taxpayer funds.

The state carrier has long been a highly aggressive – and many argue, deeply distorting – competitor. It slashes fares to discomfit rivals, even as it loses money, and is unable to pay its bills and sometimes staff salaries.

The grounding of Kingfisher Airlines brought some relief in reducing capacity and increasing pricing power. Carriers have since been hit by the depreciation of the rupee, which has once again put pressure on costs.

The picture is not improving. Capa estimates that India's carriers – led by Air India and Jet Airways, India's second-largest private airline by market share – lost a combined $500m from September to December. This is normally one of the two best quarters for an industry with extreme seasonal fluctuations.

"When the industry is reporting losses in peak season," reported Capa, "it is clear the domestic Indian aviation industry has a fundamental problem."

> 'It is clear that the domestic aviation industry has a fundamental problem'

IndiGo, India's largest domestic airline, which carries some 30 per cent of domestic passengers, is the main exception to this dismal picture, managing to report steady profits.

However, competitive pressure in the market is expected to intensify in the months ahead. Etihad, the Abu Dhabi state carrier, has invested $380m for a 24 per cent stake in Jet Airways.

AirAsia, the Malaysia-based low-cost carrier, and Singapore Airlines are setting up Indian carriers. Both will have the Tata group, the powerful Mumbai conglomerate, as their partner.

Analysts say these foreign carriers have a strong rationale for venturing into India's domestic market, which will help them steer more of the growing number of Indians flying abroad on to their own international networks.

Further Indian players are plunging into the fray. Aside from Air Costa, which was started by a Vijayawada-based real estate group, Air Pegasus, owned by a Bangalore-based ground-handling company, is due to start flying regional routes in the coming months. A charter airline, Air One, is also seeking a licence to start a scheduled service.

Such launches might reap a good reward. Amber Dubey, partner and head of aerospace at KPMG, the consultancy, says India still has dozens of small cities with airports that have no regular flights – which is a potentially huge untapped market for carriers with aircraft of less than 100 seats.

"There are opportunities in certain locations," Mr Dubey says. "With reduced airport charges, tax rebates on jet fuel, and local government support, this opportunity is likely to grow over the next two years."

Manufacturers head to island of innovation

Singapore

Production hub plan is paying off, says *Jeremy Grant*

When it comes to bragging rights for cutting-edge developments in the aerospace business, Singapore can shout louder than most.

In the past two years, the world's two leading makers of airliner jet engines – and the sophisticated technology that goes into one of their key components, fan blades – have invested heavily in manufacturing facilities in the city-state.

Like many, they picked Singapore as it offers a relatively low corporate tax rate (at a basic 17 per cent), a stable political environment and predictable and transparent regulations. The government has used these assets to attract investment in a series of strategic sector "hubs", of which aerospace is one.

In 2006, that effort moved into high gear when work started on converting Seletar airport on the island's eastern edge – once a Royal Air Force base – into what is now the 320-hectare Seletar Aerospace Park.

In February 2012, Rolls-Royce opened a campus there, where the UK-listed company is assembling its Trent series of engines outside Britain for the first time. The facility also produces titanium fan blades that the company says allow a weight saving of almost a third over conventional fan blades. The rapidly rotating components, which propel a tonne of air per second through the engine, have to be both strong and light.

US rival Pratt & Whitney a year later broke ground on facilities – also at Seletar – that will make fan blades from 2015, as well as high-pressure turbine discs the next year.

With a combined investment of $810m – the bulk of which is being made by the UK company – the two developments underscore how rapidly Singapore has become a global manufacturing hub for the aerospace industry.

The city-state also accounts for a quarter of Asia's maintenance, repair and overhaul of aircraft and components, according to the country's Economic Development Board.

Singapore's initiative has been a calculated bet on the growth of aerospace in Asia, which is predicted by analysts to account for one of every three new aircraft deliveries by 2020.

"The growth in the customer base is in Asia and that's influenced our thinking on where we invest," says Julian Ascherson, Rolls-Royce's Singapore-based regional director for countries in the Association of Southeast Asian Nations (Asean) and the Pacific.

Singapore has also benefited from the push by manufacturers to develop more fuel-efficient engines – hence the investments at Seletar by Rolls-Royce and Pratt & Whitney. While the former has had a presence in the island nation since the 1950s, the company only began manufacturing there in 2012.

Similarly, while Pratt & Whitney has a 30-year record in Singapore, the Seletar facility will be the first time it will be making engines in the city-state. This will also mark the first time that Pratt & Whitney will make hybrid fan blades for the company's new-generation geared turbofan (GTF) engine outside the US.

The British company's facility is operating at 20 per cent of its capacity with production of Trent 900 engines, which power the Airbus A380 aircraft. It will add production of the Trent 1000 – fitted to the Boeing 787 Dreamliner family – by midyear.

By 2016 Seletar is set to produce 250 Trent engines, representing half the company's projected annual demand for 500 engines over the next six to seven years. The other half of that demand will be supplied by Rolls-Royce's Derby plant in the UK.

In Singapore, the supply of qualified workers has been crucial. About 90 per cent of Rolls-Royce's employees are locals. Most of the technicians and assembly workers at Seletar are hired straight out of the government-backed Institute of Technical Education, which has 25,000 students in vocational training at any one time.

> The developments underscore how rapidly Singapore has become a manufacturing hub

One effect for Rolls-Royce of committing itself to making sophisticated engines and parts in Asia is that its suppliers have been following it east, and others have been found within the region.

"From a supply chain perspective, these investments have not gone unnoticed," says Mr Ascherson.

RLC Engineering Group, a company based on the UK's Isle of Man that makes titanium alloy that goes into fan blades, is setting up a facility next to Rolls-Royce's in Seletar.

"They [RLC] won't have the international footprint or experience, necessarily, but they need to expand because we are [expanding], so we've been able to work with them," says Mr Ascherson.

Rolls-Royce continues to use Japanese suppliers that for some years have been supplying parts for engines made at its Derby facility.

But it is also using suppliers in southeast Asia, including Leistritz of Germany, which has manufacturing facilities in Thailand. There are also "three or four" suppliers locally in Singapore. "That's going to grow, I think," says Mr Ascherson.

Heavyweights stake claims for supremacy in southeast Asia

Low-cost airlines *Ben Bland* sizes up the protagonists as AirAsia of Malaysia and Lion Air of Indonesia enter each other's markets

The airline industry is no stranger to personality-driven battles. Now, two southeast Asian heavyweights are facing off, as Tony Fernandes, the big-talking Malaysian founder and chief executive of AirAsia, takes on Rusdi Kirana, the publicity-shy founder of Indonesia's Lion Air.

The two biggest and fastest-growing low-cost carriers in Asia have become important customers for airliner manufacturers Boeing and Airbus, with hundreds of aircraft on order between them, and their ambitious expansion plans are pushing them to compete head-to-head.

Last year, Lion entered AirAsia's home market after setting up a joint venture, called Malindo Air, with Malaysia's National Aerospace & Defence Industries, while AirAsia has been trying to expand in Indonesia after the jet-setting Mr Fernandes symbolically acquired an apartment in Jakarta.

In an industry where profit margins are thin and susceptible to volatile outside factors such as oil prices, will intensifying competition between Lion and AirAsia develop into a Darwinian battle of survival? Or is there enough demand from the fast-growing middle class in this region to keep both going strong?

Raman Narayanan, AirAsia's head of government relations for southeast Asia, says his airline is convinced that, with the air travel industry still so under-developed, there is plenty of room for both to thrive.

"The market is definitely big enough," he says. "Southeast Asia has 600m people who are divided by large bodies of water. Compare that with the US, where there are 320m people and a fantastic highway network. Or Europe, where there are 400m people and fantastic rail networks. And yet, while the US has 7,050 commercial aircraft in use and Europe has 4,200, southeast Asia still only has 1,050."

It is no surprise, he adds, that this region currently has 1,200 more aircraft on order, led by Lion and Air Asia.

Underpinning his bullish view are the robust rates of economic growth in the region's big emerging markets – Indonesia, Vietnam and the Philippines – and the large middle classes in these countries.

In Indonesia, southeast Asia's biggest economy, the middle class will nearly double from 74m to 140m by 2020, according to projections from Boston Consulting Group, which defines this grouping as those households spending more than Rp2m ($164) a month.

"Over the next 10 years, there will be more competition, but the region is growing quickly and more people will be able to afford to travel," says Mr Narayanan. "When people get money in southeast Asia, the first thing they do is buy a car and then they take their family on an overseas holiday. It's all about status."

Brendan Sobie, a Singapore-based analyst at the Centre for Aviation, a consultancy, agrees that, against this macroeconomic backdrop, competition between Mr Fernandes and Mr Kirana is "not necessarily a zero-sum game".

But, he says, while the tycoons' airlines supplement each other in some areas, helping to deepen the air travel market, they are going head-to-head on some routes.

> 'It would be smarter to pick on the weak guys . . . but egos come into play'

Lion's share: the Indonesian carrier has ambitious plans Reuters

"Lion has gone into AirAsia's two largest markets in Malaysia and Thailand and AirAsia is trying to expand in Lion's largest market," says Mr Sobie.

Taking on a powerful incumbent is never easy. AirAsia tried to get a leg-up by taking over Batavia Air, an Indonesian carrier, in 2012. But it aborted the $80m deal because of corporate governance issues and its 49 per cent owned local affiliate, Indonesia AirAsia, remains dwarfed by Lion.

There are also questions about Lion's Malaysia venture, according to Shukor Yusof, an aviation analyst at Standard & Poor's Capital IQ, part of the debt rating agency.

"In the first six months, their numbers were terrific but then they've come to a point when they need to make money instead of just winning volume," he says.

The biggest victim of Mr Kirana's aggressive strategy in Malaysia seems to be Malaysia Airlines, the state-owned flag carrier, not AirAsia.

Over the next decade, analysts expect full-cost legacy carriers to be the main losers from the rise of low-cost operators in southeast Asia.

Low-cost carriers already account for more than half of the capacity in price-sensitive Indonesia, Malaysia, the Philippines and Thailand, compared with just 30 per cent in North America and 37 per cent in Europe, according to the Centre for Aviation.

Yet, despite the sense that there is sufficient growth to go round, the future dynamics of the AirAsia and Lion rivalry are hard to predict, given the lack of information about Mr Kirana's business.

While AirAsia is listed on the stock market in Malaysia and Mr Fernandes regularly gives interviews about his plans, Mr Kirana rarely talks to the media, his privately owned airline does not divulge financial information or statistics and his occasional public pronouncements tend to be aimed at beguiling rather than elucidating.

"Given their scale, their sizeable order books and what's behind them, it would be smarter to continue picking on the weak guys rather than each other," says Mr Sobie. "But egos always come into play in the airline industry."

Bright spots as cargo market struggles for signs of modest upturn

Freight carriers

Tough times have taught industry leaders to err on the side of caution, reports *Jane Wild*

The air cargo market has been in the doldrums since the global financial crisis began, but a few bright spots are providing hope that recovery is on the way.

The value of the sector, which moves everything from pharmaceuticals to fresh fruit and consumer electronics was estimated by Boeing, the aircraft maker, at $240bn in 2013.

The latest figures from the International Air Transport Association (Iata) point to a moderate improvement over the next five years.

In 2013 there was year-on-year growth of 1.4 per cent across the world, measured in freight tonne kilometres. Demand picked up in the latter half of the year, but improvement was patchy.

After the industry was dragged through the worst decline in its history in 2008 and 2009, with a brief pick-up in 2010, is this the start of a recovery?

Brian Pearce, chief economist at Iata, argues it is. "I think we're seeing a cyclical recovery, because business confidence and global industrial production are picking up and we're seeing air freight respond to that."

However, it is not quite the revival the industry would like. It comes amid signs of significant structural change. At the same time, it does not mirror the rise in passenger traffic.

Mr Pearce says: "It's a weak recovery because overall international trade doesn't seem to be responding to the increase in spending and production."

The trend towards reshoring of manufacturing back to the developed world adds to the difficulties.

That said, Asia is among the regions that have shown some glimmers of hope, despite a decline of 1 per cent in 2013 compared with 2012. In Europe, cargo volumes grew almost 2 per cent last year.

Iata points to a rebound in November, and a pickup in trade volumes in recent weeks to herald rosier prospects ahead for Asian cargo carriers, which make up about 40 per cent of the global market. The trade body also sees these data as an indicator of a wider upturn.

Hong Kong-based Cathay Pacific, the biggest Asian cargo airline by freight carried, remains cautious, however. "Our view is that 2014 will be pretty similar to 2013," says Mark Sutch, general manager of cargo sales. Mr Sutch suggests that this year will be a "bit better" than last but "not an all-singing, all-dancing recovery". He explains the November boost as a fillip seen every year.

"What we saw [then] ... was the traditional fourth-quarter peak. That didn't sustain itself much beyond the middle of December."

Overcapacity is the biggest problem facing carriers. Middle Eastern airlines such as Emirates, the world's biggest freight airline by tonnage carried, have been taking delivery of wide-body aircraft such as the Boeing 777 and Airbus A380.

With the deliveries of those passenger aircraft has come a glut of extra freight capacity in their holds: the Middle East freight market grew nearly 13 per cent last year.

Singapore Airlines Cargo reported an operating loss of $167m in the year to March 2013, down 5.1 per cent because of weak demand and depressed yields.

"In 2008, Cathay ran 32 freighters a week from Hong Kong to Europe," says Mr Sutch. "This year and last, it will average about 11 a week." He adds: "I wouldn't be too hopeful about [the market] ever coming back to the year of 2010, but if there is a part of the world you want to be in, then we're very well placed in Hong Kong."

Mark Sutch: cautious

Cathay is working on other opportunities, involving Mexico, India and Vietnam, among others. "It's about where the new markets are and making sure you're there," says Mr Sutch.

Iata identifies trade between emerging markets as particularly promising, for example between China and Africa, where Mr Pearce expects to see "very strong growth as new trade lanes open".

But Thomas Cullen, analyst at Transport Intelligence, cites another factor in the market's malaise: the rise in the volume of freight carried by sea.

Industry figures point to Apple's decision to ship some of its iPad tablets by sea rather than air as an example of this trend.

"The problem is the market has changed," Mr Cullen says. "The question is to what extent a recovery will benefit air cargo."

Alternative modes of transport are not the only threat.

High fuel prices will continue to put pressure on airlines. Competition issues loom if, as seems likely, the cargo industry follows the passenger market in forming closer relationships that require regulatory approval.

This sense of pessimism might be explained by the tough times the industry has already gone through, says Mr Pearce at Iata.

"There is undoubtedly a bit of conditioning by recent experience. Everyone has seen two to three years of shrinking. That dulls confidence in a dynamic upturn."

Aerospace

Seoul seeks to conquer fresh export markets

South Korea The threat of conflict with the north is an important factor driving defence investment, says *Simon Mundy*

South Korea's export sector is better known for cars and smartphones than fighter jets and helicopters.

Yet the country's defence exports have grown at one of the fastest rates in the world over the past few years, led by aerospace. The sector is seeking further expansion, with enthusiastic government backing.

Defence exports were a record $3.4bn last year, having risen steadily from $250m in 2006. "As the South Korean defence industry has grown and matured, every year it acquires more capability," says Mark Burgess, director of Honeywell Aerospace's defence business in Asia. "I don't think they're taking market share from western companies yet, but they will."

A key driver of investment in the defence industry has been the threat of conflict with North Korea, with which South Korea remains technically in a state of war. With a huge standing army across the border – estimates put North Korean troop numbers at about 1.2m – as well as Pyongyang's extensive if outdated array of heavy weaponry, South Korea has been forced to invest heavily in its military capacity.

Last year's defence budget of $31.7bn was the world's 12th biggest, according to the Stockholm International Peace Research Institute.

Much of South Korea's defence hardware has been procured from the US, a crucial military partner that still has about 28,500 troops in the country. Seoul has been unusually aggressive in insisting on "offsets" that have forced US arms suppliers to co-operate with South Korean companies, helping the latter gain valuable technological knowledge.

Current rules oblige the seller in any deal worth more than $10m to offset at least half the cost through building products in South Korea, sourcing components from domestic companies, or transferring intellectual property.

In one of the most important examples of this strategy, Samsung Aerospace built 72 F-16 fighter jets in the mid-1990s, under licence from Lockheed Martin of the US. Such agreements have helped Korea Aerospace Industries (KAI) – formed from a 1999 merger of Samsung Aerospace, Daewoo Heavy Industries and Hyundai Space and Aircraft – become the spearhead of South Korea's defence exports drive.

The pride of KAI's export offering is the T-50 fighter-trainer jet, developed in partnership with Lockheed. Last month KAI delivered the last of 16 T-50 aircraft ordered by Indonesia in a $400m deal. A few weeks earlier, the company had agreed to supply Iraq with 24 jets in a deal worth $1.1bn, with added services that could take the total value to $2bn. The company is negotiating with the Philippines, which has provisionally agreed to buy 12 of the aircraft.

KAI hopes to sell T-50 jets to the US, which wants to replace its ageing trainer jet fleet. This would help address the South Korean industry's low profile, says Choi Sang-yeol, a senior executive at the company. "So far, although Korea has great technology and great products, many customers still don't have 100 per cent confidence in our aeroplanes," he says. "But if the US chooses the T-50, it is a great opportunity for it to become a best-seller."

KAI's other flagship programme is the Surion helicopter, developed in collaboration with Airbus Helicopters, for which it is targeting exports of least 300 units by 2020.

Industry executives and analysts say KAI's growing success in the export market owes much to strong support from the South Korean government, building on diplomatic ties with countries in southeast Asia and the Middle East. Jon Grevatt, an analyst at the consultancy IHS, says: "They don't just sell military equipment, they back it up with a host of strategic deals in areas including construction and shipbuilding."

KAI is able to rely on support from some of the country's leading industrial groups: Samsung Techwin, a sister company of Samsung Electronics, provides jet engines, while LIG Nex1, owned by LG Corporation, supplies radar systems.

South Korea's efforts to move to the top end of the value chain by developing a stealth fighter with Indonesia, have been dogged by disagreement over whether the programme is a worthwhile investment.

Even optimists do not expect that jet to enter service for more than a decade, so South Korea remains reliant on foreign groups for now to provide its most advanced aircraft. In November it agreed to buy 40 F-35 stealth jets from Lockheed Martin in a deal estimated at $6.6bn, says Yang Uk at the Korea Defence and Security Forum.

As it seeks to maintain its export momentum, KAI is targeting regions such as South America: it signed a $208m deal with Peru in 2012 to supply 20 basic trainer aircraft. Such efforts are crucial if South Korea is to raise exports of defence aerospace. "They have to find new markets," says Mr Grevatt. "They can only do so much with southeast Asia."

Flight control: South Korea's Black Eagles aerobatic team in T-50 jets Getty

All-aboard: China's aviation universe is expanding Getty

Airport building set to increase rapidly

Continued from Page 1

each step about what the market will bear."

Assuming average annual GDP growth of 6.4 per cent in the two decades to 2032, US aircraft maker Boeing predicts that the size of China's civil aviation fleet will increase by 78 per cent to 6,450 airliners.

The aircraft manufacturer also estimates that some 5,580 new and replacement airliners valued at $780bn will be delivered during this period.

Last year, Boeing supplied a record 143 aircraft to Chinese carriers, including 14 Dreamliners. While most demand in volume terms is weighted towards single-aisle planes, Boeing and Airbus both expect orders for wide-body planes to increase rapidly as Chinese airlines expand their international networks.

Boeing estimates that wide-body deliveries in China over the next 20 years will be worth $400bn, against $370bn in single-aisle deliveries.

At last year's Beijing air show, Airbus unveiled plans for a lighter-weight version of its best-selling wide-body jet, the twin engined A300-330.

The company hopes a reduced fuel burn will attract more buyers, extending the model's life in the face of competition from the Dreamliner.

The aircraft is expected to enter service in 2015 or 2016.

In addition to fierce competition from rival domestic and international carriers, Chinese airlines will also have to contend with the country's high-speed rail network, which has emerged as the world's largest in less than four years.

Many of the country's latest high-speed railway stations are, like China's airports, located far from city centres, but they are preferred by an increasing number of travellers for their more relaxed security procedures, uninterrupted mobile phone connectivity, and more reliable timetables.

Flights, on the other hand, are frequently delayed by everything from dense smogs to unannounced exercises by the military, which controls most of China's airspace.

Securing wider corridors for civil aviation – and more approaches into the country's biggest airports – has become a priority for civilian air controllers.

One of the final links in China's high-speed rail network was completed in December, when services opened along the southeast coast between Shenzhen and Xiamen, with economy-class tickets priced at just Rmb150 ($25).

The impact on airlines was immediate, as they slashed ticket prices and reduced services between the two cities.

"The rapid development of high-speed rail will definitely put pressure on airlines' profitability," says Mr Ren. "And airport construction might also be affected."

Additional reporting by Wan Li

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Aerospace

Fight for JAL business heats up

Japan Airbus has won a victory with a Boeing client for the first time, says *Ben McLannahan*

Airbus is used to losing. For more than 30 years, the France-based manufacturer went into tenders to supply aircraft to Japan Airlines (JAL), the national flag carrier, and missed out every time.

Displacing Boeing, which opened its first Tokyo office in 1953 and has dominated the market ever since, was proving impossible.

"The Japanese are somewhat change-averse," says Stéphane Ginoux, president of Airbus Japan. "If they are comfortable with the relationship, if they are happy with the product, if they don't see too many issues, they are not going to look for change."

But last year was different. JAL wanted to replace its ageing fleet of wide-body, long-distance 777s, and while Boeing's new model – the 777x – was still in development, Airbus's similar-specification A350 was fresh from test flights. Importantly, the tender was overseen by JAL's chairman Kazuo Inamori, known for his insistence on using a range of suppliers at Kyocera and KDDI, two huge companies he founded.

And months before the decision was due, regulators had grounded all 50 of Boeing's 787 Dreamliners after problems with lithium-ion batteries. The incidents prompted Mr Inamori to describe a complete reliance on one vendor as "abnormal" in a CNBC interview.

A JAL representative says that the Dreamliner groundings had no bearing on the decision that followed.

But other people familiar with the situation say it was probably a combination of those factors that gave Airbus a foot in the door. On October 8, JAL announced it had signed an agreement to buy 31 Airbus A350s worth $9.5bn at list prices, along with options for another 25. The single-supplier policy was over.

"It was obviously disappointing that we did not win this campaign," says George Maffeo, president of Boeing Japan. "Going forward, we will work very hard to earn their business."

But Airbus is keen to build on its success. It has set itself a target of a 25 per cent share of total passenger and cargo aircraft operating in Japan by 2020, from about 13 per cent now.

Boeing is contemptuous of the Airbus arithmetic, noting that it has an order book of 98 planes to deliver in Japan, most of them 787s, between now and 2020.

"They'd have to deliver a whole lot of aeroplanes in the very near term to [hit the 25 per cent target]," says Mr Maffeo. "Our backlog, even at this point, is still higher in total than Airbus's backlog. I'm very sceptical that it is achievable."

But the Airbus target – and Boeing's tetchy reaction to it – is a sign of the company's determination to advance in the only leading market where the two manufacturers are nowhere near parity.

"Maybe because Boeing used to have this market as its private garden, it is upset that competition is entering," shrugs Mr Ginoux.

Analysts are cool on the prospect of rapid gains for Airbus. If low-cost carriers such as Jetstar Japan, Peach and Vanilla – all using the European manufacturer's A320 – grow very quickly, there is a chance for Airbus "to get within eyesight of that figure," says Will Horton, analyst at CAPA Centre for Aviation in Hong Kong.

But Boeing's share will not be taken easily. The Seattle-based company has had a strong grip on Japan since the end of the second world war, when domestic manufacturers – banned from making their own aircraft by occupying forces – turned into suppliers.

Now, the so-called "Heavies" – Mitsubishi, Kawasaki and Fuji – make big chunks of Boeing planes sold all over the world. The US company says it will spend about $5bn this year on procurement in Japan, helping to sustain 22,000 jobs, or almost half the country's aerospace industry workforce.

"We think it's an area of differentiation for us that we're doing things here in Japan that help the overall economy," says Mr Maffeo. "We hope, at the end of the day, that it provides us with some additional consideration."

Airbus is also battling goodwill accumulated over decades by the US aircraft maker. In the 1950s, for example, when JAL was struggling to establish itself as an international carrier, the Douglas Aircraft Company – later merged into Boeing – helped by pushing it up the delivery waiting list for its DC-6, one of the first planes capable of flying across the Pacific.

A sense of "obligation" has infused the JAL/Boeing relationship ever since, says Geoffrey Tudor, an analyst at Japan Aviation Management Research in Tokyo.

All eyes are now on the outcome of All Nippon Airways' current tender to replace half of its 54-strong fleet of 777s. About one in 10 of its planes are made by Airbus, with almost all the rest by Boeing. ANA would not comment on timing, but some expect a decision within a few months.

With one manufacturer desperate to preserve its momentum and the other desperate to disrupt it, the only clear winners are the carriers.

"It's a buyer's market," says Mr Tudor. "They'll blow away list prices."

Two can play: the national carrier has ended its one-supplier policy Reuters

'Pivot' to Asia has yet to reassure allies

US foreign policy

China's rise has coincided with some big military aerospace contracts, reports *Geoff Dyer*

When Barack Obama began his second term as US president in January 2013, he signalled that a "pivot" to Asia would be a central part of his legacy.

His officials briefed that the president would use a significant part of his time in the White House charting a strategy to underpin American presence in the Asia-Pacific region for the coming decades. Yet, one year on, the president's Asia policy is looking a lot more uncertain.

The basic logic behind the "pivot" – the word given to the new focus on Asia by then secretary of state Hillary Clinton in 2011 – was straightforward. Not only has Asia become the cockpit of the global economy, but the rise of China and its military build-up have raised tensions.

With the war in Iraq over and the conflict in Afghanistan winding down, the US realised it needed to raise its game in Asia if it were to maintain its influence in the region.

China's announcement in December of an air defence identification zone covering the East China Sea and the way it assumed control of the Scarborough Shoal in the South China Sea in 2012 indicated an intention to gain greater control over the seas that surround it – and in the process, squeeze the US navy further out into the Pacific Ocean.

"This is part of a broader Chinese strategy, to push steadily outwards without causing a conflict," says Mike Green, former Asia director at the National Security Council.

As part of the pivot, the Pentagon announced that it would focus 60 per cent of its fleet and air force in the Asia-Pacific region and that it would start to train marines in northern Australia for the first time.

The administration has supported the Trans-Pacific Partnership (TPP), a 12-country trade negotiation involving countries on both sides of the Pacific that the US sees as a central strategy to bind its economy to many of Asia's fast-growing markets. Based around its core alliances with Japan and South Korea, US strategy has tended to focus on northeast Asia. But with its engagement with Myanmar and Vietnam and its expanded relations with the Philippines, the US is trying to weave southeast Asia into its framework of regional alliances and partnerships.

American officials say these policies are not an effort to contain China, but to deter it from seeking to bully some of its neighbours or dominate the region. They insist they want the US and Chinese navies to operate in proximity in the western Pacific without coming to blows.

There may be no direct link between the new US strategy in Asia and defence deals, but the renewed focus on the region – and the tensions created by China's rise – have coincided with some big aerospace contracts.

Despite cost overruns and intense criticism surrounding the project, Japan has placed an order for 42 F-35 stealth fighter jets. The aircraft are being built by a consortium led by Lockheed Martin, the biggest defence contractor by sales, and BAE. South Korea is also expected to finalise this year an order for 40 of the jets.

> Asian nations question the US ability to back up its military commitments

Yet budget cuts at the Pentagon have raised questions among Asian governments about the US ability to back up its military commitments.

The succession of crises in the Middle East continue to dominate the daily agendas of the administration's senior policy makers.

US strategy towards the region is also being buffeted by some of the controversies over history involving Japan, its closest ally in the region.

China has objected strongly to what it views as the attempts by Japanese prime minister Shinzo Abe to rewrite the country's wartime history, which have added to the tensions in the region.

More worryingly for the US, the South Korean government is also angry at Mr Abe. The result is that America's two biggest allies in Asia are barely talking to each other.

'Flying kangaroo' chief faces tough battle for air superiority

Australia

Qantas has flown into turbulence over its own territory, reports *Jamie Smyth*

Five years after taking the top job at Qantas, Alan Joyce is facing a crisis that could break his career.

Following a profits warning, a plunging share price and the loss of the Australian flag carrier's investment grade credit rating, the 47-year-old chief executive is poised to unveil a turnround plan this month.

"He is under a lot of pressure," says George Cairns, professor of management at RMIT university in Melbourne. "Qantas is a national icon at home and the public face of Australia abroad."

Qantas has flown the skies over Australia for almost a century, developing an unrivalled regional network and establishing itself as the country's most recognisable company.

But for the first time in a decade the so-called "flying kangaroo" faces an aggressive competitor in Virgin Australia, which is taking on Qantas in its backyard, just as the airline's international unit is in trouble.

In December 2013, Qantas warned it would report losses of A$250m to A$300m ($223m-$267.8m) in the second half of that year. It blamed unfair competition from Virgin on domestic routes and unveiled a A$2bn programme of cuts to reassure investors.

That has not worked. Since the announcement, Qantas's shares have languished close to record lows. Standard & Poor's and Moody's have slashed its credit rating to junk, the latter citing a "marked deterioration" in its domestic business.

Qantas says Virgin is playing fast and loose with Australia's airline ownership laws by restructuring operations to take on board foreign capital to absorb mounting losses. "The agenda of these foreign airlines is to terminally weaken Qantas," Mr Joyce wrote in a November email to staff.

Increased competition puts Qantas in a quandary Reuters

The bitter battle has a personal edge, as Virgin is led by John Borghetti, a 58-year-old long-time Qantas executive who left the airline shortly after Mr Joyce pipped him to the chief executive role in 2008.

Since joining Virgin in 2010, Mr Borghetti has taken over regional airlines, boosted capacity and added business seats to challenge Qantas in its lucrative domestic market.

In response, Qantas has increased capacity on domestic routes to protect its 65 per cent market share, a level Mr Joyce refers to as a "line in the sand". But the cost of taking on Virgin at home, as well as other airlines abroad, is mounting.

Qantas's international unit is haemorrhaging cash as it combats competition from Middle Eastern airlines, which enjoy cost advantages over the legacy carrier thanks to lower labour costs and the location of their hubs, within easy distance of Europe and Asia as well as Australia.

Qantas's market share has fallen from 32 to 17 per cent in a decade.

After shunning alliances, Qantas changed course in 2013 and agreed a partnership with Emirates. But restoring profitability to its international unit will be challenging.

"Qantas may be a national icon but Australians will follow their wallets when booking flights," says Neil Hansford, chairman of Aviation Strategic Solutions, a consultancy.

> 'Qantas may be a national icon but Australians will follow their wallets booking flights'

He says Qantas should copy Virgin and separate its domestic division from its international unit to attract foreign capital. By doing this, Virgin circumvents the Air Navigation Act, which imposes a 49 per cent foreign ownership cap on Australian airlines operating international flights.

This enabled Etihad Airlines, Singapore Airlines and Air New Zealand late last year to back a A$350m capital raising, which took their combined stake in Virgin to 67 per cent.

But removing regulatory barriers to allow foreigners to control Qantas is politically sensitive and would require the repeal of the Qantas Sale Act, a law that limits any single foreign investor to a 25 per cent stake and total ownership by foreign airlines in Qantas to 35 per cent.

"It is a regulatory straitjacket for an airline that needs access to capital," says Dan Tehan, a Liberal MP and convener of the ruling Liberal-National coalition's Friends of Tourism group.

The coalition is open to repealing the Qantas Sale Act, but the opposition Labor and Green parties are opposed and can block proposed changes in parliament. Labor says it would prefer the government to buy a stake in Qantas. This seems unlikely. Instead, Qantas is lobbying Canberra for a government debt guarantee that would lower its cost of raising funds.

The airline is also considering raising cash via disposals. It is mulling a float of its frequent flyer unit, which could be worth A$2bn. A partial sale of its low-cost subsidiary Jetstar and the sale of airport terminal assets are also possible. But many analysts question whether disposals alone can fix Qantas.

Cameron McDonald, analyst at Deutsche Bank, says: "Selling assets doesn't solve the cost issue. It would need to be a catalyst to addressing the cost base of the company."

Any further cost-cutting, however, will put Qantas on a collision course with trade unions, further complicating the options for turning round the airline.

Patrick Low, director of communications at the Transport Workers Union, says: "We won't support further cost-cutting, and neither will the Australian public.

"Turning Qantas into Aeroflot with a kangaroo on its tail is not the answer."

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