

Australian Airports Association

The economic and social contribution of Australia's airports

In 2022, Australia's airports contributed \$105 billion in value added to the national economy, supporting 690,000 full time equivalent jobs.

Australia's airports are a vital part of Australia's economic and social fabric. Our network of airports connect Australia to the world, and indeed given our geography, provide the only practical means of travel for many journeys.

This report demonstrates the economic importance of Australia's airports in 2022 in terms of value added to the national economy and supported employment, capturing activity associated with airport precinct activity, and facilitated tourism and trade.

The analysis found that in 2022 Australia's airports contributed \$105 billion in value added (VA) to the national economy, supporting 690,000 full time equivalent jobs. The economic activity at and facilitated by airports contributed around **5% of Australia's gross domestic product (GDP)** and supported around **6% of full time equivalent (FTE) jobs in 2022**.

Beyond commercial aviation services, airports also provide critical infrastructure and services to support a range of general aviation activity. Airports, particularly secondary metro airports, are key to providing the infrastructure necessary for the training of new pilots, facilitating **337,000 training hours in 2022**.

Additionally, airports provide the infrastructure necessary to support medical and emergency response operations, aerial work and charter services. These are crucial to supporting Australia's regions, providing support for primary industries and connecting workers across the country.

While the COVID-19 pandemic brought significant challenges for the airport sector, it also highlighted their crucial importance. Indeed, airports facilitated the complex logistics of vaccines and medical equipment, while also serving as key hubs for emergency response operations. In 2022, airports reported that activity at Australia's airports had recovered to 72% of 2019 levels, with scheduled air transport services increasing as travel restrictions ease. Domestic travel is forecast to make a full recovery to 2019 levels in 2023, while international travel is forecast to recover in 2025.

Note: In this report, the term 'airport' is used broadly to cover relevant members of the AAA, capturing the full range of flight activity and regulated operations

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In 2022

Airports contributed \$105 billion to the economy, 5% of Australia's GDP

Airports supported more than 1 in 20 jobs in Australia



110 million
Facilitated commercial air passengers

472,000
Facilitated commercial movements

Recovery in 2022

72%
of air passengers to 2019 levels

67%
of airport profits to 2019 levels

Contribution of airport activities:
170,000 jobs and \$27 billion value added



11,000 jobs and \$4.2 billion value added from airport core operations

Contribution of facilitated aviation:
520,000 jobs and \$78 billion value added

160,000 jobs and \$21 billion value added from international tourism

260,000 jobs and \$42 billion value added from freight and exports



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- Airport precincts are hubs of economic activity, supporting more than 161,000 jobs and contributing \$23 billion to the economy in 2022.
- Airport workforces are diverse and highly skilled, with most airports offering training programs and seeking to improve diversity.
- In 2022, Australia's airports facilitated a total of 110 million domestic visitor nights with an associated \$28 billion in visitor expenditure
- In 2022, Australia's airports facilitated a total of 3.4 million international visitors with an associated \$14.2 billion in visitor expenditure
- In 2022, Australia's airports facilitated a total of 914,000 million tonnes of international freight with an associated value of \$138 billion

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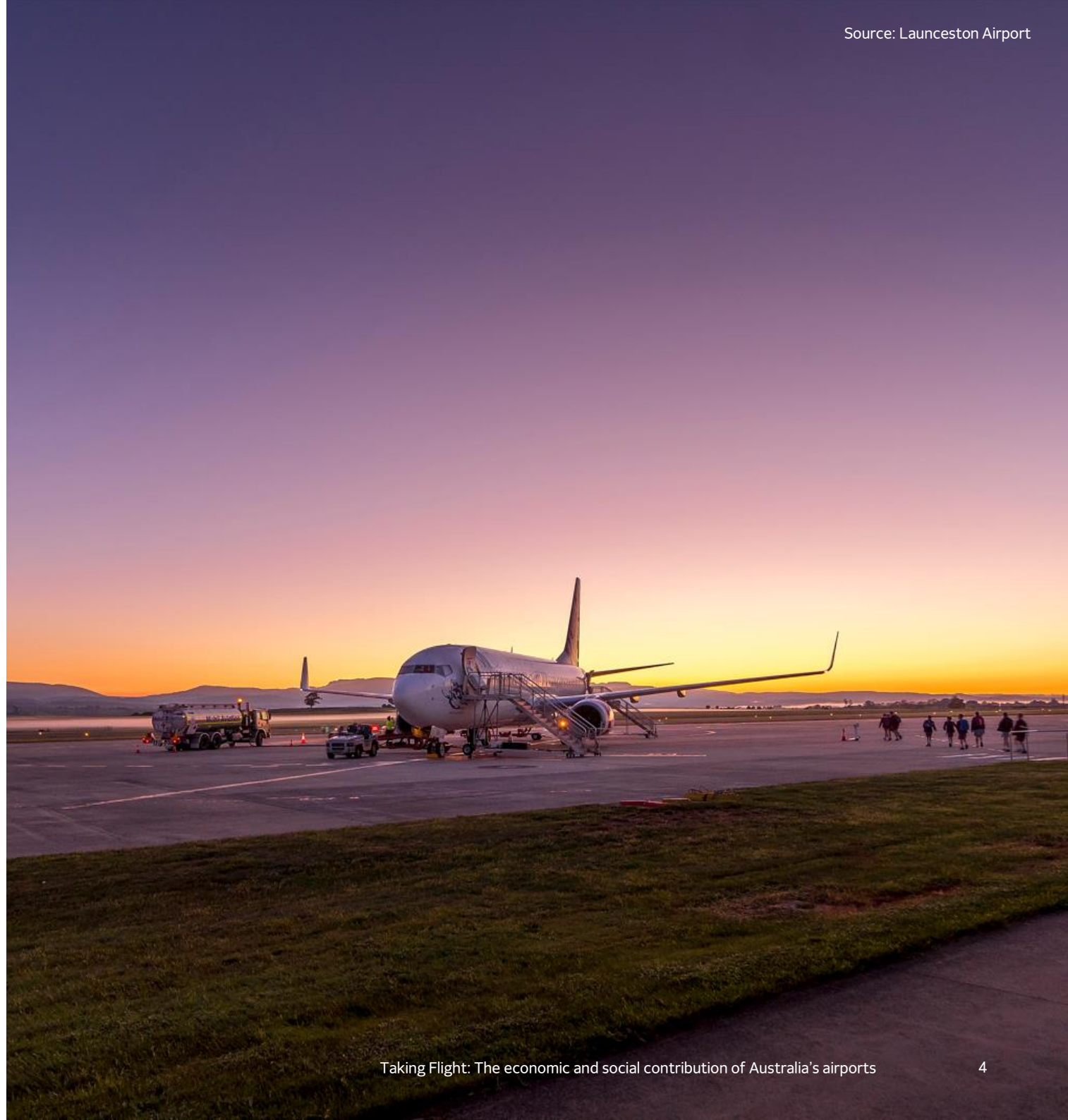
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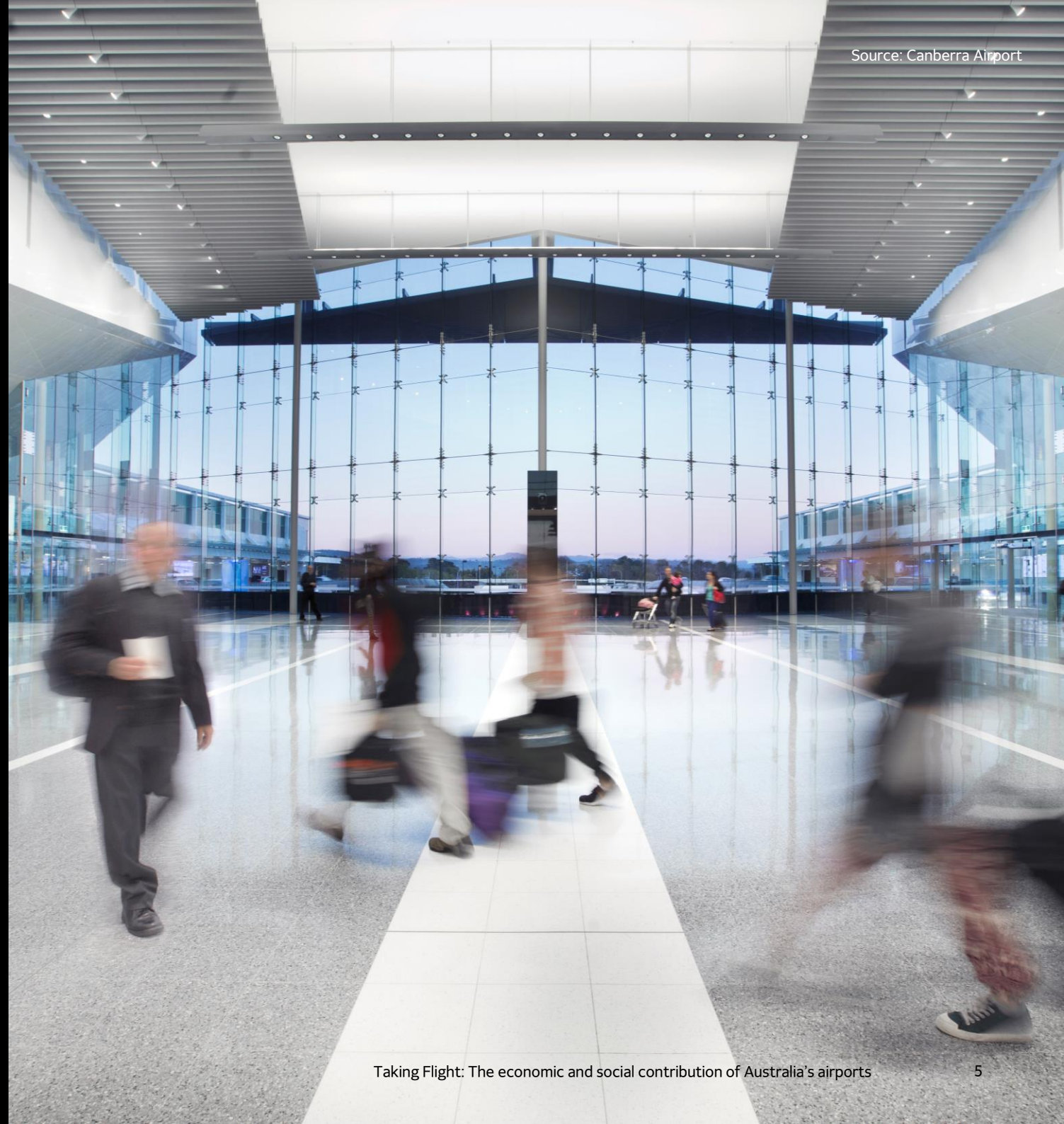
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Abbreviations

Abbreviation	Full term
AAA	Australian Airports Association
ABS	Australian Bureau of Statistics
ASGS	Australian Statistical Geographic Standard
BITRE	Bureau of Infrastructure and Transport Research Economics
CAGR	Compound annual growth rate
FIFO	Fly-in-fly-out
FTE	Full time equivalent
GDP	Gross domestic product
GSP	Gross state product
GVA	Gross value added
IO	Input-Output
IVS	International Visitor Survey
NVS	National Visitor Survey
RFDS	Royal Flying Doctor Service
RFS	Rural Fire Service
SA2	Statistical Area Level 2
SAT	Scheduled air transport
SES	State Emergency Services
TRA	Tourism Research Australia
TSA	Tourism Satellite Account
VA	Value added
VAD	Visitors Arrivals and Departures



1. Project context



Project context

Australia's network of airports play a crucial role in connecting communities, enabling economic activity, promoting social inclusion, and supporting medical, emergency response services and other general aviation activities.

This project

Deloitte Access Economics was engaged by the Australian Airports Association (AAA) to undertake an update of a report produced in 2018: *Connecting Australia: The economic and social contribution of Australia's airports*. The objective of this study is to provide the Australian Airports Association with a contemporary evidence base on the economic and social contribution Australia's airports makes to the national economy and community.

This report examines not only the significant economic contribution of Australia's network of airports, but also their role in connecting communities, facilitating labour, industry and trade links, enabling social inclusion, supporting medical services, emergency response services and other general aviation activities.

The role of the Australian Airports Association

The Australian Airports Association is the national peak body that represents the interests of more than 340 airports and aerodromes, as well as more than 150 corporate members and aviation sector stakeholders, across Australia. The AAA is a crucial advocate for effective national policies relating to airport activities that maximise the transport experience for passengers and freight movements, support and promote a prosperous and competitive aviation sector, and connect communities and industry.

The intention of this report is to stand as an information resource for the Australian Airports Association on the importance of Australia's airports and the nature of their economic and social contribution to Australia. The analysis seeks to move beyond the core quantitative findings, to cover broader insights from industry participants and to discuss strategic implications, opportunities and challenges for the future of Australia's airport industry.

Scope of the analysis

The 2018 analysis established a robust analytical framework for measuring the various components of the contribution of Australia's airports. The same analytical framework has been drawn on to underpin the analysis in this report to ensure comparability and transparency of findings over time.

The core analytical components of the research cover:

- A quantitative assessment of the direct and indirect economic contribution of Australia's airports, capturing airport operational and broader precinct activities, facilitated tourism and trade
- Case studies and qualitative insights to demonstrate the broader social contribution of Australia's airports in facilitating workforce connectivity, enabling flight training, medical and emergency response services, and supporting local communities

- Passenger and movement forecasts of airport activity, as well as industry insights on future challenges and opportunities
- A profile of airport workforces, covering demographics, skills, qualifications and actions taken by airports to support career development.

In addition, the report outlines structure, linkages and operating models of Australia's airports, as well as recent levels and types of investment undertaken to support operational growth.

In this report, the term 'airport' is used broadly to cover the full range of flight activity and regulated operations. For transparency and consistency with the use of this report, the 'airport' population captured in this analysis is consistent with the AAA's airport membership base.

Data sources

The study draws on a range of public data sources including Tourism Research Australia (TRA) visitation data, Australian Bureau of Statistics (ABS) census, labour force, and industry publications, Airservices Australia general aviation data and Bureau of Infrastructure, Transport and Regional Economics (BITRE) aviation statistics. The data was cleansed, cross referenced across the multiple sources, validated and used to estimate the economic contribution of Australia's airports in value added and employment terms. All data sources, published reports and academic research drawn on are referenced throughout the report.

Survey of airports

A further data source for the analysis was a bespoke survey of airports developed by Deloitte and distributed by the AAA. The survey was used to capture contemporary information about airports' financial performance, workforce profile, and perceptions of future challenges and opportunities. Responses to this survey were the key data input to estimating the economic contribution of airport core operational activities, as well as the workforce profiling and demand outlook.

In total, 32 airports completed the survey. Respondents include 7 of 10 major airports, as well as a mix of large regional, minor regional, remote and secondary metro airports. Figures from the survey were scaled and weighted to the airport population profile and used to underpin the core operational activity component of the economic contribution analysis.

The survey methodology, sampling outcomes and scaling and weighting approach are detailed further in Appendix A: Survey overview and B: Economic contribution framework.

2. Australia's airports



Australia's airport network

Australia's diverse network of airports keeps the country connected, providing crucial infrastructure to support travel demands, industry activity, and medical and emergency response services.

Australia has a vast airport network, servicing both regular public transport and general aviation needs from remote desert mines to thriving cities. Airports provide the infrastructure, labour and service requirements to facilitate both commercial travel and trade, and general aviation needs covering a range of activities to support both industry and the community, including flight training, medical and emergency response services, own use business charters, and aerial work such as crop monitoring and spraying or aerial surveying and mapping.

In 2022, the AAA's airport members transported 117 million passengers¹ and facilitated freight exports worth \$51 billion.²

Australia's airport network is diverse, ranging from international gateway airports in major cities to regional community airports scattered around the country.

In this report airports have been classified into four distinct categories:

- **Major:** The largest airport in each state and territory capital city, as well as Cairns and Gold Coast which act as major tourist hubs
- **Large regional:** Airports with passenger volumes above 100,000, not including the major airports
- **Minor regional and remote:** Airports outside of major cities with passenger volumes lower than 100,000, including non-SAT airports
- **Secondary metro:** Non-major airports in capital cities, primarily fulfilling general aviation requirements for the metro area, such as flight training and medical and emergency response services.

More details on the airport population captured in this analysis are available in Appendix A: Survey overview.

Australia's airports domestic passenger activity has been mapped in Figure 2.1. Overall, 90% of airports with SAT are outside of major cities, however 84% of passenger traffic goes through the major airports.² The wide geographic distribution of airports ensures connectivity, accessibility and support for all Australian regions and communities.

In this report, the economic contribution of airports covers four components of airport activity: core airport operational activity, precinct activity of onsite businesses, facilitated freight and facilitated tourism.

This report also focuses on crucial the social benefits that airports enable.

Airports benefit their communities in many ways other than the broadly recognised passenger and freight transport activity. Many airports, particularly those in regional and remote areas, operate on low margins or with the support of government funding to ensure crucial services such as regular domestic airfreight, emergency and medical response, and industry aerial support, among other benefits, are available for their local communities and regions.

Case studies are presented to demonstrate the broader role of airports in supporting local communities through connectivity and medical and emergency response support, as well as supporting industry needs, such as aerial work and connection to workforce.

Figure 2.1: Heatmap of domestic passenger activity at Australia's airports by number of fee-paying passengers, 2022



Source: Deloitte Access Economics and BITRE airport traffic data
Notes: Larger bubbles indicates more domestic passenger traffic in the area, airports with less passenger traffic have been made darker to improve visibility

The social importance of Australia's airports

Far beyond their economic impact, airports soar as vital hubs, supporting local communities by facilitating a diverse spectrum of aviation services.

Australia's airports make a crucial contribution to the social fabric and welfare of their local communities. Though airports' social contribution can be, in many cases, difficult to quantify in monetary terms, the broader services enabled and supported by airports are highly valued by local communities.

Airports enable the connection of individuals, families and industries across and throughout the globe. In Australia, airports are crucial for overcoming geographical challenges that are caused by the vastness and remoteness of many parts of Australia. Additionally, airports allow for the efficient delivery of goods and rapid response to emergencies that cannot necessarily be achieved without aviation.

Emergency support and remote air freight

Airports provide the infrastructure necessary to facilitate a range of emergency response services, such as fire services, the Royal Flying Doctor Service (RFDS), Police air services and State Emergency Service (SES). These services support all parts of Australia, however, regional and remote areas are the focus, as they often are out of reach of rapid road-based response services.

Airports provide infrastructure that is crucial in emergency response and management. For example, aircraft are used to quickly identify bushfires, and can then be used for early response, or control in areas that are difficult to access. Regional airports enable this, by providing infrastructure dedicated to emergency support, such as high flow water pumps and dedicated hangars. For example, Cessnock Airport played a crucial role in the 2019/20 bushfires by supporting helicopter water bombers with its bushfire designed water storage facilities.¹

Medical services are also supported by aircraft, with organisations such as the Royal Flying Doctor Service, relying on the support of aircraft to be able to deliver crucial medical services and supplies to anyone in Australia at any time. Aeromedical services require airports to have specialised staff and rapid responses so that aircraft can be operational, fuelled and ready to fly. The RFDS relies on airports of all sizes, which both allow them to get as close to remote communities as possible and deliver them to state-of-the-art medical facilities in capital cities.

Connecting individuals

The primary role of airports is to connect people. 28% of Australia's population is born overseas, 48% have at least a parent who is born overseas, and many have close family in cities other than where they live.² Airports create an option for people to remain connected with family and friends across Australia and overseas.

Airports in Australia act as a bridge between Australia's cities and towns, particularly for those that are separated by large distances, where other transport methods would be prohibitive such as Sydney to Perth.

Within Australia, airports can help bridge the gap between cities, regional and remote regions, thereby enhancing labour mobility, regional tourism, economic prosperity and the vibrancy of regional and remote life.

Community support and non-aeronautical services

Many airports work with the local community to provide social support through both aviation and non-aviation services. For example, Port Hedland airport runs recycling on waste that is collected in its airport and uses the proceeds to sponsor local community organisations.

Bankstown Airport is the "largest and most complex emergency medical services base in Australia",³ and as such has provided large amounts of in-kind support to a variety of emergency medical services organisations such as the RFDS. Part of this is enabled by the airports' partnerships with the broader community, such as its relations with other on-precinct businesses.

Bankstown Airport has improved community amenity in its product offering, which has increased its interaction with the broader community. As part of this, the airport has worked with a number of businesses to expand the scope of its 300 hectare precinct. This has involved the construction of facilities such as an entertainment precinct that allows for a greater interaction between aviation and non-aviation customers.

Aviation skill training

The aviation industry relies on a highly skilled workforce to keep travellers and cargo safe and affordable. Airports and other aviation professionals are critical for the provision of practical training options for pilots, aircraft engineers, mechanics, cabin crew, air traffic control and other airport operational roles.

Secondary metro airports are particularly key in the training of pilots, providing infrastructure for small planes and other training facilities. Many, such as Bankstown, have relations with tertiary institutions that offer commercial aviation degrees.

Skill training is also important in the context of emergency services, where small airports play a key role. Airports such as Western Australia's Djarindjin Airport allow for RFDS pilots to practice landing, in all conditions, in a typical rural environment that would be part of their day-to-day roles.

The social importance of Australia's airports is demonstrated throughout the report via a suite of case studies.

Aviation activity and recovery from the COVID-19 pandemic

There was a dramatic decrease in the number of passengers and flights across Australia’s airports during the COVID-19 pandemic. While there has been a remarkable recovery in 2022, passengers and movements are still below 2019 levels.

The airport sector was highly affected by COVID-19, with demand dropping dramatically from March 2020 as airlines cancelled flights due to COVID lockdowns. While some domestic flights continued, international travel almost came to a standstill following the international travel ban preventing international tourists, immigrants and university students from travelling to Australia and Australians from leaving the country without an exemption.

In 2019, 164 million revenue passengers passed through Australia’s airports, with 121 million (74%) of them being domestic passengers and 43 million being international (26%).

Major airports serviced a large majority of aircraft movements and passengers, accounting for 82% of domestic travellers, 98% of all international passengers and 87% of overall travellers.²

Major airports typically accommodate larger aircraft, which can be seen by their smaller share of aircraft movements in Chart 2.2. relative to their share of total passengers.

In 2022, while airport traffic had recovered from the lows seen in the peak of the COVID-19 pandemic, Australia’s airports were still operating below 2019 traffic levels, as seen in Chart 2.1. Across 2022, domestic passenger traffic was at 82% of 2019 levels, compared to the 45% of 2019 levels observed in the international segment.³ The trajectory of the post-COVID-19 recovery has varied across airport types. In 2022, major airports, who have a higher portion of international travel, were operating at 70% of 2019 passenger levels.

While this was partially driven by the slower recovery of international travel, major airports also recorded a relatively weaker domestic market recovery, operating at 80% of their 2019 levels in 2022. Comparatively, large

regional and minor regional and remote airports recorded the strongest recovery of passengers, reaching 91% and 90%, respectively, of their 2019 levels in 2022.⁴

As travel patterns and behaviour trends continue to evolve post recovery, airports have responded by focussing on and delivering a holistic experience. Airports are striving to meet heightened traveller expectations around quality of service relating to connectivity, fast security, and onsite facilities and amenities.

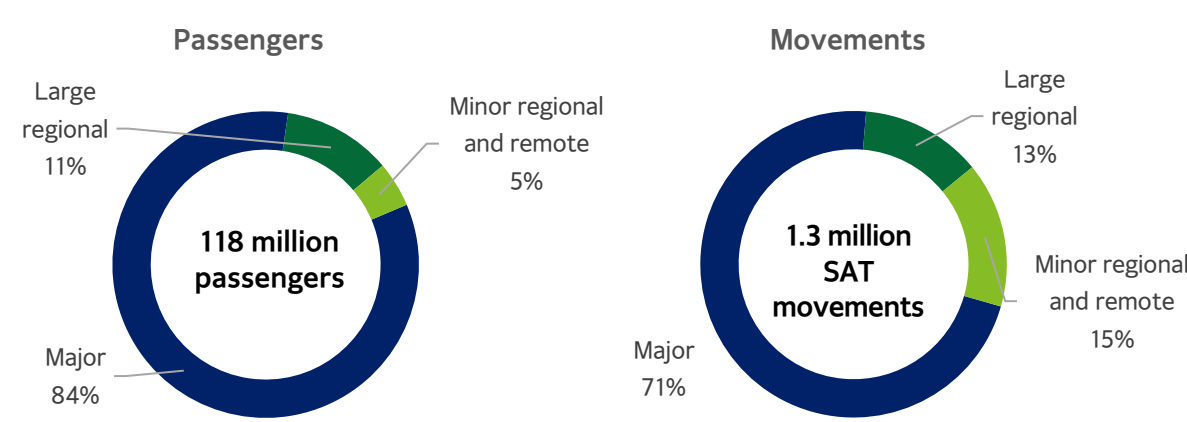
To maintain pace with the increasing and evolving demand, airports are investing to increase and improve capacity and the traveller experience. Terminals have to be kept at a high standard to ensure passengers are satisfied and safe. Runways must have enough capacity to meet demand and accommodate required aircraft sizes. Recent trends in investment activity of Australia’s airports are explored further on the next page.

Chart 2.1: Commercial passengers and aircraft movements at Australia’s airports



Source: BITRE, airport traffic data (2023)

Chart 2.2: Passengers and movements by aircraft category, 2022



Source: BITRE, airport traffic data (2023)

Airport operating performance during recovery from the COVID-19 pandemic

Revenue has decreased without a subsequent increase of costs since COVID, except for airports that rely on general aviation.

In terms of airport operating performance, the decrease in passengers and aircraft movements during the COVID-19 pandemic resulted in lower airport revenues, while recent high inflation has put pressure on operating costs. All categories of airports, except for secondary metro airports, recorded lower revenues in 2022 than 2019, as seen in chart 2.3. However, costs across most airport categories now exceed 2019 levels. As a result, many airports, particularly Minor regional and remote airports operating within reasonably tight budget bounds, reported an operating loss in 2022.

While major airports tend to operate efficiently and serve a diverse range of industries, large regional and Minor regional and remote airport performance is more dependent on the industry they primarily serve. As a result, the pandemic more heavily impacted tourism focused airports, such as those in coastal regions, lowering revenue opportunities while operating costs still needed to be met. Conversely, airports in regions with a strong resource sector recorded higher revenues than 2019 on the back of greater FIFO and trade activity as commodity prices strengthened.

As seen in chart 2.3, for all airport categories except secondary metro airports, revenue has decreased since 2019. Likewise, for all airports but major airports costs have increased.

Broadly speaking, for secondary metro airports general aviation activity has continued throughout the pandemic. In particular, medical and emergency services were fundamental to community support and the vaccine rollout at critical stages the pandemic. Pilot training activities, while scaled back, continued to operate to some extent during the pandemic. Industry specific aerial work, such as crop monitoring and land surveillance, still needed to occur and as such, airports concentrated on servicing this type of activity were relatively resilient over the pandemic.

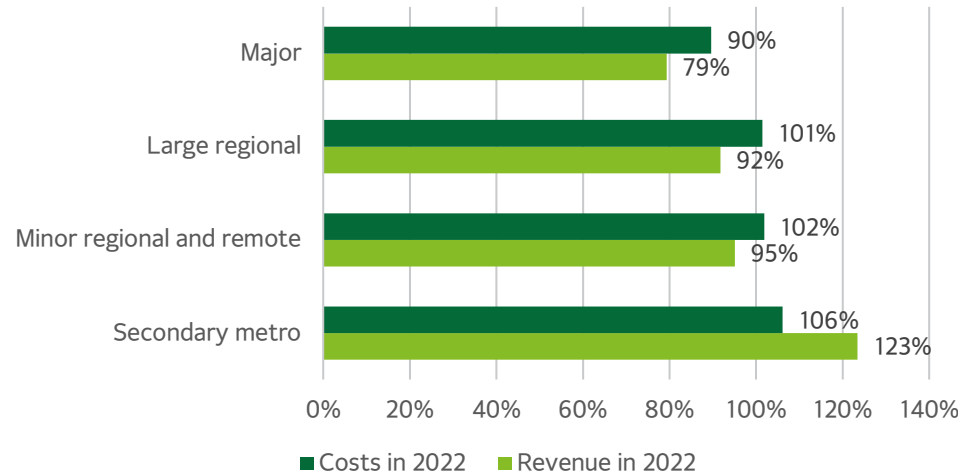
Additionally, a significant portion of secondary metro airport revenues comes from hangar rentals and in-precinct leases – ranging from airside services, warehousing and logistics to retail centres such as Direct Factory Outlets to community entertainment complexes - which remained relatively stable during the pandemic, compared to SAT activity, providing further support for secondary metro airports throughout the pandemic. This helped contribute to their relative revenue resilience since 2019.

Daniel Jarosch, Chief Executive Office of Aeria Management Group, operator of Bankstown Airport and Camden Airport provides specific insight on the relative resilience and recent performance of secondary metro airports:

“The resilience of Bankstown Airport and Camden Airport amid the impacts of Covid-19 reflects the strength of Australia’s general aviation sector and the importance of working with your customers in challenging times. Our airports remained open, serviceable and compliant throughout multiple lockdowns and restrictions. Emergency services based at Bankstown Airport continued to operate 24/7 and our pilot training schools were nimble in adapting to Covid-safe operations.”

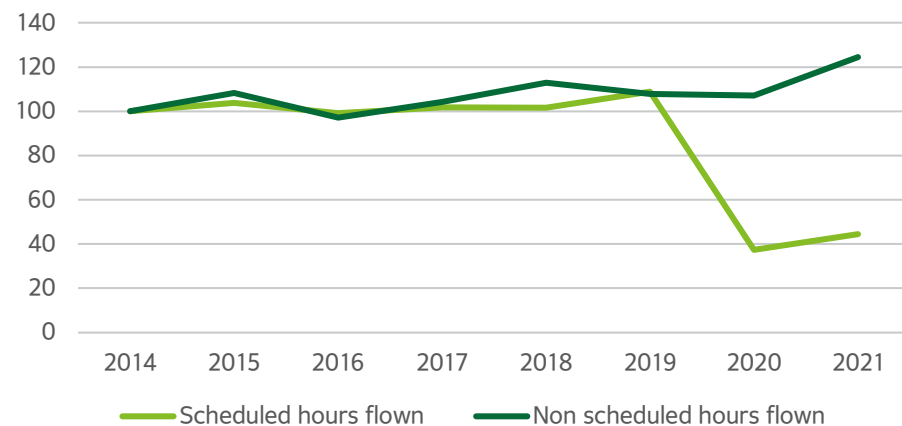
- Daniel Jarosch, CEO at Aeria Management Group

Chart 2.3: Costs and revenues of airports in 2022 as a percentage of 2019



Source: Deloitte Access Economics survey of airports, n=24
Note: Only airports that responded to the survey are included in these results

Chart 2.4: Scheduled and non-scheduled flight hours, indexed to 2014



Source: BITRE, Australian Aircraft Activity (2023)
Note: Scheduled flights include passenger and freight services, non-scheduled flights reflect general aviation activity

Case study: Flight training and the role of secondary metro airports

Australia's secondary metro airports help to support flight training and connect the community.

Secondary metro airports provide crucial infrastructure in metropolitan areas to support flight training operations, thereby building Australia's qualified pilot workforce, and ensuring major airports can focus on scheduled commercial activity.

Australia's major airports are designed to support larger aircraft and a high volume of passengers, and generally do not invest in facilities or have capacity to support light aircraft and general aviation activity. Indeed, in June 2023, Melbourne Airport recorded no aircraft landings under 7 tonnes, and only half a percent of Sydney Airport's aircraft movements were under 7 tonnes.¹

In contrast, secondary metro airports are specialised in supporting light aircraft activity, crucial for flight training, general aviation and aeromedical operations, among other services. In 2022, 87% of Australia's aviation students were studying at a university that partners with a secondary metro airport, and these students rely on metropolitan airports for their practical training.² As shown in Figure 2.2, secondary metro airports support more aircraft movements than the main passenger airports in their respective metropolitan areas, collectively accounting for 38% of Australia's aircraft movements.³

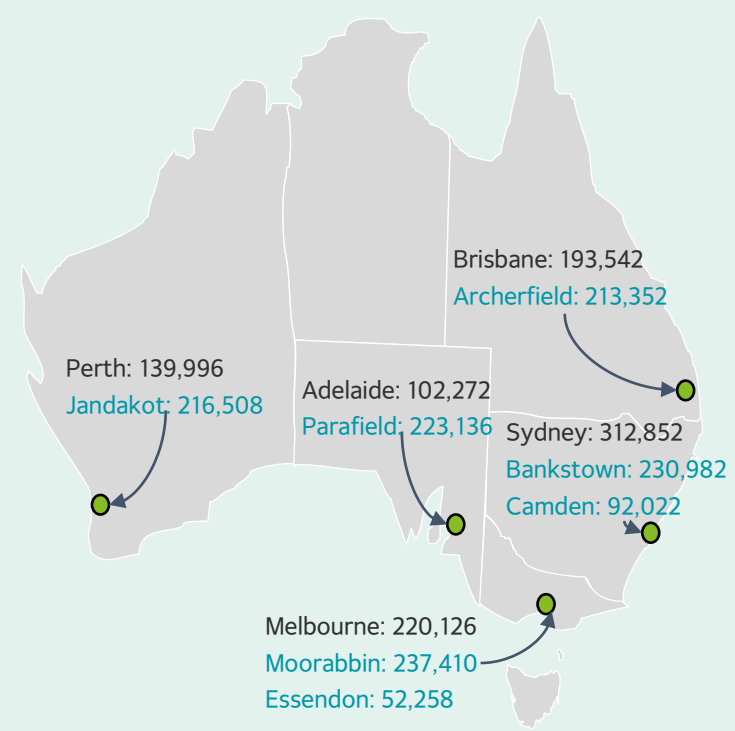
Each year 600 flight pilots attending schools such as the University of New South Wales and Sydney Flying College, are trained across Bankstown and Camden airports. Bankstown Airport's south runway is dedicated to flight training operations, with other runways also open to flight schools.

Flight training services are particularly critical right now due to qualified commercial pilot labour shortages, exacerbated by COVID-19 as pilots brought forward retirement plans.³ The NSW government has estimated that Australia will need an additional 11,000 pilots by 2038, with specialised aviation labour shortages likely to be further increased due to high international demand for Australian trained pilots.⁴

Australia's flight schools provide a small but crucial part of Australia's international student market, with 34% of Australia's aviation students not having Australian citizenship in 2020.⁵

In 2022, 337,000 training hours were enabled by Australia's airports,⁶ however, this activity is still down 20% on pre-pandemic levels. Flight training operations not only help to build commercial pilot workforce capabilities but open up a range of alternate career pathways for participants, including aircraft engineers and mechanics, air traffic control and airport operations roles.

Figure 2.2: Major and secondary metro airport movements, 2022-23



Source: Deloitte Access Economics and AirServices Australia
Note: Secondary metro airports are shown in blue text.

Connecting aviation, business and the community at Bankstown Airport

Bankstown Airport is a secondary metro airport in South West Sydney and the third busiest airport in Australia, supporting general aviation activities and services such as pilot training, charter flights and emergency and disaster response agencies.

In recent years, the airport has invested heavily in a diverse range of facilities and infrastructure to support core aviation services and the community more broadly.

- Bankstown Airport has upgraded airside pavements, improved connecting adjacent roads to the precinct, refurbished its passenger terminal and delivered new hangars and aviation facilities, to improve services and amenity for its customers and other airport users.
- Bankstown Airport has launched new community entertainment, sports and retail facilities and invested in landscaping, signage and electric vehicle charging stations, to engage and connect residents with the precinct.
- The airport precinct's new Altitude industrial and logistics hub, which features 40-plus hectares of premium warehousing and office facilities, has supported jobs and economic growth in South West Sydney and enabled reinvestment in aviation infrastructure.

Bankstown Airport is also crucial to emergency and aeromedical response services across Greater Sydney and regional areas, as the state's home base of NSW Air Ambulance, NSW Police Aviation Command, the National Parks and Wildlife Service and Royal Flying Doctor Service, as well as multiple other patient and organ transfer services.

The airport plays a crucial role in supporting the NSW Rural Fire Service and firefighting operations, including fire spotting and surveillance and aircraft maintenance. In the 2019-20 Black Summer bushfire season Bankstown Airport hosted firefighting aircraft and provided supporting services and infrastructure.

Revenue from non-aviation investments and leases has built capacity to support aviation activities, facilities and infrastructure, including new hangars and funding for non-profit organisations, such as the Little Wings patient transfer service for children who urgently need medical care in regional areas.

Strategic investment by Australia's airports

Airports are investing to boost competitiveness, meet passenger demand and experience expectations, and operate more sustainably.

Airports are capital intensive operations, requiring a complex system of infrastructure and technology, and significant land area, to facilitate the various roles and services that airports fulfill. Now, more than ever, airports are investing to enhance service quality and expand capacity. With evolving customer preferences and service expectations following the COVID-19 pandemic, strategic investment is a crucial consideration for effective airport operations.

Chart 2.5 shows that major airports have made significant recent capital investments, with approximately \$210 million per airport in the past three years.¹ While to a smaller scale, investments by large regional and secondary metro airports have also been notable, with indications of significant capital injections towards runway development at large regional airports and a focus on investing in property and infrastructure at secondary metro airports, based on the survey responses received.

Reported average investment levels at minor regional and remote airports were relatively modest in comparison, with these airports instead tending to focus on servicing their communities within available capacity conditions.

That said, the significant recent investment appears remarkable given the coinciding low demand conditions due to the pandemic. However, the decline in demand provided the opportunity to minimise the use of airport capital, allowing efficient upgrade conditions for runways and terminals.

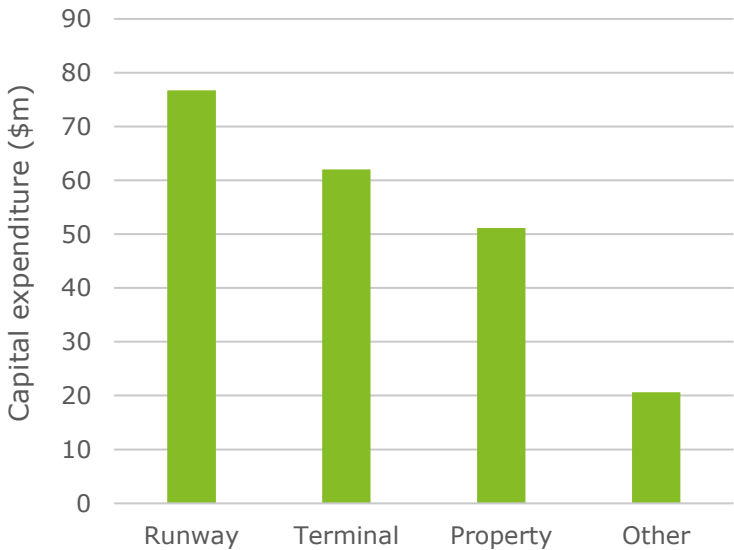
Runway spending represented the largest area of spending of for major and large regional airports. Airports tend to upgrade runways, or build additional runways, to allow for larger aircraft, more aircraft, and safer landing conditions. Higher levels of investment in runway development reveal a competitive market environment; that is, an airport that is investing to increase capacity of flights reduces the revenue it could raise from controlling capacity, indicating the airport is being led by competitive pressures from other airports or travel means.²

Further, airports are increasingly looking at how they can reach net zero, with most setting targets of between 2035 and 2040.³ One way airports have done this is by looking at sustainable materials, such as stone

mastic asphalt, in runway construction (e.g. recent upgrades at Emerald airport).⁴ This type of runway investment has been shown to have both lower associated emissions and a longer life than typical asphalt, preventing recurring emissions when it needs to be replaced.

Secondary metro airports have a greater reliance on property as part of their revenue mix than other airports, as they typically rely on hangar rental and on-precinct leases for revenue instead of landing fees. As such, secondary metro airports tend to focus investments on land and other building infrastructure.

Chart 2.5 Capital expenditure per airport in the last three years for major airports



Source: Deloitte Access Economics survey of airports, n=7
Note: This only includes major airports that responded to the survey. It is not necessarily representative of the whole airport population. Capital expenditure by nature is lumpy and so individual airport experience may vary compared to the averages shown above.

Investing in sustainability at Sunshine Coast Airport

Sunshine Coast Airport has made significant investments towards becoming Australia's first carbon neutral airport. This resulted in the Airport achieving "Level 3+ Neutrality" under the Airport Carbon Accreditation management programme.

Since 2012, Sunshine Coast Airport has recorded a 28% reduction in diesel consumption, 15% reduction in food waste, 27% reduction in energy consumption, 40% reduction in emissions, and a 10% reduction in water consumption, all of which came alongside strong financial success.⁵

To achieve these significant improvements in sustainability, Sunshine Coast Airport has invested in energy reduction, waste elimination, water and carbon offset initiatives. For example, the Airport increased the energy efficiency of its air conditioning system and automated their operations to be responsive to flight schedules and temperature throughout the day. The Airport also installed solar powered composting that has the capacity to compost 945 litres of waste per week, preventing it from going to landfill.

Water consumption was reduced by implementing urban sensitive land design to reduce irrigation and to harvest rainwater from the terminal roof for use in amenities and landscaping.

Additionally, Sunshine Coast Airport has invested in 1,435 Australian Gold Standard Carbon offsets to negate their remaining carbon emissions. This has helped the Airport to achieve the top sustainability accreditation, which has helped its engagement with local community and branding.

"Sustainability is at the heart of everything we do, helping us protect the incredible biodiversity values of our region. By investing in strong sustainable practices now, we are laying the foundation for future success, ensuring what makes the Sunshine Coast special today, is there for tomorrow."

- Kate McCreery-Carr, General Operations Manager at Sunshine Coast Airport

3. Economic value of Australia's airports



The economic contribution of Australia's airports

In 2022, Australia's airports contributed \$105 billion in value added to the national economy, supporting 690,000 full time equivalent jobs.

Economic contribution analysis

Economic contribution studies provide a snapshot of the contribution of a company or industry at a particular point in time. This section estimates the contribution of Australia's airports to the economy in calendar year 2022.

The headline contribution metrics are:

- **Gross Value Added (GVA)**- the contribution of Australia's airports to Gross Domestic Product (GDP).
- **Full Time Equivalent (FTE) Jobs**- the number of FTE employees supported by Australia's airports.

The analysis measures both direct and indirect value of Australia's Airports. The direct contribution demonstrates the returns contributed from direct labour and capital inputs associated with Airport activity. While the indirect contribution captures the supply chain activity associated with the demand for goods and services generated from other sectors of the economy.

The economic contribution analysis in this report is consistent with the Australian National Accounting framework. Specifically, the analysis was underpinned by the Deloitte Access Economics' Regional Input-Output Model, containing multipliers derived from the ABS' Input-Output, supply and use, tables.

The economic contribution of airport facilitated tourism was underpinned by a Tourism Satellite Account (TSA) framework. The TSA framework is conceptually similar and draws on the ABS Input-Output Tables, but accounts for the unique, consumption based characteristics of the tourism industry.

Further details on the analytical approach are provided in Appendix B: Economic contribution framework and Appendix C: Tourism contribution framework.

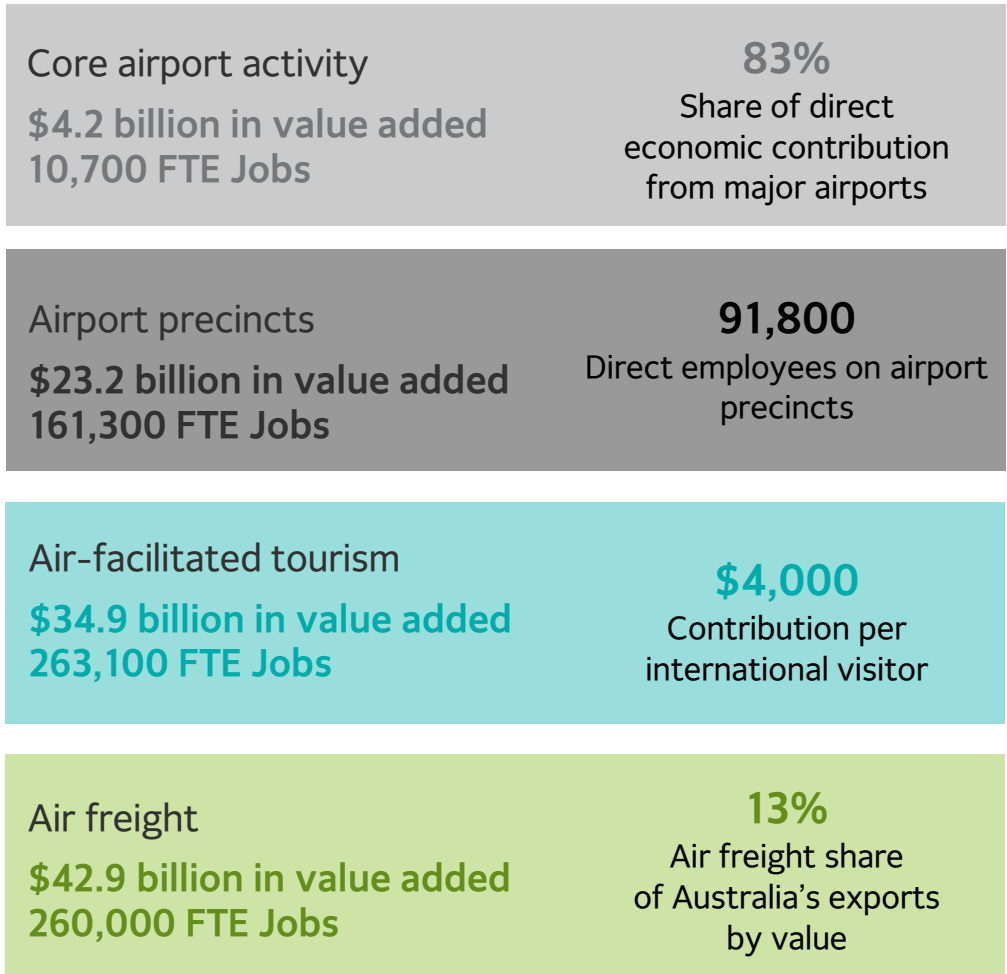
Australia's airports contribute to the economy in a variety of ways

This report estimates the direct and indirect value of four key components of airport associated activity:

- **Core airport activities:** similar to the way the economic contribution of a standard business would be estimated, this component examines the profitability, employment and expenditure of the airports themselves. *The survey of airports is the primary data input for these estimates.*
- **Airport precinct activities:** this component measures the activity that take place in broader airport precincts, including supporting businesses, retail activity, airport hotels and commercial offices. *These estimates are primarily derived from ABS census employment figures, supplemented by the survey of airports.*
- **Facilitated tourism:** airports facilitate almost all of Australia's international tourists, and approximately a quarter of domestic tourism. This component measures the contribution of airport-facilitated expenditure by tourists to the economy. *Tourism Research Australia (TRA) figures are the primary inputs to this modelling.*
- **Facilitated freight:** air freight enables safe, quick and efficient trade in perishable and high-value goods. This component measures the contribution of air-facilitated trade. *A custom ABS data request is the main data source for this section.*

The headline results for each of these components are presented in figure 3.1. The aviation industry was still impacted by the COVID-19 pandemic at the time of this study, with ongoing border restrictions, travel hesitancy and supply chain issues being significant factors. As a result, these estimates are likely conservative, and do not represent a 'typical' year of operations.

Figure 3.1: Economic contribution of Australia's airports, 2022



Source: Deloitte Access Economics

Contribution of core airport activities

In 2022, the core activities of Australia’s airports contributed \$4.2 billion in value added to the Australian economy and supported 11,000 full time equivalent jobs.

Australia’s airports are significant contributors to the economy and employment.

In 2022, 3,700 FTE jobs were directly supported by core airport activities. This captures those employed by airports and involved in the day-to-day operations and management of the business, such as ground staff, management, marketing and administration.

Major airports are highly productive, capital-intensive operations, thereby returning significant value relative to their labour requirement. In 2022, the ten major airports directly contributed more than \$2.7 billion in value added to the economy, equating to \$1.2 million in value added per direct employee, more than six times as much as the national average of \$176,300 value added per employee across all industries.¹

Of this contribution, more than 83% was contributed by the 10 major airports, with a further 11% being contributed by 33 large regional airports. This means that over 94% of the contribution of airport core operations came from just 43, or 23% of all airports in Australia. These airports are structurally different to the smaller airports that have less traffic, fewer employees and lower revenues.

While smaller airports do not make a substantial economic contribution from core activities, they are nevertheless vitally important to their communities- providing a rapid, reliable link to the rest of Australia for freight, emergency and medical services. This contribution is not captured in the calculation of a traditional economic contribution study but makes a substantial impact on the communities that benefit.

Table 3.1: Economic contribution of core airport activities, 2022

	Direct	Indirect	Total
Value added (\$m)	\$3,214	\$967	\$4,182
Employment (FTE)	3,700	7,000	10,700

Source: Deloitte Access Economics

Airports contribute indirectly to the economy through the purchase of intermediate goods and services to facilitate their operations.

In 2022, the indirect contribution of airports was \$967 million in value added to the national economy, supporting 7,100 FTE jobs. Most operational expenditure requirements of airports flows to the services and utilities, security and property sectors- the key services required to carry out the day-to-day operations of the airport (Chart 3.2). The result of this upstream activity is two indirect FTE jobs supported for every direct FTE employee. This reflects the unique nature of major airports’ business operations- providing a workplace for a range of labour-intensive businesses and organisations that deliver aviation allied services under contractual arrangements with airports.

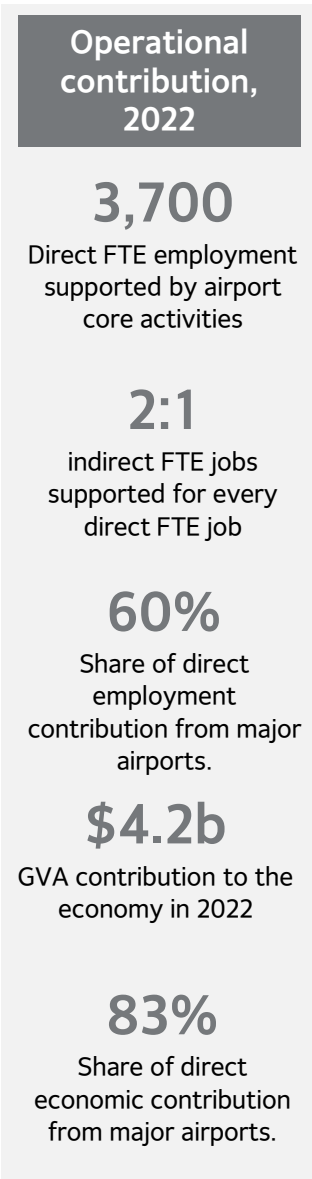
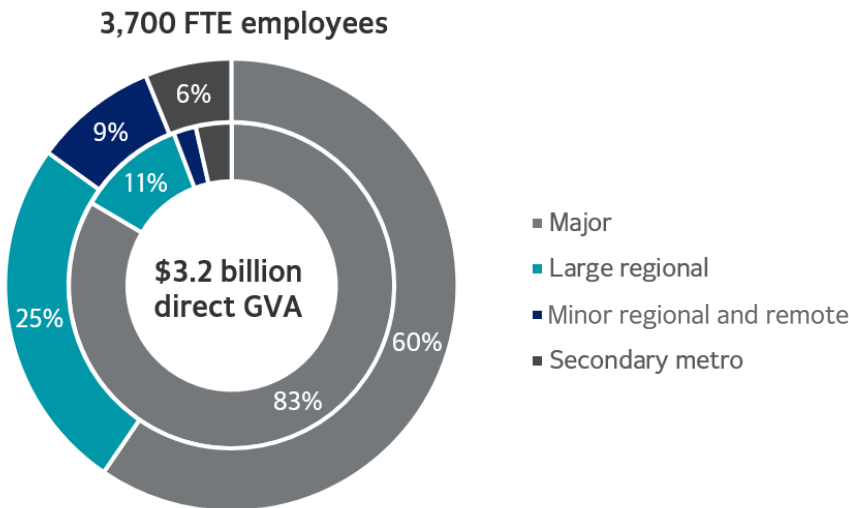
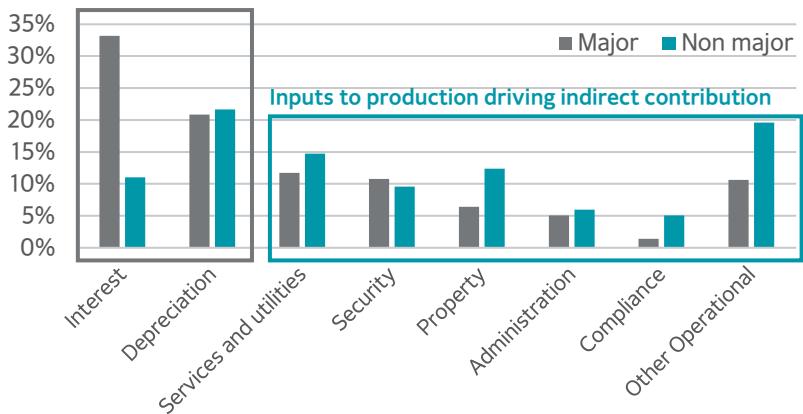


Chart 3.1: Direct employees and gross value added (GVA) of airport core operations, 2022



Source: Deloitte Access Economics

Chart 3.2: Airport cost structure, by airport type, 2022



Source: Deloitte Access Economics survey of airports, n=32

Note: Interest and depreciation are representative of the consumption of capital (or returns to capital), and therefore form part of the direct contribution estimates.

Contribution of airport precincts

In 2022, the broader business activity on airport precincts contributed \$23 billion in value added to the Australian economy, supporting more than 161,000 full-time equivalent jobs.

Airports provide a base and infrastructure to support a range of industry activity.

A wide range of businesses and services operate from airport precincts, including aircraft maintenance, warehouse and logistics, hotels, cafes and restaurants, and professional services. As major hubs of business and employment, airport precincts contribute significantly to the economy. For example, in the ACT, 4% of employment is located in the airport precinct, with Western Australia (1.6%) also having a high concentration of precinct-based employment due to the substantial commercial developments located at Canberra and Perth Airports.

The most common industries of precinct employment were transport and storage, government services and retail (Chart 3.3). The significant transport and storage workforce component suggests that a large share of precinct employment is directly related to airport operations and logistics, however airports also serve as hubs for business and government activity, as well as provide space for retail trading, ranging from standard on-airport retail options to discount factory outlets and high-end brands.

In 2022, around 91,800 FTE employees were directly employed in airport precincts, supporting a further 69,500 indirect FTE jobs through purchases of inputs to production, resulting in a total employment contribution of more than 161,000 FTE employees. This employment is concentrated in capital cities, with precincts around major airports (75%) and secondary metro airports (21%) representing more than 96% of total airport precinct employment.

In 2022, airport precincts were responsible for more than 80% of core and precinct activity at Australia's airports, demonstrating the important role Australia's airports play as a catalyst and enabler of broader industry activity. In total, airport precincts contributed more than \$23 billion in value added to the national economy, roughly evenly split between the direct (\$12.0 billion) and indirect (\$11.3 billion) activity.

Table 3.2: Economic contribution of airport precincts, 2022

	Direct	Indirect	Total
Value add (\$m)	\$11,952	\$11,287	\$23,239
Employment (FTE)	91,800	69,500	161,300

Source: Deloitte Access Economics

Note: totals may not add exactly due to rounding

The analysis of Australia's airport precinct contribution reveals that, in 2022, 1.4% of Australia's employment was supported by the activity located on airport grounds. This is comparable to the number of people employed in the entire food retailing industry (168,000 people in 2022).¹

Precinct activity, 2022

\$23 billion

in valued added contributed from airport precincts

91,800

FTE employees directly employed in airport precincts

161,000

Total FTE employees supported by airport precinct activity

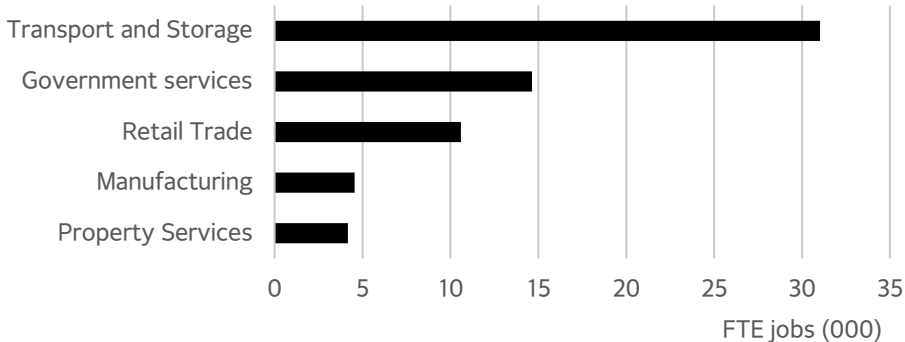
1.4%

Of Australia's FTE jobs supported by airport precinct operations

77%

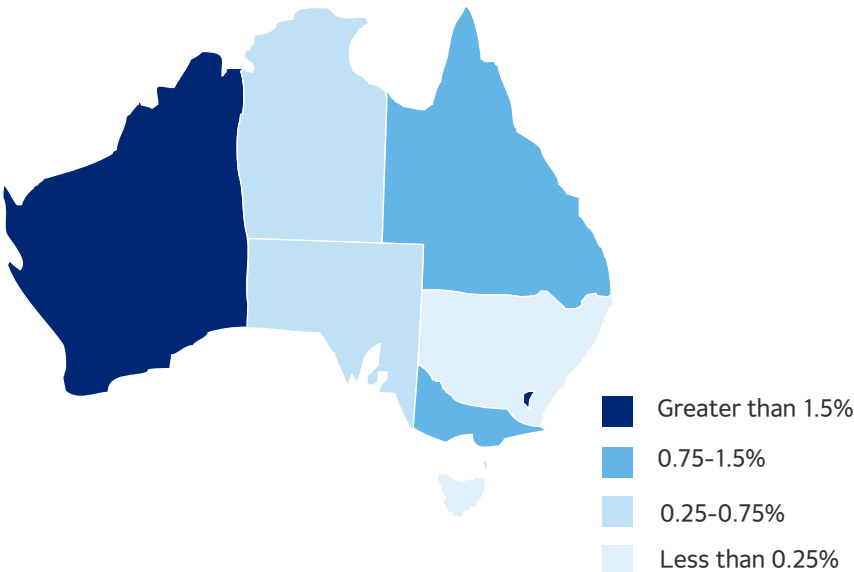
Of airport precinct employment located at major airports

Chart 3.3: Top 5 industries for direct airport precinct employment, 2022



Source: Deloitte Access Economics survey of airports, and ABS Census

Figure 3.2: Share of state employment located in Airport Precincts, 2022



Source: Deloitte Access Economics survey of airports, and ABS Census

Airport workforces: Diversity and representation

Australia's airports are thriving workplaces, bringing together a diverse group of employees from various communities.

In 2022, 3,700 workers were directly employed in managing core activities of Australia's airports. The survey of airports was used to gain a better understanding of the profile and nature of airport workforces in terms of diversity, skills, qualifications and experience of staff.

The profile of workers at Australia's airports varies across regions and airport types. Overall, approximately 41% of workers directly employed by airports are female (Chart 3.4), with overall female workforce participation being reasonably consistent across airport categories. That said, a significant 64% of regional airport senior leadership was female.

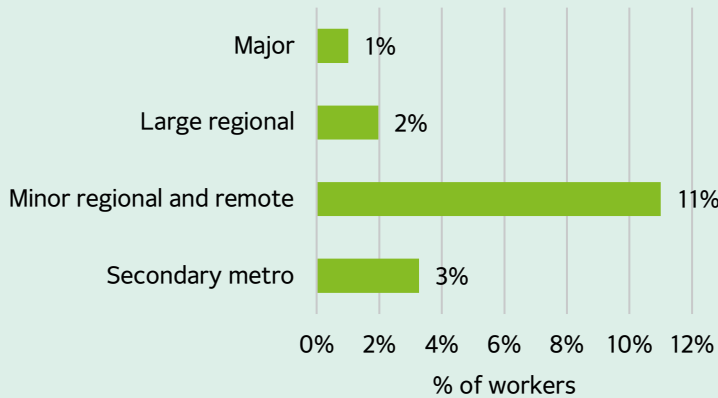
Aboriginal and Torres Strait islander people make up a higher share of remote airport workforces in line with their higher representation in these communities. However, Aboriginal and Torres Strait Islander people are somewhat underrepresented in

major, major regional and secondary metro airports at between 1% to 3% of the workforce, despite representing approximately 3.8% of the Australian population. ¹

On average, the survey of airports revealed that people who identify as disabled make up 2% of Australia's airports' workers. As other sources of reporting on the prevalence of disability in the Australian population vary in definitional terms, it is difficult to contextualise the airport workforce profile against a population benchmark.

Overall, it has been widely reported that airports like many other sectors have faced significant worker shortages across 2022 and 2023,² with the major airports hosting large job fairs after delays caused by a lack of staff. That said, the prevalence and degree of airport worker shortages has decreased into 2023.³

Chart 3.5: Proportion of employees that identify as Aboriginal and Torres Strait Islander



Source: Deloitte Access Economics survey of airports, n=28

Chart 3.6: Proportion of employees with a disability

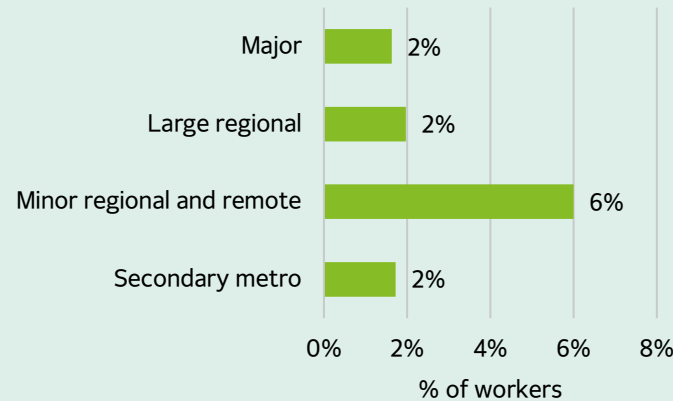
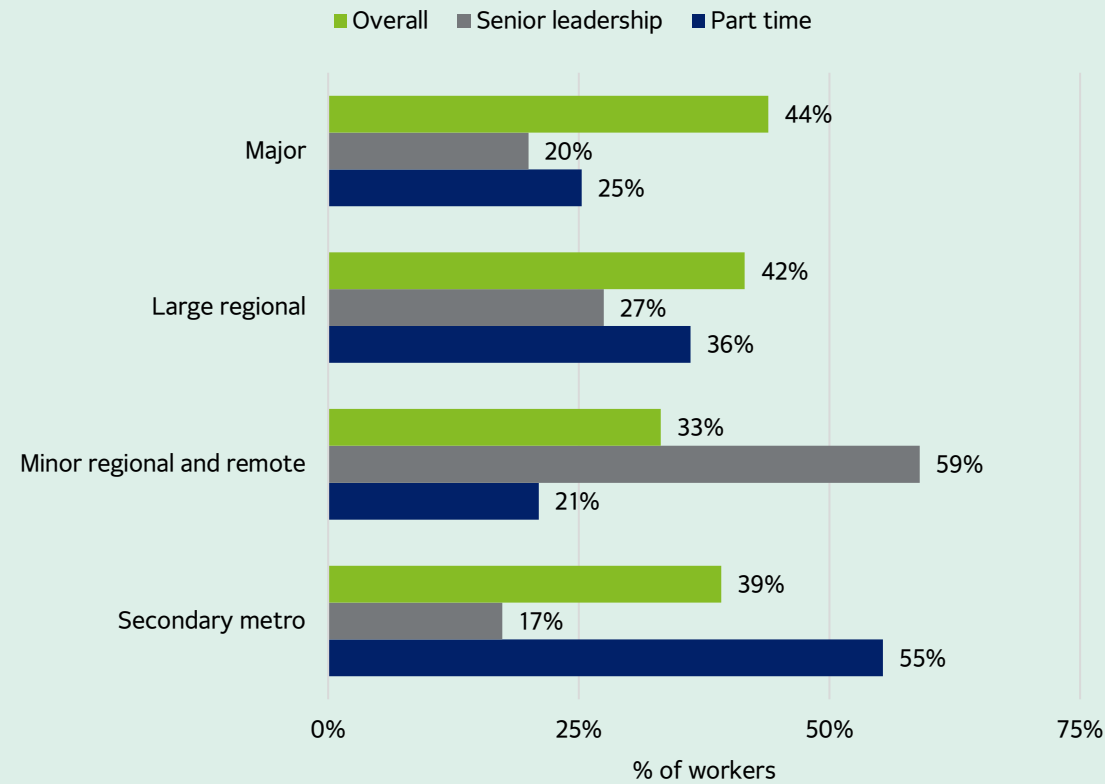


Chart 3.4: Proportion of employees that are women



Source: Deloitte Access Economics survey of airports, n=28 and ABS Census 2021
Note: Figures for overall workers and part time are reflective of the overall population and are derived from the ABS Census Place of Work 2021. Figures for senior leadership are from the survey of airports and are assumed to be representative of the overall population. This only reflects workers directly employed by the airports rather than in the airport precincts.

Airport workforces: Skills, qualifications and training

Australia's airports are investing in initiatives and strategies to develop the skill levels, experience and qualifications of their staff and to promote workforce diversity.

Australia's airports are taking specific action to improve the skill levels and diversity of their workforce. The survey of airports revealed a strong commitment from airports to provide training and skills development for workers, to incorporate flexible work options, and to promote improved diversity outcomes for their workforce.

Flexible work arrangements, formal internal training and external training were reported as the most effective initiatives to increase skills, qualifications and experience development of airport staff.

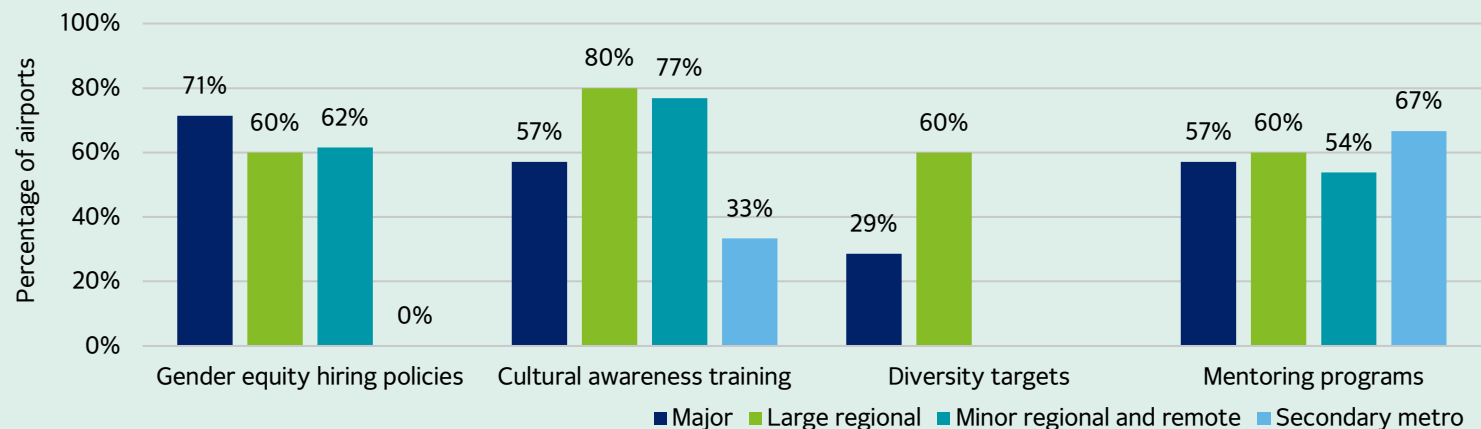
Flexible work arrangements had been implemented by all airport survey respondents, with 93% reporting the initiative to be somewhat or very effective in increasing staff skills, qualifications, and experience (Chart 3.7).

Almost 90% of airport survey respondents reported that internal training programs and external training were somewhat or very effective.

Two thirds of the airport survey respondents had explored new sources of workers in the past 3 years, and 78% of these found this to be successful at increasing workforce skills and effectiveness reinforcing the potential to look beyond traditional hiring sources and cohorts.

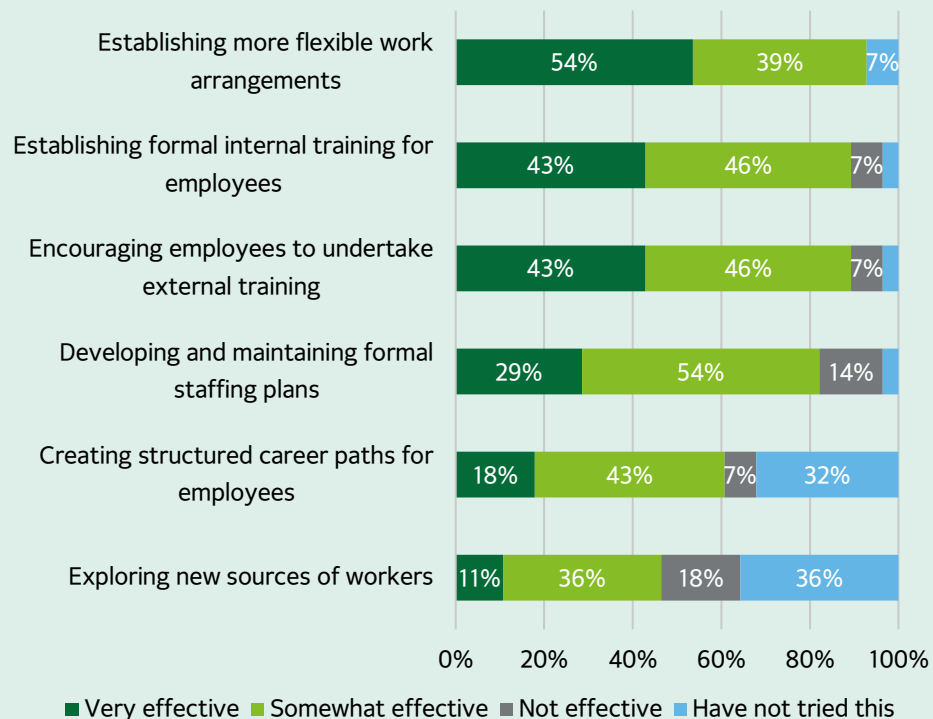
Airports have taken numerous actions to improve workforce cultural, gender and skill diversity which are shown in Chart 3.8. Excluding secondary metro airports, at least 50% of airport survey respondents in each category have initiatives covering gender equity hiring policies, cultural awareness training and mentoring programs. Diversity targets are less common, with specific quotas implemented at major airports and large regional airports.

Chart 3.8: The proportion of airports that undertake the following workforce diversity initiatives



Source: Deloitte Access Economics survey of airports, n=28

Chart 3.7 The proportion of surveyed airports that have undertaken programs to increase worker skills, and their effectiveness



Source: Deloitte Access Economics survey of airports, n=28

Contribution of domestic tourism facilitated by Australia’s airports

In 2022, Australia’s airports facilitated a total of 110 million domestic visitor nights with an associated \$28 billion in visitor expenditure, resulting in a facilitated tourism contribution of \$21 billion in valued added and 160,000 full time equivalent jobs.

Australia’s airports provide an intricate transport network to support domestic travel demands.

In 2022, Australia’s airports facilitated 24 million domestic overnight trips, and 1.1 million domestic day trips. Overall, one in five domestic visitor trips (21%) and more than one in four visitor nights (27%) were facilitated by Australia’s airports, although this trend varies across jurisdictions. In 2022, airports in the Northern Territory (55%) and Tasmania (40%) recorded the highest share of facilitated domestic visitors, while airports in NSW (16%) and Victoria (21%) had the lowest share as would be expected given the geographic positioning of those jurisdictions. Of the 200 million day trips in 2022, only 1.1 million or around 0.5% involved air travel, with airports in the NT (3%) and ACT (2%) facilitating a relatively higher share of the daytrip market.¹

In total, domestic tourism activity facilitated by Australia’s airports in 2022 contributed \$10.5 billion in direct value added and \$10.6 billion in indirect value added to the Australian economy, supporting an associated 110,000 direct FTE jobs and another 50,000 indirect FTE jobs. To put this in context, the contribution of facilitated domestic tourism is comparable to that of airport precinct activity which contributed \$23.2 billion in value added to the national economy, supporting 161,300 FTE jobs.

As a major tourist destination and heavily reliant on air travel, the contribution of air-facilitated tourism in Queensland was the largest of any state and territory in 2022 representing \$6.5 billion in value added, or over 30% of the total tourism contribution facilitated by Australia’s airports. NSW and Victoria, despite attracting more visitors overall, saw a smaller contribution due to lower mode share for air travel, together contributing just under \$9 billion in 2022.

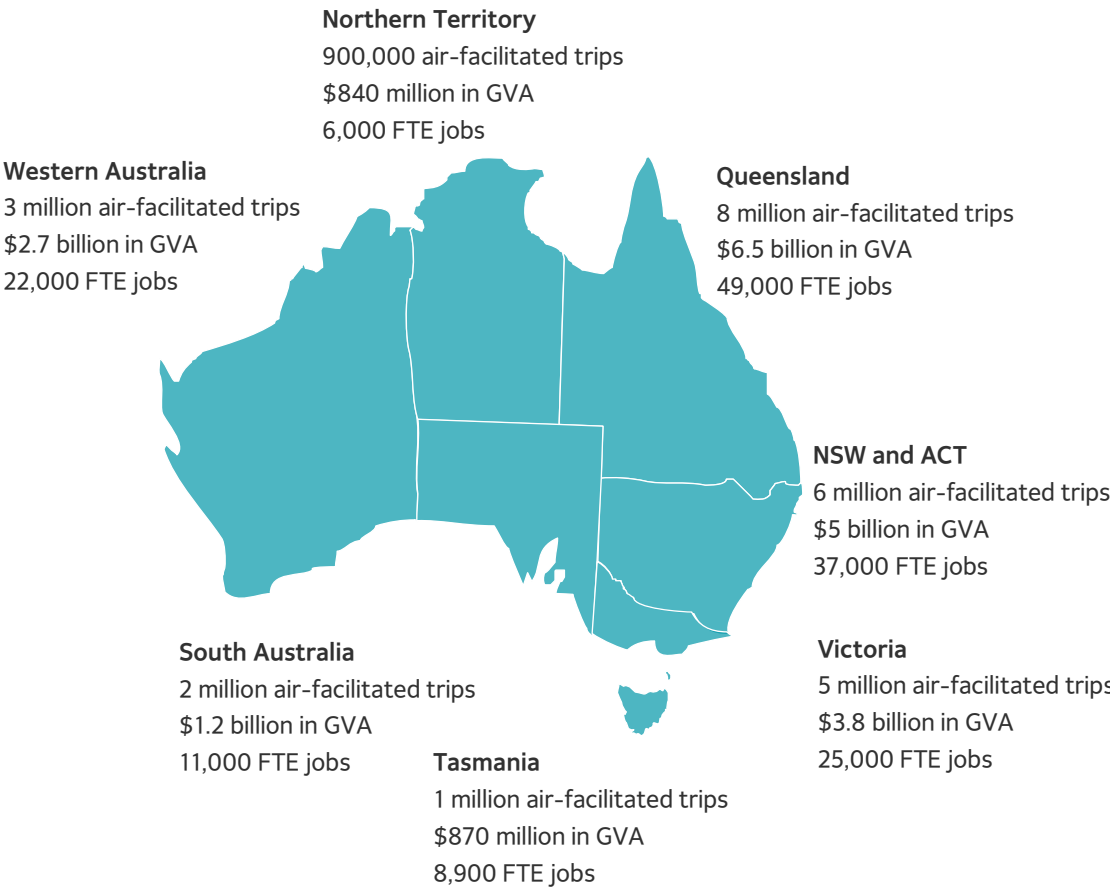
Due to differences in wages, productivity and industry structure in different states, the relationship between GVA and jobs varies across the country. In particular, Tasmania with relatively lower wages than the rest of the country, is the only state to produce less than \$100,000 in GVA per employee, while Victoria (\$150,000), the Northern Territory (\$139,000) and NSW (\$131,000) produced the most.

Table 3.3: Economic contribution of air-facilitated domestic tourism, 2022

	Direct	Indirect	Total
Domestic tourism contribution from Australia’s airports			
Value add (\$m)	\$10,469	\$10,609	\$21,079
Employment (FTE)	110,100	50,200	160,300

Source: Deloitte Access Economics
Note: totals may not add exactly due to rounding.

Figure 3.3: Economic contribution of airport facilitated domestic visitors



Source: Tourism Research Australia, Deloitte Access Economics analysis
Note: Economic contribution estimates calculated from Tourism Research Australia visitor numbers and expenditure figures and are not derived from the survey of airports. For more details on the facilitated tourism economic contribution framework and approach, refer to Appendix C: Tourism contribution framework.

Case study: Remote airports enabling workforce connectivity

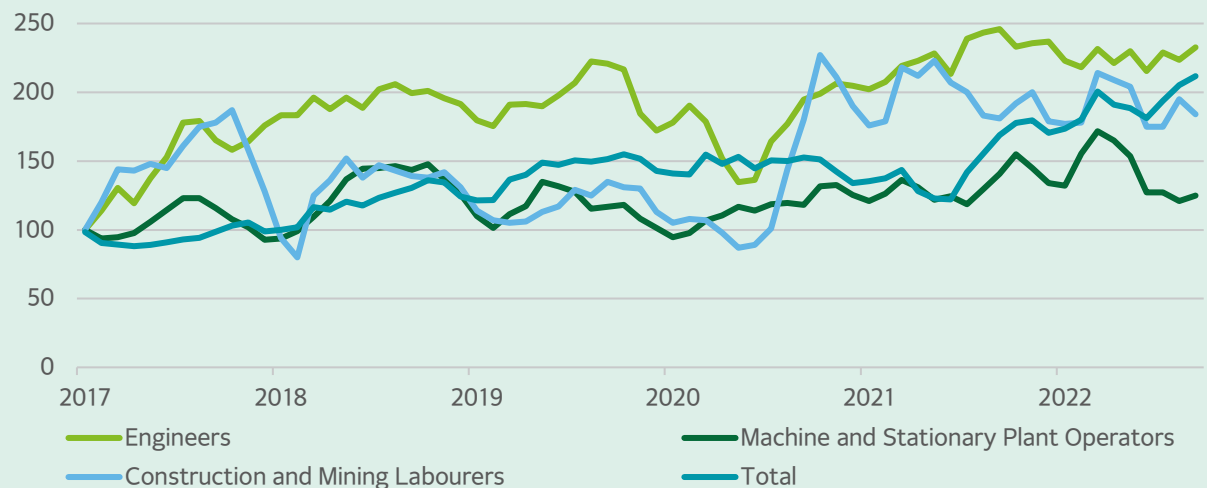
Port Hedland Airport's plays a crucial role in connecting the Pilbara with demand markets and Australia's workers.

Port Hedland in Western Australia's Pilbara region is the largest export port by tonnage in Australia, exporting 559 million tonnes of bulk cargo in 2022.¹ The town is a critical link to global demand markets for Australia's mining industry covering products such as iron ore, lithium and salt industries, among others.

Workers from a large wide range of occupations are employed in the mining and mining support sector in the Pilbara, including mining engineers, geologists, heavy equipment operators, stevedores and archaeologists. Figure 3.4 shows that people working in the Pilbara typically live in and around Perth (49% of workers) instead of living in Northern Western Australia (only 33% of people working in the Pilbara reside there), with a smaller group of workers coming from other regional areas or other states (18%).² This could be due to better amenities, infrastructure and attractions in cities, along with a concentration of training options needed to build the skills and qualifications required for core mining industry occupations. As such, the mining sector in the Pilbara relies on fly-in-fly-out (FIFO) workers to match skilled workers with jobs.

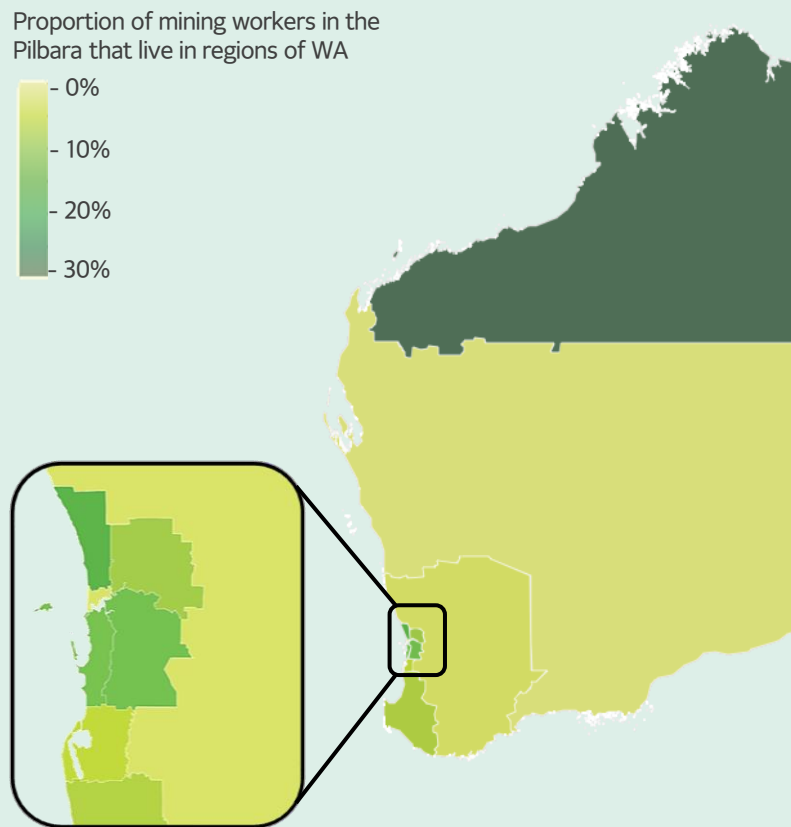
Demand for labour in the Pilbara can require a variety of talent, but the specialised workers skills may only be needed for a small part of the project which means employment can fluctuate for many workers over time. This results in employers being reluctant to incur the costs of relocating employees permanently.³ For example, between 2017 and 2022 demand for engineers in the region increased by 230%, while job listings for construction and mining labourers increased by 180% (Chart 3.9). Such significant fluctuations in labour requirements from the resource industry tend to result in industry sourcing workers from beyond the regional catchment area. Port Hedland Airport plays a crucial part in servicing these FIFO demands.

Chart 3.9: Internet job listings in the Pilbara and Kimberley, indexed to January 2017



Source: Deloitte Access Economics and National Skills Commission (2022)

Figure 3.4: Employment in mining in Western Australia by place of residence, 2021



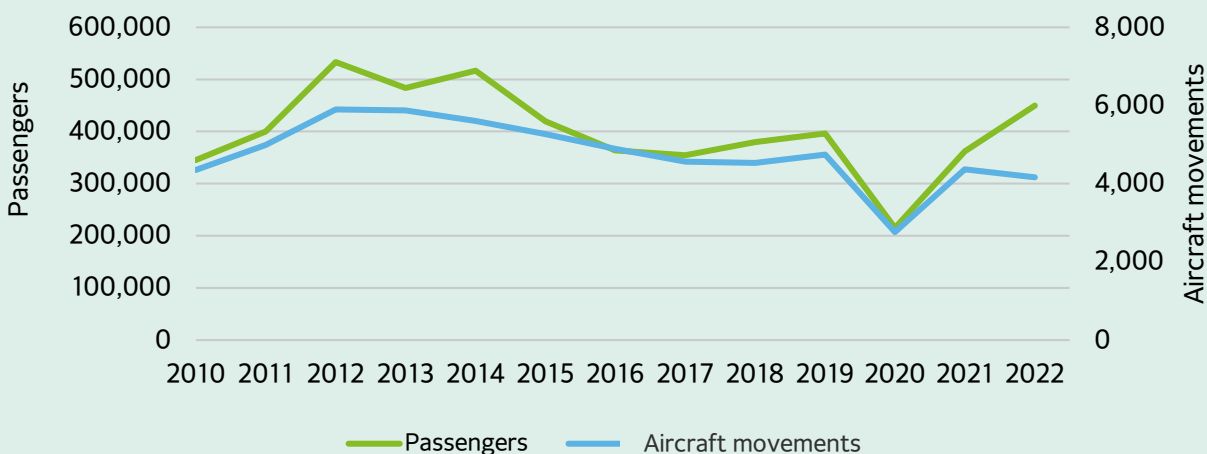
Source: Deloitte Access Economics and ABS Census 2021

Case study: The contribution of remote airports to the local community

The Port Hedland Aviation Taskforce has helped unite the voices of aviation stakeholders across the Pilbara region and demonstrated the role of Airports in supporting the needs of the local community.

In 2022, Port Hedland Airport supported 450,000 passenger movements from 4,160 SAT aircraft movements. As shown in Chart 3.10, SAT activity at Port Hedland in 2022 had already recovered to pre-pandemic levels, though higher levels in activity were seen during the resource boom years of 2011 to 2014.

Chart 3.10: Number of SAT passengers and movements at Port Hedland Airport from 2010 to 2022



Source: BITRE

In addition to SAT activity, the Airport also supports non-SAT charter flights run by mining companies that transport workers directly. Charter flights make up a significant proportion of flight movements in the Pilbara, particularly during COVID-19 where they were an important part of mining companies’ infection control processes.¹ The number of charter passengers passing through Port Hedland is not recorded, so the actual number of passengers passing through Pilbara airports is likely understated in Chart 3.10, particularly during 2020 and 2021.

Port Hedland Airport has been crucial in supporting both commercial and general aviation air services in the Pilbara region more broadly. The Airport’s management has been proactively engaging with the 20 smaller airports across the region, many of which are privately owned by mining companies, culminating in the creation of the Port Hedland Aviation Taskforce.

The Taskforce has the goal of enhancing workforce connectivity, looking at establishing new routes from Port Hedland to the east coast of Australia and Bali. Having smaller airports work alongside Port Hedland allows for a strong coordination of workforces, which is highly important in the Pilbara where labour shortages in the mining and transport sectors are a key issue. ² An aim of the Taskforce is to identify new routes that could benefit the region and provide a united voice to advocate these new routes when required. Another aim is to ensure that airports can manage demand, based on their available workforce, so that mining companies can send more workers to larger airports if necessary.

The Pilbara is also constrained by a lack of housing, with a key contributor to the housing shortage being a lack of workers to build new houses,³ many of whom need to FIFO through Port Hedland from Perth. The Taskforce aims is working to ensure that the key stakeholders in the region can coordinate to bring in skilled labour to increase housing supply.

Beyond enabling workforce connectivity, Port Hedland Airport provides crucial community support, establishing itself as a main sponsor of community events alongside mining companies.

In 2022, Port Hedland Airport raised \$6,000 in funding from its recycling program to sponsor community groups ranging from local sporting clubs to partnerships with Aboriginal community groups. The Airport also provided a further \$400,000 of in-kind support to the Royal Flying Doctor Service.

Helping to build a stronger community in the town of Port Hedland can help improve the mental health of the workforce. A 2015 study on the impact of FIFO work on mental health found that FIFO workers have above average rates of depression and anxiety, with a recommendation of this study that “where possible, FIFO workers should be encouraged and enabled to engage with the local host community.”⁴ Port Hedland’s community grants can help bring together the workforces that use the 20 airports in the Pilbara region and the community that is supported by them financially.

Airports create the opportunity for more diversified industries in the Pilbara.

The remote Pilbara town of Marble Bar has expanded its airport in part to expand its leisure tourism industry.⁵ The East Pilbara Shire Council has recognised that the town has “tourism potential” and that the upgraded airport will “open further opportunities for tourism”.⁶

The expanded Marble Bar Airport has the capacity to bring in 100-seat jets from Perth when previously the town was only accessible to tourists via road. Pilbara Tourism Association project officer Neil McGlip noted that the new airport will allow them to bring in a greater number of holidaymakers.⁷ The expansion of the airport has been coupled with a greater push for protection of key tourist sites, including nomination for natural heritage status for the region’s geologically significant Stromalite Fossils. Diversifying the local economy by strategically facilitating tourism to the region will help shield the economy of the broader Pilbara region against fluctuations in the global commodity market.

“The Port Hedland Aviation Taskforce aims to unite voices of state government, local government, business, and industry representatives all of which rely on aviation for jobs.”
-Dave Batic, CEO at Port Hedland Airport

Contribution of international tourism facilitated by Australia’s airports

In 2022, Australia’s airports facilitated a total of 3.4 million international visitors with an associated \$14.2 billion in visitor expenditure, resulting in a facilitated tourism contribution of \$13.8 billion in valued added and 103,000 full time equivalent jobs.

International tourism is a key export industry for Australia’s economy, with airports facilitating more than 99% of all inbound visitors to Australia.

In 2022, international visitors began to return to Australia in earnest following the reopening of international borders post the COVID-19 pandemic, with more than 3.4 million visitors spending 126 million nights in Australia.¹

In 2022, international visitors spent \$14.2 billion in Australia, which is estimated to have contributed \$7.4 billion directly and \$6.4 billion indirectly in value added to the economy. This equates to a total economic contribution of around \$4,000 per international visitor. Additionally, aviation-facilitated international visitor expenditure in 2022 supported the direct employment of around 75,000 people and a further 28,000 indirectly.

Table 3.4: Economic contribution of aviation-facilitated international tourism, 2022

	Direct	Indirect	Total
Value add (\$m)	\$7,438	\$6,376	\$13,814
Employment (FTE)	74,900	27,900	102,800

Source: Deloitte Access Economics
Note: totals may not add exactly due to rounding.

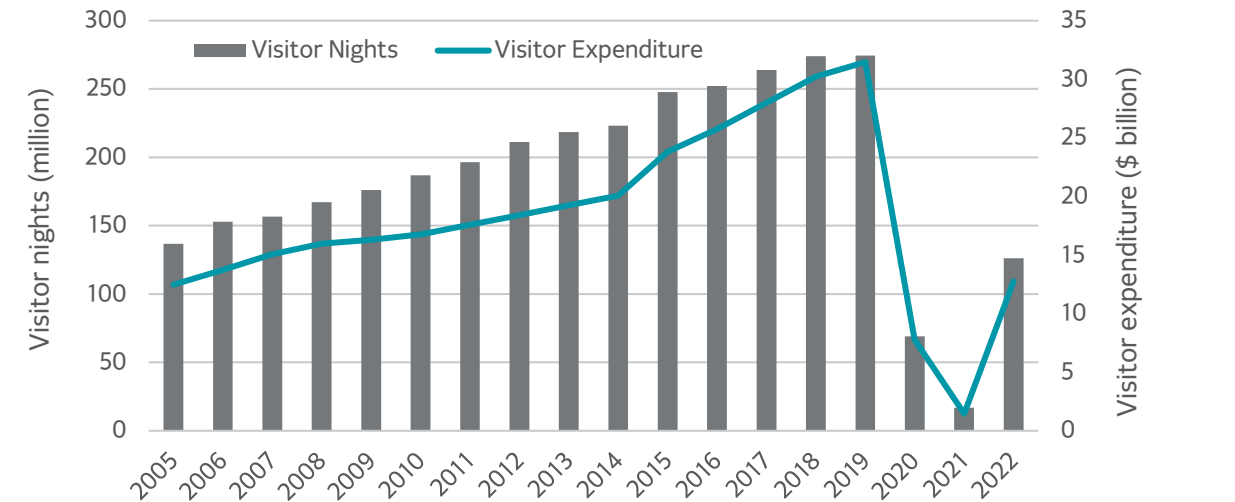
Sydney and Melbourne Airports were the most common ports of arrival, facilitating almost three quarters of international visitation to Australia.

As a result, more than 70% of the total economic contribution of aviation-facilitated international visitation is attributable to visitors who arrived at one of these two airports. That said, Townsville (86% of 2019 levels) and Darwin (55%) have recorded the strongest post-pandemic recovery relative to 2019 levels, with Sunshine Coast (18%) and Cairns (24%) airports seeing among the slowest recoveries.²

With international visitation from China in the early stages of recovery, India and the UK were the most important source markets for international tourism in 2022.

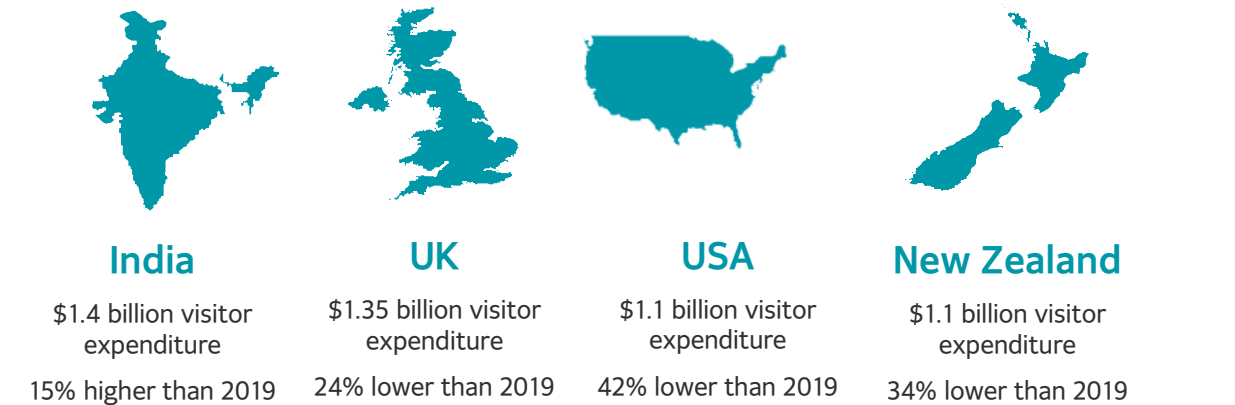
In 2022, international visitors from India spent \$1.4 billion, representing a 15% uplift against pre-pandemic 2019 levels. In contrast, visitors from China, in early stages of recovery given the later timing of the border reopening, spent 93% or \$9.4 billion less than in 2019.

Chart 3.11: International visitor nights and expenditure, 2005-2022



Source: TRA

Figure 3.5: Key source markets for international visitors, 2022



Source: TRA, Deloitte Access Economics Analysis

Contribution of freight facilitated by Australian airports

In 2022, Australia’s airports facilitated a total of 914,000 million tonnes of international freight with an associated value of \$138 billion, resulting in a facilitated freight contribution of airports of \$43 billion in valued added and 260,000 full time equivalent jobs.

Airports facilitate many aspects of the freight supply chain from handling, storage, refuelling and transport.

In 2022, Australia’s airports facilitated 914,000 tonnes of air freight, at a value of \$138 billion. The export component of that air freight activity, equating to 383,000 tonnes and a value of \$51 billion, makes a significant contribution to the national economy and the import component equates to 531,00 and \$87 billion. The role of airports in facilitating freight exports extends beyond simply transportation services, to freight handling, storage and processing activities. Australia’s complex network of airports, and associated freight transport and storage facilities, ensures regions all across the country are connected to the global market consisting of 433 global destination ports.

Air freight services provided by Australia’s airports are a crucial method of transportation of high-value or perishable Australian products.

By weight, Australia’s air exports are predominantly high-value perishable agriculture goods sent to Asian markets, accounting for two thirds of exports in 2022.³ These type of goods rely on air freight to reach other markets, as sea freight would risk spoiling. By value, gemstones and precious metals make up the majority of Australia’s air freight exports. These ultra-high value goods rely on the security benefits and connectivity of airport freight services.

In 2022, air freight made up 13% of the value of Australia’s exports, despite being only 0.01% of the tonnage, demonstrating Australia’s airports’ role in supporting the transport of high value goods to key destination markets.

Overall, in 2022, air exports contributed \$14.6 billion in direct value added and \$28.3 billion in indirect value added to the Australia’s economy, equating to a total of 87,700 direct FTE jobs and 172,300 indirect FTE jobs supported by Australian airports.

Table 3.5: Economic contribution of air freight exports, 2022

	Direct	Indirect	Total
Value add (\$m)	\$14,582	\$28,291	\$42,883
Employment (FTE)	87,700	172,300	260,000

Source: Deloitte Access Economics
Note: totals may not add exactly due to rounding.

Chart 3.12: Australia’s exports by transport type



Chart 3.13: Exports by region

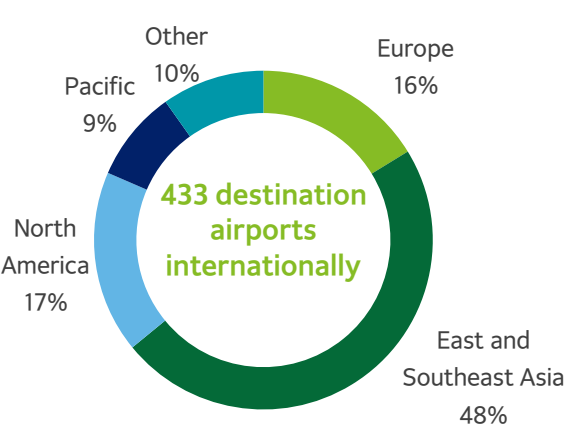


Chart 3.14: Air-exported products by value

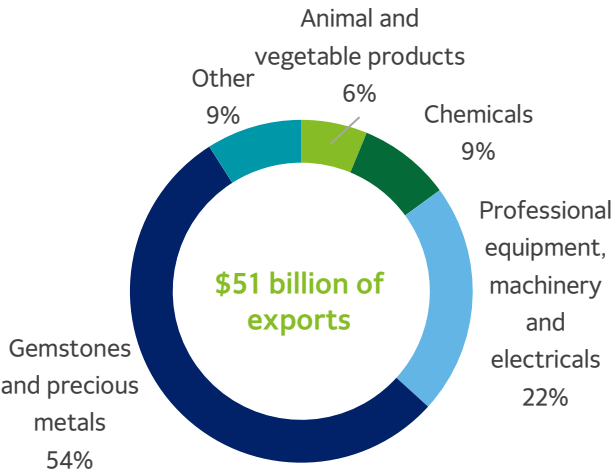
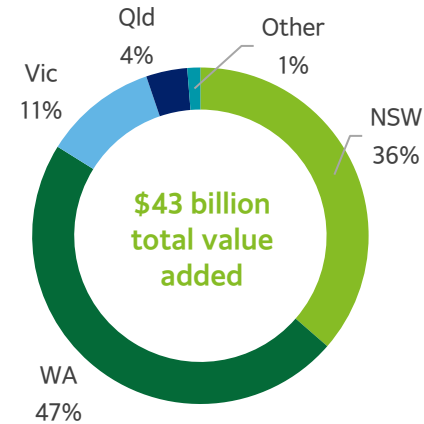


Chart 3.15: Economic contribution of air freight exports by state¹



Source: Deloitte Access Economics and custom ABS data
Note: Refer to Appendix A: Survey overview for further details on expenditure calculations
(1) This should be interpreted as the value added of the air freight that is exported in a state, not the value added of the air freight to that specific state

Case study: The importance of airports to industry

Fortescue relies on its network of airports to transport workers safely and quickly to remote mine sites in the Pilbara.

Airports and air travel are crucial for the efficient functioning of Australia's businesses.

Air travel is the most time efficient method of travel between most cities and regions in Australia. Flights between Sydney and Melbourne take less than 2 hours, less than a quarter of the time it takes to drive allowing what would otherwise be an overnight trip to be comfortably managed in a day.

By providing fast, reliable travel, airports facilitate a range of benefits to industry, contributing to more efficient production processes and better outcomes for customers.

- Travel to in-person meetings with customers and colleagues – allowing businesses to establish themselves and expand into new locations.
- Monitoring and managing decentralised supply chains and production processes – allowing businesses to locate where they can work most efficiently.
- Transporting staff to remote and inaccessible areas – such as FIFO workers on remote mine sites or construction workers on regional infrastructure projects.
- Shipping across the country and world – providing greater choice for customers and new markets for business' products.
- Supply chain resilience – speed and efficiency can be crucial in improved stock management, repairs of critical machinery and last-minute staffing needs.

Industry owned and operated airports boost worker productivity and contribute to worker safety.

Fortescue, one of Australia's leading mining companies, owns and operates a network of 5 airports located near their mining operations in the Pilbara region of Western Australia and rely on these airports to transport 15,000 staff on almost 3 million fly-in, fly-out (FIFO) trips from Perth or Busselton each year.

The key advantage of organisations such as Fortescue operating their own airports is the efficiency of employee transport. FIFO workers operate with strict shift length limits, therefore locating airports less than

20 minutes from the mine site ensures workers are spending as much of their shift on site as possible. In absence of the privately run Fortescue airports, staff would need to transit via airports in Port Hedland or Newman, the closest public airports to Fortescue mining operations, which would entail a several-hour bus trip to transport Fortescue workers from the airfield to the worksite.

The benefits arising from these travel time savings are enormous, justifying the significant investments made by industry in airport development. Fortescue's operations at Cloudbreak and Christmas Creek are only 15km apart as the crow flies, but the value of worker time is so great that the 20-30 minute travel time saving justifies building an airport for each mine site.

Operating their own airports allows Fortescue full control and flexibility over flight schedules and airfield use, with almost all flights to and from the airports being Fortescue-controlled closed charters. The benefits were highlighted during the COVID-19 pandemic, when Fortescue had to cut the capacity on flights to enable social distancing requiring twice as many aircraft movements to carry the same number of people.

Fortescue airports offer broader social benefits including facilitating emergency response services and a sustainable operations model.

In addition to their use for business operations, Fortescue's airports are used to provide medical and emergency response service access to remote locations, as well as government environmental, biodiversity and wetland management teams.

Fortescue advised of an aim to decarbonise their airport operations by 2027, ahead of the company-wide target of 2030. They have made investments across many areas of their airport operations, including baggage handling machines, conveyor belts and runway lights, all powered by onsite solar panels and batteries. In addition, diesel-powered on-site vehicles are being replaced with electric and hydrogen-powered models. While it will be difficult to decarbonise their aircraft operations, Fortescue is encouraging charter partners towards more sustainable biofuel options.

Figure 3.6: Fortescue's Operations in the Pilbara



Source: Fortescue

“Airports are a vital contributor to our business operations. Owning our own airports means our workers don't have to finish their shift an hour early to sit on a bus, and we can align our flights with their schedules. With shorter travel times, workers are less tired, improving safety and productivity.”

– Adam Kett, Manager Aerodromes,
Fortescue

4. Social value of Australia's airports



Case study: Airports supporting rapid, efficient emergency response and training

Dubbo Regional Airport has established itself as a world-leading emergency services coordination and training hub.

As well as their role in facilitating tourism, business travel and industry demands, many airports in regional areas serve as hubs for emergency response and other community services. Indeed, in addition to servicing around 200,000 passengers a year, Dubbo Airport has established itself as a leading emergency services hub in Australia. Located in the Orana region of Central West NSW, the airport has a well-established emergency services precinct, with facilities for the Rural Fire Service (RFS), RFDS, SES and Volunteer Rescue Association as well as a police training and air ambulance centre.

With such a concentration of emergency service expertise, Dubbo Airport has become a key centre for emergency response coordination and administration. During the COVID-19 pandemic, Dubbo Airport served as the emergency management coordination centre for Western and Far Western NSW. The synergies arising from having wide ranging expertise and infrastructure on-site contributed to effectively managing the complex response to the pandemic. As well as coordinating the delivery and logistics of vaccines and personal protective equipment, the airport also served as a transit storage location for emergency field hospitals, adding much needed surge capacity, and leveraged air ambulances and the RFDS to transport patients from the West to where they were able to receive the care they needed.

As well as coordinating the COVID-19 response, Dubbo Airport serves as a base for large air tankers during bushfire season. Dubbo's central location and relatively large size means that it is well placed to service these tankers efficiently and support efficient firefighting efforts.

Jacki Parish, Manager of Dubbo Regional Airport, highlights the airport's advantages for firefighting, acknowledging that:

"Timing is critical in emergency services – aerial firefighting is no different. Getting in, reloading and getting back to the fire ground is key to helping slow the spread of fires. We're ideally located, allowing us to support the services that firefighters need, without aircraft congestion delaying emergency relief."

- Jacki Parish, Manager, Dubbo Regional Airport

As a result of this efficiency, Dubbo has been used as a base for firefighting even when fires are long distances away, with large air tankers flying from Dubbo for operations as far as Western Australia and Queensland.

The emergency services expertise facilitated by Dubbo Airport was recognised globally, with Dubbo chosen alongside Seattle and Athens to host an Aerial Firefighting Series Conference in August 2023, attracting delegates from across Australia and the world to share knowledge and insights. The conference took advantage of the facilities of the recently developed RFS training academy at the Airport to highlight the benefits and synergies that arise from a concentrated hub of emergency services expertise.

Figure 4.1 Dubbo Regional Airport



Source: Deloitte Access Economics

Case study: In remote areas, airports provide a crucial link to efficient medical and emergency services

Djarindjin Airport helps to save lives by supporting crucial medical services and domestic air freight in any conditions.

Airports provide regional infrastructure and hubs for medical service operations

The RFDS is a national charitable, health organisation delivering primary healthcare and 24-hour emergency services for those that live in rural and remote Australia. This is crucial for providing support to Western Australia in particular, the world's largest health jurisdiction, where much of the state is highly remote and has little access to nearby medical services.

Regions such as Western Australia's Kimberly are very remote, and therefore for many residents trips by car or access to ambulance services to the nearest hospital can be long, expensive and easily disrupted by extreme weather events. As such, people in these regions rely on aeromedical services, especially the RFDS, to provide essential medical services.

The Aboriginal community of Djarindjin, located in the remote Dampier Peninsular of Western Australia, where the main road into the community is prone to flooding¹ and the nearest hospital is a 2-hour drive, provides an ideal example of the importance of airport and aeromedical services to remote communities.

Djarindjin Airport is crucial for RFDS operations, both for training pilots who are based in Broome and for helping medical services.

For the community of Djarindjin, the airport enables the RFDS to rapidly take patients from the town to Broome, in a place which is not readily accessible by ambulance. From the Broome RFDS base patients can either be taken to Broome Hospital or flown further afield to Perth by the RFDS for specialist treatment.

"[Djarindjin Airport] is an unequivocal asset to the community enabling retrieval at any time of the day or night in all weather conditions"

- Megan Collie, Remote Area Nurse Lombadina

Djarindjin Airport is an important stop in the training routes of the RFDS. The RFDS uses Djarindjin Airport to train night landing and take-off skills. RFDS pilots must be proficient at landing at remote airports with no lights, as other remote airstrips often lack them.

Airports are crucial for facilitating essential domestic air freight and emergency response support

In 2021 and 2023, Cape Leveque Road which connects the Dampier Peninsular with the rest of Australia was cut off by floods, preventing food and medical supplies from coming in and injured and sick people coming out of Djarindjin. Djarindjin Airport provided a crucial role in ensuring the community was supplied during the floods, having freezer, refrigerated and dry storage, which help to provide food and other supplies during natural disasters.

The airport facilitated flights from Broome and Derby that brought in supplies to this region, as they could no longer be supplied by truck. This helped keep the community fed and supplied throughout the floods.

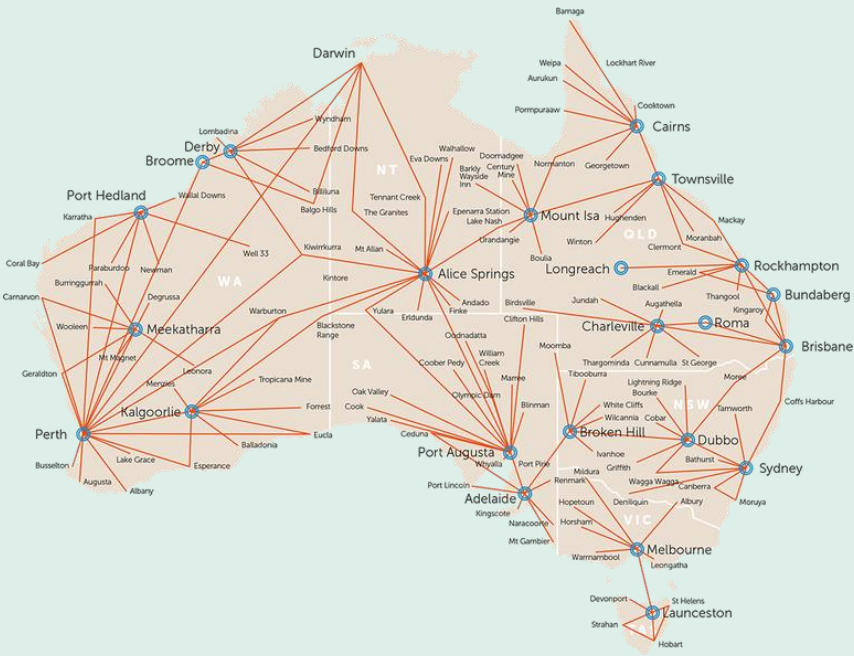
Additionally, the airports' roadhouse and associated storage that is assisted by domestic air freight has been crucial in resupplying workers and businesses who work in the peninsular, particularly in the natural gas sector.

Large regional and secondary airports provide a crucial link for medical flights and minor remote and remote airports like Djarindjin

Larger airports can provide support by hosting the RFDS. Port Hedland Airport works with the RFDS, who use their facilities at no charge, supporting over 1,000 yearly movements from the Airport, providing medical services to the entire Pilbara.

Port Hedland Airport's in-kind support is equivalent to \$300,000 to \$400,000 providing hangars, buildings and slots and other facilities for the service. This support helps the RFDS operate all over the Pilbara, ranging from small Aboriginal communities, such as Djarindjin, mining operations and the town of Port Hedland itself, where the RFDS can help connect the town to hospitals further south in Perth.

Figure 4.2: Royal Flying Doctor Service national aeromedical footprint



Source: Royal Flying Doctor Service (2023)

5. Outlook for aviation



The outlook for aviation in Australia

Australia's aviation industry faces an uncertain future, with ongoing risks to both supply and demand.

A steady recovery, but an uncertain future

The aviation industry in Australia and globally was significantly disrupted by the COVID-19 pandemic, with travel restrictions, economic turmoil and supply chain constraints all impacting different areas of the sector. While travel restrictions have been largely lifted, there remains uncertainty about the outlook for the sector, the speed and trajectory of recovery and longer-term risks and opportunities.

This section presents key international and domestic aviation forecasts from Deloitte Access Economics' Aviation Forecasting Model, informed by Deloitte Access Economics' Business Outlook macroeconomic and demographic forecasts (Figure 5.1). The forecasts cover international and domestic passengers and aircraft movements.

Deloitte Access Economics' base forecast is for **domestic travel to return to pre-covid levels in 2023 and international travel to recover in 2025.**

Key drivers of this forecast is short-run weakness in economic growth domestically, slowing population and economic growth in China, and steady demand from traditionally strong markets the USA, New Zealand and the UK.

As well as the inherent risks and uncertainty in forecasting, current post-pandemic related conditions have elevated uncertainty for the aviation industry. Supply chain constraints, macroeconomic turmoil and uncertainty as to aviation sector related decisions and behaviours mean that there are both upside and downside risks to this outlook.

"The balance of risks, however, remains tilted to the downside. This reflects our expectations that demand for air travel will face challenges in the near term, including pressures on airline costs, geopolitical uncertainty and macro-economic headwinds."

- IATA Global Outlook for Air Transport

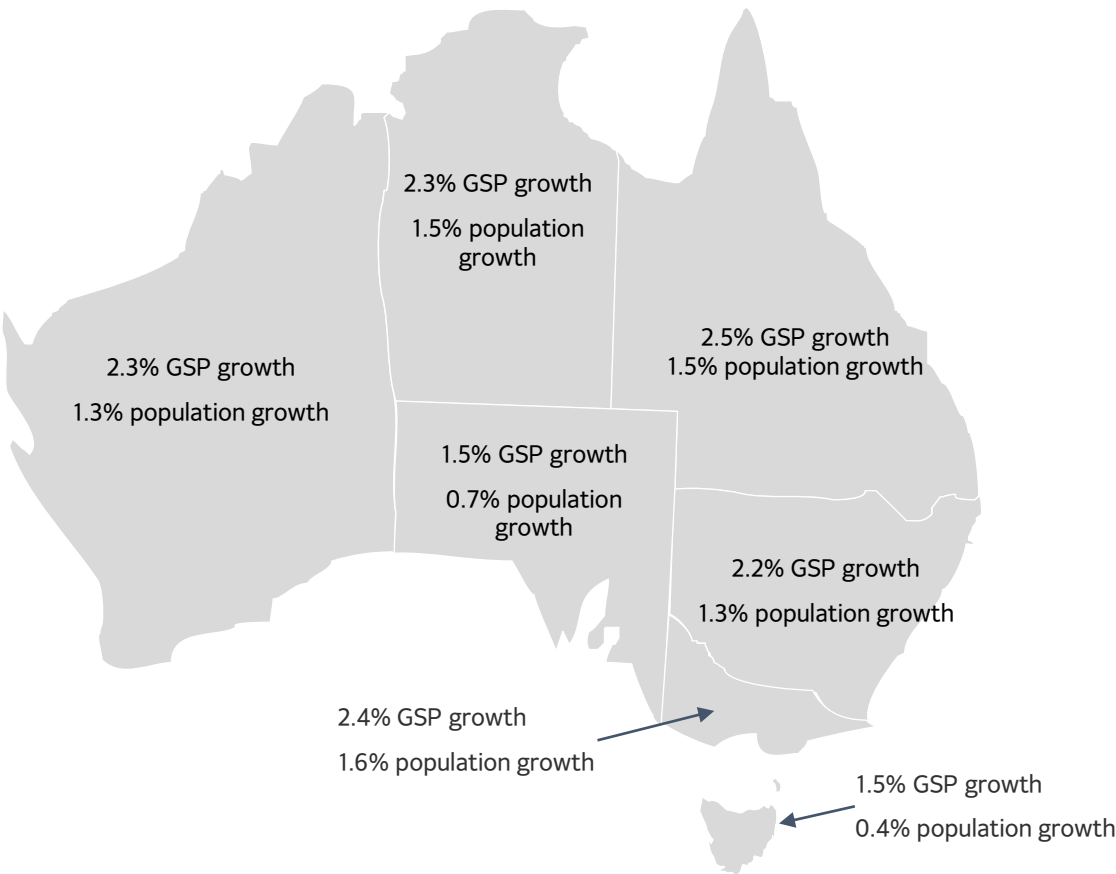
Reflecting this uncertainty, two scenarios are explored for these forecasts.

Scenario 1: Macroeconomic uncertainty - This scenario reflects ongoing uncertainty and risks in the macroeconomy, modelling the impacts of global economic growth being lower or higher than the base forecasts.

Scenario 2: Aircraft size decline - This scenario explores a gradual decline in aircraft size, motivated by a trend towards smaller, more fuel-efficient aircraft in recent orders placed by airlines, and the rise of ultra long haul routes only possible with smaller craft.

In addition, this section explores insights from the survey of airports, including airports' perceptions of key challenges and opportunities for the sector, and priorities for the future of their airports. For further details on methodology and macroeconomic context, refer to Appendix D: Air travel demand forecasting and Appendix E: Macroeconomic and aviation context.

Figure 5.1: Forecast average annual population and gross state product (GSP) growth, 2023-2030



Source: Deloitte Access Economics Business Outlook

Domestic aviation demand forecasts

The number of domestic passengers and movements are expected to recover to 2019 levels by 2023.

Strong recovery and a stable long-term growth outlook

Domestic passenger numbers are forecast to recover to 2019 levels in 2023 and continue to grow strongly throughout 2024.

In the long run, passenger numbers are forecast to grow at 2.3% per annum, reaching more than 180 million trips by 2040. Growth is forecast to be faster for major airports, due to relatively stronger income and population growth expectations, than those in regional and remote Australia. This is a reversal of the pre-pandemic trend, with passenger growth slightly faster at non-major airports (2%) than majors (0.8%) from 2012-19.

This is aligned with Deloitte Access Economics' expectations for the Australian economy. After significant volatility during the COVID-19 pandemic, the Australian economy is forecast to see relatively slow growth for the remainder of 2023 and 2024. Over the long run, growth is expected to stabilise at slightly above 2% annually, similar to the rate seen prior to the pandemic.

Due to capacity constraints and health restrictions causing lower load factors during the pandemic impacted years, movements did not fall as far - reducing by about half, compared to two-thirds for passenger numbers. The normalisation of this trend will temper movement growth, with movements forecast to grow slightly slower than passengers over the forecast horizon as growth is counterbalanced in part by increasing load factors. Despite this, by 2040, there is forecast to be just shy of 1.5 million domestic aircraft movements, an increase of approximately 1.9% annually from 2025.

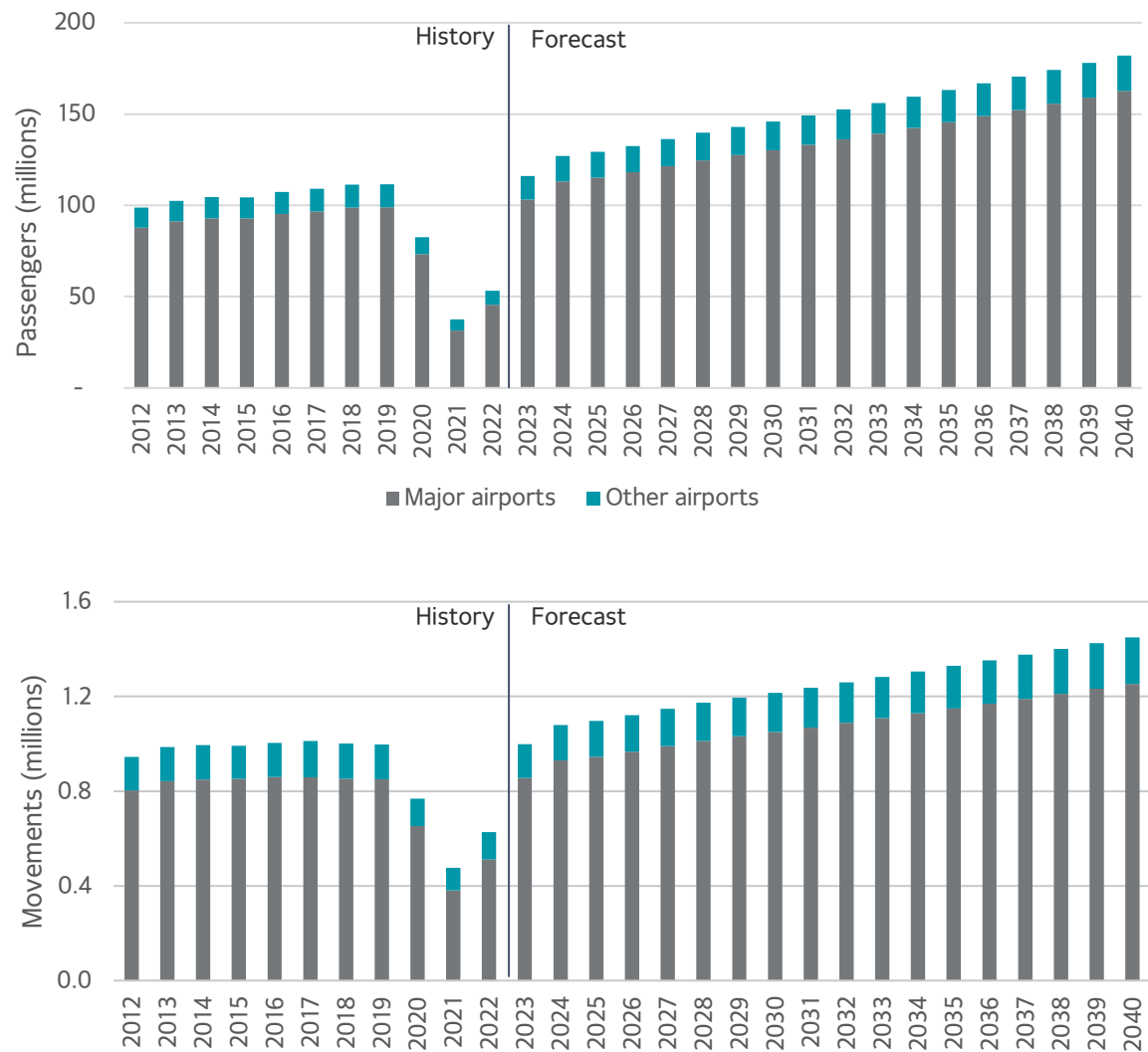
Domestic aircraft size has been very stable over time at slightly more than 130 seats per movement, and this is expected to continue through the forecasting period.

Table 5.1: Forecast average annual growth of domestic aviation demand

		2012-19	2023-30	2025-30	2025-40
Major airports	Passengers	1.7%	3.4%	2.5%	2.3%
	Movements	0.8%	3.0%	2.1%	1.9%
Other airports	Passengers	2.0%	2.9%	2.3%	2.2%
	Movements	0.4%	2.1%	1.8%	1.7%

Source: Deloitte Access Economics aviation demand forecasting model

Chart 5.1: Forecasts of domestic aviation demand, 2012-2040 financial years



Source: Deloitte Access Economics aviation demand forecasting model. Years are financial years.

International aviation demand forecasts

International passengers and movements are expected to recover to 2019 levels by late 2025.

A lagged recovery and steady long term growth rate

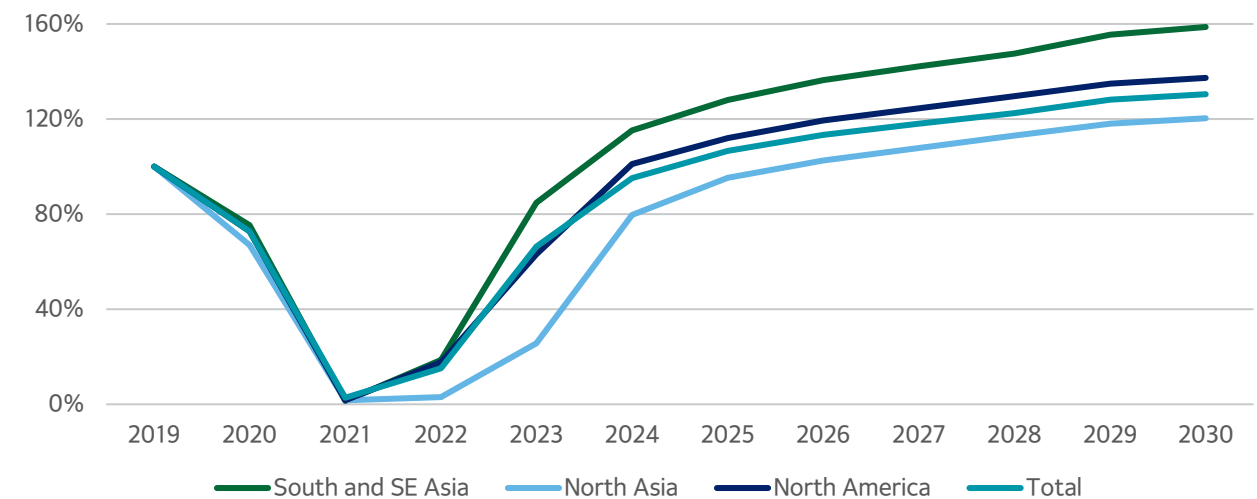
The recovery of international travel has been slower than domestic travel, driven by border closures, ongoing supply chain and capacity constraint issues, and prolonged travel hesitancy which is just starting to show signs of recovery. Overall, international passenger numbers were still 43% lower than FY2019 levels in FY2023.

As a result, international passenger numbers are forecast to recover to 2019 levels in late 2025. Following a period of catch-up growth, passengers are expected to continue to grow at a slower rate than was achieved prior to the pandemic, at slightly below 3% a year from 2025-2040 compared to 5.6% from 2012-2019. This is driven by economic disruption, changing travel patterns and structural changes in key source markets and visitor segments.

Movements are forecast to grow slightly slower than passengers, as pandemic-era falls in load factors normalise and capacity constraints continue to bind in the short-term, resulting in growth in demand being accommodated with fewer, fuller aircraft. Despite this slower growth, the lower trough in 2021 means that movements are also forecast to reach 2019 levels in 2025.

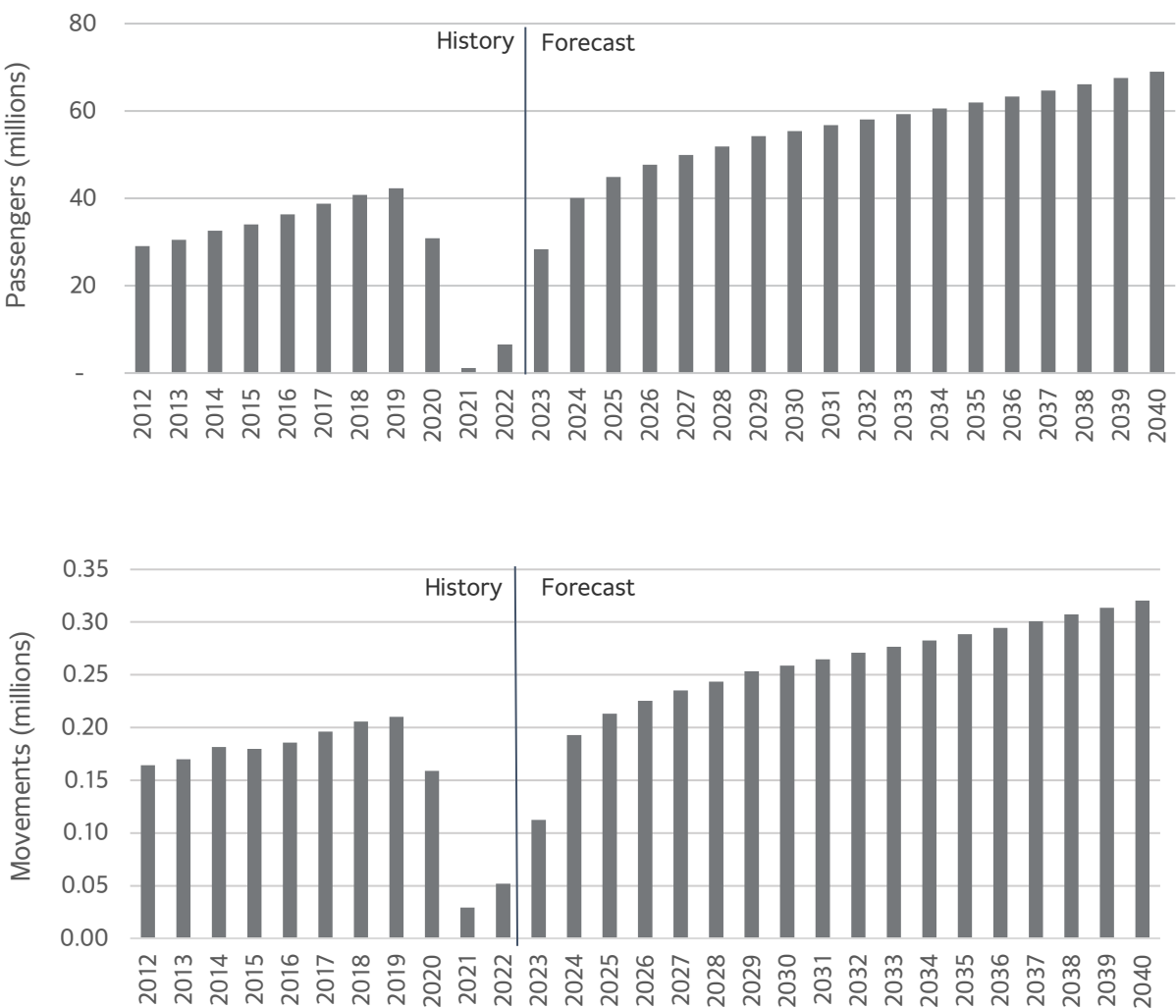
With travel restrictions retained longer in North Asia (particularly China), this region is forecast to recover more slowly, reaching pre-covid levels in 2026. South and South-East Asia are expected to grow rapidly, exceeding 2019 levels in 2024.

Chart 5.2: Forecast international aviation demand, selected source markets, % of 2019



Source: Deloitte Access Economics aviation demand forecasting model

Chart 5.3: Forecasts of international aviation demand, 2012-2040 financial years



Source: Deloitte Access Economics aviation demand forecasting model

Note: Years are financial years.

Forecast Scenario 1: Macroeconomic uncertainty

Supply chain disruptions, geopolitical risks and ongoing inflation mean that there is substantial uncertainty in global economic outlooks.

Scenario context and rationale

There are substantial ongoing uncertainties for the Australian and global economies. Locally, the impacts of supply chain disruption and associated high inflation leading to rapid increases in interest rates from the Reserve Bank of Australia are still working through the economy. Overseas, similar dynamics are playing out, with central banks fighting to bring inflation down at the minimum economic cost. The outlook for China, one of Australia’s key travel source markets, is particularly uncertain, with a creaking property market and high unemployment contributing to slowing growth. While these factors are considered in the economic forecasts underlying this section, this scenario explores the implications of both a ‘downside’ and ‘upside’ outcome for the macroeconomy.

Specifically, these scenarios demonstrate the impact on aviation demand from global economic growth being 0.75pp lower or higher each year over the forecast period.

Scenario results

With a greater share of international visitors being economically-sensitive leisure travellers, international demand is more substantially impacted by both the upside and downside scenarios. Under the upside scenario, growth is significantly higher than the base forecast, reaching almost 66 million travellers in 2030, or around 10 million additional travellers than the base forecasts, with numbers exceeding 2019 levels as early as 2024. Under the downside scenario, growth is slower by a similar amount, with only 47 million travellers in 2030. Under the downside scenario, the recovery to pre-covid levels would be delayed until 2027.

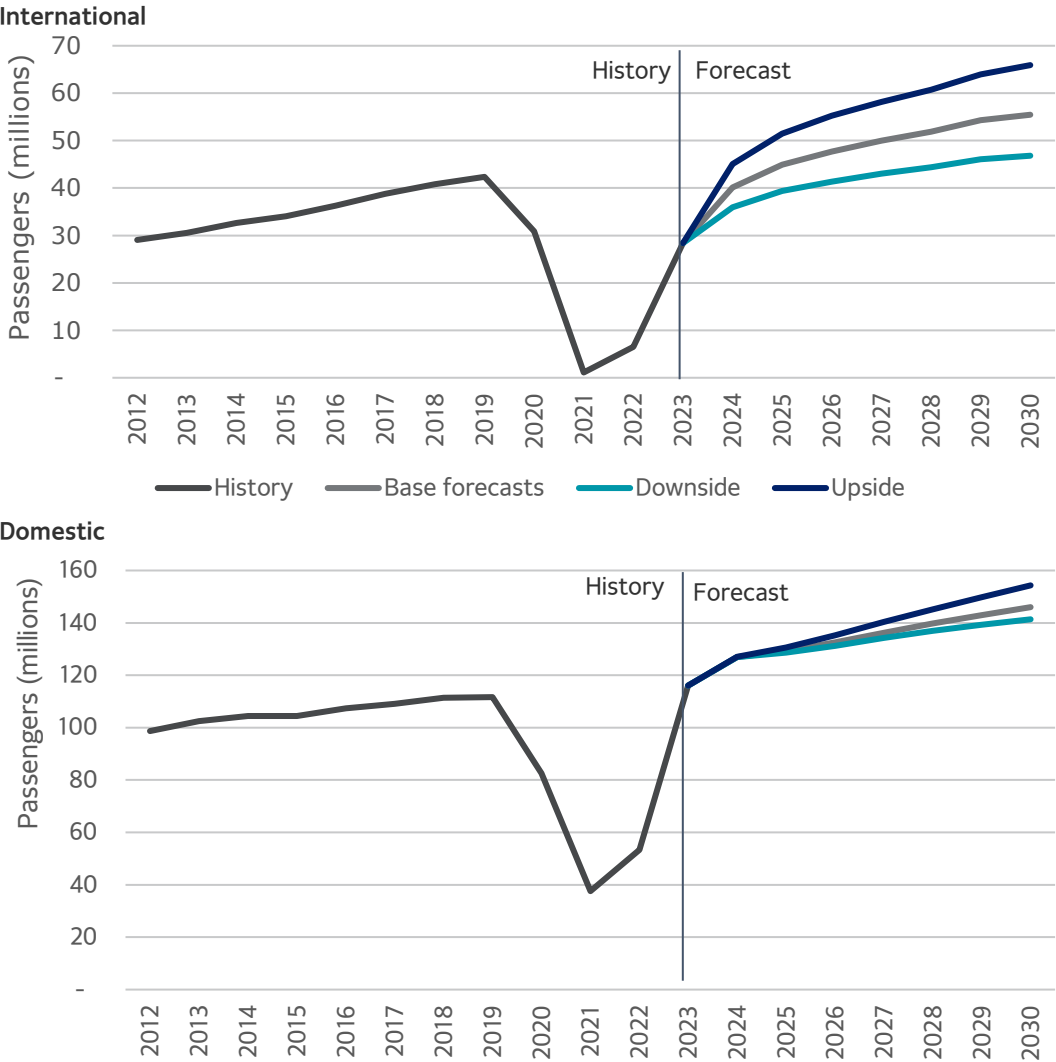
Domestic travel has a higher share of travel for the purpose of business or visiting friends and relatives, which are less sensitive to economic conditions. As a result, the domestic market is less affected by the economic changes in this scenario, with the upside scenario seeing only 9 million more travellers, or a 6% increase by 2030. The downside scenario sees a reduction of half this amount- 4.5 million fewer travellers, or a 3% decrease.

Table 5.2: Passenger growth forecast scenarios (CAGR), 2023-2030 financial years

	Base forecasts	Downside	Upside
International	10.0%	7.4%	12.7%
Domestic	3.4%	2.9%	4.2%

Source: Deloitte Access Economics aviation demand forecasting model
Note: Years are financial years. 2023-30 period includes substantial ‘catch-up’ growth arising from normalisation post-pandemic in all scenarios

Chart 5.4: Aviation demand forecast scenarios, 2012-2030 financial years



Source: Deloitte Access Economics aviation demand forecasting model
Note: Years are financial years

Forecast Scenario 2: Reduced aircraft sizes

Aircraft sizes plateaued prior to the pandemic, as airlines moved towards more sustainable, smaller aircraft.

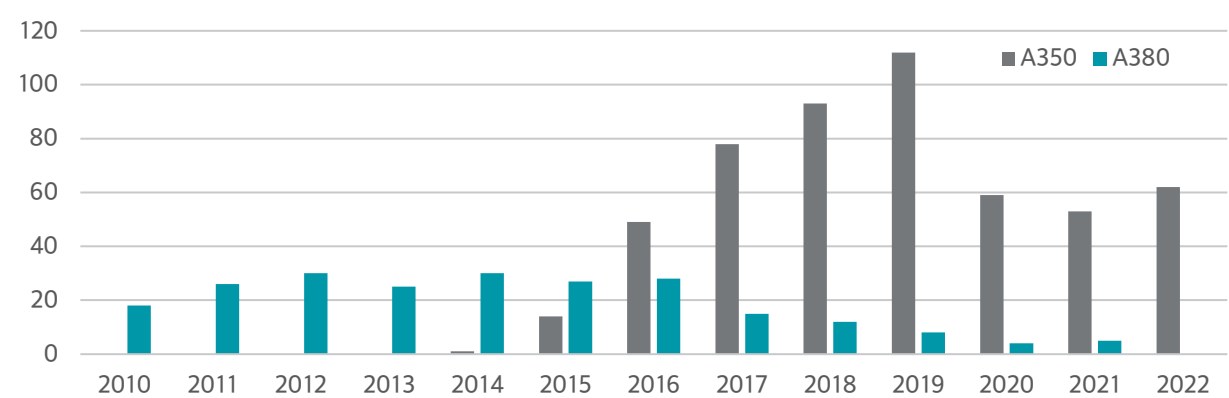
Scenario context and rationale

From 2010 to 2017, aircraft sizes on Australian international routes increased steadily, rising by 30 seats or approximately 15% to 257 seats per aircraft on average in 2017. In response to high fuel prices, increased sustainability considerations and changing consumer preferences, aircraft sizes peaked in 2017, followed by modest declines prior to the pandemic.

With aircraft sizes on domestic routes relatively stable, this scenario only impacts the forecast for international travel.

The base forecast expects aircraft sizes to stabilise at around 250 seats, however given trends observed just prior to the onset of the pandemic and general user sentiment, there is a possibility for further declines. Indeed, Airbus has no outstanding orders for its largest aircraft, the A380, with airlines instead purchasing smaller, more fuel-efficient aircraft.¹ Qantas has announced that its ‘project sunrise’ ultra long-haul aircraft will have only 238 seats, with a greater emphasis on premium seating.² This scenario could be thought of as these changes precipitating a broader trend in the industry.

Chart 5.5: Airbus deliveries of A380 and A350 aircraft, 2010-2022

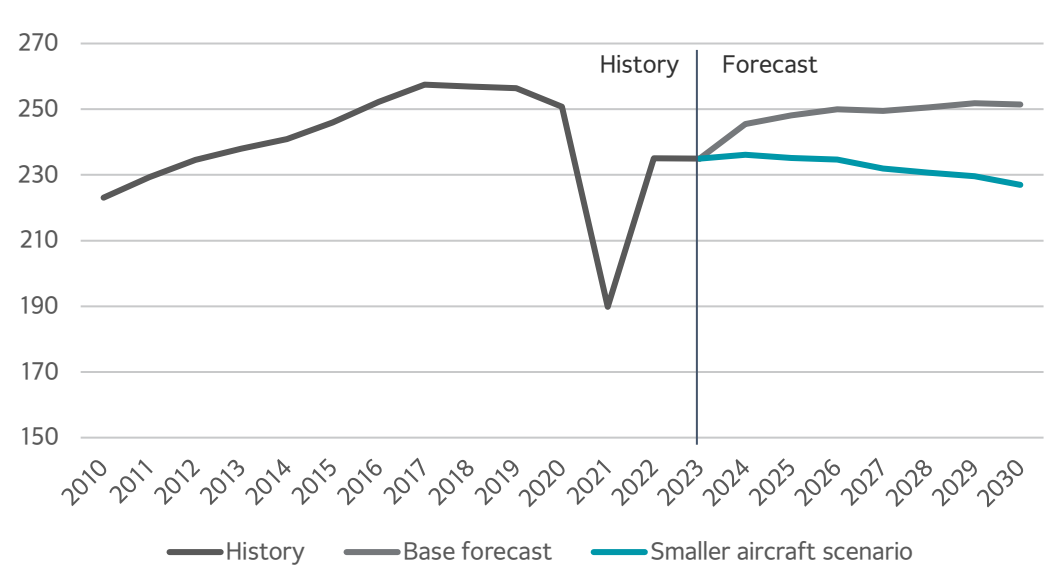


Source: Airbus

Scenario results

With smaller aircraft sizes, the same number of passengers will need to be accommodated by more movements. Under this scenario, movements grow slightly more than 1 percentage point faster than the base forecasts, at 5% annually over the medium term. In the longer term, growth is more moderate, with a smaller difference between the base and scenario outcomes than in the medium term.

Chart 5.6: Aircraft sizes on Australian international routes, 2010-2030 financial years



Source: Deloitte Access Economics aviation demand forecasting model, Note: Years are financial years

Table 5.3: International aircraft movement forecasts

	2019	2025	2030	2040	CAGR 2025-30	CAGR 2025-40
Base forecast	210,212	210,818	256,262	317,257	3.9%	2.8%
Smaller aircraft scenario	201,212	222,403	283,983	353,424	5.0%	3.1%

Source: Deloitte Access Economics aviation demand forecasting model
Note: Years are financial years

Industry trends into the future

Airports reported a variety of opportunities, challenges, and strategic focuses over the next 5 years, expected to directly impact the future of the aviation industry.

The chart set opposite demonstrates the survey responses across all airport categories regarding key opportunities, challenges and strategic areas of focus for the next 5 years. Overall, airports reported infrastructure investment and precinct and capacity expansion as key areas of opportunity in the coming years, which contributed to revenue growth and employee engagement as key focus areas.

Regulation was identified by 61% of airports as a significant challenge in the future. Of the airports who provided further detail, minor regional and remote airports reported that compliance costs were more prominent than competition regulation, which was more important for major airports.

While results varied significantly between airport types, some trends were observed across all categories. All airports ranked revenue growth as one of their top three areas of focus, and regulation as a key challenge. Sustainability, notably, was consistently recognised as an emerging focus area across all airport types.

Unsurprisingly, major airports viewed international capacity expansion as a key opportunity, while other airports did not. Capacity constraints were noted as a primary challenge for major airports, but were not an issue for other reflecting relative land availability and value between metropolitan areas compared to regional and remote areas.

Major airports

Opportunities

- Expansion through new international routes (71%) and infrastructure investment (57%) present an opportunity

Challenges

- Regulation of aviation/airfield site (86%) and capacity (86%) are major challenges

Areas of focus

- Revenue growth (57%) and improving sustainability (57%) have been identified as focuses by major airports

Large regional airports

Opportunities

- Opportunity to expand through new domestic routes (80%) and infrastructure investment (60%)

Challenges

- Skills shortages are a persistent challenge (100%) alongside issues with capital investment

Areas of focus

- Revenue growth (60%) and cost control (60%) are key focuses for large regional airports

Minor regional and remote airports

Opportunities

- Increased movements on existing domestic routes present an opportunity (75%)

Challenges

- Regulation (79%) and raising capital (83%) are major challenges

Areas of focus

- Sustainability (61%) and employee engagement (45%) are focuses for regional and remote airports

Chart 5.7: Top 5 opportunities, challenges and focuses over the next 5 years



Source: Deloitte Access Economics survey of airports, n=28

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Appendix A: Survey overview

Appendix A: Survey of airports sample and instrument outline

Deloitte Access Economics survey of airports

The survey of airports was developed by Deloitte Access Economics in consultation with the AAA. The survey data requested was kept broadly consistent with prior iterations of this analysis (refer Table A.1). Once finalised, the survey was distributed online by the AAA to their relevant membership base, with responses received across June and August 2023.

A total of 28 airports provided detailed responses, with representation across all categories of airports. Table A.2 below provides population and sample details across each airport category. Given the limited sample of minor regional and remote airports, we have combined these category for the purposes of this analysis. Ideally, future iterations of this work would seek to improve sample outcomes for these airports such that data reliability and transparency of reporting is improved.

In addition, the survey of airports was supplemented by data related to four Victorian airports, sourced with permission from a bespoke survey undertaken by Deloitte on behalf of the Victorian Government at the same time as this analysis. These data contained information on Victorian airport financial operations but did not profile the airports to the same extent as the AAA survey of airports. The incorporation of these airports provided for a total survey sample size used for economic modelling of 32.

A summary of the responses to the survey, and the relevant overall airport population is in Table A.2 below.

Table A.2: Airport population and responses

Airport category	Number of airports	Number of responses	Respondent share
Major	10	7	70%
Large regional	33	9	27%
Minor regional and remote	136	11	8%
Secondary metro	7	5	71%

Source: Deloitte Access Economics

Table A.1: Survey of airports outline

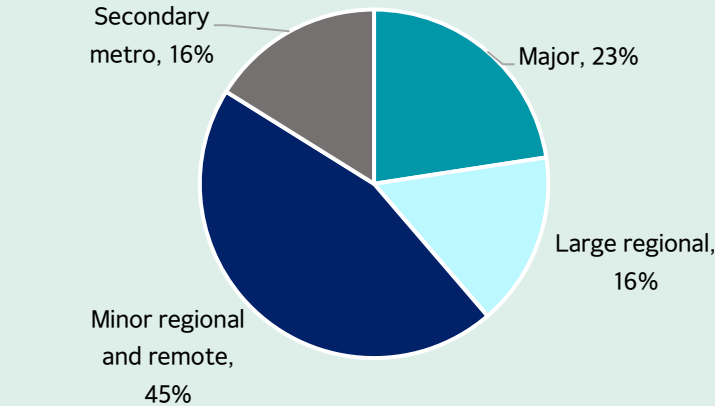
Survey section	Information targeted
Eligibility	The survey was distributed to the relevant member population by AAA
Business information	Profiling information such as IATA code, services offered and ownership structure
Financial data	Data on airports' expenditure, revenue, profit and capital expenditure. This was separated by spending categories and labour costs to support IO modelling
Workforce profiling	Airports were asked to provide information on the size and diversity of workers in Australian airports and their intentions to hire new workers
Outlook to the future	Airports were asked about what they see as challenges, opportunities and focuses over the next 3 years
Competition details	Airports were asked about their main competitors and what actions they take to respond to competition
Victorian airports	Victorian airports were given a modified survey, and as such have been treated differently in some questions

Source: Deloitte Access Economics

Appendix A: Survey of airports sample profile

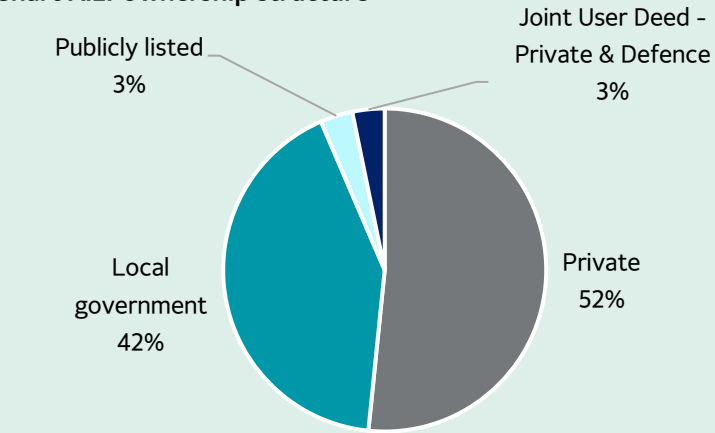
The survey of airports received 32 eligible and valid responses, although not all responses were usable for all analytical purposes given data gaps and cleansing. The content below provides an indication of the profile of the surveyed sample of airports.

Chart A.1: Airport category



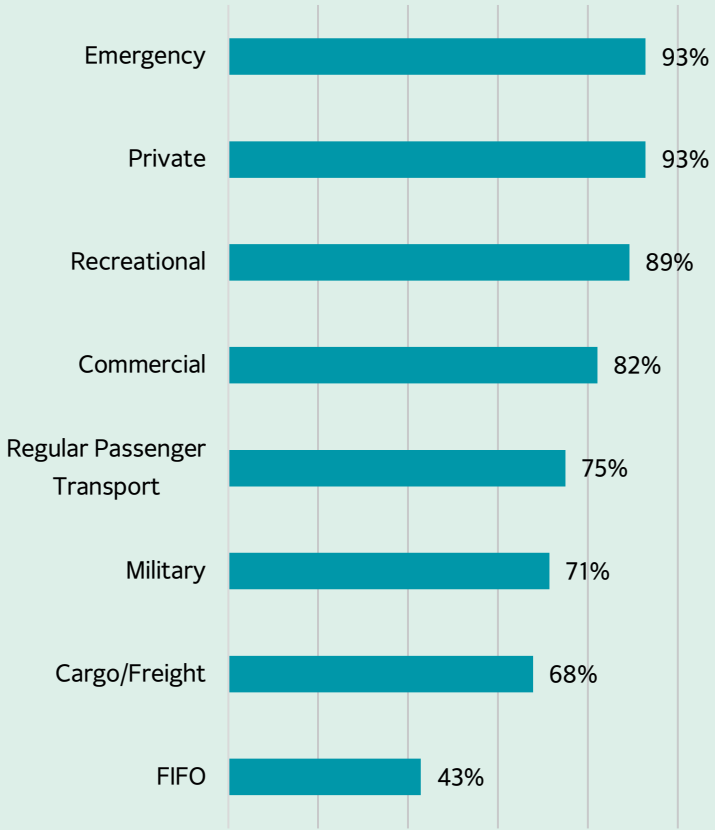
Source: Deloitte Access Economics survey of airports

Chart A.2: Ownership structure



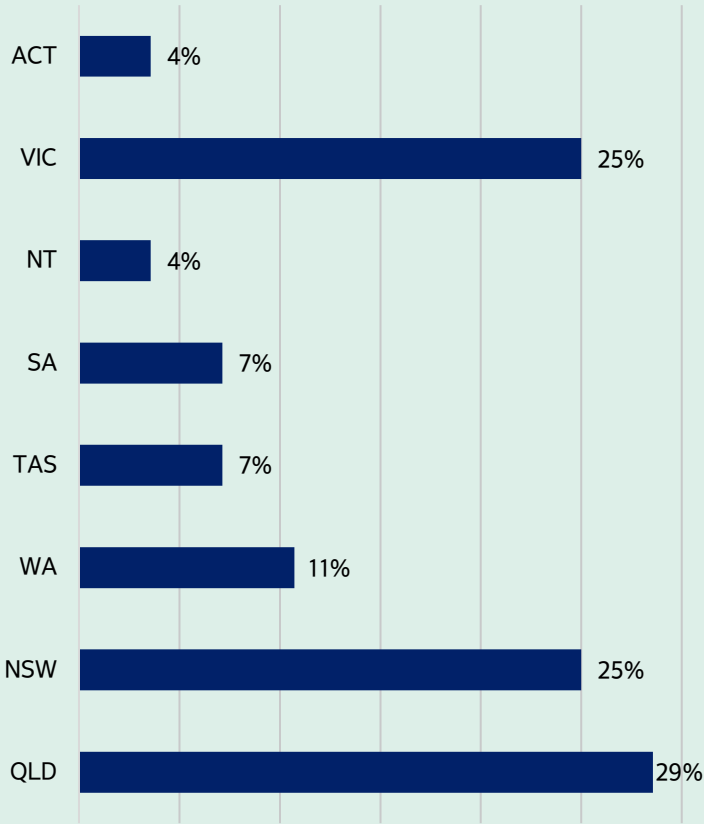
Source: Deloitte Access Economics survey of airports

Chart A.3: Activity supported by airports



Source: Deloitte Access Economics survey of airports

Chart A.4: State of airport



Source: Deloitte Access Economics survey of airports

Appendix B: Economic contribution framework

Appendix B: Economic contribution framework

Economic contribution studies are intended to quantify measures such as value added, exports, imports and employment associated with a given industry or firm, in a historical reference year. The economic contribution is a measure of the economic value of production by a firm or industry.

Value added is the most appropriate measure of the economic contribution to gross domestic product (GSP). Other measures, such as total revenue or gross output, may be easier to estimate than value added but they 'double count'. That is, they overstate the contribution of a company or industry to economic activity because they include, for example, the value added by external firms supplying inputs or the value added by other industries.

The economic activity accounting framework is presented in Figure B.1, showing how total revenue can be disaggregated into component parts in order to measure the economic contribution of an entity. The framework demonstrates the definition of value added being the difference between total revenue and intermediate inputs.

When calculating the gross operating surplus for a typical for-profit firm or industry, income streams from government (such as transfers or production subsidies) are excluded as they are a transfer of public funds, not reflective of income generated by the activities of the firm or industry.

Direct and indirect contributions

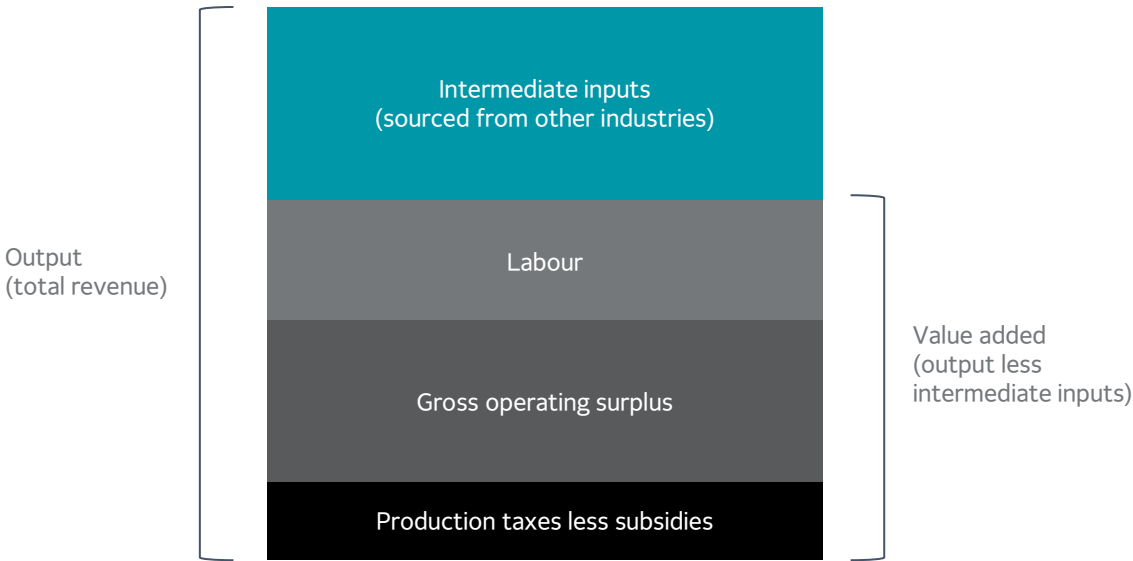
The direct economic contribution is a representation of the flow from labour and capital within the sector of the economy in question. The indirect contribution is a measure of the demand for goods and services produced in other sectors as a result of demand generated by the sector in question. Estimation of the indirect economic contribution is undertaken in an input-output (IO) framework using Australian Bureau of Statistics input-output tables which report the inputs and outputs of specific sectors of the economy (ABS 2022).

IO tables are required to account for the intermediate flows between sectors. These tables measure the direct economic activity of every sector in the economy at the national level. Importantly, these tables allow intermediate inputs to be further broken down by source. These detailed intermediate flows can be used to derive the total change in economic activity for a given sector.

A widely used measure of the spill over of activity from one sector to another is captured by the ratio of the total to direct change in economic activity. The resulting estimate is typically referred to as 'the multiplier'. A multiplier greater than one implies some indirect activity, with higher multipliers indicating relatively larger indirect and total activity flowing from a given level of direct activity.

The total economic contribution to the economy is the sum of the direct and indirect economic contributions.

Figure B.1: Economic activity accounting framework



Source: Deloitte Access Economics

Limitations of economic contribution studies

In a fundamental sense, economic contribution studies are simply historical accounting exercises. The analysis — as discussed in the report — relies on a national input-output table modelling framework and there are limitations to this modelling framework. The analysis assumes that goods and services provided to the sector are produced by factors of production that are located completely within the state or region defined and that income flows do not leak to other states.

The IO framework and the derivation of the multipliers also assume that the relevant economic activity takes place within an unconstrained environment. That is, an increase in economic activity in one area of the economy does not increase prices and subsequently crowd out economic activity in another area of the economy. As a result, the modelled total and indirect contribution can be regarded as an upper-bound estimate of the contribution made by the supply of intermediate inputs.

Appendix B: Economic contribution methodology details

Airport core activities

The contribution of airport core activities is defined as all activity that is undertaken by the airport company itself.

Data inputs

The main data input for the economic contribution of airport core activities is the survey of airports, which provided estimates of the direct employment and GVA for each category of airport. To calculate the indirect contribution, details on the airports' expenditure was collected from the survey.

Methodology

These estimates were then scaled up to account for the airports that did not respond to the survey.

For major airports, this scaling was done using shares of passenger traffic, with airports that responded to the survey covering more than 80% of air traffic. A key assumption is that airports that did not respond to the survey have similar operations on a per-passenger basis as those who did respond to the survey.

For remaining categories, population scaling was conducted based on counts of airports, such that the working assumption is that airports in these categories that responded to the survey are a representative sample of their category's operational performance.

Worked scaling example - large regional airports:

9 of 33 large regional airports (27%) responded to the survey. From their responses, a direct economic contribution of approximately \$94 million was estimated. To extend this to the whole population within this category, this figure was then multiplied by a scaling factor of 3.67 (1/0.27), resulting in a direct contribution of \$345 million. A key assumption for this to accurately reflect the true contribution is that the surveyed airports are representative of those that did not respond to the survey. While this is impossible to exactly verify, a manual check of the responses suggests a reasonable level of consistency. The indirect contribution was then calculated the Deloitte Access Economics' Regional Input-Output Model, containing multipliers derived from the ABS' Input-Output Tables. Breakdowns of key figures for the different airport categories are presented in table B.1.

Table B.1: Airport population and responses

Category	Scaling factor	Share of direct employment	Share of direct GVA
Major	1.16 (based on passengers)	60%	83%
Large regional	3.67 (based on airport count)	25%	12%
Minor regional and remote	12.36 (based on airport count)	9%	1%
Secondary metro	1.4 (based on airport count)	6%	4%

Airport precinct operations

The contribution of airport precinct operations is defined as all industry activity that takes place within the airport precinct that is not included in the airport core operations.

Data inputs

As the survey of airports alone was not able to provide sufficient data to estimate these figures, a different methodology to previous editions of this report was employed, relying **primarily on ABS census data** to estimate the employment activity on airport precincts. Because of these substantial changes, estimates should not be directly compared to previous results.

For airports that did not provide sufficient data, census estimates of employment by industry and place of work for each airport were taken, where there is a geographical unit that contains only the airport precinct. For most major airports, an ABS Statistical Area Level 2 (SA2) or Destination Zone contains only the airport precinct. **In total, census data for 12 airports was combined with survey data from 9 airports, covering all major airports and all other airports with substantial airport precincts, such as Moorabbin and Essendon Fields in Melbourne.**

For example, the Sydney Airport precinct is completely contained by the SA2 'Sydney Airport', with census figures estimating that approximately 6,000 FTE employees worked in this precinct in 2021.

Methodology

Due to limited data, these estimates are not scaled to reflect the population of airports, so exclude the precincts of a number of smaller regional and remote airports. As the census estimates are from 2021, these were scaled up in line with Australian labour force growth from census day in August 2021 to December 2022- approximately 6% growth. To avoid double counting, direct employment estimates of airport core activities were subtracted from these estimates. As the aviation industry was more significantly impacted by the pandemic than other industries, this approach is likely to result in a conservative outcome.

Direct and indirect contribution estimates were then calculated the Deloitte Access Economics' Regional Input-Output Model, containing multipliers derived from the ABS' Input-Output Tables, as outlined on the previous page.

Appendix B: Economic contribution methodology details

Facilitated trade and exports

The economic contribution of aviation-facilitated trade and exports is the contribution of the production of the goods that are exported by air. This should be interpreted as the economic contribution of air freight that is facilitated by an airport. For specific states, the economic contribution is not necessarily the economic contribution of goods that are produced in that state but goods that are exported by airports in that state.

Data inputs

The analysis of the facilitated international exports of Australia's airports was underpinned by a custom data request of Australian Bureau of Statistics (2023), *Exports and Imports*. The ABS custom dataset provides detailed information on the value, weight, and place of destination of Australia's international air export trade, mapped to Australian Harmonized Export Commodity (AHEC) group by airport for the four quarters to March 2023. This data was cleaned by the ABS to remove re-exports (goods that are imported, not processed and re-exported). Further, Deloitte Access Economics removed goods that are direct exports to aircraft stores, such as jet-fuel and food for catering.

This data was available for the 5 quarters preceding June 2023. For this, only quarters in calendar year 2022 were included to bring this contribution in line with the other economic contributions. As this reflects the year directly after border openings, it is possible that the contribution of air freight would be higher after a full recovery of the aviation sector. This would ensure that there would be more capacity in international aircraft stores, which are often used to cover some elements of air freight.

Methodology

The AHEC categories were mapped to ABS Input-Output industry group categories to fit with the Deloitte Access Economics' Regional Input-Output model framework. In this way, the value of international exports as provided by the ABS custom data set was converted to direct and indirect contribution estimates within a consistent framework to national accounting practices.

Direct and indirect contribution estimates were then calculated the Deloitte Access Economics' Regional Input-Output Model, containing multipliers derived from the ABS' Input-Output Tables as outlined on page 47.

This does not estimate whether these goods are viable to be exported by other methods. Some goods, such as high-cost machinery may be possible to ship by sea but are not due to the importance of a rapid supply chain. Other goods, such as high-value seafood may have a limited shelf-life and as such not be possible to ship by sea. Additionally, air freight is generally more secure than sea-freight, so goods with very high value per tonne, such as gold, may not be viable to be transported by sea for security reasons.

Appendix C: Tourism contribution framework

Appendix C: Tourism contribution framework

Measures of tourism activity

There are two measures of tourism activity presented in this report:

- **Visitor expenditure** is a measure of the aggregate price of goods paid by the consumer or a reflection of the price impact on visitors. It includes components that are not directly related to the industries producing the goods and services for tourism purposes, including imports, product taxes, and wholesale margins. It is necessary to adjust for these non-industry components of supply. This is calculated using data from TRA's National Visitor Survey (NVS, domestic travellers) and International Visitor Survey (IVS, international travellers) data, as well as
- **Value added** is the most appropriate measure of economic contribution as it ensures no 'double counting' of components of spend that should be allocated to other industries. For example, taxes on products (such as the goods and services tax) are recognised as a component of the Government services industry, while wholesale margins should be allocated to the economic activity associated with the wholesale trade industry.

Tourism Satellite Account framework

This analysis uses the TSA approach to measuring the economic contribution of facilitated tourism. The TSA framework is conceptually similar to and draws on the ABS IO tables to generate results. It is based on an international approach to defining the tourism sector and different tourism products and related industries depending on the extent to which they interact with tourists either directly or indirectly.

Direct contribution of tourism

A direct contribution occurs where there is a direct relationship, both physical and economic, between the visitor and the producer of the good or service. Direct tourism output is essentially the amount of tourism consumption less net product taxes, wholesale and transport margins and imports.

In the case of retail goods purchased by visitors, only the retail margin contributes to direct tourism output, value added and Gross Regional Product. This is because it is deemed that only the retailer has a direct relationship with the visitor and is therefore part of the tourism industry. As a consequence the output, and value added, attributed to other (than retail) industries is excluded from the value of direct tourism output. Direct tourism output is therefore equal to internal tourism consumption at basic prices less the cost to retailers of domestic goods sold directly to visitors.

Direct tourism gross value added shows only the 'value' which a producer adds to the raw material goods and services it purchases in the process of producing its own output. Direct tourism gross value added is measured as the value of the output of tourism products by industries in a direct relationship with visitors less the value of the inputs used in producing these tourism products.

Indirect contribution of tourism

The indirect effect of tourism consumption is a broad notion that covers upstream and supplier effects of tourism demand. Intermediate inputs represent those goods and services which support the supply of the tourism product – the cleaning services that are inputted to the hotel sector; the fuel that is inputted to the aviation industry; the fruit and vegetables that are inputted to the restaurant industry. Together with any upstream impacts, it is these flow-on effects which determine the tourism industry's indirect contribution.

The definition of direct and indirect are slightly different in the TSA approach as direct is defined as activity involving a direct interaction with tourists. Accordingly, the ratio of direct and indirect activity differs from results using a standard IO approach. However, estimates of total value added and employment should be similar across the two approaches.

Appendix C: Tourism contribution methodology details

Facilitated tourism contribution

The tourism contribution of airports is the economic contribution of the expenditure from international and domestic tourists that travelled by air. For international tourism, this represents over 99% of expenditure and for domestic travellers, slightly more than 20%.

Data Inputs

To disaggregate tourism expenditure into the component facilitated by Australia's airports, the following data sources were used :

- TRA, IVS, NVS, Regional Expenditure (REX) and Visitor Arrivals and Departures (VAD).
- Australian Bureau of Statistics (ABS), Producer Price Indices

Methodology

Using TRA visitor survey data, visitor expenditure was disaggregated by purpose of trip, location and travel mode. Given data limitations, expenditure was not linked to specific airports, but grouped at the state level.

These inputs were then applied to multipliers estimated from the TRA State Tourism Satellite Account (TSA) to estimate the economic contribution, using the tourism contribution framework detailed on the prior page.

International expenditure assumptions and details

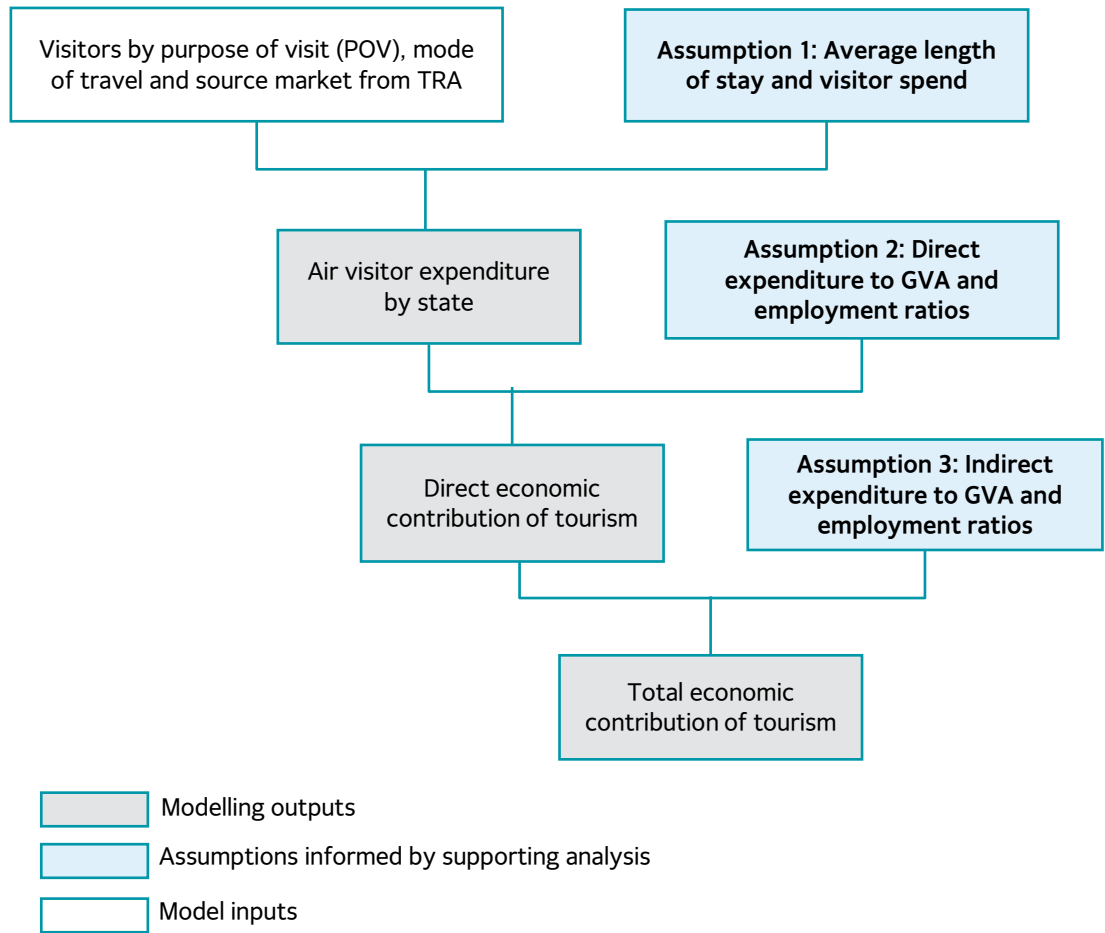
With detailed breakdowns of international expenditure not possible using IVS or REX data due to ongoing pandemic-related sampling constraints, estimates of international expenditure were derived from 2019 average expenditure profiles projected forward to 2022 using the ABS International Travel and Accommodation producer price index, and then adjusted for changes in visitor traffic using VAD data by airport of arrival.

Domestic expenditure assumptions and details

In order to estimate domestic aviation-facilitated expenditure, NVS estimates of trip mode share by purpose at a state level were combined with REX expenditure data for interstate and intrastate overnight and day trips. A key assumption in this process is that per-night expenditure is similar across travel modes, after origin, destination, length of stay and purpose of trip are accounted for.

As the NVS survey is not impacted by the same sampling issues as the IVS, the 2023 spend and activity data can be used directly without need for imputation based on pre-pandemic findings.

Figure C.1: Air-facilitated tourism contribution methodology



Source: Deloitte Access Economics

Appendix D: Air travel demand forecasting

Appendix D: Air travel demand forecasting

Aviation demand forecast methodology

The aviation demand forecasts presented in this report are produced using the Deloitte Access Economics Aviation Demand Model. This model combines detailed travel and macroeconomic data to estimate the econometric relationships between travel demand and key indicators. These estimates are applied to Deloitte Access Economics' leading macroeconomic and demographic forecasts to produce detailed, empirically grounded estimates of aviation demand.

Reflecting the upheaval and ongoing uncertainty for the travel industry arising from the COVID-19 pandemic, the raw econometric model forecasts were adjusted to account for expected recovery timelines and ongoing pandemic related constraints (or shocks to the historical relationships). These recovery adjustments are detailed in the box below.

COVID recovery adjustments

The COVID-19 pandemic affected the aviation industry more than almost any other. International travel to Australia stopped almost completely, and border closures and travel restrictions severely limited the number of passengers on domestic routes. While restrictions have generally lifted, travel has yet to recover fully, and there remains ongoing certainty as to the pace and distribution of the recovery.

For these forecasts, COVID recovery adjustments to the base forecasts were implemented, considering:

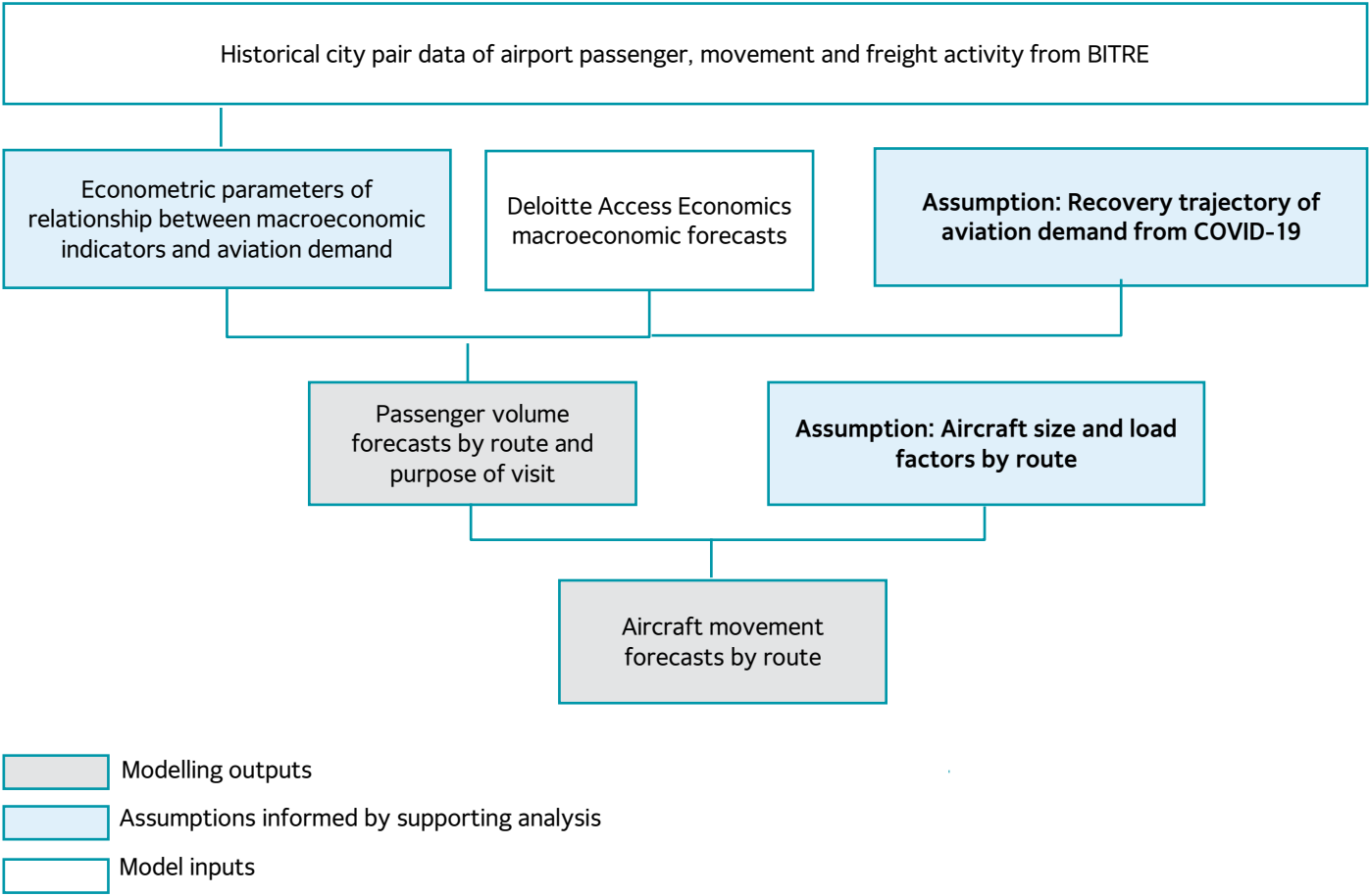
- Industry expectations of capacity constraints; and
- Travel hesitancy (informed by Deloitte's global *State of the Consumer* survey)

Prior expectations of permanent shifts in business travel behaviour as a result of the pandemic have now been removed from the COVID-19 adjustments module given the strong recovery in business travel demand to date. Likewise, almost all pent-up demand expectations as a result of visitors being unable to travel for a period of time have now flowed out of the model given the time lag since border re-openings.

Overall, the application of these assumptions result in domestic travel expected to return to pre-covid levels by **2023**, and international travel expected to recover in **2025**.

Unless otherwise specified, all years are financial years.

Figure D.1: Aviation demand forecast framework



Source: Deloitte Access Economics

Appendix E: Macroeconomic and aviation context

Appendix E: Macroeconomic context, risks and uncertainties

Income growth and population changes are the key underlying macroeconomic and demographic drivers of aviation demand.

Australian macroeconomic outlook

A bigger population, and one with more disposable income, will fly further and more often. After significant volatility during the pandemic, the Australian economy is forecast to see relatively slow growth for the remainder of 2023 and 2024. Over the long run, growth is expected to stabilise at slightly above 2% annually, close to the rate seen prior to the pandemic.

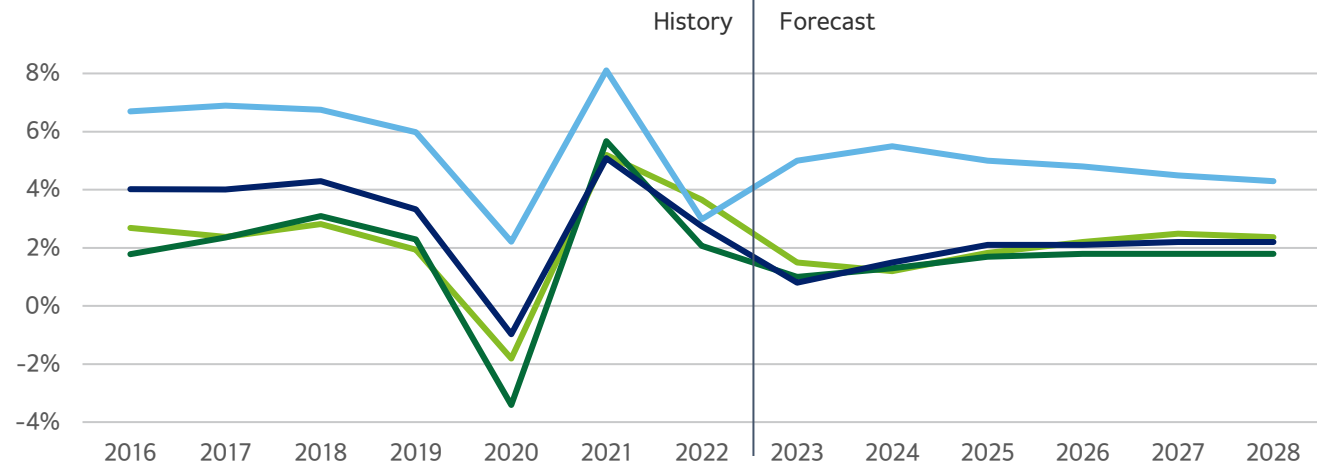
Population growth is expected to spike above the pre-pandemic rate in the short run, as migration catches up following pandemic-era weakness. In the long run, Australia's population is forecast to grow at around 1.3% per year and slightly below the historical average rate.

International macroeconomic outlook

Before the pandemic, China was the single most important source market for Australian international aviation, so its economic outlook is particularly important to the travel sector. After several decades of economic growth above 6% annually, Chinese growth is expected to slow over the medium term, with long-term growth closer to 4% forecast by the IMF. A major factor driving this slowing growth is the expected decline in China's population, with population growth tipping into negative territory in 2022 and expected to decline even further over the medium term.

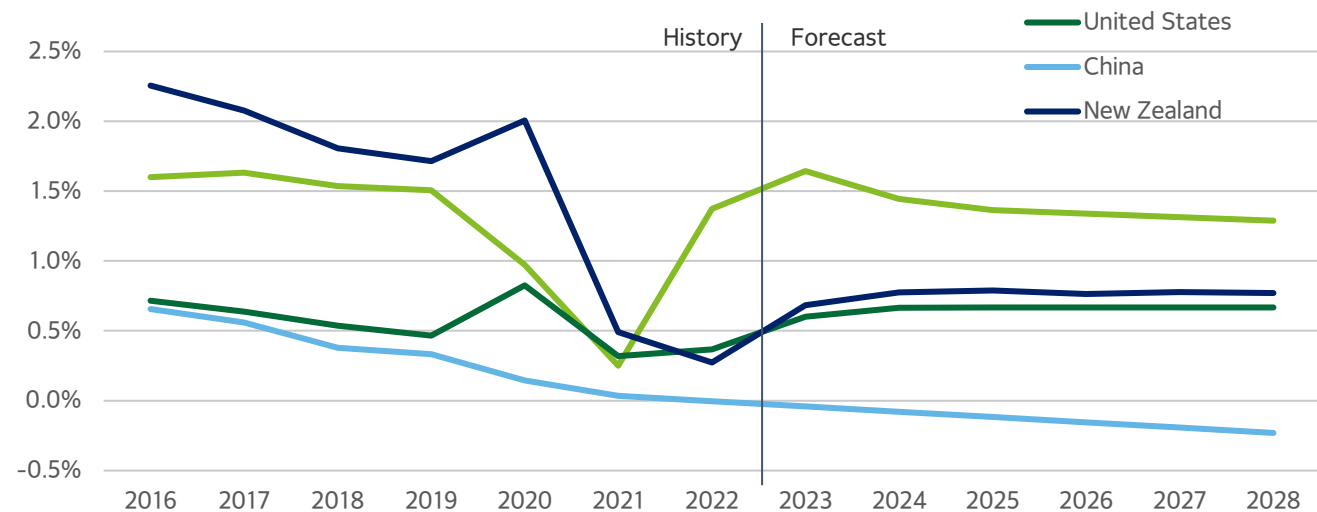
Other key markets, such as the United States and New Zealand, are expected to see slightly lower levels of economic growth over the medium term than the pre-pandemic average. These rates of growth are expected to be broadly similar to Australia, although this represents a more substantial decline for New Zealand than the United States or other developed economies.

Chart E.1: Gross domestic product growth forecast, 2016-2028



Source: Deloitte Access Economics Business Outlook

Chart E.2: Population growth forecast, 2016-2028



Source: Deloitte Access Economics Business Outlook (Australia), International Monetary Fund (International)

Appendix E: Aviation industry context

Demand weakness, skills shortages and supply chain issues are key short-term challenges for Australia’s airports.

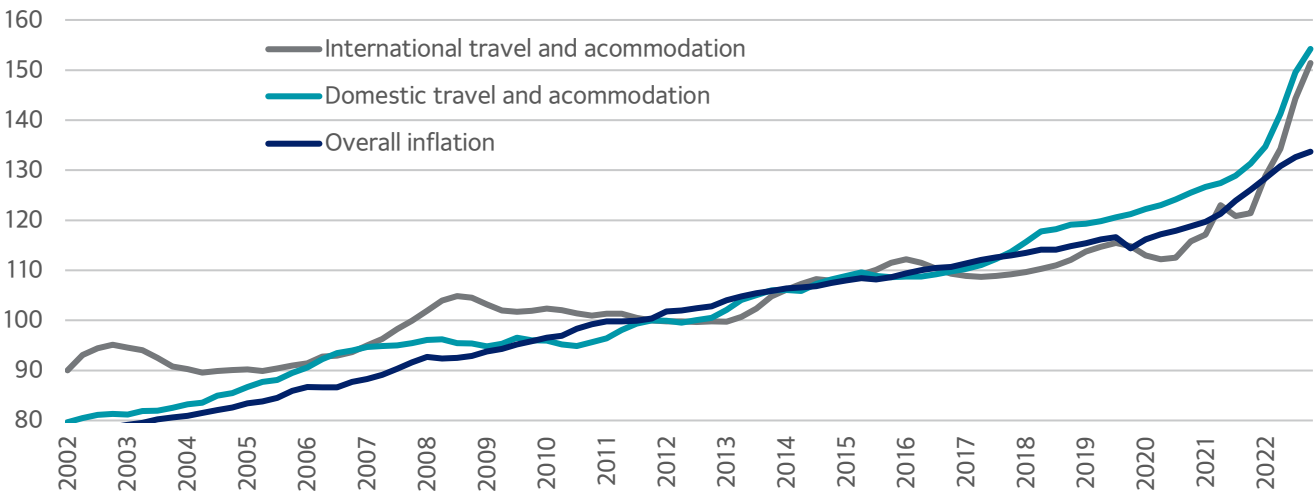
Aviation industry context and demand recovery

Although explicit travel restrictions have now generally been lifted, it will take some time for international aviation demand to fully recover to pre-pandemic levels. Travel from North-East Asia (driven by China) was only at 29% of 2019 levels in 2022-23, due to lingering restrictions and ongoing economic headwinds. Despite being reasonably quick to open borders to Australia, travel from America in 2022-23 was still substantially weaker than pre-pandemic. Overall, airports and destinations more heavily reliant on holiday visitors from these destinations have seen a slower recovery in aviation traffic.

Supply-chain issues

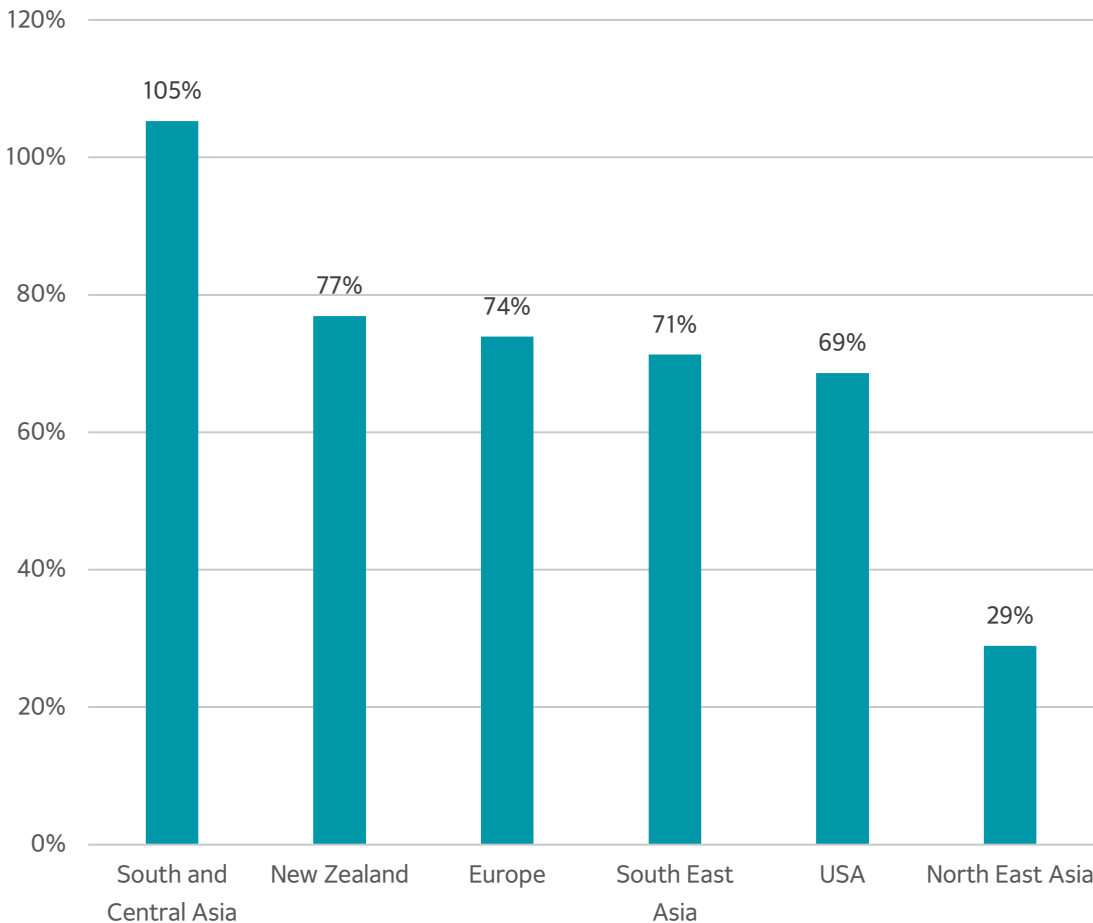
As well as demand-side issues, staffing challenges, rising input costs and supply chain constraints have seen prices for travel and accommodation services surge after a decade of relatively little growth. Since the onset of the pandemic, prices for international travel and accommodation have risen by 32%, almost twice the rate of overall inflation, despite generally growing slower than inflation over the preceding decades (Chart E.4). Similarly, prices related to domestic travel and accommodation have risen by 27% since the start of the pandemic.

Chart E.4: Selected price indices, 2002-2023



Source: ABS Consumer Price Index and sub-groups. Note: Travel and Accommodation indices are rolling annual averages.

Chart E.3: International passenger recovery, 2022-23 (% of 2019)



Source: ABS Overseas Arrival and Departures



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