



2019 INTERNATIONAL AIRFREIGHT INDICATOR

DATA AND MEASUREMENT SERIES



**INFRASTRUCTURE
PARTNERSHIPS
AUSTRALIA**



**OXFORD
ECONOMICS**

Infrastructure Partnerships Australia is an independent think tank and executive member network, focused on excellence in social and economic infrastructure.

Formed in 2005 as a genuine and enduring policy partnership between Australia's governments and industry, we exist to shape public debate and drive policy reform for the benefit of the national interest. Infrastructure Partnerships Australia's formation recognises that through innovation and reform, Australia can extract more from the infrastructure we have, and invest more in the infrastructure we need.

Infrastructure is about more than balance sheets and building sites. Infrastructure is the key to how Australia does business, how we meet the needs of a prosperous economy and growing population, and how we sustain a cohesive and inclusive society.

BIS Oxford Economics is the leader in forecasting, modelling and quantitative analysis within Australia and across the globe. They support organisations in understanding how various economic and sectoral drivers will evolve and the impacts they will have on their business.

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MESSAGE FROM THE CEO

Every day over 550 international flights arrive and depart Australia. We know with a high degree of accuracy the number of passengers those planes are carrying, their origin and destination and even the purpose of their trip.

Yet, until now, we have known very little about what is being carried in the belly of those same planes. Beyond high level indicators about the volume of airfreight, we are remarkably blind to the value, the type of commodity, and the economic contribution of the airfreight that leaves or lands in Australia.

In a national first, the Infrastructure Partnerships Australia and BIS Oxford Economics' *International Airfreight Indicator* shines a light on one of the most important components of Australia's international freight task. By knowing at the granular level the nature of Australia's inbound and outbound airfreight, we can begin to understand and improve the efficiency and effectiveness of an increasingly important part of the supply chain.

In FY2017-18, \$109 billion of international trade passed through Australia's airports, with more than 96 per cent of international airfreight passing through the four main capital city airports – Sydney, Melbourne, Brisbane and Perth. While airfreight represented less than one per cent

of Australia's international trade by volume, it was more than 21 per cent in monetary value. Put another way, one in every \$5 of Australia's imports and exports travels via our airports.

In a period of heightened trade tensions and dynamic structural change, its increasingly critical to measure and understand the evolving nature of Australia's international trade.

The *International Airfreight Indicator* shows that airports are crucial to our trade story, and the cargo transported beneath passengers is vitally important to airlines, airports and the Australian economy. More than 80 percent of our airfreight is carried in passenger aircraft, with the balance carried in dedicated freight carriers.

By transparently measuring the composition of these trade flows, the *International Airfreight Indicator* allows each of those players – airlines, airports and Australians more broadly – access to the information and insights needed to optimise the way we use our infrastructure and maximise our economic opportunities.

In April 2018, Infrastructure Partnerships Australia launched *Fixing Freight: Establishing Freight Performance Australia*. The report made the case that doing better on logistics first requires us to understand

the problem which, in turn, requires better data. Instead of simply making the call for better data, that work traced a practical pathway to establishing a dedicated freight body that we called Freight Performance Australia. Since the release of *Fixing Freight*, iMOVE CRC has commenced a study with the Commonwealth Government on freight data needs and measurement in freight.

To prove the case for better data – both the value it provides and that delivering it is achievable – we are pleased to present Australia's first public *International Airfreight Indicator*. We will continue to develop the *International Airfreight Indicator*, adding further depth and new data. Amongst the planned upgrades are deeper granularity, new approaches to visualisation and the addition of other infrastructure nodes like seaports. We hope you find the Indicator useful, and we look forward to continuing to work with you to make Australia's freight systems more efficient, more effective and more transparent.

Adrian Dwyer

KEY HIGHLIGHTS FOR FY2017-18 AND FY2018-19

1 in \$5



One in every five dollars of Australia's goods trade travels via airfreight, but it is less than one percent of trade volume.

1.15 million tonnes



FY2017-18 saw a record high for airfreight trade – 1.15 million tonnes worth \$109 billion. Over FY2018-19, we forecast this to increase by 3.5 and 4.4 per cent, respectively.

Exports increase



Exports increased more than imports in FY2017-18 relative to FY2016-17. However, exports growth expected to ease to 1.6 per cent in value and 2.4 per cent in volume compared to imports (6.2 per cent and 4.7 per cent respectively) for FY2018-19.

50 per cent+ exports to China



More than half of the growth in airfreight exports over FY2017-18 can be attributed to booming demand for food products from China. Over the past four years, exports of infant formula and related products have surged from being negligible to 18 per cent of airfreight exports by mass.



Processed products peaked

However, infant formula and other processed food products have reached a peak and will be flat over the near term. There is also considerable risk, especially on the downside due to possible trade restrictions.



Forecast \$333m fall

The largest forecast decreases for exports over FY2018-19 is expected in vehicles and transport equipment – at 19 per cent. The decline will see exports fall by \$333 million, from \$1.75 billion the previous year. Export declines are forecast to continue as the industry in Melbourne continues to experience the aftershocks of the closure of the domestic manufacturing industry in late 2017.



Largest increase

The largest forecast increase for imports over FY2018-19 is in machinery and equipment. The forecast rise follows a pick up since FY2017-18 and improved outlook for non-mining tradeable sectors, as business confidence returns encouraging them to invest in machinery and equipment, and Intellectual Property products.



70 kg per capita

Airfreight reached a record high at around 70 kg per capita over FY2017-18. This measure has increased by approximately 60 per cent over the last five years alone.



1.2 million tonnes

Airfreight imports and exports are forecast to have a moderate increase in FY2018-19 – 1.2 million tonnes worth \$114 billion.

AIRPORTS IN FOCUS



Sydney Airport

Sydney Airport – the most significant “freight hub” – represents circa 45 per cent of all freight imports and exports in both value and volume. Exports in FY2017-18 totalled 225 thousand tonnes, up 10 per cent compared to FY2016-17, bringing the total value of exports to \$13 billion. Machinery and equipment, and infant formula have been the primary source of growth in airborne exports.



Melbourne Airport

Melbourne Airport represented 28 per cent of all freight volume and 17 per cent of all freight value in FY2017-18. Growth in export volume over FY2018-19 is forecast to remain flat, however, primary rural products will increasingly drive the outlook over the coming quarters.



Brisbane Airport

Brisbane represented 12 per cent of all freight volume and seven per cent of all freight value in FY2017-18. Growth in beef exports will increasingly drive the outlook over the coming quarters, however a flat outlook for processed food will see overall tonnage growth ease to three per cent growth over FY2018-19, while growth in value is forecast to decrease 0.5 per cent.



Perth Airport

In value terms, exports are to a large extent driven by gold production, where Australia is the world's second largest producer. **Since Western Australia produces the majority of gold, Perth Airport is over-represented in exports.** Exports are forecast to grow over the next two years and peak at 354 tonnes in FY2019-20, 322 tonnes of which are produced locally.



THE INTERNATIONAL AIRFREIGHT INDICATOR

THE IMPORTANCE OF AIRFREIGHT

Australia's international competitiveness is underpinned by a reliable and efficient transport sector. Airfreight is an increasingly important component of that transport task, carrying the highest value and most time critical shipments across the nation and the world. These include necessities such as pharmaceuticals, high-end manufacturing products, and time sensitive perishable goods such as seafood. Airfreight services reduce time to link suppliers and customers quickly, efficiently and reliably. Yet, the importance of airfreight to the Australian economy is often overlooked and misunderstood with the focus almost exclusively centred on passenger travel or seaborne freight.

THE INTERNATIONAL AIRFREIGHT INDICATOR

Despite the importance of moving people and goods to the economy, we have a remarkable lack of reliable indicators to help us understand our transport system. This deficit of insight is driven by an absence of data and analysis. The result is a policy, regulatory and investment environment where decisions are based on intuition and imperfect information, rather than evidence.

Despite the existence of various high-level reports throughout the years, Australia does not measure and report on airfreight systematically or consistently. The *International Airfreight Indicator*, produced by Infrastructure Partnerships Australia (IPA) in collaboration with BIS Oxford Economics (BISOE), seeks to fill that information gap. The inaugural *International Airfreight Indicator* provides comprehensive analysis of air cargo movements into and out of Australia. The motivation behind the *International Airfreight Indicator* is three-fold:

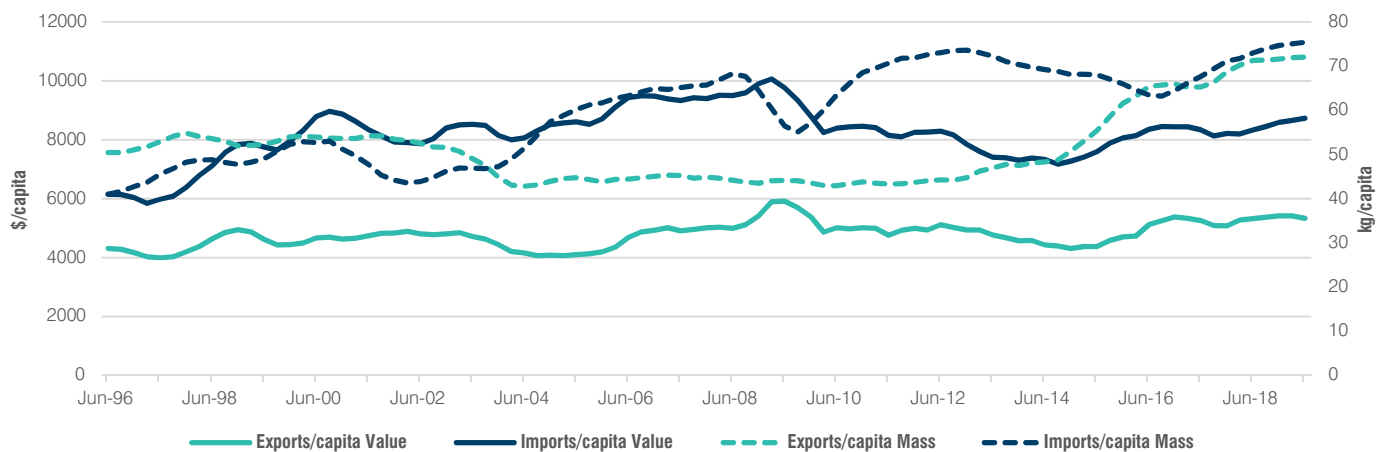
- first, given the increasing role of air transport in facilitating economic activity, an index of its output with 12-month forecasts, in both value and volume terms, can be a reliable indicator of the current and future economic activity of Australia
- second, by providing an overview of the evolving nature of airfreight in Australia, the Airfreight Indicator provides visibility and understanding of the market to industry and government. This includes a more detailed picture of what is moving where and why, how its changing over time, and the different dynamics across airports and wider catchments, and
- third, airfreight measurement through airports can lift the visibility and understanding of its significance to the Australian economy. In turn, this can assist infrastructure planning and development of strategies as well as management across the transport network.

The first edition sets the scene of the evolution of airfreight through a brief historical analysis.

AN OVERVIEW OF AUSTRALIA'S AIRFREIGHT

Freight is a direct indicator of the health of the Australian economy, and the value and volume of airfreight imports and exports related to the population base and economic activity in an airport's catchment. Air imports and exports in Australia reached a record high in FY2017-18, equivalent to 70 and 71 kg per capita respectively (Figure 1), which has grown strongly since 2004. In fact, growth in export volume of airfreight, measured on a per capita basis, has increased approximately 60 per cent over the last five years alone.

Figure 1: International airfreight per capita

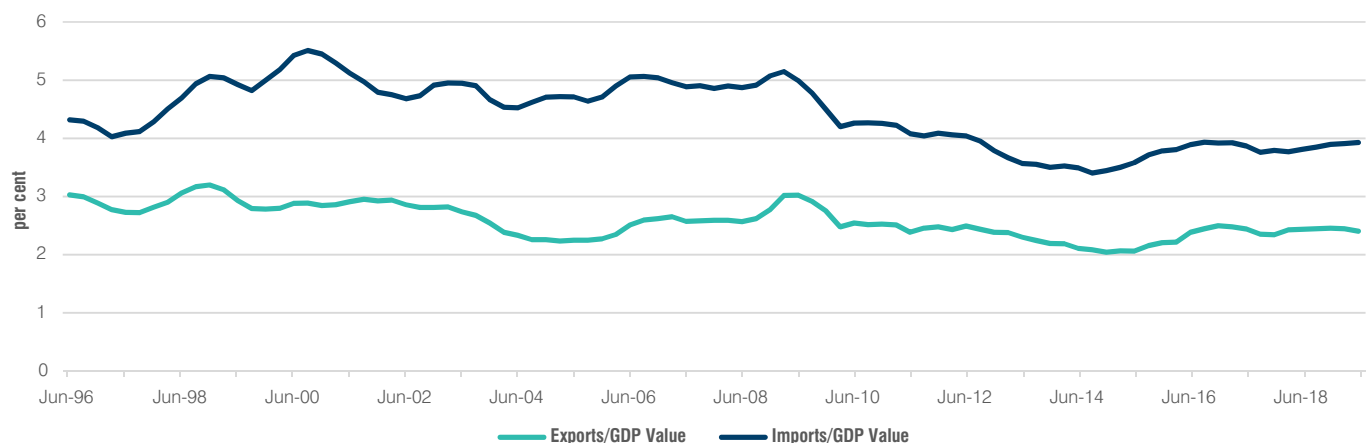


Source: IPA/BISOE based on ABS statistics

In terms of the per capita value of airfreight, imports and exports have declined marginally since their peak in 2009. Imports and exports, when measured by value on a per capita basis, displays a much higher correlation in movement than volume measured on a per capita basis. This reflects the sensitivity of airfreight, to changes in the exchange rate.

In total value terms, airfreight imports and exports represented 3.8 and 2.4 per cent of GDP respectively (Figure 2), totalling 6.2 per cent of GDP.

Figure 2: International airfreight values as a percentage of GDP




Source: IPA/BISOE based on ABS statistics

The increase in international passenger travel at Australian airports has increased the potential for international freight to be carried into and out of Australia by plane. Over 80 per cent of airfreight is carried in the cargo hold of passenger aircraft. The remaining circa 20 per cent is carried by dedicated freighters. Forecast growth in patronage is significant with:

 **65.6m passengers**

Sydney Airport forecasting 65.6 million passengers by 2039 up from 42.6 million in FY2016-17

 **67m passengers**

Melbourne Airport has forecast a doubling of patronage to 67 million by 2038, compared to 34.8 million in FY2016-17

 **48.3m passengers**

Brisbane Airport forecasting 48.3 million passengers by 2038, compared to 22.6 million in FY2017-18

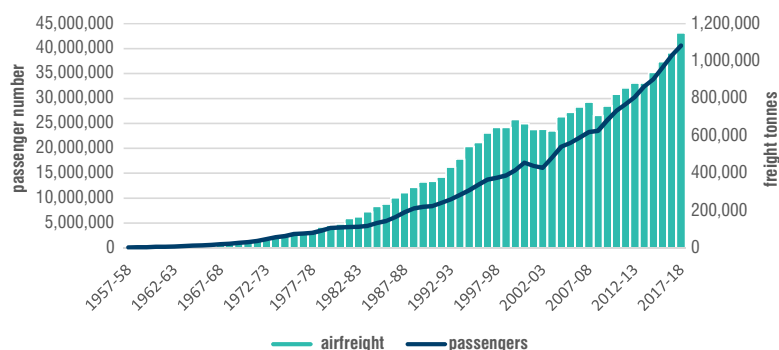
 **35m passengers**

Perth Airport forecasting 35 million passengers by 2045 up from 12.4 million in FY2016-17.

This positive relationship is further depicted historically in Figure 3, where the growth in passenger numbers correlates closely with the growth in airfreight. While airfreight to a large degree relies on passenger yield on routes, often the revenue generated from freight carried in the belly of passenger aircraft provides the necessary margin to sustain the commercial viability of a route or region. As such, there is a degree of interdependency

between passenger and airfreight movements, to support overall demand and exports.

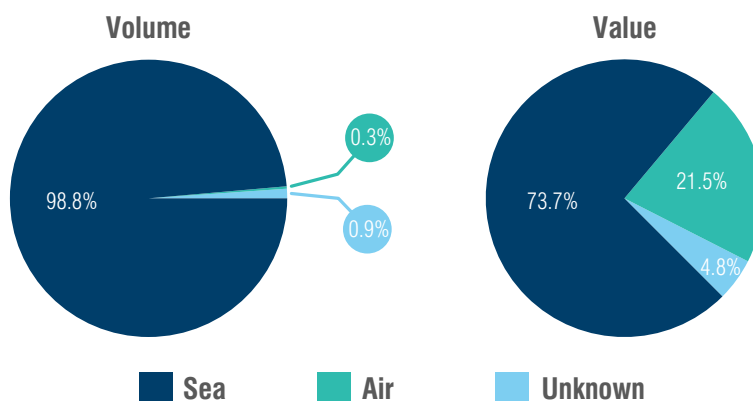
Figure 3: Relation between passengers and airfreight



Source: IPA/BISOE based on BITRE statistics

While airborne transportation may be a tiny proportion of international freight by volume - less than one per cent – it represents a significant amount of the country's imports and exports by value at circa 21 per cent (Figure 4). In an international context, airfreight represents less than one per cent of world trade by volume, but it exceeds 35 per cent by value. Australia's underweight level of airfreight compared to our global peers is due to the relative weight towards natural resources in Australia's trade mix, which is transported via sea.

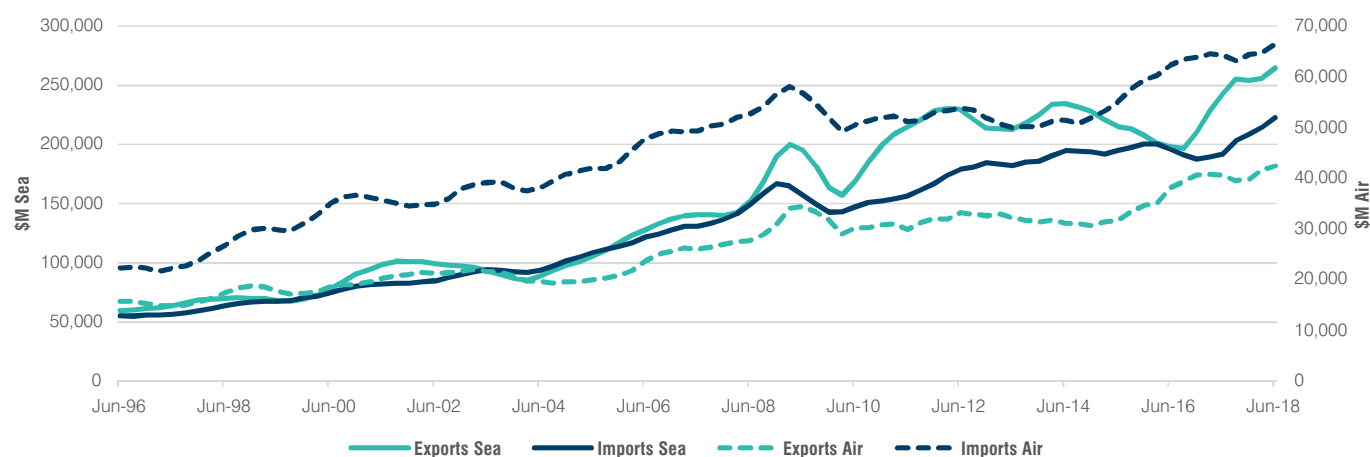
Figure 4: Modal share in international freight, FY2017-18



Source: IPA/BISOE based on ABS statistics

While shipping is the dominant mode for freight transportation (Figure 5), since 2014 its share in value terms has trended down while airfreight has risen. This has been the result of faster growth of goods that are transported by air relative to other classes of goods, rather than the stronger modal competition and mode shifting within commodity classes. Only a few smaller classes have experienced a shift between air and sea, such as footwear and food products. This is mainly due to a shift to higher quality products, which have a higher value-to-mass ratio and allow for just-in-time logistics models, as well as an increase in perishable goods.

Figure 5: International freight by mode and direction of trade



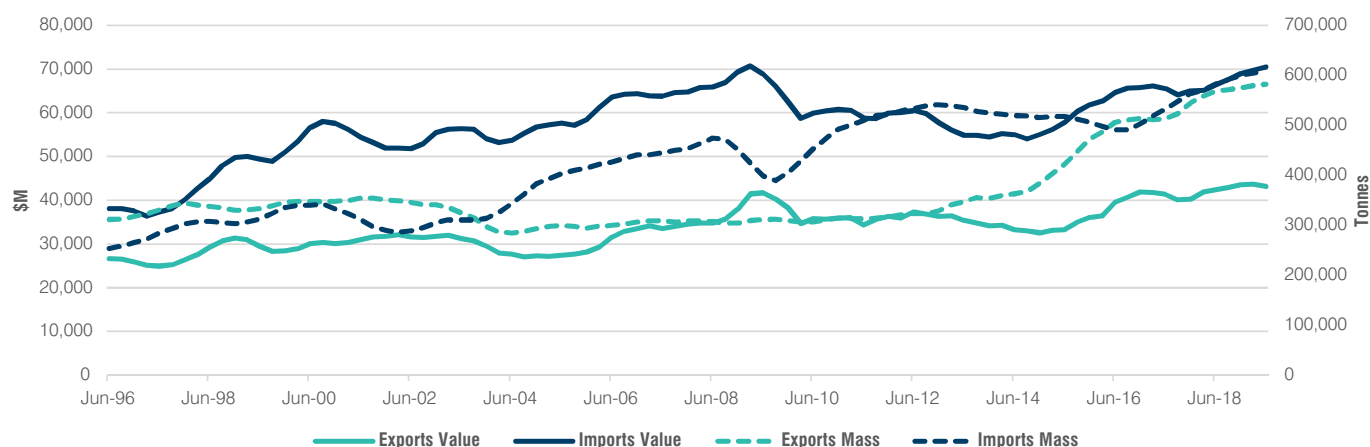
Source: IPA/BISOE based on ABS statistics

FY2017-18 was a record year for Australian trade measured in dollars and tonnes for both imports and exports by air. Circa 1.15 million tonnes of international freight, worth close to \$109 billion, passed through Australia; 530,000 tonnes of this passed through Sydney Airport, which is the most significant entry and exit point for international freight. Sydney Airport handled almost half – more than 45 per cent – of all freight imports and exports in FY2017-18 in both volumes and values.

Melbourne Airport accounted for more than one quarter of the total freight volume with 28 per cent, and 17 per cent of the total value. Brisbane Airport, Perth Airport and other airports accounted for 12 per cent, nine per cent and four per cent respectively. However, while Brisbane Airport collectively with other airports represent 10 per cent of the total value of airfreight, Perth Airport represents circa 25 per cent of airfreight export value, with gold being the largest export commodity.

Inbound and outbound freight in Australia is typically symmetric, with inbound freight representing almost half (51 per cent) of the total freight by mass in FY2017-18 and outbound accounting for the remaining 49 per cent, as seen in Figure 6 below. However, when the value of freight is considered, there is an asymmetry, with inbound freight representing 61 per cent of the total freight with the remainder being outbound freight. As such, Australia imports higher value products per tonne, than it exports.

Figure 6: International airfreight by direction

















Source: IPA/BISOE based on ABS statistics

Forecasts for FY2018-19 show an increase in total airfreight of 4.4 per cent by value (to \$114 billion) with a more modest increase of 3.5 per cent for total volume (1.19 million tonnes), relative to FY2017-18. Imports are forecast to experience the largest increase, relative to exports, in both value and volume with Brisbane Airport increasing its inbound freight by 6.9 per cent in value and Perth Airport by 5.4 per cent in tonnes. Air imports and exports are forecast to reach a record high in FY2018-19 in both values and volumes, albeit with a more modest growth relative to the previous year's growth rate (Figure 6).















In a recent study, the International Air Transport Association forecast a rise in global airfreight carried to 62.5 million tonnes in 2018¹ with IATA underlying e-commerce emerging as a new driver of airfreight. The value of goods carried by airlines is expected to exceed US\$6.2 trillion in 2018, representing 7.4 per cent of world GDP.

Table 1: Overview of Australia's airfreight imports

Key Airports	2017-18				2018-19				10-year trend	
			% change				% change		2007-08 to 2017-18	
	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Total Trade	108,860	1,150,847	3.8%	10.2%	113,652	1,191,579	4.4%	3.5%		
Import	66,418	582,168	3.3%	9.5%	70,539	609,377	6.2%	4.7%		
Sydney	39,619	305,922	4.3%	7.2%	42,106	320,173	6.3%	4.7%		
Melbourne	11,738	146,932	10.2%	11.3%	12,477	153,190	6.3%	4.3%		
Brisbane	4,680	61,496	12.9%	11.9%	5,000	64,683	6.9%	5.2%		
Perth	7,008	45,242	-5.2%	7.6%	7,373	47,703	5.2%	5.4%		
Other	3,373	22,576	-17.6%	30.8%	3,583	23,627	6.2%	4.7%		

Source: IPA/BISOE based on ABS statistics

Table 2: Overview of Australia's airfreight exports

Key Airports	2017-18				2018-19				10-year trend	
			% change				% change		2007-08 to 2017-18	
	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Total Trade	108,860	1,150,847	3.8%	10.2%	113,652	1,191,579	4.4%	3.5%		
Export	42,442	568,679	4.7%	10.9%	43,113	582,202	1.6%	2.4%		
Sydney	12,895	224,559	11.1%	10.2%	13,038	226,773	1.1%	1.0%		
Melbourne	5,661	178,519	5.0%	12.4%	5,719	184,361	1.0%	3.3%		
Brisbane	2,489	78,316	20.3%	9.7%	2,477	80,620	-0.5%	2.9%		
Perth	20,681	63,391	-0.5%	7.6%	21,152	65,971	2.3%	4.1%		
Other	716	23,894	1.6%	18.3%	728	24,478	1.6%	2.4%		

Source: IPA/BISOE based on ABS statistics

¹ IATA, 2018, IATA Cargo Strategy, Geneva.

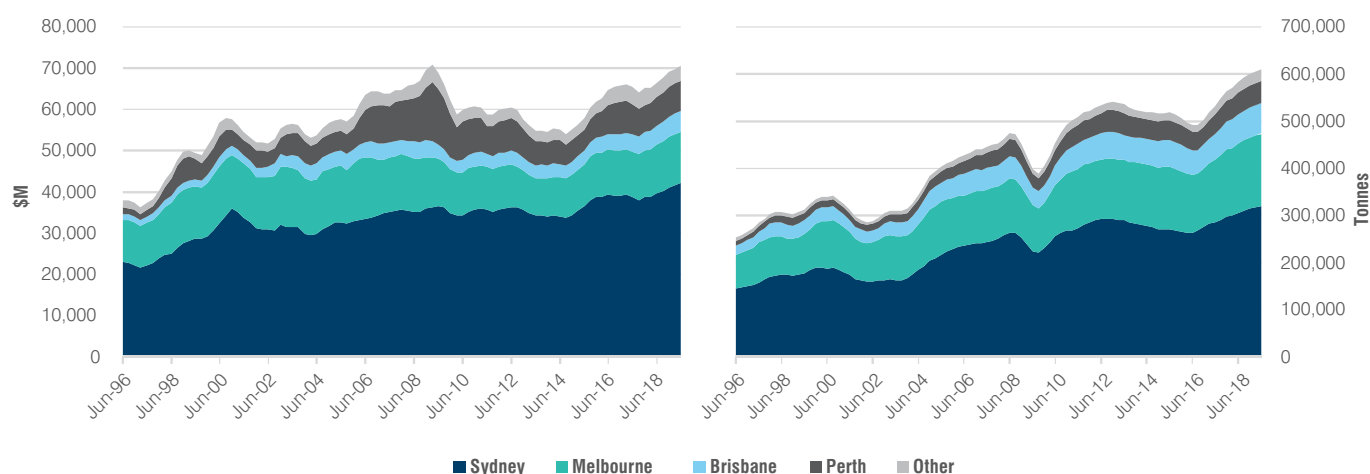
AUSTRALIA'S AIRFREIGHT BY DIRECTION

IMPORTS

Imports tend to exhibit fluctuations reflecting local economic cycles and expectations for the development of the world economy, as reflected in Figure 7. While airports experience different volumes of freight, their fluctuations show a rather symmetric picture relative to the macroeconomic environment. More specifically the downturns of 1998 and 2008 are mainly a reflection of the world economic conditions due to the Asian and the Global Financial Crisis (GFC).

Local economic condition such as the structural change of Australia's tax system in 1999, low exchange rates, inflationary pressures, high oil prices and weak residential construction affected consumer spending and business confidence in 2003 and 2005. The downturn in 2012 for volume is mainly the outcome of low investments with a slowdown of imported capital goods and in particular a decline in retail consumption. The same holds true for 2016 which was characterised by slow economic growth accompanied by weak household consumption and business investment. In general, imports refer mainly to consumption, capital and intermediate products and any change in consumer and business sentiment has a considerable impact on the respective airports' freight volumes and values.

Figure 7: Air imports by airport location



Source: IPA/BISOE based on ABS statistics

Australia's four major international airports carry a diversified trade. Imports are a mix of consumer goods (e.g. electronics and jewellery) as well as inputs into manufacturing and industry. The four large international airports in Sydney, Melbourne, Brisbane and Perth make up 96 per cent of air-based import trade into Australia, with BISOE able to identify 84 per cent of trade by commodity due to confidential commodities not reported by the ABS.

Machinery and equipment generally make up a third of imports by mass and circa 44 per cent by value (Table 3). The pick up seen since FY2017-18 is related to the improved outlook for the non-mining tradeable sectors, as a return to confidence encourages businesses to invest in machinery and equipment and Intellectual Property Products (e.g. software and research and development expenditure). The remainder of imports are made up of a wide range of consumer products (e.g. clothing, cosmetics, food, etc.) as well as chemicals and metals. As a result, import goods by air are relatively consistent across the four main airports, with a notable exception being Perth.

Perth Airport features a higher share of imports, especially in terms of value, than its population base would otherwise suggest. This is mainly due to the extensive precious metals trade in the region, which has a very high value per tonne. Precious metals and stones (gold, silver, diamonds, etc.) typically make up a smaller share by weight but are almost exclusively sent by air (to/from Perth) due to their low mass and high value.

Based on Office of Chief Economist (OCE) data, Australia exports more gold than it produces. Thus, a large portion of imports are used for local refining and re-export purposes. The OCE however, expects these imports to decline over the next two years.













































Airfreight imports originate from a wide variety of trading partners, notably China, the US, New Zealand and Europe.

Forecasts

Forecasts show an increase of 6.2 per cent of imports by value and 4.7 per cent by volume in FY2018-19. It is expected that machinery and equipment will continue defining the outlook over the coming quarters across the four major airports. Strong growth in business investment (14 per cent) due to increasing capacity constraints has been a key driver of growth in machinery and equipment investment across Australia.

As with other non-food consumer goods, strong growth in imports has been driven by a rising consumption base (e.g. growth in the population as well as higher consumption per capita due to growth in wealth). The largest decrease in FY2018-19 is expected in chemical and pharmaceutical products – circa 11 per cent.

Table 3: Air imports by commodity group

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Import		66,418	582,168	3.3%	9.5%	6.2%	4.7%		
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	29,134	149,027	10.9%	10.7%	14.2%	14.3%		
XI	Textiles and textile articles	1,920	44,300	11.9%	7.3%	1.1%	1.1%		
VI	Products of the chemical or allied industries	9,659	43,222	-1.0%	9.5%	-11.4%	-11.5%		
II	Vegetable products	389	37,229	2.7%	-5.2%	-0.2%	-0.2%		
XV	Base metals and articles of base metal	1,036	27,209	13.6%	17.9%	4.8%	4.9%		
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	9,283	26,687	8.5%	14.0%	7.5%	7.5%		
VII	Plastics and articles thereof; rubber and articles thereof	616	24,163	12.3%	12.1%	4.8%	4.9%		
XVII	Vehicles, aircraft, vessels and associated transport equipment	2,338	16,250	-30.4%	10.3%	-1.6%	-1.6%		
I	Live animals; animal products	331	14,863	4.6%	-0.7%	0.3%	0.4%		
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	222	14,817	34.0%	44.9%	2.8%	2.8%		
XX	Miscellaneous manufactured articles	701	14,679	2.7%	1.3%	-4.8%	-4.8%		
X	Pulp of wood or of other cellulosic material, recovered (waste and scrap) paper and paperboard, and articles thereof	383	14,329	11.2%	1.5%	1.2%	1.3%		
VIII	Raw hides and skins, leather, furskins and articles thereof; saddlery and harness, travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	738	6,546	12.0%	2.7%	14.5%	14.8%		
XIII	Articles of stone, plaster, cement, asbestos, mica or similar materials, ceramic products, glass and glassware	157	5,472	10.0%	13.8%	1.3%	1.6%		
XII	Footwear, headgear, umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops, and parts thereof; prepared feathers and articles made therewith; artificial flowers; articles of human hair	343	5,042	6.0%	-3.3%	5.7%	5.6%		
XIV	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	8,837	1,666	-8.8%	-3.1%	3.7%	4.0%		
IX	Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork	20	971	23.9%	1.2%	11.8%	11.5%		
V	Mineral products	9	959	13.5%	7.4%	2.4%	2.6%		
III	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	14	696	24.9%	10.0%	2.6%	2.1%		
XIX	Arms and ammunition; parts and accessories thereof	133	451	-49.7%	-30.2%	-5.7%	-5.4%		
XXI	Works of art, collectors' pieces and antiques	151	268	-5.4%	-7.7%	0.6%	0.4%		
Unknown					12.0%		0.0%		

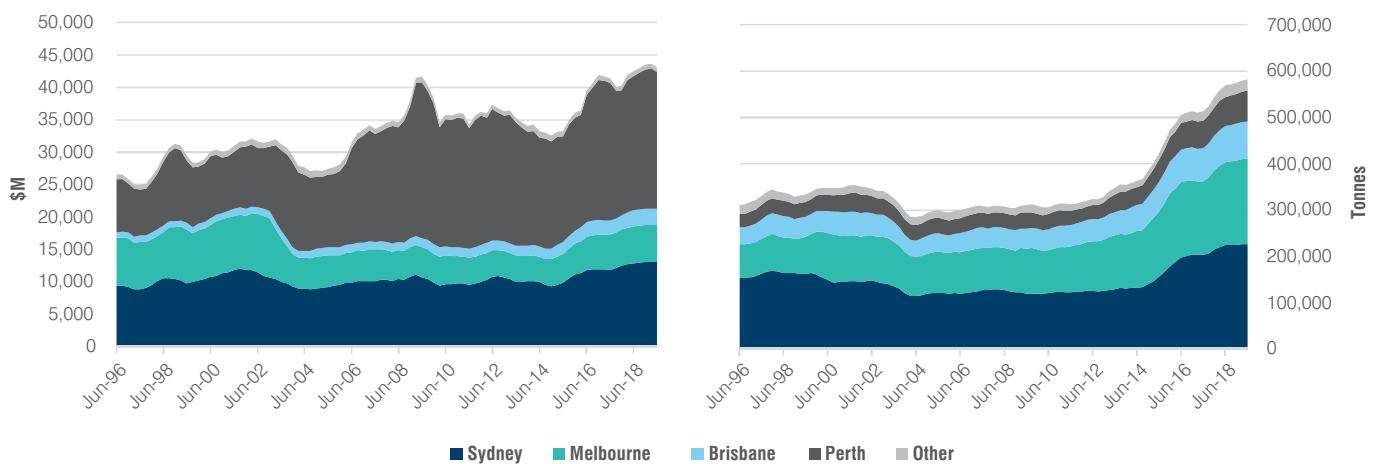
Source: IPA/BISOE based on ABS statistics

EXPORTS

While imports tend to reflect local economic cycles and changes in the exchange rate, exports are exposed to changes in production for key commodities, which in turn reflect fluctuations in commodity prices, international demand and/or weather events. Moreover, airfreight is generally related to the production activity in an airport's catchment. In general, exports are more precarious than imports since they are sensitive to both internal and external events, as reflected in Figure 8.

More specifically, external macroeconomic shocks, such as the Asian Financial Crisis (1997), the dot com bubble (2001) and the GFC (2008) in conjunction with the subsequent abrupt declines in world commodity prices led to a slowdown of Australia's airfreight exports through these years. Moreover, internal local events, like weather conditions – droughts in 2003 and 2006, floods in 2010 in combination with cyclones in early 2011 – further disrupted economic growth and in turn airfreight exports.

Figure 8: Air exports by airport location



Source: IPA/BISOE based on ABS statistics

In terms of volume, exports are driven by animal products, vegetable products and beverages, with Melbourne being historically strong (Table 4). Beverage air exports have increased almost tenfold between FY2013-14 and FY2017-18, with most of the growth being through Sydney and Melbourne airports, with Brisbane and Perth airports also experiencing a significant uplift. The prime destination in recent years has been Asia, especially China/Hong Kong.

In terms of value, exports are to a large extent driven by gold production in Australia. Since Western Australia produces the majority of gold, Perth Airport has a disproportionate share of exports. The OCE notes Australia produced 288 tonnes of gold in FY2016-17, making Australia the world's second largest producer. Exports are forecast to grow over the next two years and peak at 354 tonnes in FY2019-20, 322 tonnes of which are produced locally.

The prime destinations for exports in recent years have been China/Hong Kong, the UK, and a number of other Asian economies.

The four international airports in Sydney, Melbourne, Brisbane and Perth make up 96 per cent of air-based exports in Australia, and BISOE is able to identify 82 per cent of trade by commodity nationally. We are unable to identify the remaining exports due to confidential commodities not being reported by the ABS.













































While the relative share of cargo exports from these cities does not reflect their relative populations, there is one very notable exception: infant formula and related products. Over the past four years, exports of infant formula and related products have surged from being negligible to 18 per cent of airfreight exports by mass, most of which have been sourced directly from Sydney and Melbourne retailers, which have higher frequency services to mainland China.

Forecasts

Typically, volumes peak in the December quarter, ease back in March, and then increase in the June quarter. This last bounce back did not materialise in the latest quarter, which may reveal a structural decline, exposing airfreight trade in FY2018-19 to a potentially significant downside if the decline continues.

As such, forecasts show exports will ease to 1.6 per cent by value and 2.4 per cent by volume for FY2018-19. The largest increase is projected in textiles and animal products – circa seven per cent. Machinery and equipment will also experience an increase; however, a more moderate outlook is suggested, due to an expected flat exchange rate. The largest decrease for FY2018-19 is expected in vehicles and associated transport equipment – circa 19 per cent. Export declines are forecast to continue as the industry in Melbourne continues to experience the aftershocks of the closure of the domestic automotive manufacturing industry in late 2017.

Table 4: Air exports by commodity group

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Export		42,442	568,679	4.7%	10.9%	1.6%	2.4%		
I	Live animals; animal products	2,662	165,726	14.7%	18.2%	6.9%	6.8%		
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	1,905	105,105	12.7%	11.8%	-0.5%	-0.5%		
II	Vegetable products	413	92,079	2.4%	0.6%	1.6%	1.6%		
VI	Products of the chemical or allied industries	3,259	34,418	22.4%	49.1%	-0.3%	-0.3%		
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	5,389	32,789	4.9%	-1.9%	5.4%	5.5%		
XV	Base metals and articles of base metal	250	18,078	3.4%	-9.6%	7.1%	5.5%		
X	Pulp of wood or of other cellulosic material, recovered (waste and scrap) paper and paperboard, and articles thereof	248	15,644	15.0%	28.3%	-5.6%	-4.7%		
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	3,454	8,019	6.3%	6.9%	1.5%	1.5%		
XVII	Vehicles, aircraft, vessels and associated transport equipment	1,750	7,025	19.3%	14.8%	-18.8%	-18.6%		
VII	Plastics and articles thereof; rubber and articles thereof	170	5,050	-5.1%	-1.1%	2.1%	2.1%		
XI	Textiles and textile articles	244	4,775	11.6%	15.2%	7.4%	7.5%		
XX	Miscellaneous manufactured articles	274	2,892	-13.7%	-11.0%	-8.1%	-8.5%		
XII	Footwear, headgear, umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops, and parts thereof; prepared feathers and articles made therewith; artificial flowers; articles of human hair	74	1,884	36.0%	32.2%	5.8%	5.8%		
VIII	Raw hides and skins, leather, furskins and articles thereof; saddlery and harness, travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	129	1,839	7.5%	5.9%	2.5%	2.5%		
XIV	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	21,175	994	0.9%	14.9%	2.3%	0.8%		
XIII	Articles of stone, plaster, cement, asbestos, mica or similar materials, ceramic products, glass and glassware	53	779	7.2%	-18.7%	-1.9%	-2.2%		
IX	Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork	7	395	35.4%	-19.3%	1.9%	2.2%		
V	Mineral products	3	286	-8.1%	-86.1%	4.8%	5.0%		
III	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	13	259	-34.2%	-22.1%	2.9%	3.2%		
XXI	Works of art, collectors' pieces and antiques	78	131	-8.7%	-33.7%	-2.2%	-2.9%		
XIX	Arms and ammunition; parts and accessories thereof	33	65	-23.3%	-18.6%	-5.0%	-6.2%		
Unknown			70,449		9.5%		0.0%		

Source: IPA/BISOE based on ABS statistics

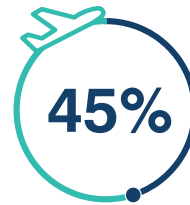


AIRFREIGHT BY AIRPORT

SYDNEY AIRPORT



KEY FINDINGS



Sydney Airport

Sydney Airport represented circa 45 per cent of all freight imports and exports in FY2017-18 in both value and volume.



306K tonnes

Imports in FY2017-18 were 306 thousand tonnes, up by seven per cent compared to FY2016-17, worth \$40 billion. Machinery and equipment is the dominant import category in both value and volume terms.



225K tonnes

Exports in FY2017-18 totalled 225 thousand tonnes, up 10 per cent compared to FY2016-17, worth \$13 billion. Machinery and equipment as well infant formula and other processed food products have been the primary source of growth in airborne exports.

























Rural products

Forecast import volumes reflect broader economic conditions, and export growth forecasts show that **primary rural products will drive growth over FY2018/19.**

SYDNEY AIRPORT – IMPORTS

Table 5: Sydney Airport imports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Import		39,619	305,922	4.3%	7.2%	6.3%	4.7%		
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	19,567	73,198	3.3%	0.4%				
VI	Products of the chemical or allied industries	7,699	26,431	-0.7%	2.8%				
XI	Textiles and textile articles	889	19,211	9.6%	5.1%				
II	Vegetable products	176	17,579	1.8%	-4.1%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	6,013	15,925	-2.5%	5.1%				
VII	Plastics and articles thereof; rubber and articles thereof	258	8,614	7.5%	-12.8%				
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	120	8,172	3.1%	16.8%				
XV	Base metals and articles of base metal	328	7,940	17.8%	11.2%				
X	Pulp of wood or of other cellulosic material, recovered (waste and scrap) paper and paperboard, and articles thereof	228	7,636	9.2%	-2.6%				
Other or unspecified		4,342	121,216						

Source: IPA/BISOE based on ABS statistics

Sydney Airport is Australia's main hub for freight with a relatively stable market share of international cargo. By volume, circa 60 per cent of imports that pass through Sydney Airport have a known commodity classification according to ABS statistics. Meanwhile, the value of the unknown commodities approaches \$4 billion – only 11 per cent of the total imports by value through the airport.























In volume tonnes, of the known commodities imported into Sydney, 24 per cent are machinery and equipment, nine per cent chemicals/pharmaceuticals, six per cent textiles and five per cent vegetable products. In monetary values, of the known commodities imported into Sydney, 49 per cent are machinery and equipment, 19 per cent chemical/pharmaceuticals and 15 per cent optical, photographic and medical instruments.

In FY2017-18, Sydney Airport carried more than half of the imported trade by value – 60 per cent of the total of \$66 billion in airfreight imports. The same holds true for volumes; Sydney Airport carried 52 per cent of the total 582,000 tonnes in airfreight imports. In FY2017-18, imports totalled 306,000 tonnes, up by seven per cent compared to FY2016-17, worth close to \$40 billion (Table 5).

Since overseas imports directly into Sydney Airport make up more than half of air imports into Australia, Sydney Airport, relative to its population catchment, is overweight on most major commodity classes in terms of mass, with the notable exception of base metals and mineral products. Sydney Airport is underweight on precious metal imports, since the majority is directed to Perth for processing and re-export.

SYDNEY AIRPORT – EXPORTS

Table 6: Sydney Airport exports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Export		12,895	224,559	11.1%	10.2%	1.1%	1.0%		
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	1,103	57,597	11.1%	10.2%				
II	Vegetable products	106	28,092	-6.1%	1.5%				
I	Live animals; animal products	327	21,374	14.3%	43.1%				
VI	Products of the chemical or allied industries	1,679	17,877	56.1%	36.7%				
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	3,189	16,984	0.4%	-3.7%				
X	Pulp of wood or of other cellulosic material, recovered (waste and scrap) paper and paperboard, and articles thereof	176	12,232	26.2%	137.9%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	2,400	5,215	2.2%	-3.0%				
XV	Base metals and articles of base metal	88	3,804	-1.6%	-78.6%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	726	3,441	6.5%	50.0%				
Other or unspecified		3,102	57,944						

Source: IPA/BISOE based on ABS statistics

By volume, we can identify 74 per cent of exports from Sydney Airport with the remainder not having a known commodity classification, according to ABS statistics. Of the known commodities exported from Sydney, 26 per cent are prepared food products, 12 per cent vegetable products and nine per cent live animals and animal products. By value, 76 per cent have a known commodity classification. Of the known commodities exported from Sydney, 25 per cent are machinery and equipment, 19 per cent are optical, photographic and medical instruments and 13 per cent chemicals/pharmaceuticals.

In FY2017-18, Sydney Airport carried circa one third of the exported trade by value – 30 per cent of the total of \$42 billion in airfreight exports. In tonnes, Sydney Airport carried circa 39 per cent of the total 568,000 tonnes in airfreight exports by mass. In FY2017-18, exports totalled 225,000 tonnes, up by 10 per cent compared to FY2016-17, worth \$13 billion (Table 6).

Since overseas exports make up 39 per cent of the overall airborne exports from Australia, Sydney Airport is relatively overweight on most major commodity classes in terms of mass - with the notable exception being animal products. In terms of value, a similar result holds true, with the exception that Sydney Airport is underweight on precious metal, since most gold is exported from Western Australia.

Export growth is expected to be flat over FY2018-19, with a one per cent forecast increase for both value and volume. This slow growth forecast comes off the back of robust growth over recent years, driven by machinery and equipment (24 per cent of total value), high-value optical and medical instruments, as well as exports of infant formula and other processed food products to China. Growth in other export classes (e.g. rural products) will increasingly drive the outlook over the coming quarters.

AIRFREIGHT BY AIRPORT

MELBOURNE AIRPORT



KEY FINDINGS



Melbourne Airport

Melbourne Airport represented 28 per cent of all freight volume and 17 per cent of all freight value in FY2017-18.



147K tonnes

Imports in FY2017-18 were 147 thousand tonnes, up by 11 per cent compared to FY2016-17, worth \$12 billion. Machinery and equipment forms the largest category in both value and volume terms.



179K tonnes

Exports in FY2017-18 totalled 179 thousand tonnes, up by 12 per cent compared to FY2016-17, worth circa \$6 billion. Animal products dominate volumetric tonnes, while chemicals/pharmaceuticals, machinery and equipment, and animal products have been the primary source of growth value.

























Rural products

Forecast import volumes reflect broader economic conditions and business investment, and exports growth reveals that **primary rural products will drive growth over the coming quarters.**

MELBOURNE AIRPORT – IMPORTS

Table 7: Melbourne Airport imports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Import		11,738	146,932	10.2%	11.3%	6.3%	4.3%		
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	5,109	35,460	-0.6%	3.3%				
XI	Textiles and textile articles	696	16,611	11.7%	7.7%				
VI	Products of the chemical or allied industries	1,510	10,819	-3.1%	20.6%				
II	Vegetable products	126	10,159	-0.1%	-9.4%				
VII	Plastics and articles thereof; rubber and articles thereof	174	7,477	7.5%	6.0%				
XV	Base metals and articles of base metal	256	7,426	4.6%	6.5%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	1,838	6,378	13.0%	-2.8%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	509	6,241	-19.6%	4.4%				
I	Live animals; animal products	162	5,898	14.2%	6.4%				
Other or unspecified		1,359	40,464						

Source: IPA/BISOE based on ABS statistics

Melbourne Airport is Australia's second busiest airport and the main hub for the south-eastern part of Australia, including southern NSW, Victoria and Tasmania. By volume, it is estimated that circa 73 per cent of imports that pass through Melbourne Airport have a known commodity classification according to ABS statistics. Meanwhile, the value of the unknown commodities is \$1 billion, only 11 per cent of total imports.

In tonnes, of the known commodities imported into Melbourne Airport, 24 per cent are machinery and equipment, 11 per cent textiles, seven per cent chemicals/pharmaceuticals and seven per cent vegetable products. By value, of the known commodities imported into Melbourne, 44 per cent are machinery and equipment, 16 per cent are optical, photographic and medical instruments and 13 per cent are chemicals/pharmaceuticals.

In FY2017-18, Melbourne Airport carried 18 per cent of the total of \$66 billion in airfreight imports into Australia. In tonnes, Melbourne Airport carried 25 per cent of the total 582 thousand tonnes in airfreight imports. In FY2017-18, imports totalled 147 thousand tonnes, up by 12 per cent compared to FY2016-17, worth \$12 billion (Table 7).

Overseas imports directly into Melbourne make up under a quarter of air imports into Australia. As a result, compared to its population, Melbourne Airport is mildly underweight on some major commodity classes in terms of volume. This includes mineral products, chemicals/pharmaceuticals, as well as machinery and equipment. Conversely, Melbourne Airport is overweight on plastics, wood products and clothing. In value terms, there is a similar result, with the notable exception that Melbourne Airport is underweight on precious metal imports since the majority is re-exported from Perth.

MELBOURNE AIRPORT – EXPORTS

Table 8: Melbourne Airport exports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Export		5,661	178,519	5.0%	12.4%	1.0%	3.3%		
I	Live animals; animal products	1,005	72,596	17.2%	16.4%				
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	542	31,084	14.9%	15.0%				
II	Vegetable products	168	28,200	14.7%	0.6%				
VI	Products of the chemical or allied industries	1,155	8,990	-7.5%	37.8%				
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	1,087	7,974	1.6%	-5.9%				
XV	Base metals and articles of base metal	82	4,799	6.5%	90.2%				
X	Pulp of wood or of other cellulosic material, recovered (waste and scrap) paper and paperboard, and articles thereof	54	2,617	-8.4%	-58.1%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	430	2,080	12.2%	-14.6%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	498	1,555	10.9%	21.4%				
Other or unspecified		641	18,625						

Source: IPA/BISOE based on ABS statistics

By volume, it is estimated that 90 per cent of exports that pass through Melbourne Airport have a known commodity classification according to ABS statistics. The value of the unknown commodities is estimated at \$641 million – 11 per cent of total exports.

In tonnes, of the known commodities exported from Melbourne Airport, 41 per cent are animal products, 17 per cent are processed food products and 16 are per cent vegetable products. 11 per cent do not have a known commodity classification. By value, of the known commodities exported from Melbourne Airport, 20 per cent are chemicals/ pharmaceuticals, 19 per cent are machinery and equipment and 18 per cent are animal products.

In FY2017-18, Melbourne Airport carried 13 per cent of the total of \$42.4 billion in airfreight exports. In tonnes, Melbourne Airport carried 31 per cent of the total 569 thousand tonnes in airfreight exports. This means, over FY2017-18, exports totalled 179 thousand tonnes, up by 12 per cent compared to FY2016-17, worth close to \$6 billion (Table 8).

Overseas exports from Melbourne make up 31 per cent of overall airborne exports from Australia. As a result, relative to its population base, Melbourne Airport holds an expected share of exports in terms of mass. In value terms, a similar result holds, with the notable exception that Melbourne Airport is underweight on precision instruments and precious metal since gold is mainly exported from Western Australia.

Exports of infant formula and other processed food products to China have been the primary source of growth in airborne exports Australia wide, including Melbourne. It is assumed that this class of exports has peaked and will be flat over the near-term. However, there is considerable risk, especially on the downside due to possible trade restrictions. Growth in other export classes, such as primary rural products, will increasingly drive the outlook over the coming quarters. It is forecast that overall tonnage growth will ease, slowing to 3.3 per cent annual growth in volume and one per cent in value by in FY2018-19.

AIRFREIGHT BY AIRPORT

BRISBANE AIRPORT



KEY FINDINGS



Brisbane Airport

Brisbane Airport represented 12 per cent of all freight volume and seven per cent of all freight value in FY2017-18.



61K tonnes

Imports in FY2017-18 totalled 61 thousand tonnes, up 12 per cent compared to FY2016-17, worth \$5 billion. Machinery and equipment forms the largest category in both value and volume terms.



78K tonnes

Exports in FY2017-18 totalled 78 thousand tonnes, up eight per cent compared to FY2016-17, worth circa \$2 billion. Animal and vegetable products dominate the volume exported, while machinery and equipment, animal products and transport equipment have been the primary source of growth in value.

























Beef exports

Import volume forecasts reflect broader economic conditions and business investment. **Beef exports have been increasingly driving growth over recent quarters. However, impact from loss of stock from the recent floods will be felt after FY2018-19.**

BRISBANE AIRPORT – IMPORTS

Table 9: Brisbane Airport imports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Import		4,680	61,496	12.9%	11.9%	6.9%	5.2%		
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	1,739	16,127	15.5%	14.3%				
XI	Textiles and textile articles	220	5,148	25.3%	15.1%				
II	Vegetable products	56	4,928	7.9%	-4.7%				
XV	Base metals and articles of base metal	131	3,619	10.8%	11.2%				
VI	Products of the chemical or allied industries	222	3,243	-1.0%	5.6%				
VII	Plastics and articles thereof; rubber and articles thereof	78	3,182	-2.6%	9.8%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	319	2,189	-2.8%	5.4%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	747	2,038	31.4%	13.4%				
XX	Miscellaneous manufactured articles	69	1,408	7.4%	-10.9%				
Other or unspecified		1,100	19,613						

Source: IPA/BISOE based on ABS statistics

Brisbane is one of the four main airports in Australia. By volume, it is estimated that 68 per cent of imports that pass through Brisbane Airport have a known commodity classification according to ABS statistics. The worth of the unknown commodities is \$1 billion – 23 per cent of the total imports by value.























By mass, of the known commodities imported into Brisbane, 26 per cent are machinery and equipment, eight per cent textiles, eight per cent vegetable products and five per cent base metals. In value terms, of the known commodities imported into Brisbane Airport, 37 per cent are machinery and equipment and 15 per cent are optical, photographic and medical instruments.

In FY2017-18, Brisbane Airport carried seven per cent of the total of \$66.4 billion in airfreight imports into Australia. In tonnes, Brisbane Airport carried 11 per cent of the total 582 thousand tonnes in airfreight imported. In FY2017-18, imports totalled 61 thousand tonnes, up by 12 per cent compared to FY2016-17, worth close to \$5 billion (Table 9).

Overseas imports directly into Brisbane make up 11 per cent of air imports into Australia. As a result, compared to either its population or total international passenger visits, Brisbane Airport is underweight on all major commodity classes in terms of value and volume.

BRISBANE AIRPORT – EXPORTS

Table 10: Brisbane Airport exports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Export		2,489	78,316	20.3%	9.7%	-0.5%	2.9%		
I	Live animals; animal products	439	25,742	12.6%	24.0%				
II	Vegetable products	86	24,128	-4.0%	0.3%				
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	117	8,775	23.2%	14.6%				
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	557	3,562	2.8%	6.4%				
VI	Products of the chemical or allied industries	220	3,280	46.9%	79.7%				
XV	Base metals and articles of base metal	36	993	17.0%	-29.0%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	417	761	79.3%	13.7%				
VII	Plastics and articles thereof; rubber and articles thereof	23	737	7.0%	57.5%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	303	609	15.9%	-8.6%				
Other or unspecified		291	9,728						

Source: IPA/BISOE based on ABS statistics

In terms of both value and volume, it is estimated 12 per cent of exports that passed through Brisbane Airport do not have a known commodity classification according to ABS statistics. In tonnes, of the known commodities exported from Brisbane, 33 per cent are animal products, 31 per cent vegetable products and 11 per cent prepared food products. By value, of the known commodities exported from Brisbane Airport, 22 per cent are machinery and equipment, 18 per cent are animal products, and 17 per cent transport equipment.

In FY2017-18, Brisbane Airport carried six per cent of the total \$42.4 billion in airfreight exports. In tonnes, Brisbane Airport carried 14 per cent of the total 569 thousand tonnes in airfreight exports. In FY2017-18, exports totalled 78 thousand tonnes, up by eight per cent compared to FY2016-17, worth approximately \$2.5 billion (Table 10).

As noted, overseas exports from Brisbane make up 14 per cent and six per cent of overall airborne exports in value and volume from Australia. As a result, relative to its population and total international passenger visits, Brisbane Airport is relatively underweight on all major commodity classes in terms of value and volume.

As with the other capital Australian airports, exports of infant formula and other processed food to China have been a key source of growth in airborne exports. Animal product exports, primarily beef, have also contributed significantly in the Airport's growth in recent years. However, the impact from loss of beef stocks from the recent floods will be felt after FY2018-19, and a flat outlook for processed food will see overall tonnage growth ease to three per cent while value growth is forecast to be negative 0.5 per cent in FY2018-19.

A black and white photograph of an airport scene, featuring a control tower on the right, several tall light poles, and a cloudy sky. A large, dark blue diagonal shape overlays the left side of the image, serving as a background for the text.

AIRFREIGHT BY AIRPORT

PERTH AIRPORT

KEY FINDINGS



Perth Airport

Perth Airport represented 10 per cent of all freight volume and 25 per cent of all freight value in FY2017-18.



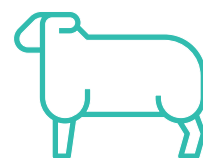
45K tonnes

Imports in FY2017-18 totalled 45 thousand tonnes, up eight per cent compared to FY2016-17, worth \$7 billion. Machinery and equipment forms the largest category in both value and volume terms.



63K tonnes

Exports in FY2017-18 totalled 63 thousand tonnes, up by eight per cent compared to FY2016-17, worth circa \$21 billion. Animal and vegetable products dominate mass from exports, while precious metals, such as gold, have been the primary source of growth in monetary terms.

























Sheep meat exports

Strong forecast import volumes reflect broader economic conditions and business investment. **Sheep meat exports have been strong, however growth is expected to moderate over FY2018-19.**

PERTH AIRPORT – IMPORTS

Table 11: Perth Airport imports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Import		7,008	45,242	-5.2%	7.6%	5.2%	5.4%		
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	1,347	13,051	19.1%	8.6%				
XV	Base metals and articles of base metal	173	4,689	29.3%	46.9%				
II	Vegetable products	26	3,912	4.5%	-4.6%				
VII	Plastics and articles thereof; rubber and articles thereof	52	1,801	13.3%	24.4%				
XI	Textiles and textile articles	71	1,784	0.7%	-5.8%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	364	1,292	-6.7%	22.6%				
VI	Products of the chemical or allied industries	127	1,197	7.6%	47.4%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	172	1,003	-27.6%	18.1%				
XX	Miscellaneous manufactured articles	39	919	-10.1%	-18.0%				
Other or unspecified		4,638	15,595						

Source: IPA/BISOE based on ABS statistics

Perth Airport is the last airport covered in this report and it is characterised by high-value, albeit low volume commodities. By volume, it is estimated 68 per cent of imports that pass through Perth Airport have a known commodity classification according to ABS statistics. Yet, it is noteworthy that the value of the unknown commodities approached \$4.6 billion – 66 per cent of the total imports by value.























Of the known commodities imported into Perth, by volume 29 per cent are machinery and equipment, 10 per cent base metals and nine per cent vegetable products. In monetary terms, of the known commodities imported into Perth Airport, 19 per cent are machinery and equipment and five per cent are chemicals/pharmaceuticals.

In FY2017-18, Perth Airport carried 11 per cent of the total of \$66.4 billion in airfreight imports into Australia. In tonnes, Perth Airport carried seven per cent of the total 582 thousand tonnes in airfreight imports by mass. In FY2017-18, imports totalled 45 thousand tonnes, up by eight per cent compared to FY2016-17, worth at least \$7 billion (Table 11).

Overseas imports directly into Perth are relatively small in comparison to Sydney (306 thousand tonnes) and Melbourne (147 thousand tonnes). As a result, Perth Airport is relatively underweight on all major commodity classes in terms of mass. In value terms, a similar result holds, with the notable exception that Perth Airport is overweight on precious metal imports, primarily gold, which is imported for further processing and re-export.

PERTH AIRPORT – EXPORTS

Table 12: Perth Airport exports by value and volume

Sorted by Section by Value		2017-18		% change				10-year trend	
				2017-18		2018-19		2007-08 to 2017-18	
		\$ million	tonnes	\$ million	tonnes	\$ million	tonnes	\$ million	tonnes
Export		20,681	63,391	-0.5%	7.6%	2.3%	4.1%		
I	Live animals; animal products	701	33,593	16.1%	10.7%				
II	Vegetable products	46	8,901	1.0%	3.8%				
XV	Base metals and articles of base metal	36	8,317	10.3%	10.0%				
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	97	4,896	7.9%	0.6%				
XVI	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	369	3,242	6.7%	-4.9%				
VI	Products of the chemical or allied industries	147	2,937	17.6%	338.1%				
XIV	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	18,853	614	-0.2%	3.3%				
XVII	Vehicles, aircraft, vessels and associated transport equipment	82	409	31.5%	34.6%				
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	175	388	71.2%	42.5%				
Other or unspecified		174	93						

Source: IPA/BISOE based on ABS statistics

In terms of both value and volume terms, it is estimated that nearly 100 per cent of exports that leave from Perth Airport have a known commodity classification according to ABS statistics. In volumetric tonnes, of the known commodities exported from Perth, 53 per cent are animal and animal products, 14 per cent vegetable products and 13 per cent base metal products. In monetary values, of the known commodities exported from Perth Airport, 91 per cent are precious metals.

In FY2017-18, Perth Airport carried 49 per cent of the total of \$42.4 billion in airfreight exports by value. In tonnes, Perth Airport carried 11 per cent of the total 569,000 tonnes in airfreight exports. In FY2017-18, exports totalled 63,000 tonnes, up by seven per cent compared to FY2016-17, worth approximately \$21 billion (Table 12).

Overseas exports by mass from Perth are relatively small compared to all other main airports. However, relative to its population base, Perth Airport holds an expected share of exports in terms of mass. Notably, Perth Airport is relatively overweight on animal products, precious metals and base metal products. In value terms, Perth Airport is overweight on precious metal imports, since gold is mainly exported from Western Australia.

Exports of infant formula and other processed food products to China have been the primary source of growth in airborne exports Australia wide. For Perth, however, growth in export tonnage has largely stemmed from a rapid increase in sheep meat exports, stemming from a recovery in meat production in Western Australia. However, as the outlook for sheep products is more moderate, forecasts show strong deceleration in growth over FY2018-19. The overall tonnage growth is forecast to ease to four per cent and increase to two per cent in value terms across FY2018-19.

ABBREVIATIONS

ABS	Australian Bureau of Statistics
AUD	Australian Dollar
BISOE	BIS Oxford Economics
BITRE	Bureau of Infrastructure, Transport and Regional Economics
FY	Financial Year
HS	Harmonized System
OCE	Office of the Chief Economist
USD	United States Dollar

APPENDIX

WHAT IS MEASURED

The primary source of data used for this edition is unpublished import and export statistics from the Australian Bureau of Statistics (ABS)², which detail commodity movements by air, direction of trade (imports and exports), units of trade (value and volume) and commodity definition from FY1996-97 to FY2017-18.

International trade in and out of Australia is recorded using what is known as the Harmonized System³ (HS) for the classification of products. At the international level, the HS for classifying goods is a six-digit code system.⁴ The HS comprises approximately 5,300 article/product descriptions that appear as headings and subheadings, arranged in 99 chapters, grouped in 21 Sections.

The analysis used focuses on the mass tonnes and Free on Board⁵ (FOB) values (indexed to CPI as of June 2018⁶) reported by the ABS by airport by Section, describing what has been occurring across the main four airports and commodities, with a focus on broad trends, recent changes, and a one-year outlook.

The forecasts used in the report rely upon a mix of commodity projections by respected government and industry bodies, and BISOE⁷ in-house projections of the underlying drivers of trade (i.e. consumption and production), airport and mode choice, and seasonality of the trade flows.

ABS reported airfreight movements are subject to confidentiality of import and export commodities, either at the commodity level and/or the port level. As such, the reported value or volume measures relying upon these statistics will tend to be underestimated. Furthermore, as the list of commodities is subject to confidentiality change over time⁷, shifts in the value and volume over time may be subject to changes in the confidentiality list. In turn, any percentage changes reported in the current report only refer to commodities that have not been moved on or off the list between July 2016 and June 2018⁸.

² Some of the data published by the ABS is subject to confidentiality, which may mean that the data is not published at the commodity level (such as mineral sands) or not available at the port level (such as sugar exports).

³ The HS is an hierarchical classification and was adopted by the World Customs Organization (WCO) in June 1983 and it entered into force on 1 January 1988. Australia began using the HS on that date as the basis for the AHECC and the Customs Tariff and for the compilation and dissemination of international merchandise trade statistics. The HS is used by over 200 countries or economies as the basis for their Customs Tariffs and for their international merchandise trade statistics. Approximately 98% of world merchandise trade is classified in terms of the HS.

⁴ The six digits can be broken down into three parts. The first two digits (HS-2) identify the chapter the goods are classified in, e.g. 09 = Coffee, Tea, Maté and Spices. The next two digits (HS-4) identify groupings within that chapter, e.g. 09.02 = Tea, whether or not flavoured. The next two digits (HS-6) are even more specific.

⁵ FOB values include the cost of delivering the goods to the nearest port is included but the buyer is responsible for the shipping and all other fees associated with getting the goods to the final destination.

⁶ The FOB values will be deflated with chain volume indices in future editions to capture the full fluctuations in the trade values.

⁷ i.e. LNG imports were not reported in April 2018, lupin exports are now subject to a six month delay in reported volumes and barley exports are now reported by port from April 2018 for the first time since November 1999 – for more details see ABS catalogue number 5372.0.55.001.

⁸ BISOE has excluded the export of Aviation turbine fuel from this analysis, which is fuel engaged in the transport of passengers or goods between Australia and other countries. This represents about three per cent by value of exports recorded by the ABS, but over 70 per cent by volume.

The report covers trade by Section according to the Harmonised Commodity Description and Coding System (HS), which is the organisation of trade at the lowest level of granularity. Each Section is detailed below:

- I.** Live Animals; Animal Products
- II.** Vegetable Products
- III.** Animal or Vegetable Fats and Oils and Their Cleavage Products; Prepared Edible Fats; Animal or Vegetable Waxes
- IV.** Prepared Foodstuffs; Beverages, Spirits and Vinegar; Tobacco and Manufactured Tobacco Substitutes
- V.** Mineral Products
- VI.** Products of the Chemical or Allied Industries
- VII.** Plastics and Articles Thereof; Rubber and Articles Thereof
- VIII.** Raw Hides and Skins, Leather, Furskins and Articles Thereof; Saddlery and Harness; Travel Goods, Handbags and Similar Containers; Articles of Animal Gut (Other Than Silkworm Gut)
- IX.** Wood and Articles of Wood; Wood Charcoal; Cork and Articles of Cork; Manufactures of Straw, of Esparto or of Other Plaiting Materials; Basketware and Wickerwork
- X.** Pulp of Wood or of Other Fibrous Cellulosic Material; Recovered (Waste and Scrap) Paper or Paperboard; Paper and Paperboard and Articles Thereof
- XI.** Textiles and Textile Articles
- XII.** Footwear, Headgear, Umbrellas, Sun Umbrellas, Walking-Sticks, Seat-Sticks, Whips, Riding-Crops and Parts Thereof; Prepared Feathers and Articles Made Therewith; Artificial Flowers; Articles of Human Hair
- XIII.** Articles of Stone, Plaster, Cement, Asbestos, Mica or Similar Materials; Ceramic Products; Glass and Glassware
- XIV.** Natural or Cultured Pearls, Precious or Semi-Precious Stones, Precious Metals, Metals Clad with Precious Metal, and Articles Thereof; Imitation Jewellery; Coin
- XV.** Base Metals and Articles of Base Metal
- XVI.** Machinery and Mechanical Appliances; Electrical Equipment; Parts Thereof; Sound Recorders and Reproducers, Television Image and Sound Recorders and Reproducers, and Parts and Accessories of Such Articles
- XVII.** Vehicles, Aircraft, Vessels and Associated Transport Equipment
- XVIII.** Optical, Photographic, Cinematographic, Measuring, Checking, Precision, Medical or Surgical Instruments and Apparatus; Clocks and Watches; Musical Instruments; Parts and Accessories Thereof
- XIX.** Arms and Ammunition; Parts and Accessories Thereof
- XX.** Miscellaneous Manufactured Articles
- XXI.** Works of Art, Collectors' Pieces and Antiques

The following table describes the data used for the present report as provided by ABS statistics.

Table 13: Data Description

Dimensions of airfreight data	Description
Imports	
Value of goods	free on board (FOB)
Gross weight of goods	the shipping weight of goods (measured in kilograms) excluding the weight of shipping containers.
Overseas country	country of origin and country of port of loading.
Overseas airport	port of loading
Australian state	state of discharge and state of final destination
Australian airport	port of discharge
Exports	
Value of goods	free on board (FOB)
Gross weight of goods	the shipping weight of goods (measured in kilograms) excluding the weight of shipping containers
Overseas country	country of final destination and country of port of discharge
Overseas airport	port of discharge
Australian state	state of origin and state of loading
Australian airport	port of loading

Source: IPA/BISOE based on ABS Statistics



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