Malaysian Aviation Commission
Suruhanjaya Penerbangan Malaysia
MAVCOM

WAYPOINT

MALAYSIAN AVIATION INDUSTRY OUTLOOK | **MAY 2018**

KEY HIGHLIGHTS

Strong industry performance to continue in 2018 as passenger traffic expected to breach 100.0 million

2017 was a year of strong industry performance in comparison to 2016 and the challenging 2014/2015 period. In 2017, passenger traffic grew 8.1% Year-on-Year (YoY) (2016: 6.2% YoY) to 99.1 million. **MAVCOM is forecasting growth of 6.5% – 7.0% YoY in 2018** to 105.6 million – 106.1 million passengers, marking three consecutive years of growth exceeding 5.0% YoY, if realised. Operating profitability at industry level in 2017 was RM1.6 billion—lower in comparison to 2016—but a significant turnaround from a cumulative operating loss of RM0.5 billion in 2014; while the negative spread between cost per available seat kilometre (CASK) and revenue per available seat kilometre (RASK) was reduced by 42.5% in 2017 from the prior year. Market capitalisation of the listed aviation companies also increased by 38.4% to RM25.6 billion at end-2017 from RM18.5 billion at the beginning of 2014, **outperforming the FTSE Bursa Malaysia KLCI by 50.5% between 2014 and 2017**. Such growth has been supported by strong demand, improved seat inventory control, and a low fuel price environment between 2015 and 2016.

Expected increase in oil prices will exert pressure on airlines' profitability

In 2017, the price of crude oil and jet fuel increased by 44.8% YoY and 52.7% YoY, respectively. Despite this, the average fares for Malaysian carriers fell by 7.7% YoY to RM371 in 2017 (2016: RM402). For the first four months of 2018, the average crude oil and jet fuel prices increased by 18.4% YoY and 25.3% YoY, respectively, while the International Air Transport Association (IATA) and the United States Energy Information Administration are forecasting **oil prices to increase between 10.7% YoY and 30.5% YoY in 2018**. **This may exert downward pressure on the airlines' profitability when fares are currently low.**

Malaysia's air connectivity in 2017 improved with more destinations and seats, in line with other countries in the Southeast Asia region

Malaysia enjoyed a net **increase of eight international destinations** which it is connected to and a net **increase of approximately 360,000 seats**, thereby strengthening the country's degree of international air connectivity. Asia has been and will continue to be the principal region of focus for Malaysia's connectivity, as 59.8% of air traffic rights (ATRs) awarded by MAVCOM to Malaysian carriers in 2017 were for routes to the Association of Southeast Asian Nations (ASEAN) Member States, China, and India. In addition, **56.4% of airports that Malaysia is connected to are airports within the Asia Pacific region which focus on serving short-to-medium haul regional destinations**. Other ASEAN Member States such as Thailand, Indonesia, Vietnam, and Cambodia have also taken significant strides in increasing the number of destinations and seats to boost their respective air connectivity.

13 out of 22 ground handling companies were profitable in 2016

Based on the latest available audited accounts, **the ground handling services segment reported a 4.7% operating profit margin in 2016**, with an aggregate revenue of RM994.4 million.

GLOSSARY OF SOURCES

Sources	
AirportIS	-
AENA	Aena SME, S.A.
ASL Holders	Licence holders of ASL issued by MAVCOM
AOL Holders	Licence holders of AOL issued by MAVCOM
ASP Holders	Licence holders of ASP issued by MAVCOM
BITRE	Bureau of Infrastructure, Transport, and Regional Economics, Australia
BNM	Bank Negara Malaysia
CAPA	Centre for Aviation
DOS	Department of Statistics, Malaysia
FTSE Bursa Malaysia KLCI	-
GHL Holders	Licence holders of GHL issued by MAVCOM
IATA	International Air Transport Association
IMF	International Monetary Fund
MAVCOM	Malaysian Aviation Commission
MOTAC	Ministry of Tourism and Culture Malaysia
Thomson Reuters	-
UK CAA	UK Civil Aviation Authority
US FAA	US Federal Aviation Administration
World Bank	-

TABLE OF ABBREVIATIONS

Abbreviations		Abbreviations	
Act 771	Malaysian Aviation Commission Act 2015	GHL	Ground Handling Licence
AED	United Arab Emirates Dirham	GIC Division	Government Investment Companies Division
AOC	Air Operator Certificate	GOM	Government of Malaysia
AOL	Aerodrome Operator Licence	HHI	Herfindahl-Hirschman Index
ASEAN	Association of Southeast Asian Nations	LCC	Low-cost Carrier
ASK	Available Seat Kilometres	Lion Air	PT. Lion Mentari Airlines
ASL	Air Service Licence	Menzies	John Menzies plc.
ASP	Air Service Permit	MIER	Malaysian Institute of Economic Research
ATR	Air Traffic Rights	MOF Inc.	Ministry of Finance (Incorporated)
bbl	Barrel	O&D	Origin and Destination
BP Global	BP plc.	OPEC	Organization of the Petroleum Exporting Countries
CAAM	Civil Aviation Authority of Malaysia	PETRONAS	Petroliam Nasional Berhad
CASK	Cost per Available Seat Kilometre	PMI	Purchasing Managers' Index
CHF	Swiss Franc	RAS	Rural Air Services
CR_2	Concentration ratio of top two biggest companies	RASK	Revenue per Available Seat Kilometre
DCA	Department of Civil Aviation, Malaysia	RHS	Right Hand Side
Etihad	Etihad Airways	RM	Ringgit Malaysia
EUR	European Euro	RPK	Revenue Passenger Kilometre
GateGroup	GateGroup Holding AG	STOLport	Short Take-Off and Landing Airports
GBP	Pound Sterling	MAS	Malaysian Airline System Berhad
GDP	Gross Domestic Product	STIDC	Sarawak Timber Industry Development Corporation

Abbreviations		Abbreviations	
UK	United Kingdom	VietJet	VietJet Aviation Joint Stock Company
US	United States	YoY	Year-on-Year
USD	United States Dollar	MAVCOM	Malaysian Aviation Commission

MALAYSIAN AIRPORT CODES

No.	Airport Code	Airport Name	No.	Airport Code	Airport Name
1	AOR	Sultan Abdul Halim Airport (Alor Setar)	18	LGL	Long Lellang STOLport
2	BBN	Bario STOLport	19	LKH	Long Akah STOLport
3	BKI	Kota Kinabalu International Airport	20	LMN	Limbang Airport
4	BKM	Ba'kelalan STOLport	21	LWY	Lawas STOLport
5	BTU	Bintulu Airport	22	MKM	Mukah STOLport
6	IPH	Sultan Azlan Shah Airport (Ipoh)	23	MKZ	Melaka Airport
7	JHB	Senai International Airport	24	MUR	Marudi STOLport
8	KBR	Sultan Ismail Petra Airport (Kota Bharu)	25	MYY	Miri Airport
9	KCH	Kuching International Airport	26	MZV	Mulu Airport
10	KTE	Kerteh Airport	27	ODN	Long Seridan STOLport
11	KUA	Sultan Ahmad Shah Airport (Kuantan)	28	PEN	Penang International Airport
12	KUD	Kudat STOLport	29	SBW	Sibu Airport
13	KUL	Kuala Lumpur International Airport	30	SDK	Sandakan Airport
14	LBP	Long Banga STOLport	31	SZB	Skypark Terminal Sultan Abdul Aziz Shah Airport (Subang)
15	LBU	Labuan Airport	32	TGC	Tanjung Manis Airport
16	LDU	Lahad Datu Airport	33	TGG	Sultan Mahmud Airport (Kuala Terengganu)
17	LGK	Langkawi International Airport	34	TWU	Tawau Airport

OTHER AIRPORT CODES

No.	Airport Code	Airport Name	No.	Airport Code	Airport Name
1	DXB	Dubai International Airport, United Arab Emirates	3	PKU	Sultan Syarif Kasim II International Airport, Indonesia (Pekanbaru)
2	DOH	Hamad International Airport, Qatar (Doha)	4	SIN	Singapore Changi Airport, Singapore

LICENCE AND PERMIT HOLDERS

Abbreviations	
AeroDarat	AeroDarat Services Sdn. Bhd.
AirAsia	AirAsia Berhad
AirAsia X	AirAsia X Berhad
Brahim's SATS	Brahim's SATS Food Services Sdn. Bhd.
Firefly	FlyFirefly Sdn. Bhd.
GTR	Ground Team Red Sdn. Bhd.
MAB Kargo	MAB Kargo Sdn. Bhd.
MAHB	Malaysia Airports Holding Berhad
Malindo	Malindo Airways Sdn. Bhd.
MAB	Malaysia Airlines Berhad
PetDagang	PETRONAS Dagangan Berhad
Petron	Petron Malaysia Refining and Marketing Berhad
Pos Aviation	Pos Aviation Sdn. Bhd.
Raya Airways	Raya Airways Sdn. Bhd.
Sabah Air	Sabah Air Aviation Sdn. Bhd.
Senai Airport	Senai Airport Terminal Services Sdn. Bhd.
Shell Malaysia	Shell Malaysia Trading Sdn. Bhd.
Shell Timur	Shell Timur Sdn. Bhd.
SSSB	Sanzbury Stead Sdn. Bhd.
TMDSB	Tanjung Manis Development Sdn. Bhd.

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2018 Economic Outlook

Global Economy is Expected to Grow by 3.9% YoY in 2018

The IMF forecasts that **the global economy will grow by 3.9% YoY in 2018** (2017: 3.6% YoY). It is expected that this growth would be supported by favourable global financial conditions, as well as, consumer and business sentiments. Improving business sentiment would boost private investments which in turn, would have a positive impact on the economic growth of large exporting countries. This group of countries, which mainly comprises the emerging market economies are **expected to grow at 4.9% YoY in 2018** as they benefit from the domestic demand of the advanced economies.

Table 1: Global GDP Forecast by IMF

Economies	2018 YoY GDP Growth Forecast (%)
Global	3.9
- Advanced Economies	*2.5*
- Emerging Market Economies	*4.9*

Source: IMF

Malaysia's GDP is Expected to Grow by 5.5% – 6.0% YoY in 2018

The IMF and the World Bank have forecasted that in 2018, Malaysia's GDP will grow by 5.3% YoY and 5.4% YoY respectively, slightly lower than the market consensus of 5.5% YoY (see Table 2). Malaysia's actual GDP growth in 2017 was 5.9% YoY. Both the IMF and the World Bank expect Malaysia's GDP to be underpinned by strong domestic and external demand, the latter particularly from the advanced economies.

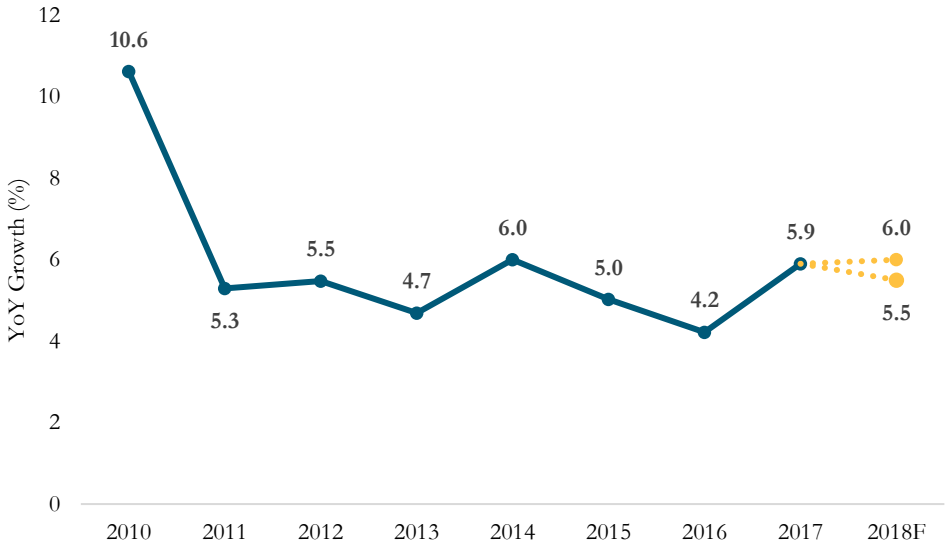
Table 2: Malaysia's GDP Forecast by IMF, World Bank, and Market Consensus

Economies	2018 YoY GDP Growth Forecast (%)
IMF	5.3
World Bank	5.4
Market Consensus	5.5

Source: IMF, Thomson Reuters, World Bank

The BNM is forecasting for Malaysia's GDP to grow by 5.5% – 6.0% YoY in 2018 (see Figure 1), driven by strong domestic demand, as well as, the general improvement of the global economy. Furthermore, the BNM also highlighted that the MIER Business Conditions Index had consistently indicated sustained expansion of the economy throughout 2017.

Figure 1: Malaysia's GDP Growth, 2010 – 2018F



Source: BNM, Thomson Reuters

2018 Passenger Traffic Outlook

Global Passenger Traffic is Expected to Grow by 6.0% YoY in 2018

IATA expects **global passenger and cargo traffic to grow by 6.0% YoY and 4.5% YoY, respectively in 2018** (see Table 3). These forecasts were underpinned by favourable business sentiments and global employment conditions, characterised by low unemployment rates and growing wages. These factors will result in strong demand for air travel, by both leisure and business travellers.

Table 3: Passenger and Cargo Traffic Forecasts by IATA

Key Figures	2018 YoY Growth Forecast[1] (%)
Global Passenger Traffic	6.0
Global Cargo Traffic	4.5

Source: IATA

In 2017, cargo traffic grew by 9.3% YoY due to companies restocking their inventories in response to strong consumer demand. This is in comparison to an average annual growth of 2.0% in global cargo traffic historically. The current growth trend is expected to continue in 2018 along with the steady expansion of e-commerce activities. Cargo traffic growth in 2017 was exceptionally high as the cargo market recovered from the aftermath of the 2009 global financial crisis.

[1] Growth forecasts in terms of RPK.

Asia Pacific Passenger Traffic is Expected to Grow by 7.0% YoY in 2018

IATA has forecasted that the passenger traffic for the Asia Pacific region will grow by 7.0% YoY, compared to its global forecast of 6.0% YoY (see Table 4). The Asia Pacific region constitutes 33.7% of global passenger traffic in 2017, making it the largest market in the world. Growth in this region will be driven by the strong demand for air travel from the domestic markets in China, India, Japan, as well as the ASEAN Member States. Within ASEAN, passenger traffic growth will mainly be driven by the LCCs—AirAsia, Lion Air, and VietJet—as they continue to take delivery of aircraft in 2018. According to CAPA, the fleet size of airlines in the ASEAN region is expected to grow by 7.0% YoY in 2018. Furthermore, it was observed that the Middle Eastern network carriers such as Emirates, Etihad, and Qatar Airways had slowed their expansion into this region as they prioritised addressing the challenges within their region. This would give many opportunities for the Asia Pacific airlines to fill in available gaps in the market.

Table 4: Passenger Traffic Forecasts by IATA

Region	2018 YoY Passenger Traffic Growth Forecast[2] (%)
Global	6.0
- North America	*3.5*
- Europe	*6.0*
- Asia Pacific	*7.0*
- Middle East	*7.0*
- Latin America	*8.0*
- Africa	*8.0*

Source: IATA

Meanwhile, passenger traffic growth in Africa and Latin America will benefit from the recovering economic conditions within those regions. Africa is expected to report 3.4% YoY GDP growth in 2018, compared to 1.4% YoY and 2.8% YoY in 2016 and 2017, respectively. Similarly, GDP for Latin America is expected to grow by 2.0% YoY in 2018 (2016: -0.6% YoY; 2017: 1.3% YoY). In 2017, both regions comprised 7.4% of the global passenger traffic.

[2] Growth forecasts in terms of RPK.

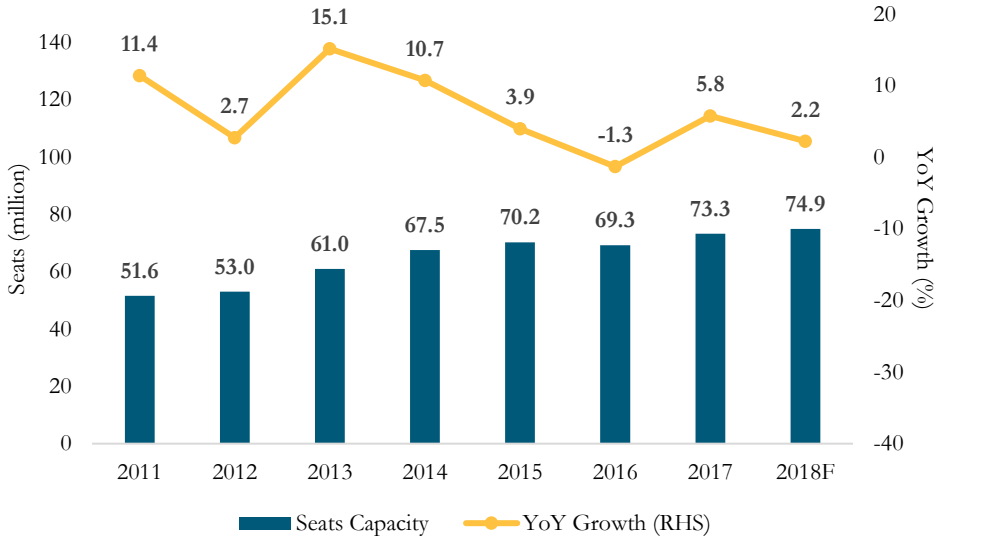
Malaysian Carriers to Increase Seats Capacity by 2.2% YoY in 2018

IATA forecasts that the global capacity in terms of ASK to grow by 5.7% YoY in 2018, which is faster than the expected growth rates of Malaysian carriers' capacity (in terms of ASK) of 1.7% YoY. In terms of seats, the **Malaysian carriers are expected to add 2.2% YoY additional seats into the market** (see Figure 2). Save for the 1.3% YoY contraction in seats capacity in 2016, the expected growth in 2018 will be the lowest since 2012, when seats capacity grew by 2.7% YoY.

In 2013, the number of seats expanded by 15.1% YoY due to Malindo's entry into the market. This prompted other Malaysian carriers to increase capacity significantly. During that time, AirAsia, AirAsia X, and MAS[3] injected 10.4% YoY, 13.0% YoY, and 27.3% YoY additional seats, respectively. As a result, the load factors for Malaysian carriers dropped from 77.9% in 2012 to 64.0% in 2013. Both the domestic and international average fares also dropped by 10.1% YoY and 9.0% YoY, respectively. Since then, MAS and Firefly have cut seats capacity after the MH370 and MH17 tragedies, and increased competition at SZB, respectively. Meanwhile, AirAsia, AirAsia X, and Malindo had been increasing their seats capacities consistently during the same period.

In 2018, the overall low growth in seats capacity for Malaysian carriers is expected to further improve load factors as traffic growth is expected to exceed the capacity expansion. Malaysian carriers will be deploying their capacities on routes to and from North Asia, India, and the ASEAN Member States. These regions are expected to report strong economic growth in 2018, which will in turn, boost demand for air travel.

Figure 2: Seats Capacity Growth by Malaysian Carriers, 2010 – 2018F



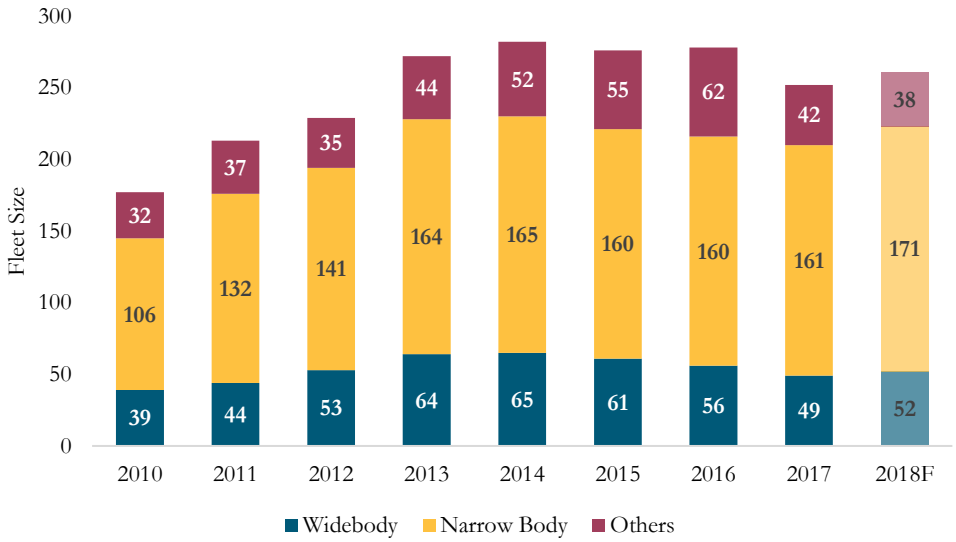
Source: AirportIS

[3] MAS' business, property, rights, liabilities, and affairs were transferred to MAB on 1 September 2015 pursuant to the Malaysian Airline System Berhad (Administration) Act 2015, gazetted on 5 January 2015.

Net Increase of Six Additional Aircraft in 2018

Malaysian carriers are expected to increase their fleet size to 261 aircraft in 2018 (2017: 252) (see Figure 3). Generally, MAB contributes to the increase in fleet size as it is scheduled to receive widebody aircraft such as Airbus 330-200s and Airbus 350-900s in 2018. MAB's new widebody aircraft are expected to fill the gaps left by Boeing 777-200s that were retired in 2017. Other airlines, such as Malindo and Firefly are planning to reduce the number of their turbo-propeller aircraft. New delivery of narrow body aircraft is expected to mainly replace the current fleet, for example, replacement of the Airbus 320 CEO with the Airbus 320 NEO.

Figure 3: Malaysian Carriers' Fleet Size, 2010 – 2018F



Source: ASL Holders

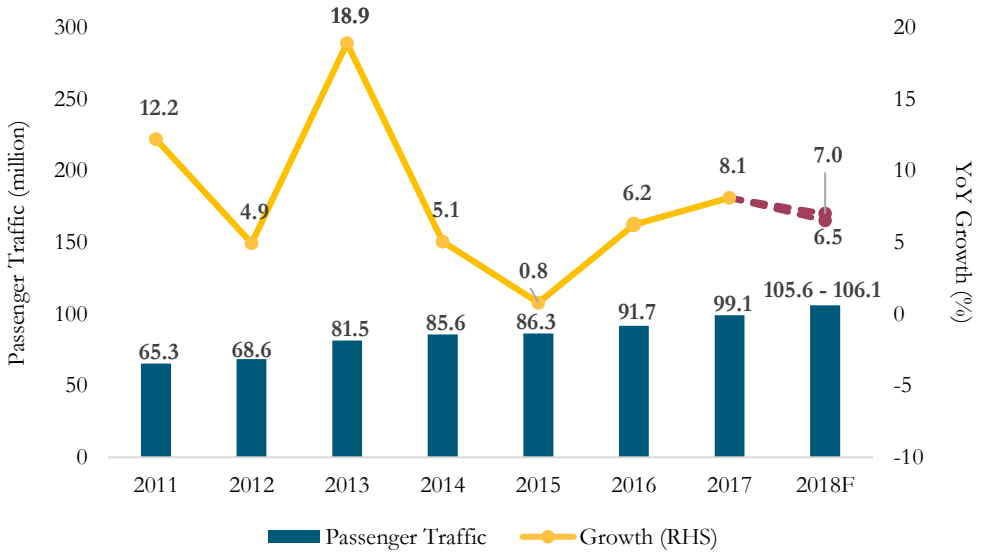
Malaysia's Passenger Traffic is Forecasted to Grow by 6.5% – 7.0% YoY in 2018

In 2017, Malaysia's passenger traffic grew by 8.1% YoY to 99.1 million passengers (see Figure 3), consistent with MAVCOM's 2017 forecasted growth range of between 7.8% YoY and 8.8% YoY.

In 2018, the Malaysian economy is forecasted to grow between 5.5% YoY and 6.0% YoY, driven by expansion in the agriculture, manufacturing, and services sectors. Favourable consumer and business sentiments will drive demand for air travel by leisure and business travellers. Therefore, **Malaysia's passenger traffic in 2018 is forecasted to grow by 6.5% – 7.0% YoY, translating into passenger traffic of 105.6 million – 106.1 million** (see Figure 4). For the first time in Malaysia's history, passenger traffic will surpass 100.0 million.

In addition, the slower expansion in Malaysian carriers' seats capacity will allow them to maintain high load factors without having to resort to price wars. Therefore, it is expected that they will be able to maintain fares at the 2017 levels.

Figure 4: Passenger Traffic, 2010 – 2018F



Source: MAVCOM Estimates, AOL Holders

SECTION 2: MACRO OVERVIEW

Global Economy Grew by 3.8% YoY in 2017

The global economy reported 3.8% YoY growth in 2017, whereas the ASEAN economy grew 5.3% YoY. According to the BNM, **the global economy reported 3.2% YoY growth in 4Q17 (3Q17: 3.3% YoY)**. The world economy saw growth in wage, as well as, lower unemployment rates. This contributed towards higher private consumption and increased demand for manufacturing products. In response to the higher demand by consumers, firms increased capital spending in machinery and equipment. These factors supported the growth of the world's major economies (see Table 5).

Table 5: 4Q17 Growth of Selected Economies

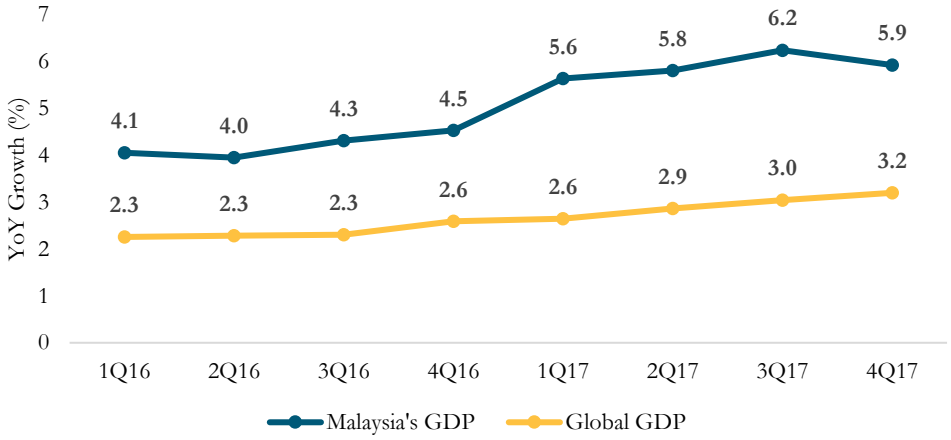
Regions	3Q17 GDP YoY Growth (%)	4Q17 GDP YoY Growth (%)
Philippines	7.2	6.5
China	6.8	6.8
Malaysia	**6.2**	**5.9**
Indonesia	5.1	5.2
Korea	3.8	2.8
Singapore	11.2	3.6
Europe	2.7	2.7
US	2.6	2.9
UK	1.7	1.4

Source: Thomson Reuters

Malaysia's GDP Grew by 5.9% YoY in 2017

The Malaysian economy registered overall GDP growth of 5.9% YoY in 2017, with the country's GDP reporting consistently higher quarterly YoY growth of between 5.6% to 6.2% from 1Q17 to 4Q17 (see Figure 5). The BNM reported that, **in 4Q17, the Malaysian economy was driven by strong growth in private consumption expenditure (7.0% YoY)**. This was supported by higher spending on food and non-alcoholic beverages, communication, and restaurants and hotels. On the production side, services, agriculture, and manufacturing were the key economic drivers.

Figure 5: Quarterly Malaysia's and Global GDP Growth, 2016 – 2017



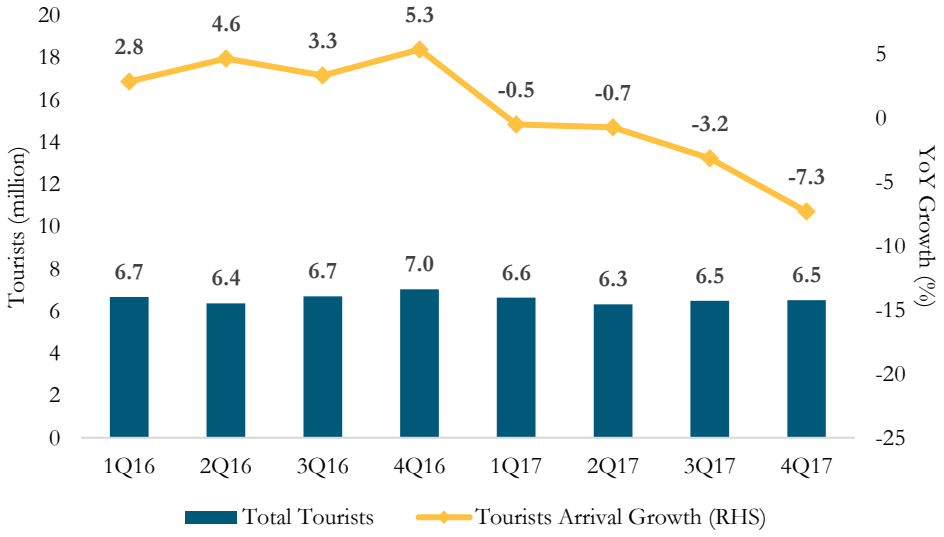
Source: DOS, Thomson Reuters

Lower Tourist Arrivals in 2017

According to the data from MOTAC, Malaysia's tourist arrivals fell 3.0% YoY to 25.9 million in 2017 (2016: 26.8 million). Tourist arrivals declined every quarter in 2017, relative to corresponding quarters in the previous years (see Figure 6). **The decline in tourist arrivals was mainly due to the lower number of Singaporean tourists**. In 2017, tourists from Singapore made up 47.9% of total tourist arrivals. One reason that had been cited for this was the introduction of the vehicle entry fee imposed on Singaporean-registered vehicles effective November 2016.

Despite that, it is worth noting that tourist arrivals from other countries such as Brunei, China, South Korea, Thailand, and Taiwan grew between 3.1% YoY and 19.4% YoY. This was in line with the data provided by the Immigration Department of Malaysia, which showed that the **arrivals of foreign nationals at KUL had increased 14.8% YoY** (2016: 4.5 million; 2017: 5.1 million).

Figure 6: Quarterly Malaysia's Tourist Arrivals, 2016 – 2017

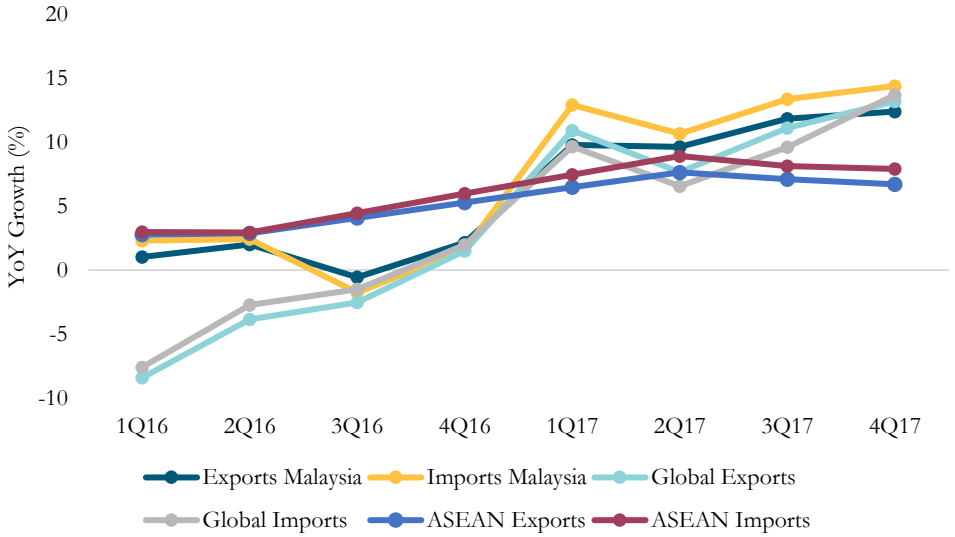


Source: DOS, MOTAC, Thomson Reuters

Stronger Overall Trade Activities in 2017 Across Regions

In line with the stronger growth of the economy in 2017, higher demand for manufacturing products boosted the growth of global trade (see Figure 7). The Asian economies such as China, Korea, and Taiwan reported stronger trade value growth, driven by the electrical and electronics and commodities sectors. Malaysia's export growth in 2017 was higher than ASEAN's export growth. For example, in 4Q17, Malaysia's exports grew by 12.4% YoY, whereas ASEAN's exports grew by 6.7% YoY. There was a general improvement in the PMI due to the stronger demand for manufacturing products in the advanced economies that contributed towards growth for exports and imports in 2017.

Figure 7: Trade Value Quarterly YoY Growth Trends, 2016 – 2017



Source: DOS, Thomson Reuters

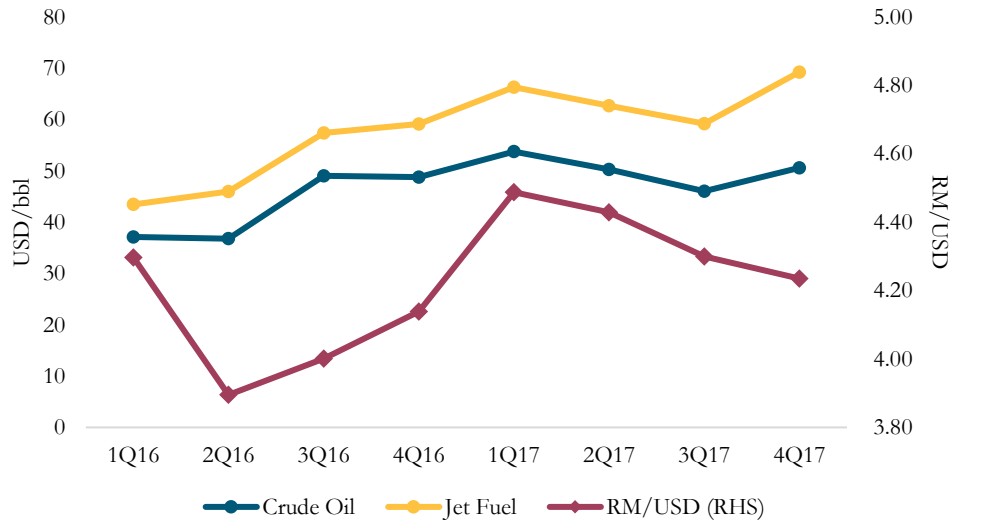
Higher Jet Fuel Price but More Favourable Exchange Rate

World crude oil price increased by 44.8% YoY from USD37/bbl in 2016 to USD54/bbl in 2017. At the same time, the global **jet fuel price increased by 52.7% YoY (2016: USD43/bbl; 2017: USD66/bbl)**. The general upward trend in the crude oil price was contributed by the coordinated efforts of OPEC and Russia to reduce oversupply of oil in the market till end 2018. Between 1Q17 and 3Q17, the concern on OPEC's and Russia's production cuts was mitigated by the increase in the US shale oil production—hitting a record high of 9.6 million barrels per day in November 2017 (+17.0% YoY)—as seen in Figure 8.

In 2017, on average, the RM had weakened against the USD from RM4.12/USD in 2016 to RM4.32/USD due to the USD benefiting from three interest rate hikes by the United States Federal Reserve System.

However, as seen in Figure 8, the **quarterly data in 2017 showed that the RM had strengthened against the USD from 2Q17 onwards due to uncertainties in the US economic policies**. The BNM also attributed the stronger RM to the liberalisation of bond market and foreign exchange hedging requirements announced in 2Q17.

Figure 8: Oil, Jet Fuel, and Exchange Rate Trends, 2016 – 2017



Source: DOS, Thomson Reuters

SECTION 3: INDUSTRY STRUCTURE

Aviation Services Segment

64 out of 69 Industry Players Generated RM32.7 billion of Revenue in 2017

As of 31 December 2017, MAVCOM had issued 65 licences/permits across four aviation services segments, in addition to the four licences/permits that were issued by the CAAM (previously known as the DCA) prior to MAVCOM's establishment (see Table 6). **These companies reported total revenue of RM32.7 billion in 2017 with an average operating profit margin of 5.8%**. 91.6% of the total revenue generated by the industry was contributed by the scheduled airlines and aerodrome operators. Between the four aviation services segments, the aerodrome operators reported an aggregate operating profit margin of 20.9% in 2017, which made them the most profitable aviation services providers in the aviation industry.

Table 6: Summary of Licensed Aviation Services Providers

Type of Licence	No. of Licence Holders	Aviation Services Segment	Revenue (RM million)		Operating Profit Margin (%)	
			2016	2017	2016	2017
ASL	7	Scheduled Services[4]	21,637.7	25,912.4	6.6	2.1
ASP[5]	27	Non-Scheduled Services	1,999.7	1,838.0	10.4	16.7
GHL	30	Ground Handling[6]	994.4	N/A	4.4	N/A
AOL	5	Aerodrome Operator	4,491.2	4,957.6	19.7	20.9
TOTAL	**69**		**29,123.0**	**32,708.0**	**8.8**	**5.8**

Source: MAVCOM

Appendix B provides the list of the licence and permit holders issued by MAVCOM as of 31 December 2017.

[4] ASL holders' revenue and operating profit margin numbers reflect only the scheduled passenger service providers. The number excludes one scheduled cargo service provider.

[5] This includes five conditional ASP holders that have yet to commence operations as they are in the process of obtaining their AOCs.

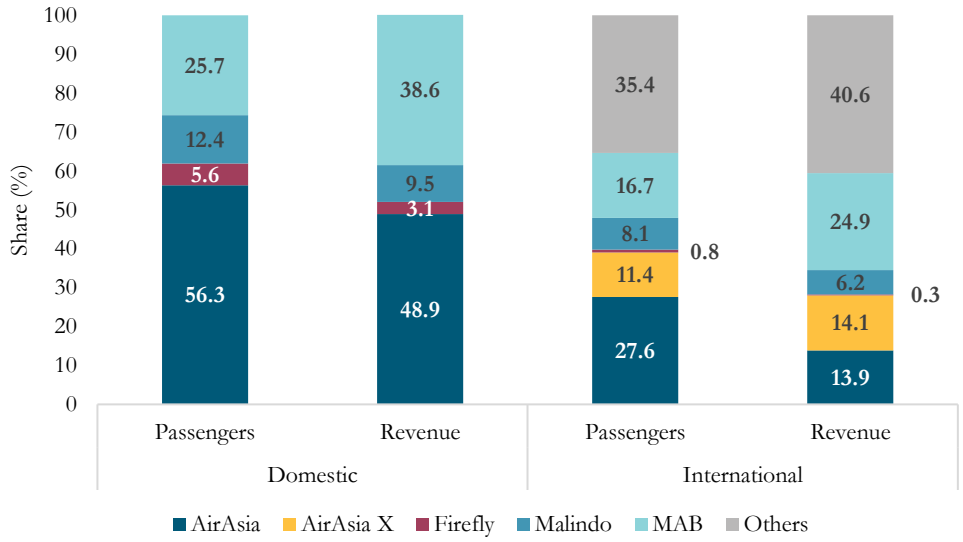
[6] GHL holders' revenue and operating profit margin numbers were based on the latest 2016 audited accounts and excluded one scheduled cargo service provider, one non-scheduled services provider, one passenger service provider, and four refuelling service providers because including these companies would overstate the GHL holders' financial numbers.

Scheduled Passenger Service Market

AirAsia is the Dominant Player for the Scheduled Passenger Service Market

In terms of passengers carried in 2017, AirAsia had the biggest market share of 56.3% in the domestic market and 27.6% in the international market (see Figure 9). In terms of revenue, AirAsia had the biggest market share of 48.9% in the domestic market, whereas MAB had the biggest share of 24.9% in the international market.

Figure 9: Percentage of Airlines' Market Share for Domestic and International Routes by Passengers and Revenue, 2017



Source: MAVCOM Estimates, AirportIS

With more than 80 airlines operating the international routes to and from Malaysia, **the international market had a low HHI[7] of 0.1362** in 2017. **As for the domestic routes, the HHI in 2017 was 0.3698, which was more concentrated compared with the international routes** as there were only four airlines operating in the domestic market. Furthermore, the international market was less concentrated compared to the domestic market as only airlines with majority local ownership could operate in the domestic market.

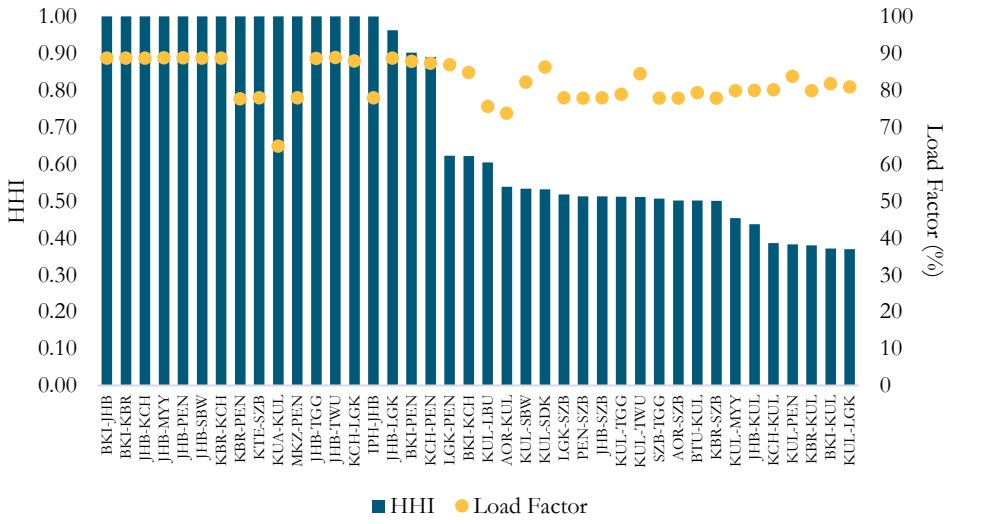
[7] HHI is an index that measures the degree of concentration in an industry, with '0' denoting no concentration and '1' denoting a monopoly.

Monopoly Structure of Domestic Routes did not Translate into High RASK

In 2017, all **domestic routes[8] reported load factors above 65.0% with an average load factor of 82.3% (2016: 75.3%)** (see Figure 10). The improvement was due to the cautious capacity expansion, as well as, strong air travel demand in 2017. The JHB-KUL route reported the highest increase in load factor between 2016 and 2017 (2016: 68.9%; 2017: 80.0%). This route is currently being served by two airlines, namely, AirAsia and MAB with a total of 72-weekly flights.

In terms of the concentration ratio, **14 out of 40 domestic routes had HHI values of 1.0000 in 2017**, which basically means that there was only one airline operating on those routes. The average HHI for domestic routes recorded less concentration from 0.5606 in 2016 to 0.4367 in 2017. Although the international passenger traffic market was less concentrated in 2017, on the individual route basis, approximately **55.4% of the international routes were operated by just one airline**. The international routes reported an average load factor of 81.0% in 2017, slightly below the average load factor of domestic routes.

Figure 10: Domestic Routes and Concentration Levels, 2017

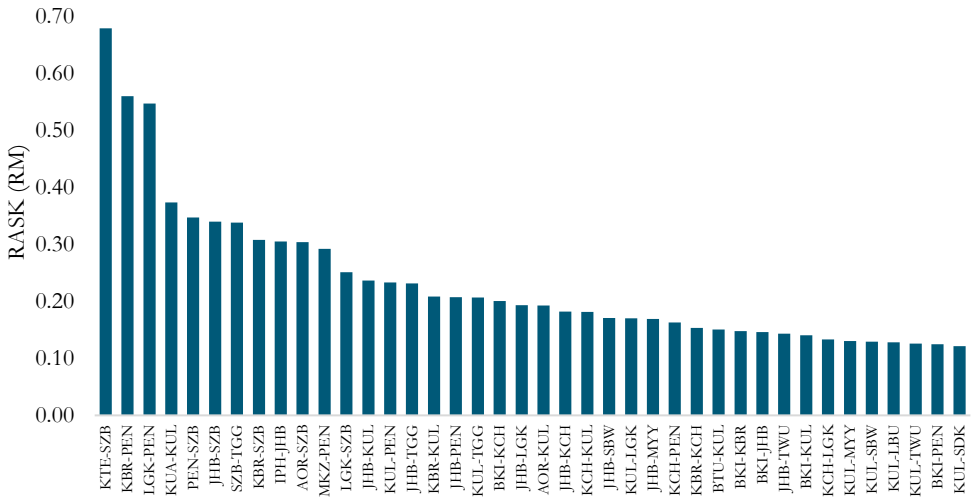


Source: MAVCOM Analysis, AirportIS

[8] Domestic routes exclude the RAS routes in Sabah and Sarawak.

The RASK for domestic routes[9] in 2017 ranged from RM0.12 to RM0.68, of which only **three domestic routes reported RASK of above RM0.40 in 2017**, namely, the KTE-SZB, KBR-PEN, and LGK-PEN routes (see Figure 11). The KTE-SZB and KBR-PEN routes were operated by only one airline each, which are Malindo and Firefly, respectively. Not all domestic routes with an HHI of 1.0000 reported high level of RASK. For example, the BKI-JHB and BKI-KBR routes reported low RASK of RM0.15 in 2017 even though these two routes were operated by one airline (AirAsia), and had no viable alternative modes of transport. The **RASK for international routes in 2017 ranged between RM0.02 and RM0.67**, where the route with the highest RASK was MKZ-PKU and the route with the lowest RASK was KUL-DOH.

Figure 11: RASK for Domestic Routes, 2017



Source: MAVCOM Analysis, AirportIS

[9] Domestic routes exclude the RAS routes in Sabah and Sarawak.

Non-Scheduled Services Segments

Highly Concentrated Business Segments Have Lower Profit Margins

Three business sub-segments—aerial work, oil and gas, and on-demand charter—reported profitability in 2017 (see Table 7). **The total market size in 2017, in terms of revenue, was RM1.8 billion, generated by 22 companies**. The biggest business sub-segment of the non-scheduled services segment in 2017 was the oil and gas sub-segment, which reported RM1.0 billion in revenue. This sub-segment was also the most profitable in 2017 with 28.4% operating profit margin, whereas the least profitable sub-segment was the surveying, observation, and patrol business which registered RM9.4 million operating losses. **In this market, the most concentrated business segment was the least profitable in 2017 showing that less competition does not necessarily lead to higher profits**. The failure for these companies to record higher profits in the absence of competition could also be attributed to their inefficient operations.

Table 7: Summary of Non-Scheduled Services' Market Structure, 2017

Type of Business	No. of Licence Holders	HHI	2017 Revenue (RM million)	2017 Operating Profit Margin (%)
Surveying, Observation & Patrol	1	1.0000	2.2	-422.0
Pleasure Flying	3	0.8205	5.3	-78.5
On-demand Cargo	2	0.6739	100.7	-6.0
Aerial Work – cloud seeding, mapping	2	0.6426	71.3	5.4
Oil & Gas	5	0.4677	1,008.5	28.4
On-demand Charter	9	0.4316	650.1	5.6
TOTAL	**22**		**1,838.0**	**16.7**

Source: MAVCOM

Aerodrome Operators Segment

Heavy Government Involvement in the Aerodrome Operations Segment

There are 42 airports in Malaysia operated by four companies, namely, MAHB, Senai Airport, TMDSB, and SSSB. MAHB currently operates a total of 39 airports, whereas Senai Airport, TMDSB, and SSSB operate JHB, TGC, and KTE, respectively. In this respect, MAHB is a near monopoly airport operator in the country. Both MAHB and SSSB are under indirect control of the GOM. MAHB is indirectly controlled by the GOM via Khazanah, PNB, and EPF while SSSB via PETRONAS. This is by virtue of the GIC Division's[10] stake in Khazanah and PETRONAS, respectively. The GIC Division also has one golden share in MAHB. MAHB is currently a public-listed company on Bursa Malaysia.

TMDSB is under the control of the Sarawak state government via the STIDC. This puts TMDSB in the same category as MAHB and SSSB, which are publicly-owned entities. Therefore, **Senai Airport is the only privately-owned airport operator in Malaysia as it is a wholly-owned subsidiary of MMC Corporation Berhad,** which is a public-listed company on Bursa Malaysia.

Near Monopoly Market Structure

By virtue of operating 39 out of 42 airports in the country, **MAHB has the largest market share in Malaysia, calculated in terms of revenue, at 98.5% (RM4.9 billion) as at 31 December 2017**. The other three airport operators generated less than RM100.0 million of aggregated revenue.

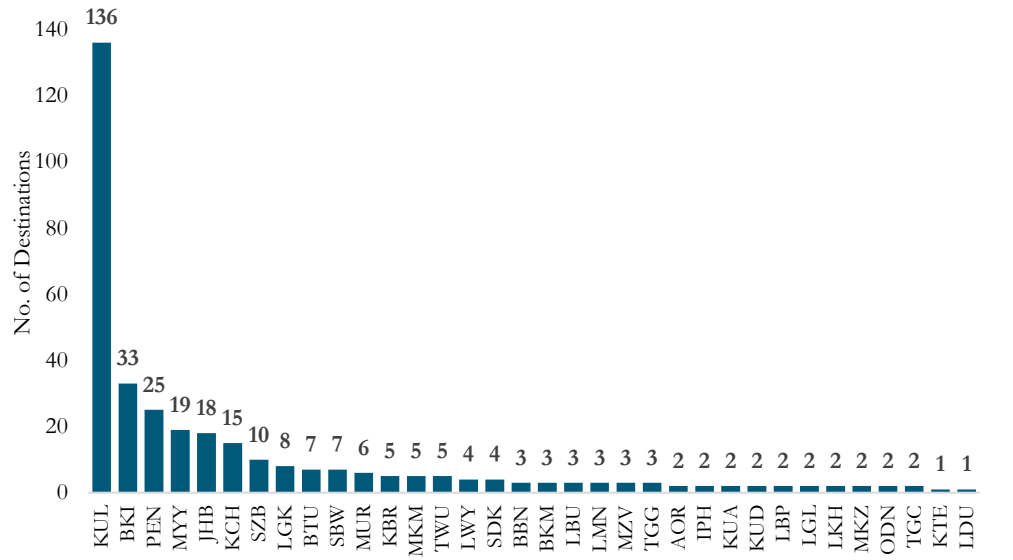
In terms of the number of passengers served, MAHB handled 96.8% of passenger traffic in Malaysia. The main reason for this dominance is MAHB's control over KUL which—as the main airport serving Kuala Lumpur—handled 58.8% of passenger traffic for Malaysia in 2017. KUL handled 58.4 million passengers in 2017, followed by BKI at 8.0 million passengers. The HHI for the airports industry in Malaysia is highly concentrated at 0.9363.

[10] Previously known as MOF Inc.

Four Main Hubs in Malaysia – KUL, PEN, JHB, and BKI

The geographical spread of top aviation hubs in Malaysia may indicate the existence of natural geographical networks. In this case, **the airport network structure in the country can be divided into four – central Peninsular Malaysia (KUL), northern Peninsular Malaysia (PEN), southern Peninsular Malaysia (JHB), and East Malaysia (BKI)**. Figure 12[11] highlights that **18 out of 34 airports currently have commercial operations serve less than three destinations**.

Figure 12: Number of Destinations Served by Airports, 2017

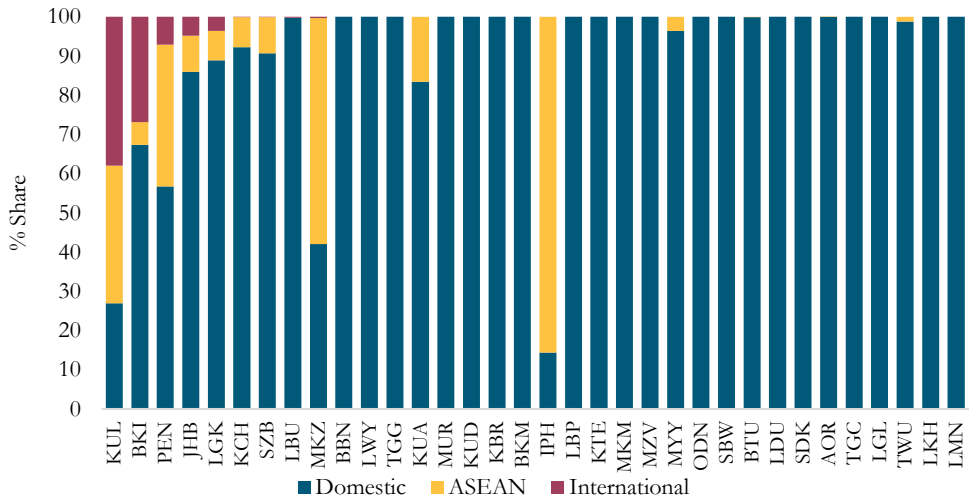


Source: MAVCOM Analysis, AirportIS

[11] The chart excludes unutilised STOLports

Most airports in Malaysia are focused on domestic passengers. This is true even for airports such as BKI, PEN, KCH, JHB, and LGK, despite their designations as international airports. Apart from KUL, both IPH and MKZ have larger proportion of international than domestic traffic (see Figure 13[12]). Thus, MAHB and Senai Airport are the only two airport operators in the country that serve domestic, ASEAN, and international traffic. This contrasts with TMDSB and SSSB—via TGC and KTE—which only cater to the domestic traffic.

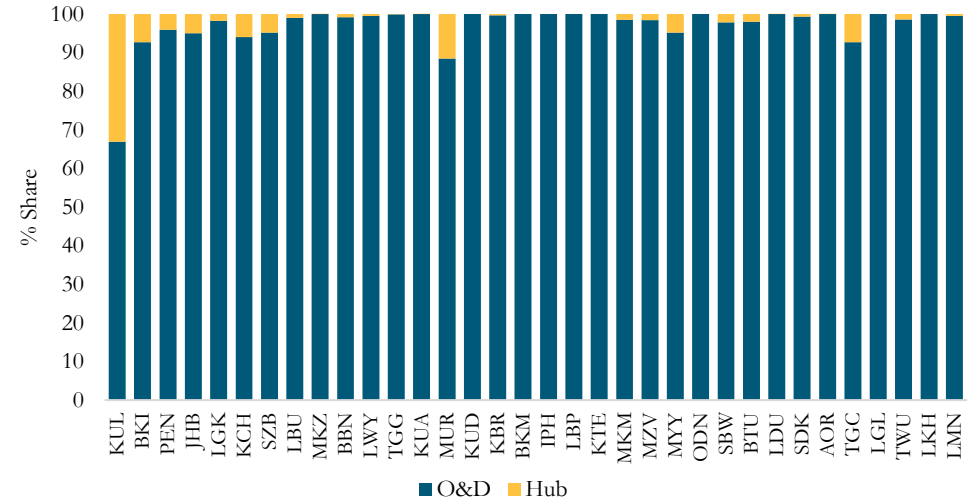
Figure 13: Traffic Breakdown by Regions of Travel, 2017



Source: MAVCOM Analysis, AirportIS

Most airports in Malaysia predominantly cater to O&D passengers. KUL, as the major hub airport in Malaysia, has a passenger composition of 32.6% hub passengers and 67.4% O&D passengers as of 2017 (see Figure 14[12]). Similarly, other airports in Malaysia are supported by demand for point-to-point services between airports.

Figure 14: Traffic Breakdown by O&D and Hub Traffic, 2017



Source: MAVCOM Analysis, AirportIS

[12] The chart excludes unutilised STOLports

Air Connectivity Index

The connectivity ranking of the ASEAN Member States remained the same between 2016 and 2017 as the **air connectivity index increased across all countries in 2017** (see Table 8). Vietnam reported the highest increase in the connectivity index from 60.8 to 74.4, whereas Brunei reported the smallest increase from 4.9 to 5.3. Based on Table 9, in 2017, Vietnam reported the highest percentage increase in the number of seats at 19.6%. At the same time, its number of destinations also increased by 15—also the highest—to 76 destinations.

Table 8: Air Connectivity Index and Ranking of ASEAN Member States, 2016 – 2017

Country	Connectivity Ranking		Connectivity Score	
	2016	2017	2016	2017
Thailand	1	1	142.7	153.0
Singapore	2	2	103.5	107.8
Indonesia	3	3	88.4	99.4
Malaysia	**4**	**4**	**79.6**	**88.8**
Philippines	5	5	71.6	77.6
Vietnam	6	6	60.8	74.4
Cambodia	7	7	15.1	21.4
Myanmar	8	8	13.8	14.7
Laos	9	9	5.0	5.5
Brunei	10	10	4.9	5.3

Source: MAVCOM Estimates, AirportIS

Changes in the air connectivity index could be contributed by changes in the number of seats and number of destinations. **In 2017, the number of destinations and seats for Malaysia increased by 6.9% YoY and 13.5% YoY, respectively** (see Table 9). In comparison, Thailand, Indonesia, and Vietnam reported more aggressive increases for both metrics in 2017.

Table 9: Changes to Number of Seats and International Destinations for ASEAN Member States, 2016 – 2017

Country	Number of Destinations		% Change	Number of Seats (million)		% Change
	2016	2017		2016	2017	
Thailand	151	180	19.2	4.06	4.49	10.6
Singapore	153	161	5.2	3.65	3.73	2.2
Indonesia	60	70	16.7	1.86	2.17	16.7
Malaysia	**116**	**124**	**6.9**	**2.65**	**3.01**	**13.5**
Philippines	63	66	4.8	1.46	1.56	7.2
Vietnam	61	77	26.2	1.44	1.72	19.6
Cambodia	41	53	29.3	0.52	0.61	17.8
Myanmar	23	26	13.0	0.32	0.34	6.7
Laos	19	22	15.8	0.16	0.17	10.3
Brunei	15	18	20.0	0.10	0.11	4.6

Source: MAVCOM Estimates, AirportIS

Although Indonesia had a lower number of international destinations and seats compared to Malaysia, it had more seats to destinations such as SIN and DXB that have a higher degree of international traffic. For example, Indonesia had 463,193 and 57,596 to SIN and DXB, respectively in 2017. Malaysia had 21.8% and 25.8% fewer seats than Indonesia to SIN and DXB, respectively. Hence, Indonesia obtained a higher connectivity score compared to Malaysia.

A Technical Paper on the Air Connectivity Index is available on MAVCOM's website to further elaborate on this subject (please see Technical Paper: Defining and Measuring Air Connectivity).

ATRs Awarded by MAVCOM as of 31 December 2017

In 2017, ASL holders were awarded 209 additional ATRs (see Table 10), with Malindo receiving the highest number of ATRs at 81, followed by AirAsia at 77. Since MAVCOM's inception in March 2016, the two ASL holders had been awarded a total of 140 and 85 ATRs, respectively. However, in 2017, there were 52 ATRs that were revoked as ASL holders failed to utilise the rights within six months from the date of issuance. Out of the 52 ATRs that were revoked in 2017, 33 ATRs were awarded to Malindo, which represented 23.6% of total ATRs that were given to the airline between 2016 and 2017. ASL holders can also surrender the ATRs that they no longer require. In 2017, there were five ATRs that were surrendered.

Table 10: Breakdown of ATRs Awarded, 2016 – 2017

Airline	Total Domestic & International ATRs Awarded		Fail to Operate[13]		Surrendered[14]	
	2016	2017	2016	2017	2016	2017
AirAsia	8	77	7	9	-	-
AirAsia X	17	15	7	2	4	3
Firefly	-	2	-	-	-	-
MAB	14	32	-	6	-	1
Malindo	59	81	-	33	3	1
Raya Airways	1	2	-	2	1	-
TOTAL	**99**	**209**	**14**	**52**	**8**	**5**

Source: MAVCOM

The ASL holders sometimes surrender or fail to utilise their ATRs due to:

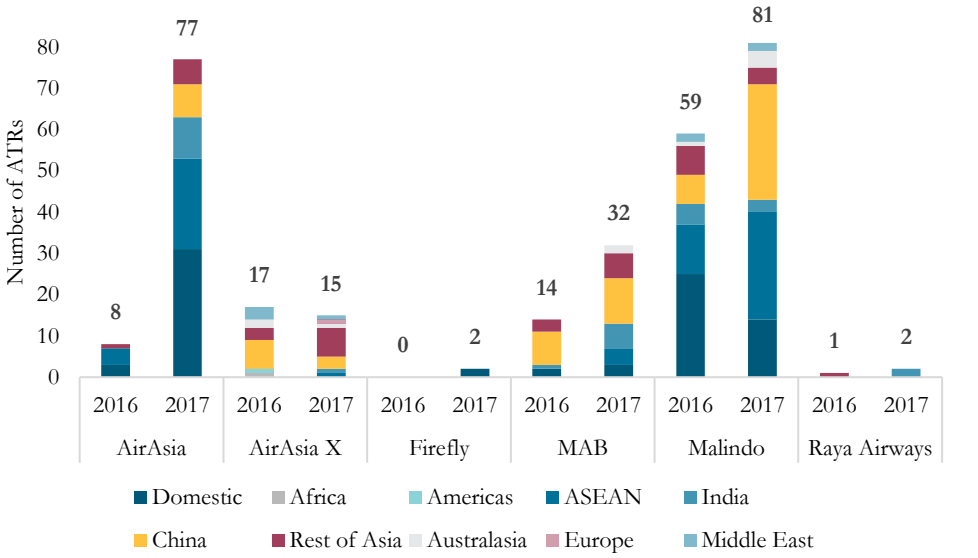
- their inability to secure the necessary approvals to operate the routes from other relevant authorities;
- the proposed route was later deemed as commercially unviable;
- the unavailability of aircraft due to changes in the aircraft delivery schedule; or
- the changes to the ASL holders' business strategy.

[13] ATRs revoked for failing to operate within six months from the ATRs' date of issuance.

[14] ATRs surrendered by the ASL holders.

In 2017, **out of the 209 ATRs awarded by MAVCOM to the ASL holders, 59.8% were for routes to ASEAN, China, and India** (see Figure 15). AirAsia and Malindo received the highest number of ATRs for these three regions representing 19.1% and 27.3% of the total ATRs that were granted in 2017. 65 ATRs that were approved for new routes and new destinations across 15 countries, with AirAsia X being the only airline that was awarded ATRs for destinations in Africa, the Americas, and Europe. The ATRs awarded to Malaysian carriers reflected their growth strategies of focusing on the ASEAN Member States, China, and India, where demand for air travel are most likely to be the highest.

Figure 15: Breakdown of ATRs Awarded by Region, 2016 – 2017



Source: MAVCOM

Section 5 provides details on the market structure of the ground handling services market.

SECTION 4: INDUSTRY PERFORMANCE

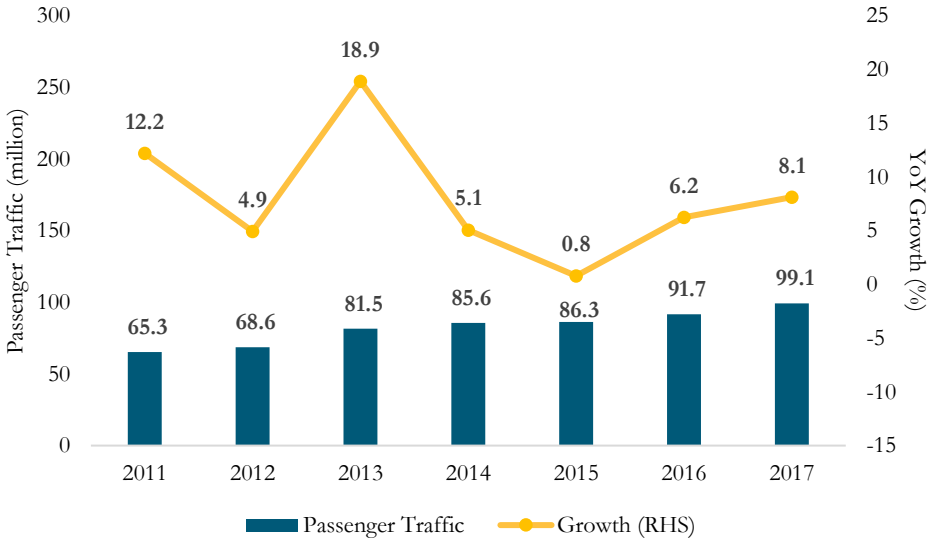
Scheduled Services

8.1% YoY Growth for Passenger Traffic in 2017

In 2017, Malaysia's passenger traffic grew by 8.1% YoY to 99.1 million (see Figure 16), which was well within MAVCOM's 2017 passenger traffic forecast of 7.8% – 8.8% YoY. During the same period, the number of seats capacity increased by 5.4% YoY. The growth of passenger traffic in 2017 was the highest recorded since 2013. Indeed, 2013 was an exceptional year when Malaysian carriers had engaged in a price war to defend their market shares upon the entry of Malindo into the market.

The 2017 passenger traffic growth was supported by the growth of international and domestic passenger traffic at 13.4% YoY and 3.3% YoY, respectively. For the international segment, traffic to the ASEAN destinations grew by 10.8% YoY, while the non-ASEAN traffic grew by 16.0% YoY.

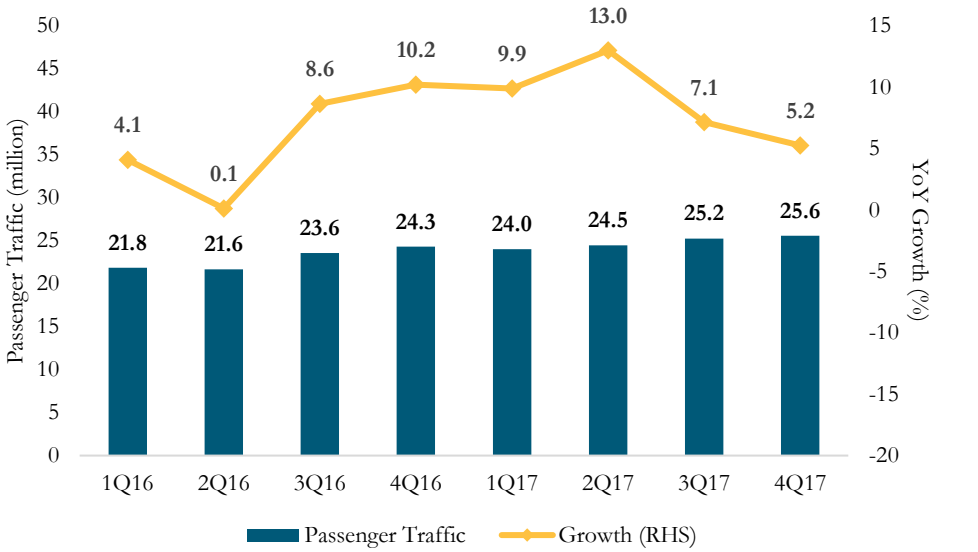
Figure 16: Annual Passenger Traffic Trend, 2011 – 2017



Source: MAVCOM Analysis, AOL Holders

In 2015, MAB had cut its capacity by 30.0%, which resulted in subdued passenger traffic growth in the first two quarters of 2016 (see Figure 17). In 2017, due to the low base effect, passenger traffic grew at rates between 7.1% YoY and 13.0% YoY during the first three quarters of 2017. Furthermore, **airlines benefited from the low jet fuel prices between 2016 and the first nine months of 2017, which allowed them to lower their average fares and stimulate demand for air travel**. This contributed to the strong growth rates—mid-single digit to double digits—between 3Q16 and 3Q17.

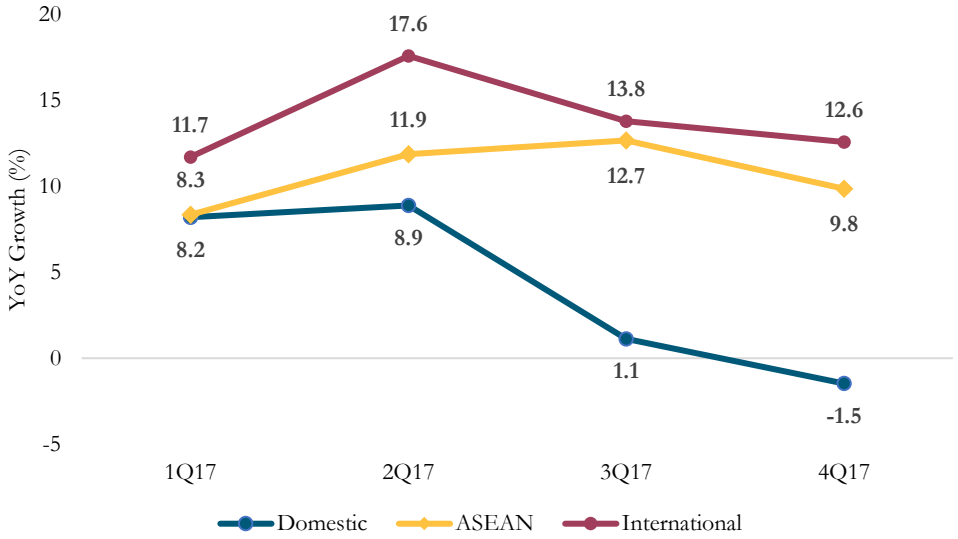
Figure 17: Quarterly Passenger Traffic Trend, 2016 – 2017



Source: MAVCOM Analysis, AOL Holders

As previously mentioned, the passenger traffic for Malaysia in 2017 was boosted by the growth of ASEAN and international traffic (see Figure 18). Between 1Q17 and 4Q17, both ASEAN and international traffic reported growth rates of between 8.3% to 12.7% YoY and 11.7% to 17.6% YoY, respectively. In contrast, **the growth of domestic traffic had decelerated in 3Q17 and declined in 4Q17** due to the reduction in domestic capacity by MAB and Firefly. During the year, the two carriers retired a number of aircraft such as, Boeing 737-400, Boeing 737-800, and ATR72-600 from their fleet. These aircraft were predominantly used for domestic destinations.

Figure 18: Quarterly Passenger Traffic Trend by Regions, 2016 – 2017



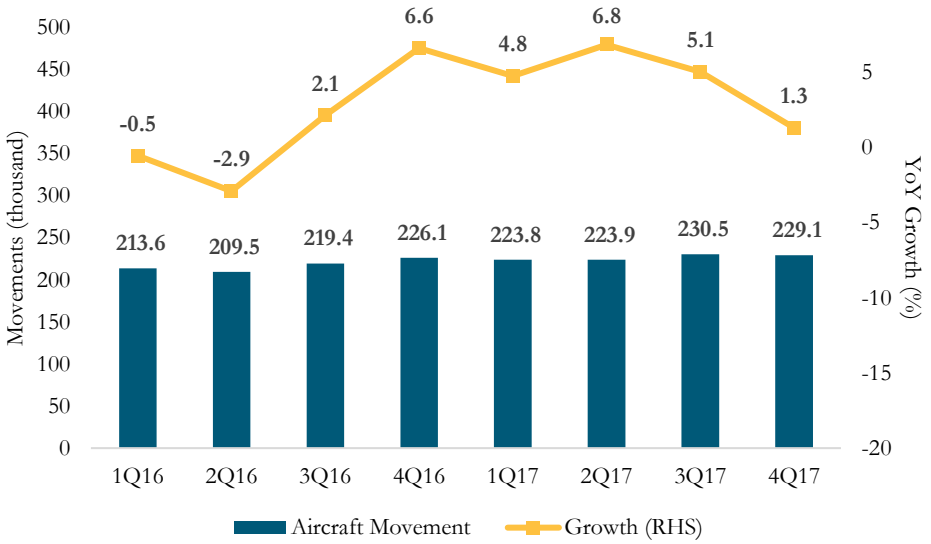
Source: MAVCOM Analysis, AOL Holders

Aircraft and Cargo Movements Continued to Grow in 2017

Similar to the passenger traffic growth, **both the aircraft and cargo movements grew by 4.5% YoY and 9.7% YoY, respectively**. Aircraft movements grew slower than passenger traffic in 2017 in view of higher wide-body aircraft movements. This is in line with the faster international passenger traffic growth that are typically carried by wide-body aircraft. Cargo movements in 2017 were supported by the strong freight growth of 10.4% YoY despite the decline in mail growth (-6.7% YoY).

On a quarterly basis, the aircraft movements reported strong YoY growth between 4Q16 and 3Q17 (see Figure 19). During this period, there was a low base effect from the cutting of capacity in 2015 by MAB as explained earlier. Growth had tapered off in 4Q17 as aircraft movements only grew by 1.3% YoY during the quarter.

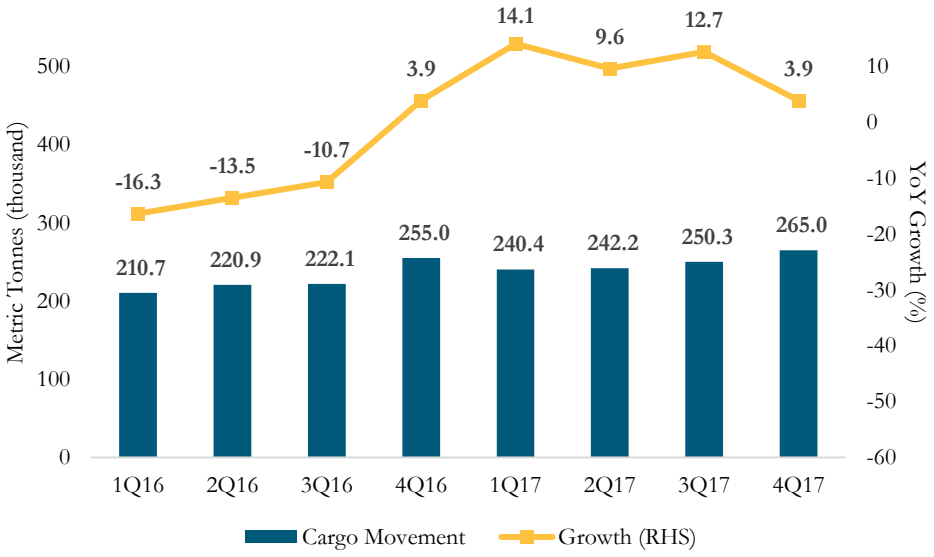
Figure 19: Malaysia's Aircraft Movements, 2016 – 2017



Source: MAVCOM Analysis, AOL Holders

In 2017, approximately 96.7% of the cargo traffic in Malaysia was contributed by freight, while the balance came from mail. There was double digit growth in cargo traffic for 1Q17 and 3Q17 (see Figure 20). The strong growth in 2017 due to the recovery from a series of negative quarterly YoY growth since 2016. The decline in cargo movements in 2016 was due to the capacity reduction by MAB Kargo. Malaysia's cargo movements were in line with the growth of imports and exports for Malaysia.

Figure 20: Malaysia's Cargo Movements, 2016 – 2017

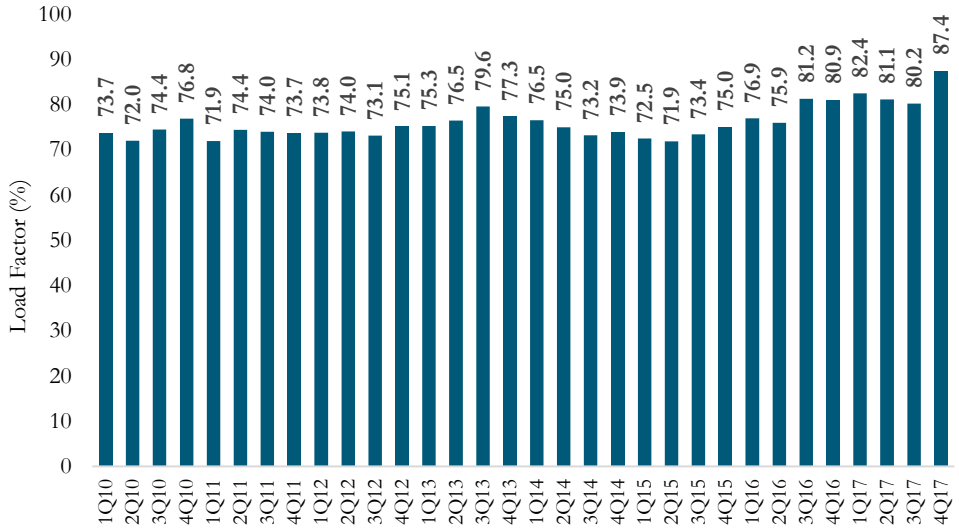


Source: MAVCOM Analysis, AOL Holders

Improved Load Factors on the Back of Lower Average Fares

2017 showed improvement in the load factors for Malaysian carriers as they reported an average load factor of 82.8% (2016: 78.8%). It was also observed that, on average, the load factors from 2016 onwards were higher than the load factors reported pre-2016. As an illustration, the load factors between 2010 and 2015 ranged from 72.0% to 79.6%, (2016 – 2017: 75.9% – 87.4%) (see Figure 21). The improvement in load factors over the past two years reflected the matching of capacity and passenger demand as some airlines rationalised their capacities, as well as, stronger air travel demand.

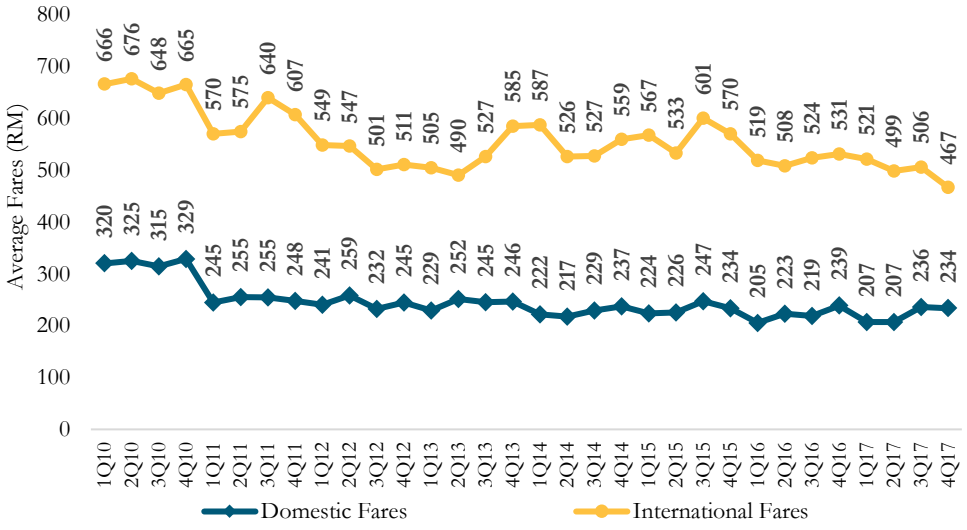
Figure 21: Malaysian Carriers' Load Factors Trend, 2010 – 2017



Source: MAVCOM Analysis, AirportIS

Between 2010 and 2017, average fares for both domestic and international routes decreased significantly. The domestic and international average fares in 2017 were RM221 and RM498, respectively (2010: Domestic – RM322, International – RM664). This could be due to the increased competition (entry of Malindo in 2013) and lower jet fuel prices from 2015 onwards. In 2017, the international average fares continued to decline from RM531 in 4Q16 to RM467 in 4Q17 (see Figure 21). However, the domestic average fares in 2017 remained at similar levels with the year 2016.

Figure 22: Malaysian Carriers' Average Fares Trend, 2010 – 2017

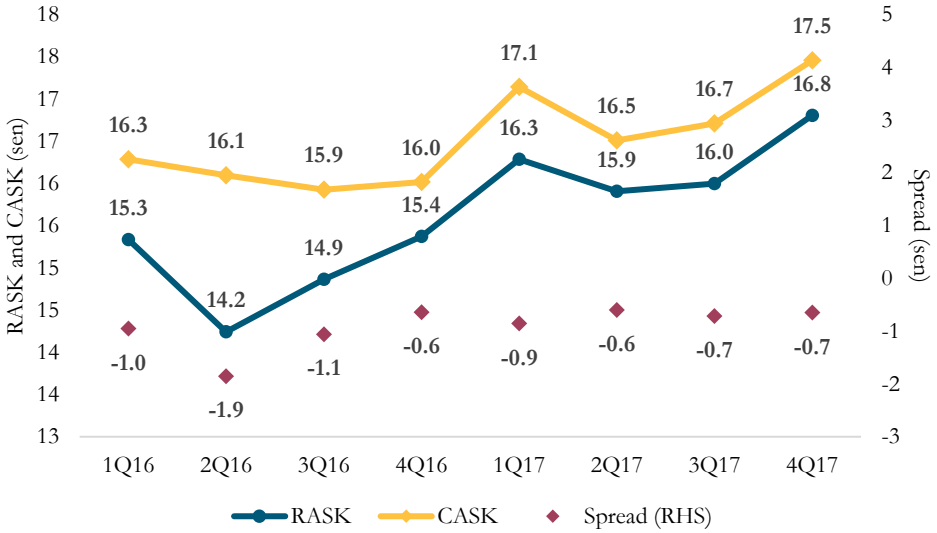


Source: MAVCOM Analysis, AirportIS

The Spread between CASK and RASK Narrowed in 2017

On average, the RASK for Malaysian carriers were 7.6% higher YoY in 2017 (2016: 15.3 sen; 2017: 16.5 sen). The 2017 RASK ranged between 15.9 sen and 16.8 sen (2016: 14.2 sen – 15.4 sen) (see Figure 23). The increase in RASK was achieved by higher load factors and outpaced the increase in CASK (+3.1% YoY). This resulted in the reduction of the RASK and CASK spread in 2017 by 42.5% YoY. **Indeed, the Malaysian carriers benefited by the continued strong demand for air travel on the back of slow expansion in capacity in 2017**.

Figure 23: Malaysian Carriers' RASK and CASK Trends, 2016 – 2017



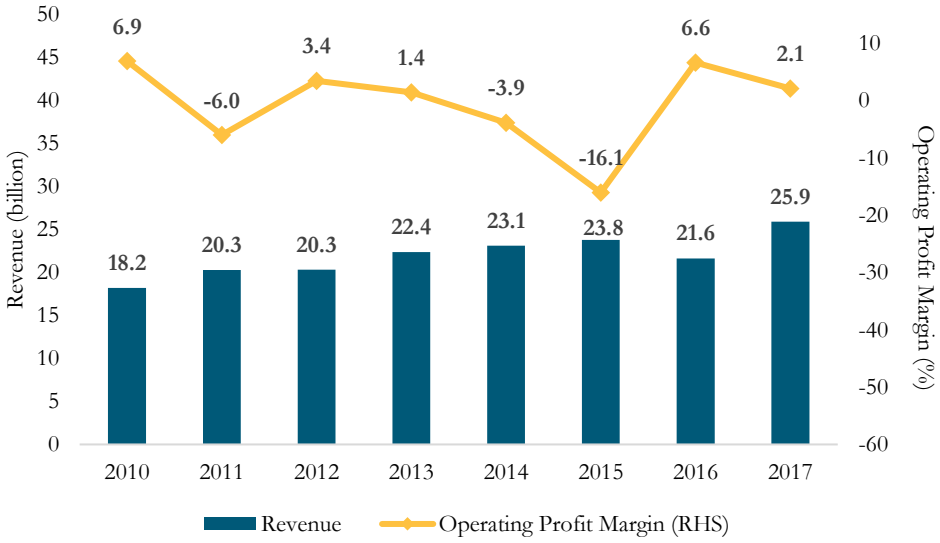
Source: MAVCOM Analysis, ASL Holders

Malaysian Carriers' Revenue was Boosted by Ancillary Revenue

The Malaysian carriers' revenue grew 19.8% YoY to RM25.9 billion in 2017 (2016: RM21.6 billion) due to overall 8.1% YoY growth in Malaysia's passenger traffic reported over the same period (see Figure 24). Their revenue was supported by ancillary income as averages fares (base fares) were falling (-3.8% YoY). Therefore, **ancillary revenue played an important role to supplement the airlines' revenue, especially in a low fare environment**.

In terms of profitability, the operating profit margin for Malaysian carriers declined from 6.6% in 2016 to 2.1% in 2017 as jet fuel prices increased from an average of USD43/bbl to USD66/bbl over the period. At the same time, the RM depreciated by 4.9% YoY over the same period which resulted in the jet fuel prices to increase by 52.7% YoY in RM terms.

Figure 24: Revenue and Operating Profit Margin of Malaysian Carriers, 2016 – 2017



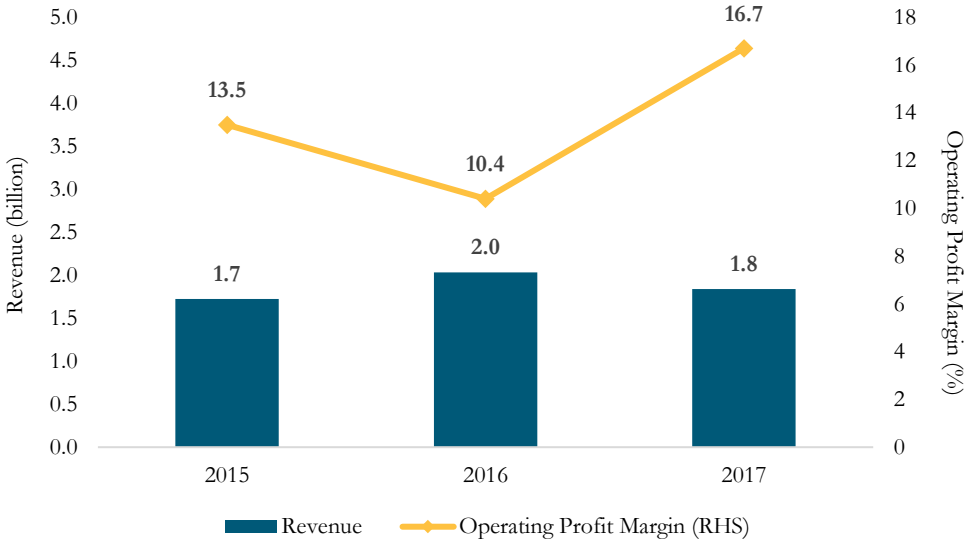
Source: MAVCOM Analysis, ASL Holders

Non-Scheduled Services

Smaller Revenue, but Significantly Higher Operating Profit Margin in 2017

The non-scheduled services segment's operating profit margin in 2017 improved to 16.7% (2016: 10.4%) (see Figure 25). This was mainly contributed by a 47.1% YoY increase in profit via an improvement in the oil and gas sub-segment (see Table 11) brought by compensation payments resulting from the termination of contracts by clients of two ASP holders.

Figure 25: Revenue and Operating Profit Margin of ASP Holders, 2016 – 2017



Source: MAVCOM Analysis, ASL Holders

Table 11: Revenue and Operating Profit Margins of ASPs' Business Segments, 2015 – 2017

Business Segment	Revenue (RM million)			Operating Profit Margin (%)		
	2015	2016	2017	2015	2016	2017
Aerial work - cloud seedling, mapping	79.0	94.8	71.3	-2.5	22.0	5.4
Oil & gas	1,405.6	1,118.8	1,008.5	16.9	14.2	28.4
On-demand cargo	93.8	91.2	100.7	-6.3	-5.5	-6.0
On-demand charter	142.2	689.7	650.1	3.5	5.4	5.6
Pleasure flying	1.5	1.2	5.3	-41.2	-91.8	-78.5
Surveying, observation & patrol	0.7	7.0	2.2	14.0	29.4	-422.0

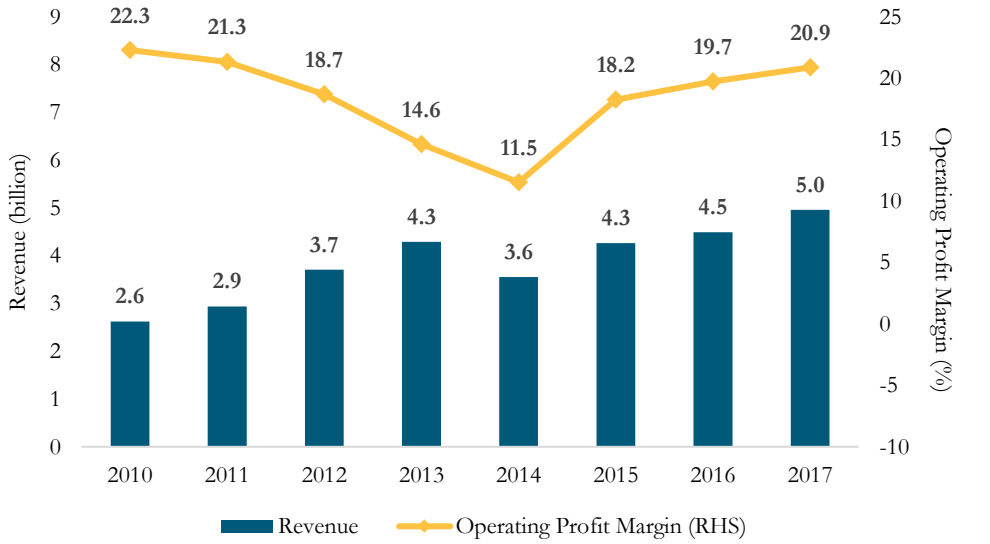
Source: MAVCOM

Aerodrome Operations

Revenue Supported by Robust Passenger Traffic Growth

More than 90.0% of the total revenue and operating profit for Malaysian airport operators were made by MAHB. Therefore, the segment's financial performance would be influenced by MAHB's financial performance. **Revenue for the Malaysian airport operators grew by 10.4% YoY supported by 8.1% YoY passenger traffic growth in 2017** (see Figure 25). As mentioned earlier, both the ASEAN and international passenger traffic grew strongly in 2017 and contributed significantly to the airport operators' revenue.

Figure 26: Revenue and Operating Profit Margin of AOL Holders, 2016 – 2017

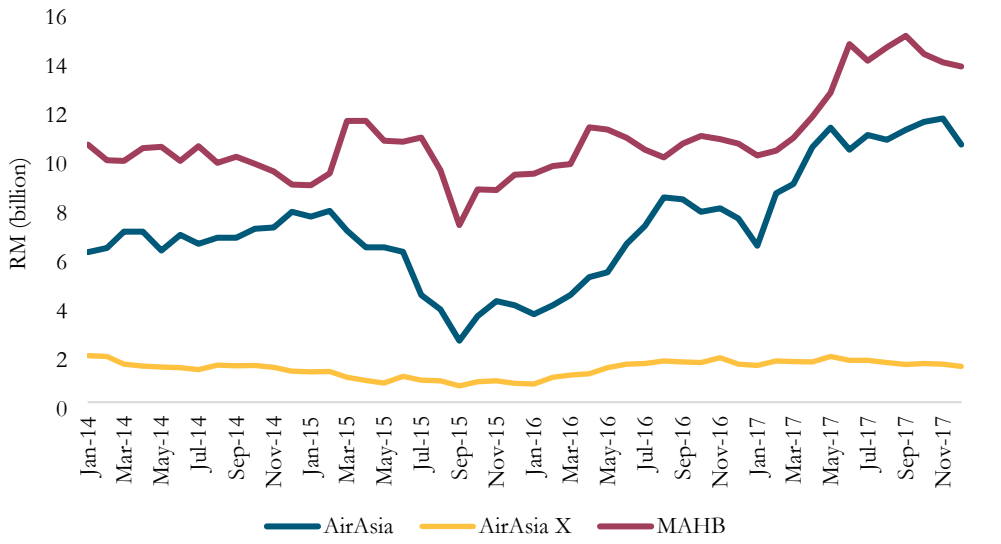


Source: MAVCOM Analysis, AOL Holders

Market Performance of Listed License Holders

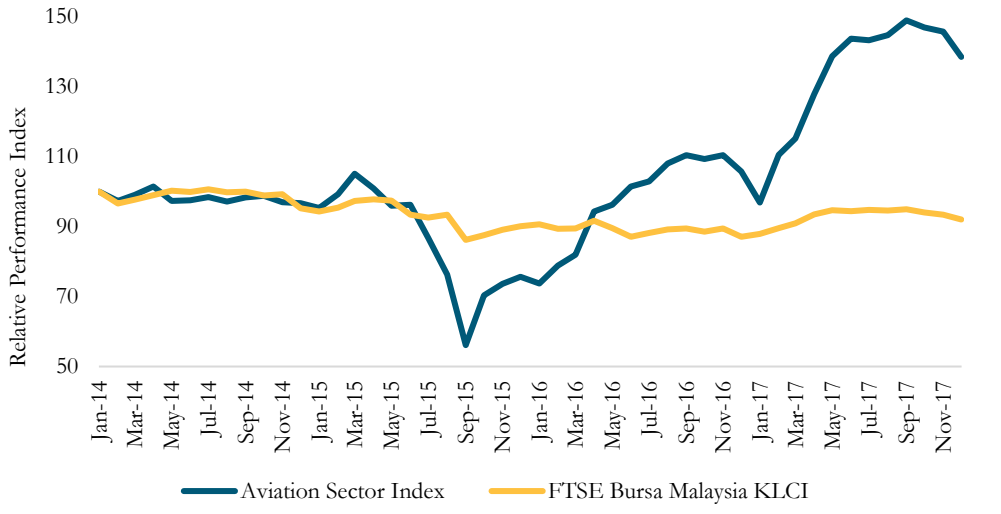
At the beginning of 2014, the cumulative market capitalisation of AirAsia, AirAsia X, and MAHB was RM18.5 billion. By end-2017, the three companies recorded total market capitalisation of RM25.6 billion (see Figure 27). AirAsia X was the only company that showed lower market capitalisation as at end-2017 (RM1.4 billion; start-2014: RM1.9 billion). Over the same period, the FTSE Bursa Malaysia KLCI fell from 1,866.96 points to 1,717.86 points. And so, in terms of relative performance, **the listed aviation companies had outperformed the market by 50.5% between 2014 and 2017** (see Figure 28).

Figure 27: Monthly Market Capitalisation of AirAsia, AirAsia X, and MAHB, 2014 – 2017



Source: Thomson Reuters

Figure 28: Relative Performance of Aviation Sector Against FTSE Bursa Malaysia KLCI, 2014 – 2017



Source: MAVCOM Analysis, Thomson Reuters

SECTION 5: DOMESTIC GROUND HANDLING SERVICES SEGMENT

Types of Ground Handling Services

As per the Second Schedule of the Act 771, **there are 12 types of ground handling services** that fall under MAVCOM's jurisdiction. The types of services that are currently defined by the Act 771 are listed in Table 12.

Table 12: Types of Ground Handling Services

No.	Ground Handling Service
1	Ground administration and supervision
2	Passenger handling
3	Freight and mail handling (documentations handling)
4	Aircraft services
5	Aircraft maintenance
6	Flight operations and crew administration
7	Surface transport
8	Catering services
9	Baggage handling
10	Freight and mail handling (physical handling)
11	Ramp handling
12	Fuel and oil handling

Source: MAVCOM

For analytical purposes, MAVCOM categorises ground handling services into one of the three sub-segments as follows (see Table 13):

Table 13: Three Sub-segments of Ground Handling Services

No.	Sub-segment	Ground Handling Service
1	Catering	Catering services
2	General Ground Handling	Ground administration and supervision Passenger handling Freight and mail handling (documentations handling) Aircraft services Aircraft maintenance Flight operations and crew administration Surface transport Baggage handling Freight and mail handling (physical handling) Ramp handling
3	Refuelling	Fuel and oil handling

Source: MAVCOM

A ground handler may provide multiple services within the list shown in Table 12. Under these circumstances, GHL holders are categorised according to the sub-segment that generates the most revenue for them. **Prior to MAVCOM's establishment, there were 65 ground handlers operating in Malaysian airports. MAVCOM's rationalisation of the ground handling services segment had resulted in the issuance of GHLs to just 30 companies as of 31 December 2017**. The breakdown of GHL holders according to the three sub-segments are as follows (see Table 14).

Table 14: Number of Companies by Sub-segment, 2017

Sub-segment	Number of Companies
Catering	3
General Ground Handling	19
Refuelling	8
Total	**30**

Source: MAVCOM

A ground handling business in Malaysia has traditionally been set up as part of an airline operating company. For example, AeroDarat and GTR were the ground handling divisions of MAB and AirAsia, respectively. There are also ground handling companies that were set up specifically to serve the general aviation market due to the different requirements in terms of products and service levels. For instance, general aviation typically uses single-engine aircraft and has low movement volumes (relative to commercial airlines).

Among the 30 GHL holders, there are also eight companies (see Table 15) whose ground handling services do not make up the biggest portion of their revenue. As an example, Raya Airways—that was issued a GHL—is an ASL holder that operates scheduled cargo services. In addition, PetDagang is an example of a GHL holder that operates a petroleum product retail business, which is not within the aviation services market.

Table 15: Number of Companies by Types of Business

No.	Company	Main Business Activity	Other Licence/Permit Issued by MAVCOM
1	Malindo	Scheduled air transport service	ASL
2	Petron	Petroleum products retailer	-
3	PetDagang	Petroleum products retailer	-
4	Raya Airways	Scheduled cargo service	ASL
5	Sabah Air	Non-scheduled air transport service	ASP
6	Senai Airport	Airport operator	AOL
7	Shell Malaysia	Petroleum products retailer	-
8	Shell Timur	Petroleum products retailer	-

Source: MAVCOM

Market Structure of the Ground Handling Services Sub-segment

Ground Handling Services Sub-Segment is Highly Concentrated

Generally, the ground handling services sub-segment is highly concentrated. However, concentration levels may depend on the types of business within this market. Typically, the biggest two companies within each business segment hold more than 80.0% of the segment. Among the three sub-segments, general ground handling is the most fragmented market, followed by catering and refuelling. There are currently 15 GHL holders that operate general ground handling businesses with an HHI of 0.3764 (see Table 16). The other two sub-segments have higher concentration ratios because there is a small number of players operating catering and refuelling businesses. The reason for this is the two sub-segments require on-site facilities and equipment that may be constrained by the airports' land space such as kitchens (for caterers) and fuel farms (for refuelers).

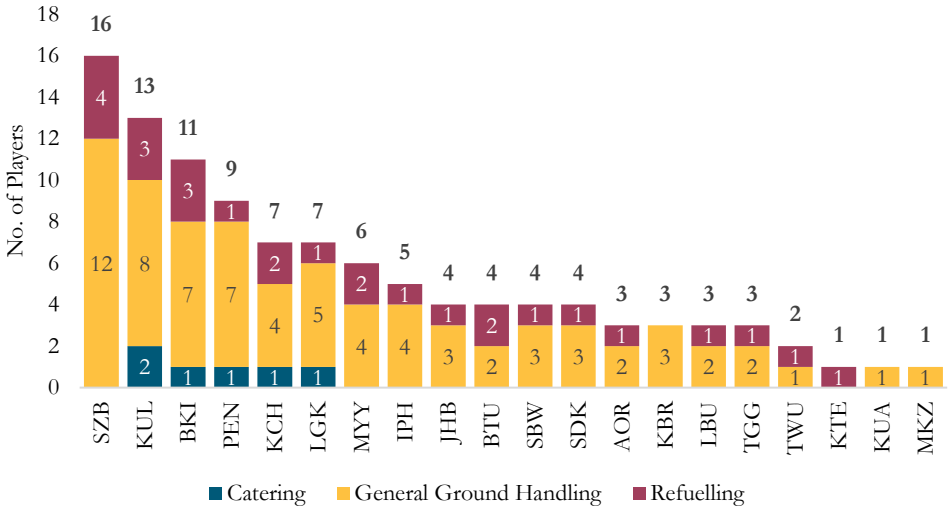
Table 16: Market Structure of GHL Market, 2016

Type of Business	Number of Companies	CR_2	HHI
Catering	3	0.9914	0.6526
General Ground Handling	15	0.8436	0.3764
Refuelling	4	0.9557	0.6752
TOTAL	**22**		

Source: MAVCOM

The GHL holders neither operate at just one airport nor operate at all airports in Malaysia. Therefore, market concentration for the ground handling services segment would be more accurate if it is measured at each individual airport. **The number of ground handling services operators at airports in Malaysia vary from just a single player to 16 players in an airport** (see Figure 29[15,16]).

Figure 29: Number of GHL Holders at Airports in Malaysia, 2017



Source: MAVCOM

The different number of players at different airports reflected the level of activities at each individual airport such as KUA and MKZ. These airports had only one GHL holder in operation as of 2016. In 2016, aircraft movements in KUL was 356,614 movements (there are 13 GHL holders in KUL), whereas for KUA, it was 3,493 movements.

[15] The numbers in the chart include the GHL holders that are also ASL, ASP, or AOL holders, and petroleum products retailers.

[16] The chart only shows airports served by the GHL holders. Ground handling services at other airports are fulfilled via self-handling by the airlines themselves.

High Number of Ground Handling Companies in Malaysia

Malaysia has many ground handling companies considering the size of its aviation services market. For example, Australia, Spain, and the UK have fewer ground handling companies (see Table 17) despite reporting higher aircraft movements and passenger traffic in 2017 than Malaysia. Even the US has only 45 ground handling companies despite recording 15.6 million aircraft movements in 2016 (Malaysia: 0.9 million in 2017).

Table 17: Number of Ground Handling Companies in Selected Countries, 2017

Country	Passenger Traffic (million)	Aircraft Movement (million)	Number of Ground Handling Companies
US[17]	944.3	15.6	45
Malaysia	**99.1**	**0.9**	**30**
UK	284.6	2.4	19
Spain	249.2	2.2	11
Australia	156.4	1.5	9

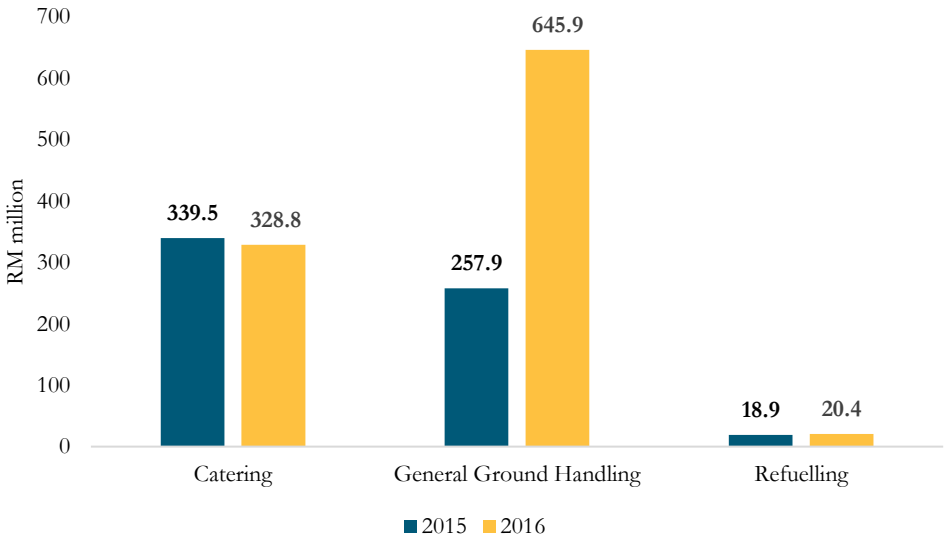
Source: MAVCOM, AENA, AirlineUpdate.com, Australia BITRE, UK CAA, US FAA

Profitability of Ground Handling Service Providers

General Ground Handling was the Biggest Sub-segment in Terms of Revenue in 2016

Based on the latest available 2016 audited accounts, revenue for the general ground handlers increased to RM645.9 million (2015: RM257.9 million). This was due to the revenue of two GHL holders were only accounted for in 2016 as they existed as departments of two ASL holders in the previous year (see Figure 30). The revenue for other sub-segments such as catering and refuelling in 2016 remained largely similar to the level reported in the previous year.

Figure 30: Revenue for Ground Handling Sub-Segment by Business, 2016

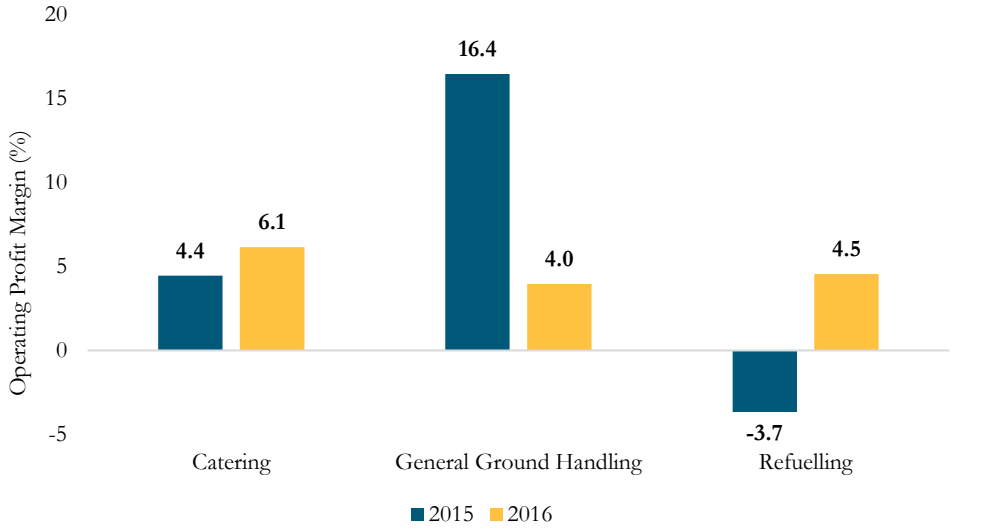


Source: MAVCOM, GHL Holders

[17] Latest available data from the US FAA in 2016.

The ground handling segment's operating profit margins ranged between -3.7% and 16.4% in 2016 (see Figure 31). **Out of the 22 companies, only 13 GHL holders were profitable at the operating level** – two from refuelling, three from catering, and nine from general ground handling sub-segments. Catering was the only sub-segment with all its players reporting profits. Between 2015 and 2016, only the general ground handling sub-segment reported smaller operating profit margin at 4.0% in 2016 (2015: 16.4%) due to the losses reported by new general ground handling companies which commenced operations in 2016.

Figure 31: Operating Profit Margin for Ground Handling Sub-Segments, 2015 – 2016



Source: MAVCOM, GHL Holders

GHL Holders' Profitability at Par with Selected Global Ground Handling Companies

While the Malaysian GHL holders reported low operating margins, these numbers are consistent with those reported by selected global ground handling companies (see Table 18). Indeed, the global ground handling companies reported single-digit operating profit margins. Dnata is the only ground handling company that reported double-digit operating profit margin of 10.0% This illustrates the highly competitive environment of the ground handling services market.

Table 18: Revenue and Operating Profit Margin of Selected Ground Handling Companies, 2017

Ground Handling Company	Ground Handling Sub-Segment	Revenue in Local Currency (billion)	Operating Profit Margin (%)
LSG Group	Catering	EUR3.2	1.4
GateGroup	Catering[18]	CHF4.6	3.7
Menzies	General Ground Handling[19]	GBP2.5	3.2
Dnata	General Ground Handling	AED12.2	10.0
BP Global	Refuelling[20]	USD244.6	3.9

Source: BP Global, Dnata, GateGroup, LSG Group, Menzies

[18] Aviation-related revenue for the GateGroup made up 61.3% of total revenue, which includes both in-flight catering and in-flight retailing business.

[19] Aviation-related revenue for Menzies made up 52.9% of total revenue. The company operates mainly in North America and Europe.

[20] Aviation-related revenue for the BP Group made up 89.8% of total revenue. The company supplies more than 420,000bbl/day of jet fuels in Australia, Europe, Mexico, New Zealand, and the US.

APPENDIX A: DATA TABLES

All the tables in Appendix A correspond to all the figures in the report.

Table A1: Malaysia's GDP Growth, 2010 – 2018F

Year	YoY Growth (%)
2010	10.6
2011	5.3
2012	5.5
2013	4.7
2014	6.0
2015	5.0
2016	4.2
2017	5.9
2018F	5.5 – 6.0

Source: BNM, Thomson Reuters

Table A2: Seats Capacity Growth by Malaysian Carriers, 2010 – 2018F

Year	Seats (million)	YoY Growth (%)
2011	51.6	11.4
2012	53.0	2.7
2013	61.0	15.1
2014	67.5	10.7
2015	70.2	3.9
2016	69.3	-1.3
2017	73.3	5.8
2018F	74.9	2.2

Source: AirportIS

Table A3: Malaysian Carriers' Fleet Size, 2010 – 2018F

Year	Wide Body Aircraft	Narrow Body Aircraft	Others
2010	39	106	32
2011	44	132	37
2012	53	141	35
2013	64	164	44
2014	65	165	52
2015	61	160	55
2016	56	160	62
2017	49	161	42
2018F	52	171	38

Source: ASL Holders

Table A4: Passenger Traffic, 2010 – 2018F

Year	Passenger Traffic (million)	YoY Growth (%)
2011	65.3	12.2
2012	68.6	4.9
2013	81.5	18.9
2014	85.6	5.1
2015	86.3	0.8
2016	91.7	6.2
2017	99.1	8.1
2018F	105.6 – 106.1	6.5 – 7.0

Source: MAVCOM Estimates, AOL Holders

Table A5: Quarterly Malaysia's and Global GDP Growth, 2016 – 2017

Quarter	Malaysia's GDP YoY Growth (%)	Global GDP YoY Growth (%)
1Q16	4.1	2.3
2Q16	4.0	2.3
3Q16	4.3	2.3
4Q16	4.5	2.6
1Q17	5.6	2.6
2Q17	5.8	2.9
3Q17	6.2	3.0
4Q17	5.9	3.2

Source: DOS, Thomson Reuters

Table A6: Quarterly Malaysia's Tourist Arrivals, 2016 – 2017

Quarter	Total Tourist (million)	YoY Growth (%)
1Q16	6.7	2.8
2Q16	6.4	4.6
3Q16	6.7	3.3
4Q16	7.0	5.3
1Q17	6.6	-0.5
2Q17	6.3	-0.7
3Q17	6.5	-3.2
4Q17	6.5	-7.3

Source: DOS, MOTAC, Thomson Reuters

Table A7: Trade Value Quarterly YoY Growth Trends, 2016 – 2017

Quarter	YoY Growth (%)					
	Exports Malaysia	Imports Malaysia	Global Exports	Global Imports	ASEAN Exports	ASEAN Imports
1Q16	1.0	2.3	-8.4	-7.6	2.8	3.0
2Q16	2.0	2.4	-3.9	-2.7	2.9	2.9
3Q16	-0.6	-1.8	-2.5	-1.5	4.1	4.5
4Q16	2.2	1.6	1.5	2.0	5.3	6.0
1Q17	9.8	12.9	10.9	9.7	6.5	7.5
2Q17	9.6	10.7	7.7	6.6	7.6	8.9
3Q17	11.8	13.4	11.1	9.6	7.1	8.1
4Q17	12.4	14.4	13.2	13.7	6.7	7.9

Source: DOS, Thomson Reuters

Table A8: Oil, Jet Fuel, and Exchange Rate Trends, 2016 – 2017

Quarter	Crude Oil (USD/bbl)	Jet Fuel (USD/bbl)	RM/USD
1Q16	37.1	43.5	4.3
2Q16	36.8	46.0	3.9
3Q16	49.0	57.4	4.0
4Q16	48.8	59.1	4.1
1Q17	53.8	66.3	4.5
2Q17	50.3	62.7	4.4
3Q17	46.0	59.2	4.3
4Q17	50.6	69.3	4.2

Source: DOS, Thomson Reuters

Table A9: Percentage of Airlines' Market Share for Domestic and International Routes by Passengers and Revenue, 2017

Airline	Domestic		International	
	Passengers (%)	Revenue (%)	Passengers (%)	Revenue (%)
AirAsia	56.3	48.9	27.6	13.9
AirAsia X	-	-	11.4	14.1
Firefly	5.6	3.1	0.8	0.3
Malindo	12.4	9.5	8.1	6.2
MAB	25.7	38.6	16.7	24.9
Others	-	-	35.4	40.6

Source: MAVCOM Estimates, AirportIS

Table A10: Domestic Routes and Concentration Levels, 2017

Route	HHI	Load Factor (%)
BKI-JHB	1.0000	88.7
BKI-KBR	1.0000	88.7
JHB-KCH	1.0000	88.7
JHB-MYY	1.0000	88.7
JHB-PEN	1.0000	88.8
JHB-SBW	1.0000	88.7
KBR-KCH	1.0000	88.7
KBR-PEN	1.0000	77.7
KTE-SZB	1.0000	78.0
KUA-KUL	1.0000	64.8
MKZ-PEN	1.0000	78.0
JHB-TGG	1.0000	88.6
JHB-TWU	1.0000	88.9
KCH-LGK	1.0000	87.9
IPH-JHB	0.9999	77.9
JHB-LGK	0.9621	88.7
BKI-PEN	0.9020	87.9
KCH-PEN	0.8892	87.3
LGK-PEN	0.6226	86.9
BKI-KCH	0.6218	84.8
KUL-LBU	0.6046	75.6
AOR-KUL	0.5384	73.7
KUL-SBW	0.5335	82.2
KUL-SDK	0.5313	86.3
LGK-SZB	0.5175	77.9
PEN-SZB	0.5125	77.9
JHB-SZB	0.5124	77.9
KUL-TGG	0.5119	78.9
KUL-TWU	0.5104	84.5
SZB-TGG	0.5064	77.8
AOR-SZB	0.5010	77.9
BTU-KUL	0.5008	79.4
KBR-SZB	0.5004	77.9
KUL-MYY	0.4537	79.8
JHB-KUL	0.4370	80.0
KCH-KUL	0.3855	80.1
KUL-PEN	0.3825	83.7
KBR-KUL	0.3795	79.9
BKI-KUL	0.3706	81.7
KUL-LGK	0.3697	80.9

Source: MAVCOM Analysis, AirportIS
Note: Domestic routes exclude the RAS routes in Sabah and Sarawak

Table A11: RASK for Domestic Routes, 2017

Route	RASK (sen)
KTE-SZB	0.68
KBR-PEN	0.56
LGK-PEN	0.55
KUA-KUL	0.37
PEN-SZB	0.35
JHB-SZB	0.34
SZB-TGG	0.34
KBR-SZB	0.31
IPH-JHB	0.30
AOR-SZB	0.30
MKZ-PEN	0.29
LGK-SZB	0.25
JHB-KUL	0.24
KUL-PEN	0.23
JHB-TGG	0.23
KBR-KUL	0.21
JHB-PEN	0.21
KUL-TGG	0.21
BKI-KCH	0.20
JHB-LGK	0.19
AOR-KUL	0.19
JHB-KCH	0.18
KCH-KUL	0.18
JHB-SBW	0.17
KUL-LGK	0.17
JHB-MYY	0.17
KCH-PEN	0.16
KBR-KCH	0.15
BTU-KUL	0.15
BKI-KBR	0.15
BKI-JHB	0.15
JHB-TWU	0.14
BKI-KUL	0.14
KCH-LGK	0.13
KUL-MYY	0.13
KUL-SBW	0.13
KUL-LBU	0.13
KUL-TWU	0.13
BKI-PEN	0.12
KUL-SDK	0.12

Source: MAVCOM Analysis, AirportIS
Note: Domestic routes exclude the RAS routes in Sabah and Sarawak

Table A12: Number of Destinations Served by Airports, 2017

Airport	Destinations Served
KUL	136
BKI	33
PEN	25
MYY	19
JHB	18
KCH	15
SZB	10
LGK	8
BTU	7
SBW	7
MUR	6
KBR	5
MKM	5
TWU	5
LWY	4
SDK	4
BBN	3
BKM	3
LBU	3
LMN	3
MZV	3
TGG	3
AOR	2
IPH	2
KUA	2
KUD	2
LBP	2
LGL	2
LKH	2
MKZ	2
ODN	2
TGC	2
KTE	1
LDU	1

Source: MAVCOM Analysis, AirportIS
Note: The table excludes unutilised STOLports

Table A13: Traffic Breakdown by Regions of Travel, 2017

Airport	Domestic	ASEAN	International
KUL	26.9	35.1	37.9
BKI	67.3	5.8	26.9
PEN	56.7	36.1	7.1
JHB	86.0	9.2	4.8
LGK	88.9	7.5	3.6
KCH	92.2	7.6	0.1
SZB	90.6	9.3	0.1
LBU	99.7	-	0.3
MKZ	42.0	57.7	0.3
BBN	100.0	-	-
LWY	100.0	-	-
TGG	100.0	-	-
KUA	83.4	16.6	-
MUR	100.0	-	-
KUD	100.0	-	-
KBR	100.0	-	-
BKM	100.0	-	-
IPH	14.3	85.7	-
LBP	100.0	-	-
KTE	100.0	-	-
MKM	100.0	-	-
MZV	100.0	-	-
MYY	96.4	3.6	-
ODN	100.0	-	-
SBW	100.0	-	-
BTU	99.9	0.1	-
LDU	100.0	-	-
SDK	100.0	-	-
AOR	100.0	-	-
TGC	100.0	-	-
LGL	100.0	-	-
TWU	98.7	1.3	-
LKH	100.0	-	-
LMN	100.0	-	-

Source: MAVCOM Analysis, AirportIS
Note: The table excludes unutilised STOLports

Table A14: Traffic Breakdown by O&D and Hub Traffic, 2017

Airport	O&D Traffic (%)	Hub Traffic (%)
KUL	66.9	33.1
BKI	92.7	7.3
PEN	95.9	4.1
JHB	95.0	5.0
LGK	98.3	1.7
KCH	94.0	6.0
SZB	95.2	4.8
LBU	99.0	1.0
MKZ	100.0	-
BBN	99.1	0.9
LWY	99.5	0.5
TGG	99.9	0.1
KUA	100.0	-
MUR	88.5	11.5
KUD	100.0	-
KBR	99.7	0.3
BKM	100.0	-
IPH	100.0	-
LBP	100.0	-
KTE	100.0	-
MKM	98.5	1.5
MZV	98.4	1.6
MYY	95.2	4.8
ODN	100.0	-
SBW	97.9	2.1
BTU	98.0	2.0
LDU	100.0	-
SDK	99.4	0.6
AOR	100.0	-
TGC	92.7	7.3
LGL	100.0	-
TWU	98.6	1.4
LKH	100.0	-
LMN	99.5	0.5

Source: MAVCOM Analysis, AirportIS
Note: The chart excludes unutilised STOLports

Table A15: Breakdown of ATRs Awarded by Region, 2016 – 2017

Region	AirAsia		AirAsia X		Firefly		MAB		Malindo		Raya Airways		Total	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Domestic	3	31	-	-	-	2	2	3	25	14	-	-	30	50
Africa	-	-	1	-	-	-	-	-	-	-	-	-	1	-
Americas	-	-	1	-	-	-	-	-	-	-	-	-	1	-
ASEAN	4	22	-	1	-	-	-	4	12	26	-	-	16	53
India	-	10	-	1	-	-	1	6	5	3	-	2	6	22
China	-	8	7	3	-	-	8	11	7	28	-	-	22	50
Rest of Asia	1	6	3	7	-	-	3	6	7	4	1	-	15	23
Australasia	-	-	2	1	-	-	-	2	1	4	-	-	3	7
Europe	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Middle East	-	-	3	1	-	-	-	-	2	2	-	-	5	3
Total	**8**	**77**	**17**	**15**	**-**	**2**	**14**	**32**	**59**	**81**	**1**	**2**	**99**	**209**

Source: MAVCOM

Table A16: Annual Passenger Traffic Trend, 2011 – 2017

Year	Passenger Traffic (million)	YoY Growth (%)
2011	65.3	12.2
2012	68.6	4.9
2013	81.5	18.9
2014	85.6	5.1
2015	86.3	0.8
2016	91.7	6.2
2017	99.1	8.1

Source: MAVCOM Analysis, AOL Holders

Table A17: Quarterly Passenger Traffic Trend, 2016 – 2017

Quarter	Passenger Traffic (million)	YoY Growth (%)
1Q16	21.8	4.1
2Q16	21.6	0.1
3Q16	23.6	8.6
4Q16	24.3	10.2
1Q17	24.0	9.9
2Q17	24.5	13.0
3Q17	25.2	7.1
4Q17	25.5	5.2

Source: MAVCOM Analysis, AOL Holders

Table A18: Quarterly Passenger Traffic Trend by Regions, 2016 – 2017

Quarter	YoY Growth (%)		
	Domestic	ASEAN	International
1Q17	8.2	8.3	11.7
2Q17	8.9	11.9	17.6
3Q17	1.1	12.7	13.8
4Q17	-1.5	9.8	12.6

Source: MAVCOM Analysis, AOL Holders

Table A19: Malaysia's Aircraft Movements, 2016 – 2017

Quarter	Aircraft Movement (thousand)	YoY Growth (%)
1Q16	213.6	-0.5
2Q16	209.5	-2.9
3Q16	219.4	2.1
4Q16	226.1	6.6
1Q17	223.8	4.8
2Q17	223.9	6.8
3Q17	230.5	5.1
4Q17	229.1	1.3

Source: MAVCOM Analysis, AOL Holders

Table A20: Malaysia's Cargo Movements, 2016 – 2017

Quarter	Cargo Movement (thousand metric tonnes)	YoY Growth (%)
1Q16	210.7	-16.3
2Q16	220.9	-13.5
3Q16	222.1	-10.7
4Q16	255.0	3.9
1Q17	240.4	14.1
2Q17	242.2	9.6
3Q17	250.3	12.7
4Q17	265.0	3.9

Source: MAVCOM Analysis, AOL Holders

Table A21: Malaysian Carriers' Load Factors Trend, 2010 – 2017

Quarter	Load Factor (%)
1Q10	73.7
2Q10	72.0
3Q10	74.4
4Q10	76.8
1Q11	71.9
2Q11	74.4
3Q11	74.0
4Q11	73.7
1Q12	73.8
2Q12	74.1
3Q12	73.1
4Q12	75.1
1Q13	75.3
2Q13	76.5
3Q13	79.6
4Q13	77.3
1Q14	76.5
2Q14	75.0
3Q14	73.2
4Q14	73.9
1Q15	72.5
2Q15	71.9
3Q15	73.4
4Q15	75.0
1Q16	76.9
2Q16	75.9
3Q16	81.2
4Q16	80.9
1Q17	82.4
2Q17	81.1
3Q17	80.2
4Q17	87.4

Source: MAVCOM Analysis, AirportIS

Table A22: Malaysian Carriers' Average Fares Trend, 2010 – 2017

Quarter	Domestic (RM)	International (RM)
1Q10	320	666
2Q10	325	676
3Q10	315	648
4Q10	329	665
1Q11	245	570
2Q11	255	575
3Q11	255	640
4Q11	248	607
1Q12	241	549
2Q12	259	547
3Q12	232	501
4Q12	245	511
1Q13	229	505
2Q13	252	490
3Q13	245	527
4Q13	246	585
1Q14	222	587
2Q14	217	526
3Q14	229	527
4Q14	237	559
1Q15	224	567
2Q15	226	533
3Q15	247	601
4Q15	234	570
1Q16	205	519
2Q16	223	508
3Q16	219	524
4Q16	239	531
1Q17	207	521
2Q17	207	499
3Q17	236	506
4Q17	234	467

Source: MAVCOM Analysis, AirportIS

Table A23: Malaysian Carriers' RASK and CASK Trends, 2016 – 2017

Quarter	RASK (sen)	CASK (sen)	RASK-CASK Spread (sen)
1Q16	15.3	16.3	-1.0
2Q16	14.2	16.1	-1.9
3Q16	14.9	15.9	-1.1
4Q16	15.4	16.0	-0.6
1Q17	16.3	17.1	-0.9
2Q17	15.9	16.5	-0.6
3Q17	16.0	16.7	-0.7
4Q17	16.8	17.5	-0.7

Source: MAVCOM Analysis, ASL Holders

Table A24: Revenue and Operating Profit Margin of Malaysian Carriers, 2016 – 2017

Year	Revenue (RM billion)	Operating Profit Margin (%)
2010	18.2	6.9
2011	20.3	-6.0
2012	20.3	3.4
2013	22.4	1.4
2014	23.1	-3.9
2015	23.8	-16.1
2016	21.6	6.6
2017	25.9	2.1

Source: MAVCOM Analysis, ASL Holders

Table A25: Revenue and Operating Profit Margin of ASP Holders, 2016 – 2017

Year	Revenue (RM billion)	Operating Profit Margin (%)
2015	1.7	13.5
2016	2.0	10.4
2017	1.8	16.7

Source: MAVCOM Analysis, ASP Holders

Table A26: Revenue and Operating Profit Margin of AOL Holders, 2016 – 2017

Year	Revenue (RM billion)	Operating Profit Margin (%)
2010	2.6	22.3
2011	2.9	21.3
2012	3.7	18.7
2013	4.3	14.6
2014	3.6	11.5
2015	4.3	18.2
2016	4.5	19.7
2017	5.0	20.9

Source: MAVCOM Analysis, AOL Holders

Table A27: Monthly Market Capitalisation of AirAsia, AirAsia X, and MAHB, 2014 – 2017

Month	Market Capitalisation (RM billion)		
	AirAsia X	AirAsia	MAHB
Jan-14	1.9	6.1	10.5
Feb-14	1.9	6.3	9.9
Mar-14	1.6	7.0	9.8
Apr-14	1.5	7.0	10.4
May-14	1.4	6.2	10.4
Jun-14	1.4	6.8	9.8
Jul-14	1.3	6.5	10.4
Aug-14	1.5	6.7	9.7
Sep-14	1.5	6.7	10.0
Oct-14	1.5	7.1	9.7
Nov-14	1.4	7.1	9.4
Dec-14	1.3	7.8	8.9
Jan-15	1.2	7.6	8.8
Feb-15	1.2	7.8	9.3
Mar-15	1.0	7.0	11.5
Apr-15	0.9	6.3	11.5
May-15	0.8	6.3	10.7
Jun-15	1.1	6.1	10.6
Jul-15	0.9	4.4	10.8
Aug-15	0.9	3.8	9.5
Sep-15	0.7	2.5	7.2
Oct-15	0.8	3.5	8.7
Nov-15	0.9	4.1	8.6
Dec-15	0.8	4.0	9.3
Jan-16	0.7	3.6	9.3
Feb-16	1.0	4.0	9.6
Mar-16	1.1	4.4	9.7
Apr-16	1.2	5.1	11.2
May-16	1.4	5.3	11.1
Jun-16	1.6	6.5	10.8
Jul-16	1.6	7.2	10.3
Aug-16	1.7	8.3	10.0
Sep-16	1.6	8.3	10.5
Oct-16	1.6	7.8	10.9
Nov-16	1.8	7.9	10.7
Dec-16	1.6	7.5	10.5
Jan-17	1.5	6.4	10.1
Feb-17	1.7	8.5	10.3
Mar-17	1.7	8.9	10.8
Apr-17	1.6	10.4	11.6
May-17	1.9	11.2	12.6
Jun-17	1.7	10.3	14.6
Jul-17	1.7	10.9	13.9
Aug-17	1.6	10.7	14.5
Sep-17	1.5	11.1	14.9
Oct-17	1.6	11.4	14.2
Nov-17	1.6	11.6	13.9
Dec-17	1.5	10.5	13.7

Source: Thomson Reuters

Table A28: Relative Performance of Aviation Sector Against FTSE Bursa Malaysia, 2014 – 2017

Month	Aviation Sector Index	FTSE Bursa Malaysia KLCI
Jan-14	100	100
Feb-14	97	97
Mar-14	99	98
Apr-14	101	99
May-14	97	100
Jun-14	98	100
Jul-14	98	101
Aug-14	97	100
Sep-14	98	100
Oct-14	99	99
Nov-14	97	99
Dec-14	97	95
Jan-15	95	94
Feb-15	99	95
Mar-15	105	97
Apr-15	101	98
May-15	96	97
Jun-15	96	93
Jul-15	87	93
Aug-15	76	93
Sep-15	56	86
Oct-15	70	88
Nov-15	74	89
Dec-15	76	90
Jan-16	74	91
Feb-16	79	89
Mar-16	82	89
Apr-16	94	92
May-16	96	90
Jun-16	101	87
Jul-16	103	88
Aug-16	108	89
Sep-16	110	89
Oct-16	109	89
Nov-16	110	90
Dec-16	106	87
Jan-17	97	88
Feb-17	111	90
Mar-17	115	91
Apr-17	128	93
May-17	139	95
Jun-17	144	94
Jul-17	143	95
Aug-17	145	95
Sep-17	149	95
Oct-17	147	94
Nov-17	146	93
Dec-17	139	92

Source: MAVCOM Analysis, Thomson Reuters

Table A29: Number[1] of GHL Holders at Airports[2] in Malaysia, 2017

Airport	Catering	General Ground Handling	Refuelling	Total
SZB	-	12	4	16
KUL	2	8	3	13
BKI	1	7	3	11
PEN	1	7	1	9
KCH	1	4	2	7
LGK	1	5	1	7
MYY	-	4	2	6
IPH	-	4	1	5
JHB	-	3	1	4
BTU	-	2	2	4
SBW	-	3	1	4
SDK	-	3	1	4
AOR	-	2	1	3
KBR	-	3	-	3
LBU	-	2	1	3
TGG	-	2	1	3
TWU	-	1	1	2
KTE	-	-	1	1
KUA	-	1	-	1
MKZ	-	1	-	1

Source: MAVCOM

Notes:

1) *The numbers in the table include the GHL holders that are also ASL, ASP, or AOL holders, and petroleum products retailers*
2) *The table only shows airports that the GHL holders are serving. Ground handling services at other airports are fulfilled via self-handling by the airlines themselves*

Table A30: Revenue for Ground Handling Sub-Segment by Business, 2016

Business	Revenue (RM million)	
	2015	2016
Catering	339.5	328.8
General Ground Handling	257.9	645.9
Refuelling	18.9	20.4

Source: MAVCOM, GHL Holders

Table A31: Operating Profit Margin for Ground Handling Sub-Segment by Business, 2015-2016

Business	Operating Profit Margin (%)	
	2015	2016
Catering	4.4	6.1
General Ground Handling	16.4	4.0
Refuelling	-3.7	4.5

Source: MAVCOM, GHL Holders

APPENDIX B: LIST OF LICENCE AND PERMIT HOLDERS

Table B1: AOL Holders

No.	Company Name
1	Malaysia Airports Holdings Bhd.
2	Senai Airport Terminal Services Sdn. Bhd.
3	Sanzbury Stead Sdn. Bhd.
4	Tanjung Manis Development Sdn. Bhd.

Source: MAVCOM

Table B2: ASL Holders

No.	Company Name
1	AirAsia Berhad
2	AirAsia X Berhad
3	Fly Firefly Sdn. Bhd.
4	Malaysia Airlines Berhad
5	Malindo Airways Sdn. Bhd.
6	MASwings Sdn. Bhd.
7	Raya Airways Sdn. Bhd.

Source: MAVCOM

Table B3: ASP Holders

No.	Company Name
1	Aerial Power Lines Sdn. Bhd.
2	Aeromanager Sdn. Bhd.
3	Afjet Sdn. Bhd.
4	Airod Sdn. Bhd.
5	Asia Jet Partner Malaysia Sdn. Bhd.*
6	Asia Tenggara Aviation Services Sdn. Bhd.
7	Awan Inspirasi Sdn. Bhd.
8	Berjaya Air Sdn. Bhd. *
9	Cempaka Helicopter Corporation Sdn. Bhd.
10	Eastflite Aviation Services Sdn. Bhd.*
11	Executive Jets Asia Sdn. Bhd.*
12	flyGlobal Sdn. Bhd.
13	Helistar Resources Sdn. Bhd.
14	Hevilift (M) Sdn. Bhd.
15	Hornbill Skyways Sdn. Bhd.
16	Jet Premier One (M) Sdn. Bhd.*
17	Layang Layang Aerospace Sdn. Bhd.
18	MHS Aviation Berhad
19	My Jet Xpress Airlines Sdn. Bhd.
20	Myballoon Adventure Sdn. Bhd.
21	PLUS Helicopter Services Sdn. Bhd.
22	Pos Asia Cargo Express Sdn. Bhd.
23	Prima Air Sdn. Bhd.
24	Sabah Air Aviation Sdn. Bhd.
25	Sazma Aviation Sdn. Bhd.
26	Systematic Aviation Services Sdn. Bhd.
27	Weststar Aviation Services Sdn. Bhd.

Source: MAVCOM

*Notes: * Conditional ASP holders. MAVCOM may grant a conditional approval to enable the applicant to initiate an application for an AOC with CAAM. If the applicant fails to obtain the AOC within the period of one year or such other period as determined by MAVCOM, the conditional approval shall lapse.*

Table B4: GHL Holders

No	Company Name
1	AeroDarat Services Sdn. Bhd.
2	Aerohandlers Sdn. Bhd.*
3	BCS Contract & Supply Services Sdn. Bhd.
4	Brahim's SATS Food Services Sdn. Bhd.
5	Bukit Wang Resources (M) Sdn. Bhd.
6	Cloudera Aviation Services Sdn. Bhd.
7	Conor Engineering & Services Sdn. Bhd.
8	D'viation Solutions Sdn. Bhd.*
9	Elite Jets Sdn. Bhd.
10	Group Team Red Sdn. Bhd.
11	Hasrat Asia (M) Sdn. Bhd.
12	Helitech Aviation Services Sdn. Bhd.*
13	Jets Fuels Sdn. Bhd.
14	KLM Line Maintenance Sdn. Bhd.*
15	Malindo Airways Sdn. Bhd.*
16	Mas Awana Services Sdn. Bhd.*
17	MNM Aviation Services Sdn. Bhd.
18	Nusantara Aviation Services Sdn. Bhd.
19	Petron Malaysia Refining & Marketing Bhd.*
20	PETRONAS Dagangan Berhad*
21	POS Aviation Sdn. Bhd.
22	Raya Airways Sdn. Bhd.
23	Sabah Air Aviation Sdn. Bhd.
24	Safeair Technical Sdn. Bhd.
25	Senai Airport Terminal Services Sdn. Bhd.*
26	Shell Malaysia Trading Sdn. Bhd.*
27	Shell Timur Sdn. Bhd.*
28	Skypark FBO Malaysia Sdn. Bhd.
29	Smooth Route Sdn. Bhd.
30	Total Megalink Sdn. Bhd.*

Source: MAVCOM

*Notes: * Conditional GHL holders. MAVCOM may grant a conditional approval to enable the applicant to initiate an application for a Technical Approval with CAAM. If the applicant fails to obtain the Technical Approval within the period of one year or such other period as determined by MAVCOM, the conditional approval shall lapse.*

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