Malaysian Aviation Commission
Suruhanjaya Penerbangan Malaysia
MAVCOM

WAYPOINT

MALAYSIAN AVIATION INDUSTRY OUTLOOK | DECEMBER 2019

KEY HIGHLIGHTS

Robust passenger traffic growth in 2020

For the first six months of 2019, passenger traffic grew by 5.2% YoY (1H18: 3.3% YoY) to 53.1mn, where domestic traffic registered a strong growth of 9.1% YoY on the back of domestic seat capacity growth of 7.8% YoY. This was slightly higher than MAVCOM's initial expectation of domestic seat capacity growth of 7.3% YoY for 2019. Additionally, passenger traffic at non-KUL airports grew by 9.8% YoY ahead of KUL's growth of 2.0% YoY. **MAVCOM revised its 2019 passenger traffic growth forecast to 6.4% – 7.0% YoY** (previous: 2.9% – 4.1% YoY) which translates into 109.1mn – 109.7mn passengers (2018: 102.5mn). **For 2020, passenger traffic is anticipated to grow between 5.0% YoY and 6.0% YoY** as demand is expected to be supported by domestic seat capacity growth of 3.2% YoY.

Higher tourist arrivals by air in 2019

In 1H19, tourist arrivals by air into Malaysia increased by 0.4mn to 4.8mn, which corresponded to an 8.8% YoY growth. The share of total tourist arrivals by air increased to 36.0% (1H18: 34.7%). Similarly, total tourist arrivals increased by 4.9% YoY to 13.4mn (1H18: -1.7% YoY) for the same period. This was attributable to higher tourist arrivals from Indonesia, China, and Thailand, which offset a decline in tourist arrivals from Singapore and Brunei. Collectively, these five countries made up 78.0% of the total tourist arrivals of 13.4mn in 1H19. During the previous Visit Malaysia campaigns in 2007 and 2014, tourist arrivals increased by 19.5% YoY and 6.7% YoY, respectively. If this still holds true in 2020, international passenger traffic growth will be lifted.

Cautious capacity expansion by Malaysian carriers in 2020

Total seat capacity by Malaysian carriers is expected to expand by 2.0% YoY (2019: 4.3% YoY), led by domestic seat capacity growth of 3.2% YoY (2019: 7.2% YoY). Given the slower growth in capacity, **average fares by the carriers are anticipated to remain flat or rise slightly.** The slowdown in capacity growth may also enable Malaysian carriers to improve their load factors.

Profitability of Malaysian carriers to remain under pressure in 2020

Malaysian carriers reported an average operating profit margin of 0.3% in 1H19 (1H18: 2.9%) due to rising costs. Malaysian carriers' cost per available seat kilometre (CASK) increased by 5.9% YoY in 1H19 to 17.9 sen whilst revenue per available seat kilometre (RASK) decreased by 2.2% YoY to 15.9 sen. The RASK-CASK spread in 1H19 of -2.0 sen was significantly wider than the 1H18 spread of -0.7 sen. If this trend persists, the profitability of Malaysian carriers will be at risk. **Similarly, aerodrome operators' earnings could also be influenced in 2020 due to the continued seat capacity expansion in the domestic market**, given that domestic passengers pay lower passenger service charges (PSC). As a result, revenue growth from PSC collection may lag passenger traffic growth.

GLOSSARY OF SOURCES

Sources	
ACI	Airports Council International
AirportIS	-
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
Badan Pusat Statistik Indonesia	-
Bank of Korea	-
Bloomberg	-
BNM	Bank Negara Malaysia
DOS	Department of Statistics, Malaysia
GHL Holders	Licence holders of GHL issued by MAVCOM
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMF	International Monetary Fund
MAVCOM	Malaysian Aviation Commission
MOF	Ministry of Finance, Malaysia
MOTAC	Ministry of Tourism, Arts and Culture, Malaysia
National Bureau of Statistics China	-
Philippines Statistics Authority	-
Singapore Ministry of Trade and Industry	-
UK Office for National Statistics	-
US Bureau of Economic Analysis	-
World Bank	-

TABLE OF ABBREVIATIONS

Abbreviations	
Act 771	Malaysian Aviation Commission Act 2015
ADB	Asian Development Bank
AOC	Air Operator Certificate
AOL	Aerodrome Operating Licence
ASEAN	Association of Southeast Asian Nations
ASA	Air Services Agreement
ASK	Available Seat Kilometres
ASL	Air Service Licence
ASP	Air Service Permit
ATR	Air Traffic Rights
bbl	barrel
BITRE	Bureau of Infrastructure, Transport and Regional Economics, Australia
bn	billion
CAAM	Civil Aviation Authority of Malaysia
CAGR	Compound annual growth rate
CASK	Cost per Available Seat Kilometre
DFTZ	Digital Free Trade Zone
E&E	Electrical and Electronics
EIA	US Energy Information Administration
EU	European Union
FAA	US Federal Aviation Administration
FTK	Freight Tonne Kilometres
GBP	British Pound Sterling
GDP	Gross Domestic Product
GHL	Ground Handling Licence
GOM	Government of Malaysia
HHI	Herfindahl-Hirschman Index
km	kilometres
mn	million
MRO	Maintenance, Repair and Overhaul
OECD	Organisation for Economic Co-operation and Development
O&D	Origin and Destination
OPEC	Organization of the Petroleum Exporting Countries
OPR	Overnight Policy Rate
PMI	Purchasing Managers Index
ppt	percentage point
PSC	Passenger Service Charge
RASK	Revenue per Available Seat Kilometre
RHS	right-hand side
RM	Ringgit Malaysia
RPK	Revenue Passenger Kilometre

Abbreviations	
UK	United Kingdom
UAS	Unmanned Aircraft System
UAV	Unmanned Aerial Vehicle
US	United States
USD	United States Dollar
v.v.	vice versa
WTO	World Trade Organization
YoY	Year-on-Year

MALAYSIAN AIRPORT CODES

Airport Code	
AOR	Sultan Abdul Halim Airport (Alor Setar)
BKI	Kota Kinabalu International Airport
BTU	Bintulu Airport
IPH	Sultan Azlan Shah Airport (Ipoh)
JHB	Senai International Airport
KBR	Sultan Ismail Petra Airport (Kota Bharu)
KCH	Kuching International Airport
KTE	Kerteh Airport
KUA	Sultan Ahmad Shah Airport (Kuantan)
KUL	Kuala Lumpur International Airport
KUL-T1	Kuala Lumpur International Airport Terminal 1
KUL-T2	Kuala Lumpur International Airport Terminal 2
LBU	Labuan Airport
LDU	Lahad Datu Airport
LGK	Langkawi International Airport
LMN	Limbang Airport
MKZ	Melaka Airport
MYY	Miri Airport
MZV	Mulu Airport
PEN	Penang International Airport
PKG	Pangkor Airport
RDN	Redang Airport
SBW	Sibu Airport
SDK	Sandakan Airport
SZB	Skypark Terminal Sultan Abdul Aziz Shah Airport (Subang)
TOD	Tioman Airport
TGG	Sultan Mahmud Airport (Kuala Terengganu)
TWU	Tawau Airport

OTHER AIRPORT CODES

Airport Code	
ADD	Addis Ababa Bole International Airport, Ethiopia
ADL	Adelaide International Airport, Australia
AKL	Auckland Airport, New Zealand
ALA	Almaty International Airport, Kazakhstan
AMM	Queen Alia International Airport, Jordan (Amman)
AMS	Amsterdam Airport Schiphol, Netherlands
AUH	Abu Dhabi International Airport, United Arab Emirates
AVV	Avalon Airport, Australia (Victoria)
BGW	Baghdad International Airport, Iraq
BKK	Suvarnabhumi Airport, Thailand (Bangkok)
BNE	Brisbane Airport, Australia
CEI	Chiang Rai International Airport, Thailand
CGK	Soekarno-Hatta International Airport, Indonesia (Jakarta)
CMB	Bandaranaike International Airport, Sri Lanka (Colombo)
DPS	Ngurah Rai International Airport, Indonesia (Bali)
DOH	Hamad International Airport, Qatar (Doha)
DXB	Dubai International Airport, United Arab Emirates
FOC	Fuzhou Changle International Airport, China
FRA	Frankfurt International Airport, Germany
HFE	Hefei Xinqiao International Airport, China
HNL	Daniel K. Inouye International Airport, United States of America (Hawaii)
IKA	Imam Khomeini International Airport, Iran (Tehran)
IST	Istanbul Ataturk Airport, Turkey
KHH	Kaohsiung International Airport, Taiwan
KIX	Kansai International Airport, Japan (Osaka)
KMG	Kunming Changshui International Airport, China
KTJ	Kichwa Tembo Airport, Kenya
KTM	Kathmandu Tribhuvan International Airport, Nepal
LHR	London Heathrow, UK
LOP	Lombok International Airport, Indonesia
LPQ	Luang Prabang International Airport, Laos
MCT	Muscat International Airport, Oman
MDC	Sam Ratulangi International Airport, Indonesia (Manado)
MEL	Melbourne Airport, Australia
MLE	Velana International Airport, Maldives (Malé)
MRU	Sir Seewoosagur Ramgoolam International Airport, Mauritius
OKA	Naha Airport, Japan
RUH	King Khalid International Airport, Saudi Arabia (Riyadh)
SIN	Changi Airport, Singapore
TAS	Islam Karimov Tashkent International Airport, Uzbekistan (Tashkent)

Airport Code	
TKG	Radin Inten II International Airport, Indonesia (Bandar Lampung)
TPE	Taoyuan International Airport, Taiwan
TRK	Juwata International Airport, Indonesia (Tarakan)
VCA	Can Tho International Airport, Vietnam
XSP	Seletar Airport, Singapore

LICENCE AND PERMIT HOLDERS

Abbreviations	
AirAsia	AirAsia Berhad
AirAsia X	AirAsia X Berhad
Firefly	FlyFirefly Sdn. Bhd.
MAHB	Malaysia Airports Holding Berhad
Malindo	Malindo Airways Sdn. Bhd.
MAB	Malaysia Airlines Berhad
MABkargo	MAB Kargo Sdn. Bhd.
MASwings	MASwings Sdn. Bhd.
My Jet Xpress	My Jet Xpress Airlines Sdn. Bhd.
Raya Airways	Raya Airways Sdn. Bhd.
Senai Airport	Senai Airport Terminal Services Sdn. Bhd.
SSSB	Sanzbury Stead Sdn. Bhd.
TMDBSB	Tanjung Manis Development Sdn. Bhd.

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SECTION 1: MACROECONOMIC OVERVIEW AND OUTLOOK

Macroeconomic Overview

Major Economies Grew at a More Moderate Pace in 2Q19

Major economies worldwide grew at a relatively slower pace in 2Q19 compared to 1Q19 due to the ongoing trade dispute between the US and China. Economies such as China, the EU, the US, and the UK experienced lower quarterly growth in 2Q19 relative to 1Q19 (see Table 1). Similarly, in ASEAN, GDP growth in both the Philippines and Singapore also declined in 2Q19 relative to 1Q19. The prolonged trade dispute between the US and China has affected global economic growth.

Table 1: Growth of Selected Economies, 2018 – 2019

Selected Economies	3Q18 GDP YoY Growth (%)	4Q18 GDP YoY Growth (%)	1Q19 GDP YoY Growth (%)	2Q19 GDP YoY Growth (%)
Philippines	6.0	6.3	5.6	5.5
China	6.4	6.4	6.4	6.2
Malaysia	**4.4**	**4.7**	**4.5**	**4.9**
Indonesia	5.2	5.2	5.1	5.1
Korea	2.9	1.7	1.7	2.1
Singapore	1.3	1.1	1.1	0.1
EU	1.9	1.5	1.7	1.4
US	2.5	2.7	2.7	2.3
UK	1.6	1.4	1.8	1.2
Developed Economies[1]	3.2	2.1	1.8	2.1
Emerging Economies[2]	5.1	4.9	4.6	4.6

Source: Bloomberg, Badan Pusat Statistik Indonesia, Bank of Korea, DOS, IMF, National Bureau of Statistics China, Philippines Statistics Authority, Singapore Ministry of Trade and Industry, UK Office for National Statistics, US Bureau of Economic Analysis

In addition to the US-China trade dispute, lower 2Q19 GDP growth worldwide was also due to weaker investment activities. In the US, lower inventory build-up, weaker business investment, and a decline in exports contributed to slower economic growth. In Asia, economic growth in China was weighed down by weaker private consumption and a decline in exports. Growth in other economies in the Asia Pacific region was also affected by weak external demand arising from the ongoing trade dispute between the US and China.

[1] Fully industrialized economies that are members of the OECD
[2] All countries that are not members of the OECD

In the UK, a drawdown in inventories from stockpiling activities in 1Q19 moderated GDP growth in 2Q19. Stockpiling activities provided a temporary boost to the UK's economy in 1Q19 as businesses prepared for the country's exit from the EU. In the EU, softer consumption demand and weaker industrial production were among the factors that contributed to weaker economic growth in 2Q19. Germany continued to experience negative effects from the new EU-wide emission standards for diesel vehicles, which affected its domestic automobile sales and exports. Given its extensive value chains across the continent, ripple effects were felt throughout the EU.

Malaysia's GDP Grew by 4.9% YoY in 2Q19

The Malaysian economy grew faster in 2Q19 at 4.9% YoY (1Q19: 4.5% YoY) (see Figure 1), driven by continued expansion in domestic demand. Domestic demand expanded by 4.6% YoY in 2Q19 (1Q19: 4.4% YoY) supported by both higher private consumption and investment. Private consumption grew by 7.8% YoY in 2Q19 (1Q19: 7.6% YoY) due to higher spending during festive seasons (such as Hari Raya Aidilfitri), income growth from stable labour market conditions, as well as, cost of living aid from the GOM. Meanwhile, public consumption grew marginally by 0.3% YoY in 2Q19 (1Q19: 6.3% YoY) due to lower spending on supplies and services. Higher public consumption growth in 1Q19 was due to a low base effect where public consumption growth was minimal in 1Q18. This was in line with the GOM's effort to rationalize the procurement of goods and services in 1Q18.

Figure 1: Quarterly Malaysia GDP Growth, 2017 – 2019

Source: Bloomberg, DOS

On the production side, the services and manufacturing sectors grew by 6.1% YoY and 4.3% YoY, respectively (see Table 2). Several sub-sectors in the services sector saw sustained growth in 2Q19, namely wholesale and retail, finance and insurance, as well as, transport and storage. Meanwhile, the manufacturing sub-sector such as motor vehicle production and construction recorded a higher output. Furthermore, the mining and quarrying sector in Malaysia also reported growth for the first time since 3Q17. The sector grew by 2.9% YoY (1Q19: -2.1% YoY), owing to the recovery of natural gas output following prolonged pipeline disruptions in 2018. Overall, the Malaysian economy in 2Q19 recorded an expansion across all economic sectors.

Table 2: Malaysia's GDP Growth by Sector, 2019

Economy	1Q19 YoY Growth (%)	2Q19 YoY Growth (%)
Headline GDP	4.5	4.9
- Services	*6.4*	*6.1*
- Manufacturing	*4.2*	*4.3*
- Agriculture	*5.6*	*4.2*
- Mining & Quarrying	*-2.1*	*2.9*
- Construction	*0.3*	*0.5*

Source: DOS

Macroeconomic Outlook

Global Economy is Expected to Grow by 3.0% YoY in 2019

The IMF, in its October 2019 World Economic Outlook Report, forecasted that the global economy will grow by 3.0% YoY in 2019 amid a bleaker outlook in major economies and the effects from the US-China trade dispute (see Table 3). The IMF downgraded its global growth forecast from its previous forecast in April 2019 (3.3% YoY), which highlights the sluggish nature of the global economy at present.

Table 3: Global GDP Forecast by IMF

Economy	2018 GDP YoY Growth (%)	2019 GDP YoY Growth Forecast (%)
Global	3.6	3.0
- Advanced Economies	*2.3*	*1.7*
- Emerging Market Economies	*4.5*	*3.9*

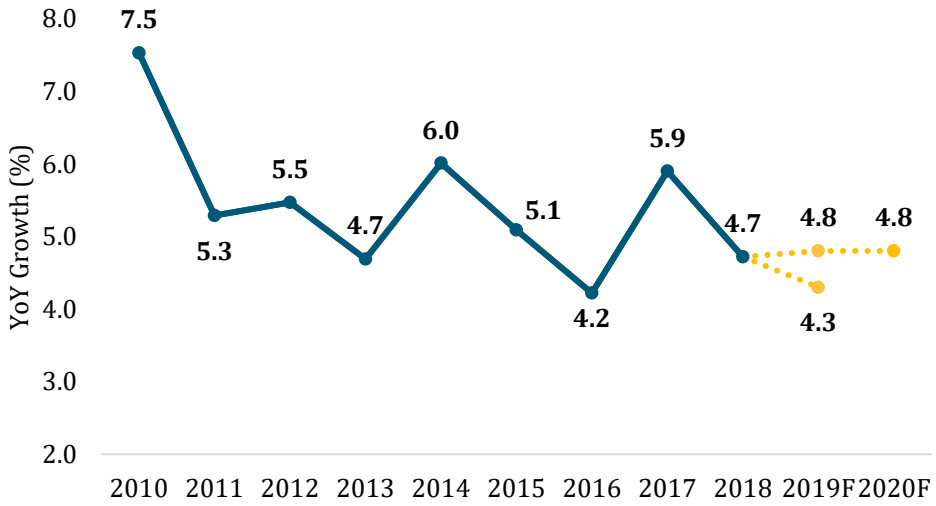
Source: IMF

The IMF opined that global economic growth in 2019 will be sustained by accommodative monetary and fiscal policies in major economies worldwide, particularly in China, the Eurozone, and the US. The IMF further opined that stimulus policies will also drive improvements in domestic consumption in stressed economies such as Argentina and Turkey. The IMF forecasted that the global economy will grow by 3.4% YoY in 2020.

Malaysia's GDP is Expected to Grow Between 4.3% and 4.8% YoY in 2019

The BNM projected that the Malaysian economy will grow between 4.3% and 4.8% YoY in 2019, driven mainly by an expansion in domestic demand and an accommodative monetary policy (see Figure 2). In May 2019, the BNM reduced the OPR by 25 basis points to 3.00% from 3.25% to provide stimulus measures to the economy. Subsequent BNM Monetary Policy Committee meetings held in July and September 2019 did not result in changes to the OPR as the BNM Monetary Policy Committee believed that current monetary policy remains accommodative for economic activities in Malaysia.

Figure 2: Malaysia's GDP Growth, 2010 – 2020F



Source: Bloomberg, BNM, MOF

The BNM opined that a continued increase in private consumption from income and investment growth, as well as, new manufacturing investments will provide further support to Malaysian economic growth. However, the external environment shaped by the ongoing US-China trade dispute is expected to negatively affect Malaysian export growth, which had consistently been a key growth driver of the Malaysian economy. Additionally, potential softening in the prices of global commodities such as crude and palm oil can also adversely impact Malaysia's economic growth.

The World Bank forecasted that Malaysian GDP will grow by 4.6% YoY in 2019 (previous forecast: 4.5% YoY) (see Table 4). The downward revision in the forecast was due to weakening private investment and export activities. Meanwhile, the ADB forecasted a growth rate of 4.5% YoY in 2019 and highlighted that weakness in fixed investment will be a major risk in 2019 due to the GOM's review and negotiation of large infrastructure projects. Export growth is also expected to remain weak for the year.

Table 4: Malaysia's GDP Forecasts by BNM, MOF, ADB, IMF, World Bank, and Market Consensus

Source	2018 YoY GDP Growth (%)	2019 YoY GDP Growth Forecast (%)	2020 YoY GDP Growth Forecast (%)
BNM	4.7	4.3 – 4.8	-
MOF	4.7	4.7	4.8
ADB	4.7	4.5	4.7
IMF	4.7	4.7	4.3
World Bank	4.7	4.6	4.6
Market Consensus	4.7	4.5	4.3

Source: Bloomberg

All three organizations concluded that household spending and private investment will be key in supporting Malaysia's economic growth in 2019, although weaker external demand will lead to poorer export growth. However, these organizations also identified additional factors that can affect Malaysia's economic growth. For example, the ADB forecasted that the review of key infrastructure projects in 2019 may drag economic growth due to delays in project construction, while the BNM identified weaker commodity prices as a further downside risk to the Malaysian economy in 2019. These additional factors contribute to the varying estimations of Malaysia's GDP growth outlook.

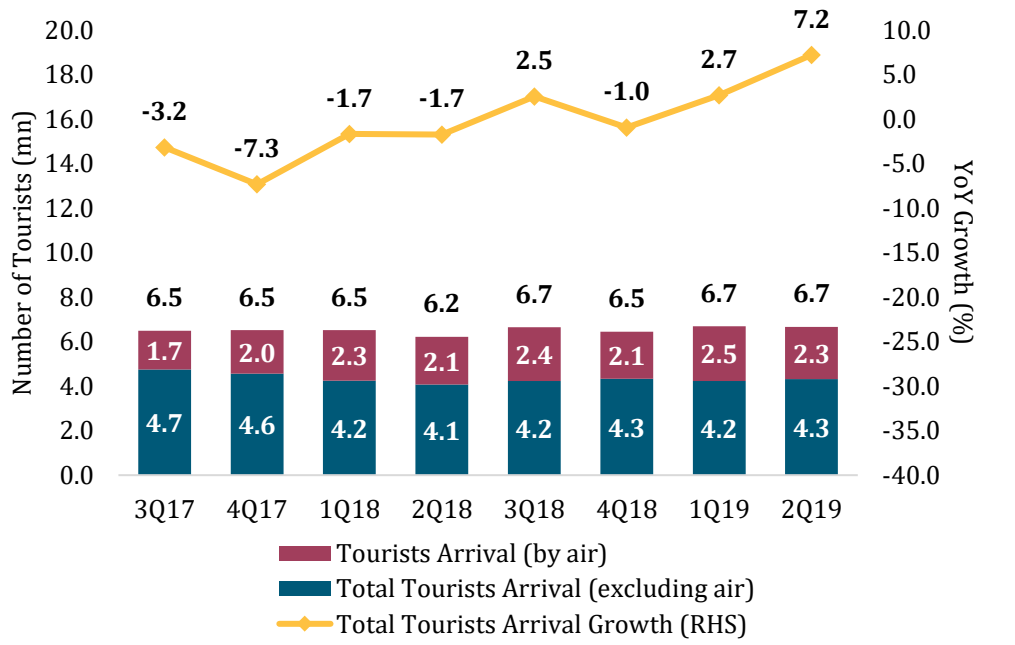
SECTION 2: INDUSTRY OVERVIEW AND OUTLOOK

Industry Overview

Tourist Arrivals Continued to Grow in 2Q19

Malaysia's tourist arrivals recorded a higher growth of 7.2% YoY in 2Q19 (1Q19: 2.7% YoY) (see Figure 3). This was attributed to higher aggregate tourist arrivals from Singapore, Indonesia, China, Thailand, and Brunei, which recorded an aggregate growth of 6.9% YoY (1Q19: 2.7% YoY). The aggregate number of tourists from these countries as a share of total tourist arrivals increased from 77.7% in 1Q19 to 78.3% in 2Q19.

Figure 3: Quarterly Malaysia's Tourist Arrivals, 2017 – 2019



Source: Bloomberg, MOTAC
Note: Figures might not add up due to rounding.

Among the five countries, the growth of tourist arrivals from Indonesia was the highest at 17.1% YoY in 2Q19 (1Q19: 13.9% YoY). Indonesia was also the second largest tourist segment to Malaysia and constituted 14.0% of total tourist arrivals in 2Q19, after Singapore (2Q19: 41.4%), resulting from promotions by travel agents and airlines. Due to this, tourist arrivals from Indonesia in 1H19 amounted to 1.9mn which is 51.6% of the 3.6mn target set by MOTAC in 2019.

In terms of tourist arrivals by market, MOTAC identified that the share of tourists from ASEAN in 1H19 constituted 70.0% of total tourist arrivals to Malaysia. The South and East Asia markets constituted 20.8%, while the Central and West Asia, and Europe markets constituted 9.2% (see Table 5).

Table 5: Malaysia's Tourist Arrivals by Market and Growth, 2019

Region	1H19 Market Share (%)	1H19 YoY Growth (%)
ASEAN	70.0	4.7
South and East Asia	20.8	7.1
Central and West Asia, Europe	9.2	1.8

Source: MOTAC

These led to higher tourist arrivals by air into Malaysia to 4.8mn, which corresponded to 8.8% YoY growth. Additionally, the share of tourist arrivals by air in 1H19 increased to 36.0% (1H18: 34.7%). This was partly attributable to the marginally higher seat capacity between Malaysia and other ASEAN Member States, which grew by 2.1% YoY, for the same period.

Weaker Trade Growth in 1H19

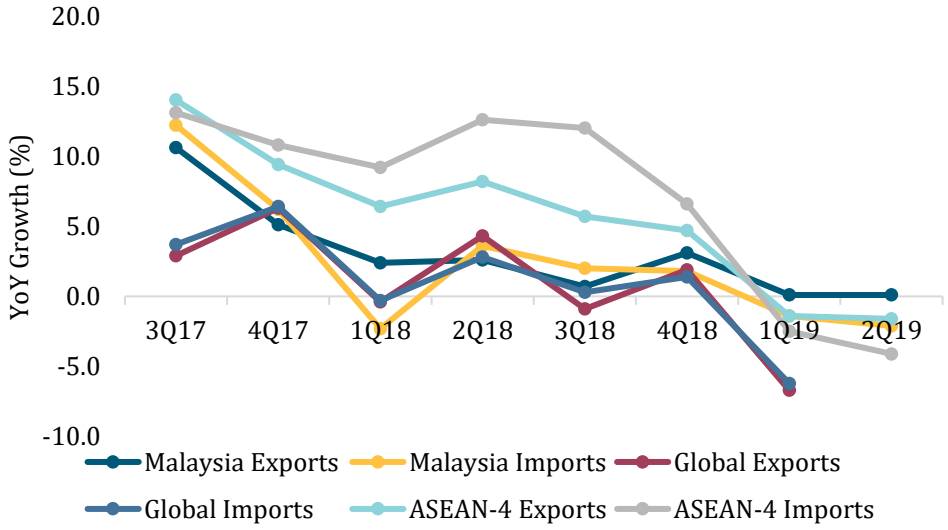
The WTO highlighted that global trade growth was weaker in 1H19 as signalled by leading economic indicators. The Global Manufacturing PMI recorded an index of 50.3 in April 2019, before dropping to 49.8 and 49.4 in May and June 2019[3]. The WTO pointed out that although expansionary fiscal and monetary policies in major economies had enhanced GDP growth, further escalation of trade tensions may pose a threat to both GDP and trade growth.

In 1H19, Malaysia's net exports recorded a lower growth of 16.0% YoY. This was partly owing to a high base effect in 2018 (1H18: 22.7% YoY) as the net exports then rebounded from a contraction (1H17: -5.4% YoY). This was due to the high import growth of capital and intermediate goods.

[3] A PMI index score below 50 indicates contraction.

Export growth for Malaysia experienced a soft landing between 1Q19 and 2Q19 where the growth rates were sustained at 0.1% YoY (see Figure 4). The decline in export growth between 4Q18 and 1Q19 was short-lived as higher non-E&E exports had offset the contraction in E&E exports, according to the BNM. The decline in E&E exports was attributable to lower demand from China. The BNM estimated that further escalation of the trade dispute between the US and China will likely reduce Malaysia's export growth by 0.2 ppt in 2019.

Figure 4: Trade Value Quarterly YoY Growth Trends, 2017 – 2019



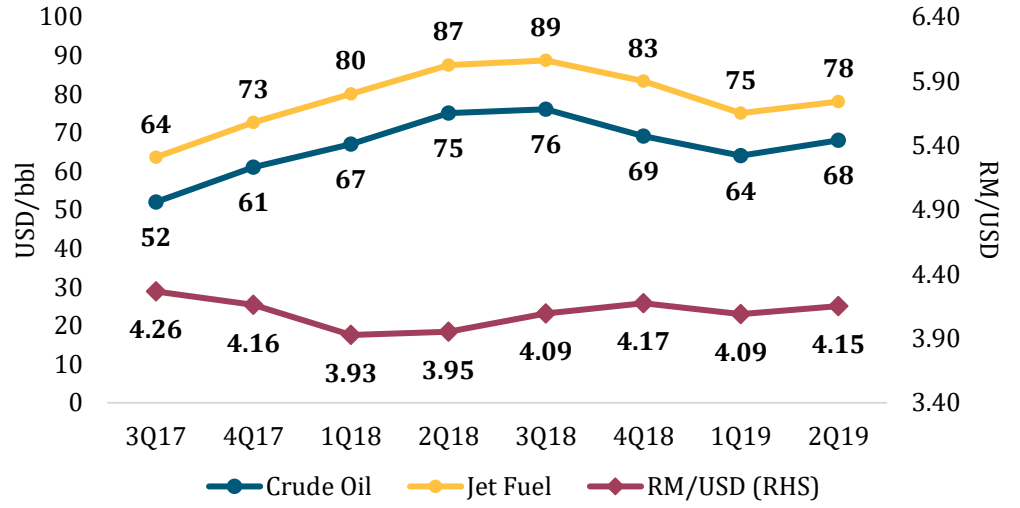
Source: Bloomberg
Note: ASEAN-4 (Indonesia, Malaysia, Philippines, and Thailand) has a more than 50% share of total ASEAN exports and imports.

Jet Fuel Price Expected to Remain Below USD80/bbl while the Ringgit Faces Downside Risks

The RM appreciated in 1Q19 to RM4.09/USD from RM4.17/USD but depreciated in 2Q19 to RM4.15/USD (see Figure 5). According to the BNM, the depreciation in 2Q19 was mainly driven by portfolio outflows due to subdued investor sentiment arising from potential reviews on Malaysia's inclusion in the FTSE Russel World Government Bond Index, as well as, softening global growth outlook. This depreciation could lead to higher jet fuel expenses for Malaysian carriers.

Brent crude oil and jet fuel prices rebounded to USD68/bbl and USD78/bbl, respectively, in 2Q19, while an average crack spread [4] of USD11 was maintained since 3Q17 (see Figure 5)**.** Both Brent crude oil and jet fuel prices averaged at USD64/bbl and USD75/bbl in 1Q19, respectively. Between January and April 2019, Brent crude oil prices were on a rising trend from an average of USD60/bbl in January to the highest of USD72/bbl in April, before declining to USD63/bbl in June 2019.

Figure 5: Oil, Jet Fuel, and Exchange Rate Trends, 2017 – 2019



Source: Bloomberg

Oil prices between January and April 2019 rallied as a result of supply cuts by OPEC and the US sanctions on Iran and Venezuela. However, these measures were short-lived as the recovery of oil exports from Venezuela and growth in oil supply from Argentina had increased supply in the global crude oil market. Nevertheless, other OPEC allies such as Russia have also been reducing crude oil output to support higher oil prices. This was in light of the rising average daily shale oil production in the US, which rose by 16.7% YoY in 1H19, following from a 14.9% YoY increased recorded in 2018.

[4] The price difference of a barrel of crude oil and jet fuel, or the refining margin.

In its September 2019 Short-Term Energy Outlook, the EIA forecasted that Brent spot prices will average USD59/bbl in 4Q19 from USD62/bbl in 3Q19. The EIA forecasts that oil prices will average USD60/bbl in 2020. Oil prices rose between January and April 2019 from USD60/bbl to USD72/bbl, respectively, before declining to USD62/bbl in October. Between January and September 2019, oil price has averaged USD65/bbl. The EIA expects downward pressure on oil prices to continue into 2020, mainly driven by continued risks over global economic growth that can dampen global oil demand.

Moving forward, headwinds arising from softening global growth and the trade dispute between the US and China are expected to weigh heavily on the RM's movement. In addition, Malaysia's potential exclusion from the World Government Bond Index, which rattled investors and caused outflows, is also another risk that may negatively affect the RM.

Nevertheless, the BNM recently announced several measures to enhance accessibility to the onshore market by providing greater freedom for after-trading hours. These measures may result in improved RM accessibility for non-resident investors and corporates, as well as, greater flexibility for repurchasing securities, which are expected to provide additional support to the RM.

Industry Outlook

Global Passenger Traffic is Expected to Grow by 5.0% YoY in 2019

IATA reported that global passenger traffic in terms of RPK grew by 4.7% YoY in 1H19 (1H18: 7.0% YoY), where the Asia Pacific region recorded a growth of 4.8% YoY (1H18: 9.7% YoY). Although a strong demand for leisure travel took place, the trade dispute between the US and China softened overall air passenger demand growth in the region, particularly in terms of international RPK growth.

In June 2019, IATA revised its 2019 global passenger traffic forecast in terms of RPK downward to 5.0% YoY (previous forecast: 6.0% YoY), which was slower than the growth rate reported in the previous year (2018: 7.4% YoY) (see Table 6). The downward revision was in tandem with lower projected global economic growth in 2019, lower household incomes, as well as, further weakening of global trade. The ongoing US-China trade dispute also led IATA to anticipate zero growth for global cargo traffic in 2019 as weak export orders are expected to persist.

Table 6: Passenger and Cargo Traffic Forecasts by IATA

Key Figures	2018 YoY Growth (%)	2019 YoY Growth Forecast (%)
Global Passenger Traffic[5]	7.4	5.0
Global Cargo Traffic[6]	3.4	0.0

Source: IATA

[5] Growth forecasts in terms of RPK.
[6] Growth forecasts in terms of FTK.

In terms of regional markets, IATA reported that passenger traffic in Europe recorded the highest growth of 6.1% YoY in RPK terms in 1H19. Strong growth in Europe was recorded despite deteriorating business confidence and slower economic activity in the UK and the European economies. Nonetheless, according to IATA, the Asia Pacific region will remain the driver of global passenger traffic growth for 2019 at 6.3% YoY, albeit at a slower rate (2018: 9.5% YoY) (see Table 7).

Table 7: IATA's Passenger Traffic Forecasts by Region

Region	2019 YoY Passenger Traffic Growth Forecast[7] (%)
Global	5.0
- North America	*4.3*
- Europe	*4.9*
- Asia Pacific	*6.3*
- Middle East	*2.0*
- Latin America	*6.2*
- Africa	*4.3*

Source: IATA

Meanwhile, the ACI forecasted that the growth in global passenger traffic will remain robust in the short- to long-term, while uncertainties will continue in global air cargo traffic in the near term. Global passenger traffic in 1H19 recorded a slower growth of 3.6% YoY (1H18: 6.6% YoY) while global cargo traffic recorded growth of -3.2% YoY (1H18: 4.8% YoY) (see Table 8).

Table 8: Passenger and Cargo Traffic by the ACI

Key Figures	1H18 YoY Growth (%)	1H19 YoY Growth (%)
Global Passenger Traffic[8]	6.6	3.6
Global Cargo Traffic[9]	4.8	-3.2

Source: ACI

The ACI highlighted that over the long term, emerging markets—especially in the Asia Pacific region—will observe the highest growth in passenger traffic relative to other regions. The ACI also emphasized that ongoing protectionist measures implemented by several major economies and the slowdown in global GDP growth have a bigger impact on air cargo compared to passenger traffic. The protectionist measures weaken global supply chains, hence softening demand for air cargo which relies on an open market to thrive.

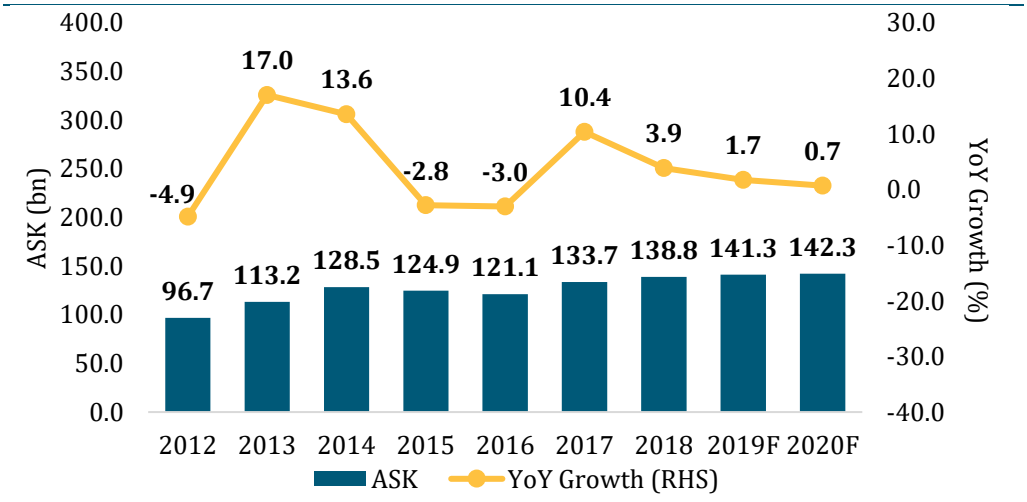
[7] Growth forecasts in terms of RPK.
[8] Growth in terms of departing and arriving passengers.
[9] Growth in terms of loaded and unloaded freight (in metric tonnes).

Malaysian Carriers to Increase Seat Capacity by 4.3% YoY in 2019

In 1H19, IATA reported that global capacity in terms of ASK grew by 4.1% YoY (1H18: 6.1% YoY), which was lower than its full-year 2019 growth forecast of 4.7% YoY (2018: 6.9% YoY). The seat capacity growth in 1H19 was slower than the passenger traffic growth over the same period, thus, increasing the average passenger load factor to 81.9% (1H18: 81.3%).

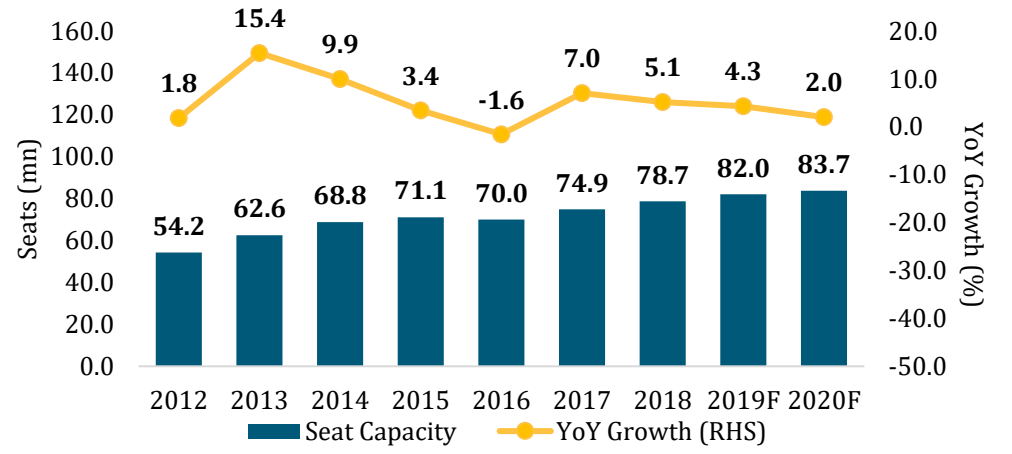
In 2019, Malaysian carriers' capacity, in terms of ASK and number of seats, is expected to grow by 0.7% YoY (2018: 1.7% YoY) and 4.3% YoY (2018: 5.1% YoY), respectively (see Figures 6 and 7). The expected growth rate in ASK terms is lower than the expected growth rate in terms of number of seats, indicating that Malaysian carriers are focusing more on serving short- and medium-haul destinations. This is in line with the contribution of the short-haul market to Malaysia's tourist arrivals.

Figure 6: Capacity Growth in terms of ASK by Malaysian Carriers, 2012 – 2020F



Source: MAVCOM, AirportIS

Figure 7: Capacity Growth in terms of Number of Seats by Malaysian Carriers, 2012 – 2020F



Source: MAVCOM, AirportIS

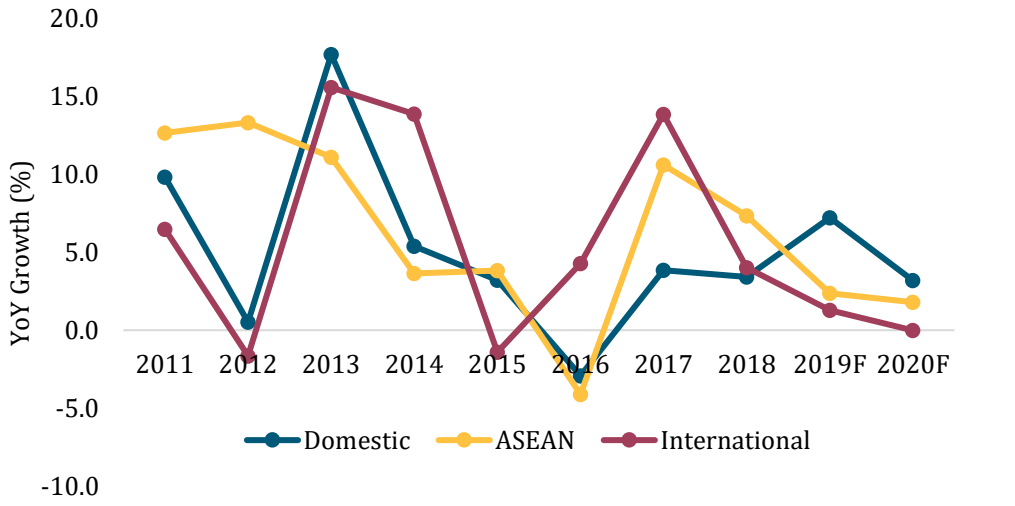
Malaysia's Passenger Traffic Grew by 5.2% in 1H19 YoY

In 1H19, Malaysia's passenger traffic grew by 5.2% YoY to 53.2mn (1H18: 50.4mn), which made up approximately 49.9% – 50.4% of MAVCOM's 2019 full-year forecast of 105.5mn – 106.7mn (see Waypoint: Malaysian Aviation Industry Outlook (May 2019)). Historically, passenger traffic in the first six months of the year approximately contributed 48.0% of total annual traffic. Therefore, passenger traffic in 1H19 represents a higher-than-average proportion of annual traffic contribution compared to previous years. The stronger-than-expected passenger traffic growth was driven by the expansion in the domestic seat capacity by 7.8% YoY in 1H19 against MAVCOM's expectation of 7.3% YoY for the full year of 2019. MAVCOM earlier forecasted that the domestic expansion would be driven mainly by additional flight frequencies, where airlines also introduced new domestic routes from non-KUL airports.

Domestic passenger traffic in 1H19 registered a growth of 9.1% YoY while international passenger traffic only grew by 1.5% YoY. International traffic growth was mainly driven by passenger traffic to ASEAN destinations (2.8% YoY) rather than to other international destinations (0.3% YoY). In terms of seat capacity, the domestic destinations that witnessed the highest increases in seat capacity in 1H19 were LMN, KUA, LDU, IPH, and MZV, with an aggregate growth of 43.7% YoY. For the international market, the passenger traffic growth was driven by airlines and charter operators flying to 19 new destinations in 1H19 such as AVV, CEI, and VCA.

The proportion of domestic seat capacity over total seat capacity grew to 34.6% in 2019 from 33.4% in 2018. In 2017 and 2018, the highest seat capacity growth rates were observed for routes to other international destinations and ASEAN, respectively. Subsequently, in 2019, the growing domestic seat capacity represents a reallocation of seat capacity by the Malaysian carriers (see Figure 8).

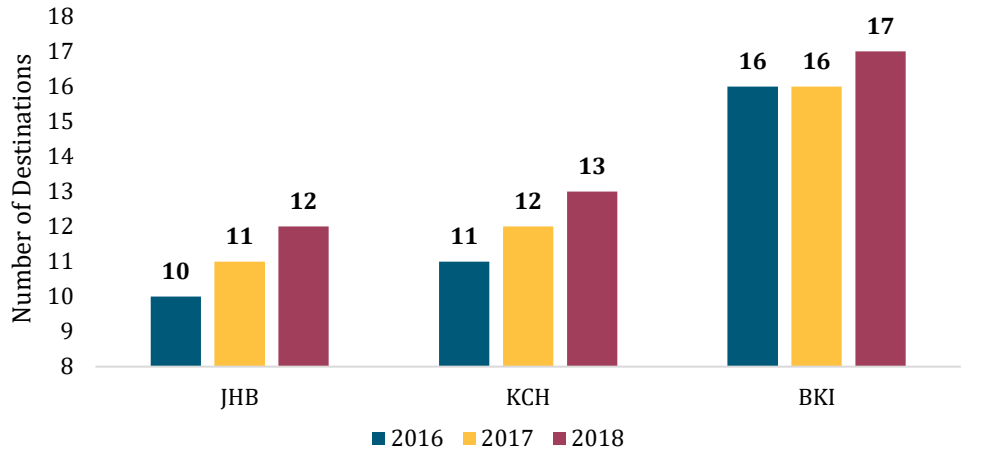
Figure 8: Seat Capacity Growth by Region, 2011 – 2019



Source: MAVCOM, AirportIS

The higher seat allocation to domestic destinations was also driven by Malaysian carriers operating domestic services at non-KUL airports, signifying the development of alternative airport hubs. The increased services enabled a wider choice of domestic destinations at these airports, which helped support passenger traffic growth. Figure 9 depicts the increasing number of domestic destinations served from JHB, KCH, and BKI between 2016 and 2018.

Figure 9: Number of Domestic Destinations Served at JHB, KCH, and BKI



Source: MAVCOM, AirportIS

Subsequently, in 1H19, passenger traffic growth at non-KUL airports operated by MAHB grew by 8.5% YoY, compared to 1.1% and 2.9% for KUL-T1 and KUL-T2, respectively. Meanwhile, JHB recorded a passenger traffic growth of 25.2% YoY. The passenger traffic growth at both non-KUL airports operated by MAHB and JHB was driven by domestic passengers, which witnessed a growth of 9.6% YoY and 28.3% YoY, respectively.

Malaysia's Passenger Traffic is Expected to Grow by 6.4% – 7.0% YoY in 2019

MAVCOM forecasts that 2019 passenger traffic will grow between 6.4% YoY and 7.0% YoY (previous: 2.9% – 4.1% YoY) to between 109.1mn and 109.7mn. 1H19 had witnessed strong growth in seat capacity (particularly domestic seat capacity), strong economic growth in Malaysia, and declining crude oil prices globally. Additionally, strong passenger traffic growth from non-KUL airports and traffic to ASEAN destinations have also been robust in 1H19. As a result, on a monthly basis, passenger traffic growth in 2019 outpaced growth in previous years.

The robust passenger traffic growth in 2019 will continue to be driven by domestic demand as the Malaysian economy is expected to remain resilient with a growth forecast of 4.3% – 4.8% YoY. The forecasted decline in oil prices is expected to continue in 4Q19, which can help airlines lower their costs and fares. Additionally, the depreciation of the RM against the USD will also support Malaysia's passenger traffic growth in terms of making travelling to Malaysia relatively cheaper.

Malaysia's Passenger Traffic is Expected to Grow by 5.0% – 6.0% YoY in 2020

For 2020, the demand for air travel will be supported by the continued reallocation of seat capacity by Malaysian carriers to the domestic market. This increase will be mainly driven by domestic market seat capacity which is anticipated to grow by 3.2% YoY. This growth will be led by routes within East Malaysia that will grow by 4.8% YoY, followed by East-West Malaysia by 2.0% YoY, and within West Malaysia by 1.5% YoY. The top three routes within East Malaysia that will experience the highest growth are KCH-SBW (14.0% YoY), BTU-KCH (13.4% YoY), and KCH-MYY (9.9% YoY). In terms of Malaysian carriers' fleet, there will be additional eight narrow-body aircraft in 2020 (2019: nine aircraft) to support the growth of the domestic market.

Seat capacity growth in 2020 for ASEAN market is forecasted to be at 1.8% YoY, while the international market is expected to experience no growth. This growth trends continue from two consecutive years of declining seat capacity growth in the ASEAN (2018: 7.3% YoY; 2019F: 2.4% YoY) and international (2018: 4.9% YoY; 2019F: 3.6% YoY) markets. This is in line with the airlines' strategy to consolidate seat capacity in both markets to achieve higher load factors. As a result, passenger traffic in both markets are expected to increase despite the downward trend in seat capacity growth.

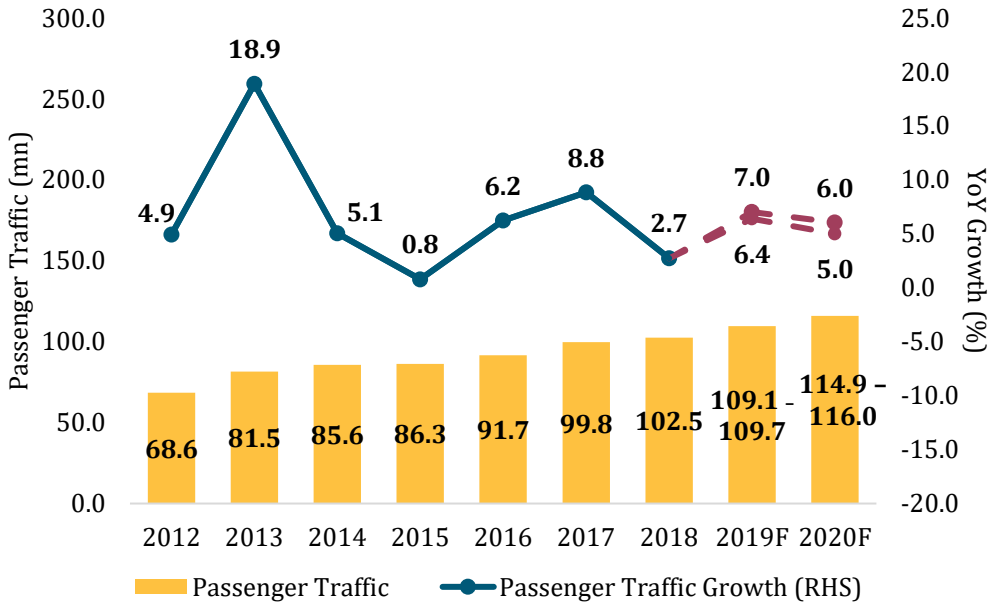
Additionally, passenger traffic growth in 2020 will also be supported by international arrivals from the Visit Malaysia Year 2020 campaign. Previous Visit Malaysia campaigns in 2007 and 2014 increased tourist arrivals by 19.5% YoY (2006: 6.8% YoY) and 6.7% YoY (2013: 2.7% YoY), respectively. International arrivals in 2020 are also expected to be further supported by passenger traffic associated with the Asia Pacific Economic Cooperation Leaders' Summit that will be held in Kuala Lumpur in November 2020.

The impact arising from the recent downgrading of CAAM to a Category 2 Aviation Regulator[10] by the US FAA is expected to be minimal. Existing services that can be affected are the KUL-HNL via KIX and codesharing between MAB and American Airlines. Collectively, these routes contribute 1.2% of the total seat capacity to and from Malaysia forecasted in 2020. However, should other civil aviation authorities such as the Japanese, South Koreans, and Chinese follow suit by disallowing Malaysian carriers to undertake operations to their respective countries, the impact can be greater than that of the downgrade by the US FAA.

[10] A Category 2 classification indicates that a country's civil aviation authority is non-compliant in at least one of the Critical Elements of an effective aviation oversight body specified by ICAO. These critical elements can include aviation legislation, technical personnel, and licensing and certification, among others.

Furthermore, both a weaker RM and lower oil prices are also expected to provide a boost to passenger traffic growth in 2020. Therefore, **MAVCOM forecasts that passenger traffic will grow between 5.0% YoY and 6.0% YoY in 2020**, translating into passenger traffic of 114.9mn – 116.0mn (see Figure 10).

Figure 10: Passenger Traffic, 2012 – 2020F



Source: MAVCOM, AOL Holders

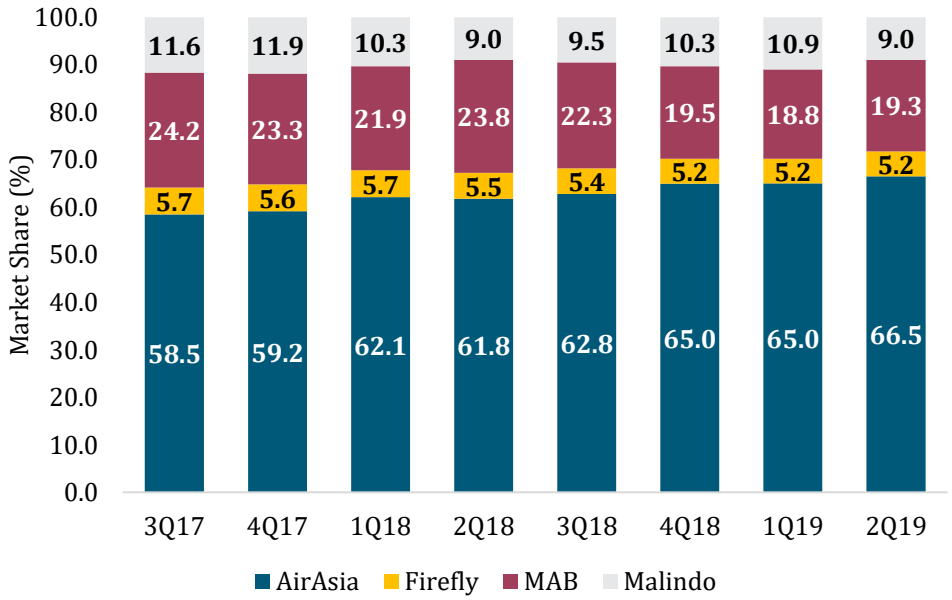
SECTION 3: INDUSTRY STRUCTURE

Scheduled Passenger Services Market

AirAsia Maintained Its Dominant Position in the Market

AirAsia remained the largest player in the domestic market as it increased its market share in terms of number of passengers to 66.5% in 2Q19 (2Q18: 61.8%) (see Figure 11). AirAsia operated 14 of the 20 domestic monopoly routes in Malaysia for the same period. Malindo maintained its market share at 9.0% in 2Q19 (2Q18: 9.0%), while MAB saw a decline in its market share by 4.5 ppt to 19.3% in 2Q19 (2Q18: 23.8%). In 2Q19, both AirAsia and Malindo increased their seat capacity by 17.8% YoY and 3.9% YoY, respectively. During the same period, MAB also increased its seat capacity by 18.0% YoY, but the number of passengers carried by MAB decreased by 12.2% YoY. The decline in the number of passengers carried translated into a further reduction in MAB's market share for domestic routes in 2Q19.

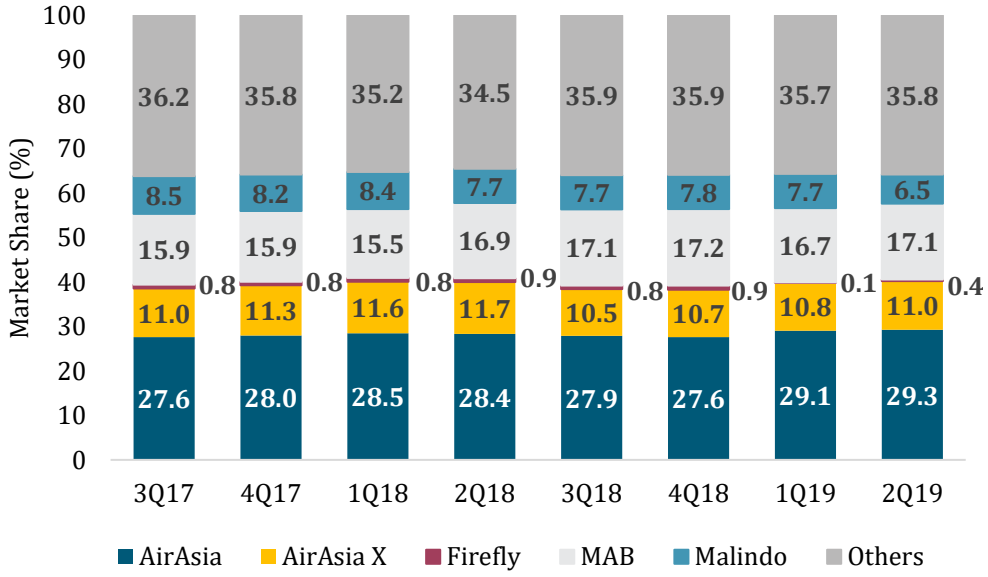
Figure 11: Percentage of Airlines' Market Share for Domestic Routes by Passengers, 2017 – 2019



Source: MAVCOM, AirportIS

In the international market, AirAsia remained the largest airline with a market share of 29.3% in 2Q19 (2Q18: 28.4%) (see Figure 12). AirAsia increased its market share for international routes in 1Q19 after four consecutive quarters of decline. Similarly, Firefly's market share for international routes increased to 0.4% in 2Q19 (1Q19: 0.1%) after commencing its operations on the SZB-XSP route in April 2019. This route replaces its previous operation to Singapore, SZB-SIN, which ceased operations in December 2018. The market shares for foreign airlines remained relatively unchanged between 3Q18 and 2Q19.

Figure 12: Percentage of Airlines' Market Share for International Routes by Passengers, 2017 – 2019

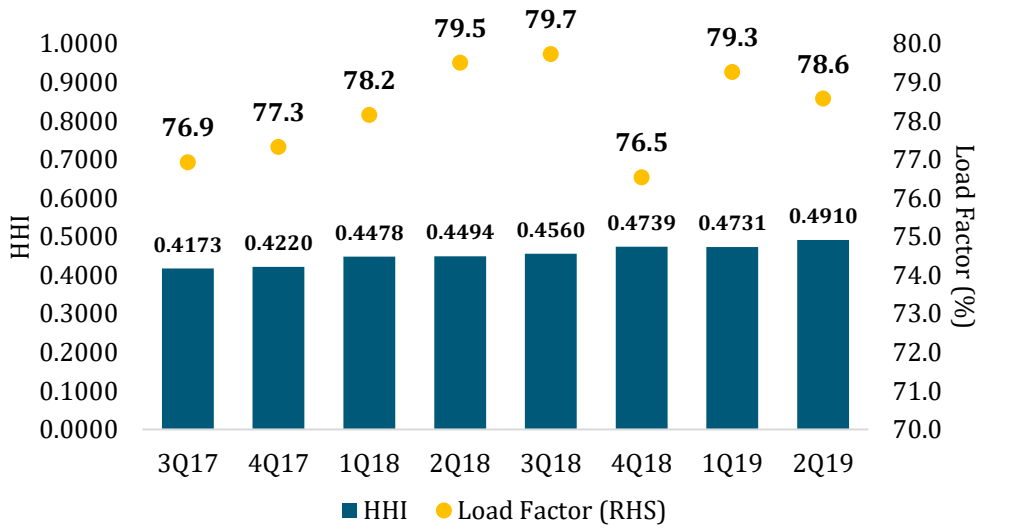


Source: MAVCOM, AirportIS

Both Domestic and International Routes Were More Concentrated in 2Q19

The domestic market became more concentrated in 2Q19 as AirAsia increased its market share to 66.5% (2Q18: 61.8%), resulting in the HHI[11] increasing to 0.4910 (2Q18: 0.4494) (see Figure 13). However, the average load factor of Malaysian carriers in the domestic market declined to 78.6% in 2Q19, mainly due to a decline of MAB's load factor to 67.6% in 2Q19 (2Q18: 90.9%).

Figure 13: Domestic Market Concentration Levels and Load Factors, 2017 – 2019



Source: MAVCOM, AirportIS

The five domestic routes with the highest and lowest load factors in 2Q19 are shown in Table 9. These five routes were operated by either one or two players only. Each of the routes with the highest load factors was operated by only one player, indicating that there is a potential for new entrants.

Table 9: Five Domestic Routes with Highest and Lowest Load Factors, 2019

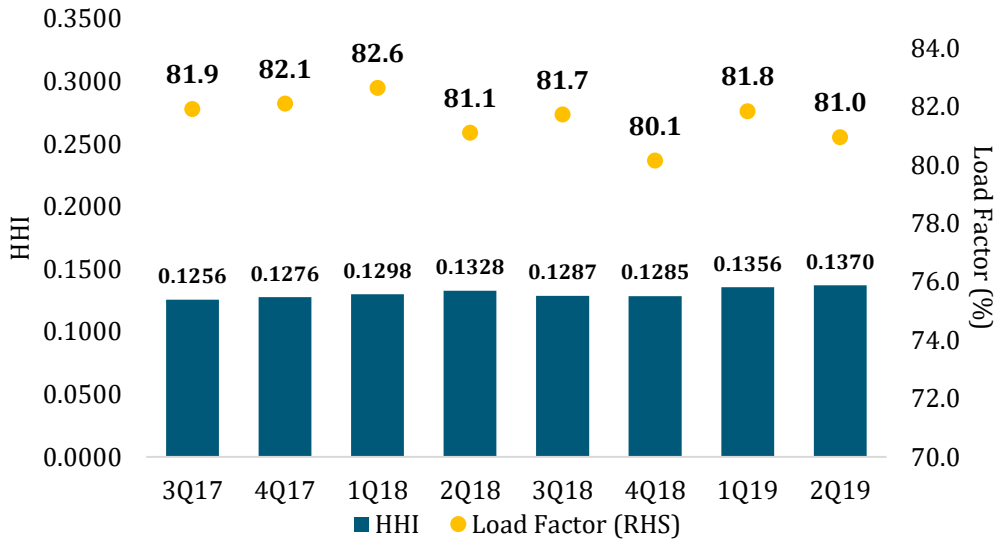
Route	Average Load Factor (%)	Number of Players
Highest		
BKI-SBW	86.1	1
KCH-TWU	86.1	1
BKI-BTU	86.1	1
LGK-JHB	86.0	1
PEN-BKI	86.0	1
Lowest		
PEN-MKZ	73.9	1
SZB-KTE	73.7	1
MKZ-KBR	72.9	1
KUL-KUA	72.4	2
MKZ-LGK	72.3	1

Source: MAVCOM, AirportIS

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

Concentration levels of the international market were considerably lower compared to the domestic market between 3Q17 and 2Q19. As at 30 June 2019, there were 63 foreign airlines operating alongside Malaysian carriers in serving the international market. The average load factor trend in the international market followed that of the domestic market, where a decline from the preceding quarter to 81.0% was observed (see Figure 14). Malaysian carriers' average load factor for the international market declined in 2Q19 to 81.8% (2Q18: 83.4%) whereas foreign carriers' average load factor increased to 79.4% (2Q18: 77.1%), which indicated that more passengers were travelling on foreign carriers.

Figure 14: International Market Concentration Levels and Load Factors, 2017 – 2019



Source: MAVCOM, AirportIS

The five international routes with the highest and lowest load factors in 2Q19 are shown in Table 10. The top five international routes with the highest and lowest load factors were operated by either one or two players only, indicating that the market for international routes also has the potential to attract more players.

Table 10: Top Five International Routes with Highest and Lowest Load Factors, 2019

Route	Average Load Factor (%)	Number of Players
Highest		
KUL-MED	98.8	2
KUL-TAS	98.6	1
JHB-CAN	94.0	2
KUL-DXB	92.8	1
KUL-CEB	91.0	1
Lowest		
TWU-TRK	51.4	1
KUL-FOC	51.2	2
PEN-KMG	46.8	1
KUL-RUH	36.5	1
BKI-FOC	29.4	1

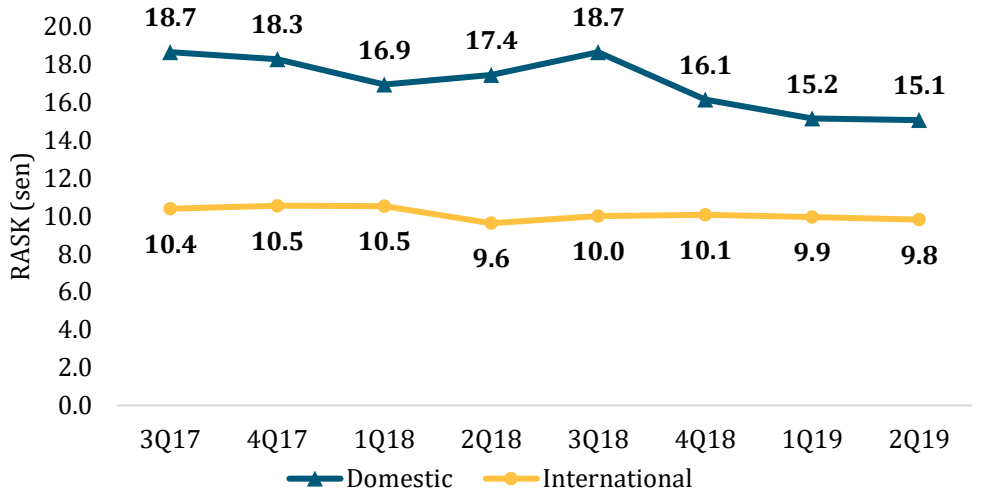
Source: MAVCOM, AirportIS

In 1H19, on average, the RASK for domestic routes (15.1sen) was 52.9% higher than the RASK for international routes (9.9 sen). In 2Q19, for domestic routes, the PEN-LGK route operated by Firefly had the highest RASK (RM1.06) and the KUL-BKI route operated by AirAsia had the lowest RASK (9.1 sen). For international routes, TWU-TRK route operated by MAB had the highest RASK (RM1.70) and DOH-KUL route operated by Qatar Airways had the lowest RASK (1.9 sen) for the same period.

In terms of number of players, the domestic routes with the highest and lowest RASK (PEN-LGK and KUL-BKI, respectively) were operated by two and three players each, respectively, while both the international routes (TWU-TRK and DOH-KUL) were monopoly routes during this period.

Between 3Q18 and 2Q19, domestic capacity in terms of ASK for Malaysian carriers increased by 5.0% whilst the number of seats increased by 7.1%. This indicates that Malaysian carriers increased their operational frequencies during this period. However, the aggregate revenue declined by 16.2% for the same period. Correspondingly, the RASK on domestic routes fell by 19.2% from 18.7 sen to 15.1 sen (see Figure 15). This was in line with the average fares of domestic routes, which declined by 15.7% from RM230 to RM194 between 3Q18 and 2Q19. A higher-than-expected seat capacity growth in 1H19 pressured Malaysian carriers to lower airfares in order to preserve load factors.

Figure 15: RASK for Domestic and International Routes, 2017 – 2019



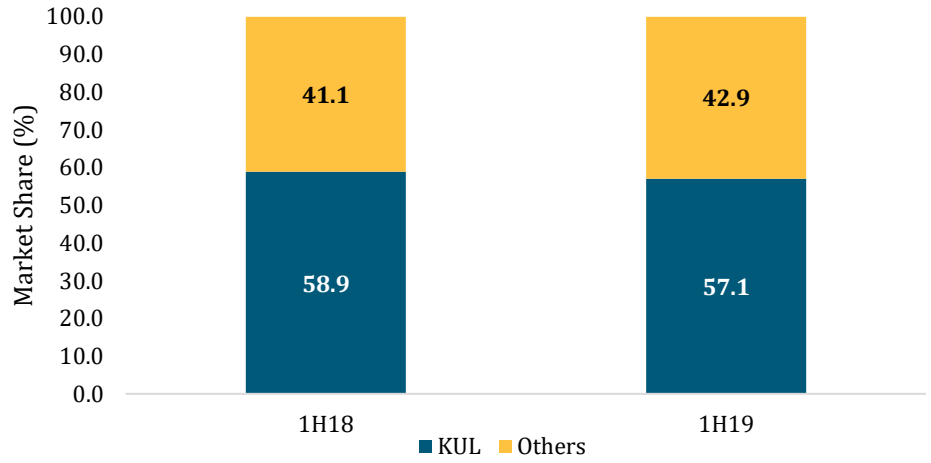
Source: MAVCOM, AirportIS

Aerodrome Operators' Segment

KUL Market Share Declined

Passenger traffic at Malaysia's airports in 1H19 was highly concentrated at KUL as the airport handled 57.1% (1H18: 60.9%) of the total passenger traffic for Malaysia (see Figure 16). However, KUL experienced a decline in market share in 1H19 due to an increase in the market share held by airports such as BKI, JHB, and PEN. At these airports, passenger traffic grew 10.5% YoY, 24.0% YoY, and 8.9% YoY, respectively, while passenger traffic at KUL grew only 2.1% YoY.

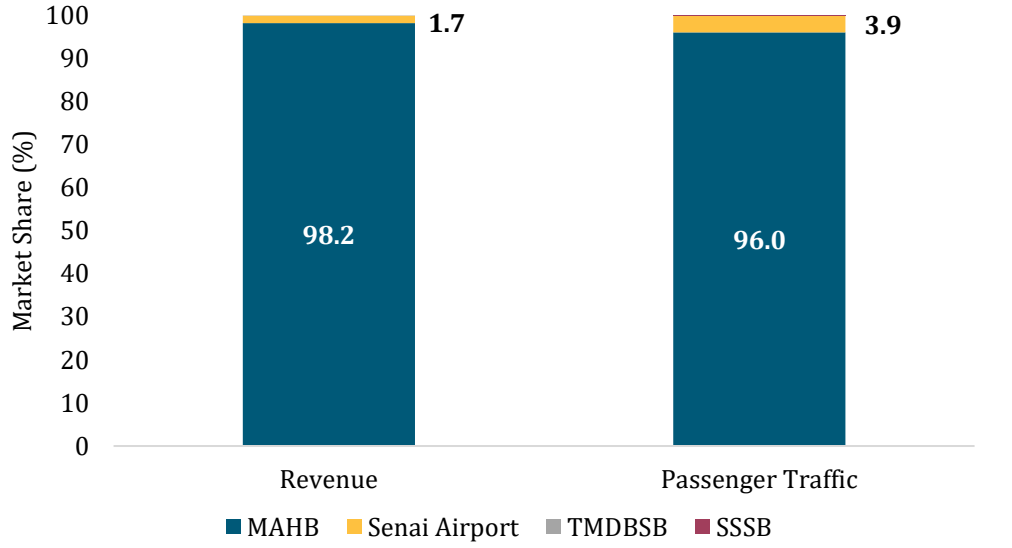
Figure 16: Market Shares of Airports in Malaysia in Terms of Passenger Traffic, 2019



Source: MAVCOM, AOL Holders

However, despite the increase in market share by JHB, the overall effect in terms of operators' market share remain negligible as MAHB operates 39 of the 42 airports in Malaysia. In 1H19, the aerodrome operating segment reported total revenue of RM2.6bn, of which 98.2% was generated by MAHB (see Figure 17). As the biggest airport operator in the country, MAHB handled 96.0% of total passenger traffic in Malaysia in 1H19 (1H18: 96.5%). Additionally, with an HHI of 0.9641 in 1H19 (1H18: 0.9662), this was the most concentrated segment within the aviation services market.

Figure 17: Market Shares of the Aerodrome Operators' Segment by Revenue and Passenger Traffic, 2019

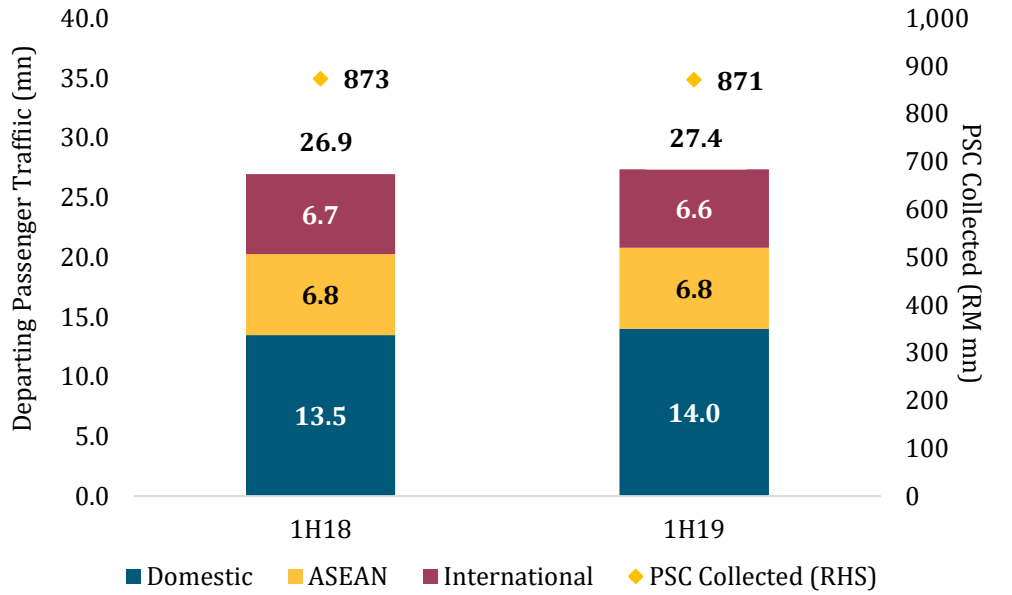


Source: MAVCOM, AOL Holders
Note: TMDBSB and SSSB collectively made up 0.1% of each the total revenue and passenger traffic in 1H19.

Changing Passenger Composition Will Influence Aerodrome Operators' Earnings

MAVCOM estimated that PSC collection growth in 2019 will be commensurately lower relative to passenger traffic growth. As mentioned earlier, 1H19 witnessed growth in domestic and ASEAN passengers relative to passengers from other international destinations. The growing proportion of domestic and ASEAN passengers will affect aerodrome operator earnings as both these classes of passengers pay a lower PSC compared to international ex-ASEAN passengers. Figure 18 shows that the growth in the departing passenger traffic between 1H18 and 1H19 of 1.6% YoY was not met with an increase in PSC collected (-0.3% YoY).

Figure 18: Departing Passenger by Regions and Passenger Service Charge Collected, 2018 – 2019



Source: MAVCOM, AirportIS

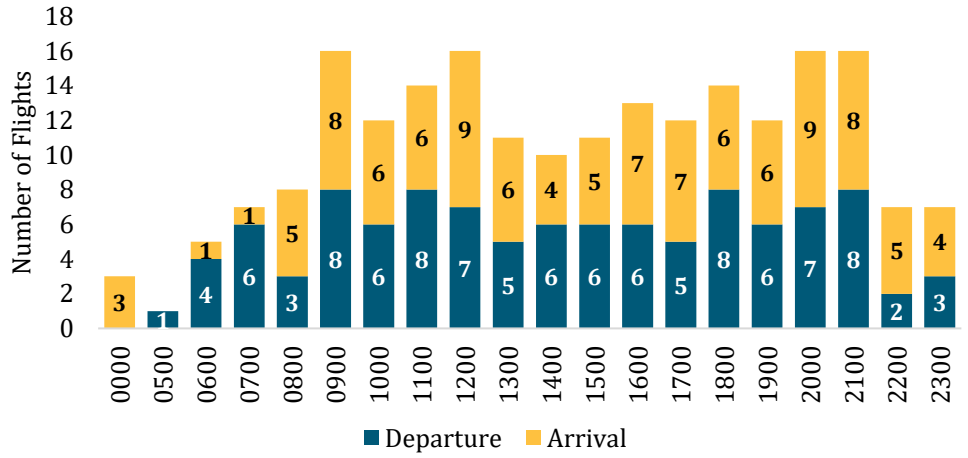
Congestion at Airports is Closely Linked to Constrained Airport Infrastructure

Based on MAVCOM's analysis, JHB, KCH, KUL-T1, PEN, and TWU are identified to be in the 'sweating' airports category.[12] In this category, airports experience a utilization rate of above 100% and a positive CAGR. In order to address congestion, these airports can work together with airlines to improve flight scheduling to shift traffic from peak to off-peak hours, enhance the operational efficiencies of airports, and lastly, expand airport infrastructure. Failure to address congestion may result in flight delays for passengers and increased costs for both airports and airlines.

[12] These airports have positive CAGR in terms passenger traffic between 2014 and 2018 and have already exceeded their respective terminal design capacity in 2018 (see Waypoint: Malaysian Aviation Industry Outlook (May 2019)).

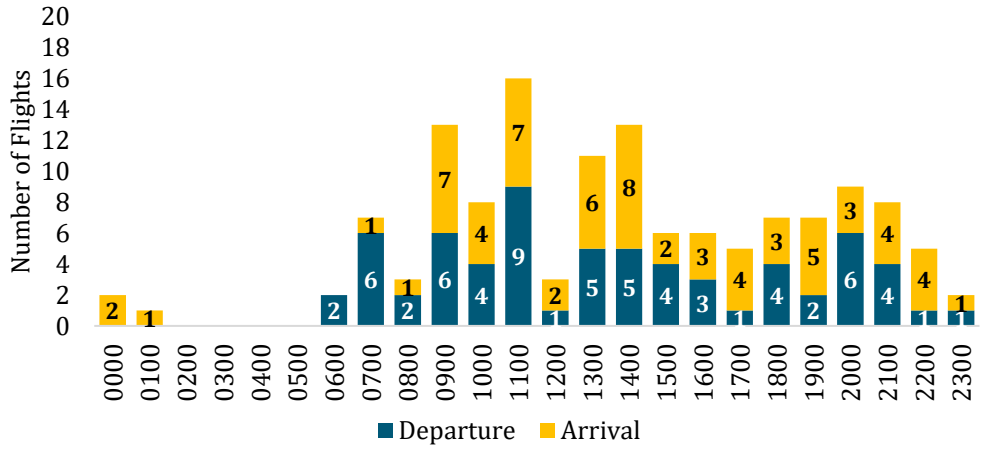
However, if the congestion occurs during peak hours only, airports can consider enhancing its operations to address congestion. Figures 19 and 20 illustrate the distribution of flight departures and arrivals at two of these airports; PEN[13] and KCH[14]. In terms of aircraft movements, it can be observed that the peak hours at PEN is between 0900 and 1200, as well as, 1800 and 2100. At KCH, the peak hours can be observed to be between 0900 and 1100, as well as, 1300 and 1400.

Figure 19: Flight Departure and Arrival Distribution at PEN, 2019



Source: MAVCOM, AirportIS

Figure 20: Flight Departure and Arrival Distribution at KCH, 2019



Source: MAVCOM, AirportIS

Peak hour congestion at Malaysian airports is closely linked to the availability of airport slots. MAVCOM's Technical Paper on Managing Airport Demand: The Role of Airport Slots further discusses this.

[13] Sample of flight departures and arrivals on 30 June 2019.
[14] Sample of flight departures and arrivals on 30 June 2019.

Ground Handling Services Segment

Ground Handling is the Least Concentrated Segment

As at 30 June 2019, there were 30 GHL Holders that operate in three ground handling services sub-segments. **Based on 1H19 financial data, the GHL Holders reported RM0.7bn in revenue**[15] (1H18: RM0.5bn) (see Table 11). In terms of profitability, the ground handling services segment reported an average operating profit margin[16] of 6.7% in 1H19 (1H18: -0.9%).

Ground handling is the least concentrated segment compared to scheduled passenger services, non-scheduled services, and aerodrome operation segments. However, different sub-segments within the ground handling segment may have different degrees of market concentration. For example, the catering services is the most concentrated sub-segment with an HHI of 0.6861.

Table 11: Market Structure of GHL Segment, 2019

Type of Business	No. of Licence Holders	HHI	1H19 Revenue (RM mn)	2018 Operating Profit Margin (%)
Catering	3	0.6861	174.1	2.8
General Ground Handling	19	0.3098	467.7	8.7
Refuelling	8	0.4811	17.5	-5.2
TOTAL	**30**		**659.3**	**6.7**

Source: MAVCOM

The general ground handling sub-segment includes 10 types of services. A general ground handler may provide multiple services within the list shown in Table 12.

Table 12: Types of General Ground Handling Services

No.	Ground Handling Services
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	Baggage handling
9	Freight and mail handling (physical handling)
10	Ramp handling

Source: MAVCOM

[15] The total revenue excludes revenue generated by the GHL Holders that are also ASL, ASP, or AOL Holders, and petroleum products retailers.

[16] The average operating profit margin excludes revenue generated by the GHL Holders that are also ASL, ASP, or AOL Holders, and petroleum products retailers.

ATRs Awarded by MAVCOM as of 30 June 2019

In 1H19, ASL Holders were awarded 104 additional ATRs (see Table 13), with AirAsia receiving the highest number of ATRs at 38, followed by MAB at 28. During this period, 33 ATRs were revoked as ASL Holders failed to utilize the rights within six months from the date of issuance.

Table 13: Breakdown of ATRs Awarded, 2018-2019

ASL Holders	Total Domestic & International ATRs Awarded		Failed to Operate[17]		Surrendered[18]	
	2018	1H19	2018	1H19	2018	1H19
AirAsia	98	38	6	15	-	4
AirAsia X	20	10	11	4	-	-
Firefly	4	2	-	0	-	-
MAB[19]	24	28	6	4	-	-
Malindo	52	23	35	10	-	-
MASwings	3	1	-	0	-	-
My Jet Xpress	-	1	-	0	-	-
Raya Airways	4	1	-	0	-	-
TOTAL	**205**	**104**	**58**	**33**	**-**	**4**

Source: MAVCOM

The ASL Holders sometimes surrender or fail to utilize their ATRs due to:

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

AirAsia had surrendered four ATRs in 1H19, with three of the four ATRs surrendered for routes from Malaysia to Indonesia (two for the KUL-LOP route and one for the KUL-TKG route) while the other was for a Malaysian domestic route (BKI-TWU). The former was surrendered due to a reallocation of ATRs for other routes while the latter was returned due to the underutilization of the ATRs in terms of frequency. It is imperative for airlines to utilize the ATRs assigned as non-utilization of the ATRs within six months of issuance will result in the ATRs being revoked.

[17] ATRs revoked for failing to operate within six months from the ATRs' date of issuance.
[18] ATRs surrendered by the ASL Holders.
[19] ATRs awarded include ATRs for the use of MABkargo.

Box 1 highlights the importance of having clear rules regarding the utilization of ATRs which is essential in route development and facilitating air connectivity in Malaysia and with other States.

Box 1: Administration of Unutilized Air Traffic Rights in Malaysia and Other Jurisdictions

An ASA is an agreement that enables countries to allow their respective designated airlines to operate flights into each other's territory. ASAs contain provisions on ATRs, capacity, tariffs (prices), designation, as well as, ownership and control. The route schedule contained within the ASA specifies the points from which airlines can operate flights from and includes the locations that can be served (i.e. points of call) within, between, and beyond the bilateral partners (if any). ATRs may also be restricted or unrestricted.

In Malaysia, an ATR is required for any ASL Holder intending to undertake to carry by air or use any aircraft for the transport of passenger, mail or cargo for hire and reward upon any scheduled journey between two or more places, of which one must be located in Malaysia. MAVCOM allocates ATRs to airlines based on the criteria specified in section 66 of Act 771, which, among others, considers the available allocation remaining for each route. An ATR Holder is required to use all the capacity allocated to it within six months from the date an ATR certificate is issued. In assessing ATR allocations, MAVCOM considers the following factors:

- public demand and the interests of air transport users;
- quality of service, and economic viability of the proposed flights;
- competition levels, particularly on international routes; and
- impact on Malaysia's airports and the aviation industry.

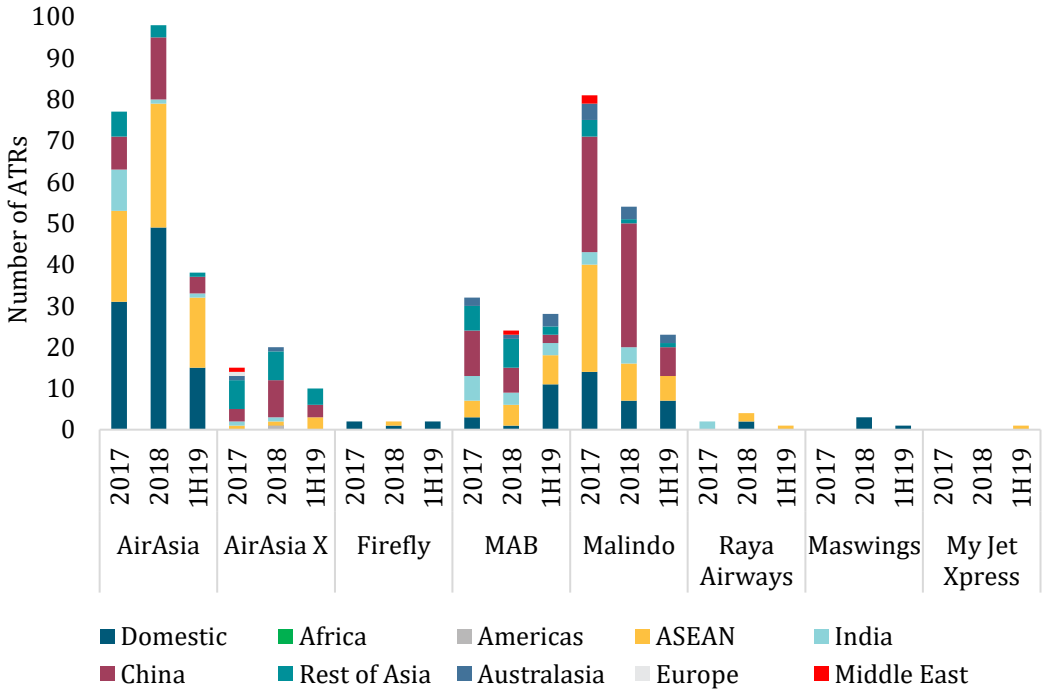
The rules surrounding the allocation of ATRs may differ among countries. Singapore has established the Air Traffic Rights Committee under the Air Navigation (Licensing of Air Services) Regulations for the purpose of allocating ATRs for scheduled journeys under ASAs. Singapore ATR Holders are required to use the capacity allocated to it within six months from the approved effective date of operation. Unlike Singapore, the Australia International Air Services Commission does not require ATR Holders to utilize the capacity allocated within a certain timeframe after the allocation is first assigned. Airlines that would like to utilize the unused capacity (currently assigned to other airlines) may make an appeal to the Australia International Air Services Commission for a reallocation of the ATR.

Recently in the Philippines, Philippines AirAsia filed a petition to the Civil Aeronautics Board to be designated as a Philippine carrier in order to operate flights to the US under the Philippines-US Air Transport Agreement. The Civil Aeronautics Board and the Philippine Department of Transportation and Communication lodges the designation of Philippines-based airlines. The dispute arose from Air Philippines' refusal to return its ATR to the US despite not utilizing it. Cebu Pacific Air and Philippines Airlines are the Philippine-designated carriers operating routes to the US. The Civil Aeronautics Board is assessing the claim made by the airline against Air Philippine.

This highlights the need to have clear rules regarding the utilization of ATRs to ensure that they can be gainfully and efficiently utilized by capable airlines, therefore promoting greater competition among airlines and choice for consumers.

1H19 saw the largest share of ATR allocations for domestic routes at 34.6% (1H18: 29.7%), followed by allocations to the ASEAN region at 33.7% (1H18: 25.2%) (see Figure 21). The share of ATR allocations to destinations in China declined to 15.4% (1H18: 30.6%), in part due to difficulties in obtaining landing slots at Chinese airports, which limited expansion opportunities for airlines.

Figure 21: Breakdown of ATRs Awarded by Region, 2017 – 2019



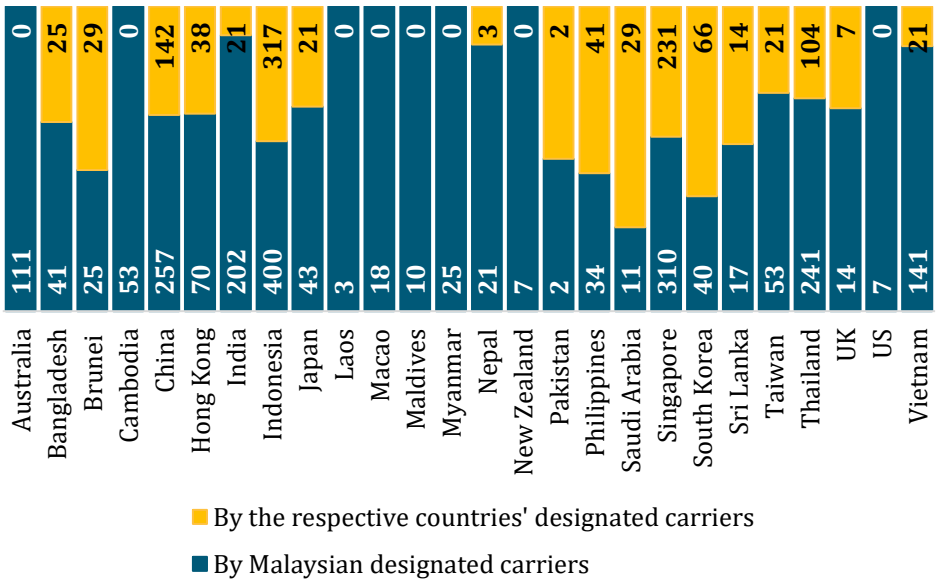
Source: MAVCOM
Note: Raya Airways and My Jet Xpress are ASL Holders providing scheduled cargo services.

The increase in allocated ATRs for domestic and ASEAN routes is emblematic of more liberal aviation policies, with the ASEAN Single Aviation Market playing a key role in facilitating regional connectivity. There has also been continued interest in routes connecting secondary cities in Malaysia to each other such as PEN-TGG and PEN-KUA, as well as, a renewed focus on key domestic trunk routes such as KUL-BKI, KUL-KCH, and KUL-PEN in 2019. Internationally, new destinations from Malaysia include KTJ, HFE, OKA (via TPE), MDC and TKG.

Malaysian Carriers Utilize 26 out of 106 ASAs

As at 30 June 2019, Malaysia had ASAs with 106 countries. However, **Malaysian-designated carriers utilized Third[20], Fourth[21], and Fifth[22] Freedom Rights in the respective ASAs for only 26 countries**. Among the 26 utilized ASAs, Malaysian-designated carriers operated seven or more (i.e. at least daily) flights per week to 24 of the 26 countries; the only countries where Malaysian carriers did not operate at least daily flights to are Laos and Pakistan. There were also several foreign-designated carriers that did not reciprocate in terms of the utilization of their home state's ASA with Malaysia—there were no designated carriers from Australia, Cambodia, Laos, Macao, Maldives, Myanmar, New Zealand, and the US that operated flights to Malaysia (see Figure 22).

Figure 22: Utilization of ASAs, 2019



Source: MAVCOM

[20] Unrestricted ASAs do not have limits in terms of types of aircraft, number of seats, and number of frequencies that can be deployed by the designated carriers in the ASAs, whereas the restricted ASAs specify restrictions to capacity deployment. Utilisation of an ASA means operating at least one flight into a country that is a party to an ASA.

[21] The Third Freedom Right is the right to carry traffic from the home state of the carrier into another state and the Fourth Freedom Right is the right to carry traffic from another state to the home state of the carrier.

[22] The Fifth Freedom Right is the right granted by one state to put down and carry traffic from the home state of the carrier destined to a third state.

There were also close to 70 countries such as Argentina, Canada, France, South Africa, and Russia in which the ASAs with Malaysia are not utilized by either Malaysian- or the respective foreign-designated carriers. The underlying reasons for the non-utilization of these Rights could potentially be due to relative geographical isolation, unattractive yields, or that these markets may not be sufficiently attractive to offer suitable onward connections based on each airline's passenger profile.

Utilization of ASAs by Foreign Carriers

There are also carriers operating to Malaysia from countries that Malaysian-designated carriers do not fly to (see Table 14).

Table 14: Foreign Carriers Operating into Malaysia from Countries Malaysian Carriers Do Not Fly To

Country	Airline	Route (v.v.)
Ethiopia	Ethiopian Airlines	ADD-SIN-KUL
Germany	Condor Flugdienst	FRA-KUL
Iran	Mahan Air	IKA-KUL
Iraq	Iraqi Airways	BGW-KUL
Jordan	Royal Jordanian	AMM-BKK-KUL
Kazakhstan	Air Astana	ALA-KUL
Mauritius	Air Mauritius	MRU-SIN-KUL
The Netherlands	KLM Royal Dutch Airlines	AMS-KUL-CGK
Oman	Oman Air	MCT-KUL
Qatar	Qatar Airways	DOH-KUL
		DOH-PEN
Turkey	Turkish Airlines	IST-KUL
United Arab Emirates	Emirates	DXB-KUL
	Etihad Airways	AUH-KUL
Uzbekistan	Uzbekistan Airways	TAS-KUL

Source: AirportIS

The case of Condor Flugdienst (a member of the now-defunct Thomas Cook Group) is unique as the airline is contracted to carry passengers booked on package tours by the company and sell any surplus seats to the general public i.e. a public charter flight. Public charter flights operate like normal scheduled flights i.e. operate on specific day(s) of the week and would not appear to be distinct from regularly scheduled flights, except in legal or regulatory perspectives.

Condor Flugdienst began operating the FRA-KUL route in November 2018, providing a direct service to Malaysia from Europe besides existing scheduled flights provided by KLM (AMS-KUL), British Airways (LHR-KUL), and MAB (LHR-KUL). Condor Flugdienst operated three flights a week on the FRA-KUL route beginning November 2018 but reduced the frequency to twice a week since May 2019. This was likely due to lower demand for the route, which is possible for public charters given that they depend on customers booking package tours. Overall, in 1H19, Condor Flugdienst carried a total of 29,460 passengers on the FRA-KUL route, which represents 0.11% of the total international passengers carried to and from Malaysia in the same period.

Utilization of Fifth Freedom Rights Operations

There are also several Malaysian-designated carriers that utilized the Fifth Freedom Rights accorded in those ASAs—AirAsia X operates seven flights weekly from KUL to HNL via KIX, for example. Malindo also utilizes these Fifth Freedom Rights with seven flights weekly each from BNE, ADL, and MEL to KUL via DPS. Other airlines such as Air Mauritius, Ethiopian Airlines, Royal Jordanian, and Uzbekistan Airways utilize the Fifth Freedom Rights by flying to KUL via either BKK or SIN. KLM, on the other hand, makes Malaysia their intermediary point by flying to CGK via KUL. In 1H19, KLM offered 131,416 scheduled seats on AMS-CGK via KUL. It had an average load factor of 92.6% and 86.0% for the same period on the AMS-KUL and KUL-CGK segments, respectively.

Historically, Fifth Freedom Rights meant that airlines could serve further destinations due to limitations in aircraft performance as long-distance flights were not always possible. Fifth Freedom Rights also enable airlines to increase the utilization of aircraft which may be awaiting the return journeys to their respective home states, such as those services provided by Air Mauritius, Ethiopian Airlines, Royal Jordanian, and Uzbekistan Airways to Malaysia. In these cases, a relatively shorter onward destination such as to KUL from either BKK or SIN enables the aircraft to be gainfully used in the time where it may otherwise be sitting idle before its flight back to its home state.

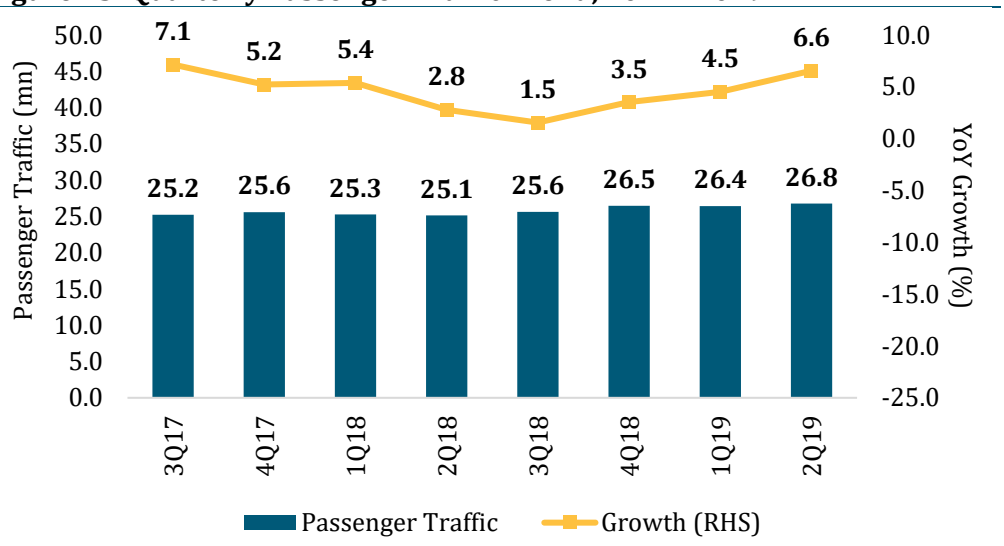
SECTION 4: INDUSTRY PERFORMANCE

Scheduled Services

Steady Domestic Passenger Traffic Growth Since 3Q18

Passenger traffic has been growing steadily, with a growth rate of 6.6% YoY in 2Q19 and rebounded from the low growth of 1.5% YoY in 3Q18 (see Figure 23). This resulted in a passenger traffic growth of 5.5% YoY in 1H19 (1H18: 4.1% YoY). Passenger traffic in 2Q19 was recorded at 26.8mn, which was the highest in the last eight quarters.

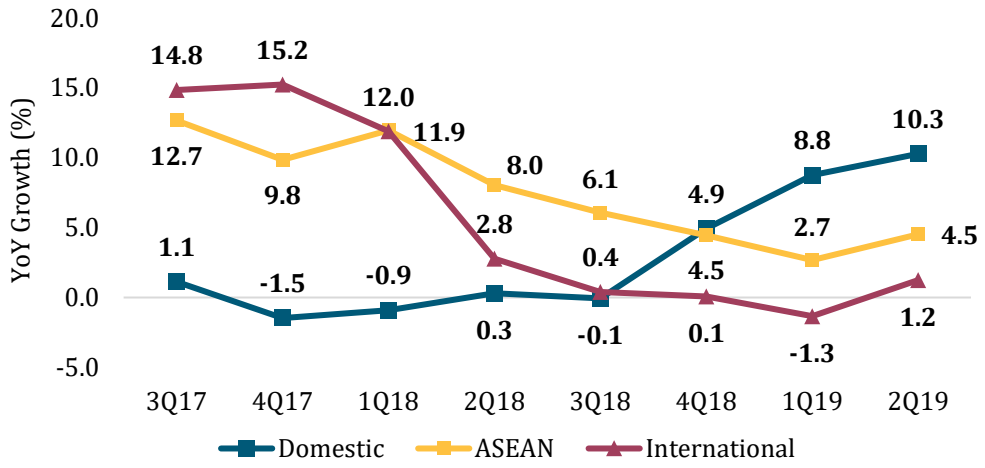
Figure 23: Quarterly Passenger Traffic Trend, 2017– 2019



Source: MAVCOM, AOL Holders

The strong passenger traffic growth in 1H19 was attributable to robust domestic passenger growth of 8.8% YoY and 10.3% YoY in 1Q19 and 2Q19, respectively (see Figure 24). In 2Q19, the domestic seat capacity of Malaysian carriers grew by 9.7% YoY. The passenger traffic growth for ASEAN also rebounded in 2Q19 due to an increase in seat capacity to ASEAN destinations by 3.6% YoY. For the same period, the international passenger traffic recorded the highest growth since 3Q18.

Figure 24: Quarterly Passenger Traffic Trend by Regions, 2017 – 2019



Source: MAVCOM, AOL Holders

In 1H19, ASEAN and international traffic reported weak growth of 3.6% YoY and -0.1% YoY, respectively (1H18: 10.0% YoY and 7.3% YoY, respectively) due to the reduction in seat capacity by airlines. For example, the 10 destination countries that reported the highest decline in the number of passengers in 1H19 were Nepal, Sri Lanka, Pakistan, United Arab Emirates, Iran, Laos, Maldives, New Zealand, Hong Kong, and Taiwan (see Table 15). These countries' share of total passenger traffic stood at 7.1% in 1H19 (1H18: 8.5%).

Table 15: Top 10 Countries with Decline in the Number of Passengers Carried and Number of Seats to and from Malaysia, 2018 – 2019

Country	Change in Number of Passengers in 1H19	Change in Number of Seats in 1H19
Nepal	-102,338	-114,610
Sri Lanka	-82,061	-96,661
Pakistan	-52,204	-66,843
United Arab Emirates	-43,740	-94,171
Iran	-34,316	-39,121
Laos	-32,406	-37,080
Maldives	-31,855	-36,336
New Zealand	-27,283	-110,577
Hong Kong	-24,605	27,083
Taiwan	-23,181	-35,830
TOTAL	**-453,989**	**-604,146**

Source: MAVCOM, AirportIS

With the exception of Hong Kong, Malaysian and foreign carriers reduced their seat capacity by 437,665 seats (72.4% of the total reduction in the number of seats) and 166,481 seats (27.6%), respectively, in 1H19.

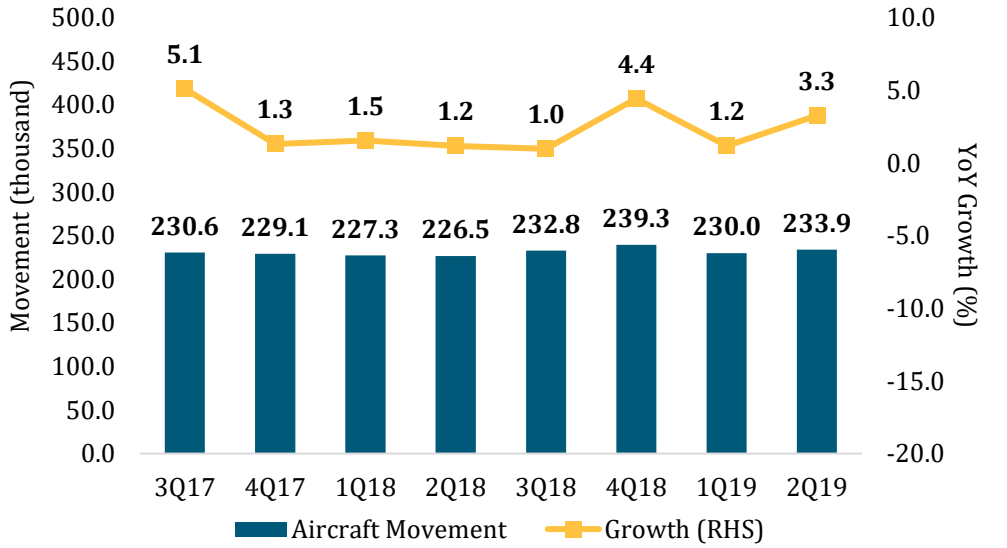
The reduction in seat capacity from Malaysia to these countries was attributable to several factors. For example, the cessation of Malaysian carriers' flight operations to KTM (Nepal), IKA (Iran), LPQ (Laos), and AKL (New Zealand) resulted in the reduction of the aggregate number of seats to those cities by 272,026 which constituted 45.0% of the total reduction in the number of seats in 1H19. In addition, a frequency reduction by Malaysian carriers to TPE and KHH (both in Taiwan), as well as, CMB (Sri Lanka) resulted in the reduction of the aggregate number of seats to the three cities by 82,642 (13.7%). The reduction in the number of seats to MLE (Maldives) by 36,336 (6.0%) was attributable to the transfer of operations between two Malaysian carriers within the same airline group which resulted in the use of smaller aircraft as well as reduced frequency. Additionally, Emirates switched to a smaller aircraft type for its operations between the United Arab Emirates and Malaysia, reducing the number of seats between the two countries by 94,171 (15.6%).

Global political developments also have an impact on airlines' commercial decisions. For example, the closure of Pakistan airspace between February and July 2019 led to a Malaysian carrier reducing its seat capacity to the country by 23,760 (3.9%). Meanwhile, the recent protests in Hong Kong also contributed to the decline in the number of passengers travelling from Malaysia to the city by 2.3% YoY in 1H19, despite an increase in the number of seats by 2.1% YoY in the same period.

Both Aircraft Movements and Cargo Traffic Growth Rebounded in 2Q19

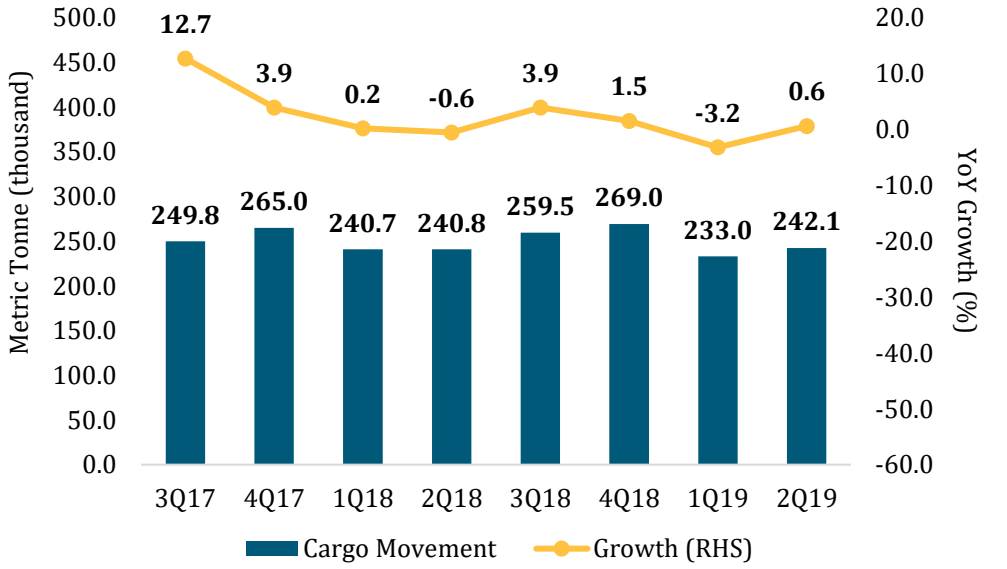
Both aircraft and cargo movements grew by 3.3% YoY and 0.6% YoY in 2Q19, respectively (see Figures 25 and 26). Higher aircraft movement in 2Q19 was in line with the strong passenger traffic growth during the period. As for cargo traffic, weak demand in the freight and mail segments contributed towards the negative cargo growth in 1Q19. Industry players reported weak cargo demand as a result of the shift from air to sea transportation due to the latter's relatively lower unit costs (e.g. fuel).

Figure 25: Malaysia's Aircraft Movements, 2017 – 2019



Source: MAVCOM, AOL Holders

Figure 26: Malaysia's Cargo Movements, 2017 – 2019

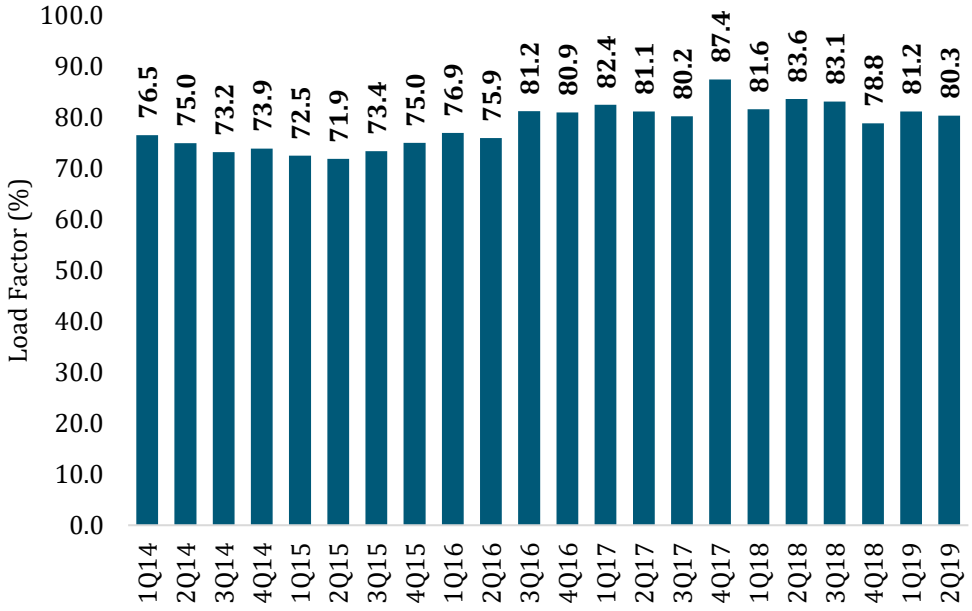


Source: MAVCOM, AOL Holders

Malaysian Carriers' Load Factors Rebounded to Above 80% in 1Q19

Malaysian carriers reported an average load factor of 81.2% and 80.3% in 1Q19 and 2Q19, respectively. In 4Q18, the average load factor for Malaysian carriers was below 80% (see Figure 27). In 2Q19, the combined seat capacity for domestic and international routes expanded at a higher rate of 8.2% YoY (1Q19: 3.9% YoY) relative to passenger traffic growth of 4.0% YoY (1Q19: 3.3% YoY). This contributed to the slightly lower average load factor achieved by Malaysian carriers in 2Q19 compared to 1Q19.

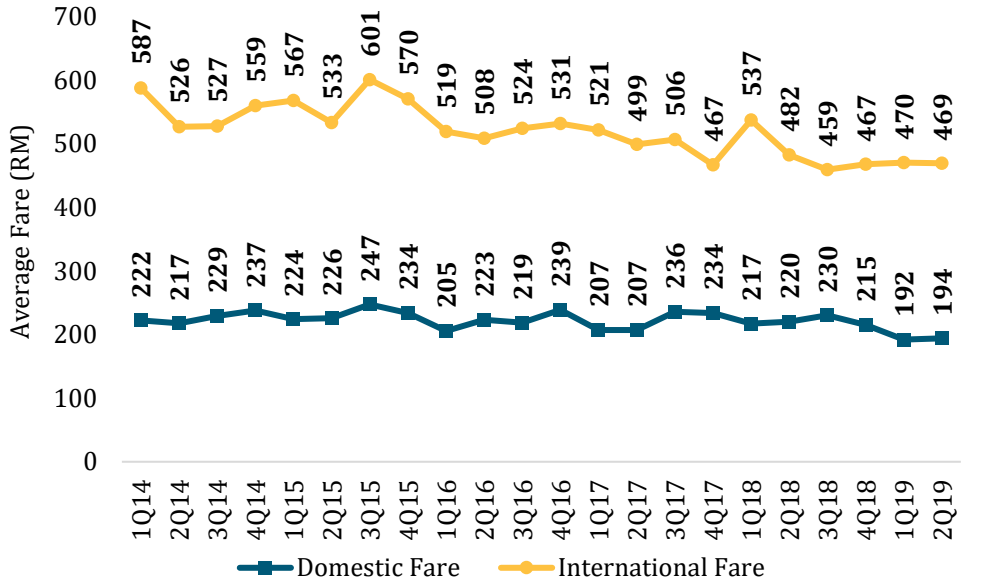
Figure 27: Malaysian Carriers' Load Factors Trend, 2014 – 2019



Source: MAVCOM, AirportIS

The increase in the average load factor in 1H19 to above 80% was also partly due to lower average fares for domestic routes in 1Q19 and 2Q19 compared to 4Q18 (see Figure 28). International fares increased marginally from RM467 in 4Q18 to RM470 in 1Q19 and moved sideways between 1Q19 and 2Q19. Meanwhile, domestic fares declined from RM215 in 4Q18 to RM192 in 1Q19 and remained relatively flat between 1Q19 and 2Q19. The decline in domestic fare was attributable to higher seat capacity growth of 8.8% YoY compared to 0.3% YoY in 1H18. This increase in seat capacity played a role in lowering domestic fare.

Figure 28: Malaysian Carriers' Average Fares Trend, 2014 – 2019

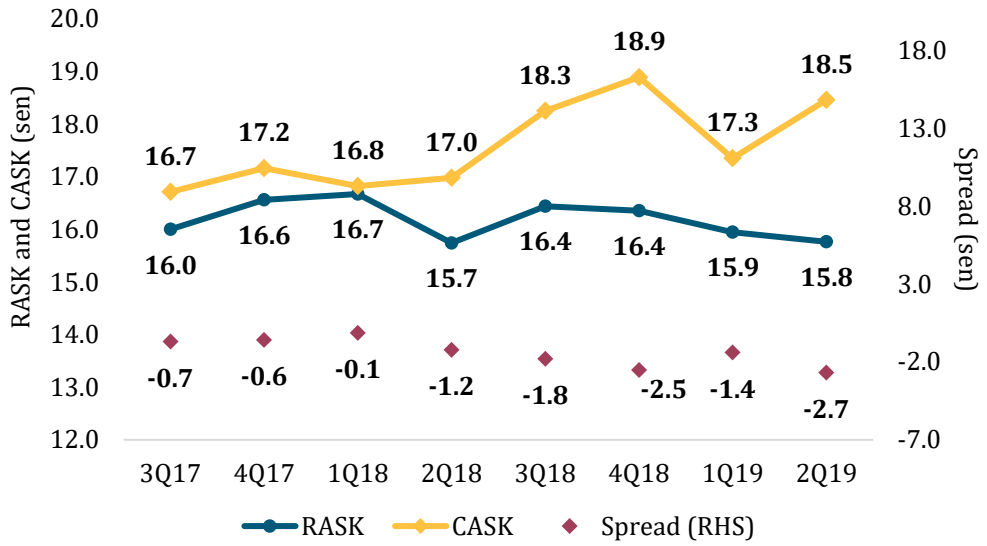


Source: MAVCOM, AirportIS

The Spread between CASK and RASK Widened Further in 2Q19

In 2Q19, the increase in CASK and jet fuel prices resulted in the widest gap between CASK and RASK over the past eight quarters. CASK increased from 17.3 sen in 1Q19 to 18.5 sen in 2Q19. At the same time, RASK decreased slightly to 15.8 sen in 2Q19, leading to a CASK-RASK spread of 2.7 sen for the same period (see Figure 29). Whilst revenue remained relatively flat in 2Q19, the total number of ASKs increased in 2Q19 relative to 1Q19, which resulted in a marginal decrease in RASK to 15.8 sen. On the other hand, CASK increased in 2Q19 due to an increase in jet fuel prices and depreciation of RM.

Figure 29: Malaysian Carriers' RASK and CASK Trends, 2017 – 2019

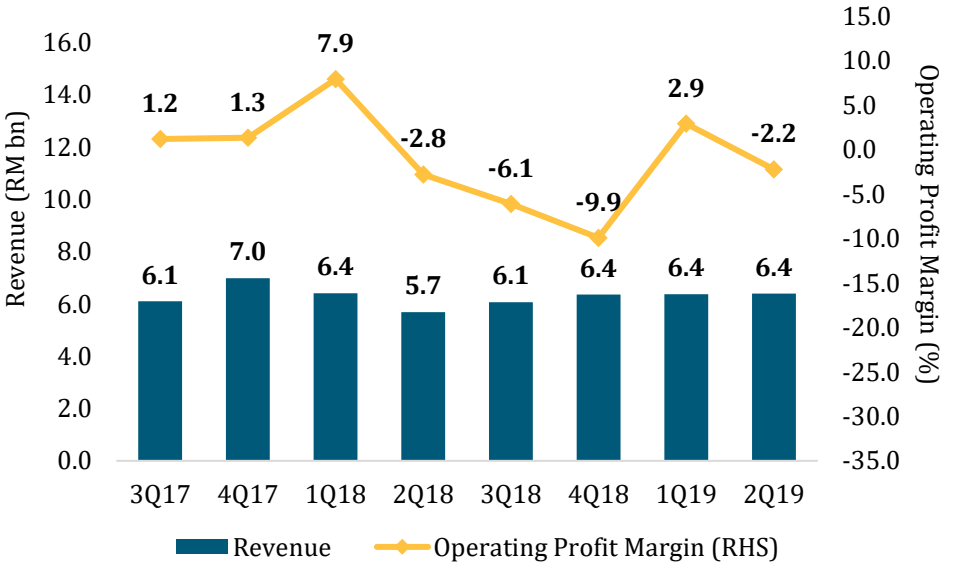


Source: MAVCOM, ASL Holders

Industry Operating Profit Margin Back in the Red

Malaysian carriers' operating profit margins slipped back into negative territory in 2Q19, caused by flat revenue growth and a wider negative spread between CASK and RASK. Malaysian carriers reported RM6.4bn revenue in 2Q19 (1Q19: RM6.4bn) and an operating loss margin of -2.2% in 2Q19 (1Q19: 2.9%) (see Figure 30). The reversion of operating profit margin into negative territory was due to a wider spread between CASK and RASK as mentioned earlier. In addition, the jump in the 1Q19 operating profit margin from 4Q18 was due to a decline in jet fuel prices.

Figure 30: Revenue and Operating Profit Margin of Malaysian Carriers, 2017 – 2019



Source: MAVCOM, ASL Holders

Aerodrome Operations

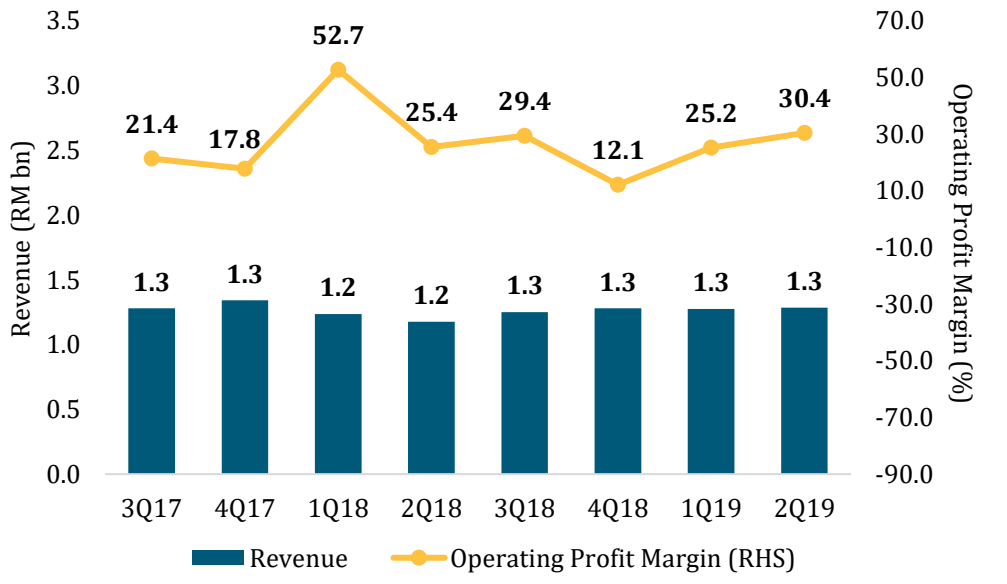
Flat Revenue Growth for Aerodrome Operators in 1H19

Between 1Q19 and 2Q19, aerodrome operators' revenue remained flat at RM1.3bn, largely due to MAHB's higher airport operations revenue being offset by a decrease in its non-airport operations revenue (due to lower revenue from its project and repair maintenance business). Aerodrome operators' airport operations typically include airport services, duty-free and non-duty-free outlets while non-airport operations typically include project and repair maintenance, hotel operations, agriculture and horticulture, and other activities.

Overall, for aerodrome operators, the airport operations revenue increased between 1Q19 and 2Q19 on the back of improved passenger traffic growth while non-airport operations revenue decreased. The aggregate financial performance of Malaysian aerodrome operators was heavily skewed by MAHB's numbers as the company generated 98.2% of the total revenue and operating profit of all aerodrome operators in the country.

Operating profit margin in 2Q19 was the highest over the past five quarters. MAHB attributed the improved margin to lower costs due to a writeback of provision for doubtful debts. As a result, the average operating profit margin among aerodrome operators in 2Q19 improved to 30.4% (1Q19: 25.2%) (see Figure 31).

Figure 31: Revenue and Operating Profit Margin of AOL Holders, 2017 – 2019



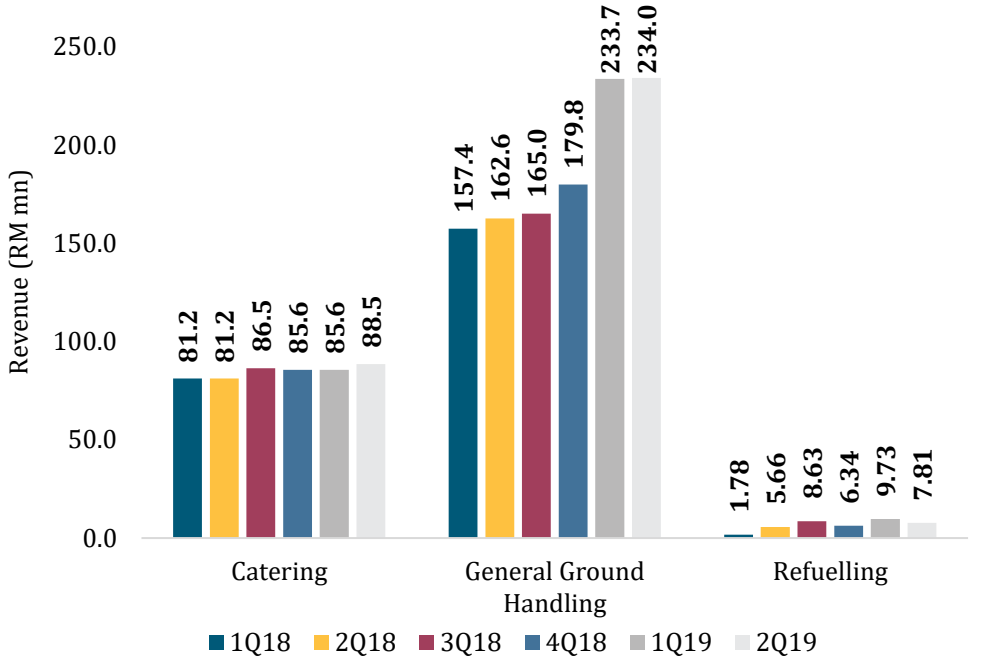
Source: MAVCOM, AOL Holders

Ground Handling Services

Revenue for the General Ground Handling Sub-Segment Grew the Fastest in 2Q19

For 2Q19, the refuelling and catering sub-segments' revenues grew by 38.1% YoY and 9.0% YoY, respectively (see Figure 32). In addition, revenue generated by the general ground handling sub-segment in 2Q19 increased by 43.9% YoY due to the entrance of a new player in late 2018 that recorded substantial revenues relative to other, smaller players; the revenue generated by the new player made up 23.9% of the total revenue for the sub-segment in 2Q19. The increase in revenue was also partly due to an increase in some players' alternative revenue sources such as maintenance, repair and overhaul, and hangarage.

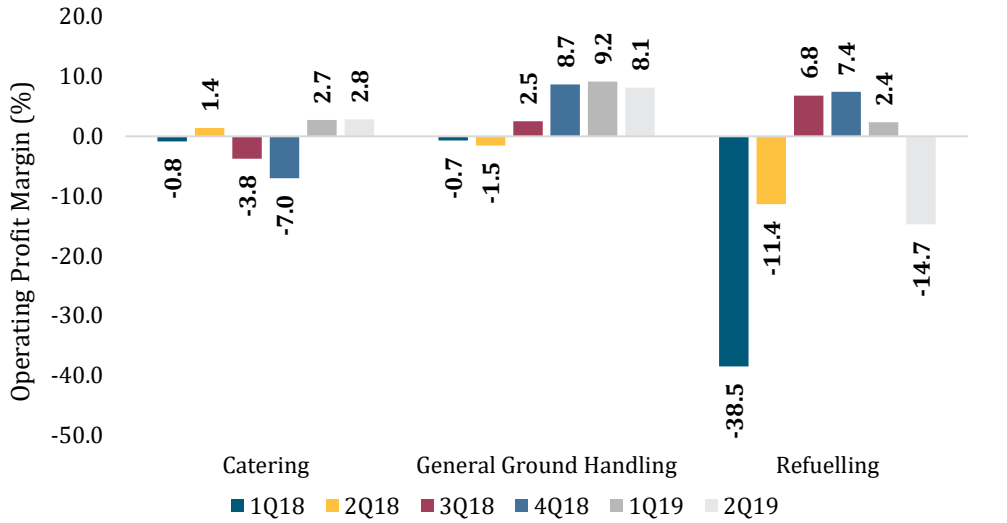
Figure 32: Revenue for Ground Handling Sub-Segments, 2018 – 2019



Source: MAVCOM, GHL Holders

The refuelling sub-segment reported an operating profit margin of -14.7% in 2Q19 after sustaining positive margins over the last three quarters (see Figure 33). This was a result of fewer business jets being handled in 2Q19. In contrast, the catering and general ground handling sub-segments reported positive margins of 2.8% and 8.1% in 2Q19, respectively. The catering sub-segment's operating profit margin improved to 2.7% in 1Q19 and subsequently to 2.8% in 2Q19 after rebounding from -7.0% in 4Q18. The general ground handling sub-segment sustained its positive operating profit margin since 4Q18; however, its margin narrowed from 9.2% in 1Q19 to 8.1% in 2Q19.

Figure 33: Operating Profit Margin for Ground Handling Sub-Segments, 2018 – 2019



Source: MAVCOM, GHL Holders

SECTION 5: NON-SCHEDULED SERVICES SEGMENT

Non-scheduled Services Segment and its Roles

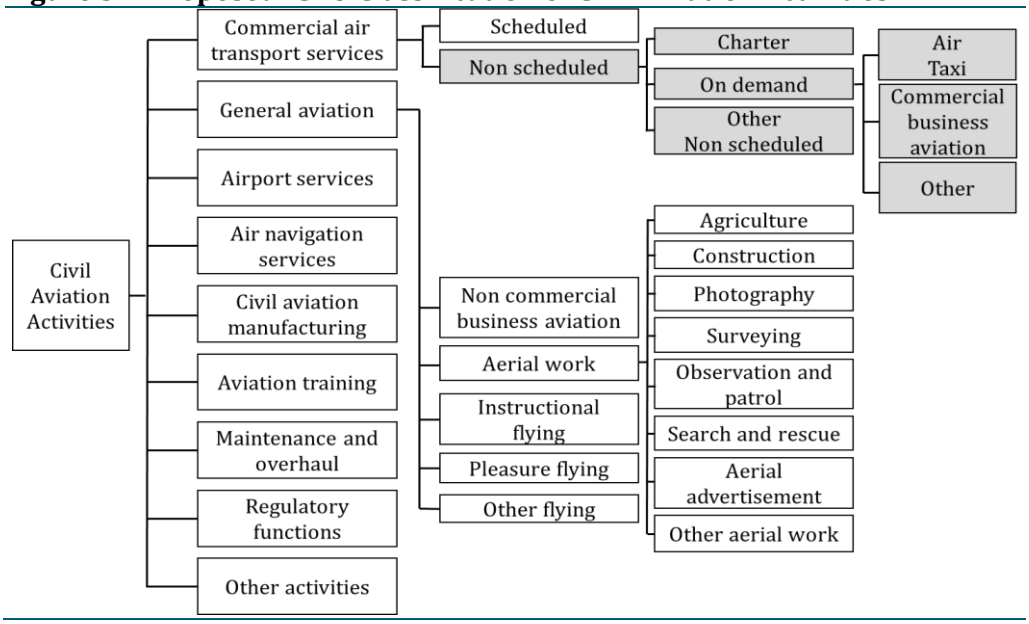
Based on Act 771, the aviation services market is categorized into four segments depending on the type of services that each licence or permit holder is authorized to render. The industry structure and performance of the first three segments (i.e. scheduled services, aerodrome operations, and ground handling services) were discussed in Sections 3 and 4.

This Section discusses the industry structure and performance, as well as, the importance of the fourth segment (i.e. non-scheduled services) in the Malaysian aviation services market to the economy. To start with, it is crucial to understand the international classification of civil aviation activities and compare them with Malaysia's classification. This helps to define the scope of discussion in this Section.

ICAO Classifies Civil Aviation Activities into Several Categories

ICAO proposed a classification for civil aviation activities for statistical purposes based on nine categories: commercial air transport services, general aviation, airport services, air navigation services, civil aviation manufacturing, aviation training, maintenance and overhaul, regulatory functions, and other activities (see Figure 34).

Figure 34: Proposed ICAO Classification of Civil Aviation Activities



Source: ICAO
Note: Shaded categories reflect non-scheduled services as defined by the ICAO.

ICAO defines non-scheduled flights as *"charter flights and, special and inclusive tour flights, other than those reported under scheduled flights, performed for remuneration on an irregular basis including empty flights related thereto, air taxi operations, commercial business flights, and blocked-off charters."*

Act 771 Defines Non-Scheduled Services in Malaysia

In Malaysia, the undertaking of non-scheduled services requires a permit known as an ASP. An ASP is required to transport passengers, mail or cargo for hire and reward between any two or more places in Malaysia.

Subsection 36(1) of Act 771 states that *"no person shall undertake to carry by air or use any aircraft for the carriage of passengers, mail or cargo for hire or reward on a non-scheduled journey between two or more places of which at least one place is in Malaysia except under and under an air service permit granted by the Commission"*. **This means that any company offering services classified under the non-scheduled and general aviation (except instructional flying) categories by the ICAO, are required to apply for an ASP to operate in Malaysia—they are classified under non-scheduled services segment in Malaysia.**

Each ASP issued by MAVCOM includes legally binding conditions on the services that the permit holders are authorized to render, the validity period, and other commercial conditions. MAVCOM will issue an ASP should the application satisfactorily fulfil the requirements under Act 771, as follows:

- an applicant of an ASP is a company incorporated in Malaysia and is majority owned and under the control of a Malaysian person;
- the experience and competency of the management team of the applicant;
- the feasibility of the proposed business plan; and
- the financial depth of the business.

ASP Holders in Malaysia are Diverse in Terms of Services, Ownership, and Location

The non-scheduled services segment in Malaysia can be further divided into six sub-segments depending on the type of business operations. An ASP Holder may provide services within the list shown in Table 16.

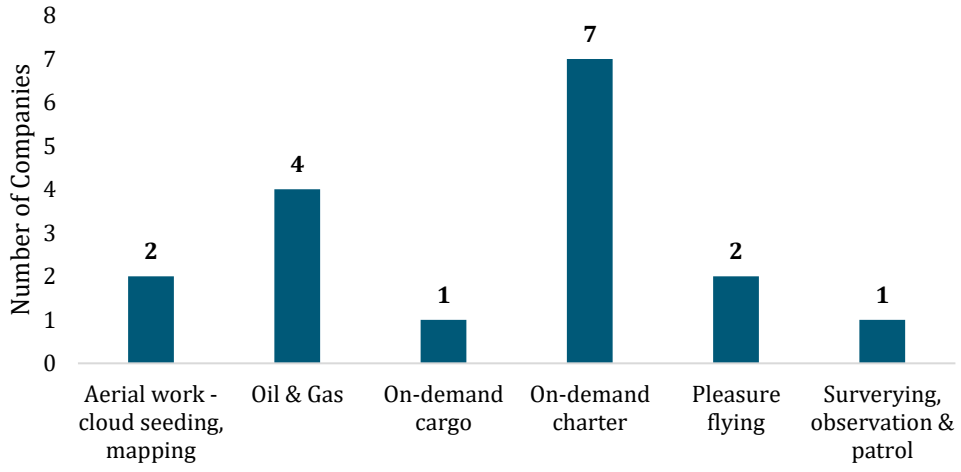
Table 16: Overview of ASP Holders' Business Operations by Type of Business

Sub-segment	Summary of Business Operations
Surveying, observation & patrol	Provide specialized services such as power line inspections, and coastline and border control
On-demand cargo	Provide air logistic services in carrying cargo, mail, and goods
Pleasure flying	Provide carriage of passengers for leisure-based tours such as hot air balloon and helicopter rides for local and international tourists
Aerial work – cloud seeding, mapping	Provide commercial cloud seeding services, aerial mapping via usage of image detectors and ranging or sensing using light, sonar and/or radio wave equipment
Oil & Gas	Provide helicopter services to transport personnel and goods to and from offshore oil and gas installations
On-demand charter	Provide air transport services in carrying government officers, corporate clients, and tourists, as well as, provide helicopter for emergency response services

Source: MAVCOM, ASP Holders

A majority of ASP Holders provide services in the on-demand charter sub-segment while only one ASP Holder operates in each of the on-demand cargo and surveying, observation and patrol sub-segments (see Figure 35).

Figure 35: Number of ASP Holders by Sub-Segment, 2019

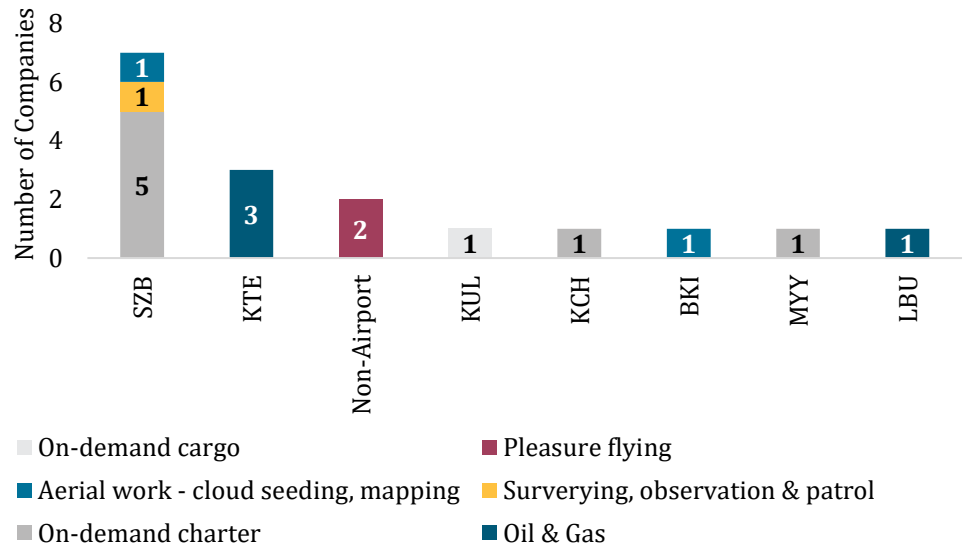


Source: MAVCOM

In terms of ownership, several ASP Holders are fully or partially owned by the state governments. They established these entities to serve specific purposes in the state's economy. Correspondingly, there are also ASP Holders that are partly established by local private and foreign entities. In terms of age of establishment, some ASP Holders had been in existence since the early 1970s.

In terms of operations, ASP Holders are spread across several locations in Malaysia, with the majority based at SZB and KTE (see Figure 36). All three ASP Holders based at KTE operate in the oil and gas sub-segment, providing services to ferry personnel of oil and gas companies to offshore platforms located in the South China Sea off the coast of Terengganu. At SZB, a high number of ASP Holders locate there as they also provide MRO services, in addition to operating non-scheduled services.

Figure 36: Distribution of ASP Holders Across Several Locations in Malaysia, 2019



Source: MAVCOM
Note: Non-airport locations are Universiti Putra Malaysia and Titiwangsa Helipad.

The State of Non-Scheduled Services Segment in Malaysia

Most Sub-segments are Highly Concentrated

Collectively, the non-scheduled services segments reported RM0.6bn revenue for 1H19 (1H18: RM0.8bn) with an average operating profit margin of 9.0% (1H18: 15.1%) (see Table 17). Except for the on-demand charter segment, other non-scheduled services segments are highly concentrated markets with HHI above 0.6000. Within each sub-segment, bigger companies—in terms of revenue—tend to report better levels of profitability, suggesting that economies of scale may be a factor. In terms of revenue generated in 1H19, the non-scheduled services segment generated the lowest revenue among the other aviation services segment; ground handling services (RM659.3mn), aerodrome operations (RM2.6bn), and scheduled services segments (RM12.8bn).

Table 17: Market Structure of Non-Scheduled Services Segment, 2019

Type of Business	No. of Licence Holders	HHI	1H19 Revenue (RM million)	1H19 Operating Profit Margin (%)
Surveying, observation & patrol	1	1.0000	5.3	-77.7
On-demand cargo	1	1.0000	54.7	1.4
Pleasure flying	2	0.6789	1.3	-40.9
Aerial work – cloud seeding, mapping	2	0.8498	26.5	6.3
Oil & Gas	4	0.7842	334.5	11.4
On-demand charter	7	0.2633	129.6	9.5
TOTAL	**17**		**551.8**	**8.8**

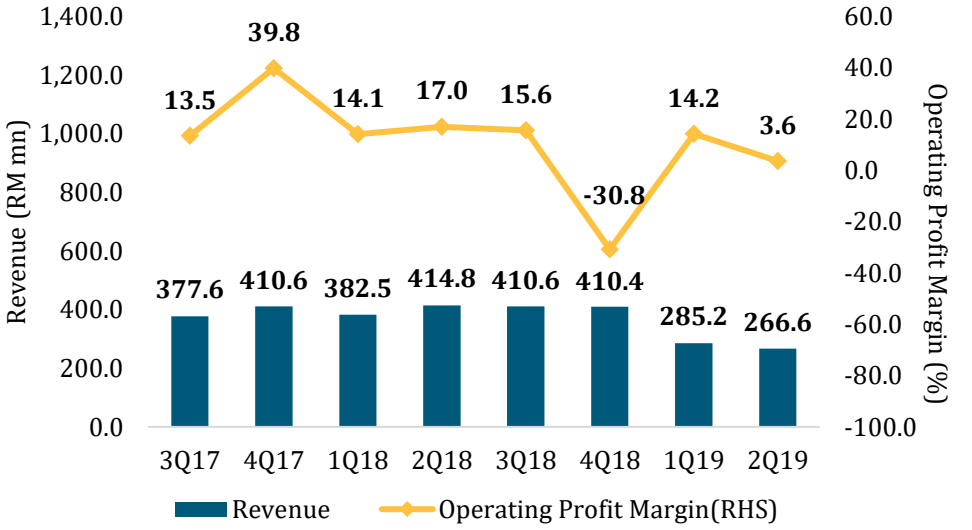
Source: MAVCOM, ASP Holders

Lower Revenues and Operating Profit Margins in 2Q19

Revenue for the segment decreased by 29.5% YoY in 1H19 (1H18: -3.5% YoY), largely attributable to a steep decline in revenue from the on-demand charter sub-segment due to the exit of several players which collectively made up 60.9% of total sub-segment revenue in 2018.

The magnitude of the decline in revenue for the on-demand charter sub-segment was large enough to offset the minor revenue increments from the other sub-segments such as on-demand cargo. In terms of operating profit margin, the segment witnessed a decline in margin to 3.6% in 2Q19 (1Q19: 14.2%) due to weaker demand in all sub-segments, particularly the aerial work and on-demand charter sub-segments (see Figure 37).

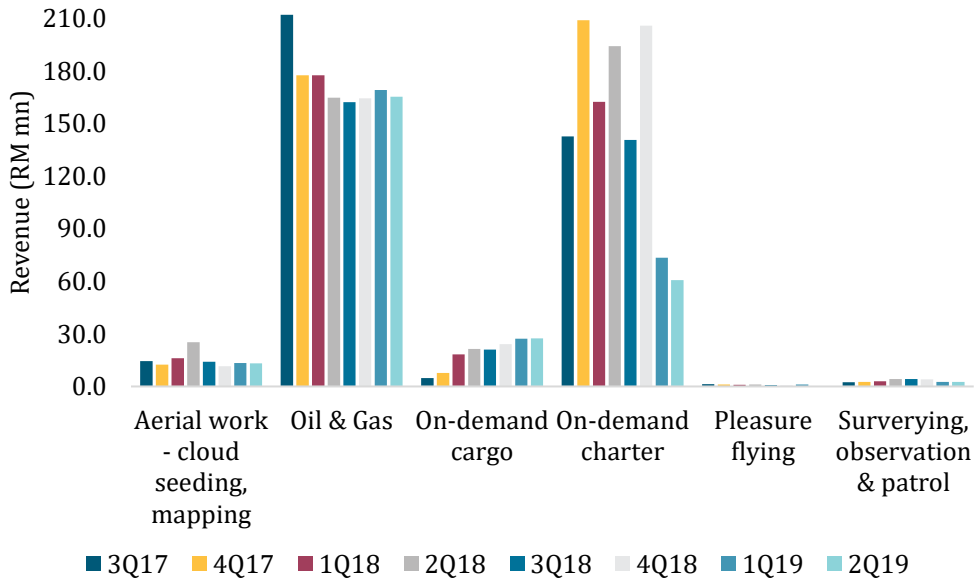
Figure 37: Revenue and Operating Profit Margin of ASP Holders, 2017 – 2019



Source: MAVCOM, ASP Holders

In terms of revenue, the oil and gas and on-demand charter sub-segments consistently reported a revenue in excess of RM100mn, while other sub-segments' revenue were below RM30mn per quarter (see Figure 38).

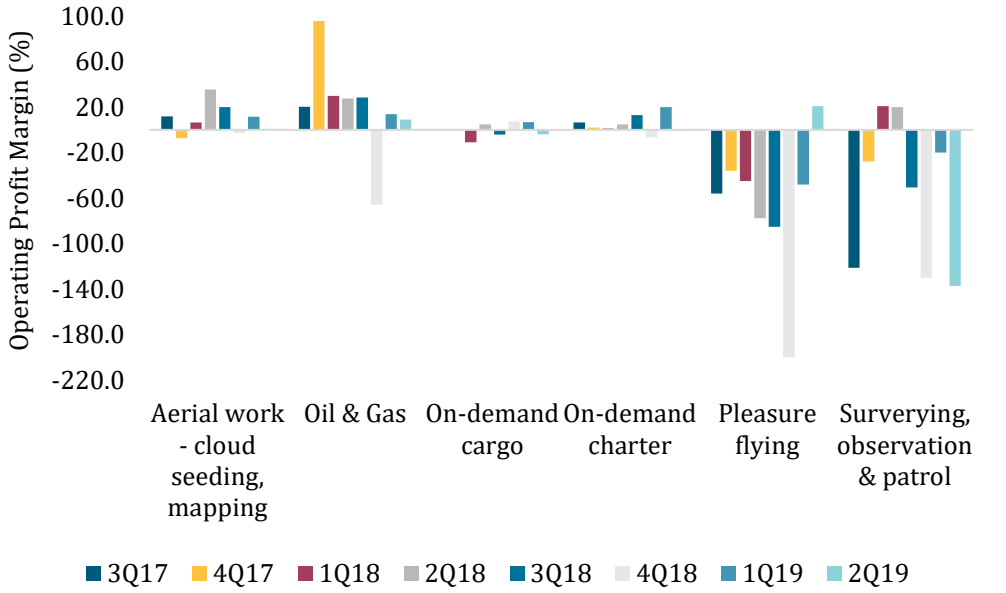
Figure 38: Revenue of ASP Holders by Sub-Segment, 2017 – 2019



Source: MAVCOM, ASP Holders
Note: Figures for pleasure flying sub-segment are smaller relative to other sub-segments.

In terms of operating profit margin, the oil and gas sub-segment consistently recorded positive operating profit margins among all other sub-segments, except for 4Q18 (which was due to a major loss incurred by one of the players). On the other hand, pleasure flying, and surveying, observation, and patrol sub-segments were rarely profitable over the past eight quarters (see Figure 39).

Figure 39: Operating Profit Margin of ASP Holders by Sub-Segment, 2017 – 2019



Source: MAVCOM, ASP Holders

The Importance of Non-Scheduled Services to the Economy

Non-Scheduled Services Contribute to Malaysia's Economy in Several Ways

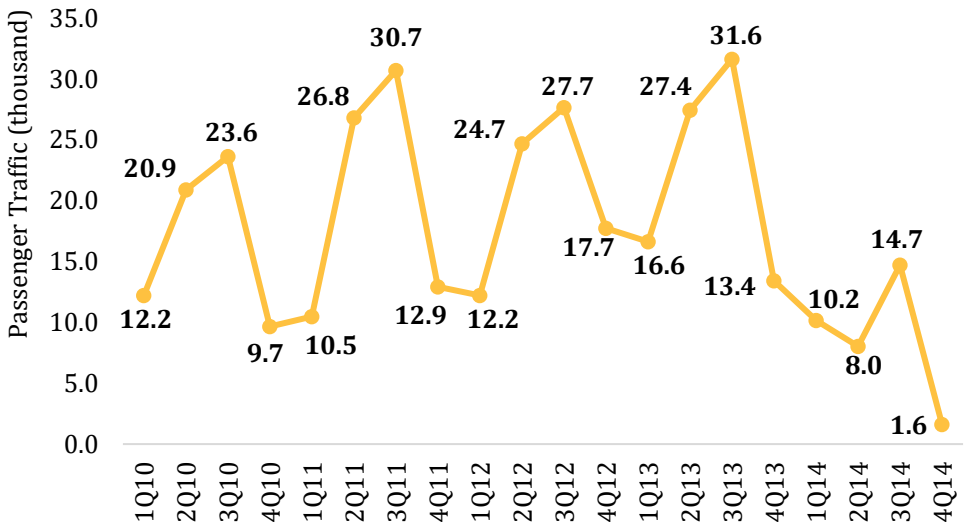
The non-scheduled services segment plays a role in the Malaysian economy by supporting the tourism sector and providing aerial services to other businesses.

Firstly, in the tourism industry, ASP Holders capitalize on seasonal O&D passengers to provide connectivity on certain routes to domestic and international tourists. Several ASP Holders provide direct flights to holiday islands in Malaysia such as Pulau Tioman, Pulau Redang, and Pulau Pangkor, from city airports such as SZB. Given the distance between these islands and major cities, ASP Holders can capitalize on tourists preferring direct access to these islands.

Several ASP Holders also have partnerships with local hotel operators on those islands such as Pulau Redang that support the ferrying of tourists to the hotels as part of a holiday package. Such bundling arrangements are possible in business conglomerates, where one segment of the business (for example, non-scheduled services) can be utilized to support the development of another (for example, hotel or leisure resorts).

Figure 40 illustrates the passenger traffic carried by a Malaysian carrier—who was an ASL Holder—on the SZB-TOD, SZB-RDN, and SZB-PKG routes. The demand on these three routes fluctuates throughout the year in tandem with seasonal weather changes, most notably the monsoon season (in the last quarter of each year until the first quarter of the following year) which reduces tourism activities.

Figure 40: Passenger Traffic Carried by a Malaysian Carrier on SZB-TOD, SZB-RDN, and SZB-PKG routes, 2010 – 2014[23]



Source: MAVCOM, AirportIS

Malaysian carriers (including both ASP and ASL Holders) also provide charter services to international destinations (see Table 18). A higher number of seat capacity to Saudi Arabia relative to other countries denotes the annual Hajj pilgrimage flights among Malaysia's Muslim population.

Table 18: Charter Services Capacity in terms of Number of Seats from Malaysia to Other Countries, 2017 – 2018

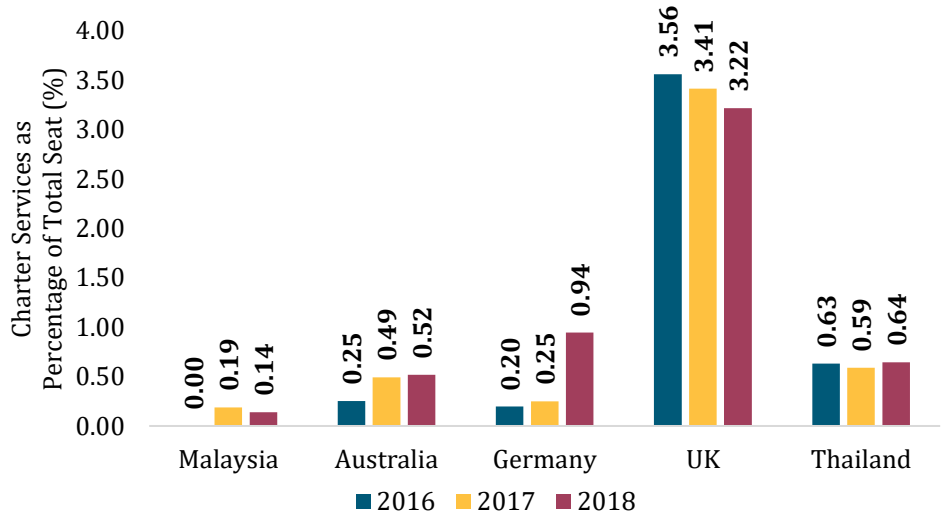
Country	Number of Seats	
	2017	2018
Total	**166,053**	**135,146**
Australia	377	-
China	8,066	-
Christmas Island	324	-
UK	-	1,800
India	-	180
Lebanon	3,016	2,262
Philippines	377	-
Saudi Arabia	153,893	132,704

Source: MAVCOM, AirportIS

[23] Operations on these three routes ended in October 2014.

In general, the number of seats for charter services by Malaysian and foreign carriers represented only 0.2% and 0.1% of total seat capacity in Malaysia for 2017 and 2018, respectively. Similarly, in other countries such as Australia, Germany, the UK, and Thailand, charter services represented less than 5% of their total seat capacity in 2016, 2017, and 2018 (see Figure 41).

Figure 41: Charter Services as a Percentage of Total Seat, 2016 – 2018



Source: MAVCOM, AirportIS

In addition, ASP Holders also provide joy rides such as hot air balloon and helicopter tour services to niche tourist segments. ASP Holders that provide these services base themselves in urban areas such as the Klang Valley to cater to a larger population with higher income.

Secondly, ASP Holders also support other businesses by providing aerial services, hence becoming an integral part of a wider value chain to the economy. These services include the ferrying of employees to offshore oil and gas installations, aerial surveys for mapping and photography, heavy lifting services for construction, and crop dusting for agricultural plantations. These ASP Holders also serve large business conglomerates such as multinational oil and gas companies, tea plantations, and palm oil estates.

Thirdly, ASP Holders also support non-commercial activities such as providing emergency response services during natural disasters, facilitating medical evacuation, and undertaking cloud seeding operations for meteorological purposes.

Furthermore, ASP Holders support the e-commerce business segment. Increased online sales through e-commerce sites has raised the demand for logistical services, often provided by ASP Holders. In one instance, an ASP Holder narrowed its annual loss by 96% over the course of one year due to increased e-commerce sales. The e-commerce business segment could receive further a boost through infrastructure projects such as the DFTZ. The establishment of DFTZ, via its e-services platform, could reduce cargo clearance times from six to three hours at the KUL Air Cargo Terminal 1. Malaysia's air cargo volume is expected to reach 1.3mn metric tonnes by 2027.[24]

A recent trend in the non-scheduled services segment is the increased usage of UAS. Stakeholders in the civil aviation sector including ICAO, IATA, and national civil authorities have acknowledged the potential benefits of UAS and are undertaking efforts to ensure the safe integration of UAS into the existing civil aviation infrastructure. Box 2 further discusses issues regarding UAS.

Box 2: Emerging Trend on Non-Scheduled Services – Unmanned Aircraft System

An UAV, also known as a drone, is part of the UAS universe and has become an integral part of the aviation sector in recent years. A drone is made of light composite materials and is usually equipped with cameras and different types of sensors depending on the objective of the flight. The ICAO defines UAS as *"an aircraft and its associate elements which are operated with no pilot on board."*

In general, there are two types of drones; a Remotely Piloted Aircraft, which uses short-range remote control and operates within visual line of sight, and an UAV, which is a fully autonomous, pre-programmed drone with specific tasks and flight path based on global positioning system, and operates beyond visual line of sight.

Drones are generally associated with tasks that are monotonous or potentially hazardous for the pilot of a manned aircraft, namely, monitoring and surveillance activities. Drones may be used for non-commercial activities such as border control, search and rescue operations, and power transmission line inspections. Drones are also used commercially in aerial photography and videography, agriculture, wildlife conversation, and recently, parcel delivery. There are several potential benefits arising from the commercial use of drones such as reducing the cost and time of delivery, easing on-the-ground traffic congestion, and reducing greenhouse gas emissions.

[24] 'DFTZ Another Symbol Of Malaysia's Success: Salleh' (2017) https://www.thesundaily.my/archive/dftz-another-symbol-malaysias-success-salleh-JTARCH499847

Technological developments, robust standards, and sensible regulations will enable the expansion of drone services to include the carriage of cargo (in the short term) and passengers (in the long term). In Malaysia, the commercial usage of drones in areas such as food delivery and courier and postal services is still in the development and testing stage. Notwithstanding the above, under sections 35 and 36 of Act 771, any persons or organizations that utilize a drone or UAS for the carriage of passengers, mail or cargo for hire and reward on a scheduled or non-scheduled basis must hold an ASL or ASP, respectively.

The usage of drones also poses several threats to the aviation sector, especially in terms of safety and security. There have been reports of near misses by pilots of scheduled aircraft as a result of unregistered drones flying near airports. Internationally, drones were alleged to be used in an attack on Saudi Aramco's (the national oil company of Saudi Arabia) oil facilities. In addition, drone radio wave communications and navigation systems are exposed to being hacked and/or hijacked mid-flight. Drones may also threaten the business landscape of companies that rely on rotary or fixed-wing aircraft, given that drone companies can offer similar services at a fraction of the cost.

Moving forward, to ensure the safety of drone operations and its integration into non-segregated airspace with other commercial aircraft, ICAO highlighted that there should be continuous engagements with respective stakeholders, including national authorities, on the following issues:

- licensing and medical qualification of drone crew;
- technology for detection and avoid systems;
- frequency spectrum (including its protection from unintentional or unlawful interference);
- separation standards from other aircraft; and
- development of a robust regulatory framework.

Generally, in each of these examples cited above, ASP Holders are better positioned to provide these services due to their operational flexibility and low cost base to operate based on demand. For example, services to island holiday destinations in Malaysia face fluctuating demand throughout the year due to the monsoon season, dampening tourism activities during that period. Although some ASL Holders may be able to provide these services, they may not be able to achieve the same level of cost-effectiveness as that of ASP Holders due to their larger fixed cost base.

ASP Holders are Exposed to Risks Affecting Their Commercial Performance

ASP Holders are exposed to risks that can affect their yield and business sustainability such as exposure to a small number of clients, operational, and human resources risk. Due to the cyclical and ad-hoc nature of the segment, low demand and absence of business contracts can cause ASP Holders to cease their operations.

Firstly, ASP Holders do not have diversified income streams. Several ASP Holders only operate in one business segment and hence rely only on a few contracts from government or private clients, which may be subject to seasonal fluctuations. Any changes in budget from the GOM and/or private enterprises can affect the financial performance of the ASP Holders. For instance, an ASP Holder that derives almost 99% of its revenue from the offshore aviation services sub-segment is vulnerable to a downturn in the oil and gas industry.

Secondly, ASP Holders also face operational risks pertaining to the choice of equipment, especially in terms of aircraft model. ASP Holders usually run smaller scale operations given the nature of their businesses. These companies tend to operate a single type of aircraft for ease of maintenance. A blanket directive that grounds any specific type of aircraft could adversely affect the business operations of ASP Holders. Depending on the lease terms, ASP Holders that lease their fleet can mitigate these operational risks by switching to alternative aircraft models, in the event of the grounding of any specific type of aircraft or changes in their business needs. Additionally, the recent downgrade of CAAM to a Category 2 Aviation Regulator[25] by the US FAA can potentially lead to an increase in the cost of doing business in Malaysia.

Thirdly, ASP Holders face the risk of personnel shortage. Several ASP Holders have faced a shortage of critical personnel such as pilots. In response, these ASP Holders have resorted to hiring foreign pilots. However, the recruitment may not occur seamlessly, hence disrupting their business operations.

[25] A Category 2 classification indicates that a country's civil aviation authority is non-compliant in at least one of the Critical Elements of an effective aviation oversight body specified by ICAO. These critical elements can include aviation legislation, technical personnel, and licensing and certification, among others.

Non-Scheduled Services Segment in Australia and the UK

Each National Jurisdiction Defines the Non-scheduled Services Segment Differently

Australia

The BITRE defines general aviation largely as per ICAO's proposed classification, and not part of the non-scheduled services segment like in Malaysia. The scope of activities under this category includes, for example, aerial work (photography, agriculture, observation and patrol, search and rescue), instructional flying, and sport and pleasure flying. Other non-scheduled services such as passenger and cargo charter flights are defined as commercial air transport services. In addition, sightseeing and joy rides that start and finish at the same location are not considered to be a form of transportation in Australia, unlike Malaysia which defines them as part of the non-scheduled services segment.

The BITRE noted that commercial performance in the general aviation sub-sector in Australia experienced a downward trend since 2010 with deteriorating yields, owing to a decline in the number of flying school flights, business flying, aerial agriculture, and survey and photography flights. Regulatory, economic, and demographic changes contributed to this decline. The general aviation sector in Australia employs an estimated 13,000 individuals, a majority of whom are aircraft pilots. On average, entities in the sector earned a profit margin of less than 3% between 2010 and 2014 and experienced a small net loss in 2015. This is indicative of challenging business conditions—such as increased fuel costs and competition from other modes of transport—that these entities face in Australia.[26]

United Kingdom

The UK categorizes the non-scheduled services segment as part of the general aviation sector. The general aviation sector is divided into two main categories—commercial and non-commercial activity. General aviation activities encompass business jets, aerial photography, pilot training, emergency service flights and air displays, as well as, private flying. The general aviation industry supports almost 10,000 jobs, contributing an estimated GBP1.1bn to the UK economy. This contribution to the economy is partly attributable to the numerous airfields located in the country—a study by the UK Department of Transport showed that over 98% of the UK population can access a capable airfield within 56km of their homes for leisure flying.

[26] General Aviation Study, BITRE (2017).

To support the growth of this segment, the UK Government identified areas of improvement such as streamlining regulation, creating more airspace sectors, and undertaking initiatives to reduce the cost of pilot training. The UK Government also noted that in the future, non-scheduled services may encompass different flying operations such as air taxis and drones, in order to take advantage of emerging technology.[27]

The Non-Scheduled Services Segment Supports the Malaysian Economy

ASP Holders in Malaysia provide an array of services ranging from on-demand cargo to aerial work that contribute to the economy by complementing other economic activities. The non-scheduled services segment provides ancillary services to other businesses that are not easily fulfilled by the ASL Holders in the scheduled services segment. In general, the value proposition of ASP Holders is defined in terms of the services offered, location of operations, as well as, its capability to adopt and utilize the latest technology. However, the number of passengers served by the non-scheduled services segment is relatively smaller compared to peers in Australia, Germany, the UK, and Thailand.

The profitability of the individual sub-segments varies. The oil and gas, as well as, on-demand charter sub-segments recorded the highest operating profit margins of 11.4% and 9.5% in 1H19, respectively. However, profitability remains a challenge in two other sub-segments i.e. surveying, observations and patrol, as well as, pleasure flying. These two sub-segments recorded the lowest operating profit margins of -77.7% and -40.9%, respectively, for the same period. This indicates that the current business environment may not fit well with the business models employed by some of these ASP Holders. In addition, the revenue generated by players in this segment is also relatively smaller compared to other segments such as GHL.

Technological developments such as the increasing use of UAVs have disrupted certain sub-segments of ASP Holders. The usage of UAVs can lower the relative unit cost of ASP Holders, particularly for those operating aerial work services. The UK and Australian governments have recognized that the use of UAVs can either enable the growth of the non-scheduled segment or affect the commercial viability of existing players.

[27] Aviation 2050, The Future of UK Aviation, UK Government (2018).

APPENDIX A: DATA TABLES

Table A1: Quarterly Malaysia GDP Growth, 2017 – 2019

Quarter	Malaysia's GDP YoY Growth (%)
1Q17	5.6
2Q17	5.8
3Q17	6.2
4Q17	5.9
1Q18	5.4
2Q18	4.5
3Q18	4.4
4Q18	4.7
1Q19	4.5
2Q19	4.9

Source: Bloomberg, DOS

Table A2: Malaysia's GDP Growth, 2010 – 2020F

Year	YoY Growth (%)
2010	7.5
2011	5.3
2012	5.5
2013	4.7
2014	6.0
2015	5.1
2016	4.2
2017	5.9
2018	4.7
2019F	4.3 – 4.8
2020F	4.8

Source: Bloomberg, BNM, MOF

Table A3: Quarterly Malaysia's Tourist Arrivals, 2017 – 2019

Quarter	Tourists Arrival (by air) (mn)	Total Tourists Arrival (excluding air) (mn)	Total Tourists Arrival (mn)	YoY Growth (%)
3Q17	1.7	4.7	6.5	-3.2
4Q17	2.0	4.6	6.5	-7.3
1Q18	2.3	4.2	6.5	-1.7
2Q18	2.1	4.1	6.2	-1.7
3Q18	2.4	4.2	6.7	2.5
4Q18	2.1	4.3	6.5	-1.0
1Q19	2.5	4.2	6.7	2.7
2Q19	2.3	4.3	6.7	7.2

Source: Bloomberg, MOTAC

Table A4: Trade Value Quarterly YoY Growth Trends, 2017 – 2019

Quarter	YoY Growth (%)					
	Malaysia Exports	Malaysia Imports	Global Exports	Global Imports	ASEAN-4 Exports	ASEAN-4 Imports
3Q17	10.6	12.2	2.9	3.7	14.0	13.1
4Q17	5.1	6.2	6.3	6.4	9.4	10.8
1Q18	2.4	-2.3	-0.4	-0.3	6.4	9.2
2Q18	2.6	3.6	4.3	2.8	8.2	12.6
3Q18	0.7	2.0	-0.9	0.3	5.7	12.0
4Q18	3.1	1.8	1.9	1.4	4.7	6.6
1Q19	0.1	-1.4	-2.7	-6.2	-1.4	-2.5
2Q19	0.1	-2.1	-	-	-1.6	-4.1

Source: Bloomberg

Table A5: Oil, Jet Fuel, and Exchange Rate Trends, 2017 – 2019

Quarter	Crude Oil (USD/bbl)	Jet Fuel (USD/bbl)	RM/USD
3Q17	52	64	4.26
4Q17	61	73	4.16
1Q18	67	80	3.93
2Q18	75	87	3.95
3Q18	76	89	4.09
4Q18	69	83	4.17
1Q19	64	75	4.09
2Q19	68	78	4.15

Source: Bloomberg

Table A6: Capacity Growth in terms of ASK by Malaysian Carriers, 2012 – 2020F

Year	ASK (bn)	YoY Growth (%)
2012	96.7	-4.9
2013	113.2	17.0
2014	128.5	13.6
2015	124.9	-2.8
2016	121.1	-3.0
2017	133.7	10.4
2018	138.8	3.9
2019F	141.3	1.7
2020F	142.3	0.7

Source: MAVCOM, AirportIS

Table A7: Capacity Growth in terms of Number of Seats by Malaysian Carriers, 2012 – 2020F

Year	Seats (mn)	YoY Growth (%)
2012	54.2	1.8
2013	62.6	15.4
2014	68.8	9.9
2015	71.1	3.4
2016	70.0	-1.6
2017	74.9	7.0
2018	78.7	5.1
2019F	82.0	4.3
2020F	83.7	2.0

Source: MAVCOM, AirportIS

Table A8: Seat Capacity Growth by Region, 2011 – 2019

Year	YoY Growth (%)		
	Domestic	ASEAN	International
2011	9.8	12.7	6.5
2012	0.5	13.3	-1.6
2013	17.7	11.1	15.6
2014	5.4	3.6	13.9
2015	3.2	3.8	-1.4
2016	-2.9	-4.1	4.3
2017	3.8	10.6	13.9
2018	3.4	7.3	4.0
2019F	7.2	2.4	1.3
2020F	3.2	1.8	0.0

Source: MAVCOM, AirportIS

Table A9: Number of Domestic Destinations Served at JHB, KCH, and BKI

Year	JHB	KCH	BKI
2016	10	11	16
2017	11	12	16
2018	12	13	17

Source: MAVCOM, AirportIS

Table A10: Passenger Traffic, 2012 – 2020F

Year	Passenger Traffic (mn)	YoY Growth (%)
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	99.8	8.8
2018	102.5	2.7
2019F	109.1 – 109.7	6.4 – 7.0
2020F	114.9 – 116.0	5.0 – 6.0

Source: MAVCOM, AOL Holders

Table A11: Percentage of Airlines' Market Share for Domestic Routes by Passengers, 2017 – 2019

Quarter	AirAsia	Firefly	Malindo	MAB
3Q17	58.5	5.7	11.6	24.2
4Q17	59.2	5.6	11.9	23.3
1Q18	62.1	5.7	10.3	21.9
2Q18	61.8	5.5	9.0	23.8
3Q18	62.8	5.4	9.5	22.3
4Q18	65.0	5.2	10.3	19.5
1Q19	65.0	5.2	10.9	18.8
2Q19	66.5	5.2	9.0	19.3

Source: MAVCOM, AirportIS

Table A12: Percentage of Airlines' Market Share for International Routes by Passengers, 2017 – 2019

Quarter	AirAsia	AirAsia X	Firefly	MAB	Malindo	Others
3Q17	27.6	11.0	0.8	15.9	8.5	36.2
4Q17	28.0	11.3	0.8	15.9	8.2	35.8
1Q18	28.5	11.6	0.8	15.5	8.4	35.2
2Q18	28.4	11.7	0.9	16.9	7.7	34.5
3Q18	27.9	10.5	0.8	17.1	7.7	35.9
4Q18	27.6	10.7	0.9	17.2	7.8	35.9
1Q19	29.1	10.8	0.1	16.7	7.7	35.7
2Q19	29.3	11.0	0.4	17.1	6.5	35.8

Source: MAVCOM, AirportIS

Table A13: Domestic Market Concentration Levels and Load Factors, 2017 – 2019

Quarter	HHI	Load Factor (%)
3Q17	0.4173	76.9
4Q17	0.4220	77.3
1Q18	0.4478	78.2
2Q18	0.4494	79.5
3Q18	0.4560	79.7
4Q18	0.4739	76.5
1Q19	0.4731	79.3
2Q19	0.4910	78.6

Source: MAVCOM, AirportIS

Table A14: International Market Concentration Levels and Load Factors, 2017 – 2019

Quarter	HHI	Load Factor (%)
3Q17	0.1256	81.9
4Q17	0.1276	82.1
1Q18	0.1298	82.6
2Q18	0.1328	81.1
3Q18	0.1287	81.7
4Q18	0.1285	80.1
1Q19	0.1356	81.8
2Q19	0.1370	81.0

Source: MAVCOM, AirportIS

Table A15: RASK for Domestic and International Routes, 2017 – 2019

Quarter	RASK (sen)	
	Domestic	International
3Q17	18.7	10.4
4Q17	18.3	10.5
1Q18	16.9	10.5
2Q18	17.4	9.6
3Q18	18.7	10.0
4Q18	16.1	10.1
1Q19	15.2	9.9
2Q19	15.1	9.8

Source: MAVCOM, AirportIS

Table A16: Market Shares of Airports in Malaysia in Terms of Passenger Traffic, 2019

Airport	Market Share (%)	
	1H18	1H19
KUL	58.93	57.1
BKI	8.30	8.7
PEN	7.39	7.6
KCH	5.34	5.5
JHB	3.32	3.9
LGK	2.60	2.7
MYY	2.26	2.2
SZB	2.05	1.9
KBR	1.76	1.6
TWU	1.54	1.7
SBW	1.50	1.6
SDK	0.93	1.0
BTU	0.87	1.0
TGG	0.90	0.8
AOR	0.80	0.8
LBU	0.54	0.6
IPH	0.28	0.4
KUA	0.25	0.4
LDU	0.12	0.0
KTE	0.00	0.1
MZV	0.05	0.0
MKZ	0.05	0.1
LMN	0.04	0.0

Source: MAVCOM, AOL Holders

Table A17: Market Shares of the Aerodrome Operators' Segment by Revenue and Passenger Traffic, 2019

Company	Market Share (%)	
	Revenue	Passenger Traffic
MAHB	98.2	96.0
Senai Airport	1.7	3.9
TMDBSB	0.1	0.0
SSSB	0.0	0.1

Source: MAVCOM, AOL Holders

Table A18: Departing Passenger by Regions and Passenger Service Charge Collected, 2018 – 2019

	Passenger Traffic (mn)		PSC Collected (RM mn)	
	1H18	1H19	1H18	1H19
Domestic	13.5	14.0	148	154
ASEAN	6.8	6.8	238	238
International	6.7	6.6	488	479
Total	26.9	27.4	873	871

Source: MAVCOM, AirportIS

Table A19: Flight Departure and Arrival Distribution at PEN, 2019

Time	Number of Flights	
	Departure	Arrival
0000	-	3
0100	-	-
0200	-	-
0300	-	-
0400	-	-
0500	1	-
0600	4	1
0700	6	1
0800	3	5
0900	8	8
1000	6	6
1100	8	6
1200	7	9
1300	5	6
1400	6	4
1500	6	5
1600	6	7
1700	5	7
1800	8	6
1900	6	6
2000	7	9
2100	8	8
2200	2	5
2300	3	4

Source: MAVCOM, AirportIS

Table A20: Flight Departure and Arrival Distribution at KCH, 2019

Time	Number of Flights	
	Departure	Arrival
0000	-	2
0100	-	1
0200	-	-
0300	-	-
0400	-	-
0500	-	-
0600	2	-
0700	6	1
0800	2	1
0900	6	7
1000	4	4
1100	9	7
1200	1	2
1300	5	6
1400	5	8
1500	4	2
1600	3	3
1700	1	4
1800	4	3
1900	2	5
2000	6	3
2100	4	4
2200	1	4
2300	1	1

Source: MAVCOM, AirportIS

Table A21: Breakdown of ATRs Awarded by Region, 2017 – 2019

Region	AirAsia	AirAsia X	Firefly	MAB	Malindo	Raya Airways	MASwings	My Jet Xpress	Total
2017									
Domestic	31	-	2	3	14	-	-	-	50
Africa	-	-	-	-	-	-	-	-	0
Americas	-	-	-	-	-	-	-	-	0
ASEAN	22	1	-	4	26	-	-	-	53
India	10	1	-	6	3	2	-	-	22
China	8	3	-	11	28	-	-	-	50
Rest of Asia	6	7	-	6	4	-	-	-	23
Australasia	-	1	-	2	4	-	-	-	7
Europe	-	1	-	-	-	-	-	-	1
Middle East	-	1	-	-	2	-	-	-	3
2018									
Domestic	49	-	1	1	7	2	3	-	63
Africa	-	-	-	-	-	-	-	-	0
Americas	-	1	-	-	-	-	-	-	1
ASEAN	30	1	1	5	9	2	-	-	48
India	1	1	-	3	4	-	-	-	9
China	15	9	-	6	30	-	-	-	60
Rest of Asia	3	7	-	7	1	-	-	-	18
Australasia	-	1	-	1	3	-	-	-	5
Europe	-	-	-	-	-	-	-	-	0
Middle East	-	-	-	1	-	-	-	-	1
1H19									
Domestic	15	-	2	11	7	-	1	-	36
Africa	-	-	-	-	-	-	-	-	0
Americas	-	-	-	-	-	-	-	-	0
ASEAN	17	3	-	7	6	1	-	1	35
India	1	-	-	3	-	-	-	-	4
China	4	3	-	2	7	-	-	-	16
Rest of Asia	1	4	-	2	1	-	-	-	8
Australasia	-	-	-	3	2	-	-	-	5
Europe	-	-	-	-	-	-	-	-	0
Middle East	-	-	-	-	-	-	-	-	0

Source: MAVCOM

Table A22: Utilization of ASAs, 2019

Country	Number of Flights Per Week	
	By Malaysian designated carriers	By respective countries' designated carriers
Australia	111	-
Bangladesh	41	25
Brunei	25	29
Cambodia	53	-
China	257	142
Hong Kong	70	38
India	202	21
Indonesia	400	317
Japan	43	21
Lao PDR	3	-
Macao	18	-
Maldives	10	-
Myanmar	25	-
Nepal	21	3
New Zealand	7	-
Pakistan	2	2
Philippines	34	41
Saudi Arabia	11	29
Singapore	310	231
South Korea	40	66
Sri Lanka	17	14
Taiwan	53	21
Thailand	241	104
United Kingdom	14	7
United States	7	-
Vietnam	141	21

Source: MAVCOM

Table A23: Quarterly Passenger Traffic Trend, 2017 – 2019

Quarter	Passenger Traffic (mn)	YoY Growth (%)
3Q17	25.2	7.1
4Q17	25.6	5.2
1Q18	25.3	5.4
2Q18	25.1	2.8
3Q18	25.6	1.5
4Q18	26.5	3.5
1Q19	26.4	4.5
2Q19	26.8	6.6

Source: MAVCOM, AOL Holders

Table A24: Quarterly Passenger Traffic Trend by Regions, 2017 – 2019

Quarter	YoY Growth (%)		
	Domestic	ASEAN	International
3Q17	1.1	12.7	14.8
4Q17	-1.5	9.8	15.2
1Q18	-0.9	12.0	11.9
2Q18	0.3	8.0	2.8
3Q18	-0.1	6.1	0.4
4Q18	4.9	4.5	0.1
1Q19	8.8	2.7	-1.3
2Q19	10.3	4.5	1.2

Source: MAVCOM, AOL Holders

Table A25: Malaysia's Aircraft Movements, 2017 – 2019

Quarter	Aircraft Movement (thousand)	YoY Growth (%)
3Q17	230.6	5.1
4Q17	229.1	1.3
1Q18	227.3	1.5
2Q18	226.5	1.2
3Q18	232.8	1.0
4Q18	239.3	4.4
1Q19	230.0	1.2
2Q19	233.9	3.3

Source: MAVCOM, AOL Holders

Table A26: Malaysia's Cargo Movements, 2017 – 2019

Quarter	Cargo Movement (thousand metric tonnes)	YoY Growth (%)
3Q17	249.8	12.7
4Q17	265.0	3.9
1Q18	240.7	0.2
2Q18	240.8	-0.6
3Q18	259.5	3.9
4Q18	269.0	1.5
1Q19	233.0	-3.2
2Q19	242.1	0.6

Source: MAVCOM, AOL Holders

Table A27: Malaysian Carriers' Load Factors Trend, 2014 – 2019

Quarter	Load Factor (%)
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
1Q18	81.6
2Q18	83.6
3Q18	83.1
4Q18	78.8
1Q19	81.2
2Q19	80.3

Source: MAVCOM, AirportIS

Table A28: Malaysian Carriers' Average Fares Trend, 2014 – 2019

Quarter	Domestic (RM)	International (RM)
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
1Q18	217	537
2Q18	220	482
3Q18	230	459
4Q18	215	467
1Q19	192	470
2Q19	194	469

Source: MAVCOM, AirportIS

Table A29: Malaysian Carriers' RASK and CASK Trends, 2017 – 2019

Quarter	RASK (sen)	CASK (sen)	RASK-CASK Spread (sen)
3Q17	16.0	16.7	-0.7
4Q17	16.6	17.2	-0.6
1Q18	16.7	16.8	-0.1
2Q18	15.7	17.0	-1.2
3Q18	16.4	18.3	-1.8
4Q18	16.4	18.9	-2.5
1Q19	15.9	17.3	-1.4
2Q19	15.8	18.5	-2.7

Source: MAVCOM, ASL Holders

Table A30: Revenue and Operating Profit Margin of Malaysian Carriers, 2017 – 2019

Quarter	Revenue (RM bn)	Operating Profit Margin(%)
3Q17	6.1	1.2
4Q17	7.0	1.3
1Q18	6.4	7.9
2Q18	5.7	-2.8
3Q18	6.1	-6.1
4Q18	6.4	-9.9
1Q19	6.4	2.9
2Q19	6.4	-2.2

Source: MAVCOM, ASL Holders

Table A31: Revenue and Operating Profit Margin of AOL Holders, 2017 – 2019

Quarter	Revenue (RM bn)	Operating Profit Margin (%)
3Q17	1.3	21.4
4Q17	1.3	17.8
1Q18	1.2	52.7
2Q18	1.2	25.4
3Q18	1.3	29.4
4Q18	1.3	12.1
1Q19	1.3	25.2
2Q19	1.3	30.4

Source: MAVCOM, AOL Holders

Table A32: Revenue for Ground Handling Sub-Segments, 2018 – 2019

Year	Revenue (RM mn)		
	Catering	General Ground Handling	Refuelling
1Q18	81.2	157.4	1.78
2Q18	81.2	162.6	5.66
3Q18	86.5	165.0	8.63
4Q18	85.6	179.8	6.34
1Q19	85.6	233.7	9.73
2Q19	88.5	234.0	7.81

Source: MAVCOM, GHL Holders

Table A33: Operating Profit Margin for Ground Handling Sub-Segments, 2018 – 2019

Year	Operating Profit Margin (%)		
	Catering	General Ground Handling	Refuelling
1Q18	-0.8	-0.7	-38.5
2Q18	1.4	-1.5	-11.4
3Q18	-3.8	2.5	6.8
4Q18	7.0	8.7	7.4
1Q19	2.7	9.2	2.4
2Q19	2.8	8.1	-14.7

Source: MAVCOM, GHL Holders

Table A35: Number of ASP Holders by Sub-Segment, 2019

Sub-segment	Number of Companies
Aerial work – cloud seeding, mapping	2
Oil & Gas	4
On-demand cargo	1
On-demand charter	7
Pleasure flying	2
Surveying, observation & patrol	1

Source: MAVCOM

Table A36: Distribution of ASP Holders Across Several Locations in Malaysia, 2019

Sub-segment / Location	Number of Companies							
	SZB	KTE	KUL	KCH	BKI	MYY	LBU	Non-airport
Aerial work – cloud seeding, mapping	1	-	-	-	1	-	-	-
Oil & Gas	-	3	-	-	-	-	1	-
On-demand cargo	-	-	1	-	-	-	-	-
On-demand charter	5	-	-	1	-	1	-	-
Pleasure flying	-	-	-	-	-	-	-	2
Surveying, observation & patrol	1	-	-	-	-	-	-	-

Source: MAVCOM

Table A37: Revenue and Operating Profit Margin of ASP Holders, 2017 – 2019

Quarter	Revenue (RM mn)	Operating Profit Margin (%)
3Q17	377.6	13.5
4Q17	410.6	39.8
1Q18	382.5	14.1
2Q18	414.8	17.0
3Q18	410.6	15.6
4Q18	410.4	-30.8
1Q19	285.2	14.2
2Q19	266.6	3.6

Source: MAVCOM, ASP Holders

Table A38: Revenue of ASP Holders by Sub-Segment, 2017 – 2019

Quarter	Revenue (RM mn)					
	Aerial work – cloud seding, mapping	Oil & Gas	On-demand cargo	On-demand charter	Pleasure flying	Surveying, observation & patrol
3Q17	14.4	212.0	4.8	142.6	1.3	2.4
4Q17	12.4	177.5	7.8	209.0	1.2	2.6
1Q18	16.1	177.6	18.2	162.4	1.0	2.9
2Q18	25.3	164.8	21.3	194.2	1.1	4.3
3Q18	14.2	162.1	21.0	140.7	0.8	4.2
4Q18	11.5	164.5	24.2	205.8	0.5	4.0
1Q19	13.3	169.2	27.2	71.6	1.1	2.7
2Q19	13.2	165.3	27.5	57.9	0.1	2.6

Source: MAVCOM, ASP Holders

Table A39: Operating Profit Margin of ASP Holders by Sub-Segment, 2017 – 2019

Quarter	Operating Profit Margin (%)					
	Aerial work – cloud seding, mapping	Oil & Gas	On-demand cargo	On-demand charter	Pleasure flying	Surveying, observation & patrol
3Q17	11.9	20.4	0.0	6.6	-56.0	-121.3
4Q17	-7.4	95.7	0.0	1.9	-36.0	-28.0
1Q18	6.4	29.9	-11.1	1.1	-44.9	21.0
2Q18	35.5	27.7	4.8	4.9	-77.7	19.9
3Q18	19.9	28.5	-4.2	13.1	-85.4	-50.6
4Q18	-2.9	-65.7	7.3	-6.7	-200.0	-130.2
1Q19	11.6	13.9	6.7	20.6	-48.0	-19.8
2Q19	0.9	8.9	-3.8	-1.0	20.7	-137.2

Source: MAVCOM, ASP Holders

Table A40: Passenger Traffic Carried by a Malaysian Carrier on SZB-TOD, SZB-RDN, and SZB-PKG routes, 2010 – 2014

Year	Passenger Traffic (in thousand)
1Q10	12.2
2Q10	20.9
3Q10	23.6
4Q10	9.7
1Q11	10.5
2Q11	26.8
3Q11	30.7
4Q11	12.9
1Q12	12.2
2Q12	24.7
3Q12	27.7
4Q12	17.7
1Q13	16.6
2Q13	27.4
3Q13	31.6
4Q13	13.4
1Q14	10.2
2Q14	8.0
3Q14	14.7
4Q14	1.6

Source: MAVCOM, AirportIS

Table A41: Charter Services as a Percentage of Total Seat, 2016 – 2018

Year	Malaysia	Australia	Germany	UK	Thailand
2016	0.00	0.25	0.20	3.56	0.63
2017	0.19	0.49	0.25	3.41	0.59
2018	0.14	0.52	0.94	3.22	0.64

Source: MAVCOM, AirportIS

APPENDIX B: LIST OF LICENCE AND PERMIT HOLDERS

Table B1: AOL Holders

No	Company Name
1	Malaysia Airports (Sepang) Sdn. 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	FlyFirefly Sdn. Bhd.
4	Malaysia Airlines Berhad
5	Malindo Airways Sdn. Bhd.
6	MASwings Sdn. Bhd.
7	My Jet Xpress Airlines Sdn. Bhd.
8	Raya Airways Sdn. Bhd.

Source: MAVCOM

Table B3: ASP Holders

No.	Company Name
1	Aerial Power Lines Sdn. Bhd.
2	Afjets Sdn. Bhd.
3	Cempaka Helicopter Corporation Sdn. Bhd
4	Helistar Resources Sdn. Bhd.
5	Hevilift (M) Sdn. Bhd.
6	Hornbill Skyways Sdn. Bhd.
7	Jet Premier One (M) Sdn. Bhd.
8	Layang-layang Aerospace Sdn. Bhd.
9	MHS Aviation Bhd.
10	Myballoon Adventure Sdn. Bhd.
11	Plus Helicopter Services Sdn. Bhd.
12	Pos Asia Cargo Express Sdn. Bhd.
13	Prima Air Sdn. Bhd.
14	Sabah Air Sdn. Bhd.
15	Sazma Aviation Sdn. Bhd.
16	Systematic Aviation Services Sdn. Bhd.
17	Weststar Aviation Services Sdn. Bhd.

Source: MAVCOM

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	Cloudera Aviation Services Sdn. Bhd.
6	Conor Engineering & Services Sdn. Bhd.
7	Dviation Technics Sdn. Bhd.
8	Elite Jets Sdn Bhd.
9	Ground Team Red Sdn. Bhd.
10	Hasrat Asia (M) Sdn. Bhd.
11	Helitech Aviation Services Sdn. Bhd.
12	Jet Fuels Sdn. Bhd.
13	KLM Line Maintenance Sdn. Bhd.
14	Mas Awana Services Sdn. Bhd.
15	MNM Aviation Services Sdn. Bhd.
16	Nusantara Aviation Services Sdn. Bhd.
17	Petron Malaysia Refining & Marketing Berhad
18	Petronas Dagangan Berhad
19	POS Aviation Sdn. Bhd.
20	Safeair Technical Sdn. Bhd.
21	Select Fine Foods Sdn. Bhd.
22	Shell Malaysia Trading Sdn. Bhd.
23	Shell Timur Sdn. Bhd.
24	Skypark FBO Malaysia Sdn. Bhd.
25	Smooth Route Sdn. Bhd.

Source: MAVCOM

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