



KEY HIGHLIGHTS

Further contraction in 2020 passenger traffic due to COVID-19

As at early-June 2020, Malaysian and foreign carriers have cancelled **38.8mn seats (34.9% of total 2020 seat capacity) due to the Coronavirus Disease 2019 (COVID-19)**. This is 25.1% greater than MAVCOM's previous estimate of 31.0mn seats. Hence, MAVCOM revises downward its **2020 passenger traffic growth forecast to between -48.7% YoY and -50.3% YoY** (previous forecast: -36.2% YoY to -38.1% YoY), **which translates to 54.3mn – 56.0mn passengers** (2019: 109.2mn passengers). This forecast considered a lower annual load factor assumption due to muted demand during the first five months of 2020 and further seat cancellations. MAVCOM expects 35.2% of domestic and 42.9% of international seats will be cancelled in 2020, totalling 44.8mn seats (40.3% of the originally-planned capacity in 2020).¹

Both Malaysian and foreign carriers are adjusting capacity

Carriers are adjusting their seat capacity in 2020 weekly due to uncertainties in travel demand and restrictions. As at early-June 2020, **29.6mn seats have been cancelled, representing 35.4% of Malaysian carriers' total seat capacity in 2020, compared to 28.3mn at end-May 2020**. Foreign carriers operating to and from Malaysia have also cancelled seat capacity by 9.2mn (33.6% of total seat capacity for foreign carriers), compared to 8.5mn at end-May 2020. As these cuts by foreign carriers represent 23.6% of total seat cancellations, the recovery in passenger traffic would also depend on capacity reinstatement by these carriers.

Unfavourable outlook for the aviation services market remains

The revenue-at-risk for Malaysian and foreign carriers is estimated to be RM11.3bn and RM4.6bn (previous estimates: RM6.8bn and RM5.0bn), respectively (51.1% of estimated total airfare revenue in 2019, collectively). **For Malaysian aerodrome operators, it is RM0.5bn** (previous estimate: RM0.4bn) (33.4% of estimated total revenue derived from passenger service charge in 2019). Given the low passenger traffic, the inherently high fixed costs of both airlines and airports are now spread over fewer passengers, which necessitates the need for additional capital injections to sustain their business.

Uncertain recovery timeline given the unprecedented nature of the crisis

Given the severity of the pandemic and the economic downturn, the recovery of airline seat capacity to pre-COVID-19 levels is expected to take a longer time than that of previous crises. The speed of the recovery will largely be driven by public health measures to instil travel confidence and the consistency of actions undertaken by airlines, airports, and governments. To this effect, the International Civil Aviation Organization's "Take-off Guidance" provides a framework for air travel operations during this period. It is important that recovery measures are harmonized to facilitate a faster industry recovery.

¹ As at early-June 2020. MAVCOM is monitoring global and domestic developments and will adjust its forecasts accordingly.

GLOSSARY OF SOURCES

Sources

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
Bloomberg	-
BNM	Bank Negara Malaysia
CargoIS	-
DOS	Department of Statistics, Malaysia
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

TABLE OF ABBREVIATIONS

Abbreviations

Act 771	Malaysian Aviation Commission Act 2015
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
bbbl	barrel
bn	billion
CAAM	Civil Aviation Authority of Malaysia
CAAS	Civil Aviation Authority of Singapore
CAGR	Compound annual growth rate
COS	Cargo-on-seat
COVID-19	Coronavirus Disease 2019
CTK	Cargo Tonne Kilometre
EASA	European Union Aviation Safety Agency
E&E	Electrical and electronics
EIA	US Energy Information Administration
EU	European Union
FAA	US Federal Aviation Administration
FDP	Flight Duty Period
FTK	Freight Tonne Kilometres
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GHL	Ground Handling Licence
GOM	Government of Malaysia
H1N1	Influenza A H1N1
H5N1	Influenza A H5N1
H7N9	Influenza A H7N9
HHI	Herfindahl-Hirschman Index
km	kilometre
kg	kilogram
lbs	pound
MAG	Malaysia Aviation Group
MAS	Malaysia Airlines System
MCO	Movement Control Order
MERS	Middle East Respiratory Syndrome
mn	million
OPEC	Organization of the Petroleum Exporting Countries

Abbreviations

P2C	Passenger-to-cargo
ppt	percentage point
PTK	Passenger tonne kilometre
RHS	right-hand side
RM	Ringgit Malaysia
RPK	Revenue Passenger Kilometre
SOP	Standard Operating Procedure
UK	United Kingdom of Great Britain and Northern Ireland
US	United States of America
USD	United States Dollar
YoY	Year-on-Year

AIRPORT CODES

Airport Code

DPS	Ngurah Rai International Airport, Indonesia (Bali)
KUL	Kuala Lumpur International Airport
LHR	London Heathrow, UK
PEN	Penang International Airport

LICENCE AND PERMIT HOLDERS

Abbreviations

AirAsia	AirAsia Berhad
AirAsia X	AirAsia X Berhad
Firefly	FlyFirefly Sdn. Bhd.
MAB	Malaysia Airlines Berhad
MABkargo	MAB Kargo Sdn. Bhd.
Malindo	Malindo Airways Sdn. Bhd.
MASwings	MASwings Sdn. Bhd.
My Jet Xpress	My Jet Xpress Airlines Sdn. Bhd.
Pos ACE	Pos Asia Cargo Express Sdn. Bhd.
Raya Airways	Raya Airways Sdn. Bhd.

CONTENTS

KEY HIGHLIGHTS	1
Glossary of Sources	2
Table of Abbreviations	3
Airport Codes	4
Licence and Permit Holders	4
List of Figures	7
List of Tables	8
SECTION 1: MACROECONOMIC OVERVIEW AND OUTLOOK	9
Slowdowns in the Global and Malaysian Economies in 2020	9
SECTION 2: INDUSTRY OVERVIEW AND OUTLOOK	10
Industry Overview	10
Tourist Arrivals Grew Marginally in 2019.....	10
Ringgit Expected to Depreciate and Oil Prices Will be Lower in 2020	11
Malaysia’s Passenger Traffic Contracted by 27.5% YoY in 1Q20.....	12
Industry Outlook	13
COVID-19 Will Inflict Severe Damage on the Aviation Industry	13
Passenger Traffic Growth in the Asia Pacific is Expected to Contract by 53.8% YoY	14
Malaysia’s Passenger Traffic to Contract by 48.7% YoY – 50.3% YoY in 2020	14
The Revenue-at-Risk for Malaysian Air Service Licence and Aerodrome Operating Licence Holders is Estimated at RM11.8bn	18
New Norms and Uncertainties for the Aviation Industry	18
Box 1: Restrictions on International Movement and Travel Bubbles	19
A Slow Recovery to Pre-COVID-19 Levels	21
SECTION 3: INDUSTRY STRUCTURE AND PERFORMANCE	22
Scheduled Passenger Services Market	22
Reduction of Market Shares for Malindo, AirAsia X, and Firefly in 1Q20.....	22
Market Concentration Increased in 1Q20, Average Load Factor Dipped Below 70.0%	23
Malaysian Carriers’ Average Load Factor Dipped Below 70.0% and Average Fare Increased in 1Q20.....	24
Air Traffic Rights Awarded by MAVCOM as of 31 December 2019	25
Malaysian Carriers Utilize 26 out of 106 Air Service Agreements	25
SECTION 4: AIR CARGO OPERATIONS AND COVID-19	27

Air Cargo Operations in Malaysia	27
Air Service Licence or Air Service Permit is Required for Cargo Operations in Malaysia	27
Malaysia’s Air Cargo Market is Growing Despite Connected to Fewer Destinations	27
Increased Importance of Air Cargo During COVID-19 Pandemic.....	29
Increased Freighter Operations Amid Loss in Belly Cargo Capacity	29
Reconfigured Passenger Aircraft are Used for Air Cargo Operations	31
Various Risks are Present in the Operations of Reconfigured Aircraft	32
Regulations Have Been Evolving to Cope with the Current Environment...	32
Air Cargo Business May Act as a Hedge against Low Passenger Volume	33
APPENDIX A: DATA TABLES.....	34
APPENDIX B: LIST OF LICENCE AND PERMIT HOLDERS.....	46

List of Figures

Figure 1: Global and Malaysia’s GDP Growth, 2010 – 2020F	9
Figure 2: Quarterly Malaysia’s Tourist Arrivals, 2017 – 2019.....	10
Figure 3: Oil, Jet Fuel, and Exchange Rate Trends, 2018 – 2020.....	11
Figure 4: Quarterly Passenger Traffic Trend, 2018 – 2020	12
Figure 5: Quarterly Passenger Traffic Growth by Regions, 2017 – 2019.....	13
Figure 6: Seat Capacity Growth in Malaysia, 2005 – 2020	13
Figure 7: Total Seat Capacity in Malaysia, 2020	15
Figure 8: Passenger Traffic (Base Case Scenario), 2012 – 2020F	17
Figure 9: Index of Major Events’ Impact on Global Seat Capacity, 2005 – 2020 ..	21
Figure 10: Percentage of Airlines’ Market Share by Passengers, 2018 – 2020.....	22
Figure 11: Market Concentration Level and Load Factor, 2018 – 2020	23
Figure 12: Malaysian Carriers’ Average Load Factor Trend, 2014 – 2020.....	24
Figure 13: Malaysian Carriers’ Average Fare Trend, 2014 – 2020	24
Figure 14: Utilization of ASAs as at 31 December 2019.....	26
Figure 15: Total FTK by Malaysian Air Cargo Players, 2015 – 2019.....	28
Figure 16: Total Trade Value by Mode of Transport, 2015 – 2019.....	28
Figure 17: Total Cargo and Trade Value at KUL and PEN, 2015 – 2019.....	29
Figure 18: Available FTK in the Asia Pacific, 2019 – 2020.....	30
Figure 19: Scheduled Passenger and Full-Freight Operations in Malaysia, 2020	30
Figure 20: Total Revenue Tonne Kilometres Performed, 2015 – 2019	31
Figure 21: Outbound Air Cargo Rate from the Asia Pacific, 2020	31

List of Tables

Table 1: Passenger and Cargo Traffic Forecasts by IATA	14
Table 2: Passenger Traffic Growth Forecast, 2020.....	16
Table 3: Travel Restrictions by Selected Countries, May 2020	19
Table 4: Measures Undertaken in the Aviation Industry	20
Table 5: Breakdown of ATRs Awarded, 2018 – 2019.....	25
Table 6: Details on Cargo Operations, May 2020	27
Table 7: Risks for COS and P2C Operations	32

SECTION 1: MACROECONOMIC OVERVIEW AND OUTLOOK

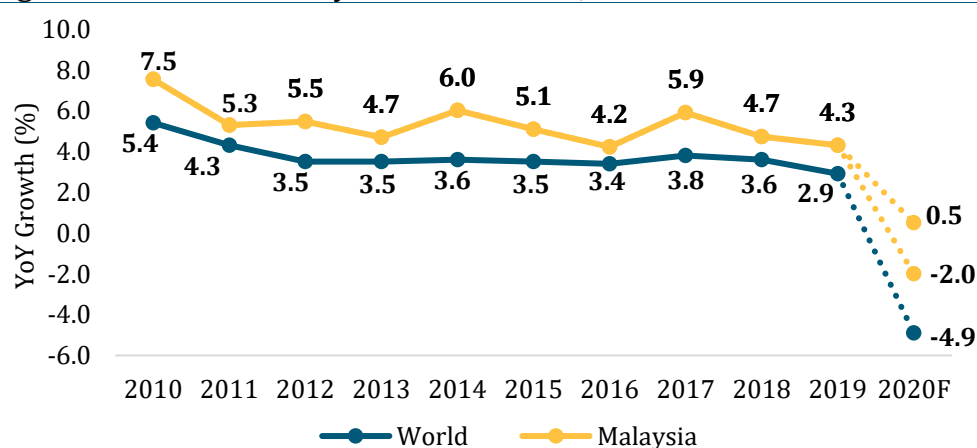
Slowdowns in the Global and Malaysian Economies in 2020

Global economic activity moderated sharply in 1Q20, with a significant economic slowdown in major economies. This was due to the measures taken by countries worldwide to contain the spread of COVID-19 such as border controls, business closures, and movement restrictions. **Malaysia is no exception, with growth at a low level of 0.7% YoY in 1Q20** (1Q19: 4.5% YoY). The implementation of the MCO between 18 March and 9 June 2020 led to weaker private sector economic activities arising from restricted mobility, the closure of non-essential services, and a pause in ongoing investments.

In the June 2020 update to its World Economic Outlook, **the IMF revised its forecast for global GDP to contract by 4.9% YoY** (previous forecast²: -3.0% YoY), with a recovery of 5.4% YoY in 2021 (previous forecast³: 5.8% YoY). The revision in forecast considered a deeper recession taking place in both advanced and emerging economies, which will subsequently hamper recovery prospects. **However, great uncertainties surround this forecast**, as the recovery depends on the progress in developing a vaccine, the effectiveness of containment measures, as well as, changes in consumer and producer behaviour.

The BNM has also revised downward its forecast for the Malaysian economy to between -2.0% YoY and 0.5% YoY in 2020 (previous forecast: 3.2% YoY – 4.2% YoY) (see Figure 1). Similarly, the World Bank also revised downward its forecast for the Malaysian economy to -3.1% YoY (previous forecast: 4.6% YoY). While sizeable fiscal and monetary policy measures have been undertaken to support the economy, downside risks from supply shocks, caution in household spending, and delayed business investments remain. The economy is expected to contract further in 2Q20 due to the MCO before a partial recovery in 2H20.

Figure 1: Global and Malaysia's GDP Growth, 2010 – 2020F



Source: Bloomberg, BNM, IMF, MOF

² IMF's previous forecast in its April 2020 World Economic Outlook.

³ Ibid.

SECTION 2: INDUSTRY OVERVIEW AND OUTLOOK

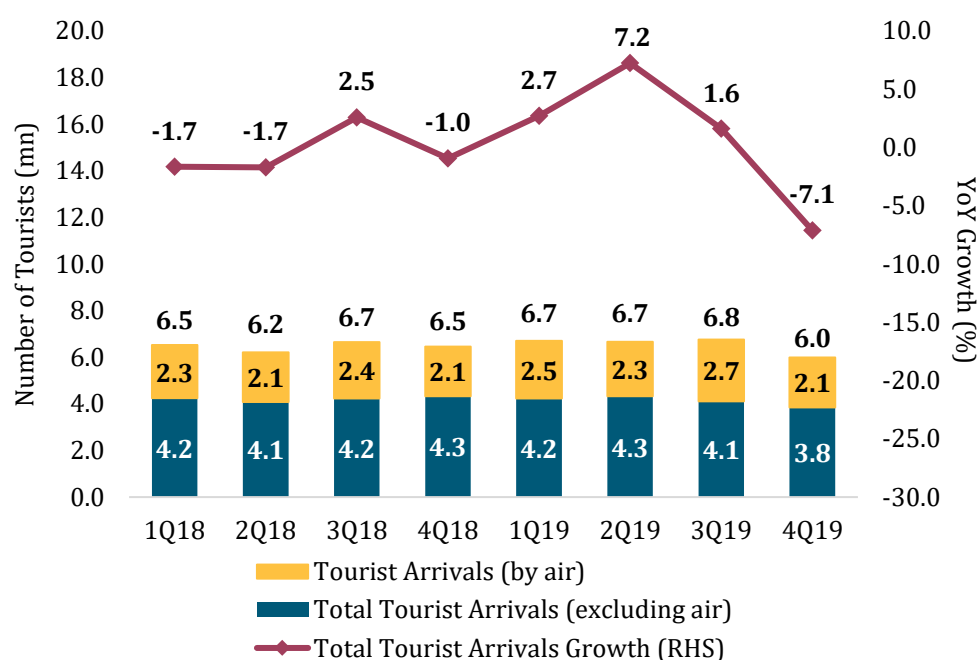
Industry Overview

Tourist Arrivals Grew Marginally in 2019

Malaysia's tourist arrivals increased by 1.0% YoY to 26.1mn in 2019 (2018: -0.5% YoY) due to an increase in arrivals from Indonesia and China of 10.5% YoY and 5.8% YoY, respectively. This was partially offset by a decline in tourist arrivals from Singapore and Brunei of -4.3% YoY and -12.0% YoY, respectively.

In 4Q19, Malaysia's tourist arrivals recorded a decline of 7.1% YoY (3Q19: 1.6% YoY) (see Figure 2). Overall tourist arrivals (excluding those by air) contracted by 11.1% YoY to 3.8mn whilst tourists arriving by air remained around 2.1mn in 4Q19. This was partly attributable to fewer Singaporean tourists entering via the Johor-Singapore Causeway due to worsening congestion.⁴ Additionally, aggregate tourist arrivals from Singapore, Indonesia, China, Thailand, and Brunei contracted by 10.7% YoY in 4Q19 (3Q19: -1.3% YoY) partly due to the recurrence of transboundary haze in Southeast Asia.⁵

Figure 2: Quarterly Malaysia's Tourist Arrivals, 2017 - 2019



Source: Bloomberg, MOTAC

Note: Figures might not add up due to rounding.

⁴ Musa, Z. (2020, December 16). Find solutions to ease congestion at the Causeway, Govt urged. *The Star*.

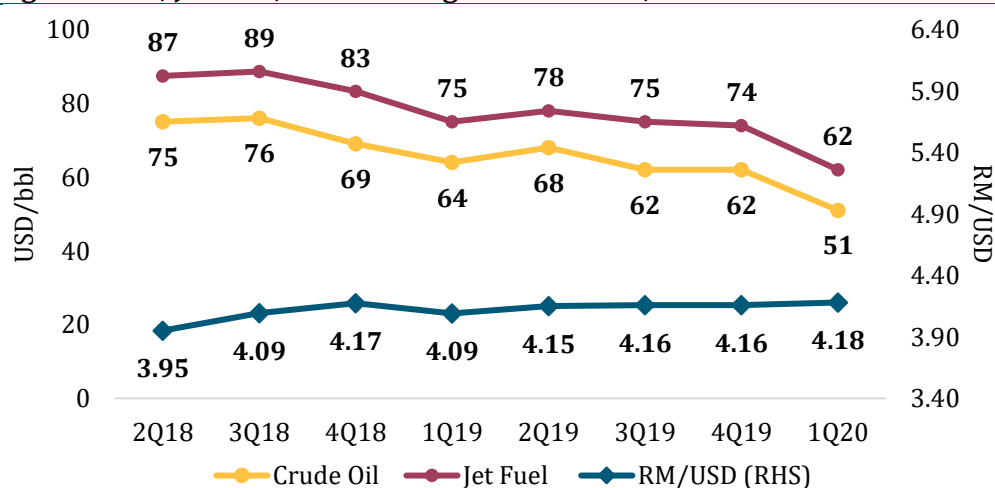
⁵ A Malek, N. H. (2020, September 25). Haze hurting Malaysia's tourism. *The Malaysian Reserve*.

As regards the mode of transport, the growth of tourist arrivals by air to Malaysia increased by 7.2% YoY in 2019 (2018: 35.5% YoY), with a marginal increase of 1.0% YoY in 4Q19 (3Q19: 9.5% YoY). However, COVID-19 is expected to cause a sharp decline in tourist arrivals in 2020. Accordingly, the Visit Malaysia Year 2020 campaign was cancelled. Nonetheless, to revive the tourism sector, MOTAC is looking into pivoting its efforts towards promoting domestic tourism instead. An online survey published by Tourism Malaysia⁶ showed that 73.1% of the 13,797 respondents preferred to travel domestically and 32.1% intended to travel domestically within one month of the MCO being lifted. Additionally, it was found that 43.1% of respondents were willing to travel by air.

Ringgit Expected to Depreciate and Oil Prices Will be Lower in 2020

The RM remained flat in 3Q19 and 4Q19 at RM4.16/USD, registering RM4.14/USD in 2019 (2018: RM4.04/USD). In 1Q20, the RM depreciated by 2.2% YoY and averaged RM4.18/USD (see Figure 3). This was in tandem with heightened investors' risk aversion in global financial markets and demand for safe-haven assets. According to the BNM, the RM/USD rates alongside capital flows are expected to remain volatile in the near term. Investors' sentiments are weakened due to uncertainties arising from COVID-19 which are expected to affect economic growth.

Figure 3: Oil, Jet Fuel, and Exchange Rate Trends, 2018 – 2020



Source: Bloomberg

In 1Q20, Brent crude averaged USD51/bbl while jet fuel averaged USD62/bbl, with an average crack spread⁷ of USD11/bbl. Oil prices declined between 4Q19 and 1Q20 primarily due to a fall in demand from the transport sector, owing to the imposition of movement restrictions by countries worldwide to contain COVID-19. Additionally, a negotiation on production cuts between the

⁶ Tourism Malaysia. (2020). *Survey on Domestic Travel in Malaysia After Movement Control Order (M.C.O.), 7th – 13th April 2020*.

⁷ The crack spread is the price difference between a barrel of crude oil and jet fuel. It is also known as the refining margin.

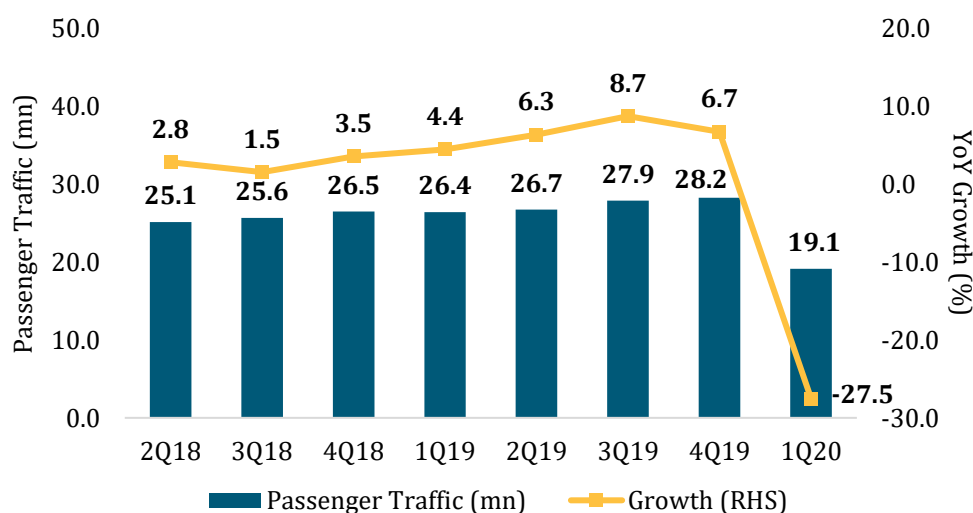
Saudi Arabia-led OPEC delegation and Russia in March 2020 broke down, further pushing oil prices down as oversupply concerns surfaced.

The combination of the demand shock and oversupply resulted in an oil price crash in 1Q20, unlike the previous crash in 2016, which was primarily due to oversupply from US shale oil production. **On 12 April 2020, OPEC and non-OPEC producers agreed on a production reduction of 9.7mn barrels per day in May and June 2020** (approximately 18.0% of March 2020's daily output) to support global oil prices, with the reduction being phased out gradually until April 2022. Despite the coordinated production cuts to support prices, the US EIA forecasted in June 2020 that Brent crude oil prices will average USD38/bbl in 2020, down from its earlier forecast of USD43/bbl (2019: USD64/bbl). **A low oil price environment will result in losses for airlines that are highly hedged, which will be compounded by the revenue decline in the passenger traffic segment.**

Malaysia's Passenger Traffic Contracted by 27.5% YoY in 1Q20

Passenger traffic in 1Q20 was 19.1mn, a contraction of 27.5% YoY (1Q19: 26.4mn; 4.4% YoY) (see Figure 4). This was a significant drop from the highest recorded traffic of 28.2mn in 4Q19 and the lowest since 1Q13 at 17.8mn. **The decline in passenger traffic in 1Q20 was attributable to the slow demand for air travel and the start of travel restrictions arising from measures taken by countries worldwide** to contain COVID-19, including the implementation of the MCO in Malaysia effective 18 March 2020.

Figure 4: Quarterly Passenger Traffic Trend, 2018 – 2020

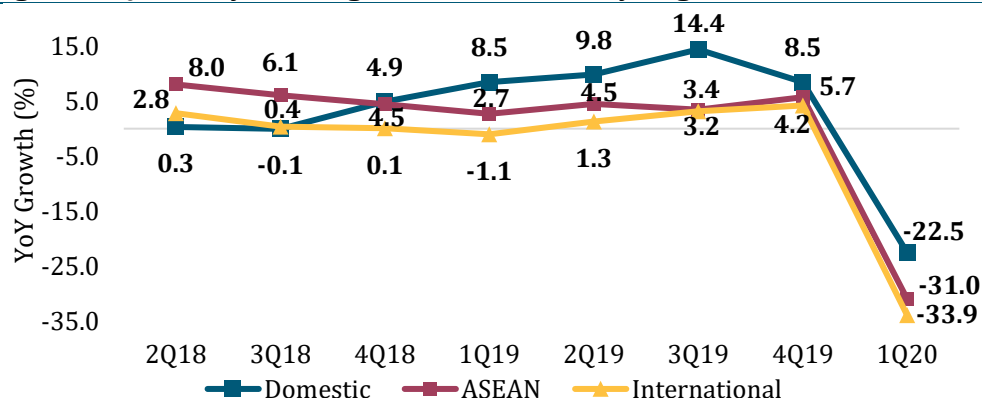


Source: MAVCOM, AOL Holders

The decline in passenger traffic in 1Q20 was led by the international market at -33.9% YoY (1Q19: -1.1% YoY) followed by the ASEAN market at -31.0% YoY (1Q19: 2.7% YoY). Domestic passenger traffic in 1Q20 declined by 22.5% YoY (1Q19: 8.5% YoY).

This contrasts with the increasing growth rate in the domestic market since 4Q18 that remained high throughout 2019, with the highest growth being 14.4% YoY recorded in 3Q19 (see Figure 5).

Figure 5: Quarterly Passenger Traffic Growth by Regions, 2017 - 2019



Source: MAVCOM, AOL Holders

Industry Outlook

COVID-19 Will Inflict Severe Damage on the Aviation Industry

Since 2004, there were only three periods where Malaysia experienced a major contraction in seat capacity growth (see Figure 6)—the domestic routes’ rationalization (2006), the GFC (2008), and MAS’ restructuring exercise (2016)⁸—with the most severe contraction in seat capacity happening in July, August, and March of the respective years. **In May 2020, COVID-19 resulted in a seat capacity decline of 92.3% YoY, unprecedented in the Malaysian aviation sector.** The prospect of the aviation sector worldwide—including Malaysia’s—will depend on the pandemic’s severity and air travel recovery.

Figure 6: Seat Capacity Growth in Malaysia, 2005 - 2020



Source: MAVCOM, AirportIS

⁸ MAB was established as part of the MAG on 1 September 2015 after MAS was delisted from Bursa Malaysia following its post-restructuring programme in 2014 and ceased operation on 31 August 2015. In this report, the national carrier will be referred to as MAS for pre-2015 discussion and MAB for post-2015 discussion.

Passenger Traffic Growth in the Asia Pacific is Expected to Contract by 53.8% YoY

In June 2020, IATA revised its global passenger traffic growth forecast to -54.7% YoY (previous forecast⁹: -48.0% YoY) while cargo traffic growth was forecasted to be -16.8% YoY (previous forecast¹⁰: between -14.0% YoY and -31.0% YoY). **Passenger traffic growth for the Asia Pacific is forecasted to be at -53.8% YoY** (previous forecast¹¹: -50.0%) while Malaysia's is expected to be at -51.0% YoY (previous forecast¹²: -39.0% YoY) (see Table 1), owing to prolonged travel restrictions, lower passenger confidence, and muted demand amid the economic slowdown.

Table 1: Passenger and Cargo Traffic Forecasts by IATA

Key Figures	2018 YoY Growth (%)	2019 YoY Growth (%)	2020 YoY Growth Forecast (%)
Global Passenger Traffic ¹³	7.4	4.2	-54.7
Global Cargo Traffic ¹⁴	3.4	-3.3	-16.8

Source: IATA

ICAO had called on governments to ensure the continuity of the global air cargo supply chain to facilitate the distribution of aid to countries affected by COVID-19. Despite the reduction in scheduled passenger services—which has affected belly cargo operations—freight cargo operations are increasing to ensure the delivery of vital medicine and medical equipment, among other essential goods. Air cargo operations in Malaysia and their role in transporting goods during COVID-19 are discussed further in Section 4.

Malaysia's Passenger Traffic to Contract by 48.7% YoY – 50.3% YoY in 2020

In its March 2020 Waypoint report, MAVCOM laid out three possible scenarios for the potential impact of COVID-19 on passenger traffic growth in 2020. The scenarios considered existing and further possible seat cancellations by both Malaysian and foreign carriers. **As at early-June 2020, 38.8mn seats have been cancelled by both Malaysian and foreign carriers in 2020 (34.9% of total seat capacity for 2020), with 71.1% of the total seat cancellations for the international market.** This is 25.1% greater than MAVCOM's previous estimates of 31.0mn seats (MAVCOM's base case scenario in March 2020).

⁹ IATA's previous forecast on 14 April 2020.

¹⁰ IATA's previous forecast on 28 April 2020.

¹¹ IATA's previous forecast on 14 April 2020.

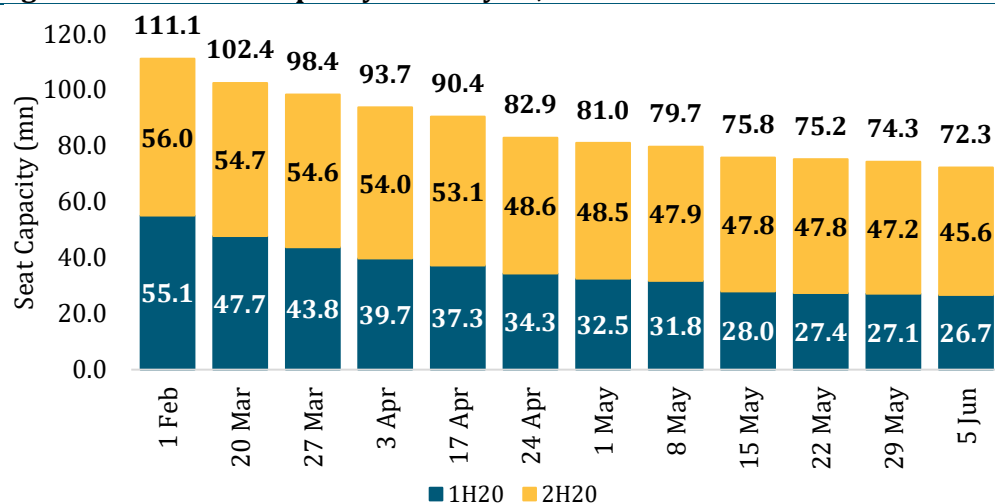
¹² IATA's previous forecast on 3 April 2020.

¹³ Growth forecasts in terms of RPK.

¹⁴ Growth forecasts in terms of Cargo Tonne Kilometre (CTK) (freight and mail).

As at early-June 2020, 28.3mn of the 38.8mn seats were cancelled in 1H20 while 10.5mn seats were cancelled in 2H20. **Based on the number of seats cancelled in 1H20, an additional 17.9mn seats may be further cancelled should the severity in 2H20 match that of 1H20.** Carriers are still uncertain about the rapidly evolving situation due to travel restrictions, as well as, the implementation of health and safety measures. As a result, they are adjusting their total seat capacity in 2020 weekly (see Figure 7).

Figure 7: Total Seat Capacity in Malaysia, 2020



Source: MAVCOM, AirportIS

Given the relaxation of movement restrictions within Malaysia, MAVCOM expects the domestic market to recover faster relative to the international market. In light of the economic downturn and reluctance of countries worldwide to lift their border controls, the seat capacity recovery to pre-COVID-19 levels is expected to take a longer time i.e. beyond 2020 and would also depend on the development of a vaccine to restore passenger confidence.

For the first five months of 2020, seat capacity declined by 41.2% YoY while passenger traffic dropped by 55.2% YoY. This translates into a passenger load factor of 58.6% (5M19: 76.9%). **Therefore, MAVCOM is revising downward its annual load factor assumption to be between 60.0% and 68.0% in 2020** (previous assumption: between 63.0% and 69.0%). However, the load factor for the rest of 2020 is expected to increase from the 5M20 level as carriers adjust seat capacity to match demand and this would not be more than eight ppt¹⁵ higher than the load factor achieved in 5M20. Overall, this would still be lower than the 2019 annual load factor of 78.8%.

¹⁵ Based on the widest range between the highest and the lowest load factors reported in 2009 following the GFC.

Based on the latest developments in air travel, new assumptions were made for the three possible scenarios by taking into consideration the different severity in seat cancellations in 2H20 (see Table 2). **Therefore, MAVCOM estimates that the total seat cancellations in 2020 will be larger than its previous forecast in March 2020.**

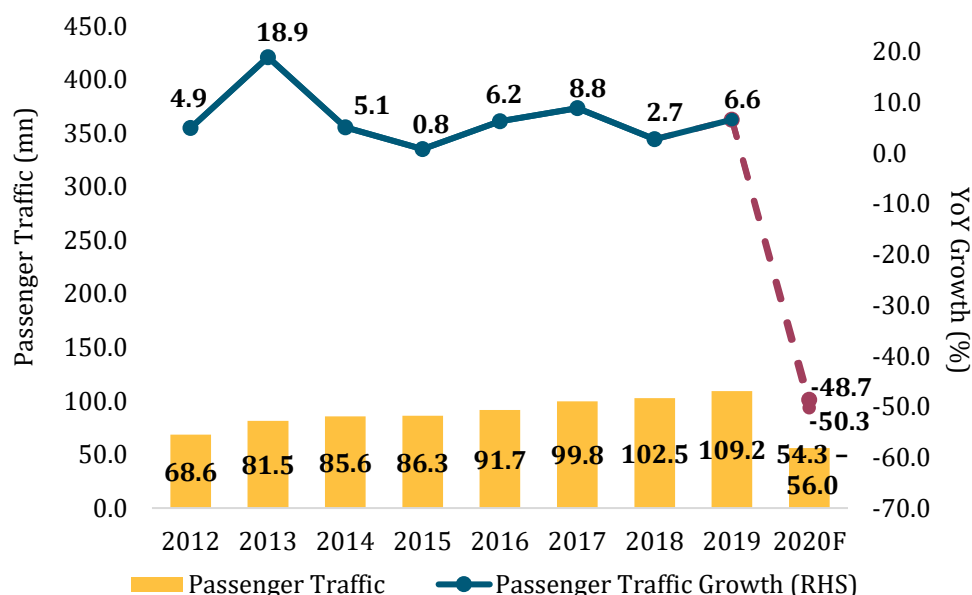
Table 2: Passenger Traffic Growth Forecast, 2020

Assumptions	Worst Case Scenario	Base Case Scenario	Best Case Scenario
Domestic Seats Reduction	40.8% of 2020 seat capacity	35.2% of 2020 seat capacity	29.6% of 2020 seat capacity
International Seats Reduction	48.2% of 2020 seat capacity	42.9% of 2020 seat capacity	37.7% of 2020 seat capacity
Load Factor (%)	60.0 – 62.0	63.0 – 65.0	66.0 – 68.0
Passenger Traffic Growth Forecast (mn)	47.1 – 48.7 (between -55.5% YoY and -56.9% YoY)	54.3 – 56.0 (between -48.7% YoY and -50.3% YoY)	62.0 – 63.9 (between -41.5% YoY and -43.2% YoY)

Source: MAVCOM

For the **base case scenario**, MAVCOM revises downward its 2020 passenger traffic forecast to contract by between 48.7% YoY and 50.3% YoY, which translates to 54.3mn – 56.0mn passengers (previous forecast: -36.2% YoY to -38.1% YoY) (see Figure 8), the lowest since 2009. Alongside existing seat cancellations, this forecast assumes a lower annual load factor and further seat cancellations of 6.0mn. This would mean a total cancellation of 44.8mn seats, representing 40.3% of the originally-planned capacity in 2020.

Figure 8: Passenger Traffic (Base Case Scenario), 2012 – 2020F



Source: MAVCOM, AOL Holders

However, if the spread of COVID-19 does not recede and travel restrictions prolong, MAVCOM's **worst case scenario** estimates that **passenger traffic in 2020 will contract by between 55.5% YoY and 56.9% YoY, translating to 47.1mn – 48.7mn passengers**. This assumes a lower annual load factor and further seat cancellations of 11.9mn, alongside existing seat cancellations. Total capacity will reduce by 50.7mn seats, representing 45.7% of the originally-planned capacity in 2020.

On the other hand, if COVID-19 is contained and travel restrictions are lifted, thereby improving demand for air travel, MAVCOM's **best case scenario** indicates that **passenger traffic in 2020 will contract by between 41.5% YoY and 43.2% YoY, translating to 62.0mn – 63.9mn passengers**. This assumes a lower annual load factor compared to the previous best case scenario forecast, but no further seat cancellations other than the existing ones.¹⁶ This would amount to total seat cancellations of 38.8mn, representing 34.9% of the originally-planned capacity in 2020.

¹⁶ 2020 annual seats data as at early-June 2020.

The Revenue-at-Risk for Malaysian Air Service Licence and Aerodrome Operating Licence Holders is Estimated at RM11.8bn

Based on MAVCOM's passenger traffic growth forecast in 2020, for the base case scenario, **the revenue-at-risk for Malaysian and foreign carriers is estimated at RM11.3bn and RM4.6bn** (previous estimates: RM6.8bn and RM5.0bn), respectively (51.1% of estimated total airfare revenue in 2019), whilst **for Malaysian aerodrome operators, the revenue derived from passenger service charge that is at risk is estimated at RM0.5bn** (previous estimates: RM0.4bn) (33.4% of estimated total revenue derived from passenger service charge in 2019). The revenue-at-risk for both ASL and AOL holders is estimated at RM11.8bn (previous estimates: RM7.2bn).

New Norms and Uncertainties for the Aviation Industry

Our passenger traffic growth forecasts and outlook for the Malaysian aviation industry are subject to a high degree of uncertainty. The performance of the industry will depend on the pandemic's severity, as well as, how consumers, industry players, and policymakers react. Some of the sources of uncertainty are as follows:

- **The pathway of the pandemic:** while Malaysia has experienced considerable success in containing the spread of COVID-19 so far, the possibility of a second wave remains.¹⁷ This may necessitate the re-imposition of movement controls, which will directly impact the air transport industry. The spread of the pandemic will also affect the outlook for the international passenger market, as this will influence government-imposed restrictions on international movement (see Box 1). Ultimately, the only decisive solution to the pandemic is the development of a vaccine. Progress or setbacks in efforts to develop a vaccine will influence the medium-to-long-term outlook of the aviation industry.
- **Public health measures:** Malaysia began its Recovery MCO phase on 10 June 2020 which is scheduled to end on 31 August 2020. Interstate travel is now allowed under the Recovery MCO rules although large gatherings such as conferences and exhibitions will still be subject to the SOPs set by the GOM. The GOM has maintained its border controls and quarantine measures, which may reduce demand for air travel.
- **Economic outlook:** as discussed in Section 1, Malaysia is likely to face an economic contraction due to the disruptions caused by COVID-19 and the consequent lockdown measures. Should the contraction prove more severe than expected, or the recovery more muted, the reaction of households and corporations in reducing their discretionary spending—including air travel—will be more pronounced.

¹⁷ Kaos Jr., J. (2020, May 12). Health DG: Malaysia concerned about possible emergence of COVID-19 second wave. *The Star*.

- **Changes in passenger behaviour:** independent of the economic circumstances, the non-monetary cost of air travel (the risk of contracting COVID-19) may mean that consumers will be less willing to travel by air. Leisure travellers may choose to use private vehicles to travel to their destinations, substitute towards more proximate locations, or not travel altogether. Corporations, having already invested and become accustomed to telecommuting and online conferencing facilities, may also reduce the demand for business travel.

Box 1: Restrictions on International Movement and Travel Bubbles

As part of efforts to contain the pandemic, many countries have imposed restrictions on international movement. These include the suspension of international flights, quarantine requirements for overseas arrivals, or entry bans for non-citizens. Table 3 below describes the travel restrictions imposed by selected countries.

Table 3: Travel Restrictions by Selected Countries, May 2020

Countries	Travel Restrictions
Indonesia	Travellers who are not citizens or permanent residents will not be allowed entry. Those allowed entry must have a valid health certificate
Singapore	Travellers who are not citizens or permanent residents will not be allowed entry. Those allowed entry are subject to self-quarantine for 14 days
China	Entry ban on all non-citizens
Thailand	Suspension of all international flights
India	Suspension of all international flights
Australia	Travellers who are not citizens, permanent residents, or their immediate family members will not be allowed entry. Those allowed entry are subject to self-quarantine for 14 days
Vietnam	Entry ban on all non-citizens. Those allowed entry are subject to self-quarantine for 14 days
South Korea	Entry ban for visitors from various countries. Those allowed entry are subject to self-quarantine for 14 days
Hong Kong	Travellers who are not citizens or permanent residents will not be allowed entry
Japan	Entry ban for visitors from various countries (except citizens, permanent residents, or their immediate family members)

Source: Respective government website

These restrictions may continue to be in place even as governments relax restrictions on domestic movements. For example, Malaysia's Recovery MCO has relaxed various restrictions on domestic movements, but international movements are still largely prohibited.

Some governments have agreed to open their borders to selected countries (travel bubbles) to facilitate a partial recovery in trade and tourism, such as:

- Australia and New Zealand
- Austria, France, Germany, and Switzerland
- Estonia, Latvia, and Lithuania

Malaysia is also considering setting up travel bubbles with six countries namely Australia, Brunei, Japan, New Zealand, Singapore, and South Korea to begin restoring international travel.¹⁸ Passenger traffic from these six countries constituted 17.3% of total passenger traffic in Malaysia in 2019. However, certain prerequisites and mutual agreement on the Standard Operating Procedures (SOPs) must be reached before the travel bubble arrangements can be pursued.

The performance of the aviation industry will also be affected by measures—either adopted by industry players themselves or that imposed by governments—to reduce the spread of COVID-19 via air transport. For example, the GOM previously imposed a 66.6% load factor limit¹⁹ on scheduled flights to Peninsular Malaysia from Sabah and Sarawak during the Conditional MCO period. This limit may increase fares or reduce flights due to airlines' inability to cover their costs. However, this was lifted under the Recovery MCO.²⁰

Aviation industry players have also adopted various measures to reduce the spread of COVID-19. These include automated check-ins, onboard social distancing, temperature checks, and use of face masks (see Table 4). While these measures will help restore passenger confidence to a certain extent, some of them will directly increase the cost of providing air transport services, which may then be passed on to consumers in the form of higher airfares.

Table 4: Measures Undertaken in the Aviation Industry

Measures	Details
Body temperature screening	<ul style="list-style-type: none"> • Placing of thermal scanners at every main entrance and terminal
Social distancing	<ul style="list-style-type: none"> • Markers to indicate one-metre distancing • Emptying of seats onboard flights
Hygiene	<ul style="list-style-type: none"> • Wearing of face masks • Disinfection of aircraft after each operation
Digitization	<ul style="list-style-type: none"> • Use of touchless passenger check-in solutions and biometric screening

Source: Various airline and airport operator websites

¹⁸ Povera, A. (2020, June 19). Health DG: 'Travel bubble' talks still in very early stages. *New Straits Times*.

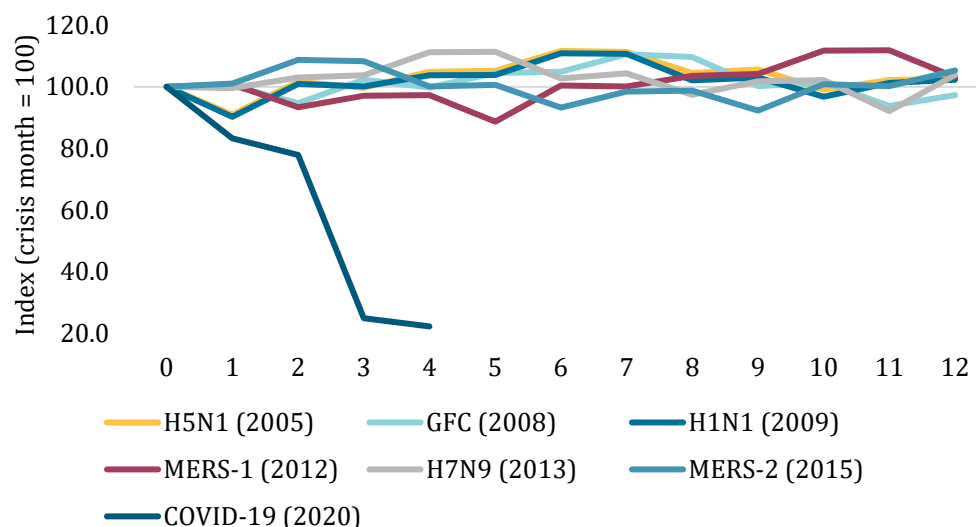
¹⁹ Ministry of Health. (2020). *Prevention and Control of Infectious Diseases (Measures Within Infected Local Areas) (No. 6) Regulations 2020*.

²⁰ First announced on 11 June 2020. SOPs released on 16 June 2020.

A Slow Recovery to Pre-COVID-19 Levels

The aviation industry has recovered quickly from previous crises, with seat capacity returning to pre-crisis levels in a short period of time (see Figure 9). However, the magnitude of capacity cuts due to COVID-19 is far larger than previous crises, and the recovery may be dampened by the global economic downturn. **Hence, the recovery of airline seat capacity to pre-COVID-19 levels is expected to be a slow one.**

Figure 9: Index of Major Events' Impact on Global Seat Capacity, 2005 – 2020



Source: MAVCOM, AirportIS

Note: Seat capacity in terms of ASKs.

In May 2020, ICAO published “Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis” to provide a framework that airlines, airports, and governments can adopt. The guidance details the mitigations needed to reduce the public health risk to both travellers and workers, as well as, measures to increase confidence among travellers. It is important for any measures by either industry players or governments to be consistently adopted and coordinated worldwide in a phased manner. **The lack of harmonization in the implementation of measures by airlines, airports, or governments may confuse travellers and discourage air travel, thus, delaying industry recovery further.**

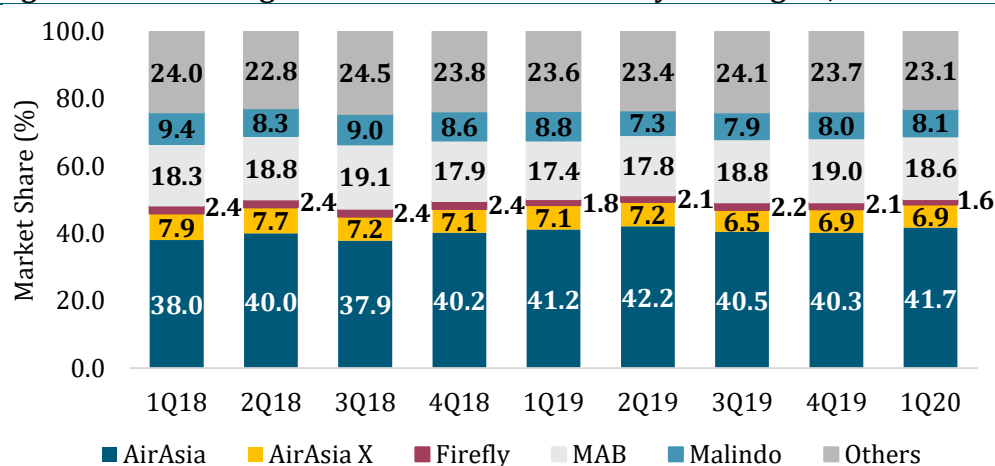
SECTION 3: INDUSTRY STRUCTURE AND PERFORMANCE

Scheduled Passenger Services Market

Reduction of Market Shares for Malindo, AirAsia X, and Firefly in 1Q20

Malaysian carriers flew 26.2% YoY fewer passengers in 1Q20 due to the fall in demand for air travel and the imposed travel restrictions. AirAsia continued to dominate the market with a 41.7% share (1Q19: 41.2%). Meanwhile, **the market shares for Malindo, AirAsia X, and Firefly fell to 8.1%, 6.9%, and 1.6%, respectively, in 1Q20** (1Q19: 8.8%, 7.1%, and 1.8%) (see Figure 10). However, the combined market share for Malaysian carriers increased marginally to 76.9% (1Q19: 76.4%).

Figure 10: Percentage of Airlines' Market Share by Passengers, 2018 - 2020



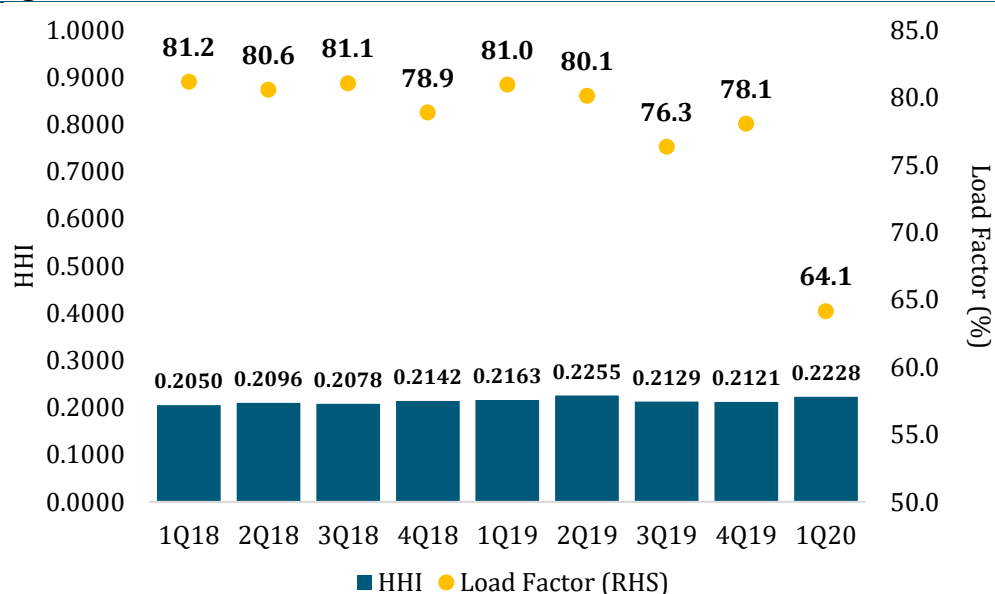
Source: MAVCOM, AirportIS

Firefly experienced a -35.5% YoY drop in passengers, the largest among all Malaysian carriers, followed by Malindo and AirAsia X with a 32.7% YoY and 29.1% YoY drop in passengers carried, respectively, during the same period.

Market Concentration Increased in 1Q20, Average Load Factor Dipped Below 70.0%

Market concentration²¹ in Malaysia's aviation market increased to 0.2228 in 1Q20 (1Q19: 0.2163) due to the increase in the market shares of AirAsia and MAB. AirAsia's and MAB's market shares increased as AirAsia X and Malindo experienced a significant drop in international passengers (see Figure 11). The average load factor for all carriers dropped to 64.1% in 1Q20 (1Q19: 81.0%), mainly due to the reduction in demand for air travel as the COVID-19 outbreak worsened and the implementation of the MCO effective 18 March 2020.

Figure 11: Market Concentration Level and Load Factor, 2018 - 2020



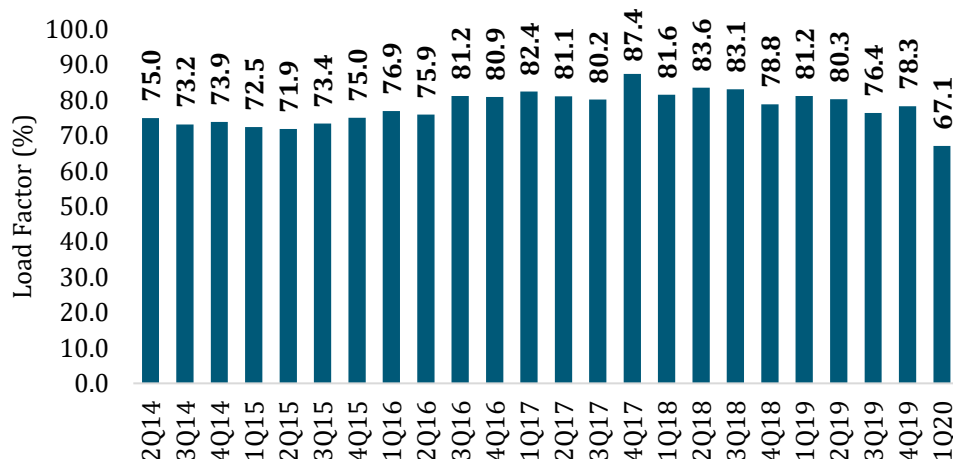
Source: MAVCOM, AirportIS

²¹ Market concentration is measured by using HHI, where '0' denotes no concentration and '1' denotes a monopoly.

Malaysian Carriers' Average Load Factor Dipped Below 70.0% and Average Fare Increased in 1Q20

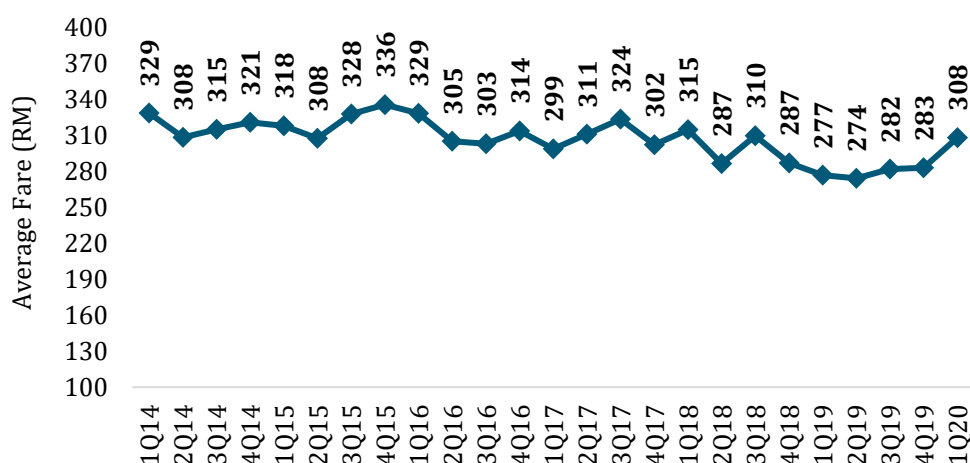
Malaysian carriers' average load factor fell to 67.1% in 1Q20 (1Q19: 81.2%) (see Figure 12). This was due to the contraction in passenger traffic by 26.2% YoY in 1Q20 (1Q19: 3.3% YoY) arising from COVID-19 and a delayed response by Malaysian carriers in adjusting their seat capacity (seat capacity in 1Q20 contracted by 9.1% YoY). **Additionally, Malaysian carriers' average fare in 1Q20 rose to RM308** from RM277 in 1Q19, following capacity cuts in 1Q20 (see Figure 13).

Figure 12: Malaysian Carriers' Average Load Factor Trend, 2014 - 2020



Source: MAVCOM, AirportIS

Figure 13: Malaysian Carriers' Average Fare Trend, 2014 - 2020



Source: MAVCOM, AirportIS

Air Traffic Rights Awarded by MAVCOM as of 31 December 2019

AirAsia surrendered seven ATRs (see Table 5) in 2019, five of which were for international routes from Malaysia to Indonesia while the other two were for domestic routes. In the same period, Malindo surrendered three ATRs, two of which were for routes from Malaysia to Australia via DPS and the other was for a route from Malaysia to Indonesia. MAB also surrendered three ATRs, all three being routes from Malaysia to China.

Table 5: Breakdown of ATRs Awarded, 2018 – 2019

ASL Holders	Total Domestic & International ATRs Awarded		Failed to Operate ²²		Surrendered ²³	
	2018	2019	2018	2019	2018	2019
AirAsia	98	63	6	33	-	7
AirAsia X	20	12	11	10	-	-
Firefly	4	4	-	-	-	-
MAB ²⁴	24	40	6	14	-	3
Malindo	52	46	35	21	-	3
MASwings	4	1	-	-	-	-
My Jet Xpress	-	3	-	-	-	-
Raya Airways	3	4	-	-	-	-
TOTAL	205	173	58	78	-	13

Source: MAVCOM

2019 saw the largest share of ATR allocations for domestic routes at 34.7% (2018: 36.4%) **and ASEAN at 34.7%** (2018: 27.7%), **followed by allocations to destinations in China at 15.0%** (2018: 34.7%). The share of ATR allocations to destinations in China declined in part due to difficulties in obtaining landing slots at Chinese airports, which limited expansion opportunities for airlines.

Malaysian Carriers Utilize 26 out of 106 Air Service Agreements

As at 31 December 2019, Malaysia had ASAs with 106 countries. However, **Malaysian-designated carriers utilized²⁵ Third, Fourth, and Fifth²⁶ Freedom Rights in the respective ASAs for only 26 countries.** Among these, Malaysian-designated carriers operated seven or more flights per week to the 26 countries, except Laos and Pakistan.

²² ATRs revoked for failing to operate within six months from the ATRs' date of issuance.

²³ ATRs surrendered by the ASL Holders.

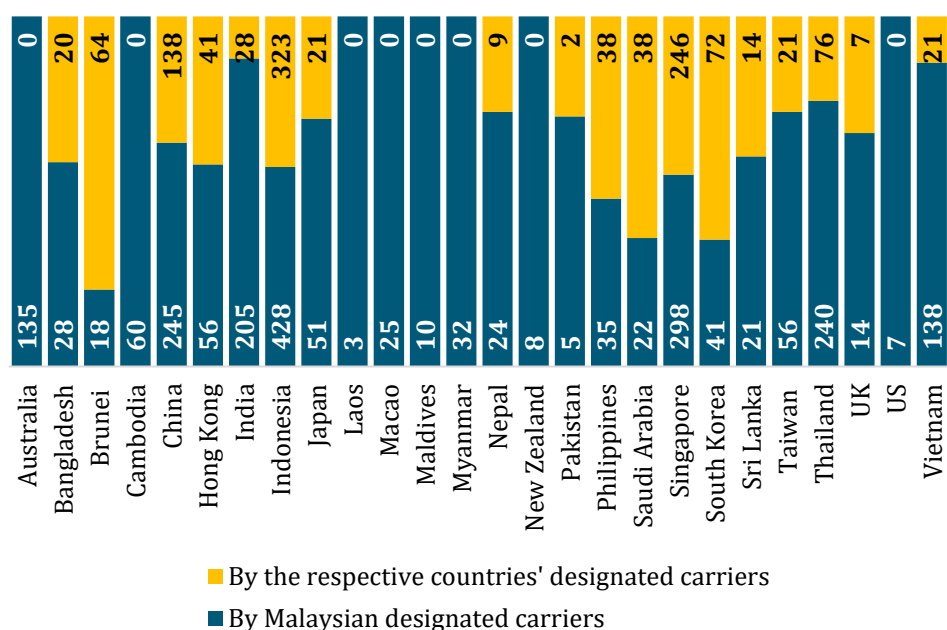
²⁴ ATRs awarded include ATRs for the use of MABkargo.

²⁵ 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. Utilization of an ASA means operating at least one flight into a country that is a party to an ASA.

²⁶ 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. 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 no designated carriers from Australia, Cambodia, Laos, Macao, Maldives, Myanmar, New Zealand, and the US that operated flights to Malaysia (see Figure 14).

Figure 14: Utilization of ASAs as at 31 December 2019



Source: MAVCOM, AirportIS

Malaysian carriers undertook fewer operations to Bangladesh, China, Hong Kong, Singapore, Thailand, and Vietnam as at 31 December 2019 relative to 30 June 2019. As for foreign carriers, airlines from Bangladesh, China, the Philippines, and Thailand undertook fewer operations. Owing to the holiday season, airlines have deployed their fleet to other tourist destinations. At present, there are close to 70 countries such as Argentina, Canada, South Africa, and Russia in which the ASAs with Malaysia are not utilized by either Malaysian- or the respective foreign-designated carriers.

Malaysian carriers previously operated to countries such as Iran, Mauritius, and the United Arab Emirates. However, recent operations to these countries ended in April 2018, April 2017, and February 2016, respectively. Foreign carriers that have stopped flying into Malaysia in recent years include Cambodia's JC International Airlines (February 2018), Myanmar Airways International (October 2017), and Kuwait Airways (March 2016). The cessation of operations by Malaysian carriers to other countries and by foreign carriers to Malaysia is due to the relative geographical isolation between Malaysia and other countries, unattractive yields, or that these markets may not be sufficiently attractive to offer suitable onward connections based on each airline's passenger profile.

SECTION 4: AIR CARGO OPERATIONS AND COVID-19

Air cargo plays a crucial role in transporting essential goods and maintaining global value chains in the current pandemic. **Airlines have been increasing air cargo operations due to the rising demand—partly contributed by growing e-commerce transactions—amid a decline in belly cargo capacity from reduced passenger services segment.** This section presents an overview of the Malaysian air cargo market and changes in operations due to COVID-19.

Air Cargo Operations in Malaysia

[Air Service Licence or Air Service Permit is Required for Cargo Operations in Malaysia](#)

Generally, air cargo involves the transport of freight and mail. The cargo is carried on full-freight aircraft, passenger aircraft (belly cargo), and Road Feeder Services²⁷. ICAO includes cargo operations as part of commercial air transport services, one of the nine services categorized as civil aviation activities. In Malaysia, Act 771 defines air transport service as “a commercial air service that is operated for the purpose of transporting persons, personal belongings, baggage, goods or cargo in an aircraft between two points”. **Air transport operations involving cargo carriage in Malaysia require either an ASL or ASP.** The details of cargo operations by the ASL holders and the ASP holder are listed in Table 6.

Table 6: Details on Cargo Operations, May 2020

Player	Licence	Operational Details (aircraft model utilized)
AirAsia	ASL	• Belly cargo
AirAsia X	ASL	• Belly cargo
Firefly	ASL	• Belly cargo
MAB/MABkargo	ASL	• Belly cargo • Full-freight (Airbus 330-200F)
Malindo	ASL	• Belly cargo
MASwings	ASL	• Belly cargo
My Jet Xpress	ASL	• Full-freight (Boeing 737-300F)
Pos ACE	ASP	• Full-freight (Boeing 737-400F)
Raya Airways	ASL	• Full-freight (Boeing 767-200F, Boeing 757-200F, Boeing 737-400F)

Source: ASL Holders, ASP Holder

[Malaysia's Air Cargo Market is Growing Despite Connected to Fewer Destinations](#)

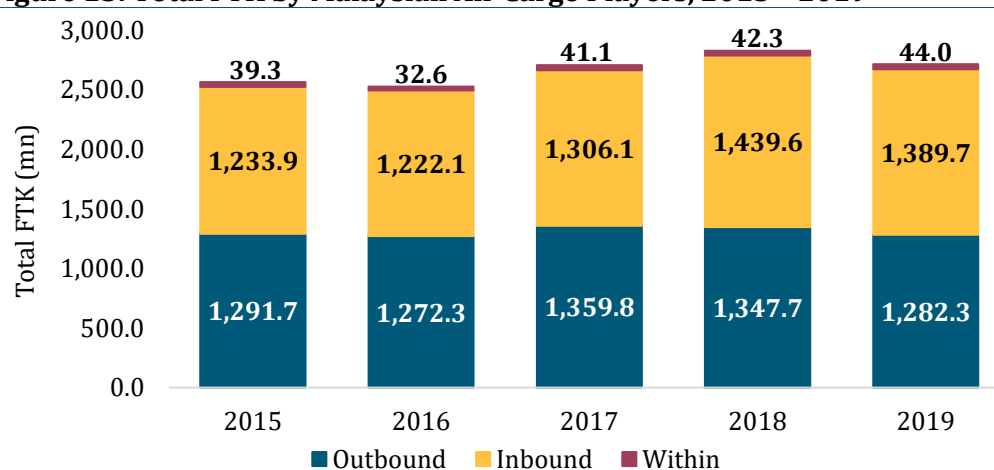
Malaysia had scheduled outbound air cargo services to 16 countries²⁸ in 2019, down from 20 countries in 2015. Relative to other countries in ASEAN, Malaysia ranked joint-third with Thailand in terms of outbound connectivity, behind Singapore (25 countries) and Vietnam (21 countries).

²⁷ Also known as flight trucks, this service transports cargo by truck between airports.

²⁸ Australia, Azerbaijan, China, Hong Kong, India, Indonesia, Japan, Luxembourg, Macao, the Philippines, Singapore, South Korea, Thailand, Taiwan, the US, and Vietnam.

Between 2015 and 2019, the CAGR for total FTK in Malaysia was 1.4%. **As regards cargo composition, inbound cargo FTK was higher than outbound cargo FTK²⁹ between 2017 and 2019.** This is due to a relatively larger decline in outbound FTK to the US and Belgium. During the same period, inbound cargo increased from Hong Kong and Australia. **The trend was the reverse of that between 2015 and 2017, when outbound FTK was higher** (see Figure 15).

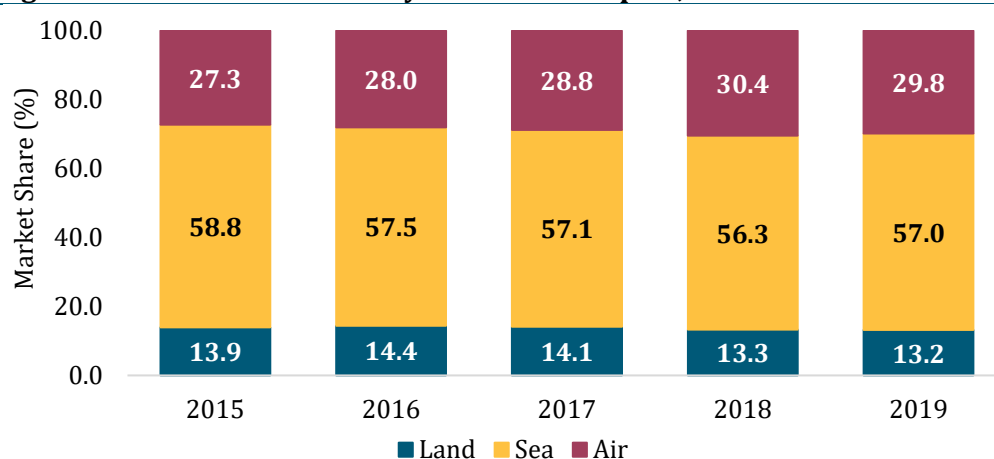
Figure 15: Total FTK by Malaysian Air Cargo Players, 2015 - 2019



Source: MAVCOM, CargoIS

This reflects the loss of air cargo trade with distant countries, which are also major markets for Malaysian goods. If this trend persists, Malaysia may lose out on cargo connectivity to these countries due to carriers reducing their cargo capacity. This can also increase shipping time and costs, as cargo would have to go through multiple intermediary points to reach their end destinations. **Approximately one-third of Malaysia's total trade value³⁰ is transported by air** (see Figure 16). **The value of cargo exported by air grew the fastest**, with a four-year CAGR of 8.2% between 2015 and 2019 (sea: 5.0%; land: 4.5%).

Figure 16: Total Trade Value by Mode of Transport, 2015 - 2019



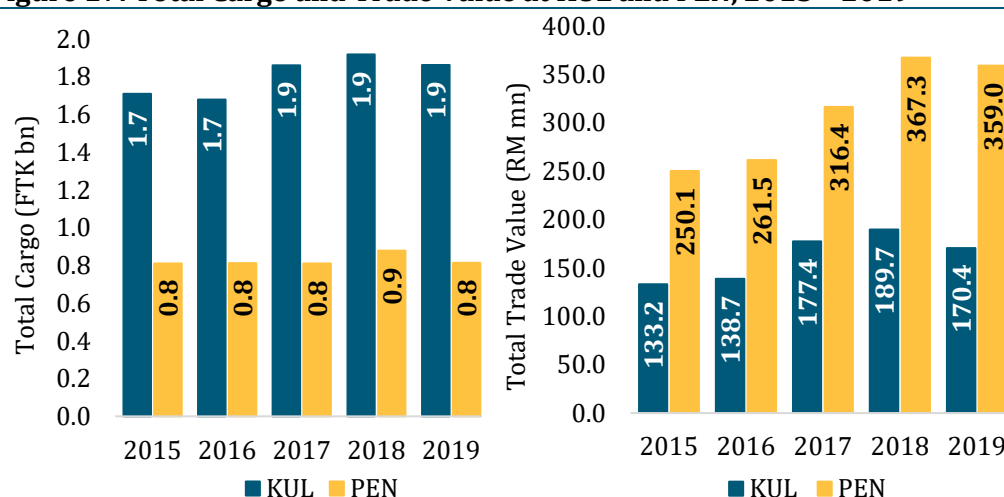
Source: MAVCOM, DOS

²⁹ One FTK is one metric tonne of revenue load carried one kilometre by an airline.

³⁰ Total exports and imports.

At the airport-level, although higher cargo FTK was transported via KUL, PEN had a higher cargo value (see Figure 17). This can be explained by PEN's proximity to the Bayan Lepas Free Trade Zone, which houses E&E multinational corporations such as Intel, DELL, and Western Digital, all of which export high-value consumer and industrial electronic components, as well as, electrical products. Air cargo services **also help firms maintain low inventory levels and support just-in-time manufacturing by enabling** product assembly via express shipments. Total trade value of E&E products in Malaysia grew by 28.9% between 2015 and 2019, driven by **the trade of electronic integrated circuits and telecommunications equipment**.

Figure 17: Total Cargo and Trade Value at KUL and PEN, 2015 - 2019



Source: MAVCOM, CargoIS, DOS

Increased Importance of Air Cargo During COVID-19 Pandemic

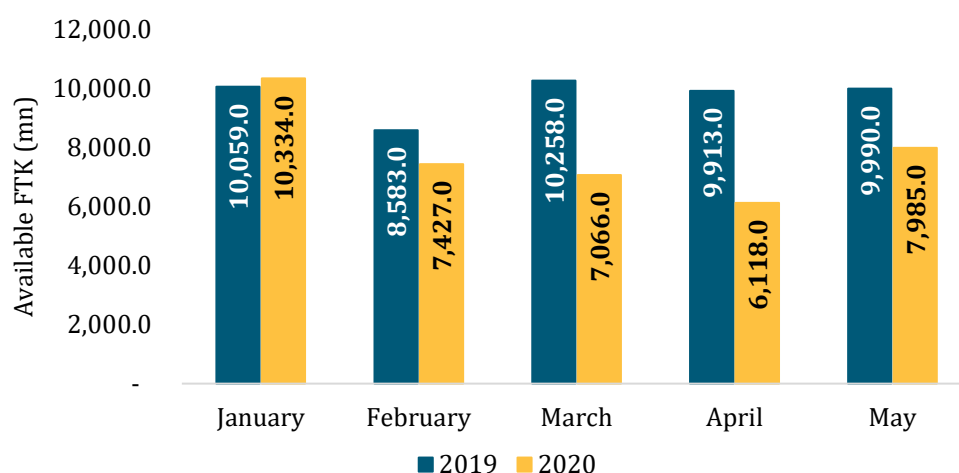
Increased Freighter Operations Amid Loss in Belly Cargo Capacity

Given the abrupt cessation of scheduled passenger services, a significant loss of air cargo capacity has occurred from the decline in belly cargo capacity. Globally, IATA reported that available capacity³¹ in April declined by 42.0% YoY, while belly capacity declined by 75.0% YoY. Since the COVID-19 outbreak, countries have relied on air cargo to transport vital goods such as medical supplies and food aid. Given that some countries have prioritized the shipments of these goods and the relatively lower air cargo capacity, it is expected that the transportation of other, non-critical goods will encounter longer shipping times and higher costs.

³¹ In terms of CTK.

In the Asia Pacific, a decrease in belly cargo capacity has also reduced the overall air cargo capacity (see Figure 18).

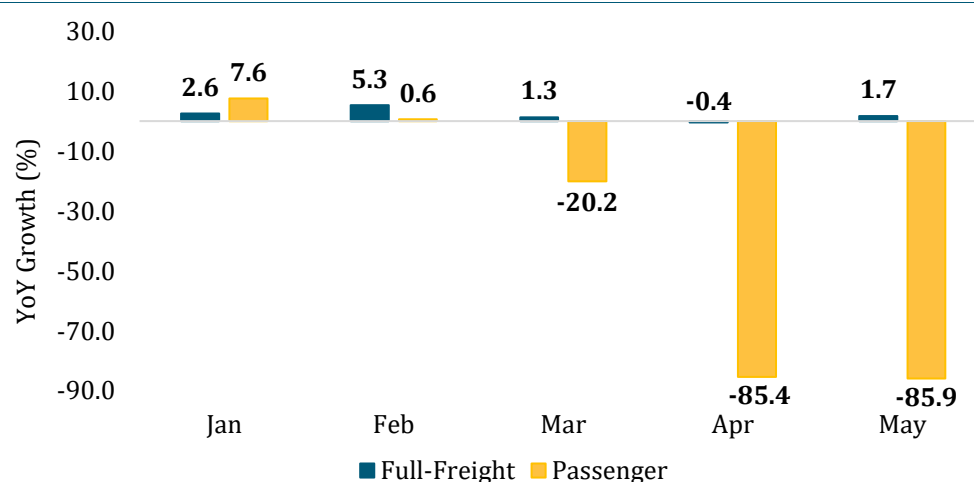
Figure 18: Available FTK in the Asia Pacific, 2019 – 2020



Source: MAVCOM, Bloomberg

To compensate for the loss of belly cargo, both full-freight and scheduled passenger carriers with freight arms are undertaking increased air cargo operations. IATA reported that a decline in global belly cargo capacity in April was partially offset by a 15.0% increase in capacity through expanded use of full-freight aircraft. IATA also reported that 75.8% of airlines³² worldwide were undertaking air cargo operations as at 31 May 2020. In Malaysia, full-freight operations have not been as affected as scheduled passenger operations between January and May 2020 (see Figure 19). Nine new ATRs were approved by MAVCOM for full-freight operations by Malaysian carriers, of which three are for new routes (one each to China, Europe, and Southeast Asia).

Figure 19: Scheduled Passenger and Full-Freight Operations in Malaysia, 2020

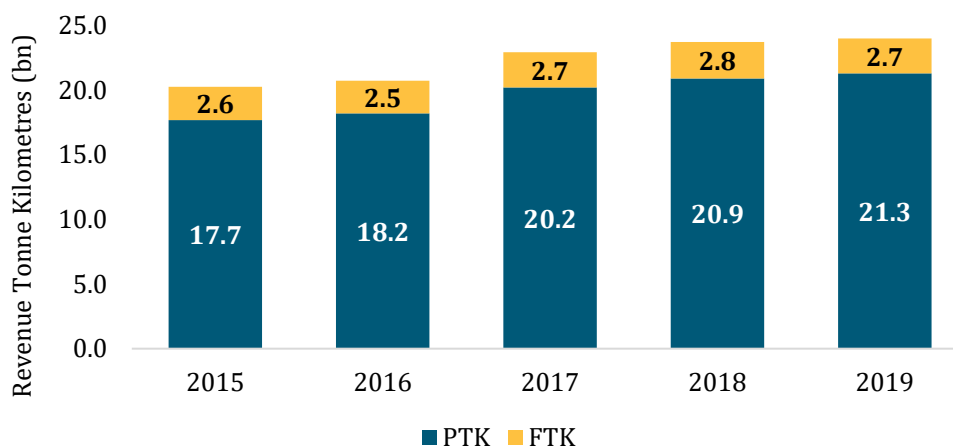


Source: MAVCOM, AirportIS

³² Database of 376 airlines tracked by IATA's Air Cargo Tariff and Rules team. The figure refers to airlines operating as usual and those with some service interruptions.

However, full-freight operations only constituted an average of 12.0% of total revenue tonne kilometres performed in Malaysia between 2015 and 2019. Most of the tonnage is derived from belly cargo through passenger services (see Figure 20).

Figure 20: Total Revenue Tonne Kilometres Performed, 2015 - 2019



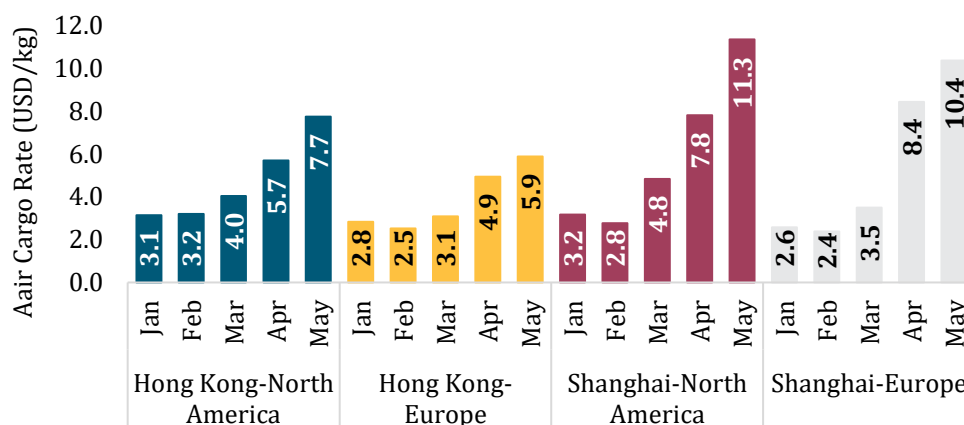
Source: MAVCOM, AirportIS, CargoIS

Note: PTKs are converted from RPKs at a ratio of 10RPKs = 1PTK. Revenue Tonne Kilometre is defined as the sum of PTK and FTK.

Reconfigured Passenger Aircraft are Used for Air Cargo Operations

Given the increasing demand for air cargo, carriers have started to reconfigure their passenger aircraft to transport cargo. For example, in Malaysia, MAB utilized its Airbus 380-800 to carry 26.0 tonnes of cargo to LHR in May 2020 in a COS operation³³ while other carriers have undertaken P2C operations, where passenger aircraft are reconfigured to fully carry cargo. The increase in COS and P2C operations may provide some relief to carriers in the Asia Pacific through increased revenue-generating opportunities, given the rising air cargo rates (see Figure 21).

Figure 21: Outbound Air Cargo Rate from the Asia Pacific, 2020



Source: MAVCOM, Bloomberg

³³ Malaysia Airlines Berhad. (2020, May 1). *MABkargo boldly flies A380 for London cargo.*

Various Risks are Present in the Operations of Reconfigured Aircraft

The reconfiguration of aircraft for COS and P2C operations involve several operational and safety risks, given that such operations may involve the removal of fixtures in the cabin and different ground handling procedures (see Table 7).

Table 7: Risks for COS and P2C Operations

Area	Top Risks
Cargo operations	<ul style="list-style-type: none"> • Aircraft denied landing due to possible presence of passengers
Passenger cabin	<ul style="list-style-type: none"> • Improperly restrained cargo • Leakage of liquid in cargo load • Overheating of cabin systems • Undeclared/wrongly declared dangerous goods • Undetected smoke or fire in the cabin
Return to service	<ul style="list-style-type: none"> • Damaged cabin fixtures and fittings
Occupational safety	<ul style="list-style-type: none"> • Employee injury due to fall from height, trips, slips, and manual lifting

Source: IATA

Regulations Have Been Evolving to Cope with the Current Environment

Civil aviation authorities such as EASA, FAA, and CAAS have been providing guidelines on the procedures and considerations involved in COS and P2C operations, **given that passenger aircraft are not certified to carry cargo on passenger seats or load cargo onto pallets on the main deck.**

The European Commission had called on the EU Member States to grant additional traffic rights to air cargo operations, temporarily remove night curfews, and approve slots for operations, among others. EASA has published guidelines³⁴ for civil aviation authorities of the EU Member States to allow the transport of cargo in the passenger deck. The guidelines address the operational aspects for cargo transport in the passenger deck, transport of dangerous goods, and airworthiness of passenger aircraft to transport cargo. The guidelines also provide information on the loading and transport of dangerous goods, as well as, the placement of cargo on passenger seats or onto pallets directly attached to the floor.

In the US, the designated carriers are allowed to undertake COS operations by the FAA³⁵ until 31 December 2020. The FAA updated its regulations to approve such operations as it considered the urgent need for the transportation of medical supplies and other relief goods.

³⁴ EASA. (2020). *Guidelines on the Transport of Cargo in Passenger Compartment – Exemptions Under Article 71(1) of Regulation 2018/1139 (The Basic Regulation) 2020.*

³⁵ FAA. (2020). *Exemption No. 18561 by the US FAA (Exemption for Transporting Cargo on Airplane Seats).*

The new rules stipulate that carriers:

- can transport cargo on passenger seats inside the cabin, without having to remove passenger seats or features;
- ensure that cargo on seats cannot exceed 50.0lbs (22.6kg) per seat; and
- disable all passenger services (entertainment systems, toilets, and heating).

In Singapore, Jetstar Asia, SilkAir, Singapore Airlines, and Scoot Tigerair have been allowed by the CAAS to undertake P2C operations, with the following conditions:

- loading cargo following the cabin storage areas' loading specifications;
- securely packing the cargo for various flight conditions;
- placing cargo in areas that do not impede access to emergency exits;
- not permitting dangerous goods on flights; and
- requiring cabin crew to be on board to manage any in-flight emergencies.

In Malaysia, both Malaysian and foreign carriers are required to seek CAAM's approval for COS operations. Malaysian carriers are required to obtain approval—which may take up to one month—given that COS operations may affect the airworthiness of the aircraft, as well as, involve the carriage of dangerous goods and changes to flight operations. CAAM grants approvals based on its Civil Aviation Regulations (2016). CAAM has also provided guidelines for operations that exceed the allowable FDP—including the approval required for a maximum FDP of beyond 17 hours and up to 21 hours—to allow longer flight operations by Malaysian carriers.³⁶ For foreign carriers, the undertaking of COS operations should be filed via Aerofile,³⁷ attaching relevant documentation relating to the approval for COS operations by the respective foreign carrier's national civil aviation authority, for verification and approval.

Air Cargo Business May Act as a Hedge against Low Passenger Volume

Due to the unlikely recovery of belly cargo capacity in the short-term, air cargo rates are likely to remain relatively high. While airlines may attempt to carry more cargo via P2C operations, **the air cargo segment will still face a significant net reduction in overall capacity due to the loss of belly cargo**, as scheduled passenger services worldwide are drastically reduced.

In the long-term, passenger airlines may hedge against low aircraft utilization—arising from low passenger demand—by robustly integrating cargo operations into their business model. Given that most airlines transport air cargo through belly capacity, an event such as the COVID-19 pandemic will significantly affect overall cargo capacity. Airlines may utilize different types of aircraft or build operational robustness to switch to cargo operations to sustain revenue during crises, which will improve their competitive positions.

³⁶ CAAM. (2020). *Operations Beyond Maximum Flight Duty Plan (ORO.FTL.205)*.

³⁷ Developed by MAVCOM, the Aerofile system acts as a 'one-stop' centre for airlines for landing permit filings, integrating the processes of the National Slot Coordination Malaysia (verification of approved airport slots), MAVCOM (ATR allocations), and CAAM (technical approval).

APPENDIX A: DATA TABLES

Table A1: Global and Malaysia's GDP Growth, 2010 – 2020F

Year	Global YoY Growth (%)	Malaysia YoY Growth (%)
2010	5.4	7.5
2011	4.3	5.3
2012	3.5	5.5
2013	3.5	4.7
2014	3.6	6.0
2015	3.5	5.1
2016	3.4	4.2
2017	3.8	5.9
2018	3.6	4.7
2019	2.9	4.3
2020F	-4.9	-2.0 – 0.5

Source: Bloomberg, BNM, IMF, MOF

Table A2: Quarterly Malaysia's Tourist Arrivals, 2017 – 2019

Quarter	Tourist Arrivals (by air) (mn)	Total Tourist Arrivals (excluding air) (mn)	Total Tourist Arrivals (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
3Q19	2.7	4.1	6.8	1.6
4Q19	2.1	3.8	6.0	-7.1

Source: Bloomberg, MOTAC

Table A3: Oil, Jet Fuel, and Exchange Rate Trends, 2017 – 2020

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
3Q19	62	75	4.16
4Q19	62	74	4.16
1Q20	51	62	4.18

Source: Bloomberg

Table A4: Quarterly Passenger Traffic Trend, 2017 - 2020

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	4.4
2Q19	26.7	6.3
3Q19	27.9	8.7
4Q19	28.2	6.7
1Q20	19.1	-27.5

Source: MAVCOM, AOL Holders

Table A5: Quarterly Passenger Traffic Growth by Regions, 2017 - 2020

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	8.5	2.7	-1.1
2Q19	9.8	4.5	1.3
3Q19	14.4	3.4	3.2
4Q19	8.5	5.7	4.2
1Q20	-22.5	-31.0	-33.9

Source: MAVCOM, AOL Holders

Table A6: Seat Capacity Growth in Malaysia, 2005 – 2020

Time	Seat Capacity (mn)	YoY Growth (%)
2005		
January	3.6	15.7
February	3.2	12.6
March	3.6	13.0
April	3.5	9.3
May	3.6	6.6
June	3.5	6.6
July	3.7	9.6
August	3.6	7.4
September	3.5	4.3
October	3.6	3.3
November	3.6	6.3
December	3.7	5.5
2006		
January	3.7	3.9
February	3.4	4.7
March	3.8	5.7
April	3.6	3.3
May	3.7	2.2
June	2.7	-21.8
July	2.7	-27.7
August	3.5	-5.5
September	3.5	-1.4
October	3.6	-0.4
November	3.6	-0.1
December	3.7	1.0
2007		
January	3.8	1.7
February	3.5	2.2
March	3.8	1.2
April	3.7	3.3
May	3.9	5.0
June	3.8	38.8
July	3.9	47.0
August	4.0	16.4
September	3.8	10.4
October	3.9	9.1
November	3.9	9.5
December	4.2	11.5
2008		
January	4.1	8.3
February	3.9	12.7
March	4.3	11.8
April	4.1	11.5
May	4.3	12.4
June	4.3	14.4
July	4.5	14.8
August	3.7	-8.6
September	3.8	-0.2
October	4.4	11.6

Time	Seat Capacity (mn)	YoY Growth (%)
November	4.2	8.0
December	4.7	12.9
2009		
January	4.6	13.3
February	4.1	4.3
March	4.6	7.7
April	4.5	9.8
May	4.7	8.6
June	4.6	7.4
July	4.8	8.2
August	4.9	33.2
September	4.7	21.9
October	4.9	11.1
November	4.8	12.4
December	5.1	7.2
2010		
January	5.0	7.6
February	4.6	12.4
March	5.1	10.2
April	4.9	7.1
May	5.0	7.0
June	5.0	8.1
July	5.2	7.3
August	5.1	4.4
September	5.1	9.0
October	5.2	7.6
November	5.2	8.6
December	5.4	7.8
2011		
January	5.5	10.6
February	5.1	11.5
March	5.7	11.9
April	5.5	12.8
May	5.7	13.5
June	5.6	12.9
July	5.9	13.3
August	5.8	12.9
September	5.6	11.0
October	5.8	10.2
November	5.6	7.8
December	5.9	8.6
2012		
January	5.8	5.4
February	5.4	4.9
March	5.8	2.6
April	5.7	3.3
May	5.9	3.4
June	5.8	3.0
July	5.9	1.0
August	6.1	4.9
September	5.9	5.3

Time	Seat Capacity (mn)	YoY Growth (%)
October	6.1	6.9
November	6.2	11.1
December	6.4	8.7
2013		
January	6.4	9.5
February	6.0	11.4
March	6.6	13.4
April	6.6	15.5
May	6.7	14.0
June	6.7	15.9
July	6.9	16.8
August	7.3	20.3
September	6.9	16.9
October	7.2	17.0
November	7.1	14.7
December	7.6	18.3
2014		
January	7.5	17.7
February	6.7	11.6
March	7.4	12.0
April	7.2	9.9
May	7.5	10.9
June	7.3	7.8
July	7.2	4.3
August	7.4	2.3
September	7.2	4.3
October	7.5	4.6
November	7.6	7.1
December	8.1	6.8
2015		
January	7.8	4.5
February	7.2	7.1
March	7.9	6.8
April	7.6	4.9
May	7.8	3.7
June	7.3	0.3
July	7.7	6.7
August	7.6	2.7
September	7.3	1.4
October	7.5	-0.5
November	7.3	-4.8
December	7.7	-4.9
2016		
January	7.5	-3.9
February	7.1	-1.4
March	7.5	-5.2
April	7.2	-4.8
May	7.5	-3.9
June	7.0	-4.1
July	7.6	-2.1
August	7.6	-1.0

Time	Seat Capacity (mn)	YoY Growth (%)
September	7.5	1.6
October	7.7	2.9
November	7.5	3.7
December	8.1	4.6
2017		
January	8.1	7.0
February	7.2	1.8
March	8.1	8.2
April	7.9	9.5
May	8.1	8.4
June	7.9	12.9
July	8.4	10.9
August	8.4	11.5
September	8.1	9.0
October	8.4	9.1
November	8.1	7.7
December	8.8	8.5
2018		
January	8.6	6.9
February	7.8	8.4
March	8.6	6.5
April	8.3	5.9
May	8.3	2.1
June	8.3	5.9
July	8.6	2.6
August	8.6	1.9
September	8.4	3.3
October	8.7	3.9
November	8.6	6.6
December	9.2	5.4
2019		
January	8.7	1.3
February	8.1	4.2
March	8.9	3.7
April	8.7	4.2
May	8.6	4.3
June	8.9	7.0
July	9.1	5.3
August	9.1	6.0
September	8.8	4.2
October	9.1	3.9
November	8.9	2.8
December	9.6	3.4
2020		
January	9.5	8.6
February	8.2	0.6
March	5.8	-35.3
April	1.2	-86.3
May	0.7	-92.3

Source: AirportIS

Table A7: Weekly Change in Total Seat Capacity in Malaysia, 2020

Time	1H20 (mn)	2H20 (mn)	Total (mn)
1 February	55.1	56.0	111.1
20 March	47.7	54.7	102.4
27 March	43.8	54.6	98.4
3 April	39.7	54.0	93.7
17 April	37.3	53.1	90.4
24 April	34.3	48.6	82.9
1 May	32.5	48.5	81.0
8 May	31.8	47.9	79.7
15 May	28.0	47.8	75.8
22 May	27.4	47.8	75.2
29 May	27.1	47.2	74.3
5 June	26.7	45.6	72.3

Source: MAVCOM, AirportIS

Table A8: 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
2019	109.2	6.6
2020F	54.3 – 56.0	-48.7 – -50.3

Source: MAVCOM, AOL Holders

Table A9: Index of Major Events' Impact on Global Seat Capacity, 2005 – 2020

Months After Crisis Began	H5N1 (2005)	GFC (2008)	H1N1 (2009)	MERS-1 (2012)	H7N9 (2013)	MERS-2 (2015)	COVID-19 (2020)
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	91.0	100.3	90.3	100.9	99.6	101.1	83.3
2	101.7	94.7	101.0	93.4	103.0	108.7	77.9
3	99.7	102.3	100.1	97.1	103.7	108.4	24.9
4	104.9	99.9	103.7	97.3	111.2	100.1	22.3
5	105.2	104.5	103.8	88.7	111.4	100.7	-
6	111.7	104.9	110.9	100.5	102.7	93.3	-
7	111.4	110.6	110.7	100.1	104.4	98.5	-
8	104.5	109.7	102.1	103.5	97.4	98.8	-
9	105.6	100.2	103.1	104.2	101.8	92.3	-
10	99.1	101.3	96.8	111.7	102.2	100.8	-
11	102.2	93.8	101.2	111.9	92.1	100.2	-
12	102.6	97.3	102.3	103.2	103.8	105.3	-

Source: MAVCOM, AirportIS

Table A10: Percentage of Airlines' Market Share by Passengers, 2018 – 2020

Quarter	AirAsia	AirAsia X	Firefly	Malindo	MAB	Others
1Q18	38.0	7.9	2.4	9.4	18.3	24.0
2Q18	40.0	7.7	2.4	8.3	18.8	22.8
3Q18	37.9	7.2	2.4	9.0	19.1	24.5
4Q18	40.2	7.1	2.4	8.6	17.9	23.8
1Q19	41.2	7.1	1.8	8.8	17.4	23.6
2Q19	42.2	7.2	2.1	7.3	17.8	23.4
3Q19	40.5	6.5	2.2	7.9	18.8	24.1
4Q19	40.3	6.9	2.1	8.0	19.0	23.7
1Q20	41.7	6.9	1.6	8.1	18.6	23.1

Source: MAVCOM, AirportIS

Table A11: Market Concentration Level and Load Factor, 2018 – 2020

Quarter	HHI	Load Factor (%)
1Q18	0.2050	81.2
2Q18	0.2096	80.6
3Q18	0.2078	81.1
4Q18	0.2142	78.9
1Q19	0.2163	81.0
2Q19	0.2255	80.1
3Q19	0.2129	76.3
4Q19	0.2121	78.1
1Q20	0.2228	64.1

Source: MAVCOM, AirportIS

Table A12: Malaysian Carriers' Average Load Factor Trend, 2014 - 2020

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
3Q19	76.4
4Q19	78.3
1Q20	67.1

Source: MAVCOM, AirportIS

Table A13: Malaysian Carriers' Average Fare Trend, 2014 - 2020

Quarter	Average Fare (RM)
1Q14	329
2Q14	308
3Q14	315
4Q14	321
1Q15	318
2Q15	308
3Q15	328
4Q15	336
1Q16	329
2Q16	305
3Q16	303
4Q16	314
1Q17	299
2Q17	311
3Q17	324
4Q17	302
1Q18	315
2Q18	287
3Q18	310
4Q18	287
1Q19	277
2Q19	274
3Q19	282
4Q19	283
1Q20	308

Source: MAVCOM, AirportIS

Table A14: Utilization of ASAs as at 31 December 2019

Country	Number of Flights Per Week	
	By Malaysian designated carriers	By respective countries' designated carriers
Australia	135	-
Bangladesh	28	20
Brunei	18	64
Cambodia	60	0
China	245	138
Hong Kong	56	41
India	205	28
Indonesia	428	323
Japan	51	21
Lao PDR	3	-
Macao	25	-
Maldives	10	-
Myanmar	32	-
Nepal	24	9
New Zealand	8	-
Pakistan	5	2
Philippines	35	38
Saudi Arabia	22	38
Singapore	298	246
South Korea	41	72
Sri Lanka	21	14
Taiwan	56	21
Thailand	240	76
United Kingdom	14	7
United States	7	-
Vietnam	138	21

Source: MAVCOM, AirportIS

Table A15: Total FTK by Malaysian Air Cargo Players, 2015 - 2019

Year	Outbound (mn)	Inbound (mn)	Within (mn)
2015	1,291.7	1,233.9	39.3
2016	1,272.3	1,222.1	32.6
2017	1,359.8	1,306.1	41.1
2018	1,347.7	1,439.6	42.3
2019	1,282.3	1,389.7	44.0

Source: MAVCOM, CargoIS

Table A16: Total Trade Value by Mode of Transport, 2015 - 2019

Year	Land (%)	Sea (%)	Air (%)
2015	13.9	58.8	27.3
2016	14.4	57.5	28.0
2017	14.1	57.1	28.8
2018	13.3	56.3	30.4
2019	13.2	57.0	29.8

Source: MAVCOM, DOS

Table A17: Total Cargo and Trade Value at KUL and PEN, 2015 – 2019

Year	Total Cargo (FTK bn)		Total Trade Value (RM mn)	
	KUL	PEN	KUL	PEN
2015	1.7	0.8	133.2	250.1
2016	1.7	0.8	138.7	261.5
2017	1.9	0.8	177.4	316.4
2018	1.9	0.9	189.7	367.3
2019	1.9	0.8	170.4	359.0

Source: MAVCOM, CargoIS, DOS

Table A18: Available FTK in the Asia Pacific, 2019 – 2020

Month	2019	2020
January	10,059.0	10,334.0
February	8,583.0	7,427.0
March	10,258.0	7,066.0
April	9,913.0	6,188.0
May	9,990.0	7,985.0

Source: MAVCOM, Bloomberg

Table A19: Scheduled Passenger and Full-Freight Operations in Malaysia, 2020

Month	Cargo YoY Growth (%)	Passenger YoY Growth (%)
January	2.6	7.6
February	5.3	0.6
March	1.3	-20.2
April	-0.4	-85.4
May	1.7	-85.9

Source: MAVCOM, AirportIS

Table A20: Total Revenue Tonne Kilometres Performed, 2015 – 2019

Year	PTK (bn)	FTK (bn)
2015	17.7	2.6
2016	18.2	2.5
2017	20.2	2.7
2018	20.9	2.8
2019	21.3	2.7

Source: MAVCOM, AirportIS, CargoIS

Table A21: Outbound Air Cargo Rates from the Asia Pacific, 2020

Month	Hong Kong- North America (USD/kg)	Hong Kong- Europe (USD/kg)	Shanghai- North America (USD/kg)	Shanghai- Europe (USD/kg)
January	3.1	2.8	3.2	2.6
February	3.2	2.5	2.8	2.4
March	4.0	3.1	4.8	3.5
April	5.7	4.9	7.8	8.4
May	7.7	5.9	11.3	10.4

Source: MAVCOM, Bloomberg

APPENDIX B: LIST OF LICENCE AND PERMIT HOLDERS

List of licence and permit holders valid as at 30 June.

Table B1: AOL Holders

No.	Company Name
1	Malaysia Airports Sdn. Bhd.
2	Malaysia Airports (Sepang) Sdn. Bhd.
3	Senai Airport Terminal Services 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	Afjet Sdn. Bhd.
2	Asia Jet Partners Malaysia Sdn. Bhd.
3	Berjaya Air Sdn. Bhd.
4	Cempaka Helicopter Corporation Sdn. Bhd.
5	Helistar Resources Sdn. Bhd.
6	Hevilift (M) Sdn. Bhd.
7	Hornbill Skyways Sdn. Bhd.
8	Jet Premier One (M) Sdn. Bhd.
9	Layang Layang Aerospace Sdn. Bhd.
10	M Jets International Sdn. Bhd.
11	MHS Aviation Berhad
12	Myballoon Adventure Sdn. Bhd.
13	Plus Helicopter Services Sdn. Bhd.
14	Pos Asia Cargo Express Sdn. Bhd.
15	Prima Air Sdn. Bhd.
16	Sabah Air Aviation Sdn. Bhd.
17	Sazma Aviation Sdn. Bhd.
18	Systematic Aviation Services Sdn. Bhd.
19	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	Bukit Wang Resources (M) Sdn. Bhd.
6	Cloudera Aviation Services Sdn. Bhd.
7	D'viation Technics Sdn. Bhd.
8	Elite Jets Sdn. Bhd.
9	Execujet Handling Services Sdn. Bhd.
10	Ground Team Red Sdn. Bhd.
11	Hasrat Asia (M) Sdn. Bhd.
12	Jet Fuels Sdn. Bhd.
13	KLM Line Maintenance Sdn. Bhd.
15	MAB Kargo Sdn. Bhd.
14	Malindo Airways Sdn. Bhd.
16	MAS Awana Services Sdn. Bhd.
17	MNM Aviation Services Sdn. Bhd.
18	Nusantara Aviation Services Sdn. Bhd.
19	Petron Malaysia Refining & Marketing Bhd.
20	Petronas Dagangan Berhad
21	Pos Aviation Sdn. Bhd.
22	Raya Airways Sdn. Bhd.
23	Sabah Air Aviation Sdn. Bhd.
24	Safeair Technical Sdn. Bhd.
25	Select Inflight Services Sdn. Bhd.
26	Senai Airport Terminal Services Sdn. Bhd.
27	Shell Malaysia Trading Sdn. Bhd.
28	Shell Timur Sdn. Bhd.
29	Skypark FBO Malaysia Sdn. Bhd.
30	Smooth Route Sdn. Bhd.

Source: MAVCOM

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