Malaysian Aviation Commission
Suruhanjaya Penerbangan Malaysia
MAVCOM

WAYPOINT

MALAYSIAN AVIATION INDUSTRY OUTLOOK | **DECEMBER 2023**

KEY HIGHLIGHTS

Stronger-than-expected passenger traffic performance in 2023

For the first three quarters in 2023, **Malaysia's passenger traffic has grown consistently at an average rate of 7.6% QoQ**. As at October 2023, passenger traffic has reached 69.9mn. **Due to this stronger-than-anticipated performance, MAVCOM has revised upwards its air passenger traffic forecast for 2023**. It is now expected to grow by 54% YoY to 58% YoY translating to 84.5mn to 86.5mn passengers (previous forecast: 74.6mn to 80.8mn).

Passenger traffic in 2024 is expected to reach close to 2019 levels

In 2024, MAVCOM anticipates passenger traffic to reach between 93.9mn and 107.1mn passengers, reflecting a growth between 10% YoY and 25% YoY. This forecast signifies a recovery of up to 98% of 2019 levels. Domestic and international travel to China and the ASEAN region will influence the recovery momentum. Downside risks include heightened jet fuel prices, depreciation of the Ringgit, delays in aircraft deliveries, and manpower-related issues.

Air cargo forecast for 2023 revised down, rebound expected in 2024

Malaysia's cargo volume decreased by 15.3% YoY to 4.7bn FTK in 3Q23, due to weakened external demand, slower global growth, and the ongoing geopolitical crises. Thus, **MAVCOM revised the 2023 air cargo forecast downward**, with an anticipated decline of 14.1% YoY to 13.5% YoY translating to 18.7bn to 18.8bn FTK. **A potential turnaround is expected in 2024, with projected growth of 6.0% YoY to 6.6% YoY translating to 19.8bn to 20.0bn FTK**, driven by the low base in 2023, a potential upturn in the global technology cycle, continued recovery in China, and expected economic stabilisation.

Malaysia's air connectivity ranked fifth in ASEAN

Malaysia remained in the fifth position in ASEAN, with a connectivity score of 79.7 in 3Q23. At the airport level, KUL ranked third amongst the major airports in ASEAN in terms of direct air connectivity with a score of 59.9. SIN remained at the forefront with a score of 102.1, followed by BKK at 89.1. Approximately 55.3% of Malaysia's international seat capacity was concentrated on ASEAN destinations, indicating a significant reliance on traffic between neighbouring countries.

MAVCOM assesses international hub passenger connectivity in ASEAN

Based on several indicators—number of hub passengers, number of connecting flights, number of direct destinations, number of airlines, and average connecting times—**ASEAN airports show mixed international hub connectivity performance in 2023**. This analysis enables stakeholders to identify gaps and weaknesses, as well as develop and implement actionable strategies to enhance hub connectivity.

***The data and facts in this publication are accurate as of 20 December 2023.**

TABLE OF ABBREVIATIONS

Abbreviations	
ACI	Air Connectivity Index
ADB	Asian Development Bank
AirAsia	AirAsia Bhd.
AirAsia X	AirAsia X Bhd.
AOL	Aerodrome Operating Licence
ASEAN	Association of Southeast Asian Nations
ASL	Air Service Licence
ASP	Air Service Permit
ATR	Air Traffic Rights
Batik Air	Batik Air Malaysia (previously known as Malindo Air)
bbl	barrel
bn	billion
BNM	Bank Negara Malaysia
CAPA	Centre for Aviation
CASK	Cost per Available Seat Kilometre
COVID-19	Coronavirus Disease 2019
DOS	Department of Statistics, Malaysia
E&E	Electrical and Electronics
EIA	US Energy Information Administration
EU	European Union
Firefly	FlyFirefly Sdn. Bhd.
FSC	Full Service Carrier
FTK	Freight Tonne Kilometre
GDP	Gross Domestic Product
GHL	Ground Handling Licence
HHI	Herfindahl-Hirschman Index
IATA	International Air Transport Association
IMF	International Monetary Fund
MAB	Malaysia Airlines Bhd.
MAB Kargo	MAB Kargo Sdn. Bhd.
MAHB	Malaysia Airports Holdings Bhd.
MATRADE	Malaysia External Trade Development Corporation
MAVCOM	Malaysian Aviation Commission
MCT	minimum connecting time
mn	million
MOTAC	Ministry of Tourism, Arts and Culture
MYAirline	MYAirline Sdn. Bhd.
O&D	Origin and Destination
OPEC	Organization of the Petroleum Exporting Countries
QoQ	Quarter-on-Quarter
RASK	Revenue per Available Seat Kilometre
Raya Airways	Raya Airways Sdn. Bhd.
RM	Ringgit Malaysia

Abbreviations	
SATSSB	Senai Airport Terminal Services Sdn Bhd
SKS Airways	SKS Airways Sdn. Bhd.
TMDSB	Tanjung Manis Development Sdn. Bhd.
UNWTO	United Nations World Tourism Organization
US	United States of America
USD	United States Dollar
WCA	World Cargo Airline Sdn. Bhd.
WEO	World Economic Outlook
WSTS	World Semiconductor Trade Statistics
WTO	World Trade Organization
YoY	Year-on-Year

AIRPORT CODES

Airport Codes	Airport Names
AMS	Schiphol Airport, Amsterdam, Netherlands
BKI	Kota Kinabalu International Airport, Malaysia
BKK	Suvarnabhumi Airport, Bangkok, Thailand
BWN	Brunei International Airport, Brunei
CGK	Soekarno-Hatta International Airport, Jakarta, Indonesia
DAC	Hazrat Shahjalal International Airport, Dhaka, Bangladesh
DMK	Don Mueang International Airport, Bangkok, Thailand
DOH	Hamad International Airport, Doha, Qatar
DPS	Denpasar International Airport, Bali, Indonesia
DXB	Dubai International Airport, United Arab Emirates
HKG	Hong Kong International Airport
HKT	Phuket International Airport, Thailand
IST	Istanbul Airport, Türkiye
JED	King Abdulaziz International Airport, Jeddah, Saudi Arabia
KBR	Sultan Ismail Petra Airport, Kota Bharu, Malaysia
KCH	Kuching International Airport, Malaysia
KNO	Kualanamu International Airport, Medan, Indonesia
KUL	Kuala Lumpur International Airport, Malaysia
LGK	Langkawi International Airport, Malaysia
LHR	Heathrow Airport, London, United Kingdom
MNL	Ninoy Aquino International Airport, Manila, Philippines
PEN	Penang International Airport, Malaysia
PNH	Phnom Penh International Airport, Cambodia
RGN	Yangon International Airport, Myanmar
SGN	Tan Son Nhat International Airport, Ho Chi Minh City, Vietnam
SIN	Changi Airport, Singapore
SUB	Juanda International Airport, Surabaya, Indonesia
TPE	Taoyuan International Airport, Taiwan
VTE	Wattay International Airport, Vientiane, Lao PDR

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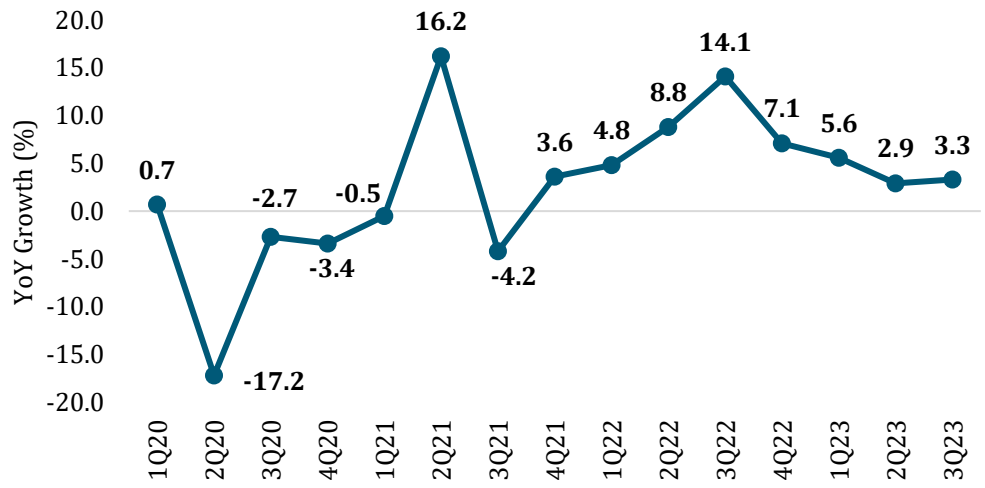
SECTION 1: MACROECONOMIC OVERVIEW AND OUTLOOK

Macroeconomic Overview

Malaysia's GDP Grew by 3.3% YoY in 3Q23

The Malaysian economy grew by 3.3% YoY in 3Q23, driven by sustained domestic demand, improvements in labour market conditions, further recovery in tourism activities, and higher construction activities (see Figure 1).

Figure 1: Malaysia's Quarterly GDP Growth, 2020 – 2023



Source: DOS

Domestic demand continued growing, with the highest growth in public investment (7.5% YoY) and public consumption (5.8% YoY). This was driven by the expansion of the government's fixed assets spending, as well as supplies and services spending. The labour market also improved as seen from a lowered unemployment rate of 3.4% in 3Q23 (2Q23: 3.5%), the lowest in the four previous quarters, and a labour force participation rate at a historical high of 70.1% (2Q23: 70.0%). However, weaker external demand had weighed on the growth in the quarter. This was partly due to the global shift in expenditure from goods to services and lower mining production, as a result of maintenance activities and production constraints in maturing oil fields (see Table 1).

Table 1: Malaysia's GDP Growth by Sector, 3Q22 and 3Q23

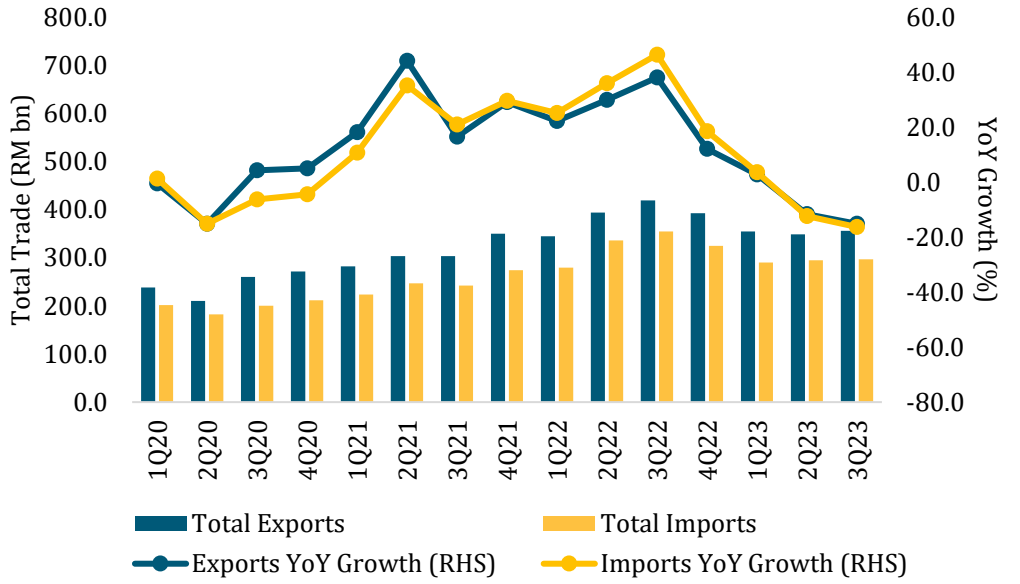
Sectors	YoY Growth (%)	
	3Q22	3Q23
Headline GDP	14.1	3.3
-Services	*16.7*	*5.0*
-Manufacturing	*13.1*	*-0.1*
-Agriculture	*1.2*	*0.8*
-Mining & Quarrying	*9.1*	*-0.1*
-Construction	*15.3*	*7.2*

Source: DOS

Subdued Trade Performance in 3Q23

In 3Q23, Malaysia's imports, exports, and trade surplus recorded a positive QoQ growth. However, on an annual basis, Malaysia's imports and exports declined by 15.2% YoY to RM356.3bn and by 16.3% YoY to RM297.2bn, respectively (see Figure 2). In 9M23, Malaysia experienced a drop in exports (-8.4% YoY), imports (-8.9% YoY), as well as trade surplus (-5.7% YoY).

Figure 2: Malaysia's External Trade, 2020 – 2023



Source: DOS

The decline in exports in 9M23 was a combined result of a lower external demand for petroleum products (-9.9% YoY), metal products (-15.3% YoY), along with chemicals and chemical products (-11.6% YoY). Weaker export prices of palm oil (-30.6% YoY) also contributed to this decline. Meanwhile, the decrease in imports was mainly attributed to the drop in electrical and electronic (E&E) products (-11.5% YoY), chemicals and chemical products (-12.1% YoY), and petroleum products (-8.9% YoY).

ASEAN remained as Malaysia's largest trading partner for both exports and imports in 9M23, despite a decrease of 7.8% YoY. Trade with China contracted by 9.2% YoY due to lower imports, as well as the decline in exports of iron and steel products, palm oil and palm oil-based products, and E&E products.

Tables 2 and 3 show the breakdown of Malaysia's top five export and import markets in 9M23, which constitute 68.5% of Malaysia's total exports and 68.3% of total imports during the period.

Table 2: Malaysia's Top Five Export Markets, January – September 2023

Market	Exports (RM bn)	Share (%)	YoY Growth (%)
ASEAN	312.2	29.7	-6.9
China	140.2	13.2	-9.8
US	119.5	11.3	-3.6
EU	84.3	8.0	-10.0
Hong Kong SAR	67.3	6.4	-6.0

Source: DOS

Table 3: Malaysia's Top Five Import Markets, January – September 2023

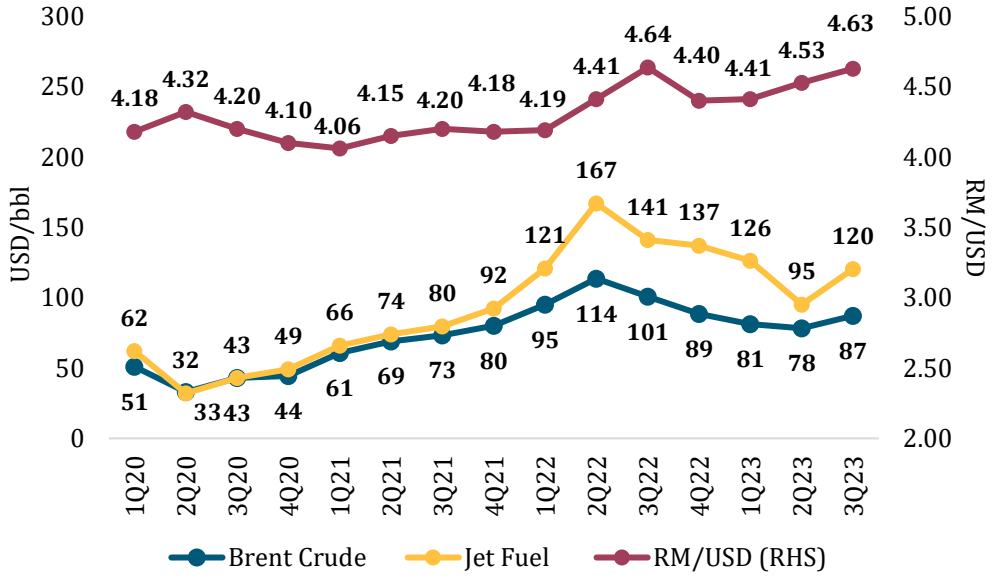
Market	Imports (RM bn)	Share (%)	YoY Growth (%)
ASEAN	221.9	25.1	-9.2
China	186.6	21.1	-8.7
EU	69.4	7.9	5.0
US	63.3	7.2	-15.5
Taiwan	61.9	7.0	-21.1

Source: DOS

Ringgit Continues Depreciating Against the USD while the Prices for Brent Oil and Jet Fuel Rebounded in 3Q23

The RM continued to depreciate against the USD, with an average exchange rate of RM4.63/USD in 3Q23 (see Figure 3). This was largely a combined result of a stronger USD and a lower demand for Malaysia's exports. As at 14 December 2023, the depreciation persisted where the RM to USD exchange rate was floating between 4.66 and 4.71 in the same month. Such depreciation further added to the price volatility of crude oil and jet fuel faced by the Malaysian industry players.

Figure 3: Oil, Jet Fuel, and Exchange Rate Trends, 2020 – 2023



Source: EIA, BNM

After a period of easing since 2Q22, **prices for Brent crude oil and jet fuel increased in 3Q23, averaging at USD87/bbl and USD120/bbl, respectively**, with an average crack spread of USD33/bbl. As of 15 December 2023, the jet fuel price eased to USD102/bbl, and the average crack spread was at USD26/bbl.

The upward trend of Brent crude oil price in 3Q23 was partly due to lower global oil inventories as a result of the voluntary crude oil production cut by Saudi Arabia and Russia since July and August 2023, respectively, on top of the ongoing production cut by OPEC+ since 2022. The impact of the production cut in 1H23, however, was moderated by increased production outside of OPEC+ and a weaker-than-expected rebound on the demand side in 2Q23, resulting in a slight decrease in crude oil price in the quarter.

The jet fuel price experienced a similar trend to Brent crude oil price, however, with a higher degree of volatility mainly contributed by the crack spread. As of 3Q23, the average crack spread of USD33/bbl still exceeded the historical norm of less than USD20/bbl due to factors including demand for other middle distillate fuels and a lack of infrastructure investment.

As noted by the International Air Transport Association (IATA), a relatively high level of oil price volatility has been observed for the previous two years, influenced by an array of factors such as economic performance, unexpected shifts in oil inventories, market sentiment, and geopolitical developments. The eruption of war in the Middle East in October 2023 further added to the volatility moving forward, as it already added 3% to 4% to the oil price in the same month and its trajectory is still unpredictable.[1] In light of such uncertainties, **the US Energy Information Administration (EIA) forecasted an increase in Brent crude oil price** from an average of USD90/bbl in 4Q23 to an average of USD93/bbl in 2024.[2]

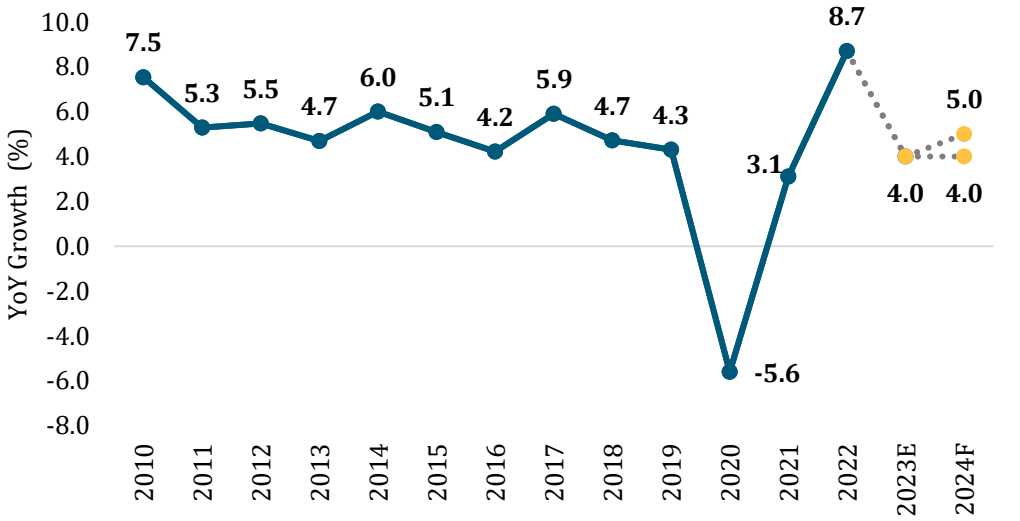
[1] IATA, https://www.iata.org/en/iata-repository/publications/economic-reports/a-renewed-rise-in-the-jet-crack-spread-adds-to-cost-pressure/ (13 October 2023).
[2] EIA, https://www.eia.gov/outlooks/steo/ (7 November 2023).

Macroeconomic Outlook

Malaysia's GDP Growth in 2024 is Expected to be Between 4.0% and 5.0% YoY

BNM projects Malaysia's GDP to grow by between 4.0% to 5.0% YoY in 2024, as of November 2023 (see Figure 4). The growth is expected to continue to be driven by an expanding domestic demand amid steady employment and income prospects, particularly in the domestic-oriented sectors.

Figure 4: Malaysia's Annual GDP Growth, 2010 – 2024F



Source: BNM

Projections by ADB, IMF, and the World Bank all fall within the the range of BNM's projection. ADB projects a GDP growth of 4.9% YoY in 2024 for Malaysia. It identifies several downside risks for Malaysia's growth in the next year, such as a weakening external demand, tightened financial conditions, and a higher debt-to-GDP ratio. Private consumption is expected to continue supporting economic growth in Malaysia. IMF forecasts Malaysia's GDP to grow by 4.3% YoY in 2024, mainly driven by a higher global demand for exports particularly in the technology sector, in conjunction with an expected moderation in domestic inflation. The World Bank expects a moderate growth in Malaysia of 4.3% YoY in 2024, with domestic demand continuing to be the main driver of growth.

On the external front, Malaysia's growth might be weighed down by a weaker-than-expected global growth, fading post-pandemic recovery in China, and intensifying geopolitical tensions. Domestically, the key downside risk lies at the uncertainty around domestic inflation and the strength of household consumption.

Table 4: Malaysia's 2024 GDP Forecasts by BNM, ADB, IMF and World Bank

Sources	Month of Forecast	2024 Malaysia's GDP YoY Growth Forecast (%)
BNM	November 2023	4.0 – 5.0
ADB	September 2023	4.9
IMF	October 2023	4.3
World Bank	October 2023	4.3

Global Output Growth Projection for 2024 Slightly Tuned Down

In the October 2023 World Economic Outlook (WEO), **the IMF forecasted global output to growth by 2.9% YoY in 2024**, remaining well below historical average (see Table 5). This is a 0.1 percentage-point drop from forecast in July 2023 WEO, reflecting a slowed down post-pandemic recovery.

Based on IMF's assessment, the economic outlook for 2024 is characterised by a moderate post-pandemic recovery and widening divergence across regions. Several factors might impede the recovery, such as the long-term consequences of the pandemic and the increasing geoeconomic fragmentation. Cyclical factors, such as tightening monetary policies to reduce inflation, withdrawal of fiscal support amidst high debt, and extreme weather events, also play a part in the slowdown in recovery.[3]

Table 5: Global GDP Projections by IMF, 2023E and 2024F

Economy	2023 Expected GDP Growth (% YoY)	2024 Forecasted GDP Growth (% YoY)
Global	3.0	2.9
- Advanced Economies	*1.5*	*1.4*
- Emerging Markets and Developing Economies	*4.0*	*4.0*

Source: IMF

The anticipated growth slowdown in advanced economies is substantial, with 90% of them projected to experience lower growth in 2023. In contrast, emerging markets and developing economies are projected to undergo a more modest decline in growth, decreasing from 4.1% YoY in 2022 to 4.0% YoY in both 2023 and 2024.

[3] IMF, World Economic Outlook, https://www.imf.org/en/Publications/WEO/Issues/2023/10/10/world-economic-outlook-october-2023 (October 2023).

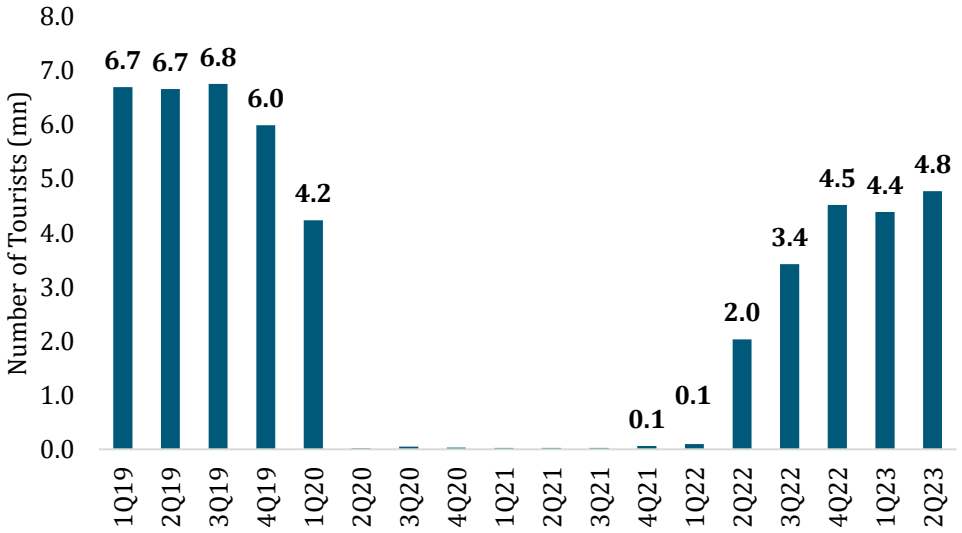
SECTION 2: INDUSTRY OVERVIEW AND OUTLOOK

Industry Overview

Recovery of International Tourists Better than Expected

According to the latest data from the Ministry of Tourism, Arts and Culture (MOTAC), **Malaysia's tourist arrivals experienced a growth of 134.6% YoY in 2Q23, translating to 4.8mn arrivals** (2Q22: 2.0mn) (see Figure 5). On a QoQ basis, tourist arrivals in 2Q23 achieved an increase of 9.0% (1Q23: 4.5mn).

Figure 5: Malaysia's Tourist Arrivals, 2019 – 2023



Source: MAVCOM, Tourism Malaysia
Notes: Data only available up to 2Q23

In 1H23, Malaysia recorded a total of 9.2mn tourist arrivals, which is a notable increase of 329.6% YoY compared to the same period in 2022 (1H22: 2.1mn). Due to the better-than-expected performance, **Tourism Malaysia now forecasts tourist arrivals in 2023 to achieve 18.0mn visitors** in view of the recovery trend, **surpassing its initial target of 16.1mn**.[4] As of the third week of August this year, Malaysia had recorded 12.2mn tourist arrivals. The key tourist markets were from ASEAN, as well as the Middle East, China, India, and Europe.[5]

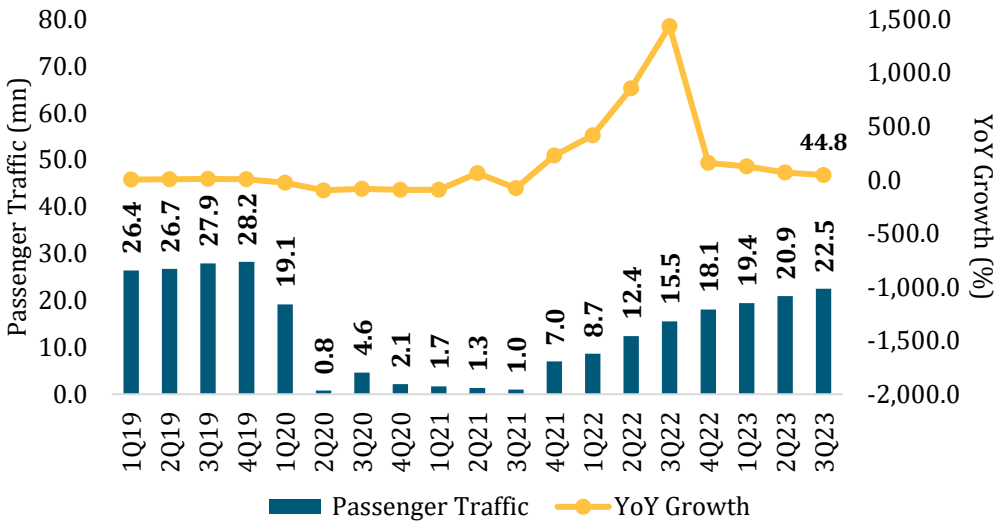
Following the declaration of Visit Malaysia Year 2026, it is anticipated that 26.1mn international tourists will visit in that year, marking a complete recovery to the pre-pandemic level observed in 2019. In the tabling of the 2024 Budget, the government has allocated RM350.0mn to boost tourism promotion and activities to promote Malaysia as the top destination for international tourists. There will also be other initiatives to encourage more visitors from China and India, such as improving visa-on-arrival facilities, social visit passes, and multiple-entry visa offers.

[4] Bernama, https://www.nst.com.my/news/nation/2023/08/940139/tourism-malaysia-dg-malaysia-anticipates-18-million-foreign-visitors-year (8 August 2023).
[5] The Edge Malaysia, https://theedgemalaysia.com/node/683100 (19 September 2023).

Continuous Surge in Air Passenger Numbers Throughout 3Q23

Malaysia's scheduled passenger traffic increased by 44.8% YoY (7.6% QoQ) **in 3Q23, reaching a total of 22.5mn passengers** (see Figure 6). For the first three quarters of 2023, Malaysia's passenger traffic has been growing consistently, with an average growth rate of 7.6% QoQ. As at October 2023, the total passenger traffic has reached 69.9mn.

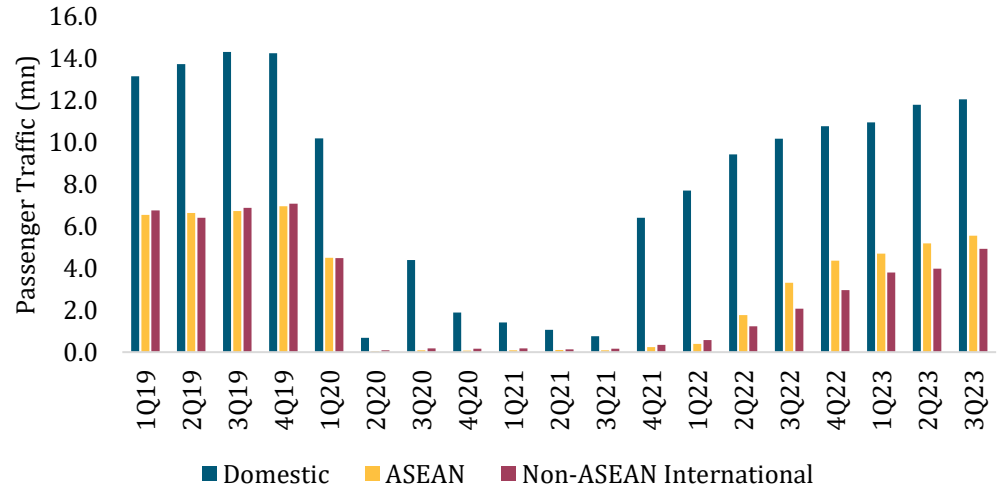
Figure 6: Malaysia's Quarterly Passenger Traffic, 2019 – 2023



Source: MAVCOM, AOL Holders

The main driver of passenger traffic continued to be domestic travel (see Figure 7), accounting for 53.5% of the total passengers in 3Q23, followed by ASEAN (24.6%) and non-ASEAN (21.9%). In terms of growth, the **non-ASEAN international region saw the highest increase of 23.7% YoY** in 3Q23. On the other hand, the ASEAN and domestic regions experienced more moderate growth rates of 7.1% YoY and 2.3% YoY, respectively.

Figure 7: Malaysia's Passenger Traffic by Region, 2019 – 2023

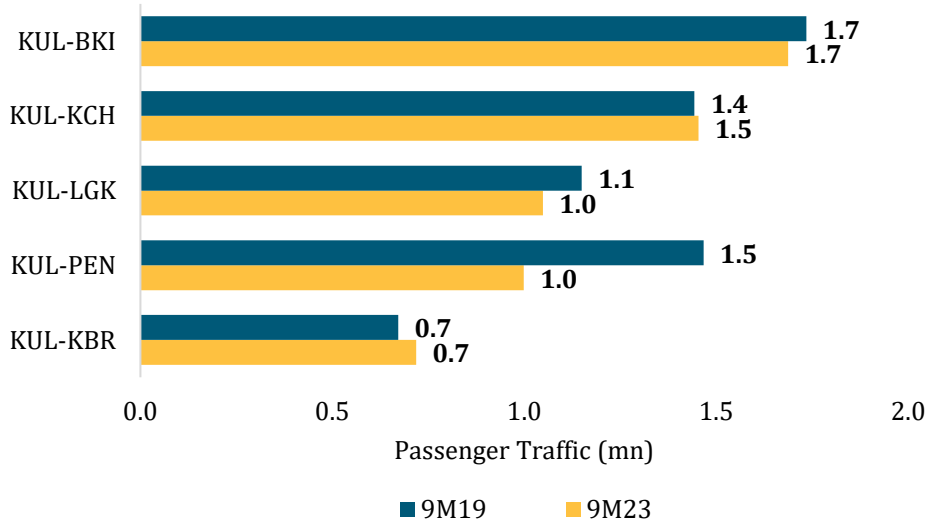


Source: MAVCOM, AOL Holders

Malaysia's Busiest Routes by Passenger Traffic

The KUL-BKI route was the busiest domestic route in terms of passenger volume, recording 1.7mn passengers in 9M23, followed by KUL-KCH (see Figure 8). KUL-LGK was the third busiest, overtaking KUL-PEN in 9M23. **Overall, the total domestic passenger traffic reached 84.5% of the 2019 level.**

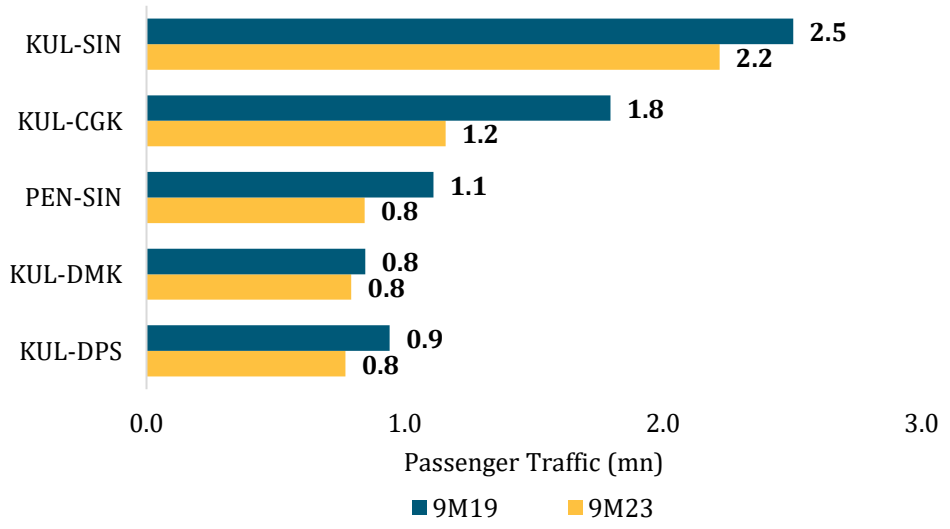
Figure 8: Malaysia's Top Domestic Routes in Terms of Passengers, January – September 2019 and 2023



Source: MAVCOM, AirportIS

KUL-SIN remains Malaysia's busiest ASEAN route, recording 2.5mn passengers in 9M23. This represents 89.0% of pre-pandemic levels (see Figure 9). KUL-DMK experienced the fastest recovery, reaching 94.0% of pre-pandemic levels. **Overall, the ASEAN region's passenger traffic had reached 77.5% of the 2019 level.**

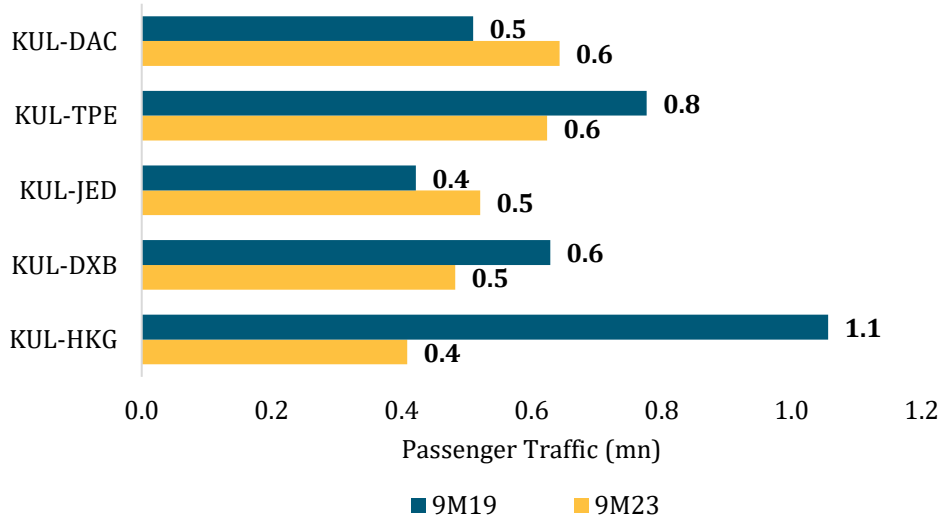
Figure 9: Malaysia's Top ASEAN International Routes in Terms of Passengers, January – September 2019 and 2023



Source: MAVCOM, AirportIS

For the non-ASEAN international region, KUL-DAC recorded the highest passenger traffic in 9M23, surpassing the pre-pandemic level (see Figure 10). In 9M23, KUL-HKG became Malaysia's fifth busiest international route. However, its passenger traffic is still far below the pre-pandemic level. **The overall non-ASEAN international passenger traffic was still at 63.4% of the 2019 level.**

Figure 10: Malaysia's Top Non-ASEAN International Routes in Terms of Passengers, January – September 2019 and 2023

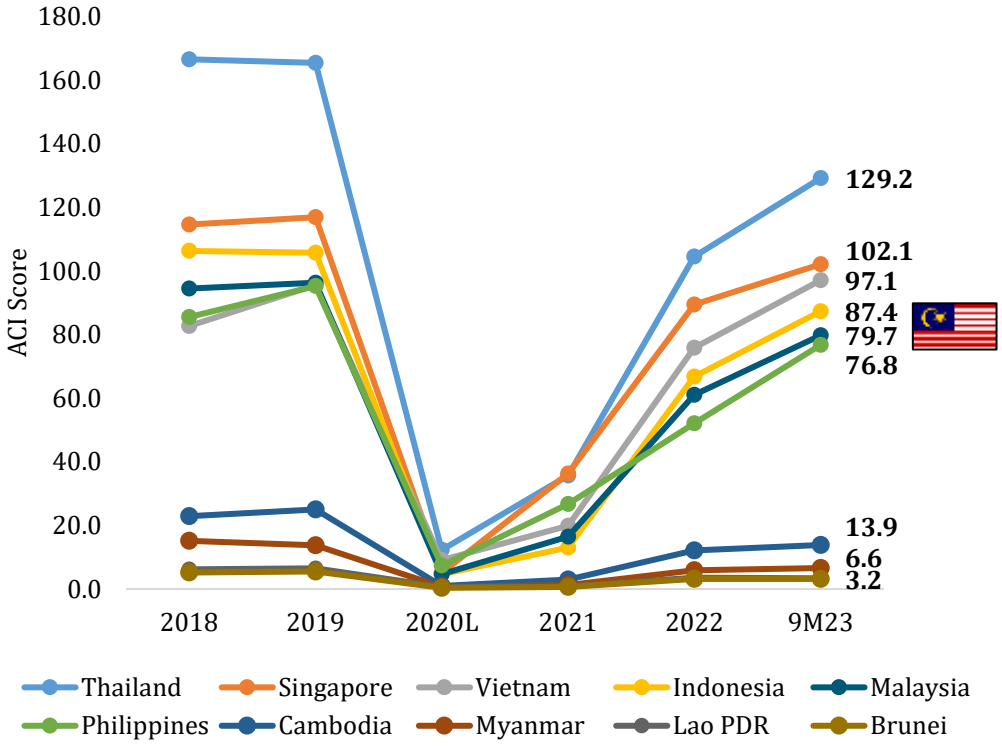


Source: MAVCOM, AirportIS

Malaysia Remains the Fifth Most Connected Country in ASEAN in Terms of Direct Connectivity

Based on MAVCOM's Air Connectivity Index (ACI) calculation, Malaysia remains in the fifth position in ASEAN with a connectivity score of 79.7 in 9M23 (see Figure 11). The ACI was an improvement from the score of 61.0 in 2022. All ASEAN countries, except Lao PDR, saw improvement in 9M23 compared to 2022.

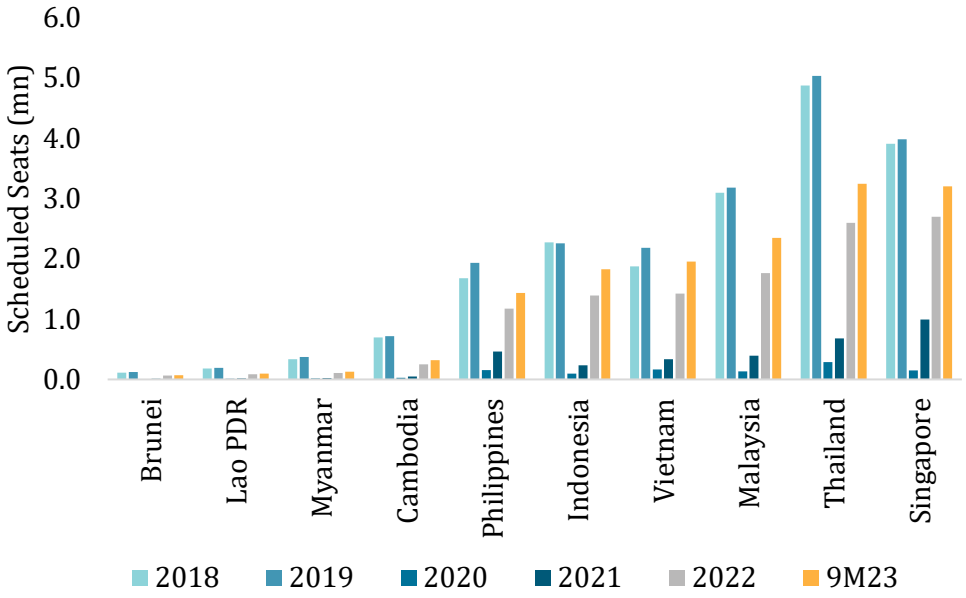
Figure 11: Air Connectivity Indices of Selected ASEAN Countries, 2018 – 2023



Source: MAVCOM

The improvement in the ACI reflects the continued rising demand for international air travel following the lifting of international border restrictions. As of 9M23, the total international seat capacity of ASEAN countries had already surpassed that of 2022, reaching 73.2% of the pre-pandemic level. During the same period, Malaysia's international seat capacity reached 73.8% of the pre-pandemic level. **In terms of international seat capacity offered, Malaysia ranked third** behind Thailand and Singapore (see Figure 12).

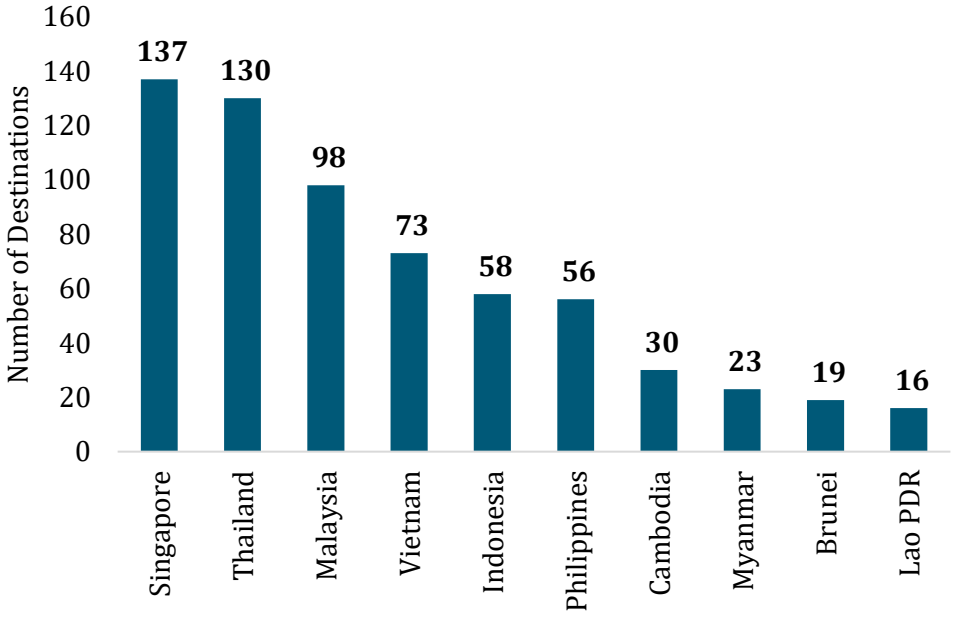
Figure 12: Total Scheduled Seats from ASEAN Countries, 2018 – 2023



Source: AirportIS

As of 9M23, Malaysia was connected to 89 international destinations, which was the third-highest number of connections among ASEAN countries (see Figure 13). Thailand offered the highest number of international destinations at 137, followed by Singapore with 130.

Figure 13: Number of International Destinations for ASEAN Countries, January – September 2023

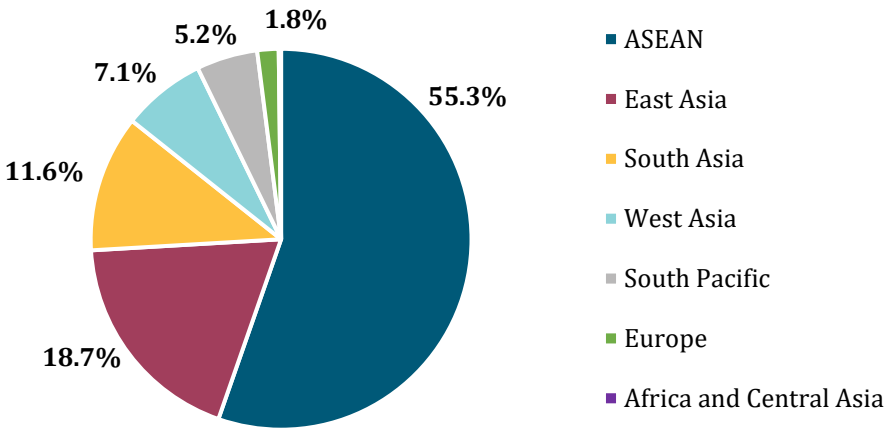


Source: MAVCOM, AirportIS

Heavy Concentration on ASEAN Destinations and Limited European Connectivity

Approximately 55.3% of Malaysia's international seat capacity is concentrated on ASEAN destinations, indicating a significant reliance on traffic between neighbouring countries (see Figure 14). However, room for improvement exists in terms of direct connectivity to European aviation hubs, as Europe represents only 1.8% of Malaysia's total international seat capacity. In comparison, Singapore and Thailand allocate 8.1% and 9.5%, respectively, of their international seat capacity directly to the European region. The limited direct connections to major European destinations may impact Malaysia's potential for tourism and its aspiration to become a leading aviation hub. This underscores the importance of strategic efforts to enhance long-haul direct connectivity for the country.

Figure 14: Malaysia's International Seat Capacity According to Region, 2023



Source: MAVCOM, AirportIS

At Airport Level Connectivity, KUL Ranked Third in ASEAN

As at 9M23, **KUL ranked third amongst major airports in ASEAN in terms of direct air connectivity**, with a score of 59.9 (see Table 6). SIN remains at the forefront, with a score of 102.1, followed by BKK at 89.1.

Table 6: Airport-level Air Connectivity Index, January – September 2023

Rank	Airport	Connectivity Score (9M23)	Highest Monthly Seats (mn)	International Destinations
1	SIN	102.1	3.2	134
2	BKK	89.1	2.1	106
3	**KUL**	**59.9**	**1.9**	**95**
4	MNL	57.0	1.1	54
5	SGN	41.2	0.9	53
6	CGK	40.3	0.8	43
7	PNH	11.9	0.3	26
8	RGN	6.1	0.1	21
9	BWN	3.0	0.1	17
10	VTE	2.6	0.1	15

Source: MAVCOM, AirportIS

ATRs Awarded by MAVCOM as of 31 September 2023

In 9M23, ASL holders were awarded 173 additional ATRs, encompassing 44 domestic routes and 129 international routes (see Table 7). During this period, Batik Air was awarded the highest number of international ATR approvals, with a total of 35 ATRs.

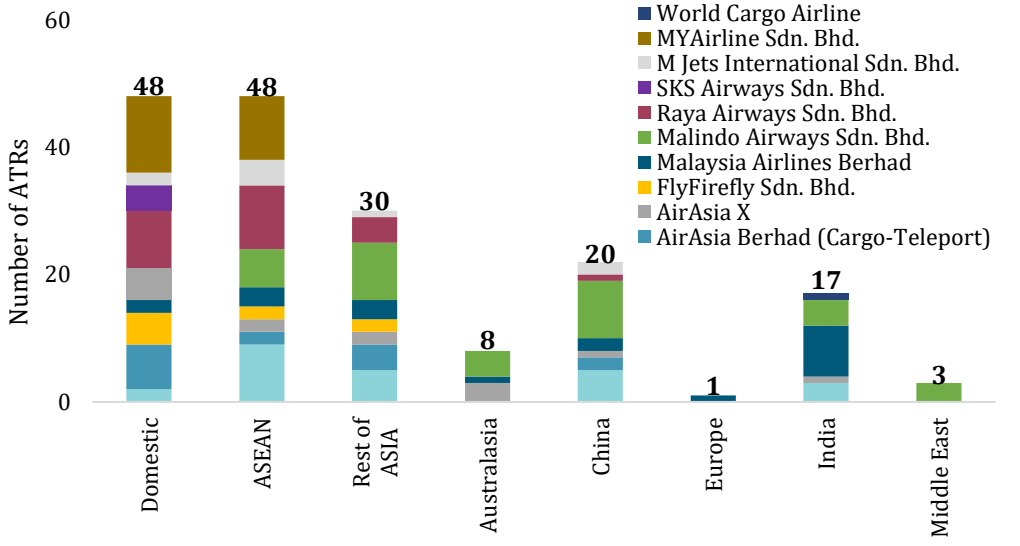
Table 7: Breakdown of ATRs Awarded, January – September 2023

ASL Holder	ATRs Awarded	
	Domestic	International
AirAsia	2	22
AirAsia (Cargo – Teleport)	7	8
AirAsia X	-	9
Batik Air	5	35
Firefly	5	4
MAB	-	10
MAB Kargo	2	8
Raya Airways	9	15
M Jets International	2	7
MYAirline	12	10
SKS Airways	4	-
WCA	-	1
TOTAL	**48**	**129**

Source: MAVCOM

In terms of regional breakdown, **both ASEAN and domestic regions received the highest allocation of ATRs with 48 approvals, followed by the Rest of Asia with 30** (see Figure 15). MyAirline received the highest number of domestic ATR approvals in 9M23, with 12 ATRs. For cargo, Raya Airways was awarded 9 domestic ATRs and 15 international ATRs, whilst AirAsia Teleport received 7 domestic ATRs and 8 international ATRs.

Figure 15: Breakdown of ATRs Awarded by Region, January – September 2023

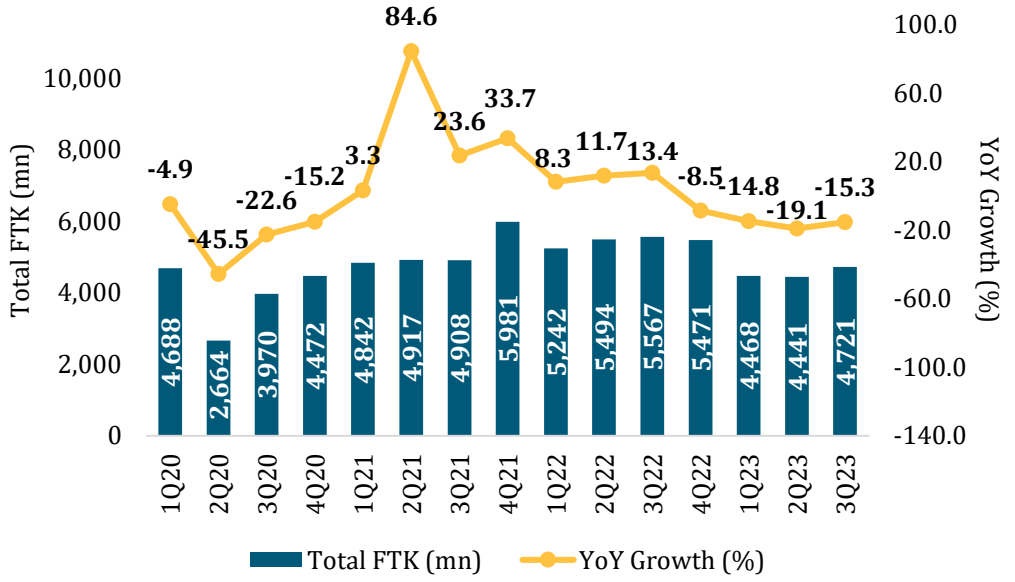


Source: MAVCOM

Malaysia's Cargo Volume Performance Continues to Decline in 3Q23

Malaysia's cargo volume, measured by total FTK, declined by 15.3% YoY (3Q22: 13.4% YoY) to 4,721mn in 3Q23 (3Q22: 5,567mn) (see Figure 16). On a QoQ basis, the total FTK recorded an increase of 6.3% in 3Q23 (2Q22: -0.6% QoQ). Factors contributing to this decline included weakened external demand, slower global growth, and the ongoing geopolitical crises.

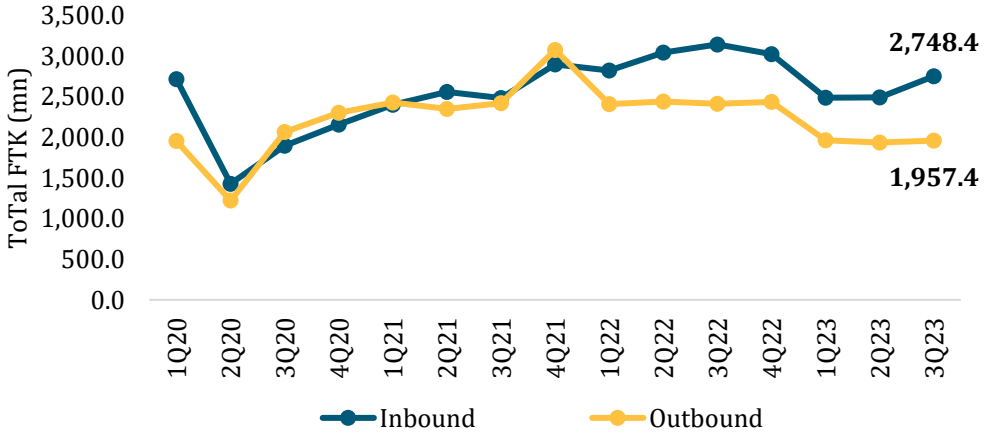
Figure 16: Total FTK in Malaysia, 2020 – 2023



Source: MAVCOM, CargoIS

In 3Q23, Malaysia's inbound cargo fell by 12.5% YoY (3Q22: 26.7% YoY) and increased by 10.4% QoQ (2Q23: 0.1% QoQ). Inbound cargo FTK was 2,748mn, lower than the pre-pandemic level of 3,247mn in 3Q19. As for the outbound cargo, FTK decreased by 18.9% YoY (3Q22: -0.2% YoY) and by 1.2% QoQ (2Q23: -1.4% QoQ). The outbound cargo FTK in 3Q23 was 1,957mn, slightly higher than the pre-pandemic level (3Q19: 1,863mn) (see Figure 17).

Figure 17: Inbound and Outbound FTK in Malaysia, 2020 – 2023

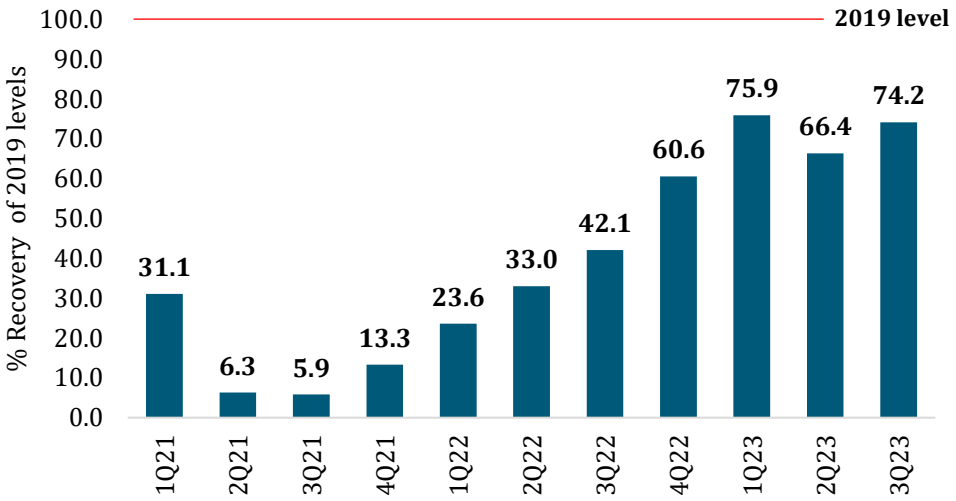


Source: MAVCOM, CargoIS
Note: This figure excludes domestic cargo volume due to small numbers

Cargo Capacity Recovery Remains Resilient Amidst Challenges

In 1Q23, the cargo capacity recovery rate reached its highest since COVID-19 at 75.9% of the pre-pandemic level (see Figure 18). Despite a slight dip in 2Q23 to 66.4%, the **capacity increased again in 3Q23 to 74.2% of pre-pandemic level**.

Figure 18: Recovery of Air Cargo Capacity of Malaysian Carriers as a Percentage of 2019 Levels, 2021 – 2023

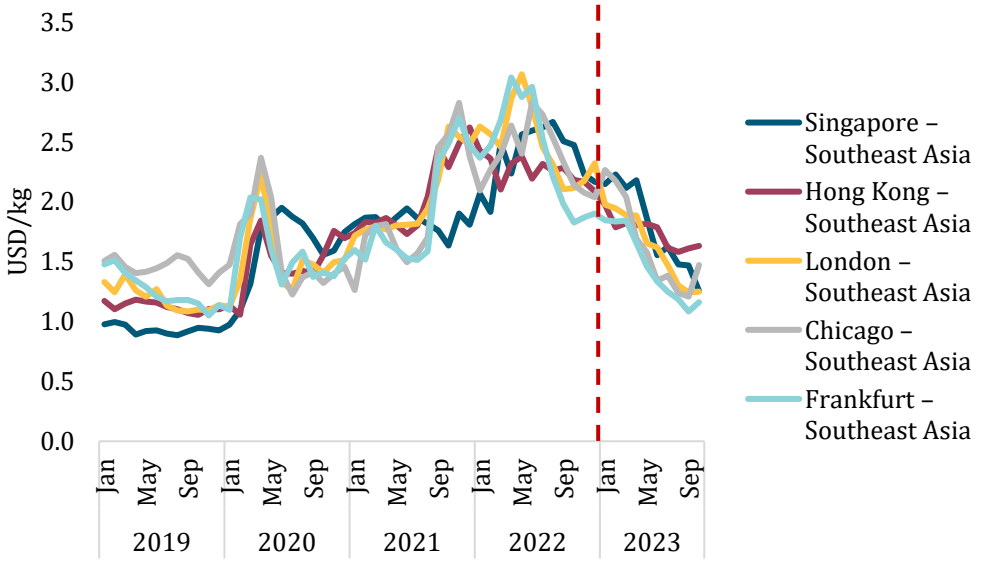


Source: MAVCOM, CAPA

Air Cargo Rates Close to Pre-Pandemic Level

The air freight rates on important trade routes have decreased throughout 2023 and are currently hovering slightly above the 2019 level (see Figure 19). Some of the main trade routes, such as Frankfurt to Southeast Asia and Chicago to Southeast Asia, are now below the 2019 level.

Figure 19: Air Cargo Rates on Major Trade Lanes, 2019 – 2023



Source: Baltic Exchange

Industry Outlook

Global Passenger Traffic is Expected to Reach 95.0% of Pre-Pandemic Level in 2023 and 106.0% in 2024

IATA expects the industry to fully recover to the 2019 level in 2024 (see Table 8). IATA's long-term outlook for passenger traffic growth remains unchanged, where the demand for air travel is expected to double by 2040, growing at an annual average rate of 3.4%.

Table 8: IATA's Global Passenger Traffic Forecasts, 2022 – 2025 vs. 2019

Key Figure	2022	2023E	2024F	2025F
Total Passenger Traffic Recovery vs. 2019 (%)	74	95	106	118

Source: IATA

However, the risks remain skewed towards the downside. This is due to the anticipation of imminent challenges for air travel demand in the short term, such as airline cost pressures, geopolitical uncertainties, and macroeconomic challenges affecting household incomes. In the long term, the uncertainties related to climate change and the expenses linked to achieving net-zero goals pose significant concerns for the overall outlook.

The Majority of Regions Are Expected to Return to Pre-pandemic Level by 2024

Latin America is now expected to fully recover to 2019 levels in 2023, whereas previously it was expected to recover later in 2024 (see Table 9). This is due to robust international demand and the strong performance of its airlines in meeting pent-up demand for air travel. The Asia Pacific region had recovered at a slower pace compared to the rest of the world, particularly after the prolonged travel restrictions in China. **When travel restrictions were lifted throughout the Asia Pacific region—particularly in China—the air passenger traffic recovery accelerated, bringing the projected recovery year forward from 2025 to 2024.** In other regions, demand for air travel remained resilient.

Table 9: IATA's Passenger Traffic Recovery Estimation by Region

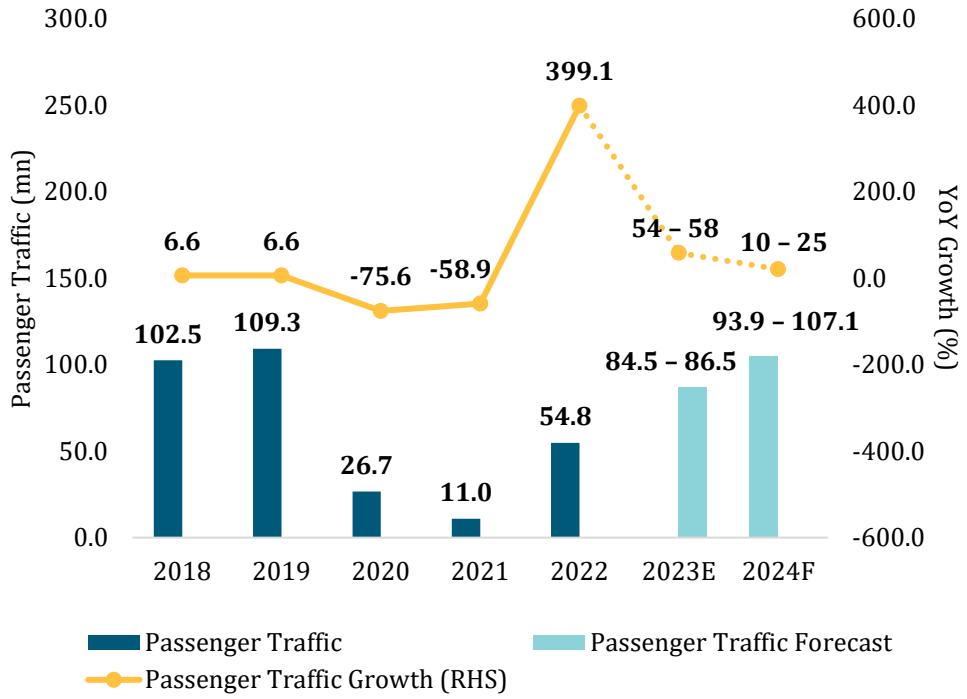
Region	Estimated Year of Recovery to 2019 levels
North America	2023
Latin America & Caribbean	2023
World	2024
Asia Pacific	2024
Europe	2024
Middle East	2024
Africa	2024

Source: IATA

MAVCOM's Air Passenger Traffic Forecast

Due to the stronger-than-anticipated passenger traffic performance, MAVCOM has revised upwards its previous 2023 air passenger traffic forecast.[6] Passenger growth is now expected to reach between 54% YoY to 58% YoY, translating to 84.5mn to 86.5mn passengers in 2023 (previous forecast: 74.6mn to 80.8mn) (see Figure 20). Looking ahead to 2024, MAVCOM anticipates passenger traffic to reach between 93.9mn and 107.1mn passengers, reflecting 10% YoY to 25% YoY growth.[7] This forecast signifies a recovery of up to 98% of 2019 levels in 2024.

Figure 20: Malaysia's Passenger Traffic, 2018 – 2024F



Source: MAVCOM, AOL Holders

Overall, airlines are strategising to increase capacity in several key domestic and international markets in 2024 (see Table 10).

Table 10: Routes with the Largest YoY Capacity Increase in 2024

Domestic	ASEAN	International
KUL – PEN	KUL – CGK	KUL – HKG
KUL – JHB	PEN – SIN	KUL – PVG
KUL – TGG	KUL – KBV	KUL – KNO
KUL – LGK	KUL – SUB	KUL – DOH

Source: MAVCOM, AirportIS

[6] The Waypoint December 2022 report covers Malaysia's 2023 passenger traffic forecast's assumptions and scenarios.

[7] In addition, the latest 30-day visa-free travel policy for visitors from China and India from 1 December 2023 onwards is expected to provide further positive impacts to Malaysia's passenger traffic recovery in 2024.

Faster than Anticipated Recovery of the Chinese Market

The revision to MAVCOM's 2023 forecast primarily stems from the accelerated recovery of the Chinese market, which has rebounded at a faster pace than initially expected. With the prompt resumption of air travel in the first quarter of 2023 instead of an initial mid-2023 forecast, airlines have significantly increased seat capacity on several key routes to China, as shown in Table 11.

Table 11: Increase in Seat Capacity to Key Destinations in China, 2023

Route vv.	Key Destinations	Seat Capacity	
		Previous (as at Dec 2022)	Current (as at Nov 2023)
KUL–CAN	Guangzhou Baiyun International Airport	199,466	823,659
KUL–PVG	Shanghai Pudong International Airport	311,675	501,366
KUL–SZX	Shenzhen Bao'an International Airport	0	351,540
KUL–XMN	Xiamen Gaoqi International Airport	90,052	182,805
KUL–PKX	Beijing Daxing International Airport	162,110	166,399
KUL–HGH	Hangzhou Xiaoshan International Airport	28,462	141,832
KUL–FOC	Fuzhou Changle International Airport	12,598	106,336
KUL–NNG	Nanning Wuxu International Airport	4,320	55,668
KUL–PEK	Beijing Capital International Airport	0	50,788
KUL–CGO	Zhengzhou Xinzheng Airport	4,104	31,350

Source: MAVCOM, AirportIS

Although flights to China resumed much earlier than anticipated, the flight capacity between Malaysia and China for the whole year of 2023 is expected to only reach 42.0**%** of the 2019 level. Nevertheless, the new visa exemption for visitors from China and India beginning 1 December 2023 hints at significant market growth potential in 2024.[8]

Recent COVID-19 Spike Not Likely to Adversely Impact the Aviation Industry

There has been a sudden rise in COVID-19 cases in Malaysia, as well as its neighbouring countries since December 2023. From 10 to 16 December 2023, 20,696 new cases have been reported in Malaysia, which was a 62% increase from the previous week.[9] The Ministry of Health (MOH) also expects a further upsurge after the Christmas and Chinese New Year celebrations. MOH has since strengthened its COVID-19 management plan and has reassured that the current situation is under control and is not burdening the health facilities. Given the low possibility of a total lockdown like in the outbreak of the pandemic, the impact of this resurgence of COVID-19 cases on the aviation industry is not likely to be as serious as it previously was.

[8] The Star, https://www.thestar.com.my/news/nation/2023/11/26/visitors-from-the-middle-east-china-and-india-to-get-30-days-visa-free-travel-from-dec-1 (26 November 2023).
[9] Malay Mail, https://www.malaymail.com/news/malaysia/2023/12/18/health-ministry-rules-out-return-of-mco-as-covid-19-cases-rise-triis-reinstated/108165 (18 December 2023)

Several Downside Risks Weigh on Passenger Traffic Growth

The passenger traffic forecast, while optimistic, may have potential downside risks that warrant consideration. The Malaysian aviation industry may face several challenges, as outlined below:

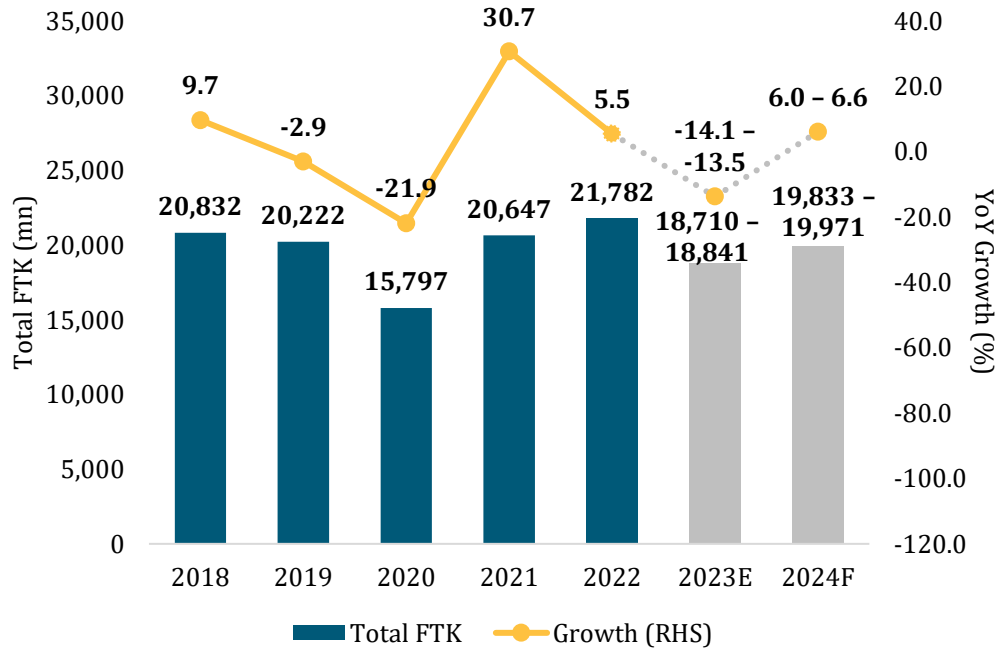
- **Heightened jet fuel prices:** As of 3Q23, the average crack spread of USD33/bbl still exceeded the historical norm of less than USD20/bbl. As jet fuel costs rise, airlines often face increased operational expenses, leading to higher ticket prices for passengers. Consequently, the surge in travel costs can deter potential passengers, particularly those sensitive to changes in ticket affordability. This ripple effect may result in a decline in overall passenger demand.
- **Weaker value of the Ringgit:** Airlines often purchase aircraft, fuel, and other essential services in USD. When the RM weakens, the cost of these expenses rises, leading to higher operational expenditures for airlines.
- **Aircraft delivery delays:** Delays in delivery would limit airline capacity as the demand for air travel approaches a complete rebound from the pandemic. The late arrival of new aircraft can disrupt airlines' strategic plans, impede fleet expansion, and have a broader impact on operations. Manufacturers of aircraft attribute these delays to challenges within supply chains and bottlenecks in the network of engine repair facilities.
- **Manpower-related issues:** Numerous personnel have departed from the aviation sector during the pandemic and have not returned, particularly in the ground handling segment. The industry is also experiencing the issue of brain drain, where numerous skilled personnel have left for other regions in search of higher wages, such as the Middle East. The training of skilled workers is a time-consuming process, posing limitations on the airline's ability to deploy additional capacity.

2023 Air Cargo Forecast Revised Downward, but Rebound Expected in 2024

MAVCOM revised its 2023 air cargo traffic forecast, initially made in December 2022, **downward** due to various factors influencing Malaysia's aviation industry. The **anticipated decline between 14.1% YoY and 13.5% YoY in 2023**, estimating a range of 18.7bn to 18.8bn FTK (see Figure 21), is primarily attributed to the persistent inflation which reduces demand for consumer goods in the US, Europe, and Asia.

In 2024, MAVCOM foresees a potential turnaround in air cargo traffic, **projecting growth between 6.0% YoY and 6.6% YoY**, translating to 19.8bn to 20.0bn FTK. This anticipated growth is possibly driven by factors including the low base in 2023, a potential upturn in the global technology cycle, continued recovery in China, and expected economic stabilisation, which will be supported by major central banks nearing the end of the monetary tightening cycle, thereby bolstering resilient consumer spending.

Figure 21: Malaysia's Air Cargo Traffic, 2018 – 2024F



Source: MAVCOM, CargoIS

This aligns with World Semiconductor Trade Statistics (WSTS) projection for the Asia Pacific semiconductor market and coincides with the WTO's forecast for Asia's merchandise trade volume. The Asia Pacific semiconductor market, as anticipated by WSTS, is predicted to witness a downturn of 15.1% YoY in 2023, followed by a strong recovery estimated at 10.7% YoY growth in 2024. [10] Additionally, the WTO anticipates Asia's merchandise trade volume to grow by 0.6% YoY in 2023, followed by an increase to 5.1% YoY in 2024.[11]

[10] WSTS, https://www.wsts.org/esraCMS/extension/media/f/WST/6032/WSTS_nr-2023_05.pdf (5 June 2023).
[11] WTO, https://www.wto.org/english/news_e/news23_e/tfore_05oct23_e.htm (5 October 2023).

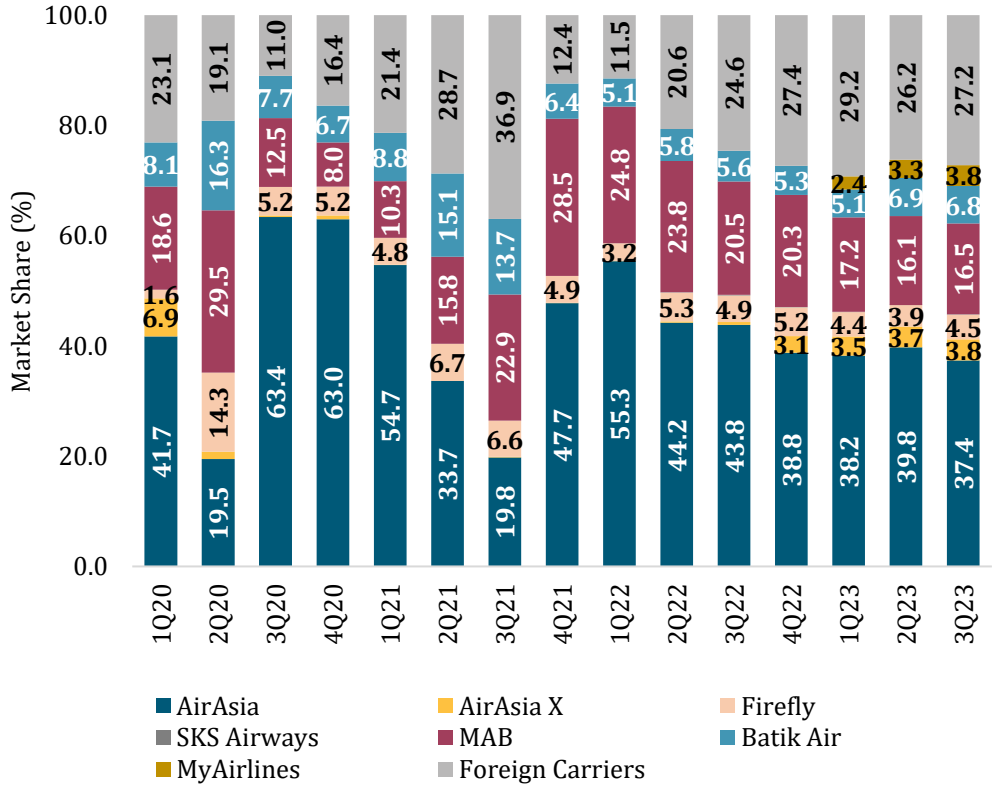
SECTION 3: INDUSTRY STRUCTURE AND PERFORMANCE

Scheduled Passenger Services

Malaysian Carriers' Passenger Market Share

In 3Q23, AirAsia continued to have the largest local airline market share of 37.4%, whilst MAB was second with a market share of 16.5% (see Figure 22). Firefly and Batik Air[12] had smaller market shares of 4.5% and 6.8%, respectively. MyAirline, which recorded a 3.3% market share in 3Q23, ceased its operations on 12 October 2023. **Overall, the market share of Malaysian carriers was 72.8%**.

Figure 22: Malaysia's Passenger Market Share by Airlines, 2020 – 2023

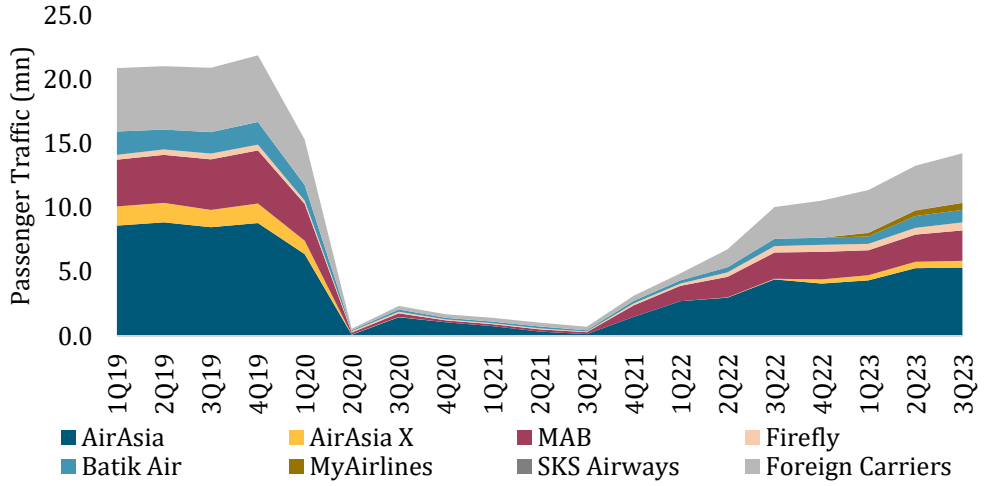


Source: MAVCOM, AirportIS

In 3Q23, the number of passengers carried by local airlines increased by 36.8% YoY, while passengers carried by foreign airlines increased by 56.7% YoY. **Passenger traffic carried by airlines in 3Q23 reached 68.0% of the passenger traffic level obtained in 3Q19** (see Figure 23).

[12] Batik Air was previously known as Malindo Air.

Figure 23: Malaysia's Quarterly Passenger Traffic by Airlines, 2019 – 2023

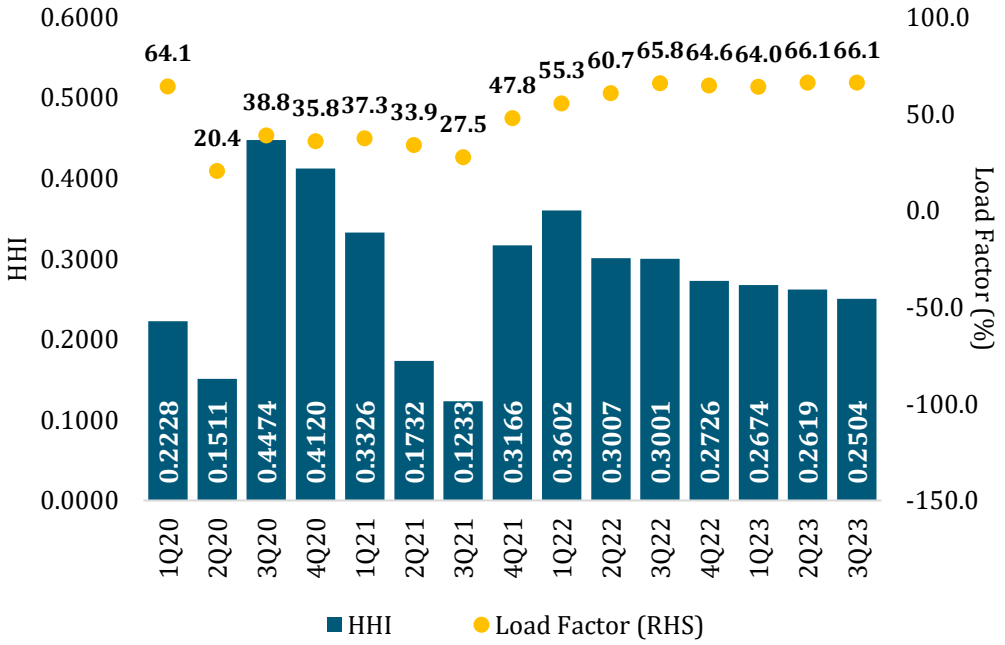


Source: MAVCOM, AirportIS

Reduced Market Concentration and Increased Average Load Factor in 3Q23

The Malaysian airline industry was less concentrated[13] in 3Q23 with an HHI of 0.2504, indicating a more competitive market (3Q22: 0.3001). The **3Q23 average load factor for all carriers, including foreign carriers, has improved to 66.1%** (1Q22: 55.3%) (see Figure 24). However, the average load factor is still far below the 2019 average of 78.9%.

Figure 24: Market Concentration Level and Load Factor, 2020 – 2023



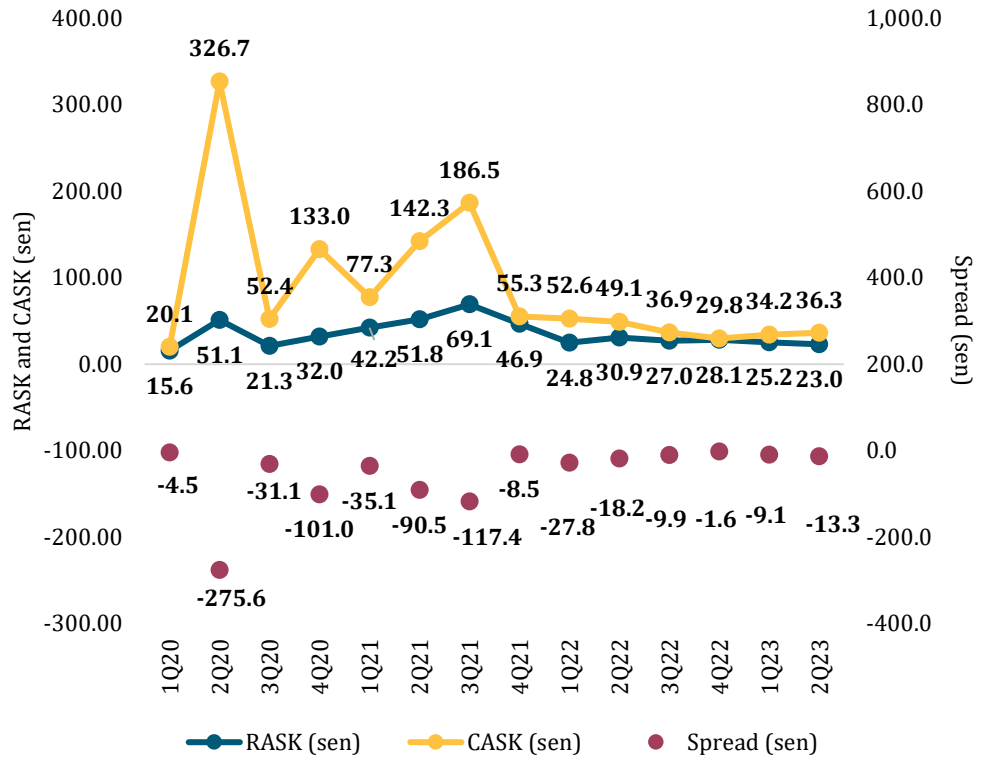
Source: MAVCOM, AirportIS

[13] Market concentration is measured by using the Herfindahl-Hirschman Index (HHI). The index ranges from '0' which denotes perfect competition to '1' which denotes a monopoly.

RASK-CASK Spread Slightly Increased in 2023

The industry's RASK-CASK spread had slightly widened to -13.3 sen in 2Q23 from -9.1 sen in 1Q23 (see Figure 25). RASK slightly reduced to 23.0 sen from 25.2 sen in the previous quarter. Meanwhile, CASK increased to 36.3 sen in 2Q23 (1Q23: 34.2 sen). The increased CASK might have been caused by higher oil prices exaggerated by a jet crack spread that was well above historic averages and higher maintenance costs by airlines.

Figure 25: Malaysian Carriers' RASK and CASK Trends, 2020 – 2023



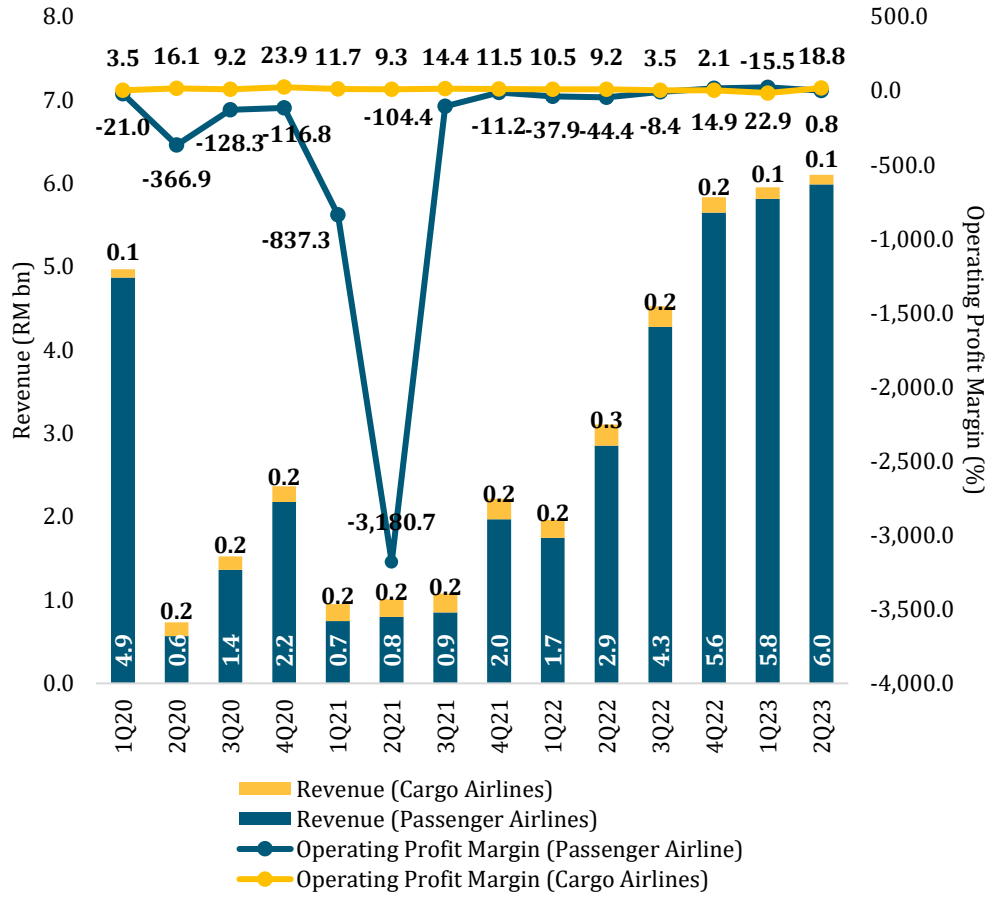
Source: MAVCOM, ASL Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

Positive Operating Profit Margin for Both Passenger and Cargo Airlines in 2Q23

Malaysian carriers reported a total revenue of RM6.10bn (2Q22: RM3.1bn) and an operating profit margin of 1.1% (2Q22: -40.0%) in 2Q23 (see Figure 26). In particular, **the operating profit margin of cargo airlines was relatively higher at 18.8% compared to the operating profit margin of passenger airlines at 0.8%.** Since the onset of the COVID-19 pandemic, cargo airlines have consistently achieved positive operating profit margins, except in 1Q23, where the operating profit margin was -15.5%, the lowest in the last three years.

As a whole, the ASL holders have been recording steady growth in revenue since 2Q22. This improved performance reflects the recovery trend of demand for international travel in Asia.

Figure 26: Malaysian Carriers' Revenue and Operating Profit Margin, 2020 – 2023



Source: MAVCOM, ASL Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

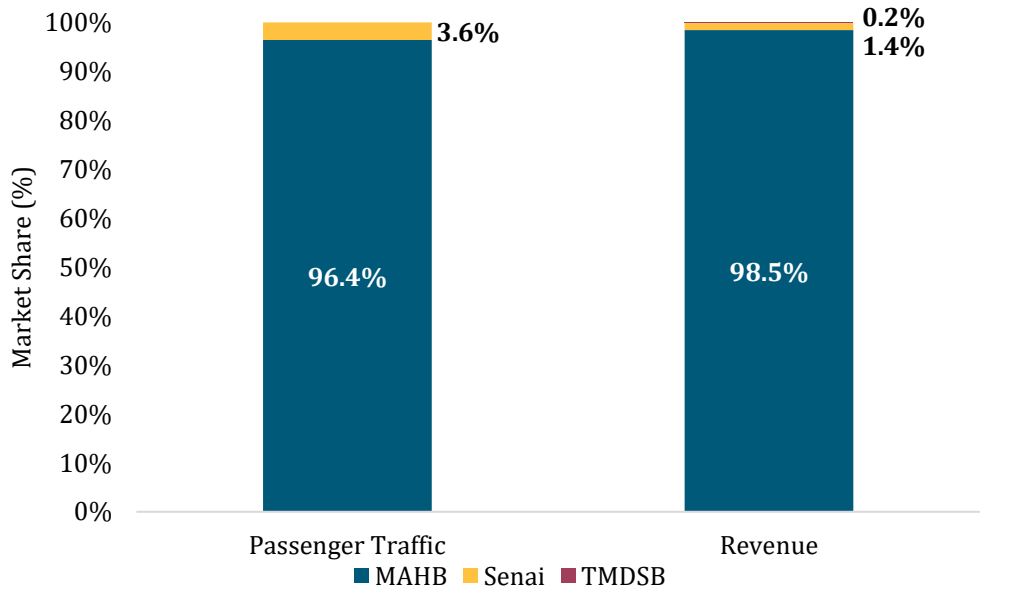
Aerodrome Operations Segment

Aerodrome Operations Continue to be the Most Concentrated Segment Within the Aviation Services Market

The aerodrome operator segment remained the most concentrated segment within the aviation services market with an HHI of 0.9698 in 1H23 (1H22: 0.9606) (see Figure 27). **MAHB, as the largest airport operator in the country, handled 96.4% of passenger traffic in 1H23** (1H22: 95.7%). In comparison, Senai Airport's passenger market share continued to drop from 4.3% in 1H22 to 3.6% in 1H23.

Similar trends are observed in terms of revenue share, where MAHB's revenue constituted 98.5% of industry-wide revenue in 1H23 (1H22: 98.0%), while Senai Airport and Tanjung Manis Airport accounted for 1.4% (1H22: 1.8%) and 0.2% (1H22: 0.2%), respectively.

Figure 27: Market Shares of the Aerodrome Operations Segment by Passenger Traffic and Revenue, 1H23



Source: MAVCOM, AOL Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

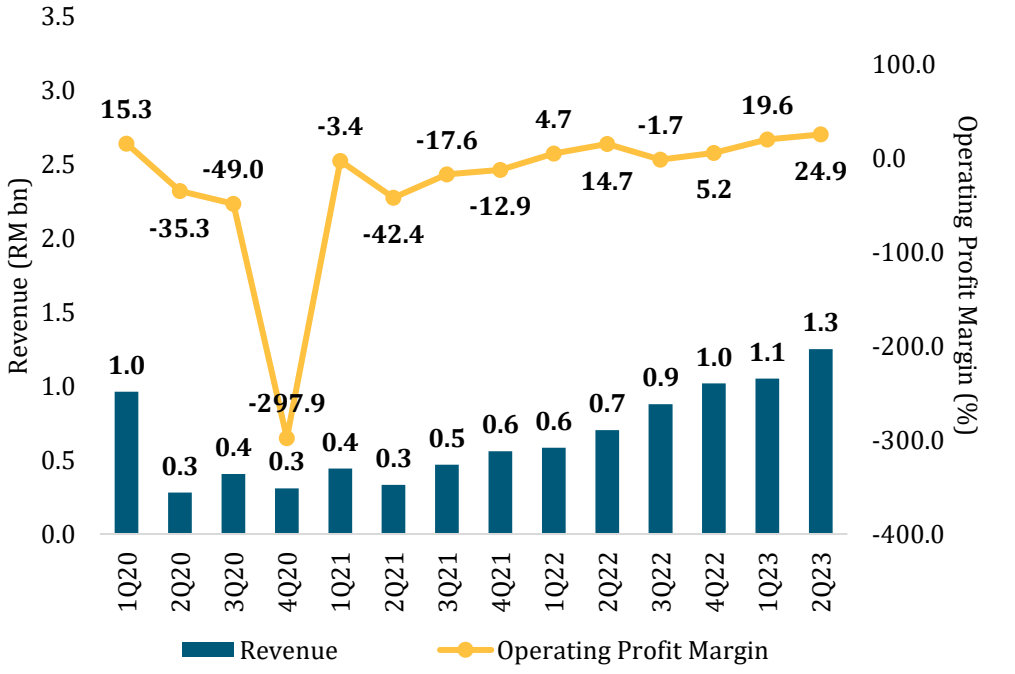
Positive Operating Profit Margins for Aerodrome Operators in 1H23

The aerodrome operators' airport operations typically include airport services, duty-free and non-duty-free outlets, while the non-airport operations include project and repair maintenance, hotel operations, agriculture and horticulture, and other activities.

For 2Q23, the revenue of the aerodrome operators increased by 77.7% YoY to RM1.3bn (2Q22: RM0.7bn) (see Figure 28), in line with the continued recovery of passenger traffic and aircraft movements. The aggregate financial performance of Malaysian aerodrome operators was heavily skewed by MAHB, as the company recorded 98.5% of the total revenue and operating profit of all aerodrome operators in the country. In light of the increase in revenue, MAHB cited supporting factors such as an increase in passenger volumes, resumption of airline services and connectivity, reopening of China's borders, and an increase in the Hajj pilgrimage quota.

The operating profit margin for the aerodrome operations segment also saw continuous improvement. In 2Q23, the operating profit margin for the segment was 24.9%, nearing the pre-pandemic average of 26.0% in 2019.

Figure 28: Revenue and Operating Profit Margin of AOL Holders, 2020 – 2023



Source: MAVCOM, AOL Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

Non-Scheduled Services Segment

On-demand Charter Sub-segment Remains Competitive

Similar to that in 2022, **the most competitive sub-segment in the non-scheduled services area in 1H23 is the on-demand charter sub-segment** with seven operators and an HHI of 0.2324. The oil and gas sub-segment is highly concentrated with an HHI well above 0.6000 (see Table 12).

Table 12: Summary of Non-Scheduled Services' Market Structure, 1H23

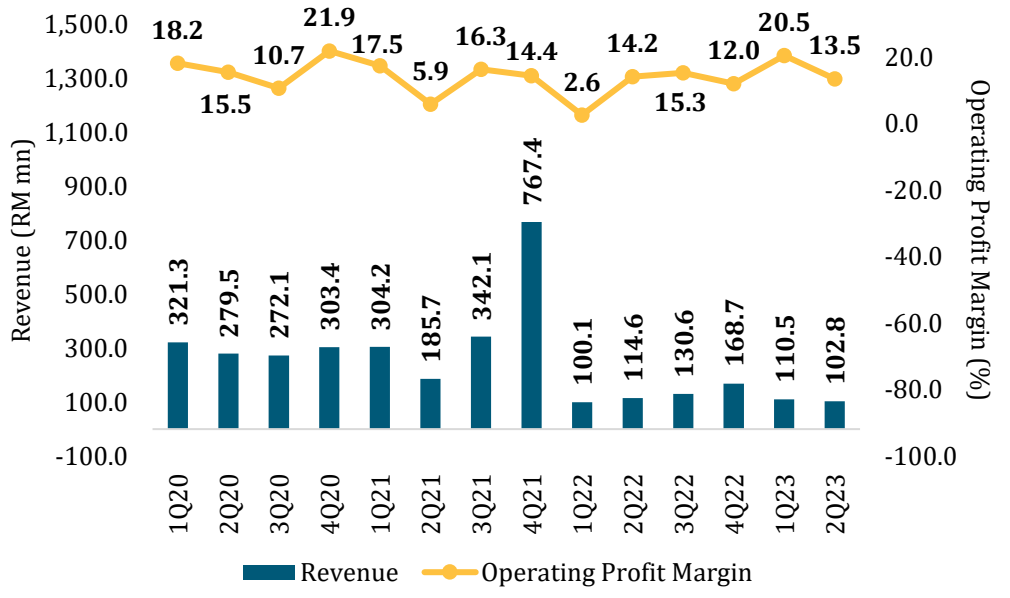
Sub-segment	No. of Licence Holders	HHI	Revenue (RM mn)	Operating Profit Margin (%)
Surveying, observation & patrol	-	-	-	-
On-demand cargo	-	-	-	-
Pleasure flying	2	0.5536	0.2	-94.6
Aerial work – cloud seeding, mapping	2	1.0000	21.9	11.4
Oil & gas	3	0.9877	41.1	10.7
On-demand charter	7	0.2324	148.1	19.4
TOTAL	**14**		**211.4**	**16.8**

Source: MAVCOM, ASP Holders

Revenue and Operating Profit Margin for ASP Holders in 1H23

Revenue for the non-scheduled services segment decreased by 10.3% YoY in 2Q23 to RM102.8mn (2Q22: RM114.6mn). In terms of profit, ASP players continued to see a positive operating profit margin of 13.5% in the same quarter, although there was a decline of 7 percentage points from 1Q23 (see Figure 29).

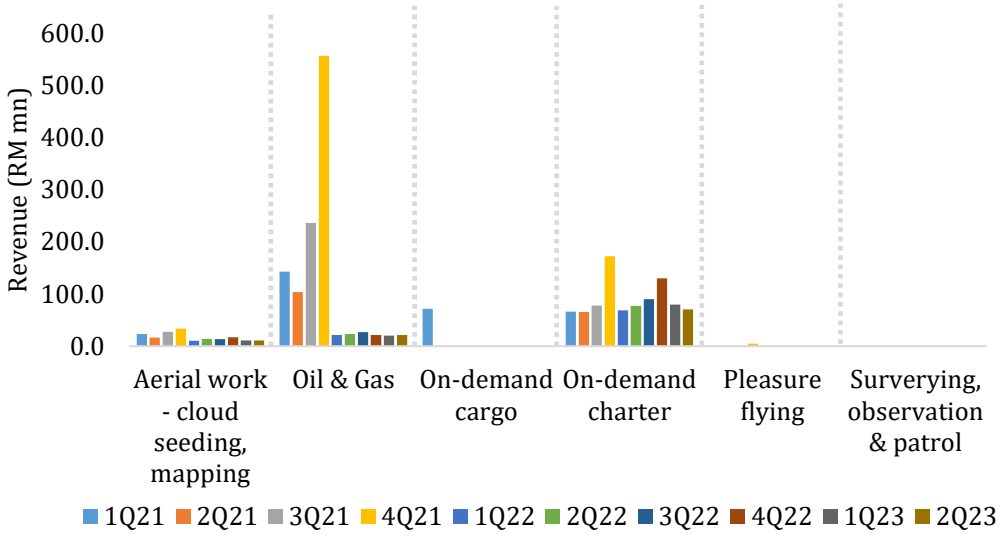
Figure 29: Revenue and Operating Profit Margin of ASP Holders, 2020 – 2023



Source: MAVCOM, ASP holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

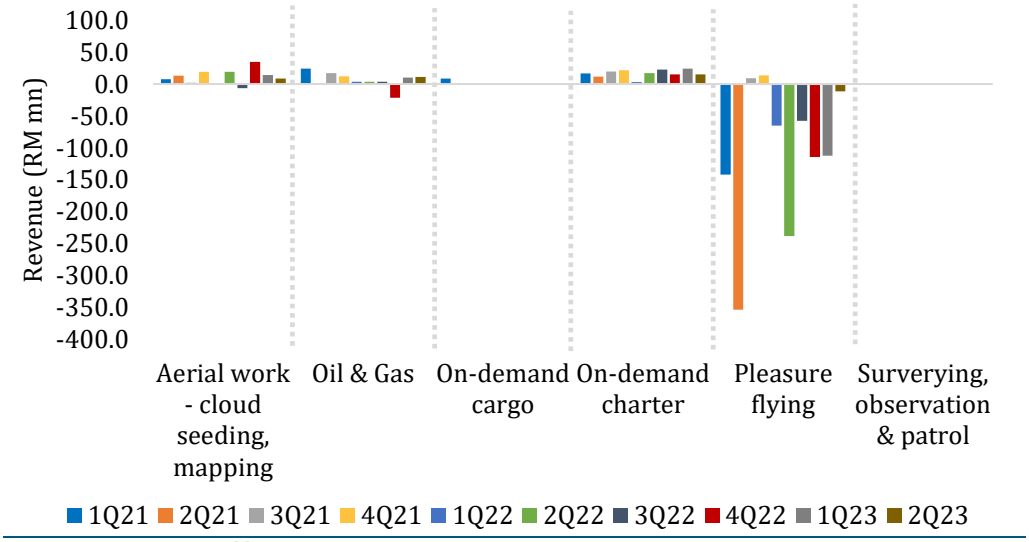
The financial performance of each sub-segment of the non-scheduled services segment is illustrated in Figures 30 and 31. **Since 2022, the on-demand charter sub-segment has overtaken the oil and gas sub-segment as the strongest-performing sub-segment**, recording revenue of RM129.8 million in 4Q22. This takeover was largely due to the sharp decline in the revenue of Weststar Aviation Services Sdn. Bhd. from 2022 onwards. **All sub-segments recorded operating profit margins in 1H23, except for the pleasure flying sub-segment.** As of 2Q23, no ASP holders are operating in the on-demand cargo and the surveying, observation, and patrol sub-segments.

Figure 30: Revenue of ASP Holders by Sub-Segment, 2021 – 2023



Source: MAVCOM, ASP Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

Figure 31: Operating Profit Margin of ASP Holders by Sub-Segment, 2021 – 2023



Source: MAVCOM, ASP Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

Ground Handling Services Segment

Ground Handling Segment Market Concentration

As at 2Q23, there were 22 Ground Handling Licence (GHL) holders operating in three ground handling services sub-segments, namely catering, general ground handling, and refuelling. As of 1H23, **the general ground handling sub-segment recorded the highest revenue of RM1,203.5mn**. Among the sub-segments, refuelling faced the most concentrated market with an HHI of 0.7120 in 1H23. The HHI for catering declined from 0.9781 to 0.5002 due to the entrance of a new player in 2023 (see Table 13).

Table 13: Market Structure of the GHL Segment, 1H23

Sub-segment	No. of Licence Holders	HHI	Revenue (RM mn)	Operating Profit Margin (%)
Catering	2	0.5002	110.2	15.7
General Ground Handling[14]	17	0.5616	1,203.5	12.1
Refuelling[15]	3	0.7120	14.1	-3.7
TOTAL	**22**		**1,327.8**	**0.2**

Source: MAVCOM, GHL Holders

The general ground handling sub-segment includes nine types of services. A general ground handler may provide multiple services listed in Table 14.

Table 14: Types of General Ground Handling Services

No.	Ground Handling Services
1	Ground administration and supervision
2	Passenger handling
3	Freight and mail handling
4	Aircraft services
5	Aircraft maintenance
6	Flight operations and crew administration
7	Surface transport
8	Baggage handling
9	Ramp handling

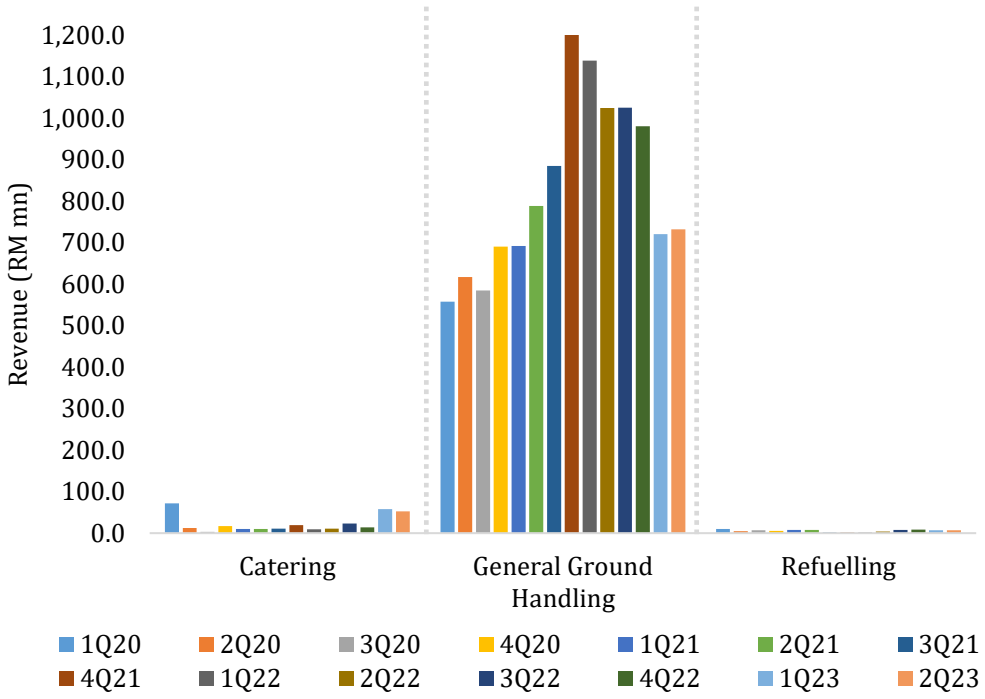
Source: MAVCOM

[14] As at 2Q23, there are 17 GHL holders in the general ground handling sub-segment.
[15] The calculation of the refuelling sub-segment excludes Petronas, Petron, Shell, and Shell Timur.

Revenue for General Ground Handling in 2Q23

In total, the revenue of all GHL holders was recorded at RM791.7mn in 2Q23, a slight increase of 0.9% from the previous quarter (1Q23: RM785.0mn) (see Figure 32). However, when compared on an annual basis, it was a decline of 23.8% YoY (2Q22: RM1,039.2mn).

Figure 32: Revenue by Ground Handling Sub-Segments, 2020 – 2023

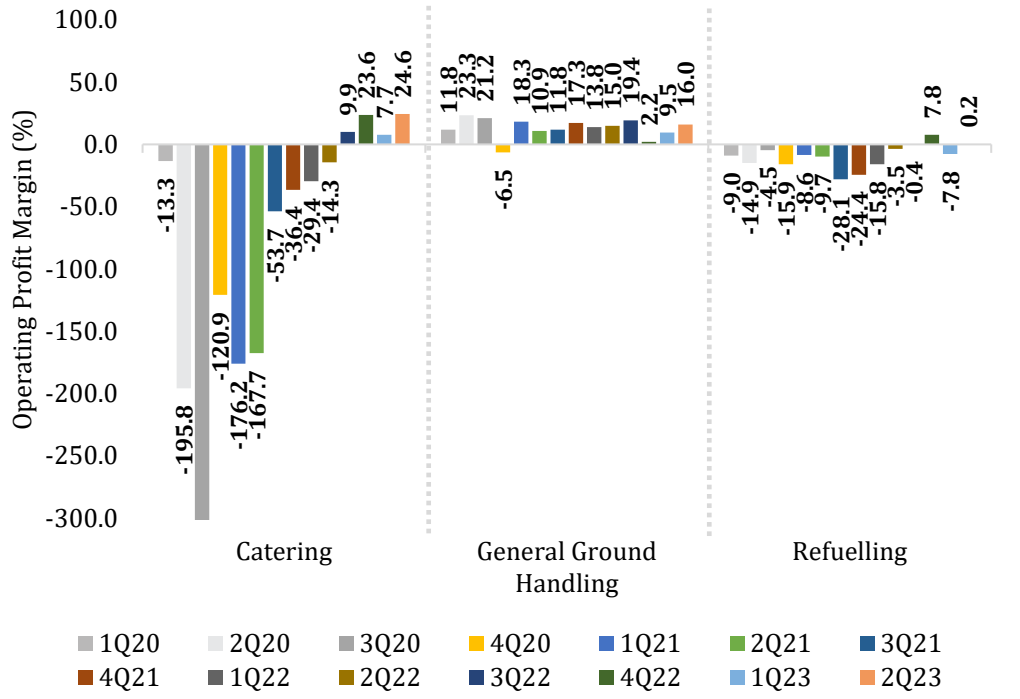


Source: MAVCOM, GHL Holders
Note: Data submitted are available up to 2Q23 only and has yet to be audited.

General Ground Handling Operating Profit Performance in 2Q23

All sub-segments reported a positive operating margin in 2Q23, where **the catering sub-segment recorded the highest margin among all at 24.6%**, followed by general ground handling (16.0%) and refuelling (0.2%) (see Figure 33). On a QoQ basis, all sub-segments saw an increase in the profit margin.

Figure 33: Operating Profit Margin by Ground Handling Sub-Segments, 2020 – 2023



Source: MAVCOM, GHL Holders

Note: Data submitted are available up to 2Q23 only and has yet to be audited.

SECTION 4: INTERNATIONAL HUB PASSENGER CONNECTIVITY IN ASEAN 2023

Introduction

Strong hub airports are vital for a country's economy, connecting businesses and markets, and making long-haul travel more accessible to consumers. Hub airports facilitate the transfer of passengers between different destinations, allowing airlines to operate more efficiently and offer a wider range of routes and destinations.

Hub connectivity is a measure of how well an airport serves as a central hub for connecting various world regions.[16] Airports within each country have different characteristics and roles, such as size, location, function, and connectivity. Some airports serve as hubs for international flights, while others focus on the domestic market. Additionally, certain airports may have better connectivity and more extensive flight networks compared to others.

There are several indicators that can provide insights into the connectivity of ASEAN hub airports. This section will focus specifically on five main indicators which include:

- Number of Hub Passengers[17]
- Number of Connecting Flights
- Number of Direct Destinations
- Number of Airlines
- Average Connecting Times

Only the international segment is considered in this section as countries such as Singapore and Brunei do not have any domestic market. These indicators will also be examined at an airport level rather than at country level, with the busiest airport from each ASEAN country chosen for the analysis. This allows the connectivity performance of hub airports to be benchmarked against regional peers, enabling stakeholders to identify gaps and weaknesses, as well as develop and implement actionable strategies to enhance hub connectivity.

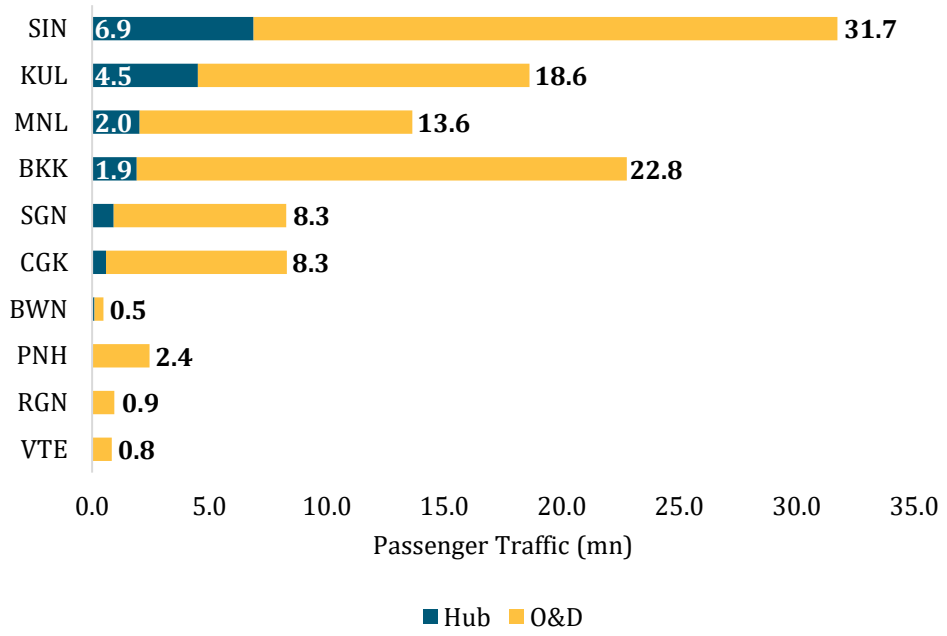
[16] Adapted from Boonekamp, T., & Burghouwt, G. (2017). Measuring connectivity in the air freight industry. Journal of Air Transport Management, 61, 81-94.
[17] Hub passengers include both transfer and transit passengers.

Number of Hub Passengers

The number of transfer or connecting passengers indicates the volume of hub traffic, which is a direct measure of an airport's hub connectivity.[18] A higher number of transfer passengers signals a more connected hub, as it demonstrates the airport's ability to accommodate connecting flights and passengers. Airports with a larger number of transfer passengers are more likely to attract airlines, resulting in increased connectivity options for passengers. The number of transfer passengers can also serve as a gauge of an airport's network efficiency. If passengers opt to transfer through a specific airport, it suggests that the airport offers efficient and convenient connections.

Figure 34 illustrates the breakdown of international passengers at the busiest airports of each ASEAN Member State by point of origin and point of destination (O&D) and connecting (hub) passengers.

Figure 34: Breakdown of International O&D and Hub Passengers by Airports in ASEAN, January – September 2023



Source: MAVCOM, AirportIS

KUL had the third-largest total international passenger traffic and the second-highest number of international hub traffic, with 4.5mn international hub passengers. Meanwhile, SIN had both the highest total number of international passengers, as well as the highest number of international hub passengers compared to other airports in ASEAN.

[18] Burghouwt, G., & Redondi, R. (2013). Connectivity in air transport networks: an assessment of models and applications. Journal of Transport Economics and Policy (JTEP), 47(1), 35-53.

Both KUL and SIN had relatively high proportions of international hub passengers at 24% and 22% of total international passengers, respectively. In comparison, the proportion of international hub traffic for MNL, SGN, and CGK were 15%, 11%, and 7%, respectively.

BKK had the second highest total number of international passengers. However, despite BKK's high total international passenger traffic, it had the fourth-most international hub passenger traffic in ASEAN. This shows that BKK's high total international passenger traffic was mainly attributed to its high volume of O&D passengers, as its international hub traffic only contributed 8% to the the total number of international passengers. This may be due to BKK being a popular destination for passengers travelling to Thailand, instead of operating as a hub for passengers to travel to elsewhere.

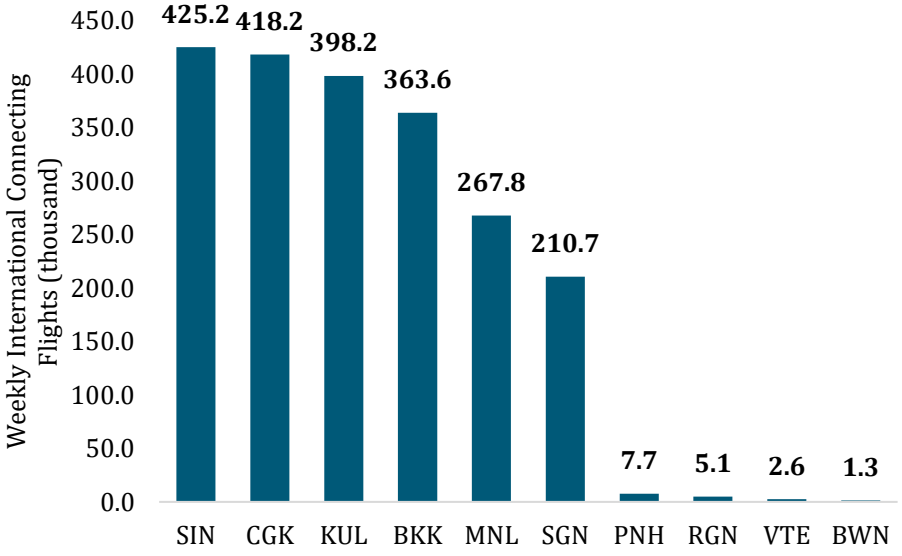
The difference in proportions of international hub traffic compared to the total international passenger traffic for each of the airports in ASEAN may be influenced by geographical location, airport infrastructure, the country's attractiveness as a tourism destination, as well as all the other indicators that will be discussed in this section.

Number of Connecting Flights

The higher the number of connecting flights facilitated by an airport, the greater the ability of an airport to serve as a hub, with more outbound connections available for every inbound flight into an airport. The number of connecting flights in a hub is dependent on several factors such as the number of flights to secondary airports in a country, the availability of slots, the minimum connecting time, and the runway capacity of the hub.

Figure 35 shows the number of connecting flights by selected hub airports in ASEAN. **KUL ranked third in ASEAN behind SIN and CGK with 398,192 connecting flights per week.** Meanwhile, SIN and CGK recorded 425,219 and 418,219 connecting flights per week, respectively.

Figure 35: Number of Weekly International Connecting Flights, 2023



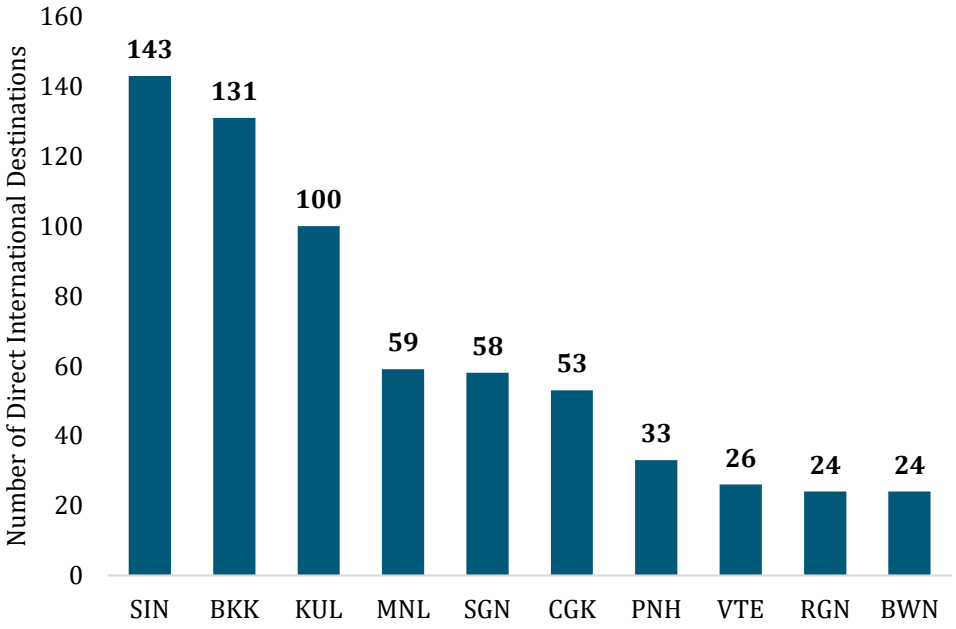
Source: MAVCOM, AirportIS
Note: Connecting flights between 1–7 January 2023 is used to represent the year 2023.

It is important to note that while the number of connecting flights can provide some insight into an airport's role as a connecting point, it does not capture the full picture. For instance, despite having the second-highest number of connecting flights, CGK ranks sixth in terms of international hub traffic volume as CGK is connected to numerous smaller domestic airports, which generate less traffic compared to flights to larger international destinations. Additionally, an airport may have a high number of connecting flights but only fly to limited number of destinations.

Number of Direct Destinations

KUL is the third highest in ASEAN in terms of number of direct destinations with 100 direct international destinations (see Figure 36). SIN has the highest number of direct destinations with 143 destinations followed by BKK with 131 destinations. The number of direct destinations served by an airport is another measure of hub connectivity. The more direct destinations that an airport serves, the wider the range of destinations that passengers can reach without having to transfer at another airport[19].

Figure 36: Number of Direct International Destinations Served by Airports in ASEAN, January – September 2023

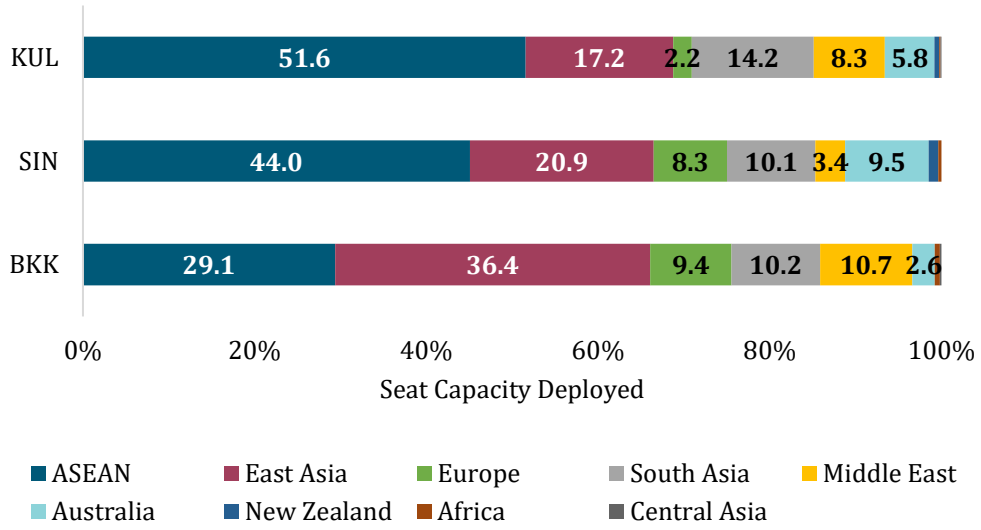


Source: MAVCOM, AirportIS

Although the number of direct destinations is important, the destinations and regions connected to the airports would ultimately determine the role of a hub. For example, SIN and BKK would be the hubs for travel from ASEAN to Europe as there are significantly larger proportion of direct capacity deployed from both airports to Europe (see Figure 37). For KUL, most of the seats are deployed to ASEAN and Northeast Asia, which makes KUL a short- to medium-haul hub in ASEAN. In order for KUL to better compete with SIN and BKK in the European region, the airport operator needs to attract more airlines that could deploy more seat capacity between KUL and Europe.

[19] An exception is that a small airport may have a large number of airlines flying to and from it if it is a popular tourist destination.

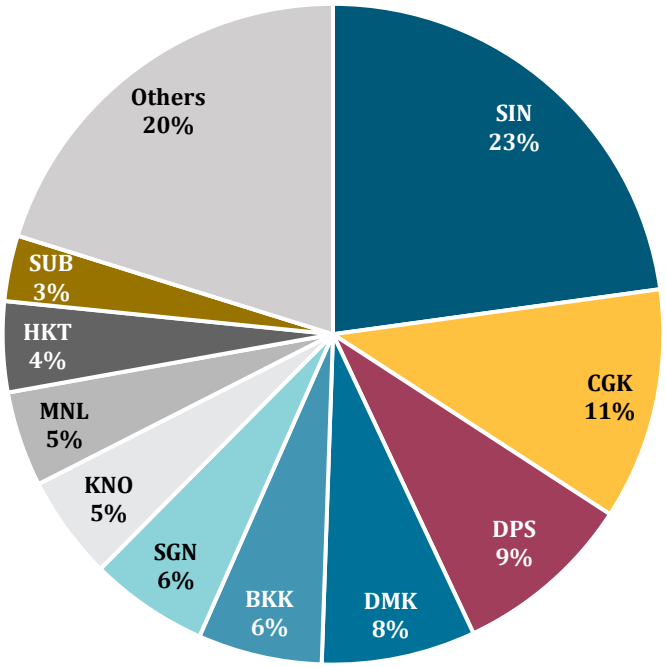
Figure 37: Seat Capacity Deployed by Region, January – September 2023



Source: MAVCOM, AirportIS

Out of all the seat capacity deployed from KUL, 51.6% of the total seat capacity were deployed to ASEAN destinations. SIN, CGK and DPS were the top three ASEAN destinations with 23.0%, 11.0%, and 9.0% of the total ASEAN seat capacity, respectively (see Figure 38).

Figure 38: Seat Capacity Deployed from KUL to ASEAN destinations, January – September 2023

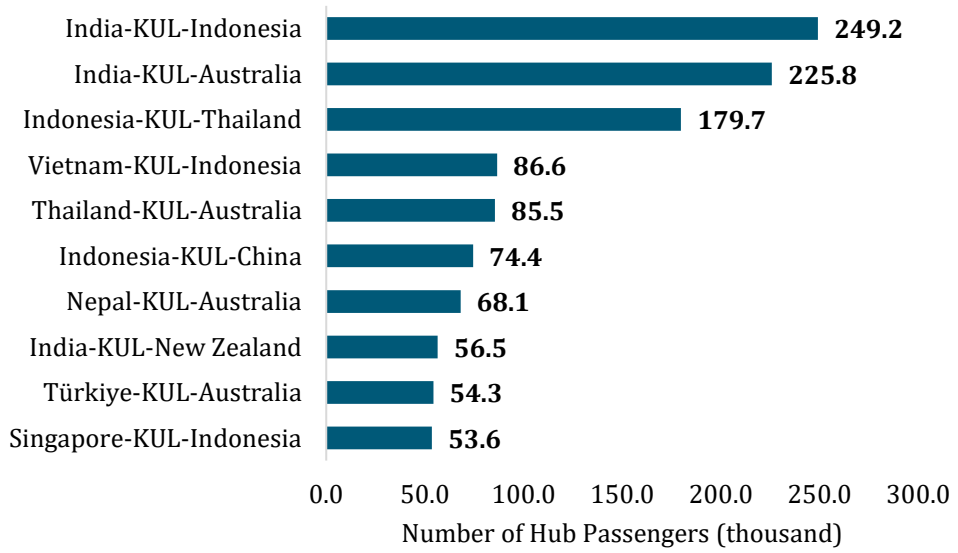


Source: MAVCOM, AirportIS

International Hub Passenger Traffic Flows

Due to the geographic proximity of KUL and SIN, there is competition for transfer passengers between the two airports, as passengers can choose either KUL or SIN as their transfer point particularly for the ASEAN, South Asia, Northeast Asia, and Australasia regions. Figure 39 shows that **KUL's largest international-to-international passenger traffic flows were intercontinental travel between Asia to Australasia, as well as intra-Asia travel** for the period between January and September 2023. The top three largest international hub passenger traffic movements were between India and Indonesia, between India and Australia, and between Indonesia and Thailand via KUL.

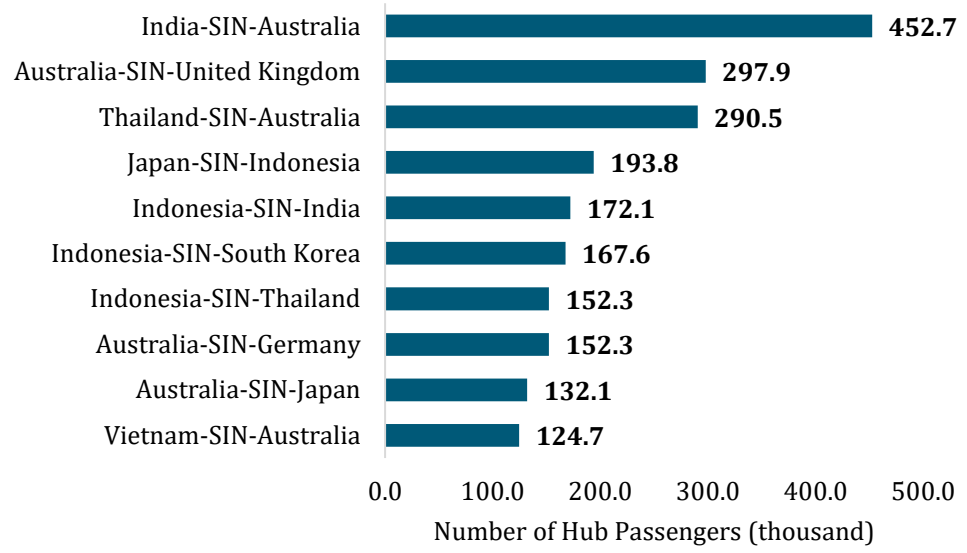
Figure 39: Top 10 International Hub Passenger Traffic Movement for KUL, January – September 2023



Source: MAVCOM, AirportIS

In comparison, **SIN's hub traffic flow shows that the top international-to-international passenger flows were intercontinental travel between Asia to Australia, between the United Kingdom and Australia, as well as intra-Asia travel** (see Figure 40). The main carriers for hub passenger traffic in SIN were Singapore Airlines and Scoot. It can be seen that while both KUL and SIN compete for transfer passengers, SIN's hub traffic flow is predominantly travel between Asian countries and Australia, whereas KUL's hub traffic flow is mainly intra-Asia travel.

Figure 40: Top 10 International Hub Passenger Traffic Movement for SIN, January – September 2023

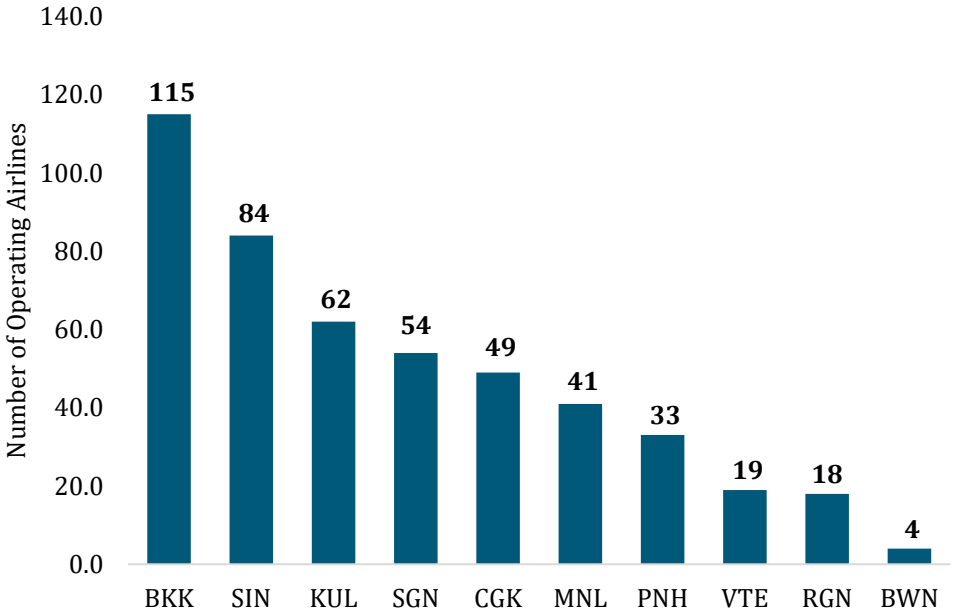


Source: MAVCOM, AirportIS

Number of Airlines

Figure 41 compares the number of airlines operating flights to and from ASEAN hub airports in 9M23. **BKK is the top-ranked destination in ASEAN, with 115 airlines operating at BKK.** It is a popular destination for airlines with a huge market for leisure travel, as Thailand is the most popular destination for international tourism in ASEAN with 39.9mn international tourists in 2019.[20] BKK, therefore, serves as an important gateway into the country. SIN and KUL have the second and third highest number of operating airlines with 84 and 62 airlines, respectively. BWN has the lowest number of operating airlines with only four airlines.

Figure 41: Number of Operating Airlines by Airport, January – September 2023



Source: MAVCOM, AirportIS

Many airlines not currently operating at KUL have codeshare agreements in place with some of the 62 airlines operating to and from KUL. **In 9M23, there were 36 additional airlines which had codeshares on inbound and outbound flights at KUL instead of operating directly at KUL.** These codeshare partners are mainly airlines from Europe and the Americas. For example, airlines from Canada and the US only operate to KUL via codeshares instead of direct flights, and there are only direct flights to three destinations in Europe: AMS, IST, and LHR.

Out of the 36 codeshare airlines, 21 are affiliated with an airline alliance. Star Alliance had the highest representation with 10 airlines, as they opt to fly directly into BKK or SIN instead, the hubs of Thai Airways and Singapore Airlines, who are both Star Alliance carriers. Eight codeshare airlines are oneworld Alliance members and affiliates while three belong to the SkyTeam Alliance.

[20] UNWTO

The number of airlines operating only as codeshare airlines at SIN and DXB, which are both large hub airports, is lower than KUL, at 32 and 23 codeshare airlines, respectively. Instead, both airports have a larger number of airlines operating directly than KUL. This indicates that **there is still room for KUL to catch up on other prominent hub airports in terms of attracting airlines around the world to operate direct routes instead of only marketing flights by codeshare partners**.

Table 15 shows the breakdown of codeshare airlines on flights at KUL, SIN, and DXB by region of origin.

Table 15: Codeshare Airlines at KUL, SIN, and DXB, January – September 2023

Origin Region	Number of Codeshare Airlines		
	KUL	SIN	DXB
Europe	12	12	9
Americas	9	9	2
Asia	7	3	5
Australasia	4	1	2
Middle East	3	4	0
Africa	1	3	5
Total	**36**	**32**	**23**

Source: MAVCOM, AirportIS

The number of airlines operating at an airport is a direct indicator of its attractiveness as a hub. However, the strength of a hub airport also depends on the network reach and strength of airlines operating at the airport. FSCs play a crucial role in providing network connectivity by linking hub airports to other hub airports, thereby increasing the number of connections to onward destinations that do not have direct connections available. FSCs also leverage alliances and codeshare agreements to efficiently connect passengers to more destinations than possible through their individual capacity and resources.

To improve the connectivity of a hub airport, it is crucial to attract airlines with large networks to operate to and from it. Concurrently, airport operators must also plan for peak hour congestion to maintain the airport's attractiveness as a hub, even when operating at a higher capacity. This involves ensuring sufficient capacity for attractive slots, ancillary and ground handling services to maintain good connecting times between flights, and a smooth passenger experience, even when the airport terminal utilisation is near its capacity limit.

Average Connecting Times

The average connecting time is a key indicator of an airport's hub connectivity, as it has a direct impact on passengers' overall travel time and experience. A shorter average connecting time indicates that the airport is able to efficiently move passengers from one flight to another. It also provides an indication of how long passengers can expect to wait between flights, which can be a major factor in their travel decisions.

Besides the frequency of connecting flights and the airport capacity utilisation, the average connecting time at an airport is influenced by the minimum connecting times (MCTs) at that airport. The MCT is the shortest time required to transfer passengers and baggage from an arriving to a departing flight. It is normally set by the airport depending on how efficient its operations are in transferring passengers.

Table 16 provides an overview of the MCTs for various connection types at different ASEAN hubs, along with a comparison to major hubs such as DOH and DXB. PNH and RGN have some of the shortest MCTs for all connection types at 40 to 45 minutes. **KUL has a 60-minute MCT for all types of connections**, lower than BKK at 70 minutes. Overall, all ASEAN hubs have comparable MCTs to DOH and DXB. DOH has a 60-minute MCT for international to international flights, whereas DXB has a 60-minute MCT for domestic to international and vice versa, and a 75-minute MCT for international to international flights.

Table 16: Minimum Connecting Time by Airport, 2023

Airport	Minimum Connecting Time (minutes)		
	Domestic to International	International to Domestic	International to International
PNH	40	40	40
RGN	45	45	45
BWN	60	60	45
KUL	**60**	**60**	**60**
DOH	-	-	60
VTE	60	60	60
SGN	60	60	60
DXB	60	60	75
BKK	75	75	75
SIN	-	-	60 – 90
MNL	45 – 120	60 – 120	60
CGK	60 – 120	120	60 – 120

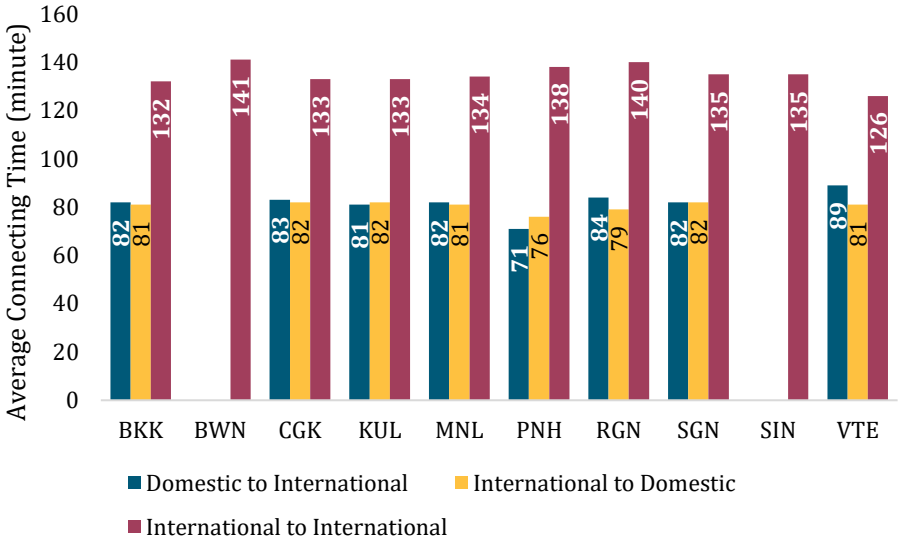
Source: MAVCOM, OAG Connections Analyser

Notes: 1) The MCT for KUL is only for flights connecting within Terminal 1

2) For airports where the MCTs vary by terminal, the figures are presented in ranges

Figure 42 shows the average connecting time by airports in ASEAN. **Overall, all airports in ASEAN have similar average connecting times.** For example, KUL has similar average connecting times to BKK for all type of connections, despite KUL having lower MCTs. Additionally, PNH has the lowest average connecting times for domestic to international and international to domestic among ASEAN hubs at 71 and 76 minutes, respectively. However, PNH has a 138-minute average connecting time for international to international, among the highest in ASEAN despite having the lowest MCT.

Figure 42: Average Connecting Time by Airport, 2023



Source: MAVCOM, OAG Connections Analyser
Note: The average wait time for connecting flights between 1–7 January 2023 is used to represent the year 2023.

Although the average connecting time can offer valuable insights into an airport's operational efficiency in facilitating connections, a longer average connecting time at an airport does not necessarily equate to a negative experience for passengers. For example, some passengers may prefer a longer connecting time to take a break during a long journey. Exceptional airport facilities, including diverse dining options, shopping outlets, lounges, and entertainment amenities, can significantly enhance the passenger experience and alleviate the discomfort of waiting. While it is important to assess the quality of facilities and amenities when evaluating an airport's effectiveness as a hub, comprehensively measuring these aspects across different airports remains a challenge.

Conclusion

The analysis showed that no single airport excelled across all hub connectivity indicators. **Each airport has its strengths and weaknesses, facing different trade-offs and challenges in improving their performance as hubs.** For example, reducing the average connecting time may increase the number of connecting flights, but passengers may run a higher risk of missed connections. Increasing hub passengers may require airlines to adjust flight schedules to optimise connecting opportunities, which could result in fewer available connecting flights as airlines prioritize scheduling for higher passenger loads. Having a large number of operating airlines may improve connectivity and choice, but it may also create issues such as slot allocation, congestion, and coordination. Therefore, **airports need to find the optimal balance that ensures efficient operations, a positive passenger experience, and competitive hub connectivity while considering the limitations and resources available**.

MAVCOM'S Long-Term Recommendations for the Civil Aviation Industry in Malaysia 2021 – 2030 highlighted that improved hub connectivity can be achieved through optimal airport infrastructure that not only meets the needs of both passengers and airlines but is also financially sustainable. Airlines prefer airports that offer efficient operations and high-quality services, as these factors affect their efficiency, pricing, and network. Since developing and operating airports require significant investment, it is important for airports to achieve optimal returns compared to their funding costs.[21]

[21] MAVCOM'S Long-Term Recommendations for the Civil Aviation Industry in Malaysia 2021 – 2030, https://www.mavcom.my/wp-content/uploads/2020/02/200210-MAVCOM%E2%80%99s-Long-Term-Recommendations-for-the-Civil-Aviation-Industry-in-Malaysia-2021%E2%80%93-2030.pdf (12 February 2020).

APPENDIX A: DATA TABLES

Table A1: Malaysia's Quarterly GDP Growth, 2020 – 2023

Year	YoY Growth (%)
1Q20	0.7
2Q20	-17.2
3Q20	-2.7
4Q20	-3.4
1Q21	-0.5
2Q21	16.2
3Q21	-4.2
4Q21	3.6
1Q22	4.8
2Q22	8.8
3Q22	14.1
4Q22	7.1
1Q23	5.6
2Q23	2.9
3Q23	3.3

Source: DOS

Table A2: Malaysia's External Trade, 2020 – 2023

Quarter	Total Export (RM bn)	Total Import (RM bn)	Export YoY Growth (%)	Import YoY Growth (%)
1Q20	238.7	201.7	-0.4	1.3
2Q20	210.3	182.7	-15.1	-15.1
3Q20	260.6	200.3	4.4	-6.3
4Q20	271.4	211.6	5.1	-4.4
1Q21	282.2	223.5	18.2	10.8
2Q21	303.3	247.0	44.2	35.2
3Q21	303.7	242.5	16.5	21.1
4Q21	350.5	274.3	29.1	29.6
1Q22	345.0	279.9	22.3	25.2
2Q22	394.2	336.1	30.0	36.1
3Q22	419.6	355.1	38.2	46.4
4Q22	393.0	325.1	12.1	18.5
1Q23	354.6	290.2	2.8	3.7
2Q23	348.7	294.8	-11.6	-12.3
3Q23	356.3	297.3	-15.1	-16.3

Source: DOS

Table A3: Oil, Jet Fuel, and Exchange Rate Trends, 2020 – 2023

Quarter	Crude Oil (USD/bbl)	Jet Fuel (USD/bbl)	RM/USD
1Q20	51	62	4.18
2Q20	33	32	4.32
3Q20	43	43	4.20
4Q20	44	49	4.10
1Q21	61	66	4.06
2Q21	69	74	4.15
3Q21	73	80	4.20
4Q21	80	92	4.18
1Q22	95	121	4.19
2Q22	114	167	4.41
3Q22	101	141	4.64
4Q22	89	137	4.40
1Q23	81	126	4.41
2Q23	78	95	4.53
3Q23	87	120	4.63

Source: EIA, BNM

Table A4: Malaysia's Annual GDP Growth, 2010 – 2024F

Year	Malaysia 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
2019	4.3
2020	-5.6
2021	3.1
2022	8.7
2023E	4.0
2024F	4.0 – 5.0

Source: BNM

Table A5: Malaysia's Tourist Arrivals, 2020 – 2023

Quarter	Total Tourist Arrivals (mn)	Total Tourist Arrivals YoY Growth (%)
1Q20	4.20	-36.8
2Q20	0.02	-99.7
3Q20	0.05	-99.3
4Q20	0.03	-99.4
1Q21	0.03	-99.4
2Q21	0.03	29.8
3Q21	0.02	-51.2
4Q21	0.06	84.4
1Q22	0.10	288.2
2Q22	2.03	7,921.9
3Q22	3.42	15,016.2
4Q22	4.51	7,250.6
1Q23	4.39	4,374.7
2Q23	4.77	134.6

Source: MAVCOM, Tourism Malaysia

Table A6: Malaysia's Quarterly Passenger Traffic, 2020 – 2023

Quarter	Passenger Traffic (mn)	YoY Growth (%)
1Q20	19.1	-27.5
2Q20	0.8	-97.0
3Q20	4.6	-83.3
4Q20	2.1	-92.5
1Q21	1.7	-91.2
2Q21	1.3	62.0
3Q21	1.0	-78.2
4Q21	7.0	228.2
1Q22	8.7	415.6
2Q22	12.4	853.8
3Q22	15.6	1,445.1
4Q22	18.1	158.7
1Q23	19.4	124.2
2Q23	20.9	68.6
3Q23	22.5	44.8

Source: MAVCOM, AOL Holders

Table A7: Malaysia's Passenger Traffic by Region, 2020 – 2023

Quarter	Passenger Traffic (mn)		
	Domestic	ASEAN	Non-ASEAN International
1Q20	10.2	4.5	4.5
2Q20	0.7	0.0	0.1
3Q20	4.4	0.1	0.2
4Q20	1.9	0.1	0.2
1Q21	1.4	0.1	0.2
2Q21	1.0	0.1	0.1
3Q21	0.8	0.9	0.2
4Q21	6.1	0.2	0.3

Quarter	Passenger Traffic (mn)		
	Domestic	ASEAN	Non-ASEAN International
1Q22	7.7	0.4	0.6
2Q22	9.4	1.8	1.2
3Q22	10.2	3.3	2.1
4Q22	10.8	4.3	2.9
1Q23	10.9	4.7	3.8
2Q23	11.8	5.2	4.0
3Q23	12.0	5.5	4.9

Source: MAVCOM, AOL Holders

Table A8: Malaysia's Top Domestic Routes in Terms of Passengers, January – September 2019 and 2023

Route	Passenger Traffic (mn)	
	9M19	9M23
KUL–BKI	1.7	1.7
KUL–KCH	1.4	1.5
KUL–LGK	1.1	1.0
KUL–PEN	1.5	1.0
KUL–KBR	0.7	0.7

Source: MAVCOM, AirportIS

Table A910: Malaysia's Top ASEAN International Routes in Terms of Passengers, January – September 2019 and 2023

Route	Passenger Traffic (mn)	
	9M19	9M23
KUL–SIN	2.5	2.2
KUL–CGK	1.8	1.2
PEN–SIN	1.1	0.8
KUL–DMK	0.8	0.8
KUL–DPS	0.9	0.8

Source: MAVCOM, AirportIS

Table A10: Malaysia's Top Non-ASEAN International Routes in Terms of Passengers, January – September 2019 and 2023

Route	Passenger Traffic (mn)	
	9M19	9M23
KUL–DAC	0.5	0.6
KUL–TPE	0.8	0.6
PEN–JED	0.4	0.5
KUL–DXB	0.6	0.5
KUL–HKG	1.1	0.4

Source: MAVCOM, AirportIS

Table A11: Air Connectivity Indices of ASEAN Countries, 2018 – 9M23

Country	2018	2019	2020	2021	2022	9M23
Thailand	166.5	165.4	12.3	35.7	104.6	129.2
Singapore	114.6	116.9	5.1	36.3	89.4	102.1
Vietnam	106.3	95.5	9.1	19.9	75.9	97.1
Indonesia	94.5	105.7	4.7	13.0	66.8	87.4
Malaysia	85.5	96.3	4.7	16.5	61.0	79.7
Philippines	82.7	95.2	7.4	26.8	52.1	76.8
Cambodia	22.9	25.0	1.0	3.0	12.1	13.9
Myanmar	15.2	13.8	0.7	1.3	5.9	6.6
Lao PDR	6.2	6.5	0.7	0.7	3.6	3.4
Brunei	5.2	5.5	0.4	0.7	3.1	3.2

Source: MAVCOM

Table A12: Air Connectivity Indices of Major Airports in ASEAN Countries, 2018 – 9M23

Airport	2018	2019	2020	2021	2022	9M23
SIN	114.6	116.9	5.1	36.3	89.4	102.1
BKK	109.9	109.2	8.4	27.5	76.7	89.1
MNL	61.1	66.1	5.2	21.1	52.4	57.0
KUL	71.8	73.2	3.6	14.7	47.5	59.9
SGN	38.1	39.7	3.9	8.8	35.4	41.2
CGK	50.1	48.1	4.2	12.4	31.1	40.3
PNH	14.7	16.6	0.6	2.0	10.2	11.9
RGN	13.9	12.9	0.7	1.3	5.6	6.1
BWN	5.2	5.5	0.4	0.7	3.1	3.0
VTE	4.7	5.0	0.5	0.7	2.8	2.6

Source: MAVCOM

Table A13: Total Scheduled Seats from ASEAN Countries, 2018 – 2023

Country	Scheduled Seats (mn)					
	2018	2019	2020	2021	2022	9M23
Brunei	0.1	0.1	0.0	0.0	0.1	0.1
Lao PDR	0.2	0.2	0.0	0.0	0.1	0.1
Myanmar	0.3	0.4	0.0	0.0	0.1	0.1
Cambodia	0.7	0.7	0.0	0.0	0.3	0.3
Philippines	1.7	1.9	0.2	0.5	1.2	1.4
Indonesia	2.3	2.3	0.1	0.2	1.4	1.8
Vietnam	1.9	2.2	0.2	0.3	1.4	2.0
Malaysia	3.1	3.2	0.1	0.4	1.8	2.3
Thailand	4.9	5.0	0.3	0.7	2.6	3.2
Singapore	3.9	4.0	0.1	1.0	2.7	3.2

Source: MAVCOM, AirportIS

Table A14: Number of International Destinations for ASEAN Countries, January – September 2023

Country	Number of Destinations
Singapore	137
Thailand	130
Malaysia	98
Vietnam	73
Indonesia	58
Philippines	56
Cambodia	30
Myanmar	23
Brunei	19
Lao PDR	16

Source: MAVCOM, AirportIS

Table A15: Malaysia's International Seat Capacity According to Region, 2023

Year	International Seat Capacity (%)
ASEAN	55.3
East Asia	18.7
South Asia	11.6
West Asia	7.1
South Pacific	5.2
Europe	1.8
Africa and Central Asia	0.2

Source: MAVCOM, AirportIS

Table A16: Total FTK in Malaysia, 2020 – 2023

Quarter	Total FTK (mn)	YoY Growth (%)
1Q20	4,688	4.9
2Q20	2,664	-45.5
3Q20	3,970	-22.6
4Q20	4,472	-15.2
1Q21	4,842	3.3
2Q21	4,917	84.6
3Q21	4,908	23.6
4Q21	5,981	33.7
1Q22	5,242	8.3
2Q22	5,494	11.7
3Q22	5,567	13.4
4Q22	5,471	-8.5
1Q23	4,468	-14.8
2Q23	4,441	-19.1
3Q23	4,721	-15.3

Source: MAVCOM, CargoIS

Table A17: Inbound and Outbound FTK in Malaysia, 2019 – 2023

Quarter	Inbound (mn)	Outbound (mn)	Within (mn)
1Q19	2,993.2	1,916.8	18.5
2Q19	3,066.7	1,806.1	18.9
3Q19	3,247.4	1,862.6	19.6
4Q19	3,050.5	2,203.1	18.8
1Q20	2,715.8	1,954.9	16.8
2Q20	1,427.6	1,221.0	15.3
3Q20	1,896.0	2,063.6	10.8
4Q20	2,156.6	2,300.3	15.3
1Q21	2,400.4	2,428.1	13.1
2Q21	2,558.7	2,347.5	10.4
3Q21	2,480.2	2,417.6	10.1
4Q21	2,897.2	3,074.4	9.1
1Q22	2,821.6	2,406.0	14.3
2Q22	3,039.9	2,439.2	15.0
3Q22	3,141.4	2,412.9	12.4
4Q22	3,019.7	2,436.0	15.6
1Q23	2,487.4	1,962.8	18.1
2Q23	2,488.9	1,935.1	16.9
3Q23	2,748.4	1,957.4	14.9

Source: MAVCOM, CargoIS

Table A18: Recovery of Air Cargo Capacity of Malaysian Carriers as a Percentage of 2019 Levels, 2021 – 2023

Year	Recovery of 2019 Levels (%)
1Q21	31.1
2Q21	6.3
3Q21	5.9
4Q21	13.3
1Q22	23.6
2Q22	33.0
3Q22	42.1
4Q22	60.6
1Q23	75.9
2Q23	66.4
3Q23	74.2

Source: MAVCOM, CAPA

Table A19: Air Cargo Rates on Major Trade Lanes, 2019 – 2023

Quarter	USD/kg				
	Singapore – Southeast Asia	Hong Kong – Southeast Asia	London – Southeast Asia	Chicago – Southeast Asia	Frankfurt – Southeast Asia
1Q19	1.0	1.1	1.3	1.5	1.5
2Q19	0.9	1.2	1.2	1.4	1.3
3Q19	0.9	1.1	1.1	1.5	1.2
4Q19	0.9	1.1	1.1	1.4	1.1
1Q20	1.1	1.3	1.5	1.7	1.6

Quarter	USD/kg				
	Singapore – Southeast Asia	Hong Kong – Southeast Asia	London – Southeast Asia	Chicago – Southeast Asia	Frankfurt – Southeast Asia
2Q20	1.9	1.6	1.7	1.9	1.6
3Q20	1.8	1.4	1.4	1.3	1.5
4Q20	1.6	1.7	1.5	1.4	1.4
1Q21	1.9	1.8	1.8	1.6	1.7
2Q21	1.9	1.8	1.8	1.6	1.6
3Q21	1.8	2.1	2.0	1.9	1.8
4Q21	1.8	2.5	2.5	2.6	2.6
1Q22	2.2	2.3	2.6	2.2	2.5
2Q22	2.5	2.3	2.9	2.6	3.0
3Q22	2.6	2.3	2.3	2.5	2.2
4Q22	2.3	2.1	2.2	2.1	1.9
1Q23	2.2	1.9	1.9	2.2	1.8
2Q23	1.8	1.8	1.7	1.5	1.4
3Q23	1.5	1.6	1.3	1.3	1.2

Source: MAVCOM, Baltic Exchange

Table A20: Total Passenger Traffic Forecast vs. 2019 by Region (%), 2021 – 2025

Total Passenger Traffic Forecast vs. 2019	2021 (%)	2022 (%)	2023 (%)	2024 (%)	2025 (%)
North America	56.0	94.0	102.0	107.0	112.0
South America	51.0	88.0	97.0	103.0	108.0
Europe	40.0	86.0	96.0	105.0	111.0
Middle East	42.0	81.0	90.0	98.0	105.0
Africa	46.0	76.0	85.0	93.0	101.0
Asia Pacific	40.0	68.0	84.0	97.0	109.0
Malaysia	10.0	39.4	65.5	84.1	96.5

Source: IATA

Table A21: Malaysia's Passenger Traffic, 2019 – 2024F

Year	Passenger Traffic (mn)	YoY Growth (%)
2019	109.3	6.6
2020	26.7	-75.6
2021	11.0	-58.9
2022	54.8	399.1
2023E	84.5 – 86.5	54 to 58
2024F	93.9 – 107.1	10 to 25

Source: MAVCOM, AOL Holders

Table A22: Malaysia's Air Cargo Traffic, 2019 – 2024F

Year	Total FTK (mn)	YoY Growth (%)
2019	20,222	-2.9
2020	15,797	-21.9
2021	20,647	30.7
2022	21,669	5.2
2023E	18,710 – 18,841	-14.1 to -13.5
2024F	19,833 – 19,971	6.0 to 6.6

Source: MAVCOM, CargoIS

Table A23: Malaysia's Passenger Market Share by Airlines, 2020 – 2023

Quarter	AirAsia	AirAsia X	Firefly	MAB	Batik Air	Others
1Q20	41.7	6.9	1.6	18.6	8.1	23.1
2Q20	19.5	1.4	14.3	29.5	16.3	19.1
3Q20	63.4	0.3	5.2	12.5	7.7	11.0
4Q20	63.0	0.7	5.2	8.0	6.7	16.4
1Q21	54.7	0.1	4.8	10.3	8.8	21.4
2Q21	33.7	0.0	6.7	15.8	15.1	28.7
3Q21	19.8	0.1	6.6	22.9	13.7	36.9
4Q21	47.7	0.1	4.9	28.5	6.4	12.4
1Q22	55.3	0.1	3.2	24.8	5.1	11.5
2Q22	44.2	0.2	5.3	23.8	5.8	20.6
3Q22	43.8	0.5	4.9	20.5	5.6	24.6
4Q22	38.8	3.1	5.2	20.3	5.3	27.4
1Q23	38.2	3.5	4.4	17.2	5.1	29.2
2Q23	39.8	3.7	3.9	16.1	6.9	29.5
3Q23	37.4	3.8	4.5	16.5	6.8	31.0

Source: MAVCOM, AirportIS

Table A24: Market Concentration Level and Load Factors, 2020 – 2023

Quarter	HHI	Load Factor (%)
1Q20	0.2228	64.1
2Q20	0.1511	20.4
3Q20	0.4474	38.8
4Q20	0.4120	35.8
1Q21	0.3326	37.3
2Q21	0.1732	33.9
3Q21	0.1233	27.5
4Q21	0.3166	47.8
1Q22	0.3602	55.3
2Q22	0.3007	60.7
3Q22	0.3001	65.8
4Q22	0.2726	64.6
1Q23	0.2674	64.0
2Q23	0.2619	66.1
3Q23	0.2504	66.1

Source: MAVCOM, AirportIS

Table A25: Market Shares of the Aerodrome Operations Segment by Revenue and Passenger Traffic, 1H23

Company	Market Share (%)	
	Revenue	Passenger Traffic
MAHB	98.2	96.3
SATSSB	1.7	3.7
TMDSB	0.1	0.0*

Source: MAVCOM, AOL Holders
*Note: *Figure is zero due to rounding*

Table A26: Breakdown of ATRs Awarded by Region, 2022 – 2023

Region	AirAsia*	AirAsia X	Firefly	MAB**	Batik Air***	Raya Airways	MASwings	My Jet Xpress	SKS Airways	MJets	MYAirline	WCA	Total
2022													
Domestic	3	8	-	2	-	1	**2**	-	4	-	12	-	32
ASEAN	13	6	2	2	6	3	-	1	-	-	-	-	33
Rest of ASIA	3	2	-	1	5	-	-	1	-	1	-	1	14
China	-	-	-	1	3	2	-	5	-	2	-	2	15
India	4	-	-	2	-	-	-	-	-	-	-	-	6
Australasia	-	7	-	1	9	-	-	-	-	-	-	-	17
Europe	-	1	-	2	-	-	-	-	-	-	-	-	3
Middle East	-	2	-	4	3	-	-	-	-	-	-	-	9
TOTAL	**23**	**26**	**2**	**15**	**26**	**6**	**2**	**7**	**4**	**3**	**12**	**3**	**100**
9M23													
Domestic	9	-	5	2	5	9	-	-	4	2	12	-	48
ASEAN	11	2	2	3	6	10	-	-	-	4	10	-	48
Rest of ASIA	9	2	2	3	9	4	-	-	-	1	-	-	30
China	7	1	-	2	9	1	-	-	-	2	-	-	20
India	3	1	-	8	4	-	-	-	-	-	-	1	17
Australasia	-	3	-	1	4	-	-	-	-	-	-	-	8
Europe	-	-	-	1	-	-	-	-	-	-	-	-	1
Middle East	-	-	-	-	3	-	-	-	-	-	-	-	3
TOTAL	**39**	**9**	**9**	**20**	**40**	**0**	**0**	**0**	**4**	**9**	**22**	**0**	**175**

Source: MAVCOM
*Note: *Including Teleport for figures in 9M23*
***Including MAB Kargo*
****Batik Air was previously known as Malindo Air*

Table A27: Malaysian Carriers' RASK and CASK Trends, 2019 – 2023

Quarter	RASK (sen)	CASK (sen)	RASK-CASK Spread (sen)
4Q19	17.3	18.8	-1.5
1Q20	15.6	20.1	-4.5
2Q20	51.1	326.7	-275.6
3Q20	21.3	52.4	-31.1
4Q20	32.0	133.0	-101.0
1Q21	42.2	77.3	-35.1
2Q21	51.8	142.3	-90.5
3Q21	69.1	186.5	-117.4
4Q21	46.9	55.3	-8.5
1Q22	24.8	52.6	-27.8
2Q22	30.9	49.1	-18.2
3Q22	27.0	36.9	-9.9
4Q22	28.1	29.8	-1.6
1Q23	25.2	34.2	-9.1
2Q23	23.0	36.3	-13.3

Source: MAVCOM, ASL Holders

Table A28: Malaysian Carriers' Revenue and Operating Profit Margin, 2020 – 2023

Quarter	Revenue (RM bn)	Operating Profit Margin (%)
1Q20	5.0	-20.5
2Q20	0.7	-280.7
3Q20	1.5	-113.7
4Q20	2.4	-105.7
1Q21	1.0	-653.1
2Q21	1.0	-2,510.4
3Q21	1.1	-79.3
4Q21	2.2	-8.6
1Q22	2.0	-32.6
2Q22	3.1	-40.0
3Q22	4.5	-7.8
4Q22	5.8	14.5
1Q23	6.0	22.0
2Q23	6.1	1.1

Source: MAVCOM, ASL Holders

Table A29: ASP Holders' Revenue and Operating Profit Margin, 2020 – 2023

Quarter	Revenue (RM mn)	Operating Profit Margin (%)
1Q20	321.3	18.2
2Q20	279.5	15.5
3Q20	272.1	10.7
4Q20	303.4	21.9
1Q21	304.2	17.5
2Q21	185.7	5.9
3Q21	342.1	16.3
4Q21	767.4	14.4

Quarter	Revenue (RM mn)	Operating Profit Margin (%)
1Q22	100.1	2.6
2Q22	114.6	14.2
3Q22	130.6	15.3
4Q22	168.7	12.0
1Q23	110.5	20.5
2Q23	102.8	13.5

Source: MAVCOM, ASP Holders

Table A30: AOL Holders' Revenue and Operating Profit Margin, 2020 – 2023

Quarter	Revenue (RM bn)	Operating Profit Margin (%)
1Q20	1.0	15.3
2Q20	0.3	-35.3
3Q20	0.4	-49.0
4Q20	0.3	-297.9
1Q21	0.4	-3.4
2Q21	0.3	-42.4
3Q21	0.5	-17.6
4Q21	0.6	-12.9
1Q22	0.6	4.7
2Q22	0.7	14.7
3Q22	0.9	-1.7
4Q22	1.0	5.2
1Q23	1.1	19.6
2Q23	1.3	24.9

Source: MAVCOM, AOL Holders

Table A31: Revenue by Ground Handling Sub-Segments, 2020 – 2023

Year	Revenue (RM mn)		
	Catering	General Ground Handling	Refuelling
1Q20	71.8	557.6	10.0
2Q20	12.8	616.9	4.4
3Q20	3.1	584.8	6.8
4Q20	16.8	690.5	5.7
1Q21	10.5	692.2	7.4
2Q21	9.8	788.0	7.6
3Q21	11.1	885.0	1.2
4Q21	19.5	1,220.5	1.4
1Q22	9.1	1,138.7	1.8
2Q22	11.2	1,024.3	3.7
3Q22	23.1	1,024.9	8.0
4Q22	13.6	980.2	8.3
1Q23	57.9	720.3	6.9
2Q23	52.4	732.1	7.2

Source: MAVCOM, GHL Holders

Table A32: Operating Profit Margin by Ground Handling Sub-Segments, 2020 – 2023

Year	Operating Profit Margin (%)		
	Catering	General Ground Handling	Refuelling
1Q20	-13.3	11.8	-9.0
2Q20	-195.8	23.3	-14.9
3Q20	-1,594.9	21.2	-4.5
4Q20	-120.9	-6.5	-15.9
1Q21	-176.2	18.3	-8.6
2Q21	-167.7	10.9	-9.7
3Q21	-53.7	11.8	-28.1
4Q21	-36.4	17.3	-24.4
1Q22	-29.4	13.8	-15.8
2Q22	-14.3	15.0	-3.5
3Q22	9.9	19.4	-0.4
4Q22	23.6	2.2	7.8
1Q23	7.7	9.5	-7.8
2Q23	24.6	16.0	0.2

Source: MAVCOM, GHL Holders

Table A33: Operating Profit Margin for Ground Handling Sub-Segments, 2020 – 2023

Year	Operating Profit Margin (%)		
	Catering	General Ground Handling	Refuelling
1Q20	-13.3	11.8	-9.0
2Q20	-195.8	23.3	-14.9
3Q20	-1,594.9	21.2	-4.5
4Q20	-120.9	-6.5	-15.9
1Q21	-176.2	18.3	-8.6
2Q21	-167.7	10.9	-9.7
3Q21	-53.7	11.8	-28.1
4Q21	-36.4	17.3	-24.4
1Q22	-29.4	13.8	-15.8
2Q22	-14.3	15.0	-3.5
3Q22	9.9	19.4	-0.4
4Q22	23.6	2.2	7.8
1Q23	7.7	9.5	-7.8
2Q23	24.6	16.0	0.2

Source: MAVCOM, GHL Holders

Table A34: Breakdown of International O&D and Hub Passengers by Airports in ASEAN, January – September 2023

Quarter	Passenger Traffic (mn)	
	Hub	O&D
SIN	6.9	31.7
KUL	4.5	18.6
MNL	2.0	13.6
BKK	1.9	22.8
SGN	0.9	8.3
CGK	0.6	8.3
BWN	0.1	0.5
PNH	0.0	2.4
RGN	0.0	0.9
VTE	0.0	0.8

Source: MAVCOM, AOL Holders

Table A35: Number of Weekly International Connecting Flights, 2023

Airport	Number of Weekly International Connecting Flights
SIN	425.2
BKK	418.2
KUL	398.2
MNL	363.6
SGN	267.8
CGK	210.7
PNH	7.7
VTE	5.1
RGN	2.6
BWN	1.3

Source: MAVCOM, AirportIS

Table A36: Number of Direct International Destinations Served by Airports in ASEAN, January – September 2023

Airport	Number of Direct International Destinations
SIN	143
BKK	131
KUL	100
MNL	59
SGN	58
CGK	53
PNH	33
VTE	26
RGN	24
BWN	24

Source: MAVCOM, AirportIS

Table A37: Seat Capacity Deployed by Region, January – September 2023

Region	Seat Capacity Deployed (%)		
	KUL	SIN	BKK
ASEAN	51.6	44.0	29.1
East Asia	17.2	20.9	36.4
Europe	2.2	8.3	9.4
South Asia	14.2	10.1	10.2
Middle East	8.3	3.4	10.7
Australia	5.8	9.5	2.6
New Zealand	0.6	1.1	0.0
Africa	0.1	0.4	0.6
Central Asia	0.1	0.0	0.2

Source: MAVCOM, GHL Holders

Table A38: Top 10 International Hub Passenger Traffic Movement for KUL, January – September 2023

Traffic Movement	Number of Hub Passengers (thousand)
India–KUL–Indonesia	249.2
India–KUL–Australia	225.8
Indonesia–KUL–Thailand	179.7
Vietnam–KUL–Indonesia	86.6
Thailand–KUL–Australia	85.5
Indonesia–KUL–China	74.4
Nepal–KUL–Australia	68.1
India–KUL–New Zealand	56.5
Türkiye–KUL–Australia	54.3
Singapore–KUL–Indonesia	53.6

Source: MAVCOM, AirportIS

Table A39: Top 10 International Hub Passenger Traffic Movement for SIN, January – September 2023

Traffic Movement	Number of Hub Passengers (thousand)
India–SIN–Australia	452.7
Australia–SIN–United Kingdom	297.9
Thailand–SIN–Australia	290.5
Japan–SIN–Indonesia	193.8
Indonesia–SIN–India	172.1
Indonesia–SIN–South Korea	167.6
Indonesia–SIN–Thailand	152.3
Australia–SIN–Germany	152.3
Australia–SIN–Japan	132.1
Vietnam–SIN–Australia	124.7

Source: MAVCOM, AirportIS

Table A40: Number of Operating Airlines by Airport, January – September 2023

Airport	Number of Operating Airlines
BKK	115
SIN	84
KUL	62
SGN	54
CGK	49
MNL	41
PNH	33
VTE	19
RGB	18
BWN	4

Source: MAVCOM, AirportIS

Table A41: Average Connecting Time by Airport, 2023

Airport	Average Connecting Time (minutes)		
	Domestic to International	International to Domestic	International to International
BKK	82	81	132
BWN	-	-	141
CGK	82	83	133
KUL	81	82	135
MNL	82	81	134
PNH	71	76	138
RGN	84	79	140
SGN	82	82	135
SIN	-	-	135
VTE	89	81	126

Source: MAVCOM, OAG Connections Analyser

APPENDIX B: LISTS OF LICENCE AND PERMIT HOLDERS AS OF 2Q23

Table B1: AOL Holders

No.	Company Name
1	Malaysia Airports (Sepang) Sdn. Bhd.
2	Malaysia Airports 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 Bhd.
2	AirAsia X Bhd.
3	FlyFirefly Sdn. Bhd.
4	Malaysia Airlines Bhd.
5	Malindo Airways Sdn. Bhd.
6	MASwings Sdn. Bhd.
7	My Jet Xpress Airlines Sdn. Bhd.
8	M Jets International Sdn. Bhd.
9	Raya Airways Sdn. Bhd.
10	SKS Airways Sdn. Bhd.
11	World Cargo Airline Sdn. Bhd.

Source: MAVCOM

Table B3: ASP Holders

No.	Company Name
1	Asia Jet Partners Malaysia Sdn. Bhd.
2	Berjaya Air 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	Myballoon Adventure Sdn. Bhd.
10	Prima Air Sdn. Bhd.
11	Sabah Air Aviation Sdn. Bhd.
12	Sazma Aviation Sdn. Bhd.
13	Systematic Aviation Services Sdn. Bhd.
14	Weststar Aviation Services Sdn. Bhd.

Source: MAVCOM

Table B4: GHL Holders

No.	Company Name
1	AeroDarat Services Sdn. Bhd.
2	Aerohandlers Sdn. Bhd.
3	Asia Digital Engineering Sdn. Bhd.
4	BCS Contract & Supply Services Sdn. Bhd.
5	Cloudera Aviation Services Sdn. Bhd.
6	Conor Engineering & Services Sdn. Bhd.
7	Dviation Solutions Sdn. Bhd.
8	Execujet Handling Services Sdn. Bhd.
9	Ground Team Red Sdn. Bhd.
10	Hasrat Asia (M) Sdn. Bhd.
11	Hornbill Skyways Sdn. Bhd.
12	Jets Fuels Sdn. Bhd.
13	KLM Line Maintenance Sdn. Bhd.
14	Layang Layang Aerospace Sdn. Bhd.
15	MAB Kargo Sdn. Bhd.
16	Malindo Airways Sdn. Bhd.
17	Mas Awana Services Sdn. Bhd.
18	MNM Aviation Services Sdn. Bhd.
19	Nusantara Aviation Services Sdn. Bhd.
20	Petron Malaysia Refining & Marketing Bhd.
21	Petronas Dagangan Bhd.
22	POS Aviation Engineering Services Sdn. Bhd.
23	POS Aviation Sdn. Bhd.
24	Prosky Services Sdn. Bhd.
25	Raya Airways Sdn. Bhd.
26	Sabah Air Aviation Sdn. Bhd.
27	Select Inflight Services Sdn. Bhd.
28	Senai Airport Terminal Services Sdn. Bhd.
29	Shell Malaysia Trading Sdn. Bhd.
30	Shell Timur Sdn. Bhd.
31	Skypark FBO Malaysia Sdn. Bhd.
32	Smooth Route Sdn. Bhd.

Source: MAVCOM

If you have any queries or comments, please contact:

MAVCOM

Level 19, Menara 1 Sentrum
201, Jalan Tun Sambanthan
50470 Kuala Lumpur
Malaysia

Tel: +603 2772 0600
Fax: +603 2772 0601
Email: enquiries@mavcom.my