

This Position Paper outlines the Malaysian Aviation Commission's position on an optimal structure for Malaysia's commercial airports sector.

EXECUTIVE SUMMARY

The performance of the airports industry in Malaysia is influenced by the behaviour and decisions of the Government of Malaysia (GoM). This is due to the latter's overlapping roles in the industry as policymaker, shareholder, and provider of capex funding. The structure and implementation of the Operating Agreement (OA) between the GoM and Malaysia Airports Holdings Berhad (MAHB), operator of more than 90% of airports in Malaysia, is emblematic of these overlapping roles. The OA underscores the fact that the airports are GoM's assets. Meanwhile, Khazanah Nasional Berhad (KNB), a sovereign wealth fund, is a major shareholder in MAHB, which is also a publicly listed company. The GoM also determines the overall policy direction for the development of the airports industry. Therefore, there needs to be a more transparent and structured capex funding model for airports in Malaysia, as well as, to mitigate conflicts of interest which may arise from the GoM's overlapping roles in relation to the Malaysian airports industry.

The industry also faces issues arising from MAHB's limited commercial behaviour which affects service quality to airlines and passengers. The recent failure of the Total Airports Management System is one of many examples of these. These issues and the lack of clarity in the airport funding model have adversely affected the competitiveness and attractiveness of the airports industry in particular, and the aviation sector in general.

For its part, MAVCOM has developed and enforced the Quality of Service (QoS) framework on airports, starting with KUL, in order to improve the quality of services offered to airlines and passengers. The Regulatory Asset Based (RAB) framework attempts to provide clarity and objectivity in airport funding by linking aeronautical charges with service levels at different airports.

MAVCOM's position on the country's airports industry is as follows:

- **There must be overall commitment towards regulatory certainty and governance.** This includes clarity in the various roles that GoM plays and the independent enforcement of regulations. This in turn, provides a conducive environment to attract investments into the industry.
- **MAHB and other commercial operators need to carry out their functions with appropriate commercial bases and autonomy,** subject to the appropriate regulations, including MAVCOM's QoS and RAB regulations.
- **Malaysia should explore benefits of competition amongst airport operators,** which needs to be in tandem with a strong legislative and regulatory framework.

ABBREVIATIONS

Abbreviations	
AAI	Airports Authority of India
Act 771	Malaysian Aviation Commission Act 2015
ACI	Airports Council International
ALI	Air Liberalization Index
Aena	Aeropuertos Españoles y Navegación Aérea
AERA	Airport Economic Authority of India
ANSP	Air Navigation Service Provider
ASEAN	Association of Southeast Asian Nations
ASUR	Grupo Aeroportuario del Sureste
ATC	Air traffic controller
ATM	Air traffic management
BAA	British Airports Authority
CAA	Civil Aviation Authority, United Kingdom
CAAM	Civil Aviation Authority of Malaysia
capex	Capital expenditure
COFECE	Comision Federal de Competencia, Mexico
CoU	Conditions of use
EBITDA	Earnings before interest, tax, depreciation, and amortization
EMP or Master Plan	Economic Master Plan for the Civil Aviation Sector
EU	European Union
FAC	Federal Airports Corporation, Australia
FSC	Full-service carrier
GAP	Grupo Aeroportuario del Pacifico
GoM	Government of Malaysia
HCI	Hub Connectivity Index
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
LCC	Low-cost carrier
MAHB	Malaysia Airports Holdings Berhad
MAVCOM or the Commission	Malaysian Aviation Commission
MCT	Minimum connecting time
MOF	Ministry of Finance, Malaysia
MOT	Ministry of Transport, Malaysia
OA	Operating Agreement
O&D	Origin and Destination
OMA	Grupo Aeroportuario Centro Norte
opex	Operating expenditure

Abbreviations

STIDC	Sarawak Timber Industry Development Corporation
STOLport	Short take-off and landing airport
SATS	Senai Airport Terminal Services Sdn. Bhd.
SCT	Ministry of Communications and Transport, Mexico
SSSB	Sanzbury Stead Sdn. Bhd.
TMDSB	Tanjung Manis Development Sdn. Bhd.
PETRONAS	Petroliam Nasional Berhad
PPP	Public-private partnership
PSC	Passenger service charge
RAB	Regulated Asset Base
UK	United Kingdom of Great Britain and Northern Ireland
US	United States of America
WACC	Weighted average cost of capital

DOMESTIC AIRPORT CODES

No.	Code	Airport
1	AOR	Sultan Abdul Halim Airport (Alor Setar)
2	BBN	Bario STOLport
3	BKI	Kota Kinabalu International Airport
4	BKM	Ba'kelalan STOLport
5	BTU	Bintulu Airport
6	IPH	Sultan Azlan Shah Airport (Ipoh)
7	JHB	Senai International Airport
8	KBR	Sultan Ismail Petra Airport (Kota Bharu)
9	KCH	Kuching International Airport
10	KTE	Kerteh Airport
11	KUA	Sultan Ahmad Shah Airport (Kuantan)
12	KUD	Kudat STOLport
13	KUL	Kuala Lumpur International Airport
14	KUL-T1	Kuala Lumpur International Airport Terminal 1
15	KUL-T2	Kuala Lumpur International Airport Terminal 2
16	LBP	Long Banga STOLport
17	LBU	Labuan Airport
18	LDU	Lahad Datu Airport
19	LGK	Langkawi International Airport
20	LGL	Long Lellang STOLport
21	LKH	Long Akah STOLport
22	LMN	Limbang Airport
23	LWY	Lawas STOLport
24	MKM	Mukah STOLport
25	MKZ	Melaka Airport
26	MUR	Marudi STOLport
27	MYY	Miri Airport
28	MZV	Mulu Airport
29	ODN	Long Seridan STOLport
30	PEN	Penang International Airport
31	SBW	Sibu Airport
32	SDK	Sandakan Airport
33	SZB	Skypark Terminal Sultan Abdul Aziz Shah Airport (Subang)
34	TGC	Tanjung Manis Airport
35	TGG	Sultan Mahmud Airport (Kuala Terengganu)
36	TWU	Tawau Airport

INTERNATIONAL AIRPORT CODES

No.	Code	Airport
1	ADL	Adelaide Airport, Australia
2	AMS	Amsterdam Airport Schiphol, Netherlands
3	ATL	Hartsfield-Jackson Atlanta International Airport (Georgia), United States
4	BCN	Barcelona Airport - El Prat, Spain
5	BKK	Suvarnabhumi Airport (Bangkok), Thailand
6	BNE	Brisbane Airport, Australia
7	BRS	Bristol Airport, United Kingdom
8	BRU	Brussels Airport, Belgium
9	CBR	Canberra Airport, Australia
10	CDG	Paris Charles de Gaulle Airport, France
11	FCO	Rome Fiumicino International Airport, Italy
12	FRA	Frankfurt am Main Airport, Germany
13	HHN	Frankfurt-Hahn Airport, Germany
14	ICN	Incheon International Airport, South Korea
15	JFK	John F. Kennedy International Airport (New York), United States
16	LCY	London City Airport, United Kingdom
17	LGW	London Gatwick Airport, United Kingdom
18	LHR	London Heathrow Airport, United Kingdom
19	MAD	Madrid - Barajas Airport, Spain
20	MEL	Melbourne Airport, Australia
21	MCO	Orlando International Airport (Florida), United States
22	MUC	Munich Airport, Germany
23	MLP	Milan Malpensa Airport, Italy
24	ORD	O'Hare International Airport (Chicago), United States
25	PER	Perth Airport, Australia
26	SIN	Singapore Changi Airport, Singapore
27	STN	London Stansted Airport, United Kingdom

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INTRODUCTION

As the economic regulator for the civil aviation industry in Malaysia, MAVCOM's functions under sub-paragraph 17(1)(a)(iii) of the Malaysian Aviation Commission Act 2015 [Act 771] include, "to promote the efficient, economic and profitable operation of aerodromes and ground handling services". This study on the airports industry structure in Malaysia is conducted pursuant to this mandate.

Our study of the airports industry structure in Malaysia aims to answer the following questions:

- What is the current industry, market, organizational, and operational structure of the Malaysian airports sector?
- What is the optimum structure for the Malaysian airports industry?

This paper is organized into the following sections:

- **Section 1** provides background information of Malaysia's current airports industry structure. It discusses the current state of Malaysia's airports industry in terms of ownership, passenger composition, and market concentration. The section also highlights some of the key issues and challenges related to the industry structure of the airports sector.
- **Section 2** describes the financial capacity for the GoM and MAHB to undertake further capex spending to invest in the airport infrastructure of MAHB's airports. Our findings show that both the GoM and MAHB are constrained in their ability to raise the funds to meet the projected capex required for the foreseeable future.
- **Section 3** summarizes the key findings of our case studies and study visits. Generally, our findings demonstrate that there is no universal "best practice" of airport ownership and industry structure. Instead, the critical factor for an airport operator is commercialization, that is, their ability to make decisions on commercial terms, with minimum to no political interference.
- **Section 4** outlines our position and proposed recommendations for a Malaysian airports industry structure that will be more competitive, "efficient, economic and profitable". We propose a three-step reform process for the Malaysian airports industry, with the implementation of each step coinciding with the foundation-setting and implementation periods for the Economic Master Plan for the Malaysian Civil Aviation Sector (EMP or Master Plan), as well as, taking into account the contractual period of the OA between the GoM and MAHB.
- **Section 5** concludes.

SECTION 1: OVERVIEW OF MALAYSIA'S AIRPORTS INDUSTRY

Malaysia's airports industry structure is a near-monopoly, with 39 out of 42 airports operated by a single operator, MAHB¹. This structure evolved as a result of Malaysia's privatization policy, which saw the creation of Malaysia Airports Berhad to maintain, manage, and operate airports, which was later listed as MAHB (see Box 1).

The salient issues relating to Malaysia's airports industry that are examined in this Section are as follows:

- 39 out of 42 Malaysian airports are operated by MAHB
- MAHB's revenue per passenger and service quality could be improved relative to other network service operators
- The industry is adversely affected by policy incoherence and uncertainty

Given the fact that Malaysia's airports industry structure is a near-monopoly, MAVCOM's position on the industry's structure focuses on issues and challenges arising from this near-monopoly over airport operations held by MAHB.

Box 1: History of Ownership Structures in Malaysia's Airports Industry

The structure of Malaysia's airports industry is linked to GoM's privatization policy, which was first announced as a national policy in 1983. Subsequently, with the passage of the Airport and Aviation Services (Operating Company) Act 1991 [Act 467] by the Malaysian Parliament, the asset ownership function for the industry was separated from its regulatory function to operationalize the privatization programme. Thereafter, Malaysia Airports Berhad² was created to maintain, manage, and operate airports, while the regulatory function remained with the Department of Civil Aviation (DCA).³

In November 1999, the holding company, MAHB, was incorporated as a public limited company and was thereafter listed on the Main Board of the Kuala Lumpur Stock Exchange (now Bursa Malaysia). To date, MAHB operates 39 airports in the country, including the international airports such as KUL, PEN, BKI, and KCH.

¹ MAHB operates the airports via its fully owned subsidiaries, Malaysia Airports Sdn. Bhd. and Malaysia Airports (Sepang) Sdn. Bhd. For ease of reference, this Paper will refer to MAHB as a single operator, unless otherwise stated.

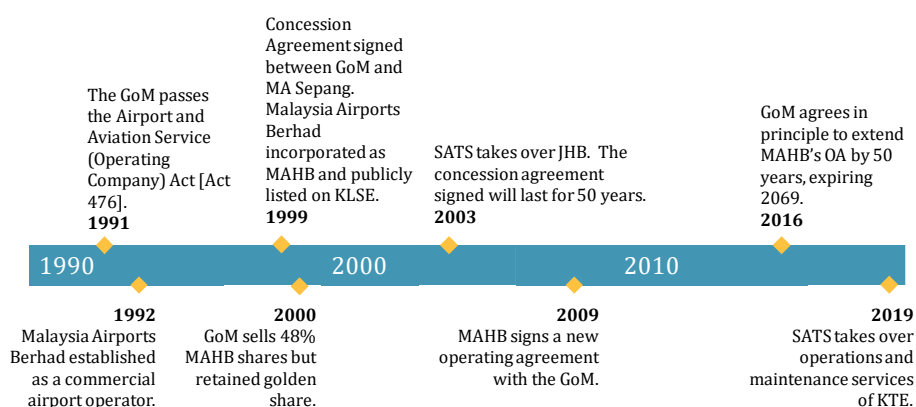
² Incorporated as MAHB in 1999.

³ DCA was corporatized and is now known as Civil Aviation Authority of Malaysia (CAAM) as of 19 February 2018. In this report, the authority/regulator will be referred to as DCA for pre-2018 discussion and CAAM for post-2018 discussion.

A second player was introduced into the airport operations market in 2003 when the concession to manage and operate JHB was granted to Senai Airport Terminal Services Sdn. Bhd. (SATS), which is in turn owned by MMC Corporation Berhad. Figure 1 illustrates the key developments in the industry since 1990.

The legacy created by these developments is a near-monopoly structure for the airports industry, with MAHB handling 96.4% of the air passengers in Malaysia in 2018. MAHB also generates nearly 99% of the revenues and operating profits for the sector.

Figure 1: Timeline of Events in the Malaysian Airports Industry



Source: MAVCOM

These developments therefore led to the ownership structure outlined in Table 1. Among the four airport operators, MAHB is the only publicly listed entity, whilst the other airport operators are privately-owned.

Table 1: Ownership Structure of Malaysian Airport Operators as at 30 June 2019

Airport Operator	Ownership Structure
MAHB	KNB – 33.21% Employees' Provident Fund – 13.51% Foreign Ownership – 31.65%
SATS	Wholly owned by MMC Corporation Berhad
TMDSB	Wholly owned by Sarawak Timber Industry Development Corporation (STIDC)
SSSB ⁴	Wholly owned by Petroliaam Nasional Berhad (PETRONAS)

Source: MAVCOM, Bloomberg

⁴ SSSB surrendered its Aerodrome Operator Licence to MAVCOM effective 1 January 2019. KTE is now operated by SATS via a management agreement.

The GoM has control of both MAHB and SSSB (KTE's previous operator). The GoM, through the Government Investment Companies Division of the Ministry of Finance (MOF), possesses a golden share in MAHB and owns PETRONAS, and thus SSSB. Additionally, TMDSB, which operates TGC, is under the control of the Sarawak State Government via its ownership of the STIDC. SATS, which operates JHB and KTE, is the only privately-owned airport operator in Malaysia.

SATS operates JHB based on a 50-year Concession Agreement signed with the GoM in 2003. SATS' Concession Agreement grants it the responsibility to incur its own capex.

MAHB operates its airport network of 39 airports based on the OA signed in 2009 with the Ministry of Transport (MOT), representing the GoM. The 2009 OA—signed for a period of 25 years—superseded a Concession Agreement signed in 1999. In contrast to SATS' Concession Agreement, MAHB's OA does not include rights for independent funding; as the asset-owner, the GoM has an obligation to provide funding for 'development capex' which is defined as capex which expands airport capacity. The OA differentiates this from 'operational capex', which is defined as capex used for maintenance of existing assets, or even the purchase of new assets that do not expand capacity. Arguably, the latter could be defined as items such as a new baggage-handling system, or airside connectivity between terminals.

This delineation of funding responsibilities between the GoM and MAHB is not a common practice internationally, and issues related to it are discussed in later Sections.

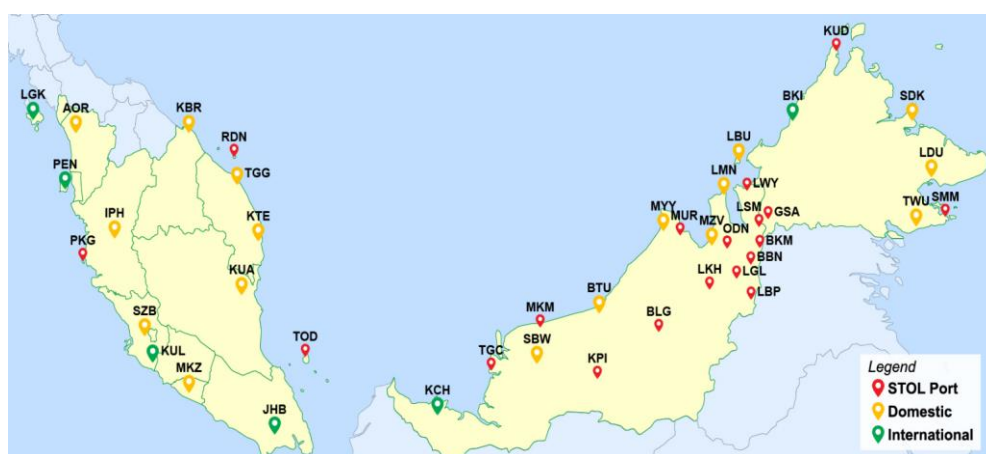
39 out of 42 Malaysian Airports are Operated by MAHB

Malaysia is one of several countries in the world with an airports network structure, with MAHB operating and managing 39 out of 42 commercial airports in the country. The three airports not operated by MAHB are:

- **JHB**, operated by SATS
- **KTE**, operated by SATS⁵
- **TGC**, operated by TMDSB

Figure 2 illustrates the airports and STOLports in Malaysia.

Figure 2: Airports and STOLports in Malaysia



Source: MAVCOM

MAHB's near-monopoly within the sector can also be seen in terms of its large proportion of passengers carried and revenue generated among all airport operators in Malaysia. Tables 2 and 3 below illustrate the revenue and passenger shares among the four airport operators in Malaysia, respectively.

As is common for other airports network operators, MAHB cross-subsidizes airports across its network, where proceeds from profitable airports, such as KUL, are used to subsidize less profitable airports (see Box 2).

⁵ SATS entered into a contract with SSSB to manage the operations and maintenance services of KTE for three years effective 1 January 2019. SSSB maintains its position as the asset owner of KTE.

Box 2: Cross-Subsidization Within Airports Networks

Cross-subsidization within an airports network is not unique to Malaysia, as countries such as Spain, Indonesia, Finland, and Sweden adopt a similar approach in their airports industry.

Cross-subsidization may bring about benefits such as better management and coordination of capacity, resources, and business strategy throughout the network. The airport network can take advantage of economies of scale that allow them to viably operate smaller airports which may not be profitable if operating individually.

Critics of the airport networks structure as practiced in Malaysia and elsewhere argue that users should not be paying for facilities that they do not use.⁶ This principle is often referred to as the “user-pay” principle, where the user pays only for facilities that they directly utilize. This is alleged to be contrary to the principle of cost-relatedness as defined by International Civil Aviation Organization (ICAO).⁷ Whilst these critics may recognize the benefits of the airport networks in ensuring the viability of smaller airports that provide connectivity to rural areas, they argue that the cost of operating these airports should be borne or subsidized by the government as opposed to passengers who use other, more profitable airports in the network.

Table 2: Revenue Shares of Malaysian Airport Operators

Airport Operator	Share of Revenue (%)
MAHB*	98.2
SATS	1.7
TMDSB	0.1
SSSB	0.0
TOTAL	100.0

Source: MAHB, SATS, TMDSB, SSSB

*Malaysian operation only.

Note: Revenue is based on latest audited accounts of each company, as at 31 December 2018.

In terms of revenue, MAHB has the largest market share in Malaysia at 98.2%. This renders the airports industry in Malaysia as highly concentrated.

Although MAHB has a dominant position in the airports industry, it is unable to exercise its market power by unilaterally increasing prices. This is due to the existence of price regulation imposed on airport charges, currently administered by MAVCOM.

⁶ IATA (n.d.).

⁷ ICAO (2013a).

Table 3: Passenger Shares of Malaysian Airport Operators, 2018

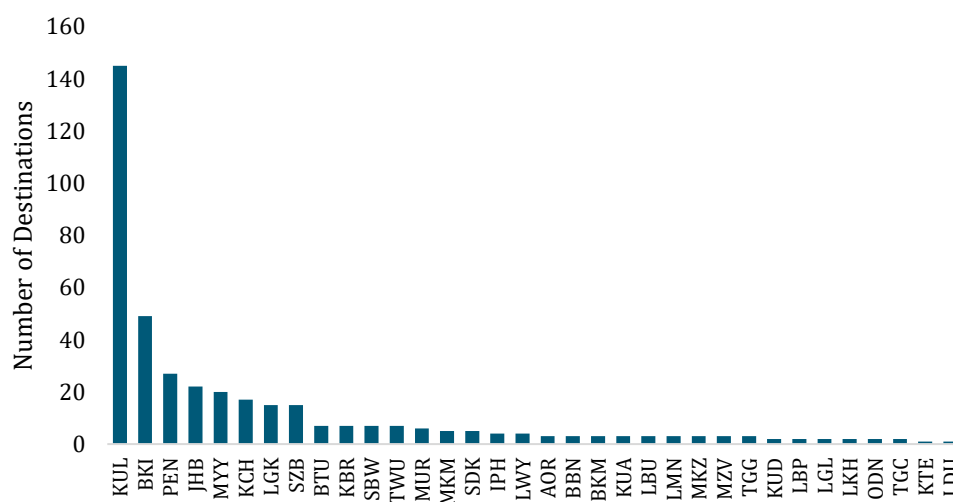
Airport Operator	Share of Total Passenger Traffic (%)	Share of Domestic Traffic (%)	Share of ASEAN Traffic (%)	Share of International Traffic (%)
MAHB	96.4	93.8	98.6	99.0
SATS	3.6	6.1	1.4	1.0
TMDSB	0.0*	0.0*	-	-
SSSB	0.0*	0.1	-	-
TOTAL	100.0	100.0	100.0	100.0

Source: AirportIS

Note: * - Very small reported number of passenger traffic

Across all categories of traffic (domestic, ASEAN, and international), MAHB is the dominant operator, handling over 93.0% of passenger traffic. This is explained by the fact that MAHB operates KUL, which handles 57.3% of passenger traffic in Malaysia.

Through its operatorship of KUL—Malaysia's main international aviation gateway—MAHB's dominance in the airports industry can also be seen from the perspective of the number of destinations served by each airport, as seen in Figure 3 below.

Figure 3: Destinations of Airports and STOLports in Malaysia, 2018

Source: AirportIS

Note: Does not include unutilized STOLports.

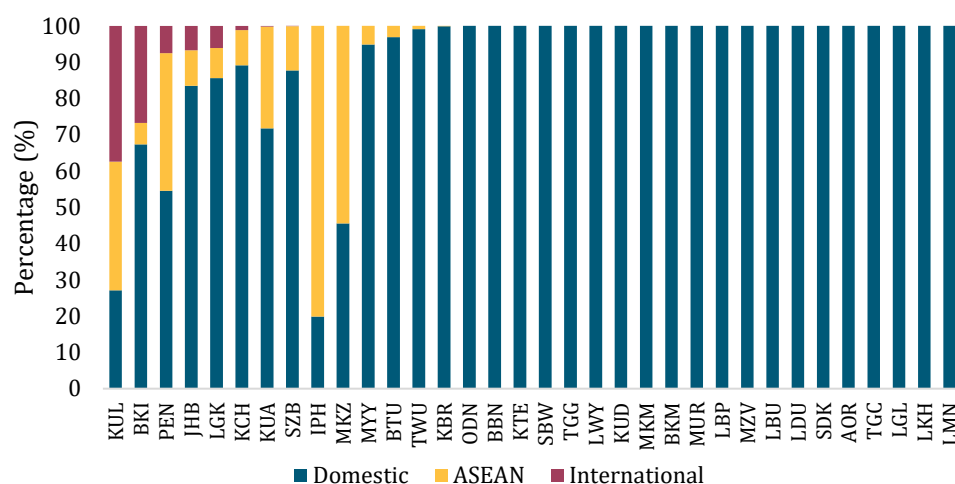
KUL is by far the largest airport in terms of the number of destinations served, connecting to 145 airports in 2018. This is far larger than the second-ranked airport, BKI, which only serves 49 destinations. A large majority of airports in Malaysia serve only five or fewer destinations. Malaysia's aviation hubs are spread geographically across the country. Excluding KUL, these are:

- **BKI**, serving East Malaysia
- **PEN**, serving northern Peninsular Malaysia
- **JHB**, serving southern Peninsular Malaysia

Airports in Malaysia Predominantly Serve Domestic and O&D Passengers

Figure 4 shows the proportion of passenger traffic broken down by their destination regions (Domestic, ASEAN, and International). A large majority of airports in Malaysia predominantly cater for domestic passengers. This includes airports that are officially designated by CAAM as "international airports", such as BKI, PEN, KCH, JHB, and LGK. KUL, IPH, and MKZ are the only airports where the majority of passengers depart to non-domestic destinations.

Figure 4: Traffic Breakdown by Region, 2018

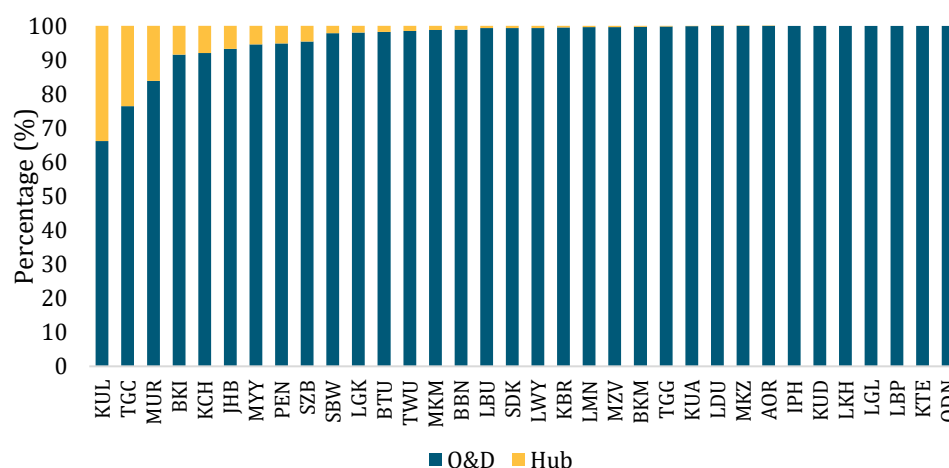


Source: MAVCOM, AirportIS

Note: Does not include unutilized STOLports.

Figure 5 shows the proportion of passenger traffic for each airport in Malaysia, broken down by O&D passengers and hub passengers. O&D passengers are defined as passengers whose journey starts at the airport of interest itself, whereas hub passengers are passengers who are transferring at the airport. Of all the airports in Malaysia, only KUL has a significant proportion of hub passengers at 33.8%. The other airports in Malaysia are predominantly supported by demand for O&D passenger traffic.

Figure 5: Traffic Breakdown by O&D vs. Hub, 2018



Source: MAVCOM, AirportIS

Note: Does not include unutilized STOLports.

MAHB's Financial Performance and Service Quality Could Be Improved

Compared to other airports network operators, MAHB's financial performance, as measured by earnings before interest, tax, depreciation, and amortization (EBITDA) margin, are the lowest when compared to other selected airports network operators. In addition, there is room for improvement in the quality of service offered at its airports.

MAHB's Financial Results Trail Behind Other Airports Network Operators

MAHB's returns are lower than those of other airports network operators around the world, as shown in Table 4 below.

Table 4: Financial Indicators of Selected Airport Operators, 2018

Airport Operator	Revenue (RM mn)	EBITDA Margin (%)	Passenger Traffic (mn)
Network Operators			
GAP	2,965.8	62.4	45.0
ASUR	3,236.2	62.0	52.3
OMA	1,423.0	70.0	21.6
Aena	20,434.5	61.5	280.3
MAHB	4,851.7	48.4	99.0
Airports of Thailand	7,967.7	58.5	139.5

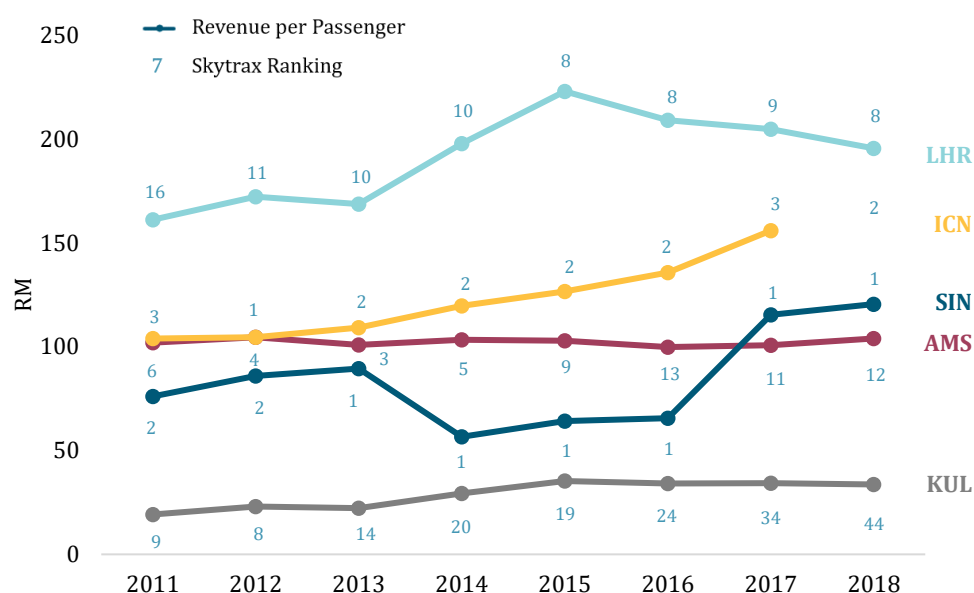
Source: MAVCOM, based on the latest available financial results

It could be argued that in the case of MAHB, revenue is largely driven by regulated airport charges, and that in general, an airport operator's commercial performance may be affected by external factors such as macroeconomic developments and the regulatory environment. Nonetheless, the operator's own internal operational efficiency plays an important role. Indeed, operators operating under different regulatory regimes and economic environments aim to maximize both aeronautical and non-aeronautical revenues in order to bolster their commercial performance.

Public Complaints Relating to Airports' Service Quality

MAHB has not been immune from criticisms over its service quality. Issues such as the breakdown of the aerotrain at KUL and poorly maintained restrooms are often cited by mainstream media. These issues are reflected in Malaysia's decline in global airport rankings such as the Skytrax World Airport Awards ranking, where KUL has fallen from 9th place in 2011 to 44th in 2018, as shown in Figure 6.

Figure 6: Revenue per Passenger for Selected Airports with Skytrax Airport Ranking, 2011 – 2018



Source: MAVCOM, Skytrax, latest available financial results

Complaints over service quality are not limited to KUL alone. Recent reports have highlighted various issues in other airports, such as flooding in PEN⁸ and complaints about the lack of cleanliness at BKI⁹, KCH, and other airports in Sarawak.¹⁰

There have also been complaints regarding services offered by ground-handlers, such as baggage-handling services. Although ground-handlers have a contractual obligation with airlines, typically passengers see airports as frontlines for their services, particularly in relation to baggage-handling services. As recommended in the proposed EMP¹¹, airport operators could address this either by ensuring that they strictly enforce their Conditions of Use (CoU) agreements between themselves and ground-handlers or entering into Service Level Agreements.

⁸ Malay Mail (2018).

⁹ Daily Express (2018).

¹⁰ Borneo Post (2019).

¹¹ MAVCOM (2019b).

When compared to a selection of four other capital-city airports, KUL's revenue per passenger ranks at the bottom, as shown in Figure 6. Apart from SIN, the airports selected for comparison operate within a competitive environment, in which several airport operators manage and operate the airports in their specific countries. While MAVCOM has introduced the QoS Framework to regulate the service quality of airports under MAHB's management, another way in which airport operators could be incentivized to improve service quality is by introducing more competition into the sector. The latter is discussed further in Section 4.

Service quality and operational efficiency do not only benefit passengers via increased comfort and convenience; efficient airport operations also benefit airlines operating from the airport. Improved operational efficiency plays a key role in attracting airlines, particularly international hub carriers, to choose Malaysian airports as their regional hub, in turn improving Malaysia's international air connectivity.¹²

While issues regarding service quality and financial results may be a result of MAHB's lack of commercial autonomy and the opaque relationship with the GoM, these issues also rely, to a large extent, on MAHB's internal operational and management efficiency. For example, the network failure of the Total Airports Management System at KUL in August 2019 could have been mitigated by measures such as ensuring that equipment is updated and secure, as well as, improving cybersecurity, which are fully under MAHB's control. This highlights that commercial autonomy needs to be complemented with internal efficiency for players in the airports industry to thrive.

¹² MAVCOM (2018c).

Overview of Funding and Governance in the Airports Industry

The funding and governance structures of the Malaysian airports industry have given rise to overlaps between the roles and responsibilities of the GoM in relation to airports. Most land and assets related to Malaysian airports and relevant infrastructure (e.g. air control and meteorological towers) are owned by the GoM. The funding, management, and operations of the three airports which have been privatized (JHB, KTE, and TGC) are governed by concession agreements. By contrast, those for the airports under MAHB are governed by the OA, the duration of which is between 2009 and 2034 (recall discussion in Box 1). The GoM has agreed-in-principle to extend the duration of the OA to 2069, and the detailed terms of the extension are currently being negotiated (see Box 3).

The salient terms of the OA between the GoM and MAHB include:

- **Separation of development and operational capex:** as mentioned in Box 1, the GoM has the responsibility to provide funding for development capex intended to increase the capacity of airports. MAHB is to “focus on operational excellence” and provide for operational capex which may not directly lead to increases in airport capacity.
- **Benchmark PSC rates are determined across five-year cycles:** benchmark PSC rates are defined in the OA, which are increased across five-year cycles based on the rate of inflation. The benchmark rate may differ from the actual rate of PSC which is imposed by MAVCOM.
- **The GoM reimburses MAHB for shortfalls in PSC revenue:** should the actual PSC rate be set at a level lower than the benchmark rate defined in the OA, the GoM will compensate MAHB via the Marginal Cost Support mechanism, subject to MAHB meeting productivity and service level targets. The OA mandates that a PSC review is conducted every five years from 2009.

Box 3: Proposed Extension of the OA between the GoM and MAHB

MAHB's OAs, signed via its two operating subsidiaries MA Sepang and MASB in 2009, are due to expire in 2034. The Malaysian Cabinet on 5 April 2019 had approved and announced for the two OAs currently with MA Sepang and MASB to be substituted with four new OAs, which are categorized in accordance to geographical clusters—for KUL, Sarawak and Sabah airports, as well as, for designated airports in Peninsula Malaysia. The Cabinet also approved for a longer duration of the OA until 2069, an additional 35 years over the current OAs.

MAHB made the following justifications when requesting the extension:

- **MAHB has recently undertaken development capex** for the construction of KUL-T2, in addition to other development work done in AOR, KCH, LGK, and MYY. These incurred a total of RM4.4bn worth of capex.
- **MAHB proposed to take over the development costs** of airports that are deemed competitive in the future. This has the benefit of reducing the government's fiscal burden.
- The extension of the OA, as well as, the coterminous land-lease agreement, were deemed by MAHB as **necessary for MAHB to further develop the airports industry**.
- **MAHB claimed that the 25-year concession period was insufficient** and arguably, hindered it from implementing airport development projects. The 'short' duration of the agreement means that depreciation costs need to be borne in a short period of time, thus adversely impacting MAHB's profit and loss account. The short duration was also cited as a deterrent for foreign investors to invest in MAHB or the Aeropolis project.

The Cabinet's agreement-in-principle to extend the OA is subject to terms and conditions to be determined by both the GoM and MAHB. A negotiation committee chaired by MOT and consisting of representatives from various ministries and agencies, including MOF and MAVCOM, and MAHB. Negotiations are currently ongoing for the OA's extension.

Figure 7 illustrates the delineation of funding and governance responsibilities between the GoM, MAHB, MAVCOM, and CAAM, which has arisen as a result of the structure of the OA, as well as, the regulatory developments within the country's civil aviation sector. The latter include:

- **The establishment of MAVCOM** through Act 771
- **The corporatization of DCA to CAAM** in 2018

Figure 7: Delineation of Responsibilities Between the GoM, MAHB, MAVCOM, and CAAM

GoM	MAHB	MAVCOM	CAAM
<ul style="list-style-type: none"> • Asset Owner • Principal Policymaker • Government-to-government Negotiations • Development Capex • Shareholder 	<ul style="list-style-type: none"> • Airport Operations • Operating Expenditure • Operational Capex 	<ul style="list-style-type: none"> • Economic Regulation • Competition Enforcement • Consumer Protection and Advocacy 	<ul style="list-style-type: none"> • Technical and Safety Regulation • ATC and Air Space Management Services

Source: MAVCOM

The issues and challenges created by these overlapping responsibilities of the GoM in the airport sector are discussed in the following sub-sections.

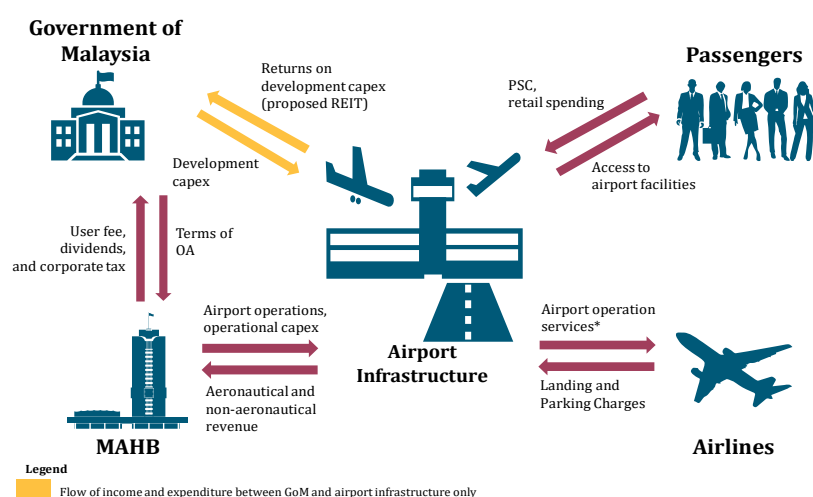
Figure 8 illustrates the current interlinking relationships of the various stakeholders towards airport infrastructure.

The primary consumers of airport services are airlines, which utilize airport facilities to provide air transport services. Airlines pay aeronautical charges in the form of landing and parking charges, among others, in return for these services. Another group of consumers are passengers, who pay PSC to access their flights, as well as, directly spend on retail at airports. As mentioned throughout this Paper, ICAO guidelines recommend that these charges should be based on the cost of services provided to airlines, passengers, and other airport users. These principles are reflected in the RAB Framework being developed by MAVCOM.¹³

From the GoM's perspective, it is responsible for the provision of development capex for airport infrastructure as provided for by the terms of the OA, which was discussed in-depth earlier in Section 1. As will be discussed in Section 2, the GoM faces fiscal constraints in bearing this responsibility. Furthermore, there have been recent proposals to obtain returns from the development capex incurred, for example via the proposed airport real estate investment trust.¹⁴ The GoM also collects from MAHB a user fee as stipulated in the OA, in addition to corporate tax and dividends, the latter by virtue of its role as a shareholder of MAHB via KNB.

MAHB, as the airport operator, is responsible for the management of airport operation services, in addition to incurring operational capex. In return, MAHB's sources of revenue are the aeronautical and non-aeronautical revenue generated from airport services. Section 2 also discusses the constraints it faces in fulfilling its role in incurring capex.

Figure 8: Interlinking Relationships Between Stakeholders in Relation to Airport Infrastructure



Source: MAVCOM

*"Airport operation services" refers to definition (c) of "aviation service" provided by Section 2 of Act 771

¹³ MAVCOM (2019c).

¹⁴ The Star (2018a).

Lack of Strategic Airports Planning

Airport developments in Malaysia have tended to be undertaken on an ad-hoc basis, mainly due to the absence of an overarching policy and/or strategic guidance document for airports development within the country. While MAHB had produced a National Airports Master Plan that had been endorsed by the Cabinet, this document dates to 1992. Moreover, it only covers airports operated by MAHB. While MAHB had subsequently updated the document—which is still limited to airports operated by MAHB—in 2008, the revised version had not been endorsed by the Cabinet and does not include developments such as the construction of KUL-T2.

The lack of overall guidance for the development of the Malaysian airports industry has led to the following issues:

- **Ad-hoc airport developments**
- **Inefficient airport designs**

In response, MAVCOM, in collaboration with CAAM and MOT, is developing a National Airports Strategic Plan (NASP) that will aim to address these issues, among others.

Ad-Hoc Airport Developments

The absence of an overarching development policy has meant that decisions regarding airport developments have been made on a piecemeal basis, whether they relate to the expansion of existing airports, or the construction of new ones. Of late, there have been announcements on third parties' intentions to develop airports in Kulim and Tioman, as well as, the potential of a third-party investor in PEN.¹⁵

Historically, the GoM's decisions regarding airport developments have not been based on a pre-existing strategy relating to air or multi-modal connectivity. Indeed, multi-modal connectivity has only been explicitly considered under the new National Transport Policy launched in October 2019. One result of this has been an imbalance in terminal utilization rates across MAHB's network, with 21 airports operating at below 60% terminal design capacity (see Table 5). This indicates that there may be a mismatch between airports infrastructure—in this case, terminal capacity—and passenger demand within certain catchment areas. For instance, there does not seem to be an economic rationale for MKZ to service international flights despite only being located about a 90-minute drive¹⁶ away from KUL, given its low utilization rate of only 10.5%.

Indeed, consultations with stakeholders in the process of developing the proposed EMP revealed unanimous agreement that there was an excess of airports in Malaysia given the size of its population and passenger demand.¹⁷

¹⁵ Various news reports (2018).

¹⁶ MAVCOM estimates.

¹⁷ See Appendix 2, MAVCOM (2019b).

Table 5: Terminal Design Capacity and Utilization Rate of Airports in Malaysia, 2018

No.	Airports	Terminal Design Capacity (mppa)	2018 Passengers Handled (mppa)	2018 Terminal Utilization Rate (%)
1	SZB	1.50	1.96	130.9
2	LDU	0.10	0.12	124.8
3	PEN	6.50	7.79	119.8
4	MYV	2.00	2.35	117.5
5	MZV	0.05	0.06	115.1
6	KUL-T1	25.00	28.29	113.2
7	KBR	1.50	1.69	112.5
8	KCH	5.00	5.56	111.3
9	TWU	1.50	1.64	109.4
10	JHB	3.50	3.52	100.7
11	BKI	9.00	8.62	95.8
12	BTU	1.00	0.92	92.3
13	SBW	1.80	1.58	87.7
14	KUL	70.00	59.99	85.7
15	KTE	0.10	0.08	83.9
16	KUL-T2	45.00	31.92	70.9
17	LGK	4.00	2.74	68.4
18	SDK	1.40	0.95	67.9
19	TGG	1.50	0.89	59.6
20	LMN	0.08	0.05	56.8
21	AOR	1.50	0.82	54.5
22	IPH	0.60	0.32	52.6
23	KUA	0.50	0.26	51.8
24	LBU	2.20	0.57	26.1
25	MKZ	0.50	0.05	10.5

Source: MAVCOM, AOL Holders

Even when capacity is considered for airport expansion and development, reference is only made to terminal, rather than overall airport capacity. This should not only include landside capacity, but airside capacity¹⁸, as well as, Air Traffic Management (ATM) capacity. Indeed, expanding terminals to target passenger sizes is redundant if those passengers are unable to board their flights on time due to airspace congestion (see Box 4). Hence, it is crucial to incorporate ATM considerations into any strategic plans for airports, as the two are inextricably linked.

¹⁸ The landside components of an airport refer to the parts of the airport designed to serve passengers, including terminal buildings, vehicular circular drive(s), and car-parking facilities. Airside facilities refer to the airfield on which aircraft operations are carried out, including aprons, runways and taxiways. See Young and Wells (2011).

The issue of capacity utilization, however, comes with two caveats. Firstly, capacity in terms of annual passenger capacity may overstate the required capacity for an airport, as it may be skewed by the number of passengers utilizing the airports during peak seasons. A more accurate measure of capacity utilization—particularly in relation to planning for infrastructure—would be the peak-hour utilization rate. Secondly, capacity utilization rates exceeding 100% does not automatically imply the need for investment in infrastructure investment. Rather, airports should first explore ways in which operational efficiency, and thus, capacity, can be improved.

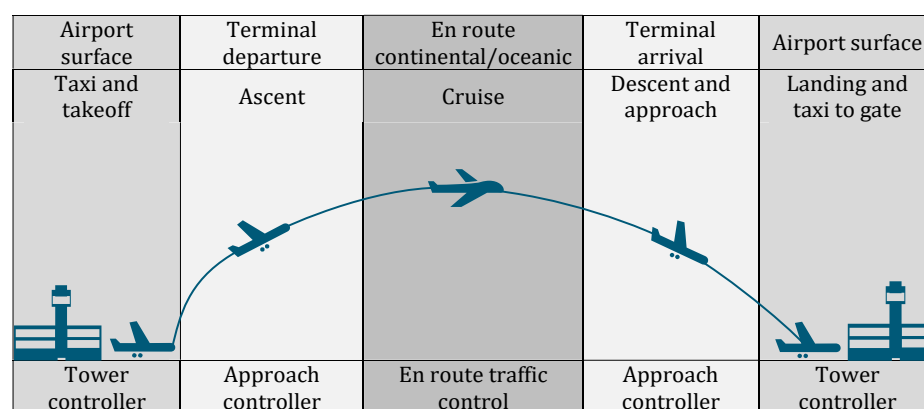
Box 4: The Importance of Air Traffic Management¹⁹

ATM coordinates air traffic in airspace mainly through ATC, air traffic flow management, and air space management. These services are defined as follows:

- **ATC:** the process of separation of aircraft in the sky as they fly and at airports where they land and take-off
- **Air traffic flow management:** the sequencing of aircraft along air routes and at airports
- **Air space management:** the organization of airspace into air routes and control areas to cater for traffic volumes and specific needs

Of these three components, ATC comprises the main function of ATM, and are undertaken by licensed air traffic controllers, while ATM in general is undertaken by Air Navigation Services Providers (ANSPs). Figure 9 illustrates the different phases during a flight requiring different types of Air Traffic Control (ATC).

Figure 9: Phases of a Flight Requiring Different Types of ATC



Source: Arblaster (2018)

¹⁹ This Box is largely adapted from Arblaster (2018).

Figure 9 also illustrates the interlinkage between ATM and airports. Both links in the aviation value chain contribute towards the productivity and accessibility of airline services for passengers and freight. When combined with aircraft technology and pilot training, the quality of air navigation infrastructure and ATM services determines the ability of aircraft to fly safely and efficiently. Beyond airports, ATM operates in a global environment, facilitating international and national connectivity.

In Malaysia, the ATC and other ATM services are provided by CAAM, which evolved from the corporatization of the DCA in February 2018. CAAM is also the technical and safety regulator for the Malaysian civil aviation sector, including for ATM and ATC services.

Although the proposed EMP does not cover ATM, given the importance of ATM to the performance of airports and the country's air connectivity, an overarching policy and strategic plan for ATM needs to be developed within the context of a policy and strategic plan for airports. Arising from consultations that MAVCOM has held with stakeholders, including CAAM, these guidance documents should address, among others, the need to sustainably finance the infrastructure, technology, and human capital required to meet the demands for ATC services in the future.

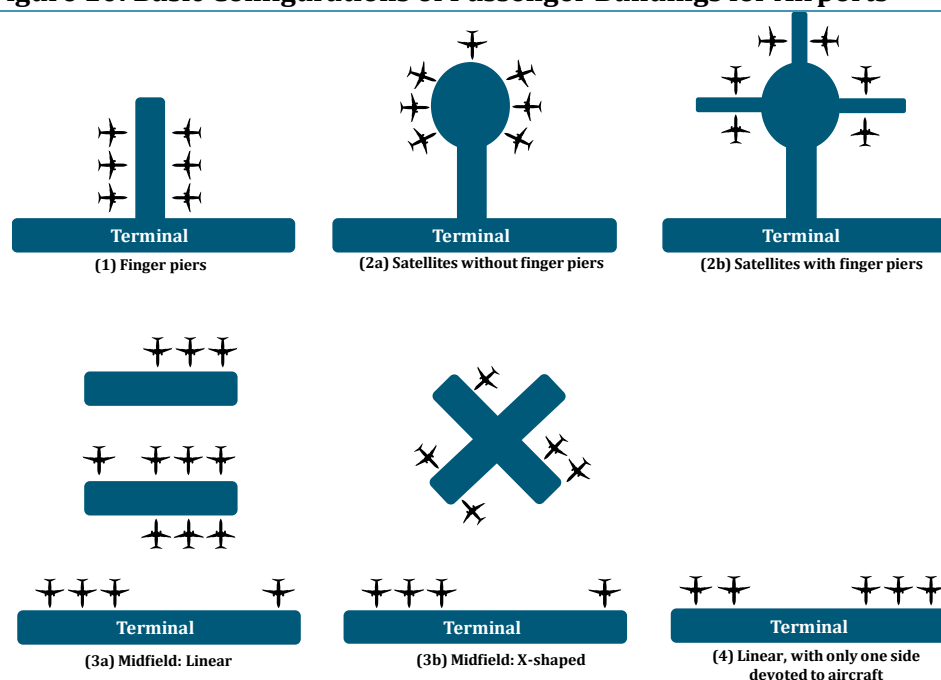
Inefficient Airport Designs

The lack of an overarching strategy may also have negative implications on the efficiency of airport designs. MAVCOM's case studies of selected airports in various jurisdictions indicate that regardless of the size or configuration of the airport, airport operators prefer integration within and between terminals to improve connecting times and operational efficiency. Additionally, airports also show a preference for infrastructure that can cater to a wide range of airline business models and network strategies. Box 5 discusses these issues further.

Box 5: The Importance of Integrated Terminals and Multi-use Infrastructure

There are five basic airport configurations as listed in Figure 10:

Figure 10: Basic Configurations of Passenger Buildings for Airports



Source: de Neuville and Odoni (2013)

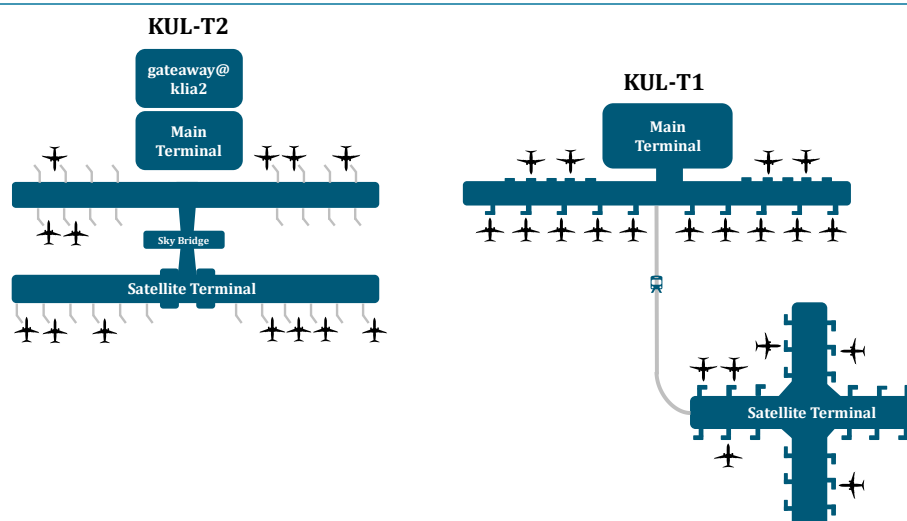
The long-term performance of an airport's choice of configuration depends on its flexibility to adapt to different types of traffic that may use the airport. Regardless of the physical configuration of the airport, airport operators favour integrated infrastructure models rather than having dedicated terminals to cater to specific airline business models. This is because the current configuration must be able to adapt to the ever-evolving business models of airlines. For example, low-cost carriers (LCCs) are starting to focus on new ways to enhance the passenger experience and are emulating traditional full-service carriers (FSC) services by providing interlining facilities and premium seats. This means that the traditional opposition of LCCs to more comprehensive airport facilities, such as aerobridges and lounges, may change in the future.

Terminal integration also allows airports to interchange their functions from being a hub or a non-hub airport depending on the airlines flying into them. An example is MXP that experienced dehubbing, after Italy's flag carrier Alitalia's decision to move its main hub back to FCO in 2008. Within three years, MXP had shifted its business model and is now one of the most important bases for easyJet. Consequently, the nature of the airport's traffic changed from primarily connecting traffic to point-to-point traffic. More recently, MXP had also experienced growth in the long-haul Italy-US markets, once again illustrating that an airport's business model can evolve over time.

The dynamic nature of airlines' business models and network strategies emphasizes the need for airports to provide facilities that can cater to a wide range of airline preferences, rather than overspecialized infrastructure that only serve a narrow set of airlines. SIN's experience in demolishing its budget terminal to make way for Terminal 4 is instructive in highlighting the potential costs involved when attempting to replace overspecialized airport facilities. Furthermore, investments in fully equipped terminals, with the latest technology, may lower terminal operating costs via automation and operational efficiencies, benefiting both FSCs and LCCs.²⁰

Structurally, KUL-T1's configuration is a linear terminal building with an X-shaped satellite, whereas KUL-T2 is a separate terminal, with the two only connected via landside transport (see Figure 11). Airports with separate multiple terminals are not uncommon. Airports like SIN, LGW, and MAD are examples of airports with distinct terminal buildings. However, the difference between KUL and these airports is the availability of airside connectivity. Passengers wanting to access inter-terminal connecting flights have no direct airside access to the other terminal, unlike SIN that provides an airside bus connection (see Figure 12), or BKK where the terminals are physically integrated (see Figure 13).

Figure 11: KUL Terminal Layout (Linear Terminal with Satellite)



²⁰ Nikkei Asian Review (2015)

Currently, the absence of airside connectivity between KUL's two terminals, and the distinct airline business models operating in each terminal —FSCs, focusing on hub traffic mainly operating in KUL-T1 and LCCs, focusing on O&D passengers operating in KUL-T2—indicates that the airport lacks terminal integration.

The most important benefit of terminal integration via airside connectivity in KUL would be the ability for it to reduce congestion at KUL-T1 without building additional terminals. Between 2016 and 2018, KUL-T1's terminal utilization rate had reached more than 100%, while KUL-T2's terminal utilization was between 60% to 71% only. Currently, airlines are reluctant to move to KUL-T2, partly because there is no airside connectivity between the two terminals and airlines operating in KUL-T2 would not be able to interline with other airlines.

The configuration of airport buildings is successful when it serves the requirements of its users, which include both passengers and airlines. Each category of passengers such as domestic, international, business, vacationers, transfers, and disabled passengers require different airport design considerations and facilities.

The volume of transfer passengers is one of the most important factors in determining airport configurations. Transfer passengers require fast, reliable, and easy-to-find connections between aircrafts. Although LCCs typically do not interline with FSCs, a growing trend in the airline industry today is self-connecting passengers. The motivations for self-connecting passengers are lower airfares, as well as O&D pairs that may not be served by a direct flight on a single airline. Over 55mn passengers a year worldwide make self-connections, almost all of them including at least one flight on an LCC. This number is forecasted to double in the next five years.²¹

As mentioned previously, the separation between KUL-T1 and KUL-T2 is not conducive for self-connecting passengers as any passenger who arrives in KUL-T2 (via an LCC) whose next flight is at KUL-T1, will require a minimum connecting time of about three hours²². This limits the number of possible connections a passenger can access in a day. In addition, passengers who need to make inter-terminal connections would have to pass through border control, check out their baggage, and travel between the two terminals via landside transport. This burdens passengers by increasing travel time and costs as some passengers would have to obtain temporary visas to enter the country in order to access landside transport to move between the terminals.²³

²¹ Cserep (2017).

²² MAVCOM's estimates, based on various sources.

²³ For instance, during the Master Plan Introductory Workshop held on 28 November 2017, MOTAC had highlighted a case where a family of tourists from India had to pay a visa fee of RM1,800 when transiting between KUL-T1 and KUL-T2 due to the lack of airside transit facilities. MOTAC had also highlighted its cooperation with India's Hyderabad Airport in implementing seamless transit to improve passenger experience.

Additionally, having integrated terminals is crucial for hub airports as it provides better hub efficiency. In comparing KUL with SIN and BKK, we found that KUL had substantially lower hub connectivity (measured by the Hub Connectivity Index (HCI)²⁴). SIN has a C-shaped terminal with finger piers and one separate terminal (Terminal 4) which has airside connection to the main building via busses (see Figure 12). On the other hand, BKK is a H-shaped terminal with international and domestic terminals on separate legs of the terminal, but all integrated within one building (see Figure 13).

Figure 12: SIN Terminal Layout (C-shaped Terminal)

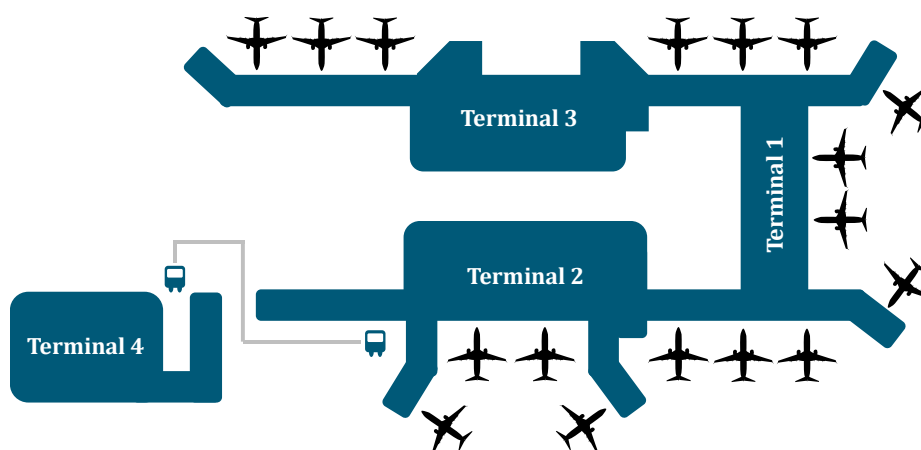
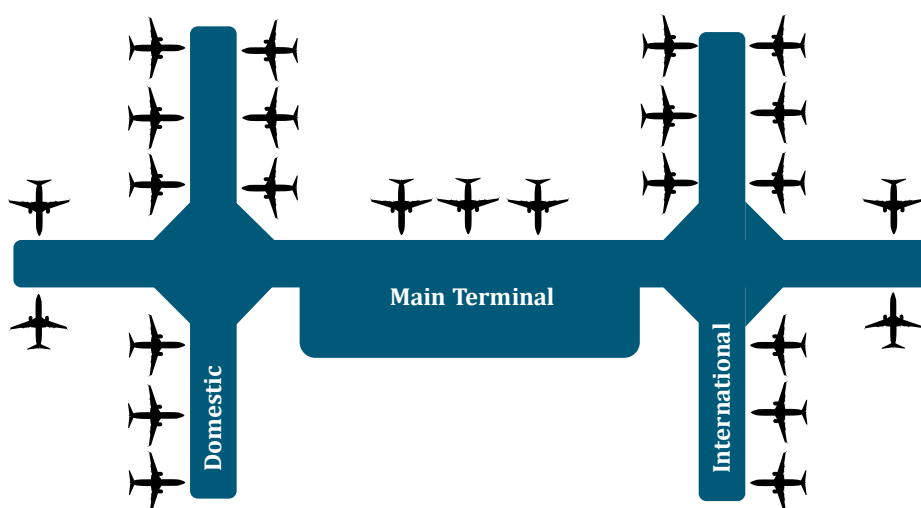


Figure 13: BKK Terminal Layout (H-shaped Terminal)



²⁴ The HCI measures the number of viable connections that can be attained between groups of arriving and departing flights in a hub airport that fulfils a specific MCT and maximum connecting time. For further details, see MAVCOM (2018c).

Table 6 shows that although KUL has more incoming flights per week, the total average connections an incoming passenger can make is only 24, while the average passenger in SIN and BKK has access to 65 and 78 possible onward connections, respectively. In terms of their HCI scores, KUL's score was only 96,725 while SIN's and BKK's was 241,213 and 281,645 respectively. KUL's lower HCI score is also partly due to its higher minimum connecting time (MCT).

Table 6: MCT, Number of Terminals, and HCI Scores for SIN, BKK, and KUL, 2018

2018	MCT	Terminal capacity	No. of terminals	No. of incoming flights	Total average connections per incoming flight	Total HCI score
SIN	45	82mn	4	3,684	65	241,213
BKK	55	45mn	3	3,594	78	281,645
KUL	60	70mn	2	3,969	24	96,725

Source: MAVCOM, OAG Connections Analyzer

The Proposed National Airports Strategy Plan

In order to address some of the issues discussed above, MAVCOM, in collaboration with MOT and CAAM, is currently developing a NASP that will provide a long-term developmental framework for airports in Malaysia. The NASP will account for economic and population growth, global developments, and sectoral developments in trade and tourism, and will act as an official document that will act as the main reference for the GoM in determining the development of airports. Details of the items under the NASP will be discussed in Section 4.

The proposed NASP will fill a critical policy gap in Malaysia's airports industry. However, the airports industry also faces broader governance and institutional issues that are discussed in the next sub-section.

Policy and Regulatory Uncertainty and Incoherence

While the proposed NASP will address technical issues relating to the planning and development of airports, issues relating to the governance and institutional framework also stymie the industry's development. These issues are not under the remit of the proposed NASP; rather they require broader measures and commitments from the GoM via a National Aviation Strategy (NAS), as well as, reform measures beyond the confines of the airports industry. This sub-section will discuss the following issues:

- **The GoM's overlapping roles** as policymaker and shareholder in the airports industry may lead to it having **conflicting objectives**.
- **The lack of commitment to uphold regulatory independence** causes uncertainty for stakeholders in the sector.
- **Contradictory decision making** by the GoM hinders the effectiveness of policymaking.

GoM's Overlapping Roles as Policymaker and Shareholder

The opacity relating to the funding of airports and airports-related infrastructure—especially in relation to those within the MAHB network—is linked to the various overlapping roles the GoM plays in the Malaysia's airports industry structure. This is particularly illustrated by the delineation of roles and responsibilities of the GoM, MAHB, MAVCOM, and CAAM in Figure 7.

Apart from being the owner for all airports and airports-related infrastructure, as well as, holding responsibility for funding development capex, the GoM—represented primarily by MOT—is also the principal policymaker for the airports sector. This means that it is responsible for national-level decisions relating to liberalization, security, safety, environmental, and other issues, in addition to all government-to-government negotiations. However, the GoM is also the ultimate shareholder for MAHB, via its ownership of KNB. Finally, the GoM, through the Government Investment Companies division, possesses one golden share in MAHB, and therefore is entitled to its own representation on the MAHB's Board of Directors.²⁵

The GoM's overlapping roles within the airports sector can contradict one another. For instance, as an ultimate shareholder, its priority should be in ensuring that MAHB is able to maximize returns. However, this could come at the expense of safeguarding passenger welfare, particularly in making sure that air travel costs are reasonable. These overlapping roles may also risk leading to investments that are made without sufficient commercial bases, such as decisions to build airports in locations with insufficient demand, and/or without a public service obligation rationale.

²⁵ For more details on MAHB's ownership structure and a discussion of issues and challenges relating to the golden share, see MAVCOM (2019), "Sequencing Liberalization of the Malaysian Air Services Sector".

An example in which this conflict may have manifested is in the determination for PSC. Although according to the OA, the PSC is supposed to be revised in five-year cycles beginning with the commencement of the OA in 2009, in reality the PSC was only revised in 2011, two years later than the scheduled review date. The same situation also applied to landing and parking charges (see Box 6).

Box 6: PSC and Other Aeronautical Charges

Aeronautical charges—PSC, and landing and parking charges—are one of the sources of revenue for airport operators. The PSC is paid by passengers at airports in Malaysia and is collected by airlines upon the purchase of tickets. The PSC collected is then paid to the airport operators following the completion of the flight.

Whilst landing and parking charges are “built-in” into the price of the ticket, the PSC is often isolated as a separate item when passengers purchase their ticket. Thus, the PSC has commonly become the topic of discussion in discussing airport charges, even though it is not the only source of revenue for airport operators. There is also a misconception among the public that the PSC is an airport tax collected by the government when, in reality, the PSC is a commercial charge that is paid to airport operators.

The PSC rates for Malaysia are currently set at RM11 for domestic flights, RM35 for flights to ASEAN destinations, and RM73 for flights to international destinations. These rates, however, will be subject to further revision once MAVCOM implements its RAB Framework, which establishes aeronautical charges based on predetermined regulated assets.²⁶ This Framework is scheduled to be in effect latest by 2Q 2020.

²⁶ See MAVCOM (2018b) for more details on the Aeronautical Charges Framework.

Lack of Commitment to Regulatory Independence

One way that governments have attempted to overcome this conflict is by establishing independent regulators who are able to regulate charges, especially towards airport operators that possess strong market power, such as in the case of MAHB. This is the path that the GoM took when establishing MAVCOM via Act 771.

The independence of economic regulation is in line with international best practices. International organizations such as the Organization for Economic Cooperation and Development (OECD) and the International Air Transport Association (IATA) recommend that regulatory agencies carry out their functions in an independent manner and protected from undue influence, whether from the regulated industry, government, politicians, or outside interest groups.²⁷ Many countries have adopted this recommendation by establishing independent regulators to oversee airport charges. A notable example is the EU's common framework for regulating airport charges, which requires Member States to establish "independent supervisory authorities" to ensure the correct application of measures under the framework.²⁸

The OECD recommends that independent regulators be considered where: "

- *there is a need for the regulator to be seen as independent from politicians, government and regulated entities, to maintain public confidence in the objectivity and impartiality of decisions and effective operation for trust in the market;*
- *both government and non-government entities are regulated under the same framework and competitive neutrality is therefore required; or*
- *the decisions of the regulator can have significant impact on particular interests and there is a need to protect its impartiality.*"²⁹

The case for independent regulation of airport charges can be based on the first scenario listed above, where politicians may have other motives besides economic efficiency in considering airport charges. For example, they may be subject to lobbying by airlines and other special interests to keep airport charges artificially low, at the expense of the ability to invest in airports infrastructure, with negative consequences for airport service quality. Conversely, there may also be an incentive to raise airport charges to increase the operator's profitability, especially in cases where the government is a shareholder of the operator. These potential conflicts of interest highlight the importance of ensuring that the determination of airport charges is conducted in an independent and impartial manner.³⁰

²⁷ OECD (2017), IATA (2008).

²⁸ Directive 2009/12/EC of the European parliament on airport charges.

²⁹ OECD (2012)

³⁰ While independent regulation of airport charges is primarily justified by the first condition, the other two conditions may be applicable to other sub-sectors in the aviation industry.

While MAVCOM is established as an independent regulator, there have been attempts to influence MAVCOM's decisions through undue political intervention. For example, in line with MAVCOM's power to set aeronautical charges, the Commission had carried out a revision of PSC in 2016. However, the Cabinet had debated and decided on the revised charges, even though the power to set aeronautical charges lies entirely within MAVCOM's jurisdiction.³¹

More recently, the current Minister of Transport announced that the Cabinet had decided on a reduction in the PSC for international flights at all airports in Malaysia except the main terminal of KUL. In justifying the decision, the Minister claimed that the government has the right to determine the PSC rate as “(A)ll (airport) assets are owned by the government” and that both MAHB and MAVCOM are government-linked entities.³² In response, IATA claimed that the move discriminated against the airlines and passengers that used the main terminal of KUL, in addition to undermining the independence of airport charges regulation.³³ Uncertainty remains on the legality and the implementation of the announced tariffs.

As an economic regulator, MAVCOM is responsible for and commits to developing and enforcing sound regulations that aim to provide a fair and competitive commercial environment for the aviation sector, which considers the welfare of aviation firms, consumers, and the broader Malaysian economy. Examples of this include the QoS and RAB Frameworks governing airport service quality and charges, respectively. However, the effectiveness of such regulation can be undermined if the GoM does not commit to the principles of regulatory independence and the separation of powers between policymakers and regulators.

Contradictory Decision-making by the GoM

Different parts of the GoM could also make decisions which may inadvertently compromise other policy objectives. For instance, in attempting to expand the GoM's Treasury revenues, the MOF had announced in the 2019 Budget, and which was subsequently passed by the Dewan Rakyat in April 2019 in the Departure Levy Act 2019 [Act 813], the imposition of a Departure Levy for all air travellers flying to non-domestic destinations beginning September 2019.

Although other jurisdictions have also imposed charges to passengers which are similar to the Departure Levy (in that they do not relate to the cost of developing or operating airports)³⁴, the Departure Levy may result in negative impacts for the Malaysian aviation sector, as follows³⁵:

³¹ As stated by the then-Minister of Transport, “MAVCOM presented their views to me, and we are looking at the finer details. We also discussed in the cabinet (sic.) today.” (The Sun, 2016)

³² The Star (2019a), Bernama (2019)

³³ The Edge (2019a)

³⁴ E.g. the Air Passenger Departure Tax in Hong Kong, the Departure Tax in Japan, and the Air Passenger Duty in the United Kingdom.

³⁵ MAVCOM's commentary on the proposed Departure Levy can found in MAVCOM (2018a).

- **The proposed levy will increase air travel costs:** MAVCOM estimated that the Departure Levy will increase non-airfare costs to outbound passengers by 54.8% to 57.1%. This represents a material increase, which could imply that Malaysia no longer offers one of the lowest non-airfare costs both regionally and globally.
- **Implications on cost under the RAB Framework:** stakeholders such as MAHB and the GoM will need to consider the Departure Levy's impact on the cost to consumers when debating the appropriate level of future capital expenditure in the airports industry and the resultant service levels and airport charges.
- **The proposed levy may potentially be inconsistent with ICAO guidelines and international good practices:** the relevant ICAO policies and guidelines³⁶ state that any cost imposed on travellers should be utilised for the benefit of the aviation industry and that charges not intended to recover the costs of civil aviation facilities and services are considered a form of tax. While ICAO guidelines are not obligatory on Member States, they nonetheless represent best practices in the civil aviation industry.³⁷
- **Unclear basis for the rate of the Departure Levy:** the method for determining the rate of the Departure Levy is currently unknown, thus there is a lack of transparency and quantitative basis for the rate. In contrast, the RAB Framework, deployed to determine aeronautical charges for airports, provides charges that are based on quantifiable assumptions and subject to consultation with industry stakeholders.

Indeed, the Minister of Transport indicated that the announcement of the PSC reduction—discussed in the previous sub-section—was primarily motivated by the desire to “*balance with (sic.) the Departure Levy*”. Some commentators have pointed out that it would have been more straightforward to abolish the departure levy if the policy objective is to maintain low costs for travel.³⁸ Furthermore, the lowering of the PSC will impose fiscal costs on the GoM via an increase in Marginal Cost Support payment to MAHB, partially defeating the purpose of the departure levy to begin with.

The example of the departure levy demonstrates the importance of being aware about the roles and relationships of various stakeholders in the airports industry as discussed earlier. Contradictory policymaking can occur in other matters relating to airports, and policymakers should be aware of the full implications of their decisions lest any unintended consequences arise. This can be done via greater consultation with relevant stakeholders, in particular ministries and agencies that may be affected by the decisions.

³⁶ ICAO (2013a).

³⁷ MAVCOM notes that the government's current intention is for the departure levy to only be applicable for passengers departing the country by air transport. (The Malaysian Reserve, 2019).

³⁸ The Star (2019a), The Edge (2019a).

Issues Surrounding Corporate Governance

The previous sub-section discussed issues emanating from the GoM's various roles in the airports industry. Additionally, there are also issues that arise from MAHB's ability to operate as a commercial entity. These issues include:

- **Dampened commercial autonomy**, which hampers MAHB's ability to undertake necessary investments in a timely manner
- **Misallocation of risk and return**, where the long period of the operating agreement is not commensurate with MAHB's limited funding obligations
- **Unclear funding responsibilities and practices** for certain airport infrastructure and lack of clarity on the funding process

Dampened Commercial Autonomy

MAVCOM's case studies of airports indicate that in other jurisdictions, even where the airport is owned by the government, for example AMS, the government does not intervene in commercial decisions. Thus, while there are government representatives on the boards of such airports, they represent the government as a shareholder. This means that any decisions these representatives make as board members for such airports are based on commercial, or profit-maximization considerations. Meanwhile, public interests relating to airport development and operations are safeguarded via other means, such as policies, laws, and regulations. Hence, even for government-owned airports in the jurisdictions studied, decisions on capex are determined solely by their management and board on commercial bases.

By contrast, in MAHB's case, the GoM is responsible for airports' development capex. MAHB must seek approval from the MOT (and ultimately, the Cabinet) for any development capex that it wishes to incur on its own. Therefore, such decisions may be influenced by other considerations beyond commercial interests, and may conflict with MAHB's responsibility, as a publicly listed entity, to maximise returns for its shareholders.

Misallocation of Risk and Return

In terms of a public-private partnership (PPP) model for airports, the OA is a hybrid between a lease/affermage agreement³⁹ and a concession agreement, where the private sector operator has full autonomy over all capex and opex (see Box 7, which discusses the different ownership and management structures for selected airports and airport operators). This means that MAHB is responsible for opex and operational capex, and the GoM is responsible for development capex.

As Figure 14 in Box 7 illustrates, this hybrid structure indicates that there could be a possible mismatch between the risk-return allocation in terms of the OA's structure. Typically, in PPP contracts, the higher the financial risk borne by the operator, the longer the duration of the contract. This is because the operator is meant to bear the cost of funding capex, the returns of which will take a long time to be realised.⁴⁰

In the case of MAHB, the operator does not bear the responsibility to fund all its capex, only those deemed operational capex, as discussed previously. On the other hand, the duration of the OA is longer than the typical affermage agreement and is much closer to that of a concession agreement. This is more so the case for the extension to the OA, which will be for 35 years.

Hence, there could be some misallocation of risk and return between the GoM and MAHB, where MAHB is bearing less risk than it should be apportioned with given the long period of the OA.

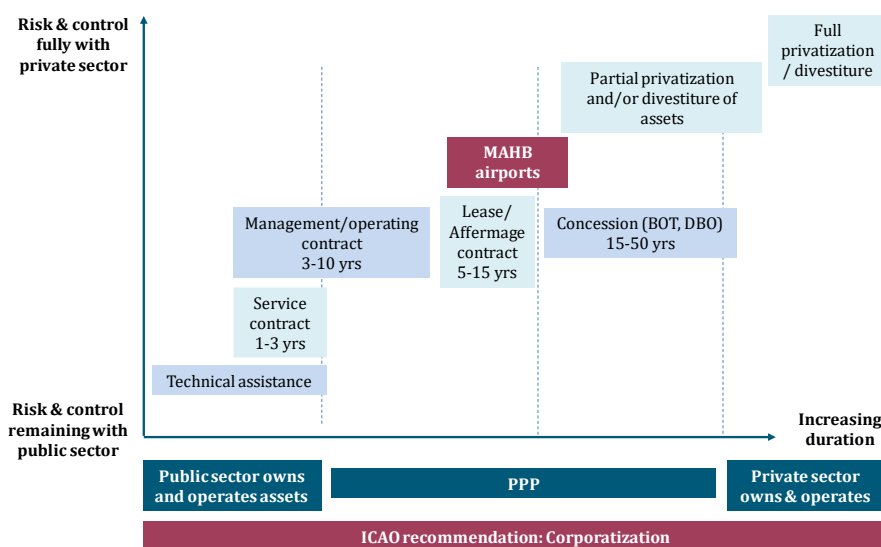
³⁹ According to the World Bank, lease/affermage agreements are “generally public-private sector arrangements under which the private operator is responsible for operating and maintaining the utility but not for financing the investment.

⁴⁰ Engle, Fisher, and Galetovic (2014).

Box 7: Ownership and Management Structures for Airports

Figure 14 summarizes the allocation of risk and control between the private and public sectors for different airport ownership models for selected airports covered in MAVCOM's airport case studies.

Figure 14: Allocation of Risk and Control for Different Airport Ownership Structures



Source: MAVCOM

As Figure 14 illustrates, there is a variety of airport ownership and management models employed globally, ranging from full public to private sector ownership, with PPP enabling the allocation of risk and control to be shared between governments and private sector operators. Even PPP models are varied. These include:

- **management/operating contracts:** short-term contracts which are rare in the airports industry, as typically airports-related investments require longer durations
- **lease/affermage agreements:** typically medium-term
- **concession agreements:** typically very long-term

While all PPP contracts entail retention of asset ownership by the government, in management/operating and lease/affermage-type PPP contracts, the government also finances capex. By contrast, concession agreements require the concessionaires to fund capex. As stated, the OA between the GoM and MAHB is a hybrid between a lease/affermage agreement, where the GoM retains asset ownership, and a concession agreement, given its long duration.

Unclear Funding Responsibilities and Practices

In practice, the delineation of responsibilities over development capex has been more fluid. Apart from the estimated RM4.4bn of development capex that MAHB had already undertaken for the construction of KUL-T2 and other development work for selected airports, the GoM had also requested that MAHB fund other construction projects which would fall under the definition of development capex, such as a proposed expansion for PEN. Although the GoM is contractually obligated to compensate MAHB for such development capex, the Airport Development Request process for MAHB to claim the capex funding from the GoM has not been exercised. This may have a negative impact on MAHB's finances, and so, the returns it can provide to its shareholders, which include the GoM.

Additionally, there is no official allocation of funding responsibilities for infrastructure that is deemed necessary for airport operations but may not be deemed to be under any airport operator's purview. These include air control and meteorological towers, as well as, other infrastructure inside the terminal buildings, such as customs, immigration, and quarantine facilities.

Finally, there is also a need to determine the funding mechanism for the construction, operation, and maintenance of STOLports which are currently being used by, among others, the Public Service Obligation routes in Sabah and Sarawak. Such routes are deemed as being non-commercial.

By convention, these capex have typically been borne by the operators themselves. However, as stated, these expenditures impact their bottom-line, which will then have implications for their shareholders. For MAHB, this includes, ultimately, the GoM. The lack of clarity in capex responsibilities in these areas has led to delays in essential investments, as well as, financial uncertainty for airport operators such as MAHB.

SECTION 2: FINANCIAL CAPACITY FOR AIRPORT DEVELOPMENT

This Section discusses the financial capacity available for airport development and the options available to the GoM and MAHB in raising additional funds for capex to invest in airports. Based on the GoM's statutory constraints on borrowing and current priority in reducing the national debt, as well as, MAHB's debt covenants, we conclude that there is limited space for both the GoM and MAHB to borrow sufficient funding to fund the required capex.

Projected Capex by MAHB and the GoM

MAHB's projected capex, approved by MAVCOM, for the three-year period from 2020 to 2022 amounts to RM4.0bn.⁴¹ The bulk of projected capex for this period will be invested in the two terminals of KUL, amounting to RM2.7bn. These include:

- **Capacity de-bottlenecking measures**, including replacing the aerotrain and improving baggage flows.
- **Infrastructure refurbishment** to repair outdated and damaged infrastructure, including pavement repairs and facility maintenance.
- **Replacing end-of-life safety and security equipment**, including CCTV, ICT equipment, security processing, and air ground lighting.

GoM's Air Transport-related Expenditure Under The 11th Malaysia Plan (2016 – 2020)

Based on the OA signed between MAHB and the GoM, responsibility for airport development capex lies with the GoM. MAHB may choose to incur its own capex, subject to approval by the GoM.

In line with this, the 11th Malaysia Plan contains the following items on airport development:

- Construction of a **new Kuala Lumpur Air Traffic Control Centre** at KUL to replace the existing National Control Centre located in Subang.
- **Upgrade of the ATM systems** to increase aircraft movements per hour at KUL.
- **Terminal expansion at LGK⁴² and KBR** to cater for increased passenger traffic. Capex for these two airports amounting to RM89.0mn and RM483.0mn, respectively, have been approved by the GoM.

⁴¹ Regulatory Period 1 of the RAB Framework. MAHB projects capex worth RM0.5bn for 2019. More details will be available in MAVCOM's forthcoming Decision Paper.

⁴² Completed in 2018.

The 2018 mid-term review of the 11th Malaysia Plan presented the following items for airport development:

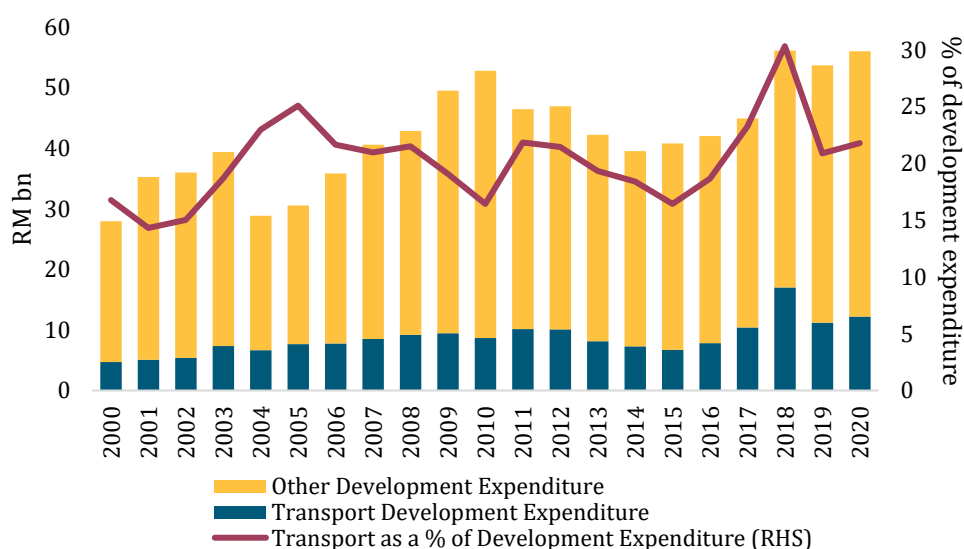
- **Terminal expansion and extension of runways at KBR and PEN** to increase capacity and efficiency.
- **The completion of upgrading works at LGK** in 2018 is expected to reduce congestion and improve comfort for air travellers.
- **Construction of a new airport in Mukah** to help enhance connectivity and mobility to the coastal areas of Sarawak.

The Transport Sector Receives on Average 20.2% of Development Expenditure

For the period 2000 to 2020, the GoM allocates, on average, 20.2% of annual development expenditure on the transport sector as seen in Figure 15. It should be noted that the transport sector consists of multiple modes of transport, of which air transport is one of them. Thus, the air transport sector does not receive the entire transport sector development allocation.

For the year 2020, the GoM has allocated RM12.2bn for the transport sector out of a total RM56.0bn of development expenditure. The transport sector is the largest recipient of government development expenditure, constituting 21.8% of the total development budget in 2020.

Figure 15: GoM Development Expenditure, 2000 – 2020



Source: MOF

The GoM has Stated that it Faces Constraints in Funding Airport Infrastructure

The GoM has acknowledged the constraints in its fiscal capacity and that this will have implications on its ability to incur expenditures. For example, when commenting on the 2019 Budget, the Prime Minister stated that the burden of reducing government expenditure would be largely borne by a cut in the development budget, given the difficulties in reducing operational expenditures.⁴³ The GoM has already postponed, renegotiated, or cancelled several infrastructure projects such as the Mass Rapid Transit Circle Line, the KL-Singapore High Speed Rail, and the East Coast Rail Link.⁴⁴

Due to these constraints, the GoM has expressed a preference for airport infrastructure development to be funded via private investment. The Minister of Transport further elaborated that in addition to reducing the GoM's fiscal burden, the use of private sector finance has additional benefits such as the ability to undertake multiple airport developments concurrently and the introduction of competition into the sector.

This has been corroborated by the Minister of Finance, who stated that the expansion of PEN and the building of a new proposed airport at Kulim would be funded via a private financing initiative. The Minister further stated that the GoM planned to use private financing for other airport construction projects, given the potential to help the government reduce its expenditures.⁴⁵

Pursuant to attracting private investment, the GoM has also expressed willingness to open the sector to competition, acknowledging that MAHB has limited capacity to fund and manage airports across the country.⁴⁶

⁴³ The Star (2018b).

⁴⁴ The Edge (2018).

⁴⁵ The Star (2019).

⁴⁶ The Edge (2019b).

MAHB's Financing Capacity Faces Some Limitations

A typical corporate entity sources its capital from equity and debt. The preference for each funding option depends on its target capital structure and its ability to generate a return above its weighted average cost of capital. A company also has to consider, among others, existing debt covenants, as well as, requirements for shareholders' approval to increase capital.

Raising Capital via Equity

MAHB may explore equity funding via the issuance of new shares to existing and/or new investors. New shares can be issued, for example, either via rights issuance or private placements. However, equity investors typically demand higher returns on their investments compared to debtholders, which will result in higher weighted average cost of capital. Generally, issuance of new shares may not be preferred by existing shareholders due to earnings dilution, unless funds raised can be shown to be deployed for value accretive pursuits. The last rights issuance and private placements by MAHB were done in 2015 and 2014, respectively.

Raising Capital via Debt

MAHB had issued several debt instruments, namely Senior Sukuk, Senior Term Facility and Islamic Medium-Term Notes in 2013, 2015, and 2010, respectively, for various purposes, namely to fund working capital and the costs of building KUL-T2. For the Senior Sukuk, the company still has a RM1.0bn facility that can be tapped into without requiring shareholders' approval. However, MAHB may be constrained by the following covenants if it considers raising debt. These are:

- MAHB's sukuk covenant limits the gearing ratio, defined as debt/equity, to a maximum of 1.25x. Its gearing ratio stood at 0.56x as at 31 December 2018, in compliance with MAHB's sukuk covenant
- MAHB's AAA credit rating is contingent on maintaining an adjusted gearing ratio⁴⁷ below 1.00x and a Funds from Operations (FFO)/debt and contingent liabilities ratio no lower than 0.20x. These ratios stood at 0.65x and 0.24x, respectively as at 31 December 2018, in compliance with the AAA credit rating requirements.

⁴⁷ The adjusted gearing ratio is calculated by reclassifying half of its perpetual sukuk from equity to borrowings.

Scenario Analysis on Debt Raising

We conducted a scenario analysis, as summarized in Table 7, to estimate MAHB's ability to raise additional funds without breaking any of its covenants. Scenario I involves raising funds via the issuance of perpetual sukuk, whereas Scenario II involves additional bank borrowings in compliance of MAHB's covenants. Scenario III also involves bank borrowings but allows for MAHB's credit rating to drop from AAA to A.

Table 7: Scenario Analyses for MAHB's Funding Options, 2018

RM mn	as at 31 December 2018	Scenario I	Scenario II	Scenario III
Total borrowings	5,143.3	5,838.1	6,338.1	9,869.9
Perpetual sukuk	997.8	1,997.8	997.8	997.8
Equity	9,140.7	10,140.7	9,140.7	9,140.7
Funds from operations ¹	1,479.9	1,479.9	1,479.9	1,479.9
Contingent liabilities ²	562.7	562.7	562.7	562.7
Gearing (x)	0.56	0.58	0.69	1.08
Adjusted gearing (x)	0.65	0.75	0.79	1.20
FFO/debt and contingent liabilities ratio	0.24	0.20	0.20	0.14

Source: MAVCOM, MAHB

Notes:

- 1) Cashflow from operations before working capital changes and after tax and Istanbul Sabiha Gokcen's concession payment (RM452.4mn)
- 2) Including provision for lawsuit by Kuala Lumpur Aviation Fuelling System Sdn. Bhd. (RM484.2bn)

All scenarios indicate that MAHB would be unable to raise the entirety of the RM4.5bn in required capex funds for 2019 – 2022 by raising debt, unless it is willing to forgo its AAA credit rating.

- **Scenario I:** MAHB can issue another RM1.0bn of perpetual sukuk without breaking any of its AAA credit rating covenants, while at the same time take on additional debt of RM694.8mn. This measure will maintain MAHB's FFO/debt and contingent liabilities ratio at the required 0.20x and gives the company access to total capital of RM1.7bn. This will be cover only 37.7% of the total projected capex between 2019 and 2022.

RM mn	as at 31 December 2018	Scenario I
Total borrowings	5,143.3	5,838.1
Perpetual sukuk	997.8	1,997.8
Equity	9,140.7	10,140.7
Funds from operations	1,479.9	1,479.9
Contingent liabilities	562.7	562.7
Gearing (x)	0.56	0.58
Adjusted gearing (x)	0.65	0.75
FFO/debt and contingent liabilities ratio	0.24	0.20

- **Scenario II:** MAHB may also choose to raise additional debt without issuing perpetual sukuk. Based on their current capital structure, MAHB can raise an additional RM1.2bn of debt without violating any of its debt covenants, where the FFO/debt and contingent liabilities ratio acts as the limiting factor preventing further borrowings. Under this scenario, the debt raised will only cover 26.6% of the projected capex between 2019 and 2022.

RM mn	as at 31 December 2018	Scenario II
Total borrowings	5,143.3	6,338.1
Perpetual sukuk	997.8	997.8
Equity	9,140.7	9,140.7
Funds from operations	1,479.9	1,479.9
Contingent liabilities	562.7	562.7
Gearing (x)	0.56	0.69
Adjusted gearing (x)	0.65	0.79
FFO/debt and contingent liabilities ratio	0.24	0.20

- **Scenario III:** Should MAHB allow for its rating to be downgraded from AAA to A, MAHB will have room to raise an additional RM4.7bn without violating its sukuk covenant. Its FFO/debt and contingent liabilities ratio will fall to 0.14 and its adjusted-gearing ratio will be at 1.2x. The debt raised will be adequate to cover the projected capex between 2019 and 2022. However, this will come at the cost of its AAA credit rating, with potential implications on its future cost of borrowing.

RM mn	as at 31 December 2018	Scenario III
Total borrowings	5,143.3	9,869.9
Perpetual sukuk	997.8	997.8
Equity	9,140.7	9,140.7
Funds from operations	1,479.9	1,479.9
Contingent liabilities	562.7	562.7
Gearing (x)	0.56	1.08
Adjusted gearing (x)	0.65	1.20
FFO/debt and contingent liabilities ratio	0.24	0.14

Our scenario analysis indicates that raising additional debt may result in MAHB losing its AAA credit rating or violate its sukuk covenants. Therefore, there is a need to consider various funding mechanisms to support airport developments in the country.

Measures to Improve Capacity to Undertake Capex

MAVCOM's Proposed RAB Framework to Improve Financial Capacity

Considering the challenges in ensuring that airport operators have sufficient capacity to undertake capex spending, MAVCOM is developing the RAB Framework, which links fees and charges due to airports with pre-determined capex within a specified regulatory period. The RAB Framework improves MAHB's capacity to undertake capex in two ways. Firstly, the calculated charges—PSC, and landing and parking charges—will improve MAHB's cash flow, which can then be used to fund required airport developments, including those deemed development capex under the current OA. Secondly, the Framework also helps provide certainty to existing and potential investors by ensuring a fair rate of return, thus improving MAHB's ability to raise capital.

Third-party Investments into Airports can Provide Other Efficiency Benefits

While the RAB Framework is designed to be sufficient in providing the financial capacity for airport capex, third-party investments—particularly from other airport operators—into Malaysia's airports industry may bring complementary benefits in terms of sectoral benchmarking and efficiency.

MAHB's near-monopoly position in the industry has led to a shortage of domestic competitor firms that can be used to analyse MAHB's commercial performance in a comparative perspective. The existence of third-party investors in different airports or airport clusters may provide such benchmarks in the future. These can act as an additional source of competitive pressure on MAHB, as investors and other industry stakeholders will compare MAHB's performance with other parties operating within the Malaysian airports industry. There are also other benefits such as enabling knowledge transfers and improving risk diversification, bringing benefits to both service quality and commercial performance.

Under the current OA, MAHB may seek to obtain third-party investments only at the holding company level. Given that the proposed extended OA may entail splitting the network into four clusters: one for KUL, and one each for other designated airports in Peninsular Malaysia, Sabah and Sarawak respectively, it may be possible for MAHB to seek external parties' investments into airport developments at the cluster level.

It should be noted, however, that decisions regarding the funding options for future airports developments require high-level policy decisions by the GoM, the most pertinent of which is whether to grant airport operators full responsibility over development and operational capex. MAVCOM recommends that the GoM decide in the affirmative. This is further elaborated in Section 4.

SECTION 3: MODELS OF AIRPORTS INDUSTRY STRUCTURE AND GOVERNANCE

In this Section, we discuss the results of case studies we have undertaken as part of our review on optimal airport industry structures. These case studies show that there is no “best practice” when it comes to industry structures, ownership, and governance; a wide variety of models have been successful in different contexts.

Research on the subject of airport management and governance has not identified a clear link between ownership (public vs. private ownership) and operational efficiency and service quality.⁴⁸ Instead, the main indicator that underlies successful airports is the commercialization of the airport and the ability of the airport operator to run the airport on commercial considerations.

Commercialization of airports often involves, at least, the loosening of links between the government and the airport operators. In practice, this can occur via the establishment of independent airport authorities or corporations. The loosening of ties between government and airport operator allows the airport operator greater commercial and operational freedom to make business decisions without government interference.

The trend towards increased commercialization and corporatization among major global airports is a response to several developments. These include the liberalization of the airline industry, higher purchasing power of airlines, sales growth via online channels, expansion of substitutes such as high-speed rail and improved aircraft technology which has made more airport choices available to airlines.

In recognition of this, international institutions such as ICAO and Airports Council International (ACI) do not prescribe a specific ownership or governance model for the operation of airports. Generally, governments should be free to decide on the appropriate governance model for airports, based on their local circumstances and policy preferences. In the Malaysian context, there is no reason to believe that network operators, like MAHB, results in an inferior industry structure. As discussed in Section 1, network operators may bring benefits such as economies of scale, lower airport charges, and supporting airports in rural areas.

The case studies were conducted via site visits to selected airports, as well as, desktop research. Detailed reports on the case studies are included in Appendix 1 of this Paper. Appendix 2 presents an overview of the views of international organizations regarding the ownership and management structures of airports.

⁴⁸ See e.g. Bitzan & Peoples (2017), Graham (2014), and Graham & Morrell (2017).

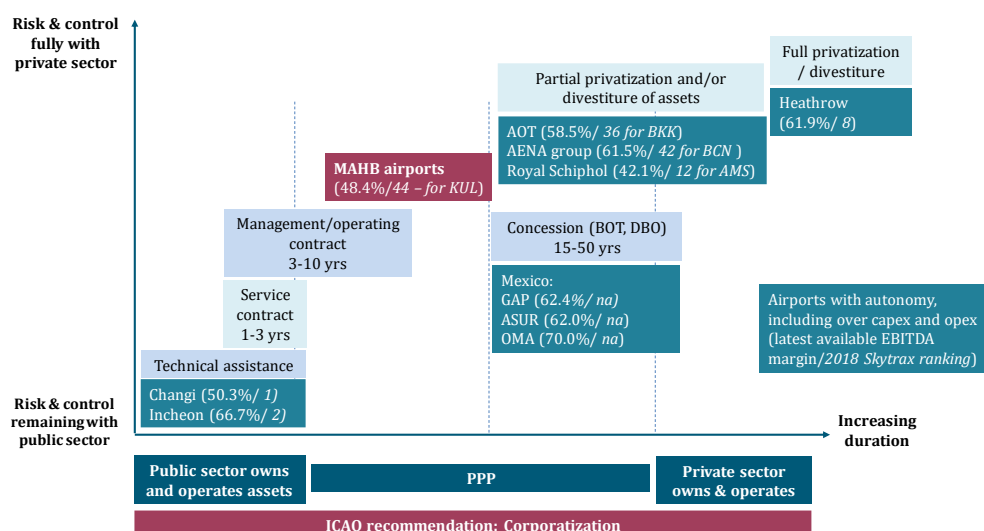
Summary of Key Findings on Ownership and Governance

Commercial Autonomy Matters More for Airport Performance than Ownership Structure

As described in Section 1, MAHB is a publicly listed entity, with partial government ownership exercised via government-linked funds such as KNB and EPF. This is not unusual, as many airport operators and/or airports in other jurisdictions continue to be partially owned by government post-privatization. The government may also impose limits on foreign ownership of airport operators, such as in Australia and Mexico. Meanwhile, there are also fully privatized airports, such as LHR.

Figure 16 compares the financial performance (as measured by EBITDA) and service quality rankings (as measured by Skytrax rankings) of selected airports with different ownership and management structures.

Figure 16: Allocation of Risk and Control for Different Airport Ownership Structures



Source: ACI, latest financial results

Figure 16, in addition to our case studies, illustrates that in general, there is no universal “best practice” regarding airport operator ownership and management structure. Indeed, airport operators are able to succeed under a variety of ownership and management models. However, the critical success factors are strong corporate governance and commercial autonomy which enable the airport operator to effectively pursue its commercial objectives.

The salient observations from our studies include the following:

- Airport operators need to operate on fully commercial terms
- Airport should have full responsibility over capex
- Aeronautical charges are generally undifferentiated between FSCs and LCCs

Airports Operate on Fully Commercial Terms

As discussed in Section 1, the GoM exerts considerable influence over the airports industry in Malaysia via its golden share in MAHB and its jurisdiction over airport development capex. Additionally, government representatives sit on the Board of Directors of MAHB. These factors may have slowed down the progress of MAHB in pursuing commercialization in its operations.

Other airports covered in our case studies are primarily run on commercial terms. The airport operators run on the objective of profit maximization whilst giving due consideration to passenger and public welfare.⁴⁹ The presence of competing airport operators also further exerts pressure on them to operate efficiently. In some cases, such as in the UK, most airport operators are fully private entities and the government has no presence in the management or operations of these operators.

Airport Operators Have Full Responsibility Over All Capex

Our survey of selected airports has found that Malaysia is an outlier in:

- differentiating between developmental and operational capex; and
- allocating the responsibility for funding development capex to the government rather than the airport operator.

The need for MAHB to seek government approval for development projects hinders their ability to make decisions primarily on commercial considerations.

The responsibility and autonomy to pursue and undertake capex investments is a key factor in commercialization. In recognition of the need for airports to have the ability to make timely investments, especially for capacity expansion, other airport operators covered in our case studies have full control and responsibility for both capital and operating expenditures. This means that airport operators are able to undertake necessary investments in a relatively efficient manner.

⁴⁹ For example, AENA has a public welfare objective of maintaining connectivity and the territorial cohesion of Spain.

Aeronautical Charges Are Generally Undifferentiated Between FSCs and LCCs

As discussed in Box 6, PSC in Malaysia is currently regulated by MAVCOM. MAVCOM currently differentiates PSC by destination, with different charges for domestic, ASEAN, and international flights. Prior to 2018, the PSC rate for KUL-T2 was lower than KUL-T1. This was justified by some parties on the basis of KUL-T2 being a terminal used by LCCs, despite KUL-T2 never being officially designated as an LCC terminal. The benchmark PSC rates between the two KUL terminals were equalized effective 1 January 2018.

As part of the Commission's power to set charges for air services under section 46 of Act 771, MAVCOM is currently in the process of implementing a long-term RAB Framework that will be applied to airports within the MAHB network.⁵⁰ It is likely that this framework will result in changes to benchmark PSC rates.

Our case studies of other airports found that most airports apply uniform base landing, take-off, parking, and passenger chargers regardless of the business model of the airlines operating at these airports. The only exception was AMS, which charges cheaper parking and landing rates for flights that use their fast-turnaround pier. It should be noted that the fast-turnaround pier is not exclusive to LCCs.

Aeronautical charges for Aena's airports are governed by a five-year airport charges framework as defined in the DORA. The DORA provides for differentiated charges for different categories of airports, approximately segmented by passenger volumes. The key feature of the framework with which airport charges are set is the link between charges and quality of service indicators.

⁵⁰ For more information on the Aeronautical Charges Framework, kindly refer to MAVCOM's Second Consultation Paper on the Framework, issued on 18 June 2019 (MAVCOM, 2019c).

Ownership and Governance in Other Industries in Malaysia

In addition to drawing lessons from models of ownership and governance from airport industries in other countries, there are also relevant lessons from other sectors that may be described as “strategic” in Malaysia. Box 8 discusses these findings.

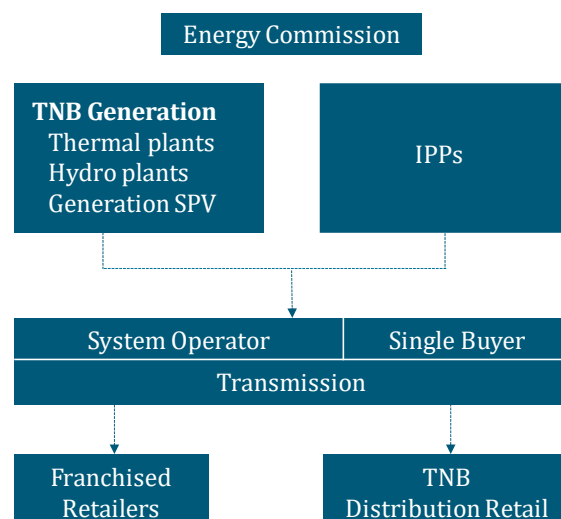
Box 8: Ownership and Governance in Other Industries in Malaysia

Power

In Malaysia, one industry that has seen significant changes in ownership and management in line with the government’s privatization plan is the electricity industry. The industry was originally under the purview of the Central Electricity Board (CEB), which was established in 1949 to take over the operations of the Electricity Department (later renamed National Electricity Board in 1965). Subsequently, all of the CEB’s assets, liabilities, and operations were transferred to Tenaga Nasional Berhad (TNB) in 1990 during its incorporation as a public limited company. TNB was then listed on the stock market in 1992.

The industry structure also changed as a result of the privatization programme. Historically, TNB was the only operator, with wholly vertically integrated operations comprising generation, transmission, and distribution/retail. In the early 1990s, the GoM allowed private companies to participate in the generation sub-sector through the introduction of Independent Power Producers (IPPs). These private IPPs were given licences to supply electricity to TNB through negotiated power purchase agreements (PPAs). However, transmission and distribution networks which form the national grid remain under the control of TNB, apart from private franchised retailers, which distribute electricity within a restricted or licensed area (see Figure 17).

Figure 17: The Current Electricity Industry Structure



Source: Peninsular Malaysia Electricity Supply Industry Outlook 2013

The objectives of the privatization and corporatization of TNB, in line with the privatization policy of the GoM, was to reduce the latter's financial and administrative burden, improve efficiency, and facilitate economic growth. In this regard, the privatization of TNB could be considered as more "complete" compared to the airports industry in Malaysia, as all of its assets previously owned by the GoM are reflected in TNB's balance sheet. By comparison, the assets owned by the GoM in the airports industry are not reflected in MAHB's balance sheet. Hence, TNB is able to be accountable for all of its assets, liabilities, and operations without requiring GoM funding and managerial input, although tariffs still require the GoM's approval.

Overall, the efficiency and productivity of TNB improved after the privatization as upgrades to its facilities and services were able to be carried out earlier than expected if they had been undertaken by the GoM.⁵¹ Metrics such as cost per unit output (sen/kWh), the number of service centres open to the public, and revenue generated were higher post-privatization compared to before its privatization in 1991. Incidences of breakdown substantially decreased from 311,190 in 1991 to 42,850 in 2000. This translated to a System Average Interruption Duration Index (SAIDI) from 770 minutes per customer per year in 1996, to 319 minutes per customer per year in 2000.

After the privatization and introduction of competition in the form of IPPs in the early 1990s, the GoM continued to reform the industry via several programmes and plans, such as the Five Fuel Policy (1999), Comprehensive National Energy Policy/PPA Renegotiation (2006 – 2009), and account unbundling of TNB's sub-divisions ahead of the introduction of the Incentive Based Regulation (IBR) in 2010 – 2011. The IBR, a charges framework based on the Regulated Asset Base, was finally introduced in 2014 (trial year), with the first Regulatory Period (RP1) being 2015 – 2017 and RP2 spanning 2018 – 2020.

Telecommunications

Like the electricity industry, the telecommunications industry has seen significant changes in its governance model arising out of privatization. The industry was part of the privatization wave in the 1980s as an overall drive to increase efficiency, productivity, and capacity and to alleviate the burden on the GoM's resources. Syarikat Telekom Malaysia Berhad (STM) was created in 1987 to take over the operations of Jabatan Telekomunikasi Malaysia and was later renamed Telekom Malaysia Berhad (TM). TM was later listed on the stock exchange in 1990.

⁵¹ Economic Planning Unit (2001).

The GoM then liberalized parts of the industry, such as the fixed-line subsector, with five fixed-line licences being awarded in the 1990s despite the high capital-intensive nature of the industry. For cellular services, the first cellular phone licence was issued to NMT450 in 1984, followed by STM Cellular Communications in 1988 (later renamed as Celcom Sdn. Bhd.). Other players followed suit, including TM, Mobikom, Maxis, DiGi, and TIME dotCom. Similarly, the internet service provider (ISP) market was liberalized following the initial internet service provided by MIMOS Berhad to include TM, TIME, Maxis, and Celcom.

Like the electricity industry, the privatization of the telecommunications industry yielded some benefits in terms of better services and higher efficiencies. Examples of improvements include the introduction of detailed billing systems with reduced errors, higher revenue per subscriber, higher production per employee, and improved responses to customer complaints.⁵² On the other hand, one criticism made was that the higher efficiency and level of service was accompanied by higher charges, i.e. an increase of 30% post corporatization.⁵³

Telecommunications industry players are free to set rates for services provided, as per section 197(1) of the Communications and Multimedia Act 1998 [Act 588], unlike those in the electricity industry. The rates set must adhere to certain principles outlined in section 198 of Act 588. The rates must be fair, cost-oriented (eliminate cross-subsidies), do not contain discounts that will limit competition, attractive to encourage investments into the industry, and in line with international regulations and best practices. Additionally, the Minister of Communications and Multimedia may intervene in the setting of rates for the services provided by industry players if required for the purpose of public interest.⁵⁴ In 2003, the Minister issued a directive to the Malaysian Communications and Multimedia Commission to determine access pricing network facilities and services. The standard on access pricing outlined the maximum prices to be charged for the provision of network facilities and services. The latest such standard that was issued in 2007 runs from 1 January 2018 to 31 December 2020.

To date, TM remains the dominant entity in the fixed-line subsector but has a much smaller market share in the mobile wireless subsector. The GoM maintains a significant stake in the company but largely allows full autonomy of the management and operations of the fixed-line and cellular businesses. The industry has also benefited from greater competition, particularly in the wireless subsector, which has resulted in increased products and services offered to consumers. Overall, the privatization and transfer of control to the operating entity have led to significant benefits and better performance for TM as the national telecommunications company.⁵⁵

⁵² Economic Planning Unit (2001).

⁵³ Sundaram, J., & Tan, W. (2005).

⁵⁴ Section 199 of Act 588.

⁵⁵ Lee, Tan, and Lee (n.d.).

SECTION 4: MAVCOM POSITIONS ON MALAYSIA'S AIRPORTS INDUSTRY STRUCTURE

Sections 1 and 2 outline the issues faced by the industry, including:

- **MAHB's financial performance and service quality have room for further improvement**, which could be linked to the lack of competitive pressures.
- **Absence of an airports policy and overarching strategy plan** for the industry, which has led to ad-hoc airport developments and inefficient airport infrastructure designs.
- **Policy and regulatory uncertainty and incoherence**, as well as, **MAHB's limited commercial behaviour**.

Given these findings, MAVCOM has adopted the following position on the optimal structure for Malaysia's airports industry:

- **There must be overall commitment towards regulatory certainty and governance.** This includes clarity in the various roles that GoM plays and the independent enforcement of regulations. This in turn, provides a conducive environment to attract investments into the industry.
- **MAHB and other commercial operators need to carry out their functions with appropriate commercial bases and autonomy**, subject to the appropriate regulations, including MAVCOM's QoS and RAB regulations.
- **Malaysia should explore benefits of competition amongst airport operators**, which needs to be in tandem with a strong legislative and regulatory framework.

Each of these positions are accompanied by specific action items that are also encapsulated in the proposed EMP. The implementation period for the action items are as follows:

- **Phase 1 (2019 – 2020): Foundation-setting**
This phase includes the establishment of the required policies and plans relating to the airports industry.
- **Phase 2 (2021 – 2030): Implementation**
 - Short : completed by 2022
 - Medium : completed by 2025
 - Long : completed by 2030

Strengthening Governance Via National-Level Documents

As this Paper has highlighted, there is a need to establish policies related to the governance and funding of airport developments in order to, among others, clarify the delineation of responsibilities between the GoM as policymaker and shareholder, independent regulators, and industry players.

In addition, the Commission recommends that a moratorium be placed on developments of new airports while the policies and strategy plan for the industry are being developed.

Action Items

1. Establishing airport policies within a National Aviation Strategy

Implementation period	Foundation-setting
Stakeholders	MOT, MAVCOM, and CAAM

The proposed EMP recommends the establishment of a National Aviation Strategy (NAS), including those related to airports governance and funding. Table 8 outlines these policy statements and their related issues.

Table 8: Proposed Policy Statements Related to Airports in the Proposed NAS

Policy statements	Details
<ul style="list-style-type: none"> The Government supports the development of an economically sustainable and resilient civil aviation sector that can significantly support Malaysia's evolution into a top destination for global economic activity The Government commits to the maintenance of strong institutional arrangements to support a fair and competitive commercial environment for the civil aviation sector 	<ul style="list-style-type: none"> The NAS should promote and support liberalization for the sector, in terms of: <ul style="list-style-type: none"> Ownership: increasing private sector and foreign ownership Competition: increasing the number of players in the market The NAS should recognize the importance of sequencing liberalization measures <ul style="list-style-type: none"> Regulation should keep pace with changing market dynamics Conflicts of interest between the policymaker, regulators, asset-owners, operators, and other sector stakeholders should be avoided Competition process, rather than competitors, should be protected
<ul style="list-style-type: none"> The Government commits to the principle that civil aviation infrastructure should be funded, developed, and maintained with the objective of maximizing efficiency and enhancing economic competitiveness 	<ul style="list-style-type: none"> The NAS should recognize and commit to differentiated funding mechanisms for the development and maintenance of commercial and non-commercial infrastructure: <ul style="list-style-type: none"> Commercial: fully funded by the private sector

Policy statements	Details
<ul style="list-style-type: none"> The Government commits to providing inclusive civil aviation services for all Malaysian citizens 	<ul style="list-style-type: none"> Non-commercial: fully funded by the Government Associated regulated charges for the use of such infrastructure should be calculated on a cost-recovery basis

These policies will then be operationalized through a National Airports Strategy Plan, outlined below.

2. Developing a National Airports Strategy Plan

Implementation period	Foundation-setting
Stakeholders	MOT, MAVCOM, and CAAM

A National Airports Strategy Plan (NASP) is currently being developed by MAVCOM, in collaboration with CAAM and MOT, and will address the economic, technical, safety, security, and environmental aspects of airports development in Malaysia. The proposed areas of coverage of the NASP and their links to the proposed NAS is listed in Table 9.

Table 9: Proposed NASP Items Related to Airports in the Proposed NAS

Policy statements	Proposed NASP Items
<ul style="list-style-type: none"> The Government supports the development of an economically sustainable and resilient civil aviation sector that can significantly support Malaysia's evolution into a top destination for global economic activity 	<ul style="list-style-type: none"> Assessments of new airport developments need to account for their impact on and connectivity with, other modes of transport, including at the last mile Economic regulation of airports and ANSPs to be in line with both ICAO's Airport and ANSP Economics Manuals <ul style="list-style-type: none"> Development and maintenance of commercial airports infrastructure to be fully funded by private sector Regulated charges to be determined on a cost-recovery basis Roadmap towards self-funding for ATC
<ul style="list-style-type: none"> The Government supports the development of an economically sustainable and resilient civil aviation sector that can significantly support Malaysia's evolution into a top destination for global economic activity (cont.) 	<ul style="list-style-type: none"> Implementation of Quality of Service framework for airports Linking ground handling services to airport performance (via strengthening CoU) Introducing performance requirements for ATC service providers

Policy statements	Proposed NASP Items
	<ul style="list-style-type: none"> Provisions in the OA/concession agreement to allow for ownership liberalization Setting the baseline to develop a talent development strategy for <ul style="list-style-type: none"> Airports ATC Developing a long-term human capital strategy for ATC, including requirements for funding and training
<ul style="list-style-type: none"> The Government commits to the maintenance of strong institutional arrangements to support a fair and competitive commercial environment for the civil aviation sector 	<ul style="list-style-type: none"> The airports industry is subject to Part VII of Act 771 Abolition of golden share in MAHB Separation of regulatory function from ATC as part of a roadmap towards self-funding ATC Associated regulated charges for the use of such infrastructure should be determined on a cost-recovery basis
<ul style="list-style-type: none"> The Government commits to the principle that civil aviation infrastructure should be funded, developed and maintained with the objectives of maximizing efficiency and enhancing economic competitiveness 	<ul style="list-style-type: none"> Efficiency and competitiveness considerations to be integral to assessments for airport developments: <ul style="list-style-type: none"> Funding for construction, operation, and maintenance of commercial airport should be fully funded by the private sector Current and future transportation needs of catchment area Existing transportation network Commitment to integrated terminals for airports
<ul style="list-style-type: none"> The Government commits to providing inclusive civil aviation services for all Malaysian citizens 	<ul style="list-style-type: none"> The construction and maintenance of STOLports and relevant infrastructure for PSOs to be fully funded by the Government

The Need for Greater Commercial Behaviour for Airports

The existence of conflicts of priorities arising from the opacity in terms of the delineation of responsibilities between the GoM and MAHB, particularly regarding responsibility over capex, hinders MAHB from being able to effectively pursue its commercial objectives, with negative implications for the growth of the airports industry. Hence, MAVCOM proposes a re-delineation of responsibilities as follows:

Action Item

1. Granting full capex responsibility to operators

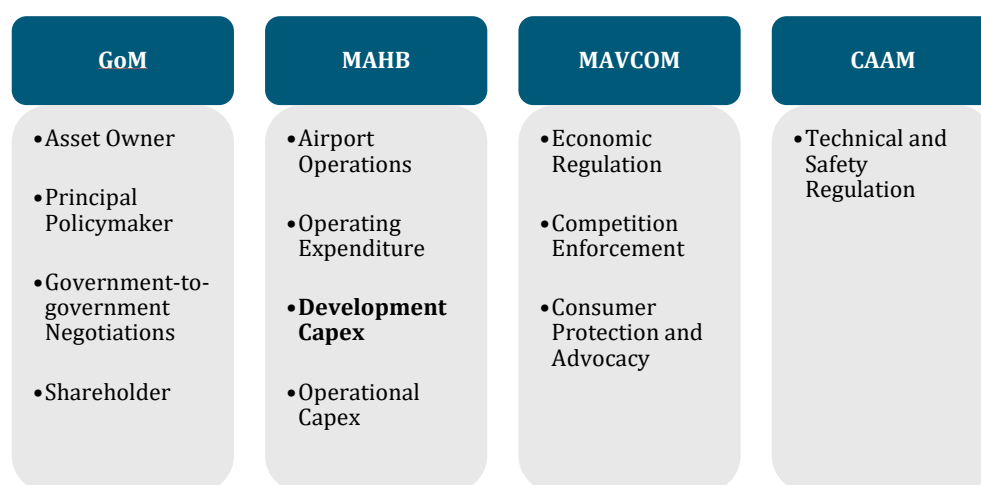
Implementation period	Medium- to long-term
Stakeholders	MAHB, MOT, and MOF

Changes in corporate governance would enhance the commercial behaviour of airport operations: granting full responsibility over all capex and opex to airport operators, and eventually abolishing the golden share in MAHB.

This will require a change in the terms of the OA to become a full-fledged concession agreement. The OA may need to be terminated as the proposed changes will deviate from the existing underlying principles governing the relationship between the GoM and the operator.

The proposed delineation of responsibilities between the GoM, MAHB, and independent regulators in the industry is outlined in Figure 18. The key change is in fully transferring the responsibility for development capex to MAHB, in addition to its current responsibility over operational capex.

Figure 18: Proposed Delineation of Responsibilities between GoM, MAHB, MAVCOM, and CAAM



Source: MAVCOM

Given the costs involved in terminating the existing OA, it is proposed that the extension to the OA, which is currently being negotiated, include clauses that will enable the airport operator to be fully responsible for all capex and opex.

The Need to Introduce Competition Among Airport Operators

As discussed in this Paper, one of the key common factors driving high-performing airports is competition. Hence, the Commission recommends that the airports industry be liberalized according to a phased approach. The regulatory considerations regarding this phased approach are further outlined in MAVCOM's Position Paper on Sequencing Liberalization of the Malaysian Aviation Services Sector.⁵⁶

Action Item

1. Introducing competition in two phases

Given the terms of the current OA, and the GoM's inability to fund airport development, the Commission proposes that competition is introduced to the airports industry in two phases:

a) Decentralization of MAHB

Implementation period	Medium- to long-term
Stakeholders	MAHB, MOT, and MOF

Airports such as PEN, BKL, and KCH should be run by fully autonomous subsidiaries of MAHB. This relies on the currently negotiated OA having provisions to allow for the decentralization of certain airports without having to resort to the termination of the OA.

As Box 3 of this Paper highlights, the latest announcement regarding the OA extension indicates that the GoM and MAHB are indeed amenable to the concept of breaking-up the current network into separate clusters, as the existing OA will be superseded and replaced with four OAs for different clusters.

b) Introducing different airport networks

Implementation period	Long-term
Stakeholders	MAHB, MOT, and MOF

This allows for competition within the existing airport network without resorting to full-fledged privatization, as well as, cross-subsidies. To effect this change, MAVCOM proposes that a new term be included in the OA extension which permits it to be reviewed by the GoM should the need to introduce more competition arise.

⁵⁶ MAVCOM (2019b).

SECTION 5: CONCLUSION

Malaysia's airports industry is almost as old as the global commercial aviation industry itself, with the earliest commercial flights flying out of Sungai Besi airport in 1947.⁵⁷ Since then, ownership of airports in Malaysia has gone through several evolutions. This process began with the separation of the regulatory and asset-ownership and airport management functions within of the then-DCA to the PPP structure we have today for most airports. The industry's market structure, however, has barely shifted, remaining a near-monopoly.

This market structure, combined with a lack of clarity regarding the delineation of governance, as well as, funding responsibilities among the industry's policymaker, independent regulators, and operators, has dampened the growth trajectory of Malaysia's airports. MAVCOM's functions in developing and enforcing economic regulation of airports needs to be supported by the GoM's commitment towards regulatory independence, policy certainty, and good corporate governance. Additionally, MAHB and other commercial operators need to operate with sufficient commercial autonomy, and sound commercial decision making.

Hence, in accordance with MAVCOM's responsibilities "to promote the efficient, economic and profitable operation of aerodromes and ground handling services"⁵⁸, the Commission has adopted the following position on the optimal structure for the Malaysian airports industry:

- **There is a need for stronger commitments to regulatory certainty and governance**
- **Airport operators need to carry out their functions with appropriate commercial bases and autonomy**
- **Malaysia should explore benefits of competition amongst airport operators**

Each of these positions are accompanied by specific action items that are also encapsulated in the proposed EMP.

Airports do not only drive growth in the civil aviation sector, they also play a crucial catalytic role for the wider economy by connecting Malaysia to the rest of the world, serving as a conduit for economic activity such as international tourism and trade. The current challenges faced by the industry revolve around unclear governance arrangements and insufficient financial capacity. Hence, MAVCOM's position and recommendations, accompanied by complementary policies and reforms, aim to address these issues so that Malaysia is equipped with an optimally structured airports industry that can effectively support her ambitions to progress towards a developed economy.

⁵⁷ New Straits Times (2018b).

⁵⁸ Section 17(1)(a)(ii) of Act 771.

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APPENDIX 1: CASE STUDIES OF AIRPORT OWNERSHIP AND GOVERNANCE REGIMES

Airport Operator Privatization in Selected Countries

This section presents a selection of case studies based on the experiences of other countries in determining the governance and ownership structures of their airports. The key features are summarized in Table 10 below.

Table 10: Summary of Privatization and Industry Structures

	Australia	Spain	Mexico	India	UK
Privatization Model	Trade sale	Share flotation	Concession	Concession	Share flotation; now a trade sale
Ownership Model	Government limits foreign ownership to 49%	Government retains 51% ownership	Government limits foreign ownership to 49%	Government retains 26% ownership	Heathrow Ltd is fully private.
Airport Structure	Individual airport	Airport network	Airport networks; three airport groupings	Individual airport	Airport network and individual municipal airports
Concession/Lease Tenure	50-year lease, with optional 49-year extension	N.A.	50 years, with optional 50-year extension	30 years, with optional 30-year extension	N.A.

Source: MAVCOM, based on various sources

Airport Operator Privatization in Australia

Prior to 1988, airport ownership was under the Australian Government. The government bore the majority of the financial burden in relation to the operation of airports. In 1988, the Federal Airports Corporation (FAC)—a government entity—was given ownership and operating rights for 22 airports. The relevant assets were then vested to the FAC. One of the FAC's objectives was to keep the aeronautical charges as low as possible by increasing income from other sources, of which was largely met through retailing and property sources.

The government announced in 1994 its intention to sell the airports and a study was commissioned to determine the best way to proceed. The study recommended the sale of individual airports, as opposed to selling the airports system as a whole as it would generate more income for the Australian Government. The related assets vested to FAC were transferred back to the government, and the Airports (Transitional) Act 1996 was drawn up to enable the privatization process.

The first phase of airport privatization occurred in 1997, where MEL, BNE, and PER were leased for 50 years with options to extend the leases for an additional 49 years, which resulted in the government not retaining ownership of the airports. The three privatized airports were relatively profitable entities among all airports under the purview of the FAC.

The second phase of airport privatization was completed in 1998 that involved seven major airports, including ADL and CBR, and seven regional airports. Contrary to the first phase, over half of these smaller airports were loss-making and were more reliant on the services of FAC. The four airports were also leased for 50 years with options to extend the leases for an additional 49 years.

Airport Operator Privatization in Spain

Before privatization, 46 commercial airports in Spain were operated by Aeropuertos Españoles y Navegación Aérea (Aena). Aena was an entity under the purview of the Ministry of Transport, Tourism, and Communications of Spain. Aena was restructured into the following two entities in 2011;

- **Aena Aeropuertos S.A.**, which oversees airport operations; and
- **ENAIRE**, which oversees ANS

The Spanish government's objectives in privatizing the airports include reinforcing Aena's management capabilities, guaranteeing the sustainability of the airport system, stimulating the transport sector and other related sectors, and generating financial resources to reduce public deficits.

A privatization exercise was attempted in 2011 based on a concession model limited to MAD and BCN. The exercise was aborted due to multiple factors such as an expensive valuation, unattractive concession conditions, challenging financial market conditions, and the disagreement of risk allocation.

The privatization process was reattempted in 2013 when the government opened Aena to partial privatization of 49%. 21% of the stake was taken up by three cornerstone consortia, namely Ferrovial Aeropuertos, Corporacion Financiera Abta, and the UK-based Children's Investment Fund. The remaining 28% was sold via Initial Public Offering. The Spanish government retains 51% of Aena.

Airport Operator Privatization in Mexico

Prior to 1998, the Aeropuertos y Servicios Auxiliares (ASA), a Mexican federal government-owned corporation, owned and operated airports in Mexico. ASA was formed in 1965 to take over the management of all Mexican airports from the Direccion General de Aeronautica Civil. During that period, the ultimate responsibility for Mexico's air transport sector fell under the Ministry of Transportation and Communications.

In 1999, the government opened 34 of the most profitable airports to privatization. Foreign investment is capped at 49% and any foreign investment above this threshold must be approved by the National Foreign Investments Commission. The 34 airports were grouped into three concession groups based on geographic region, namely Grupo Aeroportuario del Pacifico (GAP), Grupo Aeroportuario Centro Norte (OMA), and Grupo Aeroportuario del Sureste (ASUR). To ensure a competitive playing field, each concession group has at least one major airport in its airport groupings. All concession groups were awarded 50-year concessions, with an optional extension of 50 years.

Mexico City International Airport was initially planned to be privatized in the same year, but ASA ultimately retained ownership of the airport, along with the remaining less profitable airports that were not part of the privatization exercise.

Airport Operator Privatization in India

For the period 1995 – 2004, the Airport Authority of India (AAI) managed 92 airports, in addition to being responsible for 28 civil passenger enclaves at defence airfields. A privatization of Cochin Airport was carried out in 1999, where a 26% stake was retained by the Kerala state government whilst the remainder was held by various investors.

A decision in 2003, where the Indian Government approved the transfer of the operations and management of its airports from AAI to private players by way of long-term leases. This paved the way for privatization to set its course in India. In return, AAI retained 26% ownership in all the privatized airports.

Following this decision, Bengaluru and Hyderabad airports were privatized in 2004. The airport consortiums in both airports were awarded a 30-year concession with an optional extension of 30 years. A similar process was undertaken for Delhi and Mumbai airports in 2006. This followed a government decision in 2003 to restructure DEL and BOM via a joint-venture route.

Airport Operator Privatization in the United Kingdom

Prior to 1985, the British Airports Authority (BAA)— then a government-owned commercial enterprise—operated 22 airports in the UK. The BAA was incorporated via the Airports Act 1986 where it was dissolved and all its property, rights, and liabilities were transferred to a newly formed public limited company. The Airports Act 1986 also required all municipal airports with a turnover of over GBP1.0mn to be made public airport companies—20 airports were privatized as a result.

The trend in privatization was spurred by tighter funding requirements in 1993, which resulted in future airport development expenditure to be funded only via private sector financing. In 1996, the government sold its remaining 2.9% in BAA but retained its golden share. However, the UK Government had to give up the golden share in September 2003 due to a ruling from the European Court of Justice.

In August 2006, BAA was acquired by Ferrovial, a Spanish construction group which resulted in the delisting of BAA from the London Stock Exchange. Since then, BAA has seen multiple changes in ownership and currently it is owned by a consortium consisting of Ferrovial (25.0%), Qatar Investment Authority (20.0%), Caisse de depot et placement du Quebec (12.6%), GIC (11.2%), Alinda Capital Partners (11.2%), China Investment Corporation (10.0%) and Universities Superannuation Scheme (10.0%). BAA was subsequently renamed Heathrow Airport Holdings Limited in 2012.

Regulatory Changes in Response to Privatization

This sub-section describes the changes in the regulatory structure governing airport charges, following the liberalization of airports in the countries discussed in the previous section. As with the method of liberalization, countries adopt different methods of regulating airport charges.

Regulatory Framework in Australia

Prior to liberalization, airport charges were subject to full price control by the regulator. The price controls were kept for a period of five years post-liberalization, after which they were abolished. In 2002, Australia's Productivity Commission undertook a study on the market power of airports in the country. The study found that airports such as SYD, MEL, BNE, and PER possess high market power, particularly for international traffic. However, it was decided that the government would undertake a 'light-handed' approach in which the airports could set their own charges. Simultaneously, the Australian Competition and Consumer Commission will conduct an annual review of the charges imposed by these airports in relation to their financial and productivity performance.

Regulatory Framework in Spain

Prior to 2011, airport charges were set by the government, whereby Aena operated 46 commercial airports in the country. Aena's functions at the time were to operate airports and to provide air navigational services. In 2011, Aena's function to provide air navigational services was carved out and parked under ENAIRE. In 2013, 49.0% of Aena was sold to a consortium of private investors through an initial public offering, while the remaining 51.0% of the company was retained under the control of the Government of Spain via ENAIRE.

Post-liberalization in 2011, Spanish airports were divided into five categories (MAD and BCN were later split into separate groups) according to passenger traffic volumes, as follows:

- Group I: MAD
- Group II: BCN
- Group III: Airports with more than six million passengers
- Group IV: Airports between two million and six million passengers
- Group V: Airports between 0.5 million and two million passengers
- Group VI: Airports with fewer than 0.5 million passengers

The principle of airport regulatory framework in Spain was that airport charges imposed was limited by the operator's operating costs and allowance for a return on a capital. The return on capital has to be on the RAB, using a weighted average cost of capital. The regulatory framework also allows for variations of charges at different airports according to local economic conditions and the need to drive passenger traffic growth at the airports. Under this framework, a cap on aeronautical charges is set at an airport network level for all 46 airports, but Aena would vary the charges according to the six categories. And by virtue of size, MAD exhibited the highest level of aeronautical charges and Group VI airports had the lowest charges. The cap is reviewed in a five-year cycle in which the current cycle runs from 2017 to 2022.

Regulatory Framework in Mexico

There are 58 commercial airports in Mexico and its federal law puts all matters related to the construction, administration, and operation of airports under the Ministry of Communications and Transport Mexico (SCT). The law allows for foreign investors to own up to 49.0% of companies bidding for concessions in the country.

In 1998, the government awarded concessions to operate 34 out of the 58 commercial airports to three concession groups, as follows:

- Grupo Aeroportuario del Pacifico (GAP) – 12 airports
- Grupo Aeroportuario Centro Norte (OMA) – 13 airports
- Grupo Aeroportuario del Sureste (ASUR) – 9 airports

These concessions were granted for a 50-year period in which each concession group would have at least one major airport under their operations, for example, Guadalajara Airport for GAP, Monterrey Airport for OMA, and Cancun Airport for ASUR. The law stipulates that the government has the power to set airport charges and Comision Federal de Competencia (COFECE) issued notices between 1999 and 2000 that all airports operated by the three concession groups did not operate in competitive environments. COFECE recommended for airport charges to be regulated by the SCT.

The SCT regulates airport charges by way of setting a maximum allowable tariff, expressed in terms of maximum aeronautical revenue per unit (defined as one passenger or 100kg of cargo). Similar to an RAB framework, the maximum allowable tariff was calculated to allow for the recovery of operating costs and to achieve a return on investment on regulated assets.

Regulatory Framework in India

Prior to liberalization, airport charges were set by the government. Post-liberalization in 2008, the Indian Government established the Airport Economic Authority of India (AERA), an independent regulatory agency. AERA's main function is to regulate airports handling more than 1.5 million passengers per year.

AERA is responsible for setting user charges using a single-till approach for a five-year period. Elements taken into consideration include capex incurred and investment in airport facilities, quality of service, concessions granted by government and other relevant factors. However, the National Civil Aviation Policy issued in June 2016 recommended that airports be regulated under a hybrid till approach, where only 30% of non-aeronautical revenue is used for cross subsidization in tariff determination.⁵⁹

Airports that remain under the ownership of AAI are regulated by the Ministry of Civil Aviation under a single-till regime.⁶⁰

Regulatory Framework in the United Kingdom

Prior to liberalization, airport charges were set by the government. Post-liberalization in 2012, the Civil Aviation Act 2012 provided that a dominant airport cannot impose airport charges, unless licensed by the UK CAA to be regulated for dominant airports. Under this Act, an airport is considered dominant if it meets the criteria of a market power test carried out by the UK CAA. For example, in 2014, LHR and LGW were defined as dominant airports and the UK CAA granted them licences to impose airport charges.

Similar to Spain and Mexico, the UK also adopts the RAB for its regulatory charges framework. As opposed to LHR that was given a price cap on its aeronautical charges, LGW was exempted from a price cap. This was because LGW had committed to certain obligations in terms of price, quality of service, and infrastructure development as part of its CoU to operate the airport.

⁵⁹ Outlook India (2017).

⁶⁰ ICAO (2013b).

APPENDIX 2: VIEWS FROM INTERNATIONAL ORGANIZATIONS ON AIRPORT OWNERSHIP AND INDUSTRY STRUCTURES

ICAO

The ICAO's views on the airport ownership models and industry structures are found in the Airport Economics Manual (Document 9562⁶¹). In general, ICAO does not prescribe a best practice for airport ownership and industry structures, leaving it to the individual Member States to determine which model best fits their interest given their local circumstances.

On the issue of private ownership of airports, ICAO mentions some potential motivations that drive the privatization of airports, including but not limited to, improving operational efficiency, cost efficiency, and easing the fiscal burden on the government to fund infrastructure developments. ICAO does not object to airport privatization, subject to it not compromising the Member State's international obligations in areas such as security, safety, and economic oversight.

Whilst ICAO does not prescribe an optimal model of airport ownership and control, it does **recommend that Member States consider establishing autonomous entities** to operate their airports where it is economically viable to do so. Some of the advantages of autonomous airport operators include:

- Reducing the financing burden on governments;
- Establish a clear separation of regulatory and operational functions; and
- Ensuring that revenues generated through the use of airport resources are transparently re-invested in operating and developing airport facilities.

On the issue of airports industry structures, ICAO notes that airports in a Member State can be individual airports, airport systems, airport networks, or a combination of these. An airport network is a group of airports within a country that operate under single ownership and control—it can include all or some of the airports in a country. An airport system is composed of multiple airports that serve the same major metropolitan area, operating under single ownership and control. In general, the **ICAO allows Member States to decide on the airports industry structure that best fits their local circumstances.**

ICAO recognizes that airport networks can be beneficial in certain circumstances. For example, small airports may benefit from being part of an airports network as they receive cross-subsidies from more profitable airports within the network. Smaller airports may also benefit from economies of scale by being part of a larger network and may have easier access to capital markets relative to them being operated as a single airport.

⁶¹ ICAO (2013a).

On the other hand, **ICAO recognizes criticisms of the airport network structure** largely emanating from the practice of cross-subsidization. Cross-subsidization between airports in a network may deviate from the principle of cost-relatedness and deemed “questionable”, although ICAO recognizes the need for cross-subsidies to maintain smaller airports for policy purposes, such as to serve rural or isolated regions. ICAO also recognizes that a Member State or charging authority “may recover less than its full costs in recognition of total, regional, or national benefits”.

ACI

ACI issued policy briefs on airport ownership and industry models, detailing their recommendations on airport ownership and management. In both documents, **ACI does not prescribe a single “best-practice” model, instead allowing airport owners to decide on their preferred models based on their commercial interests, policy objectives, and local circumstances.**

In its brief on airport ownership⁶², the ACI notes that airports operate under a variety of ownership models and that there is no one-size-fits-all approach to airport ownership. Thus, airports operators should be allowed flexibility in their business and ensuring that the interests of airport users are protected by the application of sound economic principles to airport operations. Instead of prescribing a preferred ownership model, ACI focuses on the importance of creating the right economic incentives and a consistent regulatory framework under which airports can operate effectively.

In a later policy brief⁶³, the ACI argues that **privatization can be a solution to the gap in airport infrastructure**. Whilst maintaining its stance of allowing airport owners to decide on the matter, the brief estimates that airports with private sector participation receive higher capex funding compared to publicly owned airports. Given the gap in global airport infrastructure and capacity constraints, privatization should be considered as an option to allow private investments to fill the gap.

ACI has also published a policy brief on the issue of airport networks.⁶⁴ Similar to its stance on airport ownership models, ACI does not prescribe a best-practice model. **ACI believes that airport owners should be allowed to decide on the model that best serves their commercial and public policy objectives.** In this document, ACI states that the airport management model is just one factor in determining the performance of airport operators.

⁶² ACI (2017a).

⁶³ ACI (2018).

⁶⁴ ACI (2017b).

ACI recognizes the need for smaller airports to receive some form of subsidy for them to remain operational. Cross-subsidization across an airport network can be justified, especially if these smaller airports do not have access to public funding. Thus, ACI argues that airport networks should be allowed to determine their own pricing systems. ACI also recognizes the commercial and public benefits that airport networks may bring, including:

- The contribution of airport networks in enhancing connectivity between all regions in a country without any region being neglected. By doing so, airport networks may generate economic and social development;
- Airport networks may generate positive network effects, positive synergies between different airports in a network. Smaller airports may help provide feeder traffic into larger airports for onward journeys, allowing airlines at larger airports to access a larger pool of connecting traffic; and
- The integrated coverage of airport networks in a given territory may be beneficial for safety and security, as the airport network can provide multiple alternate airports for emergencies operations.

ACI does recommend that airport operators that practice cross-subsidization should adhere to ICAO's policies on charges by complying with the following safeguards:

- Non-discrimination between airlines, both domestic and international;
- Overall cost-relatedness at the network level;
- Transparency and effective consultation with airlines; and
- Reassurances that cross-subsidies are used only for airport operations and not diverted to non-airport facilities and services.

IATA

Unlike the ICAO and ACI, **IATA takes an ambivalent view towards airport privatization**. IATA passed a resolution in 2018⁶⁵ that **expressed scepticism towards the benefits of airport privatization**. Whilst not explicitly opposing privatization, the resolution includes a clause:

“Expressing concern that the result of introducing privatization in the monopoly airport sector has not, overall, resulted in the consumer benefits of improved efficiencies and reduced costs that have been realized from the privatization in the competitive airline sector.”

In a statement, IATA’s Director General notes that:

“IATA research shows that private sector airports are more expensive. But we could not see any gains in efficiency or levels of investment. This runs counter to the experience of airline privatization where enhanced competition resulted in lower pricing to consumers. So we don’t accept that airport privatization must lead to higher costs. Airports have significant market power. Effective regulation is critical to avoiding its abuse—particularly when run for profit by private sector interests,”

In its resolution, IATA urged governments considering airport privatization to explore alternative ownership and operating models, including:

- corporatization of the airport operator;
- alternative financing arrangements to fund investment and capacity growth; and
- introduction of management contracts to access private sector expertise in managing the airports.

Whilst not overtly opposed to airport networks, **IATA does oppose cross-subsidization** that is the core justification for airport networks.^{66, 67} IATA’s position is that finances across airports should be strictly separated, and the failure at a partner airport cannot be passed on to users of another airport by means of higher charges. Thus, in a position paper tabled to the Conference on the Economics of Airports and Air Navigation Services by ICAO in 2000, IATA called the conference to **“recommend the elimination of cross-subsidization practices between airports”**.

IATA’s main reason for opposing cross-subsidization is that cross-subsidization allegedly breaches ICAO’s policies of cost-relatedness. According to the cost-relatedness principle, users “should not be charged for facilities they do not use”.

⁶⁵ IATA (2018).

⁶⁶ IATA (2000).

⁶⁷ IATA (n.d.).

In summary, IATA cites the following reasons in its opposition to cross-subsidization:

- Cross-subsidization distorts competition as one group of airline users is subsidizing another group of airlines engaged in similar air operations;
- Airlines and passengers are “paying for facilities and services they do not need, do not use, and from which they do not benefit”;
- Charges should be airport-specific to maintain the link between costs and the price paid; and
- Cross-subsidies may hinder efforts to reduce costs and foster cost efficiency.

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