# Norman Manley International Airport
# Final Determination

—

May 6, 2025

# Contents

## Figures and tables

# 1 Introduction

This document sets out the JCAA's (the Authority's) final determination on the airport charges that will apply at Norman Manley International Airport (NMIA) for the next quinquennium (QQ3)—i.e. January 1, 2026 to December 31, 2030.

The current rates at NMIA are due to expire on December 31, 2025.[1] As required by the Airports (Economic Regulation) Act 2002, the JCAA has conducted an investigation to determine the appropriate charges for QQ3, which is due to commence on January 1, 2026.

The decisions made on the appropriate charges at NMIA will have significant implications for NMIA, airlines, cargo shippers, passengers and other stakeholders in Jamaica. This document incorporates views from interested parties. The JCAA would like to thank the airport, airlines, Government Ministries and other stakeholders for their positive contributions to the JCAA's review.

Figures quoted in this document are in US$ and real 2024 prices, unless stated otherwise.

[1] The rates set for QQ2 had been set to expire on December 31, 2024, but the period was extended by one year, as permitted by the Airports (Economic Regulation) Act 2002 and agreed between the Authority and the airports.

# 2 Context for the JCAA's proposals

## 2.1 Introduction

This section sets out the process that has shaped this determination, the Authority's relevant duties under the Act, the importance of stakeholder engagement, and the most appropriate form of regulation at NMIA. It also considers the concession fees paid by PAC Kingston Airport Limited (PACKAL), operator of NMIA, to the Airports Authority of Jamaica (AAJ), and the taxes imposed on airfares by the government. While the concession fee and taxes are outside of the Authority's remit, they provide important context for the review.

## 2.2 Statutory context to the JCAA's review

The Airports (Economic Regulation) Act 2002 (the Act) provides the statutory context for the review. The Act mandates that the Authority must, at the end of each five-year period, make modifications in the conditions to airport charges imposed that it considers appropriate for regulating the maximum amounts that may be levied by an approved airport operator.[2] The Act also states that the Authority must conduct a comprehensive review of the airport operator's business and operations and the environment in which they function.

The rate review process is a major programme of work, and it is important that the Authority's decisions are well supported and subject to appropriate consultation. The Authority's final determination is therefore based on a process which commenced in April 2024, for which the key milestones are outlined below.

- Publication of JCAA's consultation document, outlining the proposed timetable, consultation process, framework for the review, and the Authority's initial views on the key issues.
- Publication of the Authority's business plan guidance, outlining the information that it requires from airports and users, and to help the airports in putting together their forecasts, business plans and airport charges proposals for QQ3.
- Consultation between the JCAA and stakeholders, and the airports and stakeholders. Further information on stakeholder engagement is included in section 2.4 below.
- Publication of the JCAA's Key Issues paper, setting out the Authority's initial views on the key issues for the QQ3 review.[3]

[2] See Subsection 10 (5)(b) (Mandatory conditions for scheduled airports).
[3] JCAA (2024), 'Key Issues for the QQ3 regulatory review', August.

- Submission of airports' business plans, charges proposals and supporting documents.
- Publication of the JCAA's draft determinations.
- Post-draft determination consultations between the JCAA and stakeholders.

Upon conclusion of the review, pursuant to Section 12 of the Act, the Authority is required to submit a copy of the report to the Minister of Transport. This report must detail the investigation and consultations undertaken. The Authority is also required to submit a copy of the report to the airport operator.

The Authority's duties, which are included in the Act, need to be central in deciding on the rates for the next review. In this respect, the Authority's duties are:

- to further the reasonable interests of users of airports within Jamaica, and provide economical and reliable services to those users by establishing a system for regulation of the airports that takes account of those interests;
- to promote the efficient, economic and profitable operation of airports;
- to ensure compliance with Jamaica's international obligations, as notified by the Minister;
- to create an enabling environment for potential investors in airports;
- to encourage investment in new facilities at airports in time to satisfy demands by users of the airports;
- to impose restrictions on the operator as consistent with the performance by the Authority of its functions;
- to further vital public interests as notified to the Authority by the Minister;
- to ensure the airport is operated in accordance with performance standards and service levels that are consistent with best industry practice.

The duties are given equal weight, therefore some may need to be prioritised over others in decision-making. In this document the trade-offs are set out in taking decisions on specific factors.

In addition, in making decisions when exercising our functions under this Act, reasonable standards of procedural fairness and the rules of natural justice must be observed as well as acting in a timely fashion. Therefore, the Authority needs to:

- consult with persons who are likely to be affected by a decision;
- give to such persons an opportunity to make submissions and to be heard by the Authority;
- have regard to the evidence adduced at any such hearing and to the matters contained in any such submissions;
- give reasons in writing for each decision.

The Act also requires that, in determining whether to approve airport charges, the Authority shall take account of:

- its objectives (listed above);
- the efficiency of the operations;
- compliance with quality and performance standards;
- performance by the operator in terms of commitments undertaken under the conditions by which it was approved as an airport operator;
- whether the proposed charges would be reasonable in light of the services provided;
- whether the proposed charges can be justified, taking into account revenue from all sources from the airport's operations of the airport, including aeronautical and as much of the non-aeronautical revenues as the Authority deems appropriate.

### 2.3 Aerodrome safety and aviation security considerations

In the Key Issues paper, the Authority noted that 'evidence of whether any additional costs related to the fulfilment of airports' regulatory safety obligations are required should also be included in airport business plans and forecasts, as relevant'.[4] These regulatory safety obligations refer to the fulfilment of aerodrome safety and aviation security requirements.

With respect to aerodrome safety, the Authority has indicated concerns that a timeline had not been provided for the implementation of a Runway End Safety Area (RESA) by PACKAL.[5] PACKAL responded to this concern confirming that the Runway Extension project has commenced with planned completion for 2027, and that this would include installation of a RESA.

On the topic of aviation security, three main concerns were raised by the Authority.

1 The main screening checkpoint at NMIA needs to be reconfigured, along with upgraded screening equipment and requisite training for security personnel.

[4] JCAA (2024), 'Key Issues for the QQ3 regulatory review', August, p. 26.

2 The Hold Baggage Screening Equipment at NMIA must be properly installed with an EDS system. Timely maintenance and replacement, training and sufficient resource personnel were identified as key issues.

3 As per the findings of the USAP-CMA 2024 audit, deficiencies in resources and facilities required for aviation security were identified as follows: inadequate resource personnel; 23 out-of-order CCTV cameras; lack of communication for security officers to report incidents or request support; lack of protection from the elements at the agricultural cargo gates.[6]

In response to the above concerns relating to aviation security, PACKAL confirmed the following.

1 PACKAL has upgraded its screening equipment to include two new x-ray machines, four new walk-through metal detectors and is in the process of procuring two additional x-ray machines. PACKAL has also increased the number of security officers for the screening area. PACKAL has requested that the Authority provide details on the regulations/standards that PACKAL needs to address. In response to this request, the Authority notes that the standards by which PACKAL's screening equipment were assessed were based on the expertise and experience of the JCAA's Flight Safety Division, the condition and age of the equipment and the USAP-CMA security audit.

2 PACKAL has confirmed that it is in the process of installing and commissioning new HBS machines, with a planned completion date of April 2025.

3 Finally, with respect to the findings of the USAP-CMA audit, PACKAL's response confirmed the following.

- Inadequate resourcing is due to lack of availability of security officers affecting the Port Security Corps (PSC). PACKAL is working with PSC to address this issue.
- PACKAL is working to replace defective cameras, with 100 new cameras installed to date. These replacements will continue into 2025.
- With respect to the points raised around security office communications and agricultural cargo gates, PACKAL has stated that these are primarily the responsibility of the service provider PSC.

[6] JCAA (2024), 'Email: Aerodrome safety & Aviation Security Considerations for QQ3', November 26.

The Authority is satisfied with PACKAL's responses relating to upgrading its screening equipment and its ongoing efforts to install new HBS machines and CCTV equipment. In addition, there are no further comments with respect to PACKAL's responses regarding the findings of the USAP-CMA audit. The Authority's Flight Safety Department will continue to monitor the implementation of the various initiatives identified by PACKAL to address these deficiencies.

### 2.4 Stakeholder engagement

Stakeholder engagement is a central feature of the regulatory framework that the Authority has established for NMIA. The 'Key Issues' paper,[7] notes that where there is evidence of good customer engagement, and in areas where there is broad agreement between the airport and stakeholders, there may be less regulatory scrutiny.[8]

During the consultation process, all parties who provided consultation responses agreed with the need for stakeholder engagement and acknowledged the benefits it could bring. The Fair Trading Commission (FTC) advocated broadening the scope of stakeholder engagement, recommending that airports should consult regularly with stakeholders on the structure of charges and gather input and concerns about charge adjustments. The FTC also highlighted the need for broader stakeholder inclusion from a diverse range of voices, including those currently unrepresented.

A range of views was also expressed about the Authority's role in stakeholder engagement. For example, the International Air Transport Association (IATA) indicated that it would welcome a greater role for the Authority, suggesting that the Authority attend all consultations between the airports and stakeholders as an observer.

As indicated previously, while the Authority concurs with the views expressed on the importance of stakeholder engagement, it does not consider that it should have a role as an observer or facilitator of these consultations in order to maintain the Authority's independence, and ensure that its presence does not influence stakeholders' positions.

As part of its business plan submission, PACKAL indicated that consultation is not negotiation. For example, while PACKAL believes that it is appropriate to engage with stakeholders on future investments and

[7] JCAA (2024), 'Key Issues for the QQ3 regulatory review', August, p. 7.
[8] Less regulatory scrutiny may be applied in some areas with the exception of highly technical areas, such as setting the regulatory asset base (RAB) and estimating the weighted average cost of capital (WACC).

operational plans, it does not consider that the regulatory framework sets the requirement to negotiate with stakeholders. To this end, PACKAL has undertaken stakeholder meetings with IATA, airline representatives, and other stakeholders at NMIA to inform its business plan. Minutes for these meetings, which took place on September 17, 2024 and October 15, 2024 are included in PACKAL's business plan. PACKAL has also indicated that it intends to continue this type of stakeholder engagement over the QQ3 period.

The Authority recognises that effort has been made by PACKAL to engage with airlines and other stakeholders over the course of this review so far. It has held two broad stakeholder engagement sessions to inform its business plan—one with IATA and one with IATA and individual airline representatives. In addition, as requested by the Authority in the Key Issues paper, it has provided detailed minutes from these two sessions as part of its business plan.

However, based on the evidence submitted in the business plan, there are areas for improvement in PACKAL's stakeholder engagement. First, the Authority notes that the minutes for both consultation sessions reflected discussions mainly between IATA and PACKAL, and feedback from individual airlines or other stakeholders is limited to one point in the second meeting (October 25, 2024). It is also unclear if and how any of the feedback from the consultation sessions has been reflected in PACKAL's business plan or whether requests from stakeholders have been responded to by PACKAL. For instance, the Authority notes that IATA requested more details on yield per passenger and the increase in airport charges for QQ3. It is not clear if this has been provided to IATA and/or other stakeholders, as the business plan only states at a high-level that 'PACKAL addressed the queries raised by the stakeholders'.[9]

To this end, in its draft determination, the Authority requested that detail on how feedback from these sessions has been reflected in PACKAL's business plan proposals be clearly articulated and that detailed minutes of any other recent, relevant, consultations should be submitted for consideration for the final determination. This is particularly important in light of concerns raised by IATA in response to the draft determination regarding appropriate consultation with airlines on the airport's investments plans, discussed further in section 5.2.4 below. Similarly, the FTC recommended that PACKAL clearly indicate how stakeholder feedback—particularly from users—has influenced its business plan and

[9] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 10.

tariff proposal. The FTC also supported the establishment of a formal engagement process to promote accountability.

The Authority notes that PACKAL has not provided this additional detail in its draft determination response. The Authority urges PACKAL to deepen the level of engagement with its stakeholders over the QQ3 period (e.g. further planned meetings and communications with stakeholders) and provide the Authority with evidence of how it is doing this in a timely fashion.

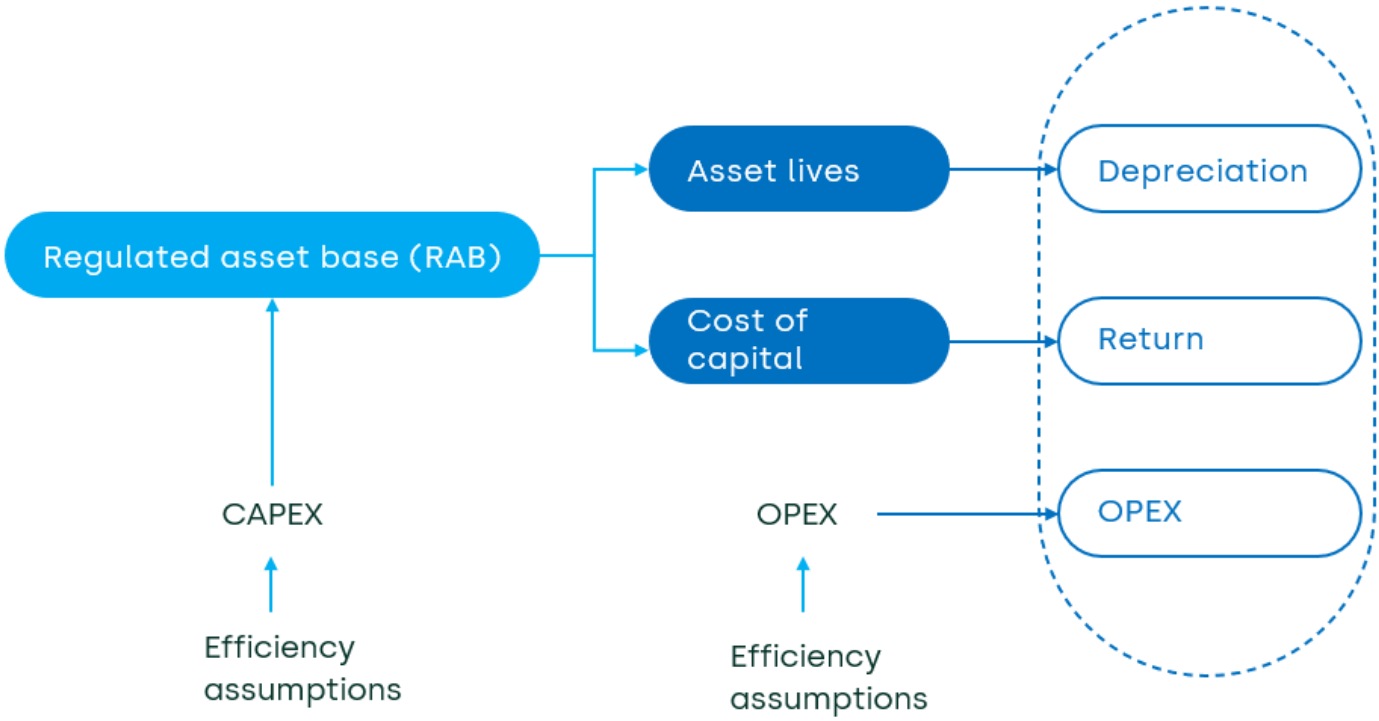
### 2.5 Form of regulation

In QQ2 the Authority introduced an incentive-based form of regulation, based on an ex-ante charge control that caps charges at a level that allows the company to recover the efficient level of costs incurred in providing the regulated service. However, under this form of regulation, the company also bears the risk of lower profits, or even losses, if it fails to control its costs and meet the regulator's forecasts. Typically, regulated charges are set on a forward-looking, real-term basis—i.e. they are adjusted for inflation through a formula based on the principle of CPI - X, where CPI reflects consumer price inflation and X reflects an efficiency factor.[10]

Under this form of regulation, the total revenue requirement is calculated as the sum of depreciation, the efficient level of operating expenditure (OPEX), and a target return on assets. In the case of both Sangster International Airport (SIA) and NMIA, the concession fee is also included. These building blocks are illustrated in Figure 2.1.

[10] Charges may also be expressed in nominal terms, in which case the company bears all the risk of inflation in the economy varying from the levels used in the regulator's forecasts.

Figure 2.1 Building blocks for setting the price cap




Source: Oxera.

In addition to the overall cap, the structure of charges within the cap can affect the type of traffic that is incentivised to use the airport. For instance, charging more at peak compared to off-peak times may incentivise airlines to shift to off-peak times. Similarly, charges could be set lower for the lower-demand season than the higher-demand season, in an attempt to encourage traffic throughout the year. Some regulatory regimes allow airports flexibility in setting and adjusting the structure of charges within the overall charge cap set by the regulator. The changes are often limited to once or twice per year, and require consultation with users.

The Authority's position is to maintain the ex-ante charge control that was introduced in QQ2, as it remains an appropriate approach and ensures stability and consistency in the regulatory regime. As in QQ2, the charge cap will be set on a price-per-passenger basis. This provides airports with the flexibility to set the structure of charges and undertake periodic or annual rebalancing of airport charges within overall guidance and approval from the Authority, and based on consultation with users.

PACKAL agrees with the Authority's position to continue with price cap regulation based on a Regulated Asset Base-Weighted Average Cost of

Capital (RAB–WACC) approach. PACKAL has indicated several reasons why it agrees that a revenue-yield approach is more appropriate than a tariff basket. It also agrees with the Authority that airports should be given flexibility to offer airline discounts within the price cap.

In response to the Authority's June 2024 consultation, PACKAL raised concerns with any sign-off on the tariff structure being required from the Authority, stating that the Authority exercises sufficient regulatory oversight in its overall setting and monitoring of the cap. The Authority notes that in line with the Act, the Authority must grant permission for, and approve, the levying of such charges.[11] This approval is to ensure that the proposed charges are within the pre-set per passenger yield cap, rather than signing off on the specifics of the tariff structure itself.

For future reviews, PACKAL has challenged whether NMIA has significant market power (SMP) and as a result whether it should be subject to economic regulation at all. According to PACKAL, there are several reasons why NMIA does not have SMP. This includes the fact that it faces competition from both SIA and the upgraded Ian Fleming Airport with which it has overlapping catchment areas. PACKAL also points to the fact that it is not a base for any major carrier and instead is mainly reliant on a few low-cost carriers such as JetBlue and Spirit, as well as Caribbean Airlines and American Airlines. On this basis, PACKAL states that 'moving out of the regulatory regime may provide PACKAL with much needed flexibility to safeguard its position in the market whilst offering incentives to foster growth'.[12]

In response to this point, the Authority reiterates the position set out in the Key Issues Paper. At the time regulation was introduced, the government's policy was that regulation should be applied to certain designated airports (NMIA and SIA) as per the Airports (Economic Regulation) Act. An important part of this regulatory framework is that it coincided with the introduction of the public–private partnership (PPP) arrangements at both airports, which have Concession Agreements with the AAJ/Government of Jamaica. The economic regulatory framework was specifically established to accommodate this PPP arrangement for Jamaica's airports as national strategic assets. In addition, Ian Fleming International Airport is unlikely to become a significant constraint on NMIA over the next regulatory period. On this basis, the Authority does not consider a need to change the regulatory framework for QQ3, but

[11] The Airports (Economic Regulation) Act 2002, Part III Airport Charges, Section 7 (1b).
[12] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 11.

further discussions with the government could be appropriate going forward.

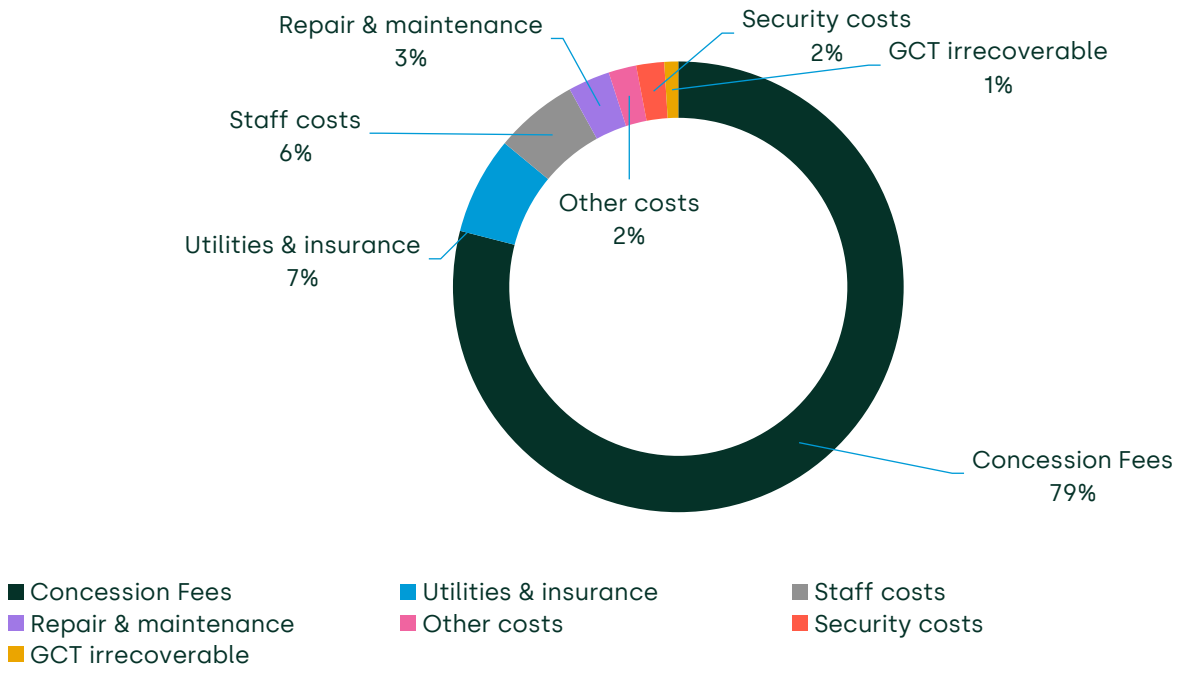
### 2.6 Concession Fee

The Concession Agreement between the Airports Authority of Jamaica (AAJ) and PACKAL commenced on October 10, 2019, and was amended on July 10, 2024. The Concession Agreement amendment sets out a revised concession fee rate of 53.22%, a nine percentage point reduction from the previous rate of 62.01%. However, the structure of the concession fee remains the same as in the original Concession Agreement—it is paid by NMIA on a monthly basis based on its annual gross revenues for that concession year.

The concession fee is a significant sum of money and is taken into account much like OPEX in the building block model (see Figure 2.1 above) and therefore ultimately increases the charges paid by passengers.

According to NMIA's business plan, concession fees account for 79% of NMIA's planned OPEX over QQ3, as shown below.

Figure 2.2 Concession fee and OPEX

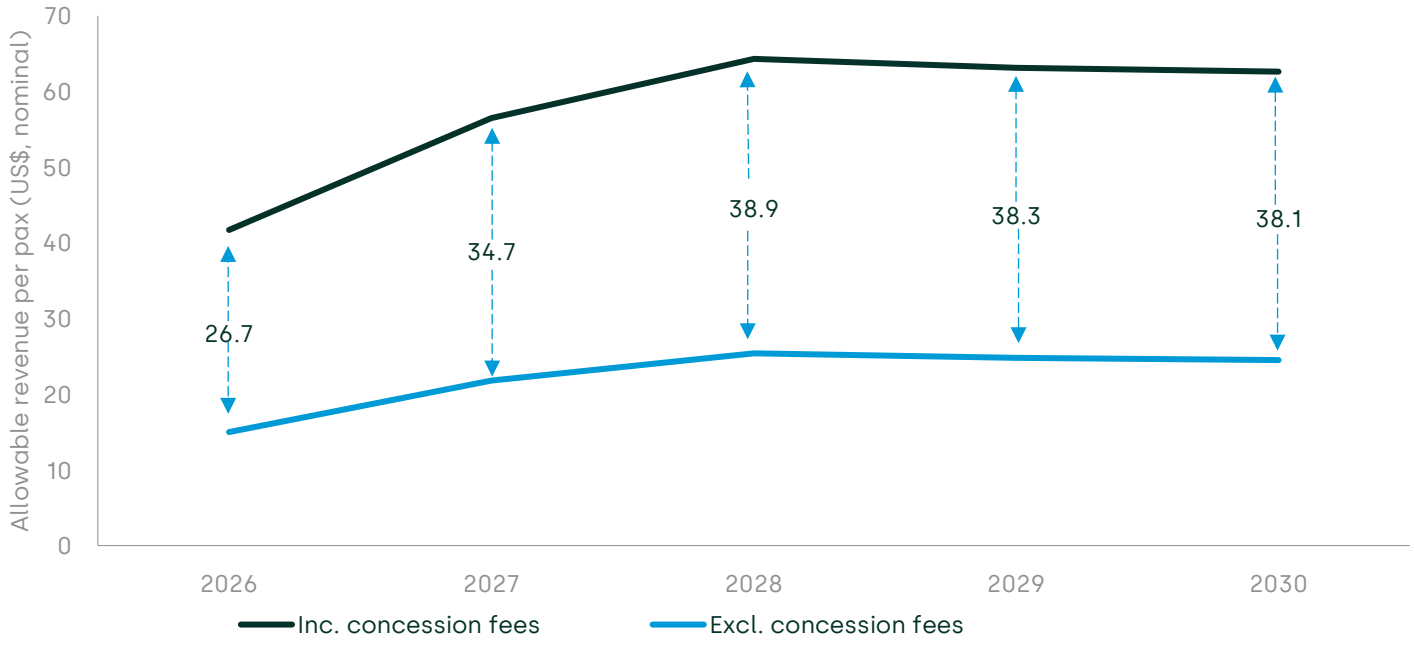



Source: PACKAL (2024), QQ3 Airport Charges Determination for NMIA, October, p. 29.

The next-largest category of OPEX forecast by NMIA is utilities and insurance at 7% of total OPEX. Therefore, the concession fee significantly

adds to the airport's costs that are ultimately paid for by passengers. This is shown in Figure 2.3 below, which illustrates the difference between NMIA's proposed charge per passenger including and excluding the concession fee.

Figure 2.3 NMIA proposed charges (including and excluding concession fee)




Source: PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 54.

Given that the concession fee is based on gross revenues at NMIA, as more expenditure enters the RAB, this increases the concession fee and the overall per-passenger charge. This is important as high charges could result in a dampening effect on traffic and traffic growth at NMIA, impacting tourism revenue and potentially the broader economy. In fact, there is some evidence showing that the charges at Jamaican airports are among the highest of comparable destinations in the Caribbean and the Caribbean side of Mexico.

While the Concession Agreement and concession fee are not within the Authority's remit, the Authority has taken account of the concession fee arrangements between the AAJ and NMIA, as set out in section 10. However, given that the concession fee is a function of total revenue, if the Authority comes to a different view from NMIA on the amount of

allowed revenue required over the course of QQ3, the concession payments will also change.

The Authority notes that PACKAL raised concerns regarding the Authority's approach to calculating concession fees in its modelling in the draft determination and the implication on the yield cap. These points are addressed in section 10.4.

### 2.7 Taxes

This determination sets the maximum charges that NMIA is permitted to charge airlines, and consequently passengers at the airport. However, the Authority is conscious that airport charges are only one component of the ultimate airfare paid by passengers. A significant component of the airfare is government taxes and charges. Much like the concession fee, taxes increase the cost for passengers to use the Jamaican airports. As such, traffic or traffic growth may be lower than it otherwise would be in absence of the taxes.

# 3 Traffic forecasts

## 3.1 Introduction

This section sets out the Authority's traffic forecasts for NMIA for QQ3. It provides the background to traffic forecasting, an assessment of PACKAL's forecasts, and concludes with the Authority's final determination of the airport's traffic forecast for QQ3.

## 3.2 Background

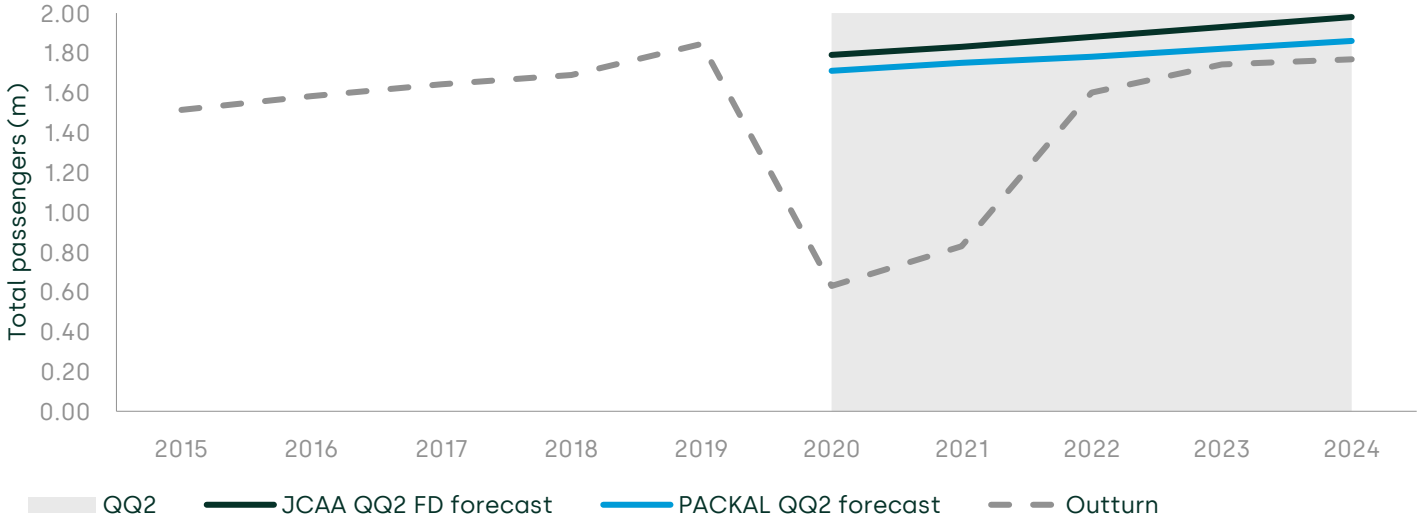
Air traffic forecasts are critical inputs to setting the price cap for airports. Ensuring that such forecasts are robust and reliable is crucial for the: (i) setting of charges, (ii) setting the allowed cost recovery, and (iii) risk management.

NMIA exhibited strong traffic growth prior to COVID-19, with a compound annual growth rate (CAGR) of 5.0%, increasing from 1.51m to 1.83m passengers between 2015 and 2019.[13] This may have been due to a number of factors, such as improvements in global economic conditions, increased connections, and lower airfares.[14] COVID-19 resulted in a material reduction in passenger numbers, as traffic reduced by 67% in 2020 (relative to 2019). Traffic at NMIA recovered thereafter, although passengers are yet to reach pre-pandemic levels.

At the QQ2 final determination, the Authority forecast that traffic would increase from 1.79m in 2020 to 1.98m in 2024, indicative of a 2.6% CAGR.[15] Figure 3.1 shows the comparison of outturn and forecast traffic by PACKAL and JCAA for QQ2.

[13] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 50.
[14] IATA (2018), 'IATA Annual Review 2018', June, p. 12.
[15] JCAA (2019), 'Final determination for Norman Manley International Airport', August, p. 21.

Figure 3.1 QQ2 outturn versus forecast traffic numbers




Source: JCAA analysis of PACKAL traffic data.

As shown in the figure, due to COVID-19, traffic on an outturn basis was materially below forecast levels, especially between 2020 and 2021. Although traffic at PACKAL has to a certain extent recovered, it has not reached 2019 levels. Passenger numbers in 2024 continued to be below the QQ2 forecasts, due in part to the most recent US travel advisory for Jamaica.[16]

While the COVID-19 pandemic could not have been foreseen, it highlights the importance of taking account of risks when forecasting traffic. This is acknowledged by PACKAL, listing various risks that its traffic forecasts do not account for, but which are beyond the airport's control, such as (i) economic risk; (ii) airline strategy risk; (iii) competitive risk; (iv) real exchange rates; (v) global shocks such as natural hazards and pandemics.[17]

Furthermore, while passenger numbers at several other airports have returned to pre-pandemic levels, there are concerns regarding whether pre-pandemic trends in air travel can be relied on for forecasting future traffic growth, given the changing nature of air travel post-pandemic. For example, due to the rise of remote work and flexible-working arrangements, it is likely that fewer corporate trips will be made, reducing

[16] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 43.
[17] Ibid., pp. 41 and 47.

the demand for business travel relative to pre-pandemic.[18] This is particularly salient for NMIA which has a reliance on business markets.[19] Some of the traffic recovery post-pandemic may also be pent up demand. This illustrates how important it is to consider whether there are any significant changes (i.e. structural breaks) in air traffic, that need to be accounted for when developing forecasts.[20] This may especially be the case for airports, such as NMIA, that have not fully recovered to pre-pandemic traffic levels.

### 3.3 PACKAL's traffic forecasts

In forecasting traffic for QQ3, PACKAL has adopted two approaches:

- a bottom-up approach for 2024 and 2025 using year-to-date traffic and airline schedules originating to/from NMIA and the US only[21];
- a top-down regression-based approach for 2026 onwards, focusing on GDP projections in key markets (i.e. regions/countries to which there is passenger traffic from NMIA).[22]

PACKAL's bottom-up approach combines airline schedules and assumptions on capacity by destination. These assumptions are based on available scheduled seat capacity and load factor trends. Specifically, the seat capacity forecast is based on published seat capacity in 2019 and 2025, alongside industry benchmarks to estimate the aircraft size for each airline and route. The load factor forecast is based on the average load factor of airlines flying between the USA and NMIA in 2019 and 2023 as well as the last 12 months to May 2024 (June 2023–May 2024).[23] Under this approach, PACKAL estimates a bottom-up load factor assumption of 80%.

In the top-down approach, it is the Authority's understanding that PACKAL has used econometrics to estimate region/country specific regressions to determine the coefficient of GDP for the relevant region/country.[24] This

[18] Bouwer, J., Saxon, S. and Lind, N. (2021), 'Back to the future? Airline sector poised for change post-COVID-19', *Mckinsey & Company*, April 2, https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/back-to-the-future-airline-sector-poised-for-change-post-covid-19 (accessed December 3, 2024).
[19] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 6.
[20] A structural break exists if the relationship between air traffic and the drivers of traffic suddenly change. For example, in the case of business travel, an increase in GDP before the pandemic may have implied more corporate trips. However, since the pandemic and the growth of remote work, this relationship may no longer hold.
[21] ICF (2024), 'Traffic Forecast Development for Norman Manley International Airport ICF Outputs, Methodology, and Approach', December, p.4.
[22] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 46.
[23] It is assumed the average is weighted based on NMIA/US market shares of the airlines.
[24] PACKAL lists the following regions/countries used in its top-down approach: (i) United States; (ii) Canada; (iii) Caribbean; (iv) 'others' which include Europe and Rest of World.

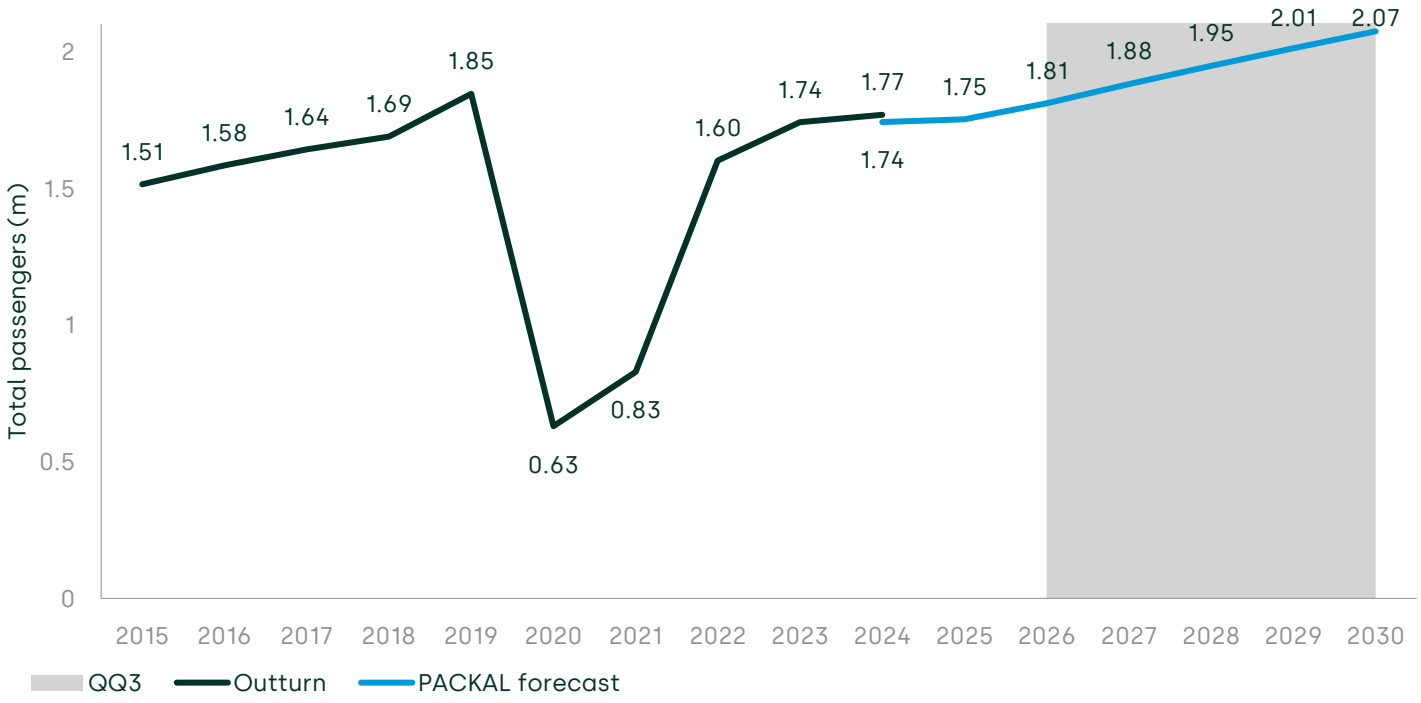
GDP coefficient represents the elasticity between GDP and traffic. Since many of the coefficients were higher than expected compared with more mature markets and academic literature (see section 3.4.2), PACKAL sets a lower elasticity. For example, in the US-only regression, PACKAL reports a coefficient of 2.63—however, this is adjusted downwards overtime to 1.60 to reflect a more mature market, as well as consistency with expectations.[25]

The following assumptions were used by PACKAL in estimating a top-down traffic forecast for NMIA:

- a modelling period of 2011–2019 is used, and the elasticity has been reduced over time due to a high estimated coefficient;
- an ordinary least squares (OLS) regression has been specified;
- a US-only GDP (combined with Jamaica's GDP) independent variable has been used due to it being the only model with an R-squared of above 80%;[26]
- for other regions, a combination of trends analysis coupled with judgement on elasticities is used to develop 'reasonable' income elasticity coefficients;[27]
- elasticities have been applied to the GDP projections for each market;
- projected growth rates in traffic across the region/country segments in QQ3 are applied to the bottom-up 2025 forecast—this produces PACKAL's final traffic forecasts, as set out in Figure 3.2.

[25] Based on a data request, as well as a call involving the JCAA, ICF, PACKAL and Oxera.
[26] PACKAL state that an R-squared output that yielded less than 80% would be inconclusive.
[27] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 46.

Figure 3.2 PACKAL's traffic forecast




Source: JCAA analysis based on traffic numbers provided by ICF/PACKAL.

PACKAL forecasts that traffic at NMIA would remain similar in 2024 and 2025 to 2023. The lack of growth can be attributed to the aforementioned level 3 advisory from the U.S. Department of State urging travellers to reconsider travel to Jamaica, as well as Hurricane Beryl disrupting air traffic in 2024.

While traffic is expected to remain stable in the short term, PACKAL has predicted a material increase in traffic from 1.75m in 2025 to 2.07m by 2030. PACKAL has not provided an explanation for this material increase in long-term growth following the lack of growth in the short term. Overall, this represents a CAGR of 3.4%, which is lower than the outturn CAGR of 5.1% over 2015–19. However, in absolute terms, the yearly growth in passenger numbers is similar between the two periods.

Finally, despite many airports, including SIA, having already exceeded pre-pandemic traffic levels, PACKAL does not expect NMIA to reach this milestone until 2027. This may support the idea that air travel trends have changed post-pandemic, and raises questions regarding the extent to which pre-pandemic trends in air travel can be relied on for forecasting future traffic growth.

## 3.4 The JCAA's draft determination

The following sections summarise the Authority's position on PACKAL's bottom-up and top-down forecasts in the draft determination.

### 3.4.1 PACKAL's approach

In the draft determination, the Authority considered numerous aspects of PACKAL's bottom-up approach to forecasting traffic in 2024 and 2025 to be reasonable. In particular, the Authority agreed with the exclusion of seat capacity and load factor data between 2020 and 2022 given the impact of COVID-19 on air traffic, although it was noted that 2022 could be representative of more recent trends and therefore could potentially be included.

However, the Authority did not use PACKAL's bottom-up forecasts directly. Instead, it used the forecasted growth rate between 2024 and 2025, and applied this to the outturn traffic for 2024.

As discussed in the draft determination, the Authority considered that there were a number of limitations to PACKAL's top-down approach. These included: (i) the exclusion of recent years (2020–2024) from the modelling period, (ii) a high GDP coefficient that was unsupported by evidence and which had to be adjusted downwards, and (iii) use of US GDP (weighted alongside Jamaican GDP) as a sole driver to explain traffic.

### 3.4.2 The JCAA's approach

Due to the aforementioned limitations of PACKAL's top-down approach, the Authority estimated an econometric model that built on PACKAL's approach in the following ways.

- **Inclusion of recent outturn data with a COVID-19 dummy**. The modelling period was extended to include 2020–24 to better reflect the recent trends in air travel. A COVID-19 dummy for the years 2020 and 2021 was included in the model to account for lockdown measures limiting air travel.[28]
- **Use of a weighted average GDP variable that incorporates other regions with traffic to/from NMIA**. That is, all regions were determined by top-down analysis instead of relying on 'a combination of trends analysis… coupled with ICF expert judgement of elasticities observed in similar VFR-oriented and

[28] A dummy variable allows for categorical data to be accounted for in the model. In the traffic model, the COVID-19 dummy variable = 1 if the year is 2020 or 2021, and 0 otherwise. This allows for the model to account for differences in traffic attributed to COVID-19.

leisure/business markets',[29] which produced income elasticity coefficients inconsistent with regulatory/academic precedent.

Using the time period 2011–24, the Authority estimated the model as follows:

$$Log(total\ passengers_t) = \beta_0 + \beta_1 Log(Weighted\ real\ GDP_t) + \beta_2 COVID_t + \varepsilon_t$$

Where t = year and weighted real GDP is defined as the following:

$$Weighted\ real\ GDP_t = \sum Real\ GDP_{it} \times Weighting\ of\ region_{it}$$

Where i = country or region.[30]

The weighting was based on the proportion of passengers from the respective region relative to the total passengers at NMIA. That is, the weighting on US GDP would be based on the proportion of passengers originating from the US relative to total passengers at NMIA.[31]

The Authority estimated a statistically significant elasticity of passenger numbers to the weighted GDP variable at 1.32. That is, a 1% increase in weighted GDP is associated with a 1.32% increase in traffic. This was materially lower than PACKAL's estimate, and more in line with precedent.

- Gallet and Doucouliagos (2014) performed a meta-analysis of income elasticities of travel and found the elasticity of international routes to be 1.546.[32]
- IATA (2008) found that income elasticities for air transport were generally between 1 and 2, and that developing countries 'typically have a greater responsiveness than developed countries'.[33] Long-haul travel from developing countries was found to exceed 2.
- The ACI (2011) states that 'typically income elasticity values […] range from 1.0 when applied to mature market segments to 2.5 in

[29] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 46.
[30] The following countries/regions, which account for most if not all traffic at NMIA, have been used: (i) USA; (ii) Jamaica; (iii) Canada; (iv) UK; (v) Caribbean; (vi) Latin America (LatAm).
[31] This is based on the Origin & Destination (O&D) and point of origin mix data provided by PACKAL.
[32] Gallet, C.A. and Doucouliagos, H. (2014), 'The income elasticity of air travel: A meta-analysis', *Annals of Tourism Research*, November, **52**:1, pp. 141–55.
[33] IATA (2008) 'Air Travel Demand – Measuring the responsiveness of air travel demand to changes in prices and incomes', IATA Economics Briefing No. 9, April, https://www.iata.org/publications/economic-briefings/air_travel_demand.pdf (accessed February 2, 2025).

the case of rapidly emerging markets', and that 'median values of around 1.5 would be normal'.[34]

Given that the majority of passengers originate from more mature markets (e.g. the USA, Canada and the UK), the Authority considered that the elasticity it had estimated was reasonable and supported by precedent.

Alternative model specifications were also tested. However, these did not perform as well, due to material decreases in model fit, statistically insignificant variables and/or unexpected relationships.

The following table summarises the Authority's traffic forecasts for NMIA at the draft determination, and compares these to PACKAL's forecasts.

Table 3.1 Comparison of traffic forecasts – draft determination

| | | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | QQ3 CAGR |
|---|---|---|---|---|---|---|---|---|---|
| **PACKAL** | Level (m) | 1.74 | 1.75 | 1.81 | 1.88 | 1.95 | 2.01 | 2.07 | - |
| | Growth | - | 0.6% | 3.3% | 3.9% | 3.5% | 3.3% | 3.1% | 3.5% |
| **JCAA** | Level (m) | 1.77 | 1.78 | 1.83 | 1.87 | 1.92 | 1.97 | 2.02 | - |
| | Growth | - | 0.6% | 2.7% | 2.7% | 2.6% | 2.6% | 2.6% | 2.6% |

Note: The 2024 figure for JCAA is based on recent outturn traffic data provided by PACKAL.
Source: JCAA analysis.

As shown in the table, the Authority forecasted traffic to increase from 1.83m to 2.02m across 2026–30, a 2.6% CAGR. This was lower than PACKAL, which forecasted an increase from 1.81m to 2.07m over the same time period, with a CAGR of 3.5%. The lower forecast was explained by a reduction in the GDP coefficient (i.e. elasticity), relative to PACKAL's

[34] ACI (2011) 'ACI Airport Traffic Forecasting Manual: A practical guide addressing best practices', June, http://www.aci.aero/Media/aci/file/Publications/2011/ACI_Airport_Traffic_Forecasting_Manual_2011.pdf (accessed February 2, 2025).

estimates, due to the inclusion of other regions in the forecast, as well as the extension of the modelling period to include more recent years.

The Authority's forecasts produced a coefficient that was more aligned with expectations and regulatory/academic precedent. It also considered more recent trends in air traffic, in particular, the recent slowdown in traffic growth at NMIA, by extending the modelling period to include 2020–24.

Given that the JCAA's analysis did not rely on any adjustments to the elasticity, it considered these estimates to be more reliable than PACKAL's. However, it acknowledged that these forecasts rely on GDP weightings that had been set equal to 2023 levels. That is, the shares of passengers originating from each region in 2023 was expected to remain unchanged throughout QQ3. The Authority noted that it would consider alternative assumptions to use in the analysis ahead of the final determination and welcomed any evidence or supporting data that the airport wished to submit on this matter.

### 3.5 Responses to the draft determination

There were no concerns raised by PACKAL or other stakeholders in response to the Authority's approach for estimating traffic at NMIA for QQ3. While PACKAL acknowledged that other regions should be accounted for in the top-down modelling, it maintained the view that a US-only GDP variable should be applied to the US and Canadian markets due to the strong model fit (based on R-squared).[35] Overall, it accepted the Authority's longer-term growth rates and traffic forecasts for QQ3.

As discussed in the draft determination, while a high R-squared implies that the model is able to account for a large proportion of the variability in traffic, and is a strong sign of model fit, PACKAL's model is still based on a small number of observations, and therefore the risk of overfitting is high. That is, with fewer observations, the model is more likely to show a trend that may not be representative of the actual relationship between variables. The model would therefore have poor predictive power in forecasting future traffic patterns. As such, a high R-squared should not be used as the sole determinant for model selection and should instead be considered alongside other aspects.

Furthermore, the Authority requested PACKAL's O&D and point of origin mix data for 2024 ahead of the final determination, as the draft

[35] PACKAL (2025), 'PACKAL's Response to JCAA's email dated 1st April 2025', April, p.3.

determination assumed the weightings for GDP would remain unchanged relative to 2023. PACKAL provided this data, and this has been used for the final determination.

Finally, PACKAL highlighted that increased services to Ian Fleming Airport may divert traffic away from NMIA. [36] However, analysis from ICF (provided by PACKAL) has suggested that increased services to Ian Fleming would not affect air traffic demand at NMIA in the short term.[37] Furthermore, using (i) published monthly departures from Ian Fleming to Miami, (ii) total seat capacity of the aircraft used for this route, and (iii) the assumed load factor from PACKAL's bottom-up analysis, the Authority considers that the total passenger increase at Ian Fleming from the increased services, combined with the loss of passengers at Ian Fleming from the cancellation of the Providenciales route,[38] is not material enough to warrant an adjustment to NMIA's traffic forecasts.

The Authority notes that, in its response to the draft determination, the FTC acknowledged that the inclusion of recent data to account for post-COVID traffic trends in econometric modelling represents an improvement over PACKAL's top-down approach. The FTC also supports the continued incorporation of external shocks (i.e. COVID) into the traffic model.

### 3.6 The JCAA's final determination

The Authority has maintained the methodology from its draft determination, following the response from PACKAL and other stakeholders. However, the Authority has updated the GDP weightings to reflect outturn O&D and point of origin mix data.

Based on this modification, the Authority estimates a GDP coefficient of 1.36. This continues to be in line with expectations from academic literature (see section 3.4.2). This is a marginal increase to the coefficient estimate of 1.32 at the draft determination.

The following table summarises the final determination traffic forecasts at NMIA for QQ3.

[36] PACKAL (2025), 'PACKAL's Response to QQ3 Draft Determination and Review of Model', April, p.6.
[37] ICF (2024), 'Traffic Forecast Development for Norman Manley International Airport ICF Outputs, Methodology, and Approach', December, p.5.
[38] Ibid.

Table 3.2 Comparison of traffic forecasts – final determination

| | | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | CAGR (QQ3) |
|---|---|---|---|---|---|---|---|---|---|
| PACKAL | Levels (m) | 1.74 | 1.75 | 1.81 | 1.88 | 1.95 | 2.01 | 2.07 | |
| | Growth | | 0.6% | 3.3% | 3.9% | 3.5% | 3.3% | 3.1% | 3.5% |
| JCAA | Levels (m) | 1.77 | 1.78 | 1.83 | 1.88 | 1.93 | 1.98 | 2.03 | |
| | Growth | | 0.6% | 2.7% | 2.7% | 2.6% | 2.7% | 2.6% | 2.7% |

Source: JCAA analysis.

The Authority's forecasts, while marginally higher than its estimates at the draft determination, are lower than PACKAL's. The Authority's CAGR is also lower than that forecast by PACKAL. This is driven by the lower estimated coefficient of GDP on traffic.

# 4 Commercial revenue and till regime

## 4.1 Introduction

The extent to which commercial revenue is deducted from the overall revenue requirement depends on the approach to the till. The Authority considers this below, followed by the determination of the appropriate commercial revenue forecasts for QQ3.

## 4.2 Till regime

### 4.2.1 Background

Airports derive revenue from two main categories of activities: aeronautical and non-aeronautical (commercial) activities. The distinction between till regimes relates to whether, and the extent to which, non-aeronautical activities are considered when determining the charges that the airport levies on airlines and passengers. The Airports (Economic Regulation) Act allows for the adoption of any type of till regime.

There are three possible options for the till regime.

1 **Single till:** in a single-till regime, the costs and revenues of both the aeronautical and commercial activities of an airport are taken into account in determining the level of airport charges. The cost base includes the overall level of costs required to provide all services at the airport, not just those services for which charges are regulated. All commercial revenues are used to offset the cost base and the charges to airlines. The RAB therefore comprises a combination of aeronautical and non-aeronautical assets.

2 **Dual-till:** in a dual-till regime, only the core aeronautical activities are taken into account in determining the level of airport charges, with the airport retaining all non-aeronautical revenue. Airport charges are derived on a stand-alone basis, so aeronautical revenues must cover costs associated with aeronautical activities only, including a reasonable return on those activities.

3 **Hybrid-till:** a hybrid-till regime avoids the binary choice between a single and a dual-till. Instead, it considers which activities and/or revenues should be included in the till, and/or the extent to which commercial profits should be shared between the airport and users. Within a hybrid till approach, there are three main options, as follows.

- **Activity-based hybrid till:** under this approach, some aeronautical activities would be included in the regulated till, while some activities would be excluded. The split could be based on activities that are perceived to be more related to aeronautical activities.
- **Fixed revenue-sharing:** instead of designating specific activities, a fixed proportion of non-aeronautical revenue would be used to reduce the charges.
- **Dynamic revenue-sharing:** rather than deducting a fixed proportion of non-aeronautical revenue, a certain amount is deducted, depending on the performance of other aspects of the regime (for example, it could be vary depending on the airport's performance on traffic compared to forecasts).

In QQ2, the Authority adopted a hybrid-till approach with fixed revenue-sharing. 90% of commercial revenues were used to reduce aeronautical charges for NMIA.

While there are merits of both single- and dual-till regimes, the Authority considers that a hybrid-till approach continues to be the most appropriate regime for QQ3 for a number of reasons. While aeronautical and non-aeronautical services are not perfectly complementary, there are likely to be some demand dependencies between the two. The Authority therefore considers that in this context a hybrid-till regime is optimal in terms of economic efficiency, as it allows an airport to use some of its profits from non-aeronautical activities to contribute to the costs of aeronautical services without the complete cross-subsidy required under a single-till regime, or no cross-subsidy in a dual-till regime. Within the hybrid-till regime, the Authority has previously implemented the fixed revenue-sharing option for NMIA, as it does not require separation of the asset base between the commercial and aeronautical tills.

### 4.2.2 PACKAL's till regime proposal

At the initial consultation stage PACKAL indicated its preference for moving towards a dual-till in the long run on the basis that it encourages efficient and effective investment, promotes OPEX efficiency, reinforces incentives for high levels of service and enables commercial returns to be used to market the airport. PACKAL stated that it considers that the 90% revenue sharing arrangement is excessive and out of line with international precedent. It cited examples of airports which have lower sharing rates, including airports in India which are mandated to share 30% of commercial revenue to reduce charges, and SIA for which a sharing rate of 70% was applied in QQ2.

However, PACKAL also proposed retaining the hybrid till with 90% revenue-sharing for QQ3 in order to keep charges at a competitive level. Under this approach, 90% of its commercial revenues would be deducted from allowed revenue and used to reduce charges, while 10% of commercial revenues would be kept by NMIA.

PACKAL proposed to move from a hybrid till regime based on revenues to a hybrid till regime based on returns. PACKAL stated that it considered cross-subsidies based on revenues to be inappropriate as it results in commercial returns below the allowed WACC for the entire airport diluting overall profitability. It acknowledged that basing a hybrid till on returns rather than revenues would require a cost allocation exercise.

### 4.2.3 The JCAA's draft determination

At the time of the draft determination, the Authority concurred with PACKAL that for the purposes of the QQ3 rate review, it was appropriate to retain the hybrid till regime with a sharing rate of 90%. The Authority considered that reducing the sharing rate for the QQ3 review would result in less commercial revenue being used to offset charges, resulting in higher charges at NMIA. Given that charges at NMIA are among the highest out of airports in the region, this would be likely to make NMIA uncompetitive with other airports.

The Authority concurred with PACKAL that there are benefits to a dual-till regime, which include providing greater incentives for airports to invest in commercial activities and for airport operators to run an efficient aeronautical business to keep charges low. While some airports around the world have switched to a dual-till regime or a hybrid till with a lower sharing rate than NMIA, many airports globally are still regulated under a single-till regime.

### 4.2.4 Responses to the draft determination

In its response to the draft determination, PACKAL raised issues with the sharing rate of 90%, which it had previously proposed. The rationale for this change was that the Authority has 'proposed a materially lower [weighted average cost of capital] (WACC) than what PACKAL considers to be an appropriate return for the business.' PACKAL also restated its arguments from the initial consultation, that it considers that the sharing rate of 90% is misaligned with international precedent and effectively functions as a single till.

In light of this, PACKAL proposed that the sharing rate should be reduced to 80% for the purposes of the QQ3 review, and then progressively reduced in future reviews.

PACKAL also restated its proposal that the till regime should be based on returns rather than revenues, for the reasons outlined in its initial consultation response. In this regard, the FTC notes that any move toward return-based till models should be preceded by the establishment of a robust cost allocation framework and independent verification mechanisms.

### 4.2.5 The JCAA's final determination

PACKAL's revised proposal to reduce the sharing rate was introduced very late in the process. More importantly, the evidence and justification to support an 80% sharing rate is insufficient. It is not unusual for a regulator to estimate a lower WACC than what is proposed by a regulated company.

Additionally, the Authority considers that reducing the sharing rate is likely to have a detrimental effect on charges. NMIA already has high charges compared to other airports in the region. Reducing the sharing rate would further increase charges, which may make NMIA uncompetitive with other airports from a charges standpoint. Further, while PACKAL has proposed a reduction in the sharing rate, other stakeholders, including IATA and FTC, have advocated for an increase in the sharing rate: '*Ideally, airports' current sharing rates could be increased, as with the appropriate economic regulation, these adjustments incentivize and allow airports to increase retail and commercial revenues while decreasing charges to airline users.*'[39]

The Authority therefore proposes to retain the current sharing rate of 90% at NMIA for the purposes of the QQ3 review. The appropriate sharing rate will be considered again in future reviews, taking into consideration the broader context, including PACKAL's level of charges.

For the purposes of the QQ3 review, the Authority will also retain the sharing rate based on revenues, as this does not require separation of the cost base. However, this matter will be considered again in future reviews.

## 4.3 Commercial revenue

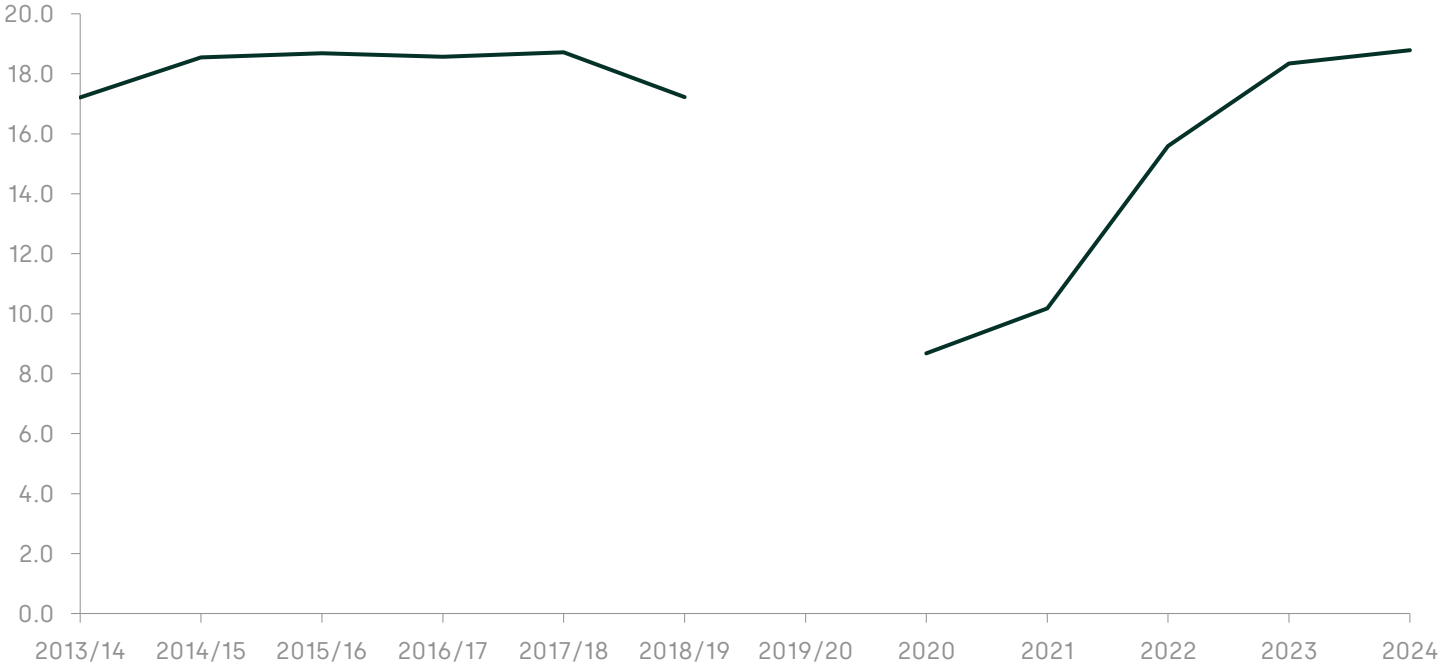
### 4.3.1 Background

Real commercial revenues per passenger at PACKAL fell slightly prior to COVID, with a CAGR of -4.7% between 2013/14 and 2018/19. However, there was then a strong rebound in commercial revenues following COVID. As the classification of commercial revenues at NMIA has changed

[39] IATA (2025), 'JM 16APR2025 IATA Comments to JCAA Draft Determination airport charges QQ3', p.2.

between the QQ1 and QQ2 periods, it has not been possible to assess how commercial revenues following COVID compared to their pre-COVID levels in specific categories.

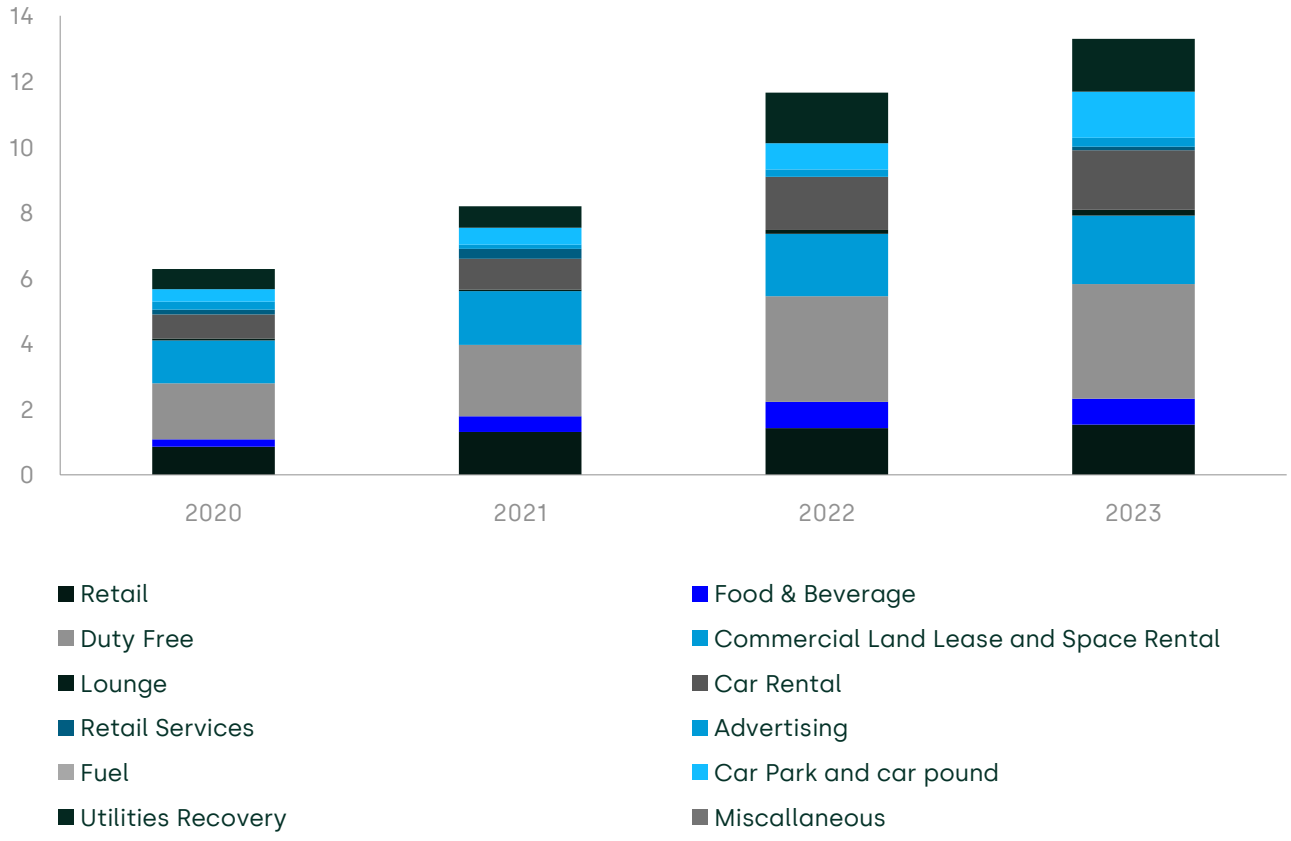
Figure 4.1 PACKAL outturn commercial revenues (US$ million)




Note: Data is shown by financial year from 2008/09-2019/2020 and by calendar year from 2020 onwards. The three-month period of January to March 2020 is included in both financial year 2019/20 and calendar year 2020. Data is in real 2024 prices.
Source: JCAA analysis of PACKAL QQ2 and QQ3 financial models.

Figure 4.2 shows non-aeronautical revenues by category for 2020–23. The largest category of non-aeronautical revenue is duty free, which accounted for 30% of commercial revenue in 2023. Commercial land lease and rental, car rental, car park and car pound, and utilities recovery were also substantial sources of non-aeronautical revenue, each accounting for between 10% and 20% of total non-aeronautical revenue in 2023.

Figure 4.2 PACKAL non-aeronautical revenues, split by category (US$ million, 2024 values)




Source: JCAA analysis of PACKAL QQ2 financial model.

### 4.3.2 PACKAL's commercial revenue proposals

In its initial consultation response, PACKAL stated that it has been undertaking various projects over the QQ2 period, which will continue into QQ3, to update the terminal infrastructure, including a departure lounge and Customs and Arrivals upgrade. Following this upgrade, the areas available for certain commercial activities, specifically food and beverage, duty free and specialty retail, will increase, as shown in Table 4.1 below. PACKAL stated that, as a result of these upgrades, commercial revenue for these categories is expected to increase following the completion of the works in 2027.

Table 4.1 Projected increase in area available for non-aeronautical revenues

| | Current area (square metres) | Forecast area (square metres) | Percentage increase |
|---|---|---|---|
| Food and beverage | 781 | 972 | 24% |
| Duty free | 448 | 621 | 39% |
| Specialty retail | 452 | 521 | 15% |

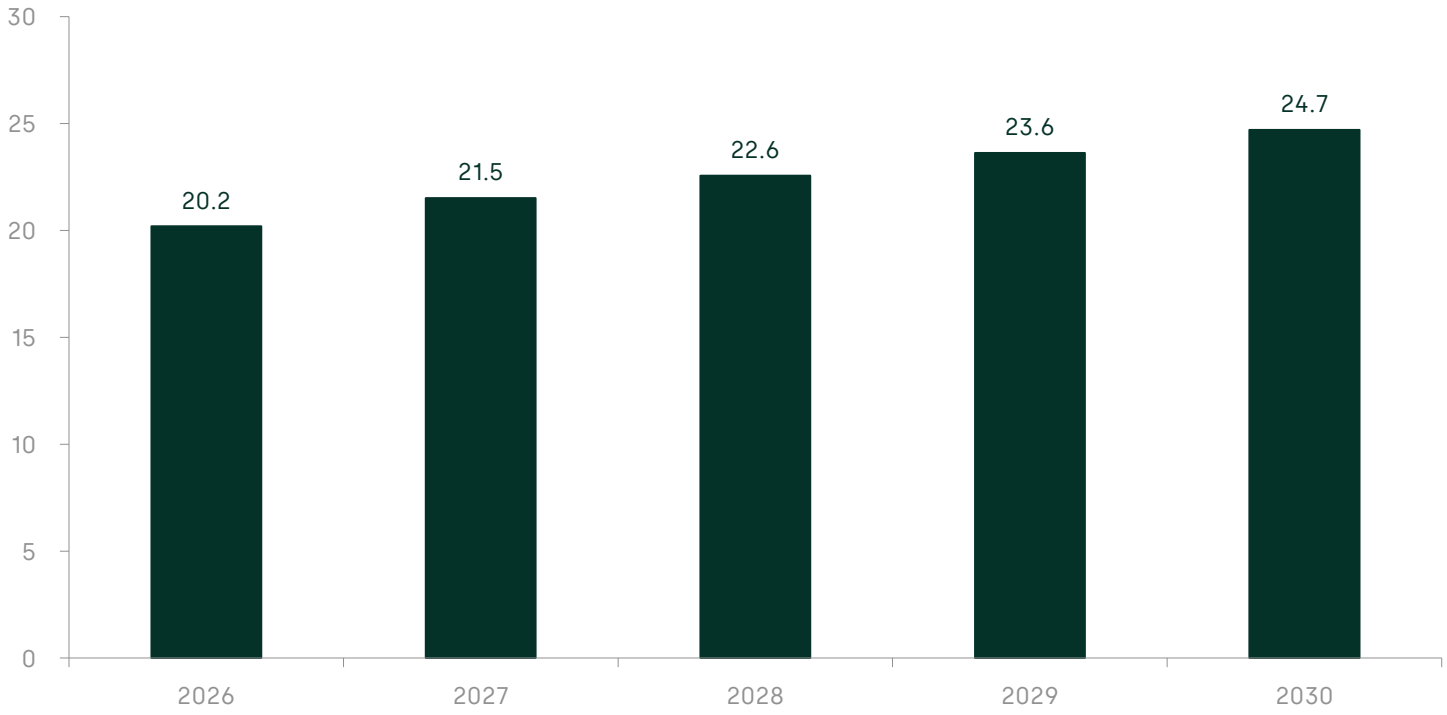
Source: PACKAL's business plan.

PACKAL forecasted commercial revenues by estimating an elasticity of each category of commercial revenues to both passenger numbers and space increases. PACKAL stated that these elasticities are based on historical trend analysis of non-aeronautical revenue figures for NMIA. PACKAL proposed the following elasticities for each category of commercial revenue.

- **Retail and retail services, food and beverage** and **duty free** were assumed to have an elasticity to passenger numbers of one, meaning that they will grow in line with passenger numbers. Additionally, these categories of commercial revenue are assumed to have an elasticity of 0.15 to space increases, meaning that for a 1% increase in the space available for that activity, revenues will increase by 0.15%.
- **Commercial land lease and rental spaces** was expected to increase by 2% per annum in real terms, because of rent escalation clauses currently in place. Additionally, commercial land lease and rental spaces are assumed to have an elasticity to passenger growth of 0.1%, meaning that a 1% increase in passenger growth will lead to a 0.1% increase in revenue from this activity.
- **Lounge, car rental** and **car park and car pound** were expected to increase with passenger growth with an elasticity of 0.5, meaning that a 1% increase in passenger growth will lead to a 0.5% increase in revenues from these categories.
- **Advertising revenues** were expected to grow at a rate of 2% per annum in real terms because of the contracts currently in place.
- **Utilities recovery** was expected to increase with passenger traffic with an elasticity of 0.2, with an uplift being expected from 2027 onwards resulting from the space increases discussed above.

Prior to the draft determination, PACKAL also categorised the revenue from four other aeronautical services (aircraft maintenance and ground handling, aircraft refuelling, inflight catering and common user terminal equipment (CUTE)) as non-aeronautical revenue. These revenue streams are unregulated and are managed in consultation with stakeholders. However, the Authority has historically included these revenue streams as part of commercial revenue under the hybrid-till model. PACKAL assumed that two of these revenue streams, aircraft ground handling and aircraft refuelling, will grow in line with air traffic movements (ATMs) at NMIA, while inflight catering will grow in line with passenger numbers. PACKAL's commercial revenue forecasts for each category of commercial revenue are shown in Figure 4.3 below.

Figure 4.3 PACKAL's commercial revenue forecasts for NMIA (US$ million, nominal)




Note: The chart has been revised from the draft determination, as it was incorrectly presenting figures on a per-passenger basis due to a labelling error in PACKAL's financial model. While PACKAL has presented the commercial revenue forecasts in per passenger terms, the Authority presents PACKAL's overall commercial revenue forecasts to make them more comparable with the Authority's.
Source: JCAA analysis of PACKAL QQ3 financial model.

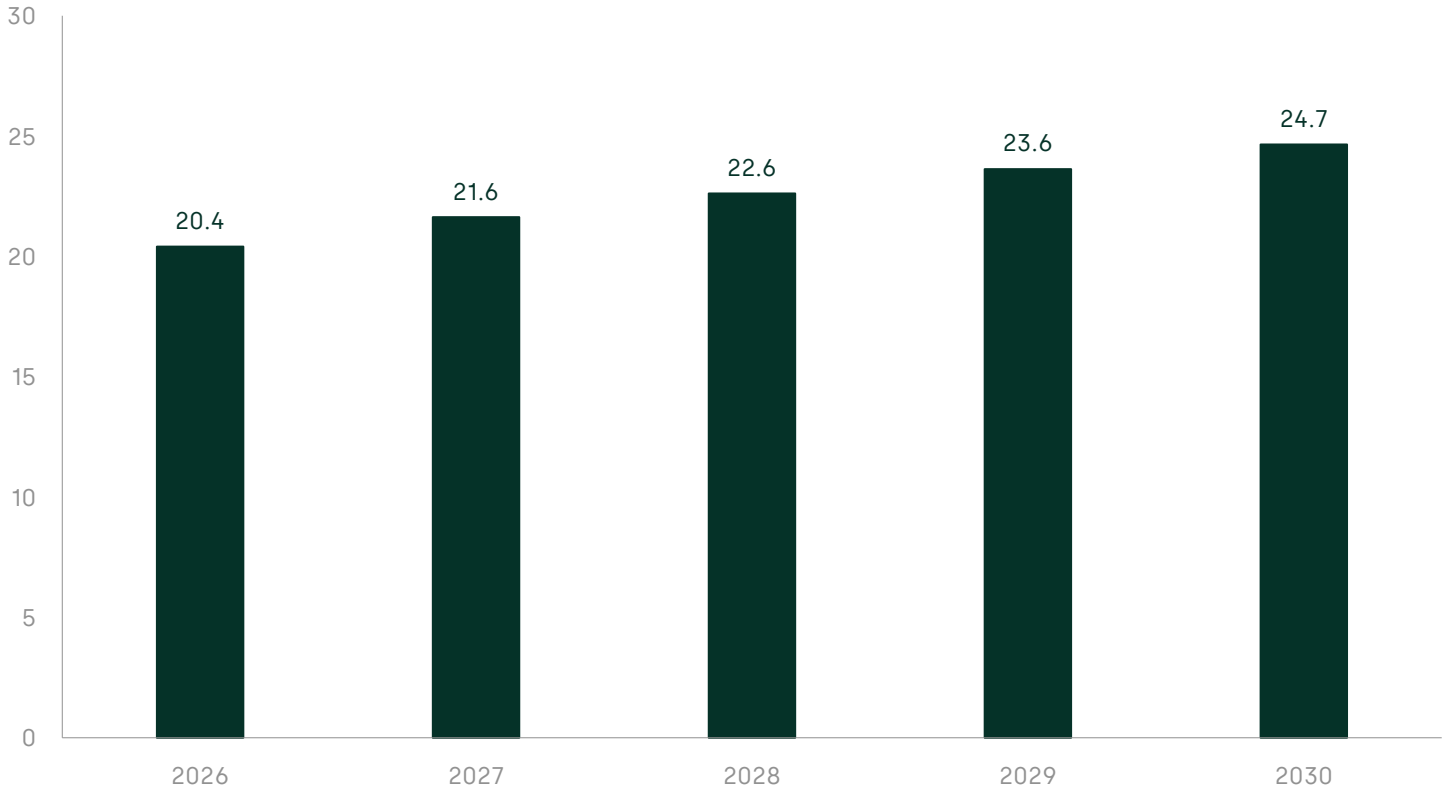
### 4.3.3 The JCAA's draft determination

In forecasting commercial revenue for QQ3, PACKAL stated that it had used historical data to inform the elasticities of commercial revenue to passenger numbers. However, it was not clear on what basis these elasticities had been calculated.

The Authority undertook a comparison of PACKAL's revenue forecasts against historical growth in commercial revenues, which indicated that PACKAL had predicted higher growth in commercial revenues than has been seen in recent years. On this basis, the Authority considered that PACKAL's commercial revenue forecasts may be ambitious. However, given the justification provided by PACKAL for the increases, and the planned increases in space available for commercial activities, the Authority considered that these forecasts should be achievable. For this reason, the Authority used the commercial revenue elasticities proposed by PACKAL for the purposes of the QQ3 price review.

The Authority's forecasts for commercial revenue at NMIA at the time of the draft determination are shown in Figure 4.4 below. The Authority's forecasts differed slightly from PACKAL's, as the Authority used its own passenger and ATM forecasts, and commercial revenues for each category are calculated by applying elasticities to forecast passenger numbers.

Figure 4.4 The Authority's commercial revenue forecasts for NMIA at the time of the draft determination (US$ million, nominal)




Note: The chart has been revised from the draft determination, as it was incorrectly presenting figures on a per-passenger basis due to a labelling error in PACKAL's financial model.
Source: JCAA analysis of PACKAL QQ3 business plan and financial model.

PACKAL proposed that the same sharing rate that is applied to all categories of non-aeronautical revenue be applied to CUTE and ground handling, which it classified as non-regulated aeronautical revenue. The Authority considered that, while there is no clear industry-wide definition of commercial and aeronautical revenue, both CUTE and ground handling should be classified as 'other revenue' rather than non-aeronautical revenue. At the time of the draft determination the Authority considered that the same sharing rate could be applied to the 'other revenue' category. This is consistent with the treatment of items classified as other revenue in QQ2.

### 4.3.4 Responses to the draft determination

In its response to the draft determination, PACKAL did not raise any concerns regarding the Authority's commercial revenue forecasts. However, PACKAL corrected an error in its model relating to CUTE revenues. PACKAL stated that CUTE revenues should not be included in the sharing rate. This is because it is a pass-through for NMIA and is

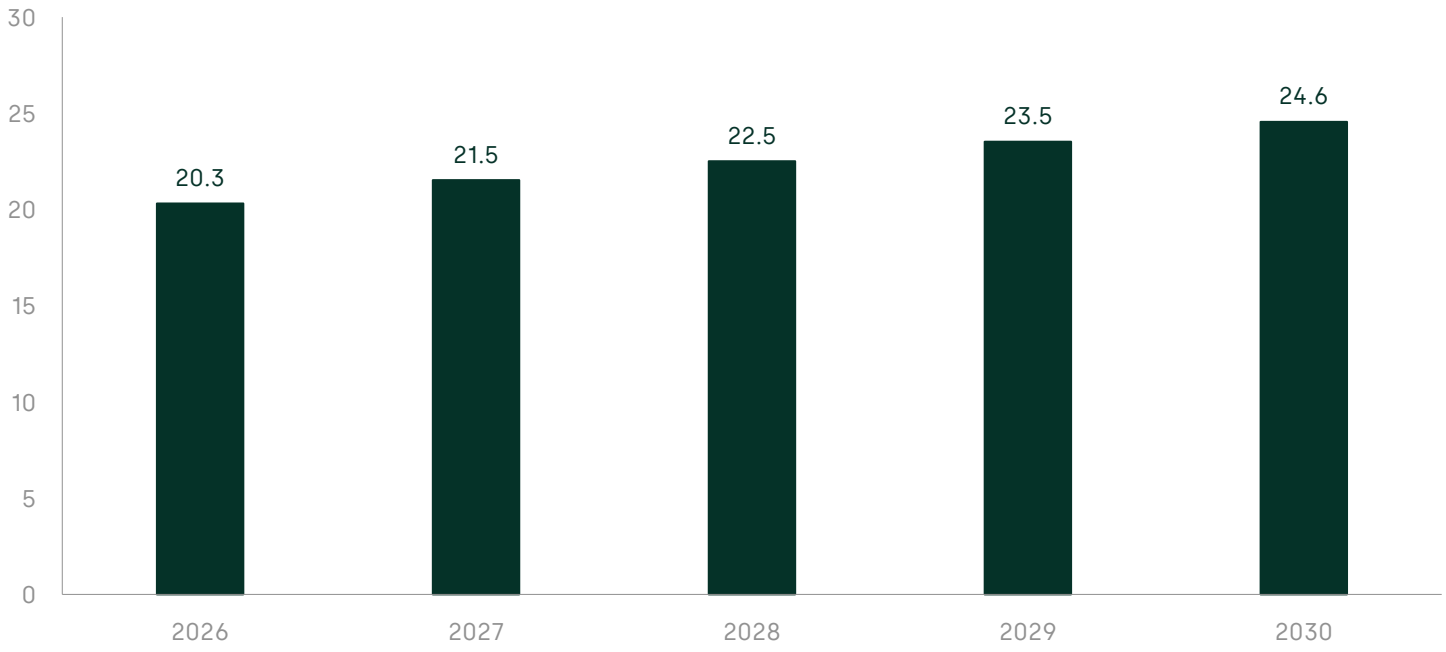
directly recovered from airport users. PACKAL also confirmed that CUTE CAPEX had not been included in the RAB. Moreover, PACKAL stated that it had erroneously deducted CUTE revenues from the total revenue used in the estimation of concession fees in its original model submission.

### 4.3.5 The JCAA's final determination

While the Authority's previous position was consistent with its position in QQ2, on consideration of the new information received from PACKAL, the Authority concurs with PACKAL that CUTE should be excluded from the sharing regime. This is on the basis of the reasons discussed above. Specifically, since CUTE CAPEX is excluded from the RAB, it should not be included in the sharing regime as it would enter on the revenue side but not the cost side.

The Authority's forecasts for commercial revenue at NMIA are shown in Figure 4.5. The Authority's forecasts differ from the forecasts at the time of the draft determination due to adjustments to passenger number forecasts and inflation assumptions between the draft and final determinations, as well as the change in the classification of CUTE revenue explained above.

Figure 4.5 The Authority's commercial revenue forecasts for NMIA (US$ million, nominal)




Source: JCAA analysis of PACKAL QQ3 business plan and financial model.

# 5 Capital expenditure

## 5.1 Introduction

This section considers the appropriate level of capital expenditure (CAPEX) for QQ3 to be taken into account in the calculation of the price cap. It first reviews the historical CAPEX at the airport, then sets out the airport's proposals for QQ3 and concludes with the JCAA's draft and final determinations.

It is worth noting that QQ3 CAPEX will not be fully paid for during the next five years. New CAPEX is added to the RAB each year and the airport earns a return (the WACC multiplied by the RAB) and a depreciation charge. For most assets the depreciation profile will be longer than five years, and as such the assets will be remunerated over a longer time period. Issues regarding the RAB, WACC and depreciation are considered in subsequent sections.

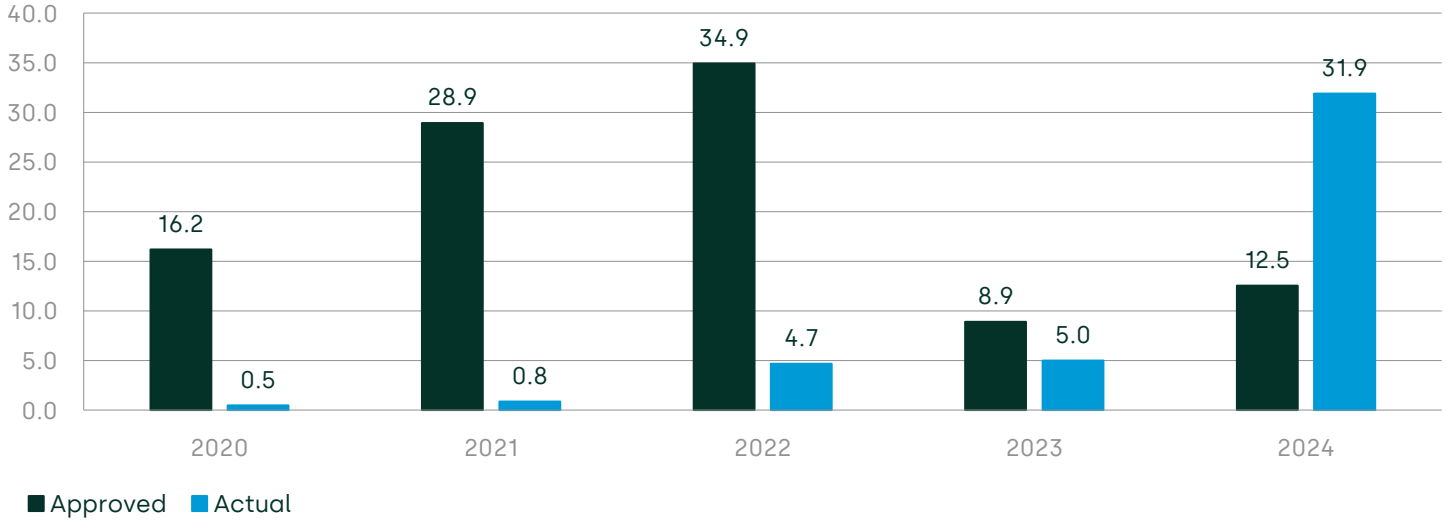
## 5.2 CAPEX programme

### 5.2.1 Background

The Authority approved $101.4m of CAPEX for QQ2 (in nominal terms). However, PACKAL spent significantly less than the approved amounts in the first four years of QQ2 (2020–23) and more in 2024. Figure 5.1 compares PACKAL's actual and approved CAPEX, highlighting the difference between the two. Overall, the underspend on CAPEX across QQ2 was $58.6m.[40,41]

[40] The calculations exclude outturn CAPEX for 2025 as this has been included in the QQ3 period in NMIA's financial model.
[41] Although 2025 was not originally part of the QQ2 period, it became part of that period due to the extension until December 31, 2025. Thus, in the context of the QQ2 review, there was no CAPEX approved for 2025.

Figure 5.1 Actual vs approved CAPEX ($m, nominal)



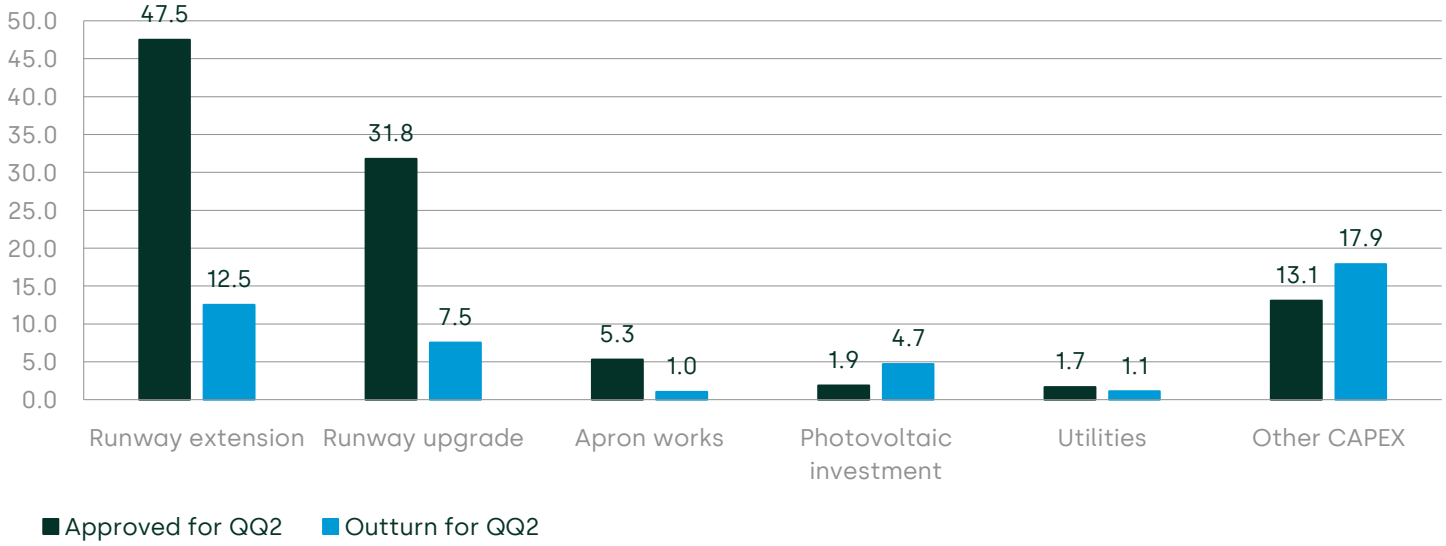

Source: PACKAL (2025), 'NMIA QQ3 Working File – Final updated_24.01.2025', 'RAB and allowed revenue' tab, January 29.

In its business plan, PACKAL noted that its CAPEX programme was severely affected by COVID-19. Specifically, PACKAL notes that COVID-19 caused a postponement of several projects which were initially planned for QQ2. The main deferred projects include the following.

- **Runway extension**. The implementation of the 300-metre runway extension was approved to be undertaken in the period 2020–22. However, material commencement of this project was delayed to 2024 as a result of COVID-19. The pandemic has both delayed the requirement for the extension and prevented works from being undertaken as the contractor had resourcing challenges.
- **Runway upgrade**. The project commenced in 2019 but was halted in 2020 due to *force majeure* conditions.
- **Apron works**. Works were approved for the period 2022–24 but were materially commenced in 2024.
- **Photovoltaic investment**. The costs included in the QQ2 review (equal to $1.6m) referred to Phase 1 only. The outturn cost for Phase 1 was approximately $3.1m. The Authority understands that Phase 2 started in 2024 and is expected to cost approximately $1.6m.
- **Utilities**. The wastewater treatment plant upgrade was delayed due to receiving only one quotation for each Request for Proposal (RFP). The project is now ongoing.

The key drivers of the variances in CAPEX spending over QQ2 are shown in Figure 5.2 which compares the approved CAPEX with the outturn CAPEX for the main projects that have been delayed.

Figure 5.2 Outturn vs approved QQ2 CAPEX by category ($m, nominal)



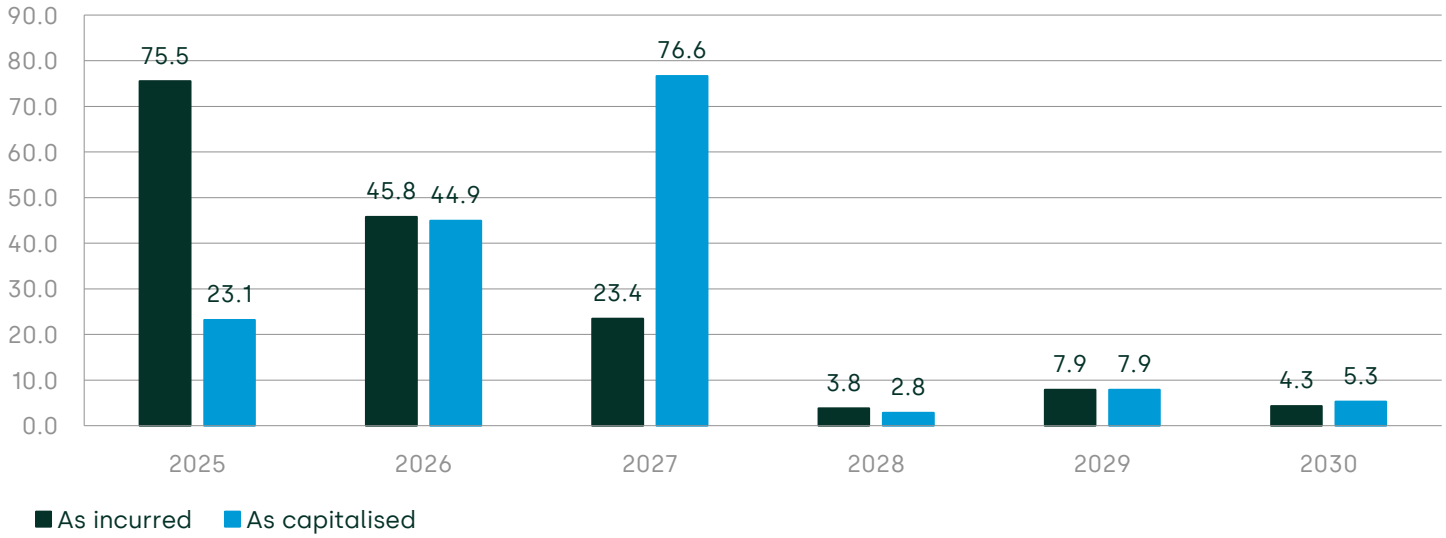

Notes: The Authority notes that the values for actual CAPEX provided by PACKAL seem to be expressed in 2024 real terms (rather than in nominal terms as is the case for approved CAPEX). The 'Other CAPEX' category includes all projects with an overspend (variance) of up to $1.6m.
Source: PACKAL (2025), 'CAPEX Tables 24.01.2025', 'QQ2 approved vs expended' tab, January 29.

### 5.2.2 PACKAL's proposals

In its business plan for QQ3, PACKAL proposed a CAPEX programme of **$85.2m over 2026–30** (in 2024 values).

The additions to the RAB over QQ3 amount to **$137.5m** (in 2024 values) as $52.3m of CAPEX incurred in 2025 is capitalised over QQ3. Figure 5.3 below shows the profile of the CAPEX incurred and the additions to the RAB over the 2025–30 period.

Figure 5.3 PACKAL CAPEX program by year ($m, 2024 values)




Source: PACKAL (2025), 'NMIA QQ3 Working File – Final updated_24.01.2025', 'Capex 2024-2030' tab, January 29.

According to the airport, this investment programme is vital to ensure the sustainable operation and development of the airport, and to preserving its competitive position in the region. It also includes the refurbishment and renovation of the terminal area to improve the service levels and to enhance the passenger experience.

PACKAL summarised its proposed CAPEX program for QQ3 in the following categories.[42]

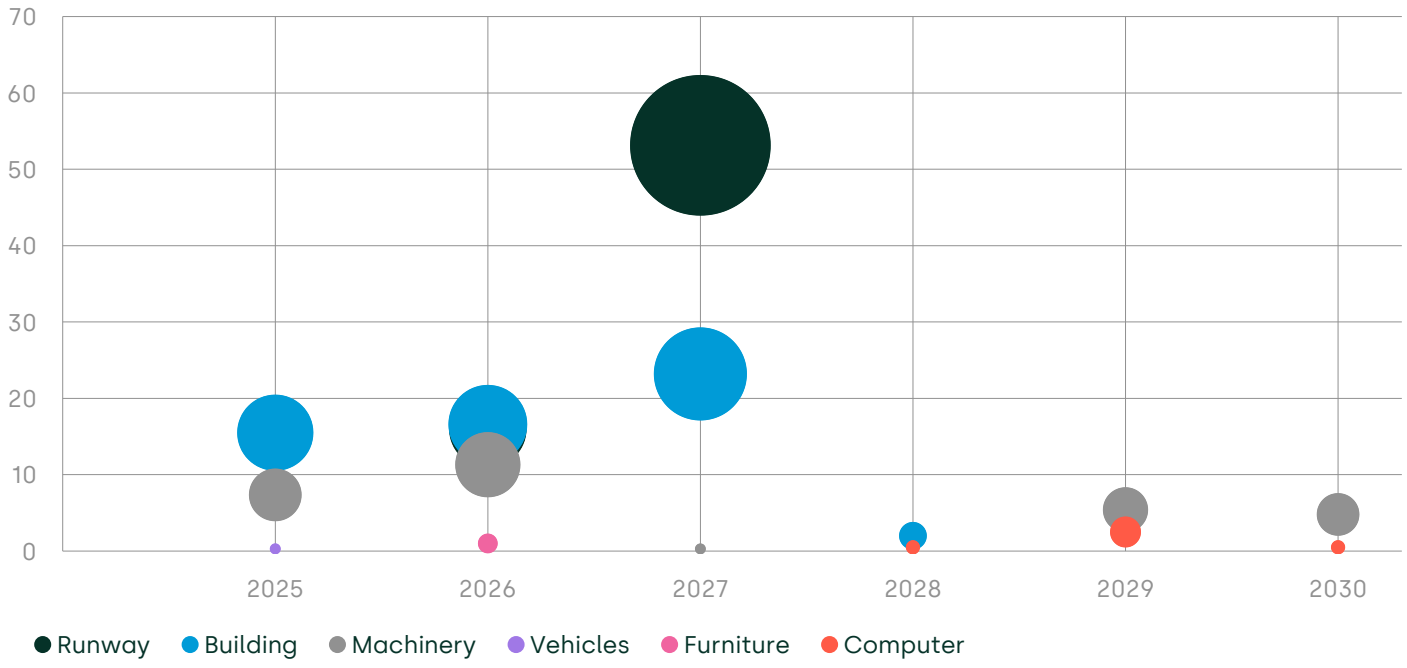
- **Runway**. This category includes the runway extension, the apron works, and the runway overlay.
- **Building**. This category mainly includes the departure lounge, the rehabilitation of the Customs Halls and Arrivals, and the rehabilitation of the taxiways.
- **Machinery**. This mainly includes the chilled water replacement lines, the replacement of X-Ray machines and the baggage handling installation, the replacement of the Igranic switchgear, and the generator replacement.
- **Vehicles**. This refers to the manager and operational vehicles as well as to the ICT and company bus.
- **Furniture**. This refers to the furniture for PACKAL offices.

[42] These categories have been used by PACKAL to estimate different useful lives.

- **Computer**. This category mainly includes the airport operation database, the replacement of the carpark pay machines, the replacement of computers, cameras, CCTV equipment and screening system (FIDS).

The Authority presents the breakdown of PACKAL's proposed CAPEX program from its business plan in Figure 5.4.

Figure 5.4 Breakdown of PACKAL CAPEX program ($m, 2024 values)




Source: PACKAL (2025), 'NMIA QQ3 Working File – Final updated_24.01.2025', 'Capex 2024-2030' tab, January 29.

PACKAL confirmed that no CAPEX forecast for QQ3 will be funded by the Airport Improvement Fee (AIF).[43, 44] According to the data provided by

[43] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, *Minutes of meeting – PACKAL and IATA on October 15, 2024*, p. 57.
[44] The AIF is levied by the Jamaican government on international departing passengers. It is used to pay for assets approved by the Minister of Transport. The Government of Jamaica has full control over capital projects funded by the AIF. The AIF is not included in the RAB and is separate from NMIA's capital expenditure forecasts. The Authority considers that the approach that PACKAL has adopted in this respect is reasonable.

PACKAL, 49% of the CAPEX programme for QQ3 refers to projects mandated by the Concession Agreement.[45]

### 5.2.3 The JCAA's draft determination

#### Considerations on the proposed CAPEX scheme

In the draft determination, the Authority evaluated the necessity of the proposed CAPEX schemes based on the outcomes they are expected to deliver for users. In determining this necessity, the Authority considered whether there was broad support expressed during stakeholder meetings.

The Authority noted that, during the meeting with IATA, PACKAL stated that the projects relating to maintaining the service level (e.g. GR-RESA, apron, taxiway rehabilitation) are required by the Concession Agreement.[46] IATA requested additional information for all projects, highlighting the baggage handling system as a 'pain point from airlines'.[47]

Based on the minutes of a subsequent meeting with IATA and airline representatives, PACKAL confirmed that there are no expansion plans as the airport does not contemplate any need for capacity expansion over the next ten years.[48] Therefore, all CAPEX for QQ3 relates to replacement works and compliance with the Concession Agreement. IATA also raised concern over $4m CAPEX for restroom refurbishment, as it seemed to be excessive compared with other airports. According to PACKAL, this amount is in line with the structural evaluation, the needs of the project, and prevalent rates in Jamaica.[49] Lastly, PACKAL clarified that some projects (e.g. washroom renovation and expansion, air conditioning) are necessary, and the Jamaican government had asked questions regarding the terminal's situation.[50]

Given PACKAL's clarifications regarding the necessity of specific projects, the Authority approved the proposed CAPEX plan.

[45] According to PACKAL, over the 2024–30 period $94.6m refers to projects mandated by the Concession Agreement. This amount includes: (i) $65.6m relating to the runway extension; (ii) $17.0m relating to the apron rehabilitation; (iii) $10.0m relating to the taxiways rehabilitation; (iv) $2.0m relating to the wastewater treatment plant. The percentage is derived by dividing $94.6m by the total amount of CAPEX forecast for the 2024–30 period (i.e. $193.6m). See PACKAL (2025), 'CAPEX Tables 24.01.2025', 'Mayor CAPEX Projects' tab, January 29.
[46] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, *Minutes of meeting – PACKAL and IATA on September 17, 2024*, p. 55.
[47] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, *Minutes of meeting – PACKAL and IATA on September 17, 2024*, p. 56.
[48] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, *Minutes of meeting – PACKAL and IATA on October 15, 2024*, p. 57.
[49] Ibid.
[50] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, *Minutes of meeting – PACKAL and IATA on October 15, 2024*, p. 58.

### Treatment of construction work in progress (CWIP)

In the draft determination, the Authority noted that, although PACKAL's initial position was to include CWIP in the RAB for QQ3 CAPEX,[51] the airport operator ultimately opted to include CAPEX in the RAB upon completion (instead of as incurred). This decision was made in light of the large-scale CAPEX program and the potential significant increase in charges.[52] Nonetheless, PACKAL requested that the Authority reconsiders this approach in the next rate review.[53]

The Authority agreed with PACKAL's proposed approach to include CAPEX in the RAB upon completion (instead of as incurred) for the 2026–30 period. This is in line with the final determination for QQ2. It also ensures that passengers are protected from a failure to deliver and is consistent with good regulatory practice, such that the assets are not depreciated until they are in use.

Therefore, in the draft determination, the Authority's proposed profile of additions to the RAB aligned with PACKAL's proposed profile of additions to the RAB (in real terms).[54] As shown in Table 5.1, based on the Authority's inflation assumptions, the total additions to RAB over the 2025–30 period amount to $171.0m (in nominal terms).

### Table 5.1 Profile of additions to the RAB for the draft determination ($m, nominal)

| Year | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Total |
|---|---|---|---|---|---|---|---|
| Additions, PACKAL | 23.6 | 46.8 | 81.5 | 3.0 | 8.8 | 6.0 | 169.6 |
| Additions, JCAA | 23.7 | 47.1 | 82.2 | 3.1 | 8.9 | 6.1 | 171.0 |

Note: The mismatch between PACKAL's and JCAA's total additions over QQ3 (in nominal terms) is due to slightly different inflation assumptions that have been used.
Source: JCAA.

[51] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, p. 15.
[52] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, p. 18.
[53] Ibid.
[54] The mismatch between PACKAL's and JCAA's total additions over QQ3 (in nominal terms) is due to slightly different inflation assumptions that have been used.

### 5.2.4 Responses to the draft determination

During stakeholder consultations, PACKAL informed the Authority that the $1.2 million CAPEX allocated to the taxiway rehabilitation, originally planned for 2024, had not been incurred by the end of that year. As this expenditure was not pre-approved by the JCAA, it was subject to adjustment in the QQ3 opening RAB.

PACKAL clarified that the 2024 CAPEX for taxiway rehabilitation should be revised downward by $1.0m, with a corresponding $1.0m increase in the 2025 allocation. This adjustment was reflected in PACKAL's revised financial model.[55]

In addition, the Authority notes that IATA's written response to the draft determination raised concerns that information provided by PACKAL did not include the level of cost details per investment required, nor did they set out the impact of these investments on potential fee proposals. Particularly in the context of NMIA, IATA's view is that had this information been provided and reviewed by stakeholders in a timely manner, a 'collaborative solution' could have been discussed with respect to the impact on charges at NMIA for 2025.

### 5.2.5 The JCAA's final determination

The Authority has taken PACKAL's clarifications into account and adjusted its estimate for the QQ3 opening RAB accordingly. Further details are provided in section 6.1.5.

Table 5.2 reflects the updated RAB additions profile for the final determination, to reflect the deferral of $1.0m in expenditure from 2024 to 2025.[56]

[55] PACKAL (2025), Annexure 2 - NMIA QQ3 Working File - revised_11.04.2025, April 11.
[56] The JCAA's additions to the RAB for the final determination reflect updated inflation forecasts as of March 31, 2025.

Table 5.2 Profile of additions to the RAB for the final determination ($m, nominal)

| Year | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Total |
|---|---|---|---|---|---|---|---|
| Additions, PACKAL | 24.6 | 46.8 | 81.5 | 3.0 | 8.8 | 6.0 | 170.7 |
| Additions, JCAA | 24.9 | 47.3 | 82.5 | 3.1 | 8.9 | 6.1 | 172.8 |

Note: The mismatch between PACKAL's and JCAA's total additions over QQ3 (in nominal terms) is due to slightly different inflation assumptions that have been used.
Source: JCAA.

The Authority acknowledges IATA's concerns around insufficient insight provided to stakeholders on the airport's investment plans. The Authority will require more evidence in QQ4 that stakeholders have been appropriately consulted on the CAPEX programme and that their views have informed the QQ4 business plans, as set out in section 2.4.

## 5.3 Additional capital expenditure (ACE) mechanism

### 5.3.1 Background

The previous section sets out the CAPEX forecasts for the QQ3 period. However, actual CAPEX may deviate from forecasts for a number of reasons.

- Changing circumstances or user preferences render a previously agreed capital project unnecessary, or indicate that additional investment is required.
- The airport has underspent due to deferring/cancelling agreed capital projects, or overspent due to bringing forward projects/undertaking additional investment that was not agreed in advance.
- The airport has underspent or overspent while delivering the agreed program as a result of external factors.

With respect to under- or overspends due to changes in projects or spending less/more on agreed programs, the Authority considers that these would be addressed at the end of the QQ3 period through a 'logging-up' or 'logging-down' procedure. For example, if an airport needs to spend more on a particular capital investment than initially allowed for by the regulator, and this additional expenditure is efficient, the regulator may allow (a portion of) this CAPEX in the RAB at the next rate review, by increasing the opening RAB for the following period. This would only be

considered in advance of setting prices for QQ4 and not during the QQ3 period.

It could also be the case that the airport has underspent or overspent while delivering the agreed program as a result of efficiencies or inefficiencies. In this case the company is required to bear the pain of any inefficiencies and retains the additional profits from outperforming on efficiencies. As such, no adjustments would be made.

However, the Authority notes that there may be new projects that arise over the course of the rate review period that would be in the interests of users, but which could not be forecast in advance of QQ3, or projects where the timing needs to be brought forward due to higher levels of demand.

In the QQ2 rate review, the Authority introduced an additional CAPEX (ACE) mechanism, through which it would be able to approve CAPEX during the rate review subject to following a pre-specified and published methodology. Any additional CAPEX approved would lead to an adjustment of the charges cap within the period. The ACE mechanism would depend on the airport operator consulting with airlines on any proposed new CAPEX and for the airports and airlines to agree on (i) the need for the project; and (ii) the price adjustment required to reflect the additional CAPEX requirement. The airport would then bring forward its proposals to the Authority with supporting evidence in order for the Authority to decide whether to accept or modify the proposal.

This mechanism was not warranted during QQ2.

### 5.3.2 PACKAL's proposals

In its business plan, PACKAL has indicated that it believes the ACE mechanism process as currently implemented is 'overly bureaucratic and slow.'[57] It flags concerns that the use of this mechanism may lead to delays in project delivery. Instead, PACKAL has proposed that a minimum threshold be set based on the average cost of projects in the CAPEX plan. Below this threshold, PACKAL would not be required to undertake consultation with users. PACKAL's view is that this would make the process more efficient, and limit the risk of smaller projects, which are necessary for service quality or maintaining airport infrastructure, being blocked due to objections by airport users.

[57] PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, p. 19.

### 5.3.3 The JCAA's draft determination

In the draft determination, the Authority proposed to retain the ACE mechanism for QQ3 and implement it as needed in the upcoming regulatory period. The mechanism would function as follows:

- Airports would consult airlines on any proposed new CAPEX projects through an airport CAPEX consultative committee (including all airlines with more than 100,000 passengers in the preceding 12 months).
- The aim would be for the airport and airlines to agree on: (i) the need for the project; and (ii) the price adjustment required to reflect the additional CAPEX requirement.
- Following consultation, the airport operator would bring forward its proposals and supporting evidence (including additional CAPEX and OPEX requirements, traffic forecasts, and information on the consultation process) to the Authority.
- Projects for which airlines agree on the need for the project and the proposed price adjustment would typically be expected to receive regulatory approval with minimal scrutiny.
- Where there is agreement on the need for the project but not the price adjustment, the Authority would review and decide whether to accept the airport operator's proposal or modify it. If the project scope and price proposal are accepted, the airport would be expected to proceed on the proposed terms. If the regulator made significant modifications to the project or price adjustment, the airport could decide whether or not to proceed (and there would be no change to the price cap).
- Finally, if airlines oppose the project or no consensus is reached, but the airport believes that the project would be in the public interest, the Authority would review whether there was sufficient justification for the investment and the appropriate price adjustment. As above, in the event of substantial modification to the airport's initial proposal, the airport could decide whether or not to proceed with the project.

Finally, in the draft determination, the Authority considered PACKAL's proposal to establish a minimum threshold below which airports would not be required to consult users. Based on analysis of the CAPEX plan by project size, the Authority set this minimum threshold at $500,000. This strikes a balance between minimising project delivery delays and excessive administrative burden for airports while ensuring that, as a general rule, users are consulted when there are deviations from the CAPEX plan.

### 5.3.4 Responses to the draft determination

In its response, PACKAL acknowledged the ACE mechanism proposed by the JCAA for QQ3. PACKAL also noted that the JCAA agreed that if new CAPEX is incurred without any proposed increase in the charges, then the ACE mechanism would not be applicable.

Furthermore, PACKAL welcomed the JCAA's proposal to set a minimum project threshold. Although PACKAL initially suggested a $1.0m threshold during the stakeholder consultations, it subsequently requested the threshold to be raised to at least $2.0m. PACKAL supported this proposal on the basis that the construction costs in Jamaica are high and expected to increase over the next three years.

In their response to the draft determination, IATA and the airlines emphasized the need for effective supervision of the ACE mechanism's implementation, particularly regarding the minimum threshold of $500,000. They argued that strong oversight is essential to prevent airports from strategically dividing projects into smaller components to circumvent user consultation requirements.

### 5.3.5 The JCAA's final determination

The Authority confirms that the ACE mechanism does not apply where new CAPEX is incurred without any associated proposal to increase charges. However, the Authority clarifies that this condition also applies to any proposed charge increases in future regulatory periods. In other words, if unanticipated CAPEX is incurred over QQ3 and is not subject to the ACE mechanism, the CAPEX would need to be reviewed before it is determined whether it would be allowed in the RAB for QQ4.

The Authority confirms the $500,000 threshold set out in the draft determination. As previously explained, this level was established based on an analysis of PACKAL's CAPEX plan for QQ3. The Authority will engage with the airports to ensure that the mechanism is applied in an appropriate manner.

# 6 Regulated asset base and depreciation

## 6.1 Setting the RAB

### 6.1.1 Background

The opening RAB for 2026 informs the charges for the next regulatory period. Several approaches can be used to set the RAB, but the Authority's first reference is the RAB values available in the airport's regulatory accounts, to the extent that the principles and approaches used to set these are consistent with regulatory best practice. Consideration is also given to how CAPEX should be added to the RAB—whether upon completion or as it is incurred.

In this regulatory review, the impacts of COVID-19 on the RAB, including how best to account for deviations between forecast and actual CAPEX due to COVID-19, and the impact of the one-year extension of the regulatory period are also important to consider.

### 6.1.2 PACKAL's proposed approach

In its business plan, NMIA set the opening RAB for QQ3 at $69.4m. This is computed starting from the opening RAB for 2020, which PACKAL estimates to be $9.6m. The value of the opening RAB for QQ2 is then brought forward to 2026 based on the CAPEX, RAB indexation, and depreciation incurred over the QQ2 period (including 2025).

PACKAL proposed to index its RAB such that it increases with inflation (as measured by CPI) in each year, and use a real WACC so that it is not compensated for inflation twice (see section 7). This is in line with the approach for QQ2.

### 6.1.3 The JCAA's draft determination

In the draft determination, the Authority noted that, in the context of QQ2, PACKAL estimated the opening RAB for 2020, as the upfront fee ($7.1m) paid by PACKAL for the right to operate NMIA. Instead, in its QQ3 modelling, PACKAL estimated the opening RAB for 2020 to be equal to $9.6m, which has been calculated by assuming that the $7.1m represented the opening RAB for 2019 (rather than 2020).[58]

[58] The value of $9.6m assumed by PACKAL is computed starting from the $7.1m representing the 2019 opening RAB and (i) adding $0.1m relating to RAB indexation; (ii) adding $2.8m relating to CAPEX incurred over 2019; (iii) subtracting $0.5m relating to the RAB depreciation over 2019. See PACKAL (2025), 'NMIA QQ3 Working File – Final updated_24.01.2025', 'Initial assumptions' tab, January 29.

In the absence of clarifications from PACKAL regarding this adjustment, the Authority's approach in the draft determination was to recalculate the opening RAB for QQ3 by assuming that the opening RAB for 2020 was equal to $7.1m (rather than $9.6m), consistent with the QQ2 Final Determination. Therefore, the Authority proposed to adjust the opening RAB for QQ3 downwards to $67.4m.

Furthermore, in the draft determination, the Authority made a downward adjustment to the opening RAB for QQ3 as, over the 2020–24 period, PACKAL spent $2.8m on projects not originally approved by the Authority.[59] This amount included: (i) $0.8m relating to the replacement of Passenger Loading Bridge (PLB) 5; (ii) $0.8m relating to motor vehicles; and (iii) $1.2m relating to the taxiway rehabilitation.[60] In line with the approach from QQ2, the Authority excluded this amount from the opening RAB for 2026, while retaining it in the closing RAB for the same year. Other than this adjustment, the Authority used PACKAL's proposed opening RAB for QQ3 in setting its determination.

### 6.1.4 Responses to the draft determination

In its formal response to the draft determination, PACKAL requested that the Authority reconsider certain aspects of its approach to setting the RAB.

- **Adjustment to QQ2 opening RAB**. PACKAL requested the Authority include the $2.8 million of CAPEX incurred in 2019 as part of the opening RAB for QQ2. PACKAL clarified that, at the time of the QQ2 determination, the full amount of CAPEX spent by PACKAL in 2019 was not available for consideration. PACKAL also confirmed that the $0.5m refers to depreciation for 2019.
- **Disallowed CAPEX for QQ2**. In relation to the amount spent for the replacement of PLB 5, PACKAL argued that the Authority's position is inconsistent with its position on service quality. PACKAL argued that the PLB replacement was targeted at improving the service quality scores, in line with the Authority's requests. Moreover, PACKAL clarified that the taxiway rehabilitation expenditure, originally planned for 2024, will be executed in 2025 instead and, thus, the RAB should be adjusted accordingly.

[59] See PACKAL (2025), 'CAPEX Tables 24.01.2025', 'QQ2 approved vs expended' tab, January 29.
[60] Ibid.

### 6.1.5 The JCAA's final determination

The Authority addresses the points raised by PACKAL in turn below.

#### Adjustment to QQ2 opening RAB

Regarding the adjustment to the opening RAB for QQ2, we understand from PACKAL that the $2.8m refers to CAPEX incurred between October and December 2019, which was not available for consideration at the time of the QQ2 determination. According to the tariff model, this amount consists of (i) $2.4m for the implementation of the mandatory 300-metre runway extension, (ii) $0.3m for environmental studies and (iii) $0.1m for equipment replacement.

The Authority has verified that this amount has been added directly to the opening RAB for QQ2, rather than being included in the RAB over QQ2. We consider this approach to be appropriate, given that the expenditure relates to 2019.

The Authority also understands that the (i) $0.1m RAB indexation adjustment and (ii) the $0.5m depreciation adjustment are related to the additional CAPEX incurred in the final quarter of 2019.

Therefore, for the final determination, the Authority has retained PACKAL's estimate of the opening RAB for 2020, which amounts to $9.6m. This replaces the adjusted figure of $7.1m used by the Authority in the draft determination. As a result, the opening RAB for 2026 has been updated to $70.5m, instead of the $67.4m proposed in the draft determination.

#### Disallowed CAPEX for QQ2

In light of new evidence submitted by PACKAL, the Authority has decided to revise the proposed downward adjustment to the opening RAB for QQ3 set out in the draft determination. The original adjustment related to $2.8 million spent during QQ2 on projects not previously approved by the Authority. This amount included: (i) $0.8m relating to the replacement of PLB 5; (ii) $0.8m relating to motor vehicles; and (iii) $1.2m relating to the taxiway rehabilitation.

Regarding the replacement of PLB 5, the Authority does not agree with PACKAL that excluding this expenditure is inconsistent with its position on service quality. In the Authority's view, this expenditure should have been anticipated at the outset of the QQ2 regulatory period. Moreover, the Authority emphasises that the adjustment related to the PLB replacement

is minor—amounting to $0.8m—and reiterates that this amount is added to the closing RAB for 2026.

The Authority accepts PACKAL's clarification regarding the CAPEX associated with the taxiway rehabilitation originally planned for 2024. In the draft determination, a downward adjustment of $1.2 million had been applied to the opening RAB, as this expenditure had not been pre-approved by the JCAA. However, PACKAL has since clarified that the 2024 CAPEX for taxiway rehabilitation should be reduced by $1.0 million, with a corresponding increase of $1.0 million in 2025. The Authority notes that this adjustment has also been in reflected in PACKAL's revised financial model.[61] In line with this adjustment, the Authority has reversed the exclusion of the expenditure related to the taxiway rehabilitation from the opening RAB for 2026.

To conclude, in the final determination, the Authority has excluded a total of $1.6 million from the opening RAB for 2026, while retaining this amount in the closing RAB for the same year. This comprises: (i) $0.8 million for the replacement of PLB 5, and (ii) $0.8 million for motor vehicles.

## 6.2 Depreciation

### 6.2.1 Background

The depreciation of CAPEX constitutes one of the building blocks of allowed revenue, along with OPEX and a target return on assets. The key principle with respect to depreciation is that assets should be depreciated to the end of their useful economic lives. This is in line with regulatory practice at airports and in other sectors internationally. However, in QQ2 PACKAL suggested that assets should be depreciated to the end of the concession period as there was no mechanism in the Concession Agreement to pay investors for undepreciated assets at the end of the term.

Depreciating CAPEX to the end of the concession period could lead to customers under- or overpaying for certain assets.

- Short-lived assets built early in the concession period would be remunerated over the entire concession period. As a result, passengers in the early part of the concession period would underpay for these assets, while passengers towards the end of the period would be contributing towards an asset no longer in use.

[61] PACKAL (2025), Annexure 2 - NMIA QQ3 Working File - revised_11.04.2025, April 11.

- Long-lived assets built towards the end of the concession period would be fully remunerated before the end of the asset's useful economic life. This would result in passengers during the concession period overpaying for the asset, while passengers after the end of the concession period would benefit from an asset without having contributed to it.

Therefore, in QQ2 the Authority's position was that all new CAPEX should be depreciated to the end of its useful economic life rather than to the end of the concession period. A straight-line depreciation profile was applied for all assets.

Moreover, the Authority's approach stipulated that arrangements should be made between the AAJ and the airport to ensure that any undepreciated CAPEX is recouped at the end of the Concession Agreement.

### 6.2.2 PACKAL's proposed approach

PACKAL proposed that new CAPEX should be depreciated to the end of its useful economic life with a straight line depreciation profile.[62] PACKAL agreed with the Authority's position, set out in the Key Issues Paper, that the alternative approach of depreciating assets to the end of the Concession Period is likely to result in high charges to customers and a mismatch between the customers using the assets and those who pay for them.

PACKAL's depreciation policy is set out in Table 6.1.

[62] Consistent with PACKAL's proposal, the opening RAB has been depreciated over 20 years, reflecting the average remaining life of the assets included in the RAB.

Table 6.1 PACKAL's depreciation policy

| Asset type | Useful life (years) |
|---|---|
| Vehicles | 4 |
| Machinery | 10 |
| Furniture | 10 |
| Computer | 3.3 |
| Leasehold | 20.8 |
| Building | 10 |
| Runway | 20 |

Note: The Authority notes that the useful life applied to the 'Computer' asset category in the tariff model is 3 years (rather than 3.3 years). The Authority notes that the CAPEX Plan for QQ3 does not include any project falling under the 'Leasehold' asset category.
Source: PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, p. 14.

PACKAL considered that, if there is undepreciated CAPEX at the end of the concession term, arrangements should be made between AAJ and PACKAL to ensure that PACKAL is able to recoup such undepreciated CAPEX. PACKAL indicated that it may propose to modify its approach to depreciation in future rate reviews if such arrangements are not made.

### 6.2.3 The JCAA's draft determination

In the draft determination, the Authority accepted PACKAL's proposed approach for QQ3 that CAPEX should be depreciated to the end of its useful economic life with a straight-line depreciation profile. The Authority also accepted PACKAL's proposed useful lives for each asset category.[63] This approach is in line with international precedent, most stakeholder views and economic principles. It also maintains consistency with the approach taken in QQ2.

However, the Authority acknowledged that there is no mechanism in the PACKAL Concession Agreement allowing undepreciated assets to be recouped at the end of the concession period. While this is not necessarily a significant issue for the purposes of the QQ3 rate review, if this situation is not remedied it will increasingly become an issue in the QQ4 and QQ5 rate reviews as the remaining length of the concession period decreases. This is because it places the airport's investors at risk of not being able to

[63] For the 'Computer' asset category, the Authority applies a useful life of 3 years, consistent with the assumption in PACKAL's tariff model, rather than the 3.3 years stated in the business plan.

recoup capital investments made during those periods, particularly for major projects with long economic lives. The Authority therefore strongly recommended that a mechanism, like the one in place for SIA, is included in the Concession Agreement between PACKAL and the AAJ during the QQ3 period in order to allow undepreciated assets to be recouped at the end of the concession period.

### 6.2.4 Responses to the draft determination

The AAJ's response to the draft determination agrees with depreciating assets to the end of their useful economic lives. Regarding the Authority's proposal that the AAJ and PACKAL introduce a mechanism to recoup undepreciated assets at the end of the concession period, such as the one in the agreement for SIA, the AAJ has noted that it is open to discussing such a mechanism for PACKAL. The AAJ's response also acknowledges that the lack of a recoupment mechanism 'may pose risks for investors in future rate reviews as the concession period shortens'. It notes, however, that the arrangements in the PACKAL Concession Agreement are such that 'the financial model used in the Bid calculates amortization and depreciation of assets based on the remaining concession period.' At the commencement of the concession, motor vehicles, moveable equipment and office equipment were provided to PACKAL by the AAJ for US$1 in aggregate, and are to be maintained, repaired and replaced over the term of the concession and handed back to the AAJ at the end of the concession term for US$1.

IATA has stated that it agrees with the Authority's position on depreciating assets to the end of their economic lives, acknowledging that adjustments to assets not depreciated by that date will be required at the end of the concession period.

The Authority notes that one stakeholder – InterCaribbean Airways – raised concerns that the agreement between the AAJ and PACKAL 'does not allow for depreciation on a long-term basis.'

### 6.2.5 The JCAA's final determination

The Authority maintains its position as set out in the draft determination that the AAJ and PACKAL should consider the introduction of a recoupment clause in the Concession Agreement for NMIA.

In response to the query raised by InterCaribbean Airways, the Authority notes that the agreement between the AAJ and PACKAL does allow for depreciation to the end of useful economic life, and both parties support this depreciation approach. The Authority's position is that a recoupment clause for undepreciated assets should be introduced in order to allow the current depreciation approach to be continued effectively.

# 7 Cost of capital

## 7.1 Methodology for calculating the WACC

Airport (and other sector) regulators typically base the allowed rate of return on their estimate of the company's WACC. The WACC represents an average of the company's cost of equity and cost of debt, weighted by its level of gearing (i.e. the proportion of net debt to the value of the business):[64]

$$WACC = (cost\ of\ equity\ \times \%\ of\ equity\ funding) + (cost\ of\ debt \times \%\ of\ debt\ funding)$$

Typically, the riskier the investment, the higher the cost of debt, cost of equity and overall rate of return will be. The determination of the allowed rate of return therefore usually takes account of: (i) prevailing financial market conditions; and (ii) the specific risk exposure of the regulated airport.

The rate of return for NMIA is determined based on a forward-looking estimation of the weighted average cost of capital, or WACC.[65] The Authority proposes an approach for estimating the WACC parameters (based on the capital asset pricing model) that takes account of the impact of COVID-19 on market data. This section sets out the Authority's estimate of the cost of capital for QQ3.

## 7.2 PACKAL's WACC proposals

Table 7.1 below sets out the WACC determined by the Authority for QQ2 and PACKAL's estimated WACC for QQ3.

[64] Tax can be dealt with in different ways depending on the approach taken to estimating the WACC. A vanilla WACC would capture tax separately, whereas in a pre-tax WACC the tax payments would be included in the WACC.
[65] The regulatory WACC allowance may differ across the regulated airports if they are found to face different levels of exposure to risk.

Table 7.1 WACC parameters

| Parameter | JCAA FD for QQ2 (until end of 2022) | JCAA FD for QQ2 (from start of 2023) | PACKAL estimate for QQ3 |
|---|---|---|---|
| Gearing | 50.0% | 50.0% | 55.4% |
| Real risk-free rate | 0.69% | 0.69% | 1.60% |
| Country risk premium | 3.33% | 3.33% | 5.50% |
| Equity risk premium | 6.00% | 6.00% | 7.00% |
| Equity beta | 1.35 | 1.35 | 1.79 |
| Real cost of equity | 12.1% | 12.1% | 19.7% |
| Real cost of debt | 11.8% | 7.0% | 8.0%[2] |
| Tax rate | 25% | 25% | 25% |
| **Real pre-tax WACC** | **13.98% (12.49%)[1]** | **11.58% (10.09%)[1]** | **16.1%** |

Note: [1] Post tax-shield adjustment. As detailed in JCAA's final determination for QQ2, to avoid over-compensating PACKAL for tax expenses, the Authority proposed to subtract the incremental tax shield that PACKAL benefitted from by having a higher gearing rate and a higher cost of debt compared with the Authority's view of an efficiently financed company (which was estimated to have a gearing ratio of 50% and a nominal cost of debt of 9.00%). [2] As clarified by PACKAL in a subsequent meeting with the Authority, this value refers to a nominal rate (rather than a real one).
Source: PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, pp. 20–26.

Further detail on its estimates for the different parameters for QQ3 are included below.

### 7.2.1 Gearing

The Authority notes that PACKAL has implicitly proposed to use a 55.4% gearing assumption. It understands that this value is based on its current gearing ratio.[66]

### 7.2.2 Risk-free rate

PACKAL notes that the risk-free rate is the interest rate that can be obtained by investing in no-default risk instruments. It also notes that the US Treasury bonds are commonly used as proxy for this type of return, and that there is general consensus that long-term securities should be

[66] PACKAL (2024), 'Data Request Package', December 3, p. 11.

considered—though it is debatable whether the tenor should be ten years or longer.

Consistent with the approach used by the Jamaican Office of Utilities Regulation (OUR) determination in 2021, PACKAL proposes using the current risk-free rate, as opposed to a historical average of the risk-free rate data. Therefore, PACKAL estimates the risk-free rate based on the Treasury bond yield curve (as of September 2024).

In its Business Plan submission, PACKAL indicates that the approach of using the spot yield on ten-year US Treasury bonds, which is equal to 3.75%, reflects the current low level of risk-free rates relative to future trends. According to PACKAL, this aligns with the average lifespan of assets and matches the remaining lifetime of the concession (19 years left to 2044). PACKAL adjusts the nominal rate using a 2.1% inflation rate[67] to arrive at a real risk-free rate estimate of 1.6%.

### 7.2.3 Country risk premium

The Country Risk Premium (CRP) aims to capture the additional risk relating to doing business in a specific country. PACKAL considers a CRP of 5.5% which is taken from the Damodaran July 2024 update for Jamaica. PACKAL states that this is in line with the suggested approach from the OUR 2021 determination.[68]

### 7.2.4 Equity risk premium

The Equity Risk Premium (ERP) measures the additional level of return that is required to persuade investors to hold a portfolio of all stocks in a country rather than the risk-free Government bond. PACKAL notes that estimating the equity risk premium (ERP) is a data-intensive process and remains subject to academic debate, as the results can vary significantly depending on the time horizon, averaging methodology, and countries included in the analysis. PACKAL also notes that, as the CAPM model is a forward-looking model, the CAPM parameters (including the ERP) should be based on expectations regarding current and future returns.[69]

[67] Based on IMF's estimate for 2026.
[68] The Authority notes that PACKAL seems to have referred to the Jamaican government bond yield calculated in the OUR 2021 determination (i.e. 5.57%), rather than to the difference between the Jamaican and US government bond yields, which is instead equal to 3.46%. See OUR (2021), 'Estimate of the Weighted Average Cost of Capital for Telecommunication Carriers', *Determination Notice*, September 1, p. 31, https://our.org.jm/wp-content/uploads/2021/09/Estimate-of-the-Weighted-Average-Cost-of-Capital-for-Telecommunications-Carriers-Determination-Notice20210901_11203750-1.pdf (accessed November 29, 2024).
[69] Regulators usually make use of the capital asset pricing model—or 'CAPM'—to set the allowance for the cost of equity. In the CAPM, the calculation of the cost of equity is based on three building

PACKAL estimates the ERP based on three different sources: (i) the ERP estimated by Professor Damodaran;[70] (ii) the ERP from the New Zealand Commerce Commission in its Input Methodologies; (iii) the UK CAA's estimate for the H7 review for Heathrow in 2023. The range of estimates generated by these sources is set out in Table 7.2 below.

Table 7.2 PACKAL's estimated Equity Risk Premium

| Approach | ERP |
|---|---|
| ERP for Jamaica from Damodaran (July 2024) | 9.6% |
| ERP for airports in New Zealand (July 2024) | 7.9% |
| ERP for Heathrow H7 2023 | 7.0% |

Source: PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, p. 24.

PACKAL uses the lower bound of the above range, which is equal to 7.00%.

### 7.2.5 Asset beta

To estimate the asset beta, PACKAL considers asset betas for a group of comparable airports for the last ten years (from Bloomberg). It also considers the asset beta recently used by other regulators, including the New Zealand Commerce Commission, ranging from 0.60 to 0.67, and the UK CAA's estimate for the H7 review for Heathrow, ranging from 0.44 to 0.62.

PACKAL focuses on the five-year average of the asset betas, which ranges from 0.89 to 0.96 based on different samples of comparators. PACKAL argues that the closest direct comparator for NMIA is its parent company GAP, which has an average beta range of 0.63–0.95, based on the three-year and five-year average. On this basis, PACKAL recommends an asset beta of 0.80.

blocks: (i) the risk-free rate (RFR)—which captures the required return on a riskless asset; (ii) the equity beta—which measures the company's exposure to systematic risk; (iii) the equity risk premium (ERP)—defined as the difference between the return expected from holding a diversified portfolio of securities and the RfR.

[70] Dr Aswath Damodaran, Professor of Finance at the Stern School of Business of New York University, publishes an extensive dataset of financial information for companies across sectors and countries.

### 7.2.6 Debt beta

The Authority notes that PACKAL implicitly assumes a debt beta equal to zero, although no justification has been provided for this assumption in PACKAL's submission.

### 7.2.7 Equity beta

As the beta is a measure of the correlation between the company's risk and general market risk, the equity beta is derived from the asset beta to reflect not only the business risk but also the risk introduced by financial leverage.

PACKAL derives an equity beta of 1.79, based on the gearing and the asset beta assumptions detailed above and using the Harris–Pringle formula with zero debt beta.[71]

### 7.2.8 Cost of debt

PACKAL notes that the cost of debt should reflect the cost of borrowing for the company, taking into account the business risk, country risk, and the current market conditions. According to PACKAL, the cost of debt is typically composed of (i) the risk-free rate and (ii) a corporate debt premium which considers the additional cost of borrowing for a corporate entity compared with the government.

As of September 2024, PACKAL has secured intercompany loans from its parent company GAP at an average rate of 8.0%. This is taken as the real cost of debt in the WACC calculations.[72]

According to PACKAL, the cost of debt should not simply be limited to the company's current borrowing costs, but consideration should also be given to the future cost of borrowing and the market-based conditions. PACKAL notes that its current cost of borrowing has reduced from the QQ2 rate review and is expected to remain at this level for the next five years. PACKAL also expects the impact of the tax shield adjustment on the WACC to be removed as the cost of debt is now below 9.0%, which was identified by the JCAA in QQ2 as the nominal cost of debt of an efficiently financed company. On this basis, PACKAL estimates the cost of debt for QQ3 at 8.0%.

[71] Oxera (2023), 'Finding the right formula: de-levering and re-levering the beta in the CAPM', *Agenda*, January 31, https://www.oxera.com/insights/agenda/articles/finding-the-right-formula-de-levering-and-re-levering-the-beta-in-the-capm/ (accessed December 16, 2024).
[72] PACKAL clarified in a subsequent meeting with the Authority that the 8.0% cost of debt represents a nominal rate instead.

## 7.3 The JCAA's draft determination

The Authority's proposed draft determination for the WACC is set out in Table 7.3.

Table 7.3 The JCAA's WACC estimate for QQ3 draft determination

| Parameter | PACKAL estimates for QQ3 | JCAA estimates for QQ3 | Sources of evidence |
|---|---|---|---|
| Gearing | 55.4% | 55.0% | Assumed notional gearing level, which is consistent with a prudent debt capacity for PACKAL, emerging market averages for the air transport sector from Damodaran, and regulatory precedents. |
| Real risk-free rate | 1.60% | 2.36% | Forward-rate on 10-year US government bonds for the mid-point of QQ3 (i.e. approximately three years from the date of the determination). Converted to a real value using a 2% inflation rate and based on the Fisher equation. |
| Country risk premium | 5.50% | 3.01% | Difference between Jamaica and US Treasury 10-year bond yields over the last five years. |
| Equity risk premium | 7.00% | 6.01% | Based on historical ERPs from DMS, implied ERPs from Damodaran, and regulatory precedent. |
| Asset beta | 0.80 | 0.90 | Based on the comparator sample provided by PACKAL, adjusted for the outcomes of the liquidity test. Market data updated as of January 2025. |
| Debt beta | 0.00 | 0.05 | 2008 study from Shaefer, S.M. and Strebulaev, I.A. and credit rating of its parent company Grupo Aeroportuario del Pacifico (GAP). |
| Equity beta | 1.79 | 1.93 | Based on Harris–Pringle formula using asset beta, debt beta, and gearing assumptions above. |
| Post-tax real cost of equity | 19.7% | 17.0% | Calculated based on the above inputs. |
| Tax rate | 25.0% | 25.0% | Based on the corporation tax rate. |
| **Pre-tax real cost of equity** | **26.2%** | **22.7%** | **Derived from the post-tax cost of equity and the tax rate.** |

| Parameter | PACKAL estimates for QQ3 | JCAA estimates for QQ3 | Sources of evidence |
|---|---|---|---|
| **Real cost of debt** | **8.0%** | **5.9%** | **Calculated starting from the nominal cost of debt provided by PACKAL, using a 2% inflation rate assumption and based on the Fisher equation.** |
| **Real pre-tax WACC** | **16.1%** | **13.4%** | **Calculated based on the above inputs.** |

Source: JCAA.

A more detailed explanation of the Authority's assumptions in the draft determination is provided below.

### 7.3.1 Gearing

The Authority proposed a notional gearing assumption of 55%, based on a review of the following evidence (also considered in QQ2).

- the level of gearing used by credit rating agencies when assessing the rating of airports with credit ratings that JCAA believes to be satisfactory (i.e. BBB- and above).
- the average gearing for the air transport sector in emerging markets, according to Damodaran.
- recent OUR determinations for utility companies in Jamaica.

On the basis of this evidence, further explained below, the proposed gearing for the QQ3 draft determination was slightly lower than PACKAL's proposed gearing assumption (i.e. 55.4%) and higher than the notional gearing level set for QQ2 (equal to 50%).

#### Information from credit rating agencies

In order to infer an appropriate gearing ratio for PACKAL based on credit rating agencies' reports, the Authority has looked at Moody's ratings of Grupo Aeroportuario del Pacifico (GAP), which is PACKAL's parent company and also owns Mexican airports with similar characteristics to NMIA. On April 21, 2020, Moody's downgraded GAP's credit rating from A3 to Baa1.[73] On February 25, 2022, Moody's also assigned a Baa1 rating to

[73] Cbonds (2020), 'Moody's Investors Service downgrades LT- local currency credit rating of Grupo Aeroportuario del Pacifico to "Baa1"; outlook negative', April 22, https://cbonds.com/news/1227065/ (accessed December 11, 2024).

the senior unsecured *certificados bursatiles* due 2027 and 2032 issued by GAP.[74] As at June 30, 2024, GAP had a total gearing ratio of 69%,[75] which represents a significant increase compared to the previous rate review six years ago, when the total gearing ratio of GAP was 48.5%.[76]

### Evidence from Damodaran

As of January 5, 2025, Damodaran calculated the book and market gearing ratio for the air transport sector in emerging markets as 71% and 47% respectively. The Authority noted that, compared with six years ago, both gearing ratios have substantially increased.[77] However, the sample considered by Damodaran also included airlines and air transport infrastructure funds, which reduce its reliability for determining an appropriate gearing level for PACKAL.

### Recent OUR determinations

The OUR's 2021 determination of the WACC for the telecommunication sector set optimal (notional) gearing levels of 35.5% and 35.7% respectively for fixed line and mobile carriers.[78] These values represented a significant increase from the gearing levels set in the 2016 telecoms review—considered as part of the QQ2 rate review—which were 22.5% and 20% for fixed line and mobile carriers respectively. Furthermore, the Authority noted that the OUR's approach is also informed by regional estimates of the gearing from Damodaran.

### Conclusions on the gearing assumption

In the draft determination, the Authority considered a notional gearing assumption of 55% to be appropriate. This represented an increase from the 50% notional gearing assumed in QQ2, reflecting evidence of a rise in

[74] Moody's (2022), 'Grupo Aeroportuario del Pacifico, SAB de CV—Moody's rates proposed certificados bursalites 2022 of Grupo Aeroportuario del Pacifico', *Yahoo! Finance*, February 25, https://finance.yahoo.com/news/grupo-aeroportuario-del-pacifico-sab-174114508.html (accessed December 11, 2024).
[75] As of June 2024. Calculated as (MXP41,836m)/(MXP41,836m + MXP18,900m). GAP (2024), 'Grupo Aeroportuario del Pacifico announces results for the second quarter of 2024', p. 18, https://www.aeropuertosgap.com.mx/images/files/GAP%20-%202Q24_ENG_VF.pdf (accessed December 16, 2024); and GAP (2024), '2Q24 Corporate Presentation', p. 49, https://www.aeropuertosgap.com.mx/files/CORPORATE_PRESENTATION_2Q24_VF.pdf (accessed December 16, 2024).
[76] GAP (2019) 'Annual Report 2018', p. 19.
[77] As of January 5, 2019, the book and market gearing ratio for the air transport sector in emerging markets was respectively 53% and 43%.
[78] OUR (2021), 'Estimate of the Weighted Average Cost of Capital for Telecommunication Carriers', *Determination Notice*, September 1, pp. 19–23, https://our.org.jm/wp-content/uploads/2021/09/Estimate-of-the-Weighted-Average-Cost-of-Capital-for-Telecommunications-Carriers-Determination-Notice20210901_11203750-1.pdf (accessed November 29, 2024).

gearing ratios compared with the previous rate review. This increase may be attributed to the lingering impact of the global pandemic, during which companies needed to significantly increase their leverage. The Authority will reassess this assumption in QQ4 to determine whether the observed rise in gearing ratios represented a temporary response to the pandemic or a more structural shift.

The Authority highlighted that a 55% gearing assumption aligns with the notional gearing levels considered reasonable within international regulatory frameworks for the aviation sector. For instance:

- Heathrow Airport: the UK Civil Aviation Authority (CAA) set a notional gearing assumption of 60% in its regulatory framework for the H7 price control;[79]
- Dublin Airport: the Authority used a notional gearing assumption of 50% as outlined in its regulatory determination.[80]

### 7.3.2 Risk free rate

In the draft determination, while the Authority was comfortable with adopting the ten-year yields assumption (reflecting airport assets lasting longer than the five-year quinquennial period), it did not consider that it was appropriate to use a spot estimate from more than a year before QQ3 starts.

Instead, the Authority proposed estimating the risk-free rate based on the forward rate of ten-year maturity US Treasury bonds at the mid-point of the QQ3 period. This estimate was derived from the forward rate three years from December 2024. Using the forward yield curve offers a more precise assessment than relying on a spot yield curve, as it better reflects market expectations for future interest rates.

As shown in Figure 7.1, this resulted in an estimate of the nominal risk-free rate of 4.41%. Using a 2% inflation assumption and based on the Fisher equation,[81] the Authority estimated a real risk-free rate of 2.36%.

[79] CAA (2023), 'Economic regulation of Heathrow Airport Limited: H7 Final Decision', *Section 3: Financial issues and implementation*, CAP2524D, table 9.6, March.
[80] Irish Aviation Authority (2022), 'Decision on an Interim Review of the 2019 Determination in relation to 2023-2026', *Commission Paper 7/2022*, Table 10.2, December 23.
[81] According to the Fisher equation, (1 + real RfR) = (1 + nominal RfR) / (1 + inflation).

Figure 7.1 Nominal forward curve for ten-year US government bonds


Source: Bloomberg.

### 7.3.3 Country risk premium (CRP)

Consistent with its assumptions on the risk-free rate and in line with the final determination for QQ2, the Authority has compared ten-year yields on Jamaican government bonds with ten-year yields on US government bonds. The Authority has averaged the difference in yields over a five-year period to determine the CRP. On this basis, the Authority estimated a CRP equal to 3.01%. This approach is in line with that used in the latest OUR determination for the telecoms industry.

As shown in Figure 7.2, while the Jamaican CRP increased to above 6% in the context of the COVID-19 crisis, the difference in yields since then has been between 2.0% and 3.5%. This trend supports a stable long-term average of approximately 3% for this parameter, which is also in line with the final determination for QQ2.

Figure 7.2 Comparison between Jamaica and US 10-year government bond yields (2019–24)


Source: Bloomberg.

### 7.3.4 Equity risk premium

The Authority's estimate for the ERP was based on various sources, comprising the historical ERPs, the implied ERPs, and regulatory precedents.

- **Historical ERPs**: the Authority considered the average of the geometric and arithmetic mean for the risk premium over US bills, based on DMS data for 1900–2023.[82] This resulted in an estimate of 6.95%.
- **Implied ERPs**: the Authority considered the average implied ERP estimated by Damodaran for the years 2020–24, which was equal to 4.77%.[83]
- **Regulatory precedents**: the Authority considered both the 2021 OUR determination for the telecoms industry[84] and the 2023 Input

[82] Dimson, E., Marsh, P. and Staunton, M. (2024), 'UBS Global Investment Returns Yearbook 2024', p. 241.
[83] NYU Stern (2024), 'Historical Implied Equity Risk Premiums, Implied Premium (DDM)', January, https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histimpl.html (accessed December 13, 2024).
[84] OUR (2021), op. cit., September 1, p. 48.

Methodology Review of the New Zealand Commerce Commission.[85]

Table 7.4 The JCAA's estimate for the ERP

| Approach | Range | Average | JCAA's comments |
|---|---|---|---|
| Historical premiums | 6.00–7.90% | 6.95% | The Authority considered the geometric and arithmetic mean of US equity premium over US bills, based on Credit Suisse data for the period 1900–2023. |
| Implied premiums | 4.24–5.94% | 4.77% | The Authority considered the implied equity premium estimated by Damodaran for the years 2020–24. |
| Regulatory precedents | 5.63–7.00% | 6.32% | 2021 OUR determination for the telecoms industry and 2023 Input Methodologies Review of the New Zealand Commerce Commission. |
| **Average** | - | **6.01%** | - |

Source: JCAA.

Based on the above evidence, the Authority adopted a 6.01% ERP resulting from the average of historical ERPs, implied ERPs, and regulatory precedents. This value is in line with that set in the final determination for QQ2.

### 7.3.5 Asset beta

The Authority did not consider it reasonable to rely exclusively on the asset beta of its parent company, GAP, particularly in light of the volatile beta estimates resulting from using different averaging periods shown by PACKAL.[86] Instead, the Authority proposed to rely on the comprehensive set of global airports considered by PACKAL in its business plan, which included:

- Grupo Aeroporturario del Pacifico (GAP);
- Grupo Aeroportuario del Sureste (ASUR);
- Aeropuertos Españoles y Navegación Aérea S.A. (AENA);

[85] New Zealand Commerce Commission (2023), 'Part 4 Input Methodologies Review 2023 – Final decision', Cost of capital topic paper, p. 9, December 13, https://comcom.govt.nz/__data/assets/pdf_file/0022/337612/Part-4-IM-Review-2023-Final-decision-Cost-of-capital-topic-paper-13-December-2023.pdf (accessed December 13, 2024).
[86] According to ICF analysis, the asset beta for GAP is equal to 0.63, 0.95, and -0.63 using a three-year, five-year, and ten-year averaging period respectively.

- Corporacion America Airports (CAAP);
- Grupo Aeroportuario del Centro Norte (OMAB);
- Flughafen Zuerich AG;
- Vinci SA.[87]

In line with regulatory best practice, the Authority ran liquidity tests on the sample provided by PACKAL to exclude potential illiquid stocks that may affect the reliability of the average asset beta. In particular, the sample has been filtered based on the bid–ask spread and the number of zero return days.[88] This liquidity analysis confirmed that all of the stocks considered by PACKAL were sufficiently liquid.

Table 7.5 shows the Authority's estimates for the asset betas of the comparator sample, based on the latest available market data.[89]

Table 7.5 The JCAA's estimates of asset betas for NMIA's comparator sample

| Airport operator | Asset beta |
|---|---|
| Grupo Aeroporturario del Pacifico (GAP) | 1.15 |
| Grupo Aeroportuario del Sureste (ASUR) | 0.97 |
| Aeropuertos Españoles y Navegación Aérea S.A. (AENA) | 0.78 |
| Corporacion America Airports (CAAP) | 0.55 |
| Grupo Aeroportuario del Centro Norte (OMAB) | 1.11 |
| Flughafen Zuerich AG | 0.77 |
| Vinci SA | 0.94 |
| **Average** | **0.90** |

Source: JCAA's analysis based on Bloomberg data (updated as of December 13, 2024). The figures refer to the five-year average of five-year daily asset betas. The calculations of asset betas are based on the assumption of a 0.05 debt beta.

[87] PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October, p. 23.
[88] Regarding the bid–ask spread, the Authority excluded those companies with an average bid–ask spread over the last five years higher than 1%. For the number of zero return days, it excluded those companies with an average percentage of trading days with no price change over the last five years higher than 10%.
[89] JCAA's calculations are updated as of December 13, 2024. The asset beta calculations are based on the five-year average of five-year daily betas downloaded from Bloomberg, using a 0.05 debt beta assumption.

On this basis, the Authority estimated the average asset beta for NMIA of 0.90.

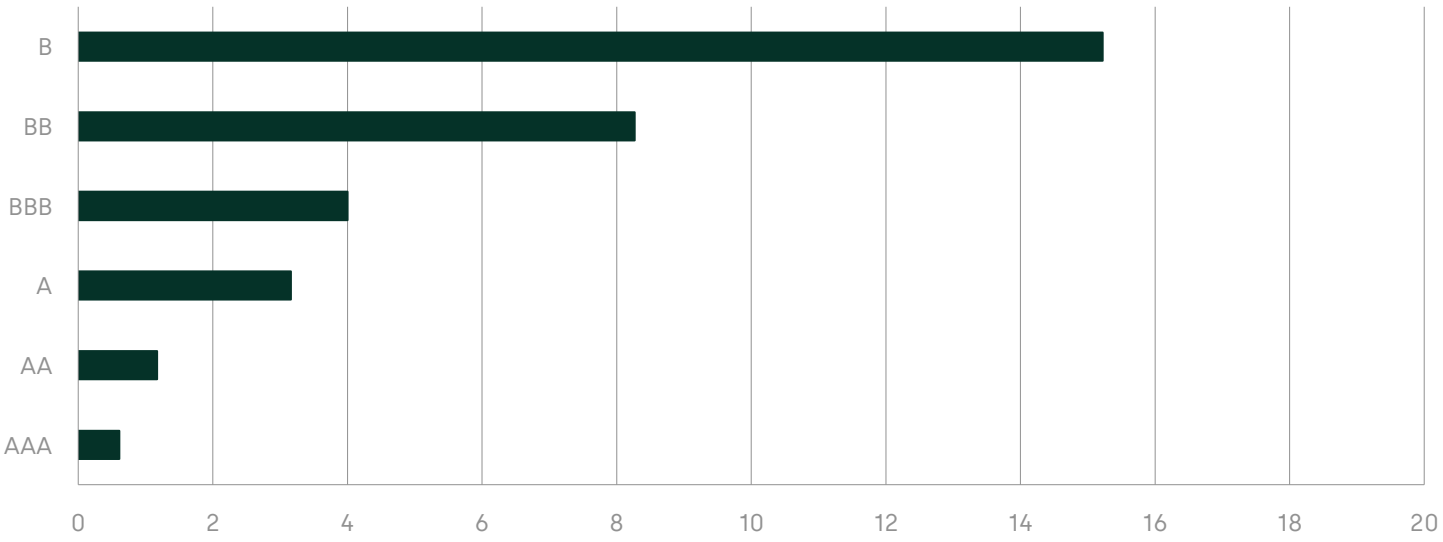
### 7.3.6 Debt beta

According to the definition of the UK CAA in the context of the H7 final decision for Heathrow Airport, the debt beta 'represents the proportion of a company's systematic risk exposure that is attributable to debt'.[90] The Authority considered that it is appropriate to include an estimate of the debt beta for PACKAL, to reflect the sensitivity of the market value of PACKAL's debt to changes in broader macroeconomic conditions and systematic risk factors.

Since PACKAL is not a public company and does not receive a direct credit rating from a credit rating agency, the Authority proposed to estimate the debt beta starting from Moody's assigned credit rating for GAP.

After determining the credit rating, the Authority assigned a debt beta based on a study from Schaefer and Strebulaev,[91] which found for companies with a credit rating of BBB a sensitivity of corporate bond returns to equity of four basis points (bps).[92]

Figure 7.3 Debt betas by credit rating (bps)




[90] UK Civil Aviation Authority (2023), 'Economic regulation of Heathrow Airport Limited: H7 Final Decision', *Section 3: Financial issues and implementation*, CAP2524D, para 9.44.
[91] Schaefer, S.M. and Strebulaev, I.A. (2008), 'Structural models of credit risk are useful: evidence from hedge ratios on corporate bonds', *Journal of Financial Economics*, **90**, pp. 1–19.
[92] Equivalent to Baa for Moody's.

Source: Based on Schaefer, S.M. and Strebulaev, I.A. (2008), 'Structural models of credit risk are useful: evidence from hedge ratios on corporate bonds', *Journal of Financial Economics*, **90**, pp. 1–19.

Given GAP's credit rating of Baa1 (the top notch of the Baa banding),[93] the Authority considered that PACKAL should also be able to obtain a credit rating somewhere in the Baa or Ba banding. As such, and in line with the final determination for QQ2, the Authority estimated the debt beta for PACKAL to be 0.05.

### 7.3.7 Equity beta

The Authority re-levered the 0.90 asset beta using its gearing and debt beta assumptions, resulting in an equity beta of 1.94.

### 7.3.8 Corporation tax rate

The Authority has retained PACKAL's assumption for the corporation tax rate of 25%.

### 7.3.9 Cost of debt

In a meeting with the Authority on January 20, 2025, PACKAL clarified that the 8.0% cost of debt in its business plan represents a nominal rate, despite being treated as a real rate in its business plan. Therefore, the Authority applied a 2% inflation rate to PACKAL's proposed cost of debt of 8.0% in order to arrive at a real cost of debt.[94]

In the draft determination, the Authority also confirmed that it does not apply any tax shield adjustment on the WACC given that PACKAL's nominal cost of debt is now below 9.0%, which was identified by the Authority in QQ2 as the nominal cost of debt of an efficiently financed company.

On this basis, the Authority estimated a 5.9% real cost of debt for PACKAL.

## 7.4 Responses to the draft determination

In its response to the draft determination, PACKAL raised some comments on the following WACC parameters:

- Equity risk premium (ERP);
- Country risk premium (CRP) and;

[93] Cbonds (2020), 'Moody's Investors Service downgrades LT- local currency credit rating of Grupo Aeroportuario del Pacifico to "Baa1"; outlook negative', April 22, https://cbonds.com/news/1227065/ (accessed December 11, 2024).
[94] Based on the Fisher equation.

- Cost of debt.

### Equity risk premium (ERP)

In its comments on the Draft Determination submitted to the JCAA on March 7, 2025,[95] PACKAL notes that JCAA's estimated ERP of 6.01% compares with PACKAL's proposed estimate of 7.00%. PACKAL questions the rationale behind the selection of regulatory precedents cited by the JCAA, suggesting that the selection criteria are unclear and may give the impression that precedents were selectively chosen to justify a lower ERP.

In its formal consultation response submitted April 11, 2025, PACKAL provided a revised table correcting the interpretation of evidence from the New Zealand and Heathrow H7 regulatory determinations. PACKAL further argues that its proposed ERP of 7.0% is consistent with the long-term historical evidence from the 1900–2023 Dimson-Marsh-Staunton (DMS) dataset, which the JCAA referenced in its Draft Determination (i.e., 6.95%). Additionally, PACKAL maintains that the corrected New Zealand and Heathrow H7 precedents continue to support its proposed 7.0% ERP.

### Country risk premium (CRP)

In its comments on the Draft Determination submitted to the JCAA on March 7, 2025, PACKAL highlights a discrepancy between its estimated CRP of 5.50% and the JCAA's estimate of 3.01%. While the JCAA's figure is derived from the differential between Jamaican and US 10-year government bond yields, PACKAL asserts that this method does not fully capture the extent of Jamaica's country risk.

In its formal consultation response submitted April 11, 2025, PACKAL clarified that its CRP estimate is based on the methodology developed by Damodaran. According to this approach, the CRP for Jamaica is calculated by first identifying a credit default spread of 4.66%. This figure is based on Jamaica's credit rating from Moody's (B1) and reflects the average Credit Default Swap (CDS) for countries with the same rating. This spread is then multiplied by Jamaica's relative equity market volatility, which is 1.35. The result of this calculation is a country risk premium of 6.01%. PACKAL notes that this represents an increase from the July 2024 Damodaran update (used in its October business plan), which

[95] Email to the JCAA, "RE: Comments on JCAA's Draft Determination," sent March 7, 2025.

indicated a CRP of 5.56%. This, according to PACKAL, signals a rising trend in Jamaica's country risk.

PACKAL also observed that, in the QQ2 Final Determination, the JCAA approved a CRP that fell within a range defined by the Damodaran estimate and the point-in-time estimate of the bond yield differential. On this basis, PACKAL proposes that for QQ3, the JCAA consider adopting an average of the Draft Determination estimate (3.01%) and the current Damodaran estimate (6.01%), which would yield a CRP of 4.6% for Jamaica.

### Cost of debt

In its comments on the Draft Determination submitted to the JCAA on March 7, 2025, PACKAL noted that the 8% cost of debt included in its business plan was expressed on a real basis, not a nominal basis. It disagrees with the assertion that it had previously clarified the 8% rate as nominal. The Authority notes that this point was not raised in PACKAL's formal response to the draft determination.

## 7.5 The JCAA's final determination

Regarding the concerns raised by PACKAL on the ERP, CRP, and cost of debt, the Authority makes the following observations.

### Equity risk premium (ERP)

In formulating its draft determination, the Authority started from reviewing the regulatory precedents cited by PACKAL in its business plan. These include: (i) the ERP estimated by Professor Damodaran; (ii) the ERP from the New Zealand Commerce Commission and; (iii) the UK CAA's estimate for the H7 review of Heathrow in 2023.

However, the Authority did not consider PACKAL's proposed evidence from the UK CAA, as its methodology assumes a stable Total Market Return (TMR), rather than a stable ERP, which is the approach adopted by the Authority.

Regarding the implied ERP estimated by Professor Damodaran, the Authority notes that the 9.62% figure proposed by PACKAL refers to the sum of the implied ERP for the US (i.e., 4.12%) and the country risk premium

for Jamaica (i.e., 5.50%).[96] The Authority does not consider the proposed figure to be relevant, as the country risk premium for Jamaica is accounted for separately. After adjusting for this, PACKAL's proposed ERP (i.e., 4.12%) is actually slightly lower than the five-year average of implied ERPs considered in the draft determination (i.e., 4.77%).[97]

As for the ERP used by the New Zealand Commerce Commission, the Authority noted during the stakeholder consultation that the source of the 7.9% ERP cited in PACKAL's business plan was unclear. The Authority referred to the 'Cost of Capital Topic Paper' from the 2023 Input Methodologies Review–Final Decision, which points to an ERP of 7.0% in its draft determination. The Authority notes that this estimate aligns with PACKAL's revised figure of 7.0% for the New Zealand precedent, as submitted in its formal response.

Considering the full body of evidence, the Authority notes that while some sources suggest a higher ERP than the previous rate review, others indicate a lower value. On balance, the Authority considers 6.01% to be a reasonable figure. This figure is aligned with the final determination for QQ2.

### Country risk premium (CRP)

The Authority acknowledges that PACKAL's proposed country risk premium of 5.50% is based on the Damodaran July 2024 update for Jamaica. However, this value does not align with the approach outlined in the OUR 2021 determination, contrary to PACKAL's assertion in its business plan. [98] The Authority observes that, in its business plan submission, PACKAL appears to have referenced the Jamaican government bond yield from the OUR 2021 determination (i.e. 5.57%), rather than the appropriate measure—the difference between the Jamaican and US government bond yields, which is equal to 3.46%.[99]

[96] See NYU Stern (2024), 'Country risk premium', July, 'ERPs by country' tab, available at: https://pages.stern.nyu.edu/~adamodar/pc/datasets/ctrypremJuly24.xlsx (accessed March 19, 2025).
[97] See New Zealand Commerce Commission (2023), 'Part 4 Input Methodologies Review 2023 – Final decision', Cost of capital topic paper, p. 9, December 13, https://comcom.govt.nz/__data/assets/pdf_file/0022/337612/Part-4-IM-Review-2023-Final-decision-Cost-of-capital-topic-paper-13-December-2023.pdf (accessed March 19, 2025).
[98] See PACKAL (2024), 'QQ3 Airport charges determination for NMIA', October 25, p. 25.
[99] See OUR (2021), 'Estimate of the Weighted Average Cost of Capital for Telecommunication Carriers', Determination Notice, September 1, p. 31, https://our.org.jm/wp-content/uploads/2021/09/Estimate-of-the-Weighted-Average-Cost-of-Capital-for-Telecommunications-Carriers-Determination-Notice20210901_11203750-1.pdf (accessed March 19, 2025).

Specifically, concerning the use of Damodaran's estimate for the CRP, the Authority notes that Damodaran estimates it by adjusting the sovereign default spread using a ratio that reflects the relative volatility of the equity market compared to the debt market (i.e., 1.35 in the January 2025 update). While the Authority does not consider it necessary to assess the technical details of this adjustment at this stage, it observes that such a methodology does not appear to align with standard industry practice.

Furthermore, as also acknowledged by PACKAL, in the absence of Jamaican sovereign bonds denominated in USD or EUR, Damodaran derives Jamaica's country default spread exclusively based on the traded sovereign CDS of other countries that share the same sovereign credit rating as Jamaica. As a result, according to Damodaran's methodology, Jamaica is assigned the same country default spread as other countries such as Gambia, Senegal, and Turkey—without accounting for the specific risks of the Jamaican market.

Additionally, the Authority notes that its approach is supported by the OUR regulatory precedent, which has used treasury yield spreads to inform the CRP in its recent determinations. Notably, in its 2014 electricity determination, the OUR rejected using Damodaran's CRP estimate, citing a paper which stated that 'since Damodaran's CRP can be neither theoretically nor empirically supported, the rates of return on capital that are derived by such methods are highly arbitrary'.[100]

Lastly, the Authority does not support PACKAL's view that the most recent (January 2025) Damodaran estimate—reflecting an increase over the July 2024 update—should be used as the basis for the CRP. The Authority considers this increase to represent a short-term fluctuation. It therefore maintains its position, consistent with the QQ2 Final Determination, to base the CRP on a five-year average of the yield differential between Jamaican and US 10-year government bonds.

### Cost of debt

The Authority notes that, during the meeting on January 20, 2025, PACKAL clarified that the 8.0% cost of debt stated in its business plan represents a nominal rate rather than a real rate. This aligns with PACKAL's business plan, which indicates that this figure is based on the 2019 and 2024 lines of credit agreement, both of which carry an 8.0% nominal interest rate.

[100] Kruschwitz, L., Loffler, A., and Mandl, G. (2012), 'Damodaran's Country Risk Premium: A serious Critique', Business Valuation Review, 31: 2/3, pp. 75–84.

Since PACKAL has proposed indexing its RAB and using a real cost of capital, the Authority calculates a real cost of debt of 5.9% by applying a 2% inflation rate to PACKAL's proposed 8.0% nominal cost of debt.

To conclude, the Authority has retained the WACC set out in the draft determination.

# 8 Operating Expenditure

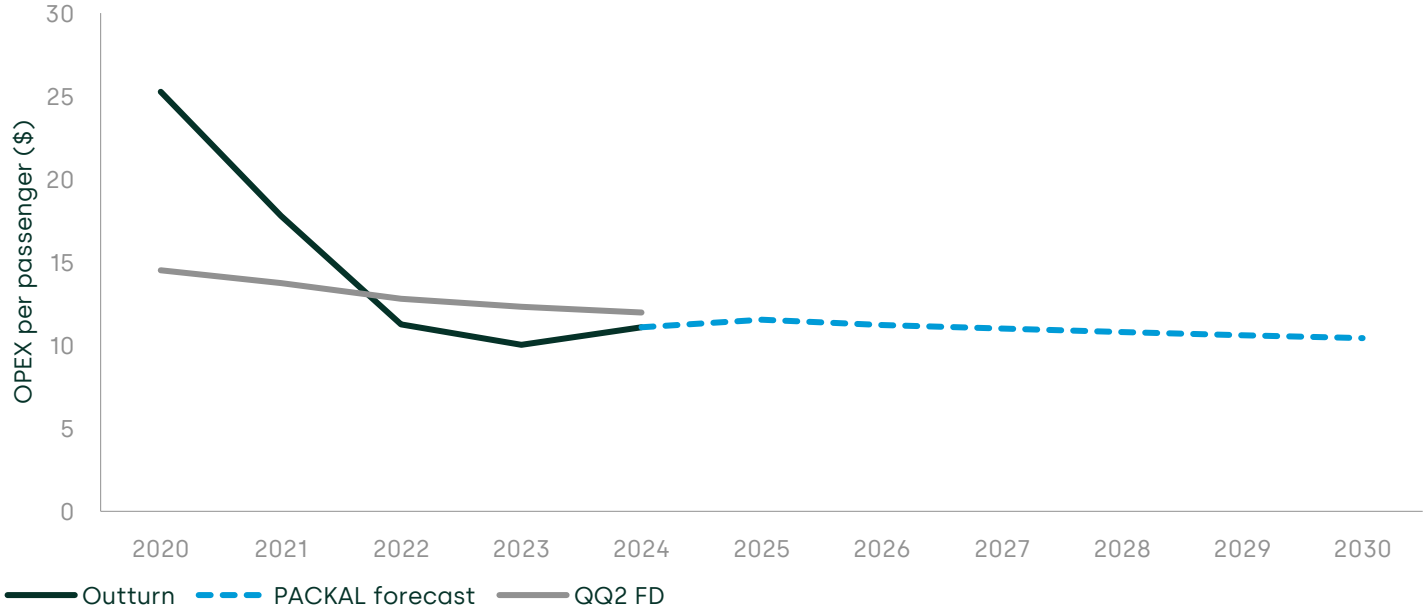
## 8.1 Background

The extent to which an airport's OPEX is efficient depends on a number of factors. In general, efficiency is a relative concept where, ideally, an airport's performance would be compared with 'best-practice' through benchmarking against suitable comparators. In the case of NMIA, there are some limitations in using a benchmarking approach. First, SIA may be regarded as the only suitable comparator, given it is the only other airport operating under the same regulatory regime in the same country. Other airports in Jamaica or across the Caribbean may not be suitable comparators for a number of reasons, including but not limited to: (i) inconsistent management incentives and regimes; (ii) different regulatory accounting guidelines and cost-allocation policies; (iii) country-specific cost pressures.

As noted in the draft determination, while there are limitations in benchmarking NMIA's OPEX to other airports, a comparison of NMIA's historical level of unit OPEX to other airports in the region shows that NMIA's OPEX per passenger is among the highest in the region. It is above the regional average, with only Bridgetown and St. Maarten having higher per-passenger costs.

For these reasons, the Authority uses the trend in OPEX per passenger, or unit OPEX, as a starting indicator to help determine NMIA's efficiency. Figure 8.1 below shows the trend in real unit OPEX at NMIA over time, comparing outturn and forecast performance.

Figure 8.1 Real unit OPEX per passenger (2024 prices)



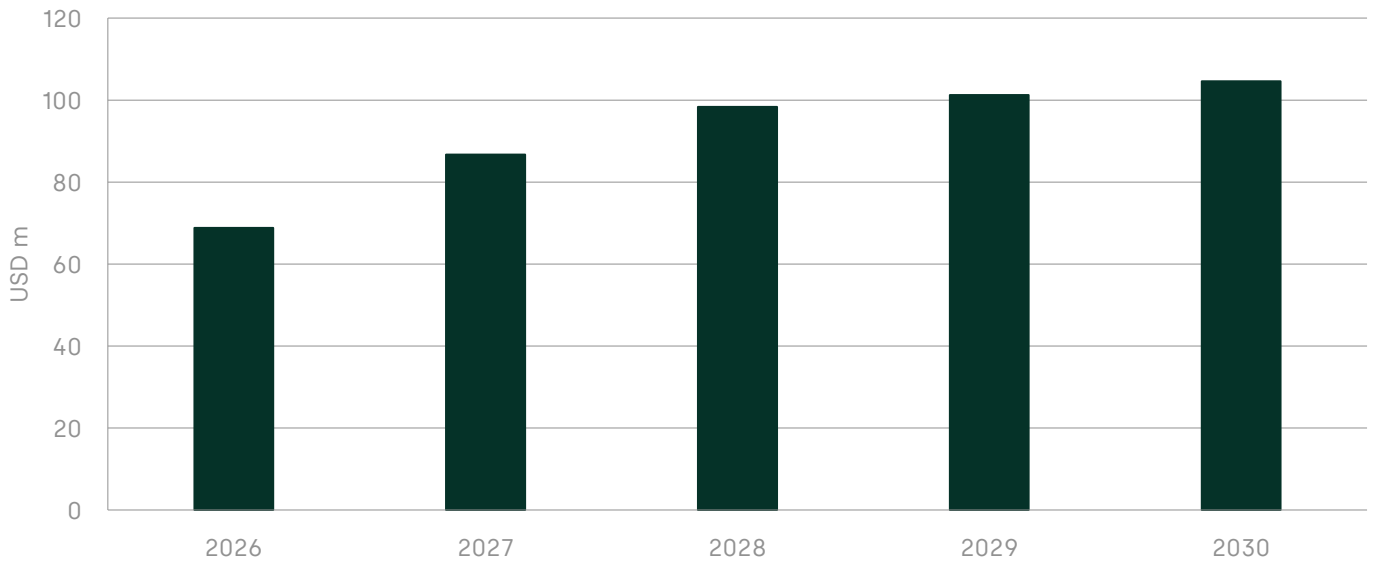

Note: Concession fees are excluded from OPEX. Security and CUTE maintenance have been included.
Source: JCAA analysis of NMIA's tariff model.

In 2020 and 2021, PACKAL's outturn unit OPEX was materially above the forecasts set as part of QQ2. Even though PACKAL's total operating costs were lower than the allowed OPEX, this was outweighed by the significant reduction in passenger numbers as a result of COVID-19. However, between 2022 and 2024, PACKAL reported a yearly average of 15% lower unit OPEX relative to what was forecast at QQ2. This is driven by a combination of lower-than-expected passenger traffic (reducing total OPEX) as well as a reduction in the overall demand for certain services, such as utilities, insurance, and security, rather than a decrease in unit costs.

## 8.2 PACKAL's OPEX forecasts

PACKAL forecast a significant increase in OPEX during QQ3, as illustrated by Figure 8.2. It has argued that this reflects the combined impacts of inflation, minimum-wage increases, and expansion-related adjustments. The Authority's assessment has focussed on the extent to which these projected increases are driven by unavoidable external factors as opposed to operational inefficiencies.

Figure 8.2 Forecast OPEX during QQ3 (USD $m nominal)




Source: PACKAL (2024), 'QQ3 Airport Charges Determination for NMIA', October 25

PACKAL identified staff costs as a key driver of the forecast increase, citing government-mandated minimum wage increases as a major contributor. According to PACKAL, the minimum wage in Jamaica has increased by around 60% in real terms between 2022 and 2024, resulting in upward pressure on staffing costs.[101] PACKAL argued that these increases have been compounded by higher-than-usual inflation, which has driven real-term increases in labour expenses.

PACKAL has also highlighted utility costs as another pressure point, contending that NMIA, as a consumer in a utility market characterised by monopolistic/oligopolistic structures, has limited bargaining power over electricity and water tariffs. PACKAL pointed to multiple tariff revisions during the QQ2 regulatory period and projected further increases throughout QQ3. While PACKAL noted its ongoing investment in solar power, which is expected to reduce electricity costs by 20% (and account for 60% of consumption) starting in 2026, it stated that the airport will remain dependent on traditional fossil fuel sources (for the remaining 40% of consumption).[102]

Repairs and maintenance costs are projected by PACKAL to rise, reflecting the additional cost of maintaining upgraded infrastructure and

[101] PACKAL (2024), 'QQ3 Airport charges determination', October 25, p. 30.
[102] PACKAL (2024), 'QQ3 Airport charges determination', October 25, p. 30.

expanded facilities. PACKAL included an elasticity of 10% for these costs, arguing that they increase with passenger traffic and are necessary to accommodate new operational demands, such as the introduction of biometric and passenger processing system.[103]

PACKAL has also projected a significant increase in insurance costs, driven by a recent replacement cost valuation for NMIA's expanded facilities. PACKAL asserts that this adjustment is required to comply with the Concession Agreement, which mandates full coverage of the airport's assets.[104]

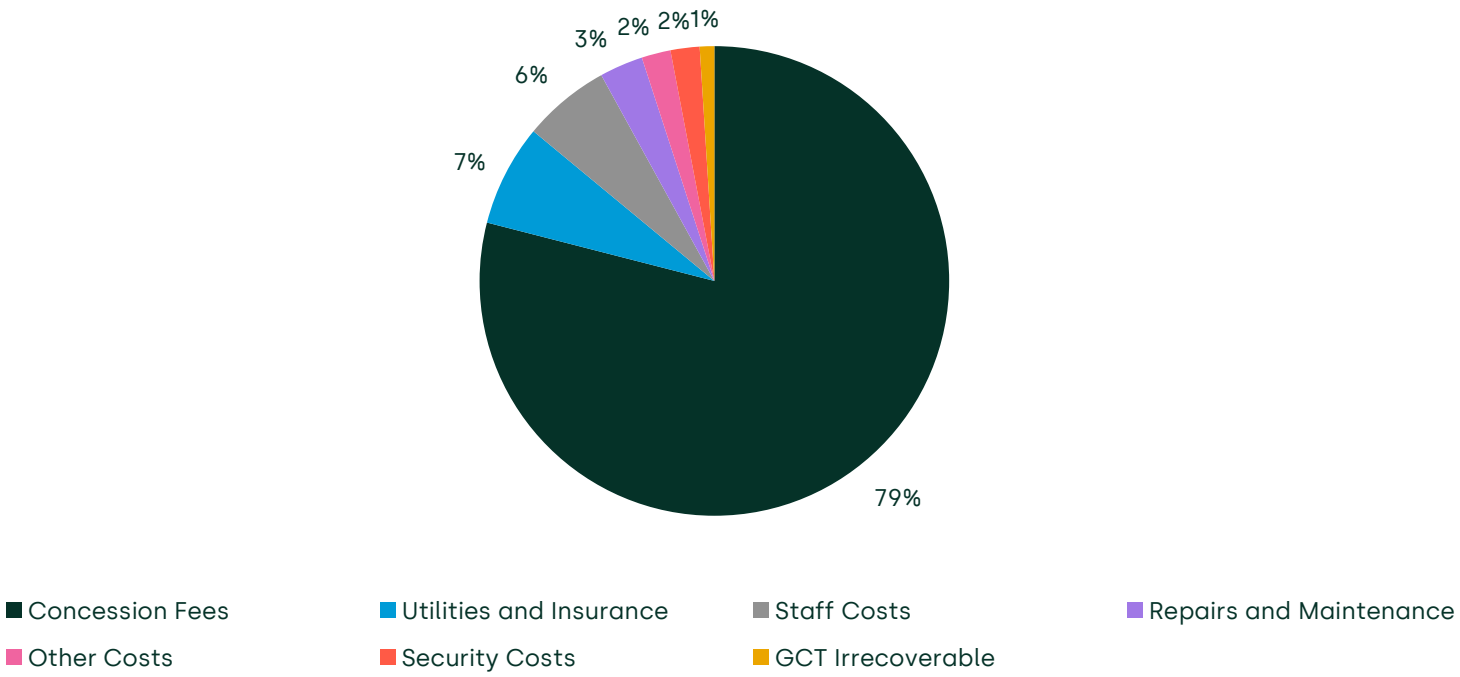
In addition, PACKAL anticipates that security costs will increase in line with passenger volumes and operational requirements. It argued that these costs are largely outside its control, as they are tied to services provided by the PSC, resulting in NMIA being a price taker in this area.[105]

Overall, PACKAL has indicated that its forecast includes some efficiency gains, such as reduced utility costs from solar power and the stabilisation of certain expense categories. However, it maintains that the projected real increase in OPEX during QQ3 reflects external pressures and the costs associated with expansion.

Figure 8.3 below shows how unit OPEX is projected to change for each category of spend from 2025 (the last year of QQ2) to 2030 (the last year of QQ3). The key driver of costs is an increase in staff costs (by 10% per passenger across QQ3) and security costs (by 12% per passenger across QQ3).

[103] PACKAL (2024), 'QQ3 Airport charges determination', October 25, p. 30.
[104] PACKAL (2024), 'QQ3 Airport charges determination', October 25, p. 30.
[105] PACKAL (2024), 'QQ3 Airport charges determination', October 25, p. 30.

Figure 8.3 Forecast OPEX for QQ3 by category




Source: PACKAL (2024), Business Plan.

## 8.3 The JCAA's draft determination

The Authority's initial proposal for OPEX elasticities, the categorisation of OPEX cost categories, and the addition of an S-term for security costs for QQ3 are set out below.

### 8.3.1 OPEX elasticities

OPEX elasticities reflect the responsiveness of specific operating cost categories to changes in passenger volumes. These elasticities help ensure that costs scale appropriately with the airport's activity. Establishing robust elasticities is important to forecasting efficient costs and aligning expenditure with expected traffic growth.

In the absence of additional evidence or analysis from PACKAL regarding proposed changes to OPEX elasticities for QQ3, in the draft determination, the Authority proposed to maintain the OPEX elasticities previously established for QQ2. These elasticities were derived using historical data and through benchmarking.

However, to ensure that the QQ2 elasticities continue to be appropriate for QQ3, further benchmarking was conducted. This included assessing regulatory precedent—in particular, the regulatory determinations for

Heathrow and Dublin airports. This evidence indicates that similar elasticities as in QQ2 are appropriate for QQ3.[106]

The proposed OPEX elasticities for QQ3 are outlined in Table 8.1 below.

Table 8.1 OPEX elasticities

| Elasticities | QQ3 |
|---|---|
| Staff costs | 40% |
| Security | 30% |
| Repairs and maintenance | 30% |
| Janitorial and cleaning | 15% |
| Utilities | 30% |
| Other | 25% |

Source: JCAA (2025).

### 8.3.2 OPEX cost categorisation

The classification of operating costs into controllable and uncontrollable is critical for determining the applicability of efficiency targets and ensuring a fair assessment of the airport's operational performance.[107] Unlike CAPEX, all (efficient) OPEX will be recovered from customers during the course of QQ3. In the draft determination, the Authority considered the majority of cost categories to be at least partially controllable in the long term.

Utilities and insurance, while influenced by external market forces, should not be categorised as fully uncontrollable. The Authority's view in the draft determination was that airports, including NMIA, have some ability to manage these costs through strategic procurement, competitive tendering, and investment in cost-saving initiatives. For instance, utilities can be managed by adopting energy-efficient technologies or negotiating favourable long-term agreements with providers.

[106] Heathrow Airport (2020), 'H7 Revised Business Plan (Detailed)', December.
[107] Controllable costs are OPEX items over which the airport operator has influence or a considerable degree of control. Uncontrollable costs are OPEX items where, while the airport may still have some degree of influence, public policy or market factors determine the level of costs that the airport has to bear to a considerable extent.

Similarly, while rising insurance premiums reflect broader market trends, airports have the ability to compare quotes across providers to secure competitive rates. As such, these cost lines should be classified as controllable. In the draft determination, the Authority noted that if PACKAL provides evidence to justify these items being treated as partially controllable, this position may be reconsidered.

In the draft determination, the Authority also considered that staff costs are largely within PACKAL's control, particularly with respect to recruitment, staffing levels, and operational efficiency. However, certain elements of staff costs—such as adjustments for government-mandated minimum wage increases, and statutory payments including social security contributions—are externally determined and beyond management's discretion. To reflect this, the Authority proposed to classify staff costs as controllable, except for elements relating to changes in the minimum wage, which will be treated as uncontrollable and subject to a pass-through mechanism. This approach aligns with regulatory precedent.

A full categorisation of controllable and uncontrollable cost lines can be found in Table 8.2.

Table 8.2 NMIA OPEX categories

| **Expense line** | |
|---|---|
| Staff costs | Controllable |
| Repairs and Maintenance | Controllable |
| Janitorial | Controllable |
| Other OPEX | Controllable |
| Environmental work | Controllable |
| Utilities | Controllable |
| Marketing and promotion | Controllable |
| Insurance | Controllable |
| Security | Uncontrollable |
| Bad debt | Uncontrollable |
| Concession fee | Uncontrollable |
| Irrecoverable GCT | Uncontrollable |

The Authority's final determination with respect to OPEX is set out in section 8.5 below.

### 8.3.3 Security 'S-term'

In light of the recent volatility in security costs, and the unique circumstances surrounding the provision of security services at NMIA, the Authority has considered the introduction of an 'S-term' to account for unforeseen security costs. The inclusion of an 'S-term' was proposed by MBJAL in its Business Plan for QQ3, but the Authority considered that its application could be relevant for both airports.

The S-term was not factored into the proposed passenger charge set out by the Authority in the draft determination, as the Authority was considering whether it should be introduced, subject to further details and discussion with the relevant parties.

## 8.4 Responses to the draft determination

In its response to the draft determination, PACKAL raised several points in relation to the classification and treatment of OPEX for NMIA during QQ3. Regarding staff costs, PACKAL reiterated its view that these costs should be considered partially controllable, rather than limited only to adjustments relating to the minimum wage.

On utilities, PACKAL requested that these be re-categorised as partially controllable, citing limited ability to influence unit rates for electricity and water despite efficiency measures such as the planned solar power installation. Similarly, PACKAL sought the reclassification of insurance costs as uncontrollable. In its response, it cited significant recent increases in premiums driven by macroeconomic and environmental factors, and a limited pool of providers offering suitable aviation coverage.

On the proposed S-term, PACKAL was broadly supportive of the concept, noting that it would provide a mechanism to address costs arising from additional security measures, similar to the approach taken by the UK CAA. However, PACKAL also sought further clarification on how the mechanism would be implemented in practice and suggested that it account for both the security costs and the associated concession fees.

## 8.5 The JCAA's final determination

The Authority considers PACKAL's proposed OPEX for QQ3 to be broadly reasonable and recognises that increases attributed to statutory minimum wage adjustments and security costs may outweigh some of the operational efficiencies identified in areas such as utilities. As with all

efficient OPEX, these costs will be recovered from customers during the course of QQ3.

However, in response to PACKAL's submission, the Authority has reviewed specific elements of MBJAL's cost forecasts and provides the following clarifications and updates to our position.[108]

### Staff costs

On staff costs, the Authority notes PACKAL's view that all staff costs should be considered partially uncontrollable. However, the Authority maintains its position that staff costs should be classified as controllable. The Authority does not anticipate any exceptional increases to the minimum wage over QQ3 beyond that would not be captured by standard inflation expectations. As such, any future changes are expected to broadly align with forecast inflation and can be accounted for within operators' standard cost planning processes.

### Utilities

On utilities, while PACKAL has set out its position that these costs should be classified as partially uncontrollable, the Authority does not consider that sufficient new evidence has been provided to support a change in approach. Although the Authority acknowledges that utility tariffs in Jamaica are subject to regulation, and that there may be limited flexibility in negotiating unit rates, airports still have the ability to influence overall costs through demand-side measures, investment in efficiency, and long-term procurement strategies. The Authority remains of the view that such costs can be managed by the operator and are therefore controllable.

### Insurance

In the draft determination, the Authority invited PACKAL to submit evidence that would justify reclassifying insurance costs as partially uncontrollable. While the Authority acknowledges PACKAL's comments regarding the role of macroeconomic and environmental factors in driving premium increases, it does not consider that the response meets the evidentiary threshold required to support reclassification. High observed growth rates alone do not imply a lack of control, particularly given that PACKAL participates in a group tendering process and can

[108] Note, security costs are dealt with in section 8.5.1 below.

draw on historical trends to inform cost forecasts. The Authority therefore maintains that insurance costs should be classified as controllable.

### S-term

The Authority confirms that it will not proceed with the introduction of a S-term for QQ3. Instead, as set out below, a formalised pass-through mechanism will be implemented to account for significant, unforeseen increases in security-related costs. This provides a more targeted and proportionate solution to managing security cost risks, while avoiding unnecessary regulatory complexity.

#### 8.5.1 Security costs

As noted above, the Authority will implement a pass-through mechanism for security-related OPEX during QQ3. This mechanism will be limited to material, unforeseen cost increases. Importantly, it is not intended to account for expected changes such as inflation, typical wage growth, or standard cost pressures that operators should factor into their forecasts. For example, anticipated increases in the national minimum wage should have been included in PACKAL's cost projections for QQ3. This mechanism will also only apply for OPEX and does not apply for CAPEX-related expenditure.[109]

In order for this mechanism to be implemented, airports will be required to submit information and data demonstrating that:

- the cost increase is attributable to **exogenous factors** beyond management's control (e.g. changes in security regulations, statutory employment changes, or directives from government or international bodies);
- all **reasonable steps to mitigate cost increases** were taken (e.g. cost control measures, reallocation of resources, efficiency initiatives);
- the cost variance is **clearly documented, traceable, and quantifiable**, including proposed per-passenger or total cost adjustments.

The burden of proof lies with the airport. The Authority will not perform detailed investigative work to fill in gaps in submissions. Requests that are not substantiated with clear, auditable evidence will not be

[109] This is in line with regulatory precedent from Heathrow airport.

considered eligible for within-period adjustments. Furthermore, the pass-through mechanism will not be applied automatically on an annual basis. Any adjustment must be explicitly requested by PACKAL (per the framework above) and supported by data and evidence.

### 8.5.2 Allowed OPEX over QQ3

As discussed in the draft determination, the Authority considers PACKAL's proposed OPEX forecast to be broadly reasonable. However, following further review, the Authority has made minor adjustments in line with updated inflation assumptions, revised traffic projections, and stakeholder feedback (as discussed above).

As a result, the final OPEX allowance for QQ3 has been revised slightly upwards from the draft determination (primarily driven by updated inflation forecasts from the IMF). The total OPEX allowance is $114.63 million, compared to $114.57 million in the draft determination and $114.02 million originally proposed by PACKAL.

The differences in total forecasted OPEX for NMIA for QQ3 are shown in Table 8.3 below.

Table 8.3 Forecast OPEX (US$ m, nominal)

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|
| PACKAL | 19.30 | 20.61 | 21.14 | 21.99 | 22.80 | 23.62 | 24.47 |
| JCAA (DD) | 19.30 | 20.58 | 21.09 | 22.01 | 22.01 | 23.81 | 24.75 |
| JCAA (FD) | 19.30 | 20.58 | 21.10 | 22.02 | 22.92 | 23.82 | 24.77 |

Note: Concession fees (fixed and additional) are excluded from OPEX. Security costs are included for comparative purposes.
Source: JCAA analysis.

# 9 Service quality regulation

This section sets out the historical service quality performance at NMIA, PACKAL's proposed monitoring and reporting methodology for service quality for QQ3, and the JCAA's proposals for ensuring that service quality is of a sufficient standard throughout QQ3.

## 9.1 Background

### 9.1.1 How service quality is monitored at NMIA

Service quality at NMIA has not historically been regulated by the Authority. However, PACKAL's performance is monitored by the AAJ, and it needs to comply with a series of service quality indicators in the Concession Agreement. PACKAL therefore collects significant amounts of information about its performance, which it submits to the AAJ and the Authority. This includes comment cards—passenger satisfaction questionnaires administered and analysed by the airport on a periodic basis—and passenger satisfaction surveys undertaken by an external party (as required under the previous Concession Agreement).

The Concession Agreement defines 26 indicators across four categories (direct services, availability of equipment and facilities, passenger satisfaction and airfield operations). Each of these indicators has metrics, standards and goals. A mechanism of Performance Liquidated Damages (PLD) exists to penalise PACKAL for underperformance at NMIA on 15 of the 26 indicators. In the event that NMIA fails to comply with the 'Minimum Facilities Standards' for any of the indicators, PACKAL must pay an additional fee to the AAJ equal to the estimate of the damages the AAJ will face as a result of the breach of service quality obligations. The PLD is calculated on gross revenue for the previous concession year. Damages relating to passenger satisfaction surveys can account for up to 2.5% of gross revenues, while all the categories combined can total 6.6%.

Table 9.1 shows the breakdown of the indicators in each category. Those included as part of the PLD regime are marked with a Q.

## Table 9.1 Service quality indicators

| Category | Indicator |
|---|---|
| Direct services | 1. Time at the security control line (Q) |
| | 2. Time to provide assistance to passengers with special needs |
| | 3. Number of serious events that are reported (theft, stealing, violent acts, etc.) |
| Availability of equipment and facilities | 4. Elevators, stairs and escalators (Q) |
| | 5. Luggage-processing system (departure) (Q) |
| | 6. Luggage-claiming system (arrivals) (Q) |
| | 7. Boarding bridges (Q) |
| | 8. Appropriate equipment for boarding and arriving Passengers with Special Assistance Needs (Q) |
| | 9. Apron positions for all aircraft |
| | 10. Pre-conditioned air |
| **Passenger satisfaction survey** | 11. Quality of information: signalling, flight information, sound system of announcement to passengers and any other information displays (Q) |
| | 12. Restroom availability and cleanliness (Q) |
| | 13. Availability and comfort of seats at the departure hall and other holding areas (Q) |
| | 14. General cleanliness of the airport (Q) |
| | 15. Airport employees' kindness at the airport (Q) |
| | 16. Availability of proper functioning luggage carts at check-in hall and baggage claim hall (Q) |
| | 17. Availability and variety of food and beverage providers, including affordable options |
| | 18. Availability and variety of basic service providers at reasonable costs |
| | 19. Availability and cost of parking spaces compared with similar facilities |
| | 20. Thermal and acoustic comfort |
| | 21. Security perception at the airport |
| | 22. Availability of curbside for departing and arriving passengers |
| | 23. Organisation of all passenger flow lines |
| **Airfield operations** | 24. Availability of stands (Q) |
| | 25. Availability of ground power units (Q) |
| **Boarding bridges** | 26. Percentage of passengers using boarding bridges (Q) |

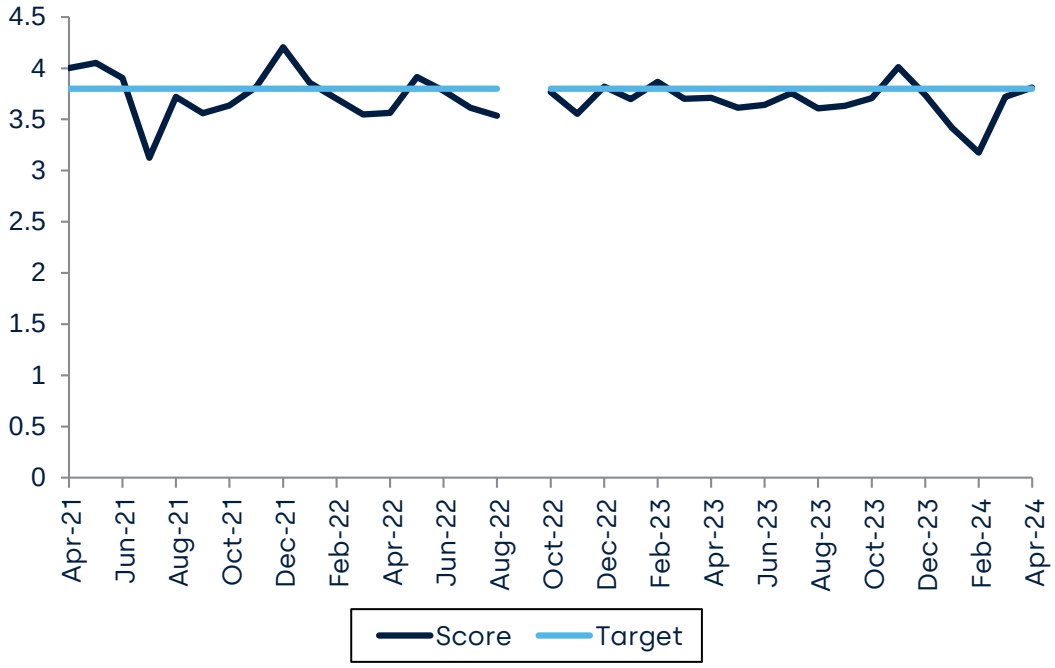
Note: Indicators marked with (Q) are included in the calculation of the Q factor.
Source: Concession Agreement, Norman Manley International Airport.

NMIA has recently experienced several issues in relation to service quality, especially regarding bathroom availability and cleanliness and air conditioning. Additionally, a system failure at NMIA in 2023 during routine maintenance resulted in significant flight delays. As a result, NMIA's average Airports Council International (ACI) World Airport Service Quality (ASQ) scores have fallen below 4.0 in 2023 and the first quarter of 2024.

PACKAL has provided data on its performance across all categories of service quality which are included in the PLD regime, and across all areas of passenger satisfaction, for the QQ2 period until April 2024. The Authority notes that the categories in the passenger satisfaction survey do not line up exactly with the categories included in Table 8.1 above, but that all categories in the PLD regime are included in the data. Figure 9.1 below shows the aggregated passenger satisfaction score at NMIA compared with its target of 3.8. As shown in Figure 9.1, overall passenger satisfaction has failed to meet its target for 25 individual months of the QQ2 period, which is 66% of the months for which data was provided.[110]

[110] Overall service quality is measured as the average score across all categories of service quality, specifically quality of information, restroom availability and cleanliness, availability and comfort of seats, general cleanliness of airport, airport employees' kindness at airport, availability of functional luggage cards, speed of baggage delivery, availability and variety of food and beverage providers and value for money, availability and variety of basic services and value for money, availability of parking, thermal and acoustic comfort, security perception of the airport and check-in waiting time and efficiency of waiting line staff.

Figure 9.1 NMIA overall passenger satisfaction score compared with target for QQ2 period



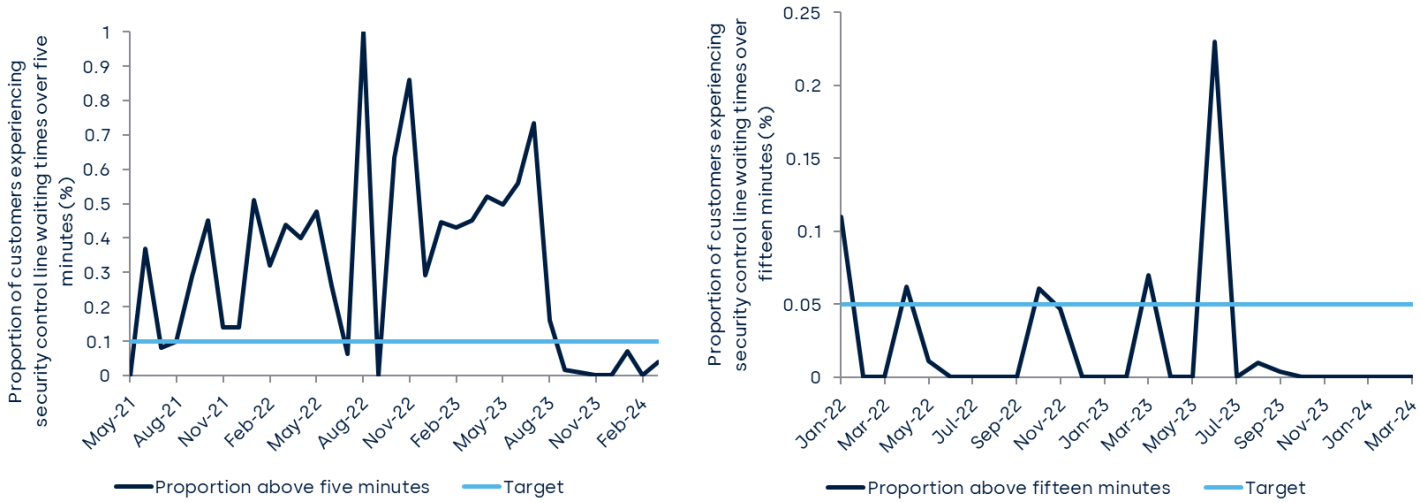

Note: The overall passenger satisfaction score is calculated as the average score across all categories of passenger satisfaction. Data on passenger satisfaction was not provided for September 2022.
Source: JCAA analysis of PACKAL service quality data.

In addition to overall satisfaction, there are thirteen individual categories of passenger satisfaction, six of which are included in the PLD regime, as shown in Table 8.1 above. Of the categories in the PLD regime, all received scores which were below target in at least four separate months (10%) of the QQ2 period, and all but one category (airport employees' kindness at airport) received scores below target in more than nine months (25%) of the QQ2 period. One of these categories, restroom availability and cleanliness, received scores below its target in more than half of the months of the QQ2 period. Of the categories which are not included in the PLD regime, one category, security perception at the airport, consistently met its target throughout QQ2, while all other categories failed to meet their target in at least three separate months of QQ2.

Figure 9.2 shows PACKAL's performance in relation to security control time. Specifically, it shows the proportion of customers for whom security control waiting lines exceeded five minutes and fifteen minutes respectively for each month of the QQ2 period, compared with the target. As Figure 9.2 shows, the proportion of customers experiencing a security wait time of over five minutes exceeded the target of 10% for around two thirds of the months of the QQ2 period, and there was one month in which

100% of customers reported wait times of five minutes or longer. Further, the proportion of customers experiencing a security line wait time of 15 minutes or more exceeded the target in around 20% of months.

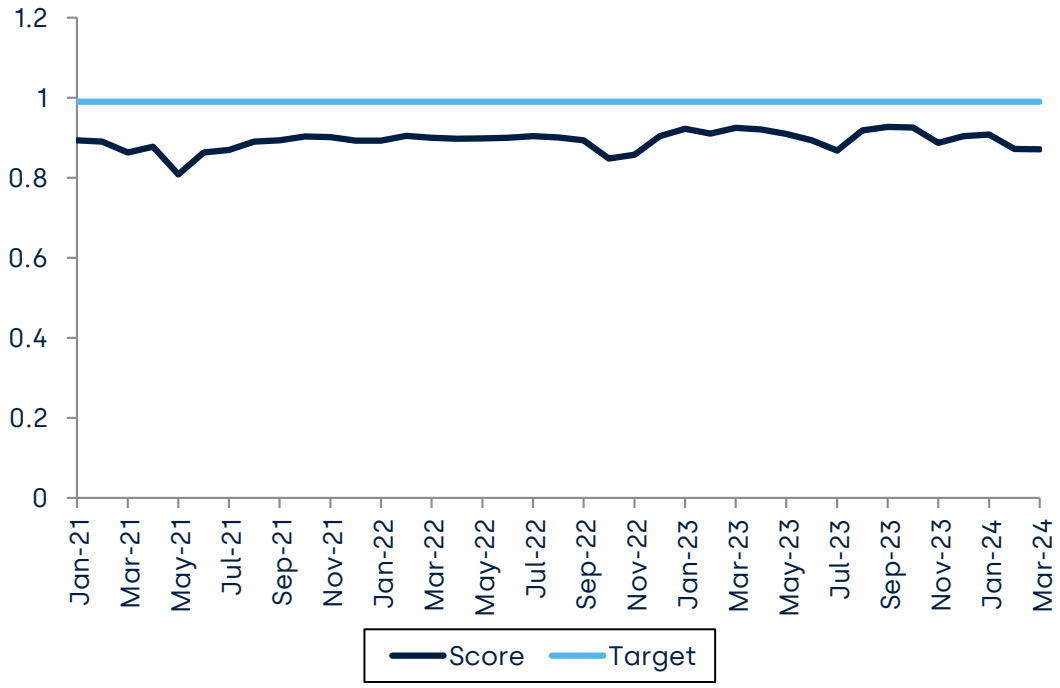
Figure 9.2 Percentage of customers experiencing security control wait times of over five and 15 minutes during the QQ2 period




Source: JCAA analysis of PACKAL service quality data.

Figure 9.3 shows average score for availability of equipment and facilities across the QQ2 period. This includes the availability of facilities including elevators, stairs and escalators, luggage processing and claim systems and boarding bridges, as well as appropriate equipment for individuals with specific assistance needs. It is defined as the proportion of these equipment and facilities which are operational. As Figure 9.3 shows, the score for availability of equipment and facilities at NMIA is consistently below its target level of 0.99. Further, the score for this category is also below 0.9 in over half of the months in QQ2.

Figure 9.3 Overall score for availability of facilities and equipment over QQ2 period compared with target level




Source: JCAA analysis of PACKAL service quality data.

The availability of stands and ground power units exceeded targets throughout the QQ2 period. The percentage of passengers using boarding bridges for international passengers exceeded targets for the majority of the QQ2 period, with the exception of one month, April 2023, when this percentage fell from 98% to 81% before increasing again in May 2023.

## 9.2 PACKAL's proposed approach

PACKAL stated that its business plan for QQ3 had been developed to ensure that PACKAL achieves a high level of service for its stakeholders and elevates the passenger experience. In particular, PACKAL is undertaking capital expenditure of US$193.6m over the period 2024 to 2030 on several projects that will enhance customer service, including the following.

- A US$66m project to extend the runway to comply with ICAO standards for Runway End Safety Areas.
- A US$17m project to rehabilitate the apron which will replace 100% of the concrete slabs and convert an area of asphalt pavement to concrete. Additionally other services on the apron, such as storm drain and lighting, will be upgraded. This will ensure the continuation of safe operations on the apron. The current slabs are nearing the end of their useful life.

- A US$20m project to refurbish the departure lounge for increased commercial footprint to more retail and food and beverage options as well as modernisation of layout and flow.
- A US$16m project to upgrade arrivals and customs will help to resolve an existing bottleneck, enhancing the arrivals experience.
- A US$7.2m Solar Farm Phase 2 project to switch to renewable energy in QQ3 and optimise the utility cost and improve sustainability.
- A US$2.2m project to upgrade and expand the restroom facilities which has been a pain point, and a constant issue raised by the AAJ.
- A US$1.1m project towards the replacement of HVAC systems to address the air conditioning issues in the terminal.

Additionally, PACKAL stated that its QQ3 business plan provides budgets to maintain staff numbers, together with expenditure on maintenance and other services, and accounts for the government's minimum wage legislation. PACKAL stated that it will continue to have an active role in monitoring and facilitating the efficiency and service levels provided by the security agencies.

PACKAL stated that it anticipates that, given the business plan presented, NMIA will achieve the service quality standards set out in the Concession Agreement. PACKAL also stated that it is continuing to develop a Services Quality Plan (SQP) for NMIA, as required by the Concession Agreement, which will be submitted to the AAJ on completion. The SQP is designed to ensure that PACKAL delivers high-quality airport services, meeting or exceeding the standards outlined in the Concession Agreement. PACKAL stated that this includes a comprehensive plan for operational resilience to minimise and efficiently recover from major disruptions. PACKAL explained that it will consult with airline users throughout the SQP development process. The AAJ may also seek feedback from airline users on the SQP throughout this process.

PACKAL stated that it believes that the Authority's role is to monitor service quality at NMIA. However, PACKAL stated that it does not believe that, given the regime established in the Concession Agreement, including the SQP, there is a need for any further regulatory regime to be set up within the rate review process. In particular, PACKAL stated that it did not support the introduction of an added layer of financial penalties or incentives for service quality performance and stated that it is important that any service quality regulation imposed by the Authority does not duplicate what has already been imposed by the AAJ.

### 9.3 The JCAA's draft determination

The Authority noted that there had been several issues with service quality at NMIA over the course of QQ2. In particular, NMIA had failed to meet its target for overall passenger satisfaction on a regular basis. It had also consistently failed to meet its targets for some categories, including bathroom availability and cleanliness, availability of facilities and equipment and waiting times.

In response to the consultation, the FTC and IATA suggested enhancements to the current service quality measures in place at both airports. The FTC recommended financial incentives or penalties based on performance against targets and incorporating customer feedback mechanisms. IATA emphasised the need for transparency in key performance indicators and proposed refunds for unmet quality expectations, and a clear link between user payments and service quality. By contrast, the AAJ considered that the existing service quality regime under the Concession Agreement is sufficient for NMIA.

The Authority noted that PACKAL has outlined plans to improve service quality at NMIA in its business plan submission, including through the SQP. Nonetheless, given the feedback received from stakeholders and the findings discussed above, the Authority considered at the time of the draft determination that some further measures should be put in place for QQ3 to ensure that service quality at NMIA meets the standards stipulated by the AAJ. This is in line with the Authority's duty under the Act to 'ensure that the airport is operated in accordance with performance standards and service levels consistent with best industry practice'.[111]

The Authority therefore proposed at the time of the draft determination that financial penalties would be introduced in cases where average service quality performance at NMIA failed to meet the minimum targets, and where penalties set out in the Concession Agreement were not enforced by the AAJ. If penalties were to be enforced, these would be used to offset the airport's charges for the following year. The Authority proposed that it would consider the introduction of a remuneration mechanism which would be used if NMIA were penalised by the AAJ after it had already been penalised by the Authority, to ensure that it did not get penalised for the same issue twice.

Additionally, at the time of the draft determination, the Authority considered that reputational incentives for NMIA should be put in place.

[111] Airports (Economic Regulation) Act, 31 December 2002, Part 1, subsection 3(h).

These incentives would be the same as those that the Authority had attempted to introduce in QQ2, whereby the airport would be required to publish its service quality performance on a quarterly basis in the airport and on its website.

### 9.4 Responses to the draft determination

PACKAL stated in response to the draft determination that it does not agree with the Authority's proposal of imposing financial penalties when these are not enforced by the AAJ. Specifically, PACKAL believes that no provision of the Act allows the Authority to impose financial penalties for non-compliance with service quality standards. PACKAL also stated that the AAJ has conducted inspections and required monthly updates on the status of PACKAL's compliance with service quality targets. PACKAL stated that it believes that the Concession Agreement already has provisions for non-compliance and that these added penalties will impose a significant financial constraint on PACKAL's business in the future.

PACKAL also stated that it does not believe that reputational incentives are necessary. While NMIA does not have a dedicated website to publish performance results publicly, it shares monthly performance reports with stakeholders via email, holds meetings with stakeholders to discuss survey results, and publishes service quality results in the bi-annual Airport Fora.

Similarly, the AAJ disagreed with the Authority's proposal that financial penalties would be imposed by the Authority if they were not imposed by the AAJ. The AAJ stated that there are robust provisions in place to ensure service quality standards are adhered to under the Concession Agreement and that the AAJ had been vigilant in its monitoring.

By contrast, IATA supported the Authority's proposal to implement financial penalties at NMIA for QQ3, on the basis that NMIA has not consistently achieved service quality standards. Further, IATA suggested that NMIA's failure to consistently meet service quality targets should be considered before setting charges for NMIA.

### 9.5 The JCAA's final determination

The Authority notes that NMIA has failed to meet the service quality standards outlined in the Concession Agreement. The Authority has confirmed that it does have the legal powers to enforce financial penalties for service quality at NMIA. However, the AAJ has stated that it will impose penalties laid out in the Concession Agreement should service quality fail to meet targets in the QQ3 period.

At the time of the final determination, the imposition of financial penalties at NMIA is still under consideration, and is subject to further coordination with the AAJ. The Authority maintains its position regarding reputational incentives outlined in the draft determination.

# 10 Final determination for the revenue yield cap

## 10.1 PACKAL's yield proposal and draft determination yield cap

In its business plan, PACKAL calculated that the required yield for the first year of the QQ3 period (2026) is $40.67 per passenger. This represented a 44% increase on the 2025 yield of $28.23. PACKAL then suggested that charges would increase to $61.38 per passenger by the end of QQ3.

In the draft determination, the Authority made changes to a number of areas in NMIA's business plan, which led to a change in the overall proposed revenue yield cap. The Authority also proposed to smooth out the revenue yields over QQ3 on the basis of CPI forecasts—see Table 10.1 below.[112]

Table 10.1 JCAA revenue yield cap for the draft determination (US$ per passenger)

| | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|
| **JCAA draft determination** | 44.25 | 45.59 | 46.88 | 48.17 | 49.44 |
| **Year-on-year change (JCAA)** | 55.7% | 3.0% | 2.8% | 2.7% | 2.7% |

Note: Since the yield reprofiling is applied to the revenue yield cap before concession fees are incorporated, the resulting charges (after concession fees are added) will not increase precisely in line with CPI inflation from 2027 onward.
Source: JCAA and PACKAL (2025), 'NMIA QQ3 Working File – Final updated_24.01.2025', January 29.

## 10.2 Post-draft determination yield cap proposal

In its formal response to the draft determination, PACKAL has proposed increasing airport charges, under two scenarios, Scenario A and Scenario B, with the yield cap rising to $82.70 under scenario A and $98.40 under scenario B—the latter being PACKAL's preferred option. The Authority notes that PACKAL's preferred option is nearly double both the Authority's

[112] The revenue yield (before concession fees) for 2026 is set such that: (i) the revenue yields grow in line with CPI forecasts in the subsequent years of QQ3; and (ii) the resulting total revenues are equal to the allowed revenues (in present-value terms).

initial proposal of $49.44 by 2030 and PACKAL's original business plan submission of $61.38 by 2030.

PACKAL's revised proposal for the yield cap is driven by a change in assumptions, notably the introduction of an 80% sharing rate under the hybrid till regime, replacing the 90% rate previously proposed and accepted by the Authority in its draft determination.

The Authority's detailed assessment of PACKAL's revised proposal is set out below.

### 10.2.1 Proposal to increase airport charges

PACKAL's justification for the significant increase in its proposed yield is based on 'preserving the financial health'[113] of NMIA. According to PACKAL, the tariff levels proposed by the JCAA would cause its debt to nearly triple by the end of QQ3, placing it in a 'financially unstable position'.[114] However, the Authority is not persuaded by the evidence provided to support these claims. In particular:

- The $86.2m in debt that has been assumed in the JCAA draft determination would represent approximately 50% of the closing RAB, which is consistent with the gearing assumption of 55% used in the Authority's modelling of the yield cap—an assumption proposed by PACKAL itself.
- A significant portion of the increase in allowed revenue in PACKAL's cash flows projection is due to the assumption of an 80% sharing rate under its revised scenarios, compared to the 90% sharing rate applied in the JCAA's proposal. The Authority also notes that higher allowed revenues in PACKAL's proposals result in correspondingly higher concession fees compared to the JCAA proposal. Although concession fees should theoretically net off—meaning that fees paid to the AAJ should equal fees collected from airport users—they nevertheless place additional upward pressure on charges borne by passengers, who ultimately fund the concession fee.
- Furthermore, allowed revenue projections under PACKAL's revised scenarios are likely overstated as they do not account for any traffic impact resulting from the proposed higher charges.

[113] PACKAL (2025), PACKAL's Response to QQ3 Draft Determination and Review of Model, April 11, pp. 3-5
[114] Ibid.

Finally, the Authority notes that stakeholders have already raised concerns regarding the level of charges proposed by the JCAA in the draft determination, warning that they may divert traffic away from NMIA to SIA or Ian Fleming Airport. For example, InterCaribbean Airways has stated in its consultation response that: '*The proposed increase in what is already a high cost will only discourage airlines and passengers from choosing Kingston as a leisure travel destination, ultimately impacting all stakeholders in the tourism and travel ecosystem.*'[115] Similarly, IATA has stated that '*[proposed charges at NMIA] impose a considerable financial burden on airlines, potentially leading to increased ticket prices and reduced passenger demand. […] They could also have negative repercussions for the country, local communities, tourism, businesses, and the airports themselves, impacting their ability to generate both commercial and aeronautical revenue.*'[116]

### 10.2.2 Conclusions

The Authority's position is that PACKAL's proposals cannot be accepted for the final determination, particularly at this advanced stage of the price review process. Moreover, the Authority finds that the evidence submitted by PACKAL is insufficient to justify the proposed changes. The adoption of PACKAL's latest proposals would likely have a significant negative impact on the airport by reducing passenger traffic, with broader economic consequences for Jamaica.

Lastly, the Authority acknowledges receipt of PACKAL's letter dated April 28, 2025 regarding the QQ3 tariff review.[117] In this letter, PACKAL submitted an updated yield cap proposal, which includes a tariff increase of 55.7% in 2026, followed by annual increases of 8.0% for the remaining years of QQ3. While the underlying assumptions of the revised yield cap proposal are unclear, the Authority notes that, in NPV terms, the proposed yield cap profile is broadly equivalent to the final determination for QQ3 (see section 10.3 below).

## 10.3 Final determination yield cap

As discussed in section 10.2, the Authority has considered PACKAL's comments, alongside the responses from other stakeholders, and has set out revised charges for the final determination in Table 10.2 and Figure 10.1 below.

[115] InterCaribbean Airways (2025), 'Re - Price Increase - 2026 to 2030 – PACKAL', April 11.
[116] IATA (2025), 'JM 16APR2025 IATA Comments to JCAA Draft Determination airport charges QQ3', p.1.
[117] PACKAL (2025), 'RE: Tariff Review - QQ3', April 28.

The Authority acknowledges that, in their formal responses to the draft determination, IATA and InterCaribbean Airways raised concerns regarding the proposed 56% increase in charges for 2026, as well as the overall high level of charges at NMIA. Furthermore, the Authority notes that, without amending the smoothing approach, charges would now increase by 81% in 2026 compared to 2025, instead of the 56% proposed in the draft determination. The increase in the yield cap compared to the draft determination is mainly driven by (i) the exclusion of CUTE revenues from the sharing mechanism; (ii) the inclusion of CUTE revenues in the revenue base used to calculate concession fees (see section 10.4) and; (iii) an inflation adjustment to the treatment of commercial revenues.

Therefore, the JCAA has proposed to change its smoothing approach for the final determination, by spreading out the one-off increase to the yield cap between 2026 and 2027.[118] Accordingly, while the yield reprofiling results in a 35% and 47% increase in 2026 and 2027 respectively, it ensures a smooth progression of tariffs from 2028 onward.

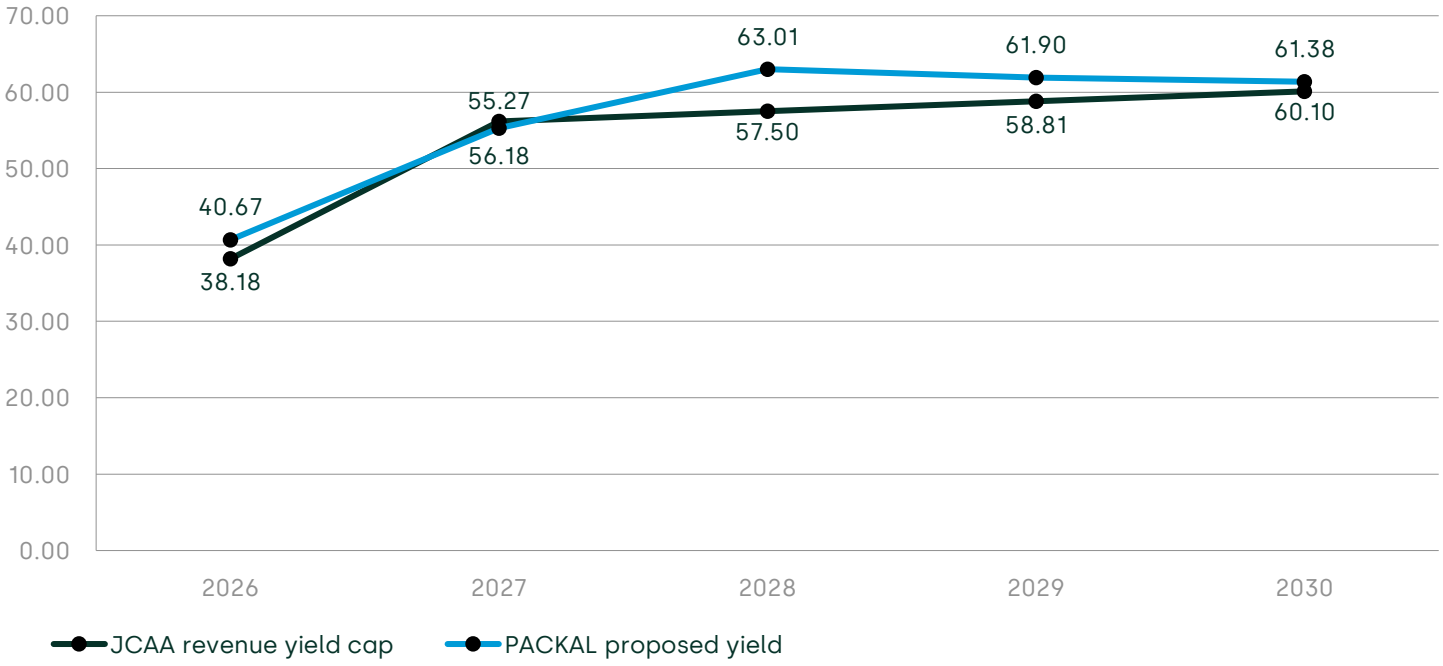
Table 10.2 JCAA revenue yield cap for the final determination (US$ per passenger)

| | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|
| **JCAA final determination** | 38.18 | 56.18 | 57.50 | 58.81 | 60.10 |
| **Year-on-year change (JCAA)** | 35.3% | 47.2% | 2.4% | 2.3% | 2.2% |

Note: Since the yield reprofiling is applied to the revenue yield cap before concession fees are incorporated, the resulting charges (after concession fees are added) will not increase precisely in line with CPI inflation from 2028 onward.
Source: JCAA and PACKAL (2025), 'Annexure 2 - NMIA QQ3 Working File - revised_11.04.2025', April 14.

[118] While the one-off increase to the yield cap is spread out evenly between 2026 and 2027 (before concession fees are added), the resulting percentage increases in charges in 2026 and 2027 (after concession fees are added) will not be equal.

Figure 10.1 JCAA revenue yield cap for the final determination (US$ per passenger)




Source: JCAA and PACKAL (2025), 'NMIA QQ3 Working File – Final updated_24.01.2025', January 29.

Table 10.3 below sets out the revenue yield cap before the concession fee is added.

Table 10.3 JCAA revenue yield cap excluding concession fees (US$)

| | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|
| **JCAA proposal** | 14.40 | 23.41 | 23.98 | 24.54 | 25.10 |

Source: JCAA and PACKAL (2025), 'Annexure 2 - NMIA QQ3 Working File - revised_11.04.2025', April 14.

The Authority notes that this is a maximum cap. Within this cap, NMIA can choose how it sets the structure of their charges and can provide discounts to airlines. The Authority further notes that NMIA can re-profile these charges within the regulatory period, as long as total revenue collected does not exceed the allowed revenue (in present value terms).

### 10.4 Concession fees

The Authority notes that most of the total charge, and therefore the reduction in the charge compared with PACKAL's original proposal, is due to the concession fee, which does not directly affect the airport's revenue.

The reduction in the concession fees compared with PACKAL's assumptions is due to both (i) lower revenue yields (before concession fees are added) determined by the Authority and (ii) less iterations used by the JCAA for the calculation of concession fees compared with PACKAL. In particular, while PACKAL used five iterations to estimate the concession fees in its business plan, the Authority used three iterations. In the draft determination, the Authority noted that the most appropriate number of iterations is not explicitly set out in PACKAL's Concession Agreement. The choice of three iterations aims to strike a balance between the need to provide an accurate estimate of concession fees to be paid, while ensuring that they are not excessively high. Using three iterations is also in line with the approach in the final determination for QQ2.

The Authority notes that, in its response to the draft determination, PACKAL disagreed with the Authority's calculation of concession fees. PACKAL proposed the use of four iterations (thus including a 0th iteration) and contends that by omitting the 0th iteration—effectively excluding concession fees from the initial allowed revenues—the Authority's approach is inconsistent with QQ2 and leads to an underestimation of the concession fees payable. Additionally, PACKAL requested that the Authority correct its approach of excluding CUTE revenues from the revenue base for the calculation of concession fees, noting that such fees are payable on CUTE revenues.

With regard to the number of iterations, the Authority maintains its position as set out in the draft determination. It disagrees with PACKAL's assertion that the current estimation method is inconsistent with the QQ2 final determination, where three iterations were used (with no 0th iteration). The Authority also notes that increasing the number of iterations would further amplify the already significant increase in charges at NMIA, as also highlighted by both IATA and the FTC. As for the treatment of CUTE revenues, the Authority clarifies that the exclusion originated from the financial model submitted by PACKAL. However, it agrees with PACKAL that CUTE revenues should be included in the base for the calculation of concession fees and has revised its concession fee calculations accordingly.

## 10.5 Final determination – summary by area

A summary of the Authority's final determinations in the different areas is set out below.

### Traffic

As per the draft determination, the Authority accepts PACKAL's growth-rate forecast for 2025 and applies this to outturn 2024 traffic levels for the bottom-up forecasts. Regarding the top-down forecasts, the Authority maintains its draft determination position, but has updated the 2024 GDP weightings to be reflective of outturn O&D and point of origin mix.

The growth rates from the top-down model are then applied to the 2025 bottom-up forecast. This reduces the CAGR from 3.5% (PACKAL) to 2.7% in the Authority's model. The traffic forecasts are summarised in Table 10.4 below.

Table 10.4 Traffic forecasts – final determination

| | | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | CAGR (QQ3) |
|---|---|---|---|---|---|---|---|---|---|
| PACKAL | Levels (m) | 1.74 | 1.75 | 1.81 | 1.88 | 1.95 | 2.01 | 2.07 | |
| | Growth | | 0.6% | 3.3% | 3.9% | 3.5% | 3.3% | 3.1% | 3.5% |
| JCAA | Levels (m) | 1.77 | 1.78 | 1.83 | 1.88 | 1.93 | 1.98 | 2.03 | |
| | Growth | | 0.6% | 2.7% | 2.7% | 2.6% | 2.7% | 2.6% | 2.7% |

Note: The 2024 figure for JCAA is based on outturn traffic data provided by PACKAL.
Source: JCAA analysis.

The Authority's traffic forecasts have marginally increased relative to its draft determination position and continue to be below that of PACKAL's forecasts. The marginal increase relative to the draft determination is explained by the slight increase in the weighted GDP coefficient following the update to the 2024 GDP weightings based on outturn point of origin data.

The lower CAGR relative to PACKAL's is explained by the materially lower GDP coefficient. We consider the Authority's coefficient to be in line with academic literature and regulatory precedent.

### Till regime

The Authority concurs with PACKAL's initial position that it is appropriate to maintain a hybrid till with a sharing rate of 90% for QQ3. Reducing the sharing rate would result in less commercial revenue being used to reduce charges, which is likely to make PACKAL's charges uncompetitive with comparable airports. The Authority does not consider that it is appropriate to reduce the sharing rate to 80% for the purposes of the QQ3 review, as proposed by PACKAL following the draft determination, as we do not consider that PACKAL has provided sufficient evidence and rationale to support such a change, and this would have a detrimental impact on charges. However, the appropriate sharing rate will be considered again in future reviews.

The Authority has maintained a hybrid till regime based on revenues, rather than returns, for the purposes of the QQ3 review, as this has some advantages—i.e. it does not require separation of the cost base.

PACKAL has indicated that it considers that in the long run, a dual-till approach would be most appropriate. The Authority considers that there are advantages and disadvantages to single-, hybrid- and dual-till approaches, and that the specific circumstances of the airport, including the competitiveness of its charges, should be taken into account when determining the appropriate till regime.

### Commercial revenues

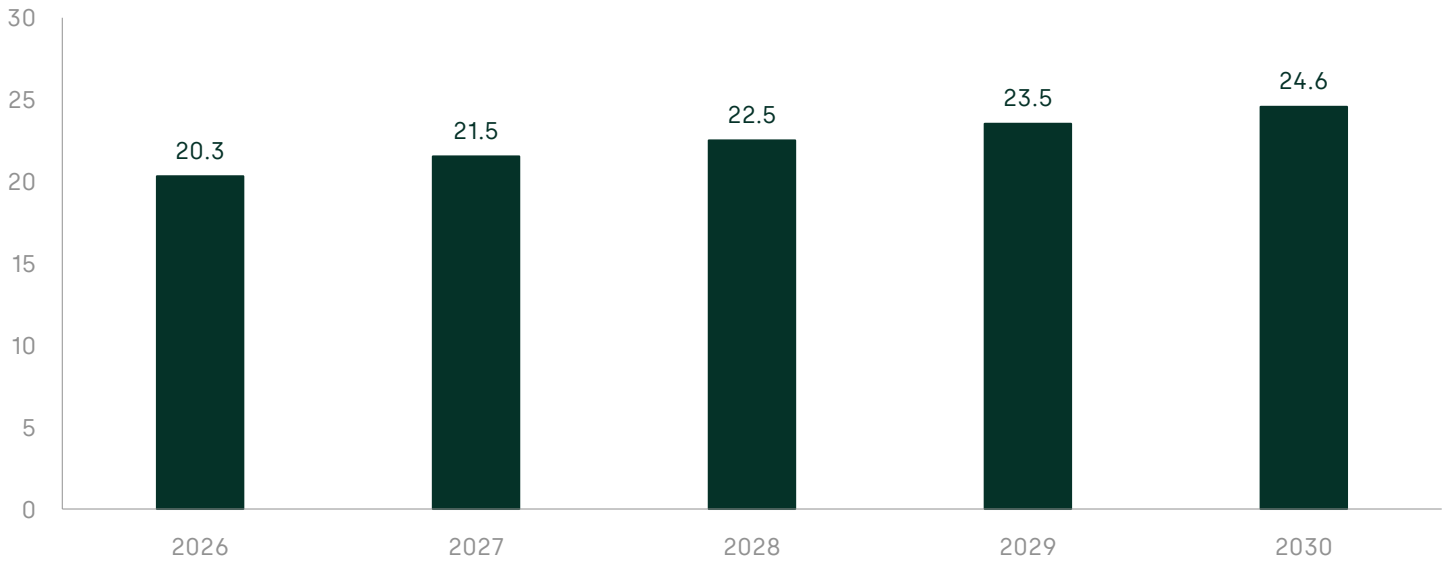
PACKAL forecasts that commercial revenues will grow over the QQ3 period with a CAGR of 2.92% between 2025 and 2030, driven in part by increases in the space available for commercial activities.

PACKAL has forecast commercial revenues by applying elasticities based on historical data to passenger forecasts. However, it is not clear on what basis these elasticities have been calculated, nor has it been possible to verify them.

The Authority has found that PACKAL's commercial revenue forecasts may be achievable given the planned increases in space available for commercial activities. On this basis, the Authority has used the commercial revenue elasticities proposed by PACKAL for QQ3.

The Authority's commercial revenue forecasts are shown in Figure 10.2 below. The difference between the Authority's commercial revenue forecasts and PACKAL's are driven by the different passenger forecasts.

Figure 10.2 The Authority's commercial revenue forecasts for NMIA (US$ million, nominal)




Source: JCAA analysis of PACKAL QQ3 business plan and financial model.

## CAPEX

The Authority has accepted PACKAL's submitted CAPEX proposals for QQ3. It has assumed CAPEX enters the RAB as the project is completed, in line with the approach proposed by PACKAL in its business plan. Compared to the draft determination, the final determination reflects a revised RAB additions profile, incorporating a deferral of $1.0m in expenditure from 2024 to 2025.

## Regulated asset base and depreciation

In the final determination, the Authority revised its estimate of the opening RAB for QQ3 from $67.4m to $70.5m, following PACKAL's clarifications regarding the 2020 opening RAB value and the $1.0m deferral in taxiway rehabilitation expenditure. Additionally, for the first year of QQ3, the Authority revised its downward adjustment to $1.6m for unapproved CAPEX incurred during QQ2, reflecting the exclusion of the taxiway rehabilitation costs.

Consistent with PACKAL's proposed approach, the Authority depreciates the assets based on their economic useful lives, using the estimates provided by PACKAL in its business plan. However, the Authority recommends that PACKAL and the AAJ include a mechanism in the

Concession Agreement to allow undepreciated assets to be recouped at the end of the concession period.

### Cost of capital

The Authority has retained its real pre-tax WACC of 13.4%, as established in the draft determination. This compares with the 16.1% WACC proposed by PACKAL in its business plan.

### OPEX and security costs

The Authority has reviewed and adjusted PACKAL's OPEX forecast for QQ3 to ensure it reflects efficient and realistic assumptions. As a result, the Authority sets a slightly higher allowed OPEX relative to PACKAL's forecast for QQ3.

A pass-through mechanism will remain in place for security-related OPEX, enabling the airport to request a cost adjustment if actual spend exceeds forecasts due to unforeseen and uncontrollable events.

Table 10.5 Total forecast OPEX ($ millions nominal)

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|
| JCAA | 19.30 | 20.58 | 21.10 | 22.02 | 22.92 | 23.82 | 24.77 |

Note: Concession fees excluded from OPEX.
Source: JCAA and PACKAL (2024).

### Service quality regulation

Service quality at NMIA has not historically been regulated by the Authority but is monitored by the AAJ, and PACKAL is required to comply with a series of service quality indicators in the Concession Agreement.

There have been several issues with service quality at NMIA over the course of QQ2. In particular, NMIA has failed to meet its target for overall passenger satisfaction on a regular basis. It has also consistently failed to meet its targets for some categories, including bathroom availability and cleanliness, availability of facilities and equipment and waiting times. Additionally, a recent system failure at NMIA resulted in significant flight delays. Although PACKAL and the AAJ believe that the existing service

quality regime at NMIA imposed by the Concession Agreement is sufficient, other stakeholders have suggested that further service quality regulation be imposed at NMIA.

At the time of the final determination, the imposition of financial penalties at NMIA is still under consideration, and is subject to further coordination with the AAJ. Additionally, the Authority considers that reputational incentives for NMIA should be put in place. These incentives are the same as those that the Authority had attempted to introduce in QQ2, whereby the airports would be required to publish their service quality performance on a quarterly basis in the airports and on their websites. The specific format and content of the data will be discussed further with PACKAL and included in the Annex to the Permission to Levy charges.