STUDY ON OPERATION AND MAINTENANCE COSTS

for

KEMPEGOWDA INTERNATIONAL AIRPORT, BENGALURU (BIAL)

(Second Control Period: 2017-2021)

May 2021

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GLOSSARY

Abbreviation	Expansion
AAI	Airports Authority of India
ACI	Airport Council International
AERA	Airports Economic Regulatory Authority of India
ALOP	Advance loss of profit
AOD	Airport Opening Date
AOL	Airport operator's liability
ARFF	Aviation Rescue and Fire Fighting
ASQ	Airport Service Quality
ASSOCHAM	Associated Chambers of Commerce and Industry of India
ATM	Air Traffic Movement
BESCOM	Bangalore Electricity Supply Company Limited
BHS	Baggage Handling System
BIAL	Bangalore International Airport Limited
CA	Concession Agreement
CAGR	Compounded Annual Growth Rate
CEO	Chief Operating Officer
CFO	Chief Financial Officer
CII	Confederation of Indian Industry
CNS	Communication, Navigation and Surveillance
CSR	Corporate Social Responsibility
CXO	Chief Experience Officer
DGM	Deputy General Manager
DIAL	Delhi International Airport Limited
EoI	Expression of Interest
ERP	Enterprise Resource Planning
F&A	Finance and Accounting
F&B	Food and Beverages
FY	Financial Year
GL	General Ledger
GoI	Government of India
GoK	Government of Karnataka
GRN	Goods Receipt Note
HIAL	Hyderabad International Airport Limited
HOD	Head of Department
HR	Human Resource
HRD	Human Resource Development
IAR	Industrial all risk
ICT	Information and Communication Technology
INR	Indian Rupee
KL	Kilo Litres
KSIIDC	Karnataka State Industrial and Infrastructure Development Corporation
kVA	Kilo Volt Amperes
kWH	Kilowatt Hour

Abbreviation	**Expansion**
LLA	Land Lease Agreement
MAG	Minimum Annual Guarantee
MD	Managing Director
MIAL	Mumbai International Airport Limited
MIS	Management Information System
MPPA	Million Passengers per Annum
MTD	Month till Date
MYTP	Multi Year Tariff Proposal
O&M	Operations & Maintenance
PO	Purchase Order
PPP	Public Private Partnership
PR	Purchase Requisition
RFP	Request for Proposal
RFQ	Request for Quotation
SAP	Systems Applications and Products
TDSAT	Telecom Disputes Settlement and Appellate Tribunal
VP	Vice President
WPI	Wholesale Price Index
YTD	Year till Date

EXECUTIVE SUMMARY

AERA is undertaking the tariff determination exercise for Bangalore airport for the 3rd control period (FY 2022 to FY 2026). As part of the tariff determination process, it has stipulated the scope of work which includes reviewing and examining the O&M costs incurred by the airport (BIAL) for the previous control period (2nd control period – FY 2017 to FY 2021). The study uses the actual numbers for the period FY17-FY20 based on the audited IGAAP financial statements of BIAL while the numbers for FY21 are based on the unaudited numbers from Apr, 2020 to December, 2020 and forecasted for January, 2020 to March, 2021 (since the actuals were not available at the time of preparation of this report).

This report aims to allocate the operational expenditure incurred by BIAL into aeronautical and non-aeronautical components and to understand the efficiency of the operational expenditure for the 2nd control period before considering them as part of the tariff determination process for BIAL.

To understand the guidelines and previous precedence on the methodology to segregate the operational expenses, the documents analysed include AERA Act, 2008, Concession Agreement of BIAL with Government of India, consultation paper and AERA orders for BIAL and for other airports. The summary of the study is produced in the table below:

Table 1: Summary of the study

Particulars*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Total operating expenses - As per MYTP submission of BIAL (refer Table 12)	371.84	412.54	463.99	530.40	511.31	**2,290.07**
Total operating expenses - As per the study (refer Table 15)	370.93	411.66	463.00	530.46	465.26	**2,241.31**
Aero operating expenses - As approved by AERA in 2nd control period order (refer Table 35)	323.36	357.26	395.60	443.59	515.25	**2,035.06**
Aero operating expenses - As per MYTP submission of BIAL (refer Table 11)	332.05	367.33	406.02	463.89	464.20	**2,033.48**
Aero operating expenses - As per the study	323.22	358.70	369.63	422.36	408.47	**1,882.38**

*1. numbers for FY17-FY20 are based on actuals while numbers for FY21 are forecasted 2. AERA has not provided data on total opex in its second control period order for BIAL

The operational expenditure allocation ratio submitted by BIAL as part of its MYTP submission is given in Table 10.It is noted that BIAL has used the MIS data for the allocation between aeronautical and non-aeronautical operational expenditure. For the study, the total operational expenditure is considered based on the audited financial statements based on IGAAP after the adjustments as per section 2.4 for allocation between aeronautical and non-aeronautical components as given in Table 15. The study undertook an evaluation of the submissions by BIAL on the allocation of the operation and maintenance costs. The study has determined the revised approach for allocation of the operations and maintenance costs as given below.

The operations and maintenance costs have been bifurcated into aeronautical, non-aeronautical and common costs based on the provisions of the AERA Act, 2008.

The bifurcation of the personnel cost, operation and maintenance cost, general administration cost, marketing and advertising cost (except collection charges which are considered as aeronautical expense) is undertaken as per below (Please refer to section 2.5):

a) These major expenses are sub-divided into sub-cost centres.

b) Each sub-cost centre is categorized into aeronautical, non-aeronautical and common and the expenses within that sub-cost centre are also categorized accordingly as given in Table 16.

c) These common costs except for marketing and advertisement expenses have been further bifurcated into aeronautical and non-aeronautical costs based on the expense allocation ratio (based on directly attributable expenses within the major cost head, please refer Table 17 for sample computation).

d) Marketing and advertisement expenses are bifurcated based on 85:15 ratio which is the average for previous years.

e) Sub-cost centres whose allocation is changed from aeronautical to common include quality management, corporate affairs, terminal operations, ops, planning and project co-ordination, innovation lab, landside maintenance – special equipment, utility – water supply, utility – power supply, corporate communication, chief operations officer, customer engagement and service quality and president – airport operations.

The bifurcation of the remaining expenses is undertaken as per below (Please refer to Table 18):

a) Concession fee – Since the tariff computation for BIAL is undertaken on hybrid till, the aeronautical concession fee for BIAL is computed as 4% of the aeronautical revenues. The study has considered the CGF revenues as part of the aeronautical revenues for computing the aeronautical concession fee.

b) CSR expenses – Computed based on the aeronautical profit before tax for BIAL.

c) Donations and waivers and bad debts – These expenses have been excluded as per AERA's second control period order for BIAL.

d) Land lease rent and rates and taxes – Land usage by BIAL has been primarily for airport with very low utilization under real estate development till FY 2020 and it is forecasted to remain the same in FY 2021. Accordingly, the lease rent and rates and taxes are considered as aeronautical.

e) Utility cost – The utility cost has been adjusted for the utility recoveries from aeronautical concessionaires as per AERA's second control period order for BIAL. The net amount has been considered as aeronautical expenses.

f) Insurance cost – These expenses are bifurcated based on the revised asset ratio.

The forecast for FY 2021 is revised based on the data available till December 2020. Therefore, the impact in the FY 2021 is a combination of this revision and the revised segregation logic.

The operational expenditure allocation ratio based on the revised segregation methodology is summarized in the table below:

Table 2: Revised segregation logic for O&M costs as per this study vis-à-vis those proposed by BIAL for second control period

Operational expenditure*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**
Personnel Expenses	90.44%	91.05%	89.71%	88.94%	88.94%
Operations & Maintenance	83.62%	84.78%	82.66%	84.49%	89.64%
Lease Rent	100.00%	100.00%	100.00%	100.00%	100.00%
Utility (Net)	100.00%	100.00%	100.00%	100.00%	100.00%
Insurance	89.29%	88.87%	88.96%	91.98%	90.93%
Rates & Taxes (other than IT)	100.00%	100.00%	100.00%	100.00%	100.00%

Operational expenditure*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**
Collection cost	100.00%	100.00%	100.00%	100.00%	100.00%
Marketing and Advertising	89.82%	83.60%	85.17%	84.80%	84.80%
Total General Administration Costs	95.10%	91.27%	63.34%	59.03%	90.00%
Total operational expenditure – Study	**87.14%**	**87.14%**	**79.83%**	**79.62%**	**87.79%**
Total operational expenditure – BIAL	**89.30%**	**89.04%**	**87.51%**	**87.46%**	**90.79%**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

The change in the operational expenditure ratio (submitted by BIAL as against considered in the study) based on the study is given below:

Table 3: Change in the operational expenditure allocation ratio based on this study vis-à-vis those proposed by BIAL for second control period

Operational expenditure*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**
Personnel Expenses	-3.67%	-3.06%	-3.13%	-3.16%	-3.16%
Operations & Maintenance	-5.01%	-4.63%	-4.95%	-4.52%	-0.06%
Lease Rent	0.00%	0.00%	0.00%	0.00%	0.00%
Utility (Net)	0.00%	0.00%	0.00%	0.00%	0.00%
Insurance	-1.50%	-1.47%	-1.07%	1.95%	0.90%
Rates & Taxes (other than IT)	0.00%	0.00%	0.00%	0.00%	0.00%
Collection cost	0.00%	0.00%	0.00%	0.00%	0.00%
Marketing and Advertising	-4.86%	-5.91%	-3.11%	-1.62%	-1.62%
Total General Administration Costs	-3.95%	-6.42%	-31.58%	-32.30%	-1.33%
Total operational expenditure	**-2.16%**	**-1.91%**	**-7.67%**	**-7.84%**	**-2.99%**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

The revised operational expenditure as per the study is given below:

Table 4: Year wise adjusted operating and maintenance expenses for the second control period as per this study

Operating expenses adjustments*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Personnel expenses	107.37	110.43	137.41	174.29	187.78	717.27
O&M	83.03	98.97	96.93	117.09	120.09	516.11
Lease Rent	13.01	13.42	13.83	14.24	14.67	69.17
Utility	36.45	41.92	34.86	34.22	23.41	170.86
Insurance	1.57	2.22	1.94	3.25	5.64	14.62
Rates & taxes (other than IT)	8.72	6.55	9.36	8.90	8.29	41.82
Marketing & Advertising	7.90	9.02	12.93	10.77	6.07	46.68
CSR	2.14	4.22	6.98	6.85	5.21	25.41
General admin costs	23.40	27.34	17.28	19.90	24.09	112.02
Total operating expenses –	**283.59**	**314.08**	**331.52**	**389.51**	**395.26**	**1713.96**

Operating expenses adjustments*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Aero						
Waiver and bad debts	0.00	0.00	0.00	0.00	0.00	0.00
Concession fee	39.63	44.62	38.11	32.85	13.21	168.42
Total operating expenditure – Aero as per the study	**323.22**	**358.70**	**369.63**	**422.36**	**408.47**	**1882.38**
Total Operating expenditure – Aero as per BIAL	**332.05**	**367.33**	**406.02**	**463.89**	**464.20**	**2,033.48**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

The impact of the revised segregation methodology (difference between aeronautical operational expenditure given in Table 4 vis-a-vis aeronautical operational expenditure submitted by BIAL given in **Error! Reference source not found.**) is summarized in the table below:

Table 5: Impact of the segregation methodology on aeronautical operational expenditure incurred by BIAL as per this study vis-à-vis those proposed by BIAL for second control period

Operating expenses adjustments*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Personnel expenses	-8.64	-7.84	-9.18	-11.88	-15.69	-53.23
O&M	-0.89	0.13	-2.21	-0.03	-0.18	-3.18
Lease Rent	0.00	0.00	0.00	0.00	0.00	0.00
Utility	-1.27	-0.72	0.18	-2.23	-9.68	-13.72
Insurance	-0.02	-0.04	-0.03	0.06	-2.06	-2.10
Rates & taxes (other than IT)	0.00	0.02	0.00	0.00	-0.87	-0.86
Marketing & Advertising	-0.18	-0.23	-2.39	-9.11	-9.54	-21.46
CSR	-1.58	-0.59	-9.02	-12.66	-11.21	-35.05
General admin costs	-3.18	-6.31	-11.41	-12.84	-11.92	-45.67
Sub-total operating expenses - Aero	**-15.78**	**-15.59**	**-34.06**	**-48.69**	**-61.15**	**-175.27**
Concession fee	6.96	7.56	8.82	9.90	5.42	38.65
Waiver and bad debts	0.00	-0.60	-11.15	-2.74	0.00	-14.49
Total Operating expenditure – Aero	**-8.82**	**-8.63**	**-36.38**	**-41.53**	**-55.73**	**-151.10**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

The airport operator, that is, BIAL had proposed a total operational expenditure of INR 2,290.07 cr., the aeronautical operational expenditure as INR 2,033.48 cr. and the non-aeronautical operational expenditure as INR 256.59 cr. for the second control period.

Based on the study, the total operational expenditure is INR 2,241.31 cr. (based on audited financial statements) and the proposed aeronautical operational expenditure is INR 1,882.38 cr. for the second control period. Thus, resulting in a reduction of INR 151.10 cr. in the aeronautical operational expenditure for the second control period. The opex allocation ratio for the second control period as submitted by BIAL is 88.80% while that considered in the study is 83.99%.

The details of BIAL's budgeting and review process, cost reduction measures undertaken by BIAL are given in section 2.1, section 3.1 and section 3.3 respectively. The suggestions for accounting the operational expenditure include usage of data from audited financial statements instead of MIS for

regulatory purposes, segregate cost centres to determine costs incurred within and outside the terminal and broaden the cost centres as given in section 2.6.

The report also analyses the operational expenditure projected by AERA in the second control period order of BIAL and the actual expenditure incurred by BIAL for the second control period as given in section 3.2. It has been observed that the actual operational expenditure is less than the forecasted operational expenditure.

The trend analysis of various components of the inflation adjusted operational expenditure is undertaken only for the period FY 2017 to FY 2020 in comparison to the increase in the passenger traffic and capacity augmentation as given in Section 3. The operational expenditure for FY 2021 has not been considered for the trend analysis as FY 2021 has been severely affected by COVID-19 pandemic with a drastic reduction in passengers. The operational expenditure of FY 2021 cannot be directly compared with the previous years as the utilization of the asset has fallen while the airport might have taken some time for adjustment to the new normal.

Based on the trend analysis and as per details provided by BIAL, the key reasons for increase in cost heads are given below:

a) Personnel cost – Personnel cost has increased from FY18 to FY19; however, it is noted that the employee cost per pax has seen a decreasing trend from FY 2018 to FY 2019 due to increase in the passenger traffic. The increase in the personnel cost from FY19 to FY20 is on account of the commissioning of the new south parallel runway in December 2019 and increase in the area of operations. Due to capacity addition by BIAL, the employee cost per pax has increased which is expected to gradually fall with the increase in utilization levels. The increase in the personnel cost from FY20 to FY21 is on account of the full year cost of the employees who joined in FY20 as well as the induction/hiring of the employees who were already given offers by BIAL.

b) Operational and maintenance (O&M) expenses - The O&M expenses as a % of gross block has increased from FY 2017 to FY 2019 due to increase in minimum wages and increased utilization of the terminal and single runway. The increase in O&M expenses in the FY 2020 is on account of the commissioning of the new south parallel runway. The O&M expenses as a % of assets has decreased in FY 2020 due to increase in the asset base.

c) Marketing and Advertising - More than 85% of the expenses are attributable to two major heads namely Aviation marketing and contracts and BDMS – Marketing. The Aviation marketing and contracts constitutes roadshows, pinnacle event, airline route launches, sponsorships and travel expenses while BDMS marketing constitutes branding, brochures, event management and social and digital marketing. Increased spend on branding and marketing of the airport has resulted in increased cost/pax over these years. BIAL has not provided the justification for the increase in marketing and advertising costs. Therefore, the marketing and advertising expenses have been considered as per Table 46 based on the growth in passenger traffic and inflation.

The trend in costs with respect to growth in traffic and capacity augmentation indicate that BIAL has maintained the efficiency in operational costs during the second control period.

The report analyses BIAL's O&M costs with respect to its performance (Internal benchmarking). It is observed from internal benchmarking that for the period FY12 – FY21, the inflation adjusted costs per pax at BIAL has decreased for major heads except O&M which has shown a marginal increase due to the increase in capacity at the airport. It is also observed that the passenger mix at BIAL is predominantly domestic which constitutes more than 80% of total traffic at BIAL.

The report also analyses BIAL's O&M costs with respect to the performance of its competition (External benchmarking). The external benchmarking has been undertaken with similar private airports in India namely DIAL, HIAL and MIAL. It is noted during this review that the airports differ from each other in many ways such as layout of the terminal building, capacity of the runway/ terminal/ apron, passenger mix, natural or man-made disruptions (like runway recarpeting) in

operations, outsourcing of services, cost of living of a city, etc. These differences have significant impact on the operational expenditure at the airport. Additionally, airports may follow varied approaches towards outsourcing of services. This can result in costs being recorded under different heads of operational expenditure for different airports. The difference on account of outsourcing is addressed to an extent while comparing overall costs between airports. It is noted that the metrics related to overall (total) operational expenditure incurred by BIAL for the period FY 2017 – FY 2020 appears reasonable in range of other private airports in India.

These costs submitted by BIAL during the second control period are based on the information/reports provided by BIAL including audited reports, department-wise operational expenditure, etc. and the observations made during the site visit and discussions held with the airport operator for clarifications.

The study has relied on the CA certificate submitted by BIAL, audited financial statements of BIAL from FY 2017 to FY 2020 and the information available in the department wise breakup of operational expenses to verify the expenses incurred during the second control period and to understand the nature of the expenses. We have not audited the operational expenses, or any other underlying data submitted by BIAL and relied on the CA's certificate for the same.

OUR WORK PERFORMED

Key steps as part of approach under the study are as follows:

a) Review Concession Agreement of BIAL, AERA Order no. 18/ 2018-19, Order no. 08/ 2014-15 and Order no. 15/ 2014-15 for BIAL, previous AERA Orders for other airports and the respective consultation papers to understand the opex allocation methodology adopted by AERA

b) Review MYTP submission of BIAL to analyse consistency of operational expenditure allocation methodology adopted by BIAL for 2nd control period with the documents submitted in support of the methodology. These documents include the auditor's certificate on the allocation of expenses (attached as Annexure I) and year-wise aero and non-aero split of expenses for the period FY 2017 – FY 2020.

c) Review auditor certificate to examine whether asset allocation principles adopted by BIAL are in accordance with principles adopted by AERA

d) Review category-wise expenses bifurcation into aero, non-aero and common

e) Check consistency between the operational expenses and the financial statements of BIAL from FY17 to FY20

f) Based on the reviews, seek clarification and additional details from BIAL to assess operational expenditure allocation. These clarifications and details are related to the methodology adopted, usage of expenses (like utility), etc.

g) Prepare the general principles for the opex allocation into aeronautical, non-aeronautical and common assets. These principles ensure consistent treatment for opex.

h) Undertake analysis and bifurcation of operational expenses into aeronautical, non-aeronautical and common using the general principles.

i) Revise the operational expenditure from FY17 to FY20 for BIAL based on the revised allocation.

j) Undertake trend analysis of the operational expenditure for the period from FY17 to FY20 for which audited financial statements were available and compare it with the increase in airport operations. Examine the probable reasons for increase in the various components of the operational expenditure.

k) Undertake internal and external benchmarking exercise for per pax/ per ATM/ % gross block costs year-on-year with other comparable major airports.

1 BACKGROUND

1.1 Objective of the assignment

The objective of this study is to undertake the analysis of Operations & Maintenance costs incurred by BIAL to bifurcate these costs into aeronautical and non-aeronautical costs and understand the efficiency in O&M costs for the 2nd control period before considering them as part of the tariff determination process for BIAL.

Since audited financial statements were available from FY 2017 to FY 2020 for the 2nd control period, the analysis of the bifurcation of operation and maintenance expenditure is based on actuals till FY 2020. The operations and maintenance costs for FY 2021 is based on the forecast. For the study below documents were examined:

a) AERA Act, 2008 with its amendment in 2019

b) Concession Agreement between Government of India and BIAL

c) Land Lease Agreement of Bangalore International Airport Limited

d) Previous AERA orders for BIAL (1st and 2nd CP)

e) Previous AERA Orders to study the methodology adopted by AERA

f) Orders of Telecom Disputes Settlement and Appellate Tribunal for BIAL (TDSAT)

g) Audited financial statement of BIAL from FY 2017 to FY 2020

h) Clarification and details received from BIAL

1.2 Profile of Bangalore International Airport Limited (BIAL)

Bangalore International Airport Limited (also referred as "Bangalore airport" or "BIAL") is one of the major airports notified by Airports Economic Regulatory Authority of India ("AERA" or the "Authority") under the provisions of the AERA Act 2008. It was formed as a joint venture of private and public sector agencies in order to develop and operate the airport. The Karnataka State Industrial and Infrastructure Development Corporation (KSIIDC), a Public sector undertaking of the Government of Karnataka (GoK) and Airports Authority of India (AAI), a Government of India (GoI) undertaking, together hold 26% equity and the strategic joint venture partners hold the remaining 74%.

The GoI signed a concession agreement (CA) with BIAL on 5th July 2004. The CA defined the terms and conditions under which BIAL, as a private company, is entitled to build and run the airport. The terms of the concession are for a period of 30 years with an option to BIAL to extend the concession period by 30 years. As per the CA, the activities of customs, immigration, quarantine, security and meteorological service will be performed by the relevant government agencies at the airport and the Communication, Navigation and Surveillance (CNS) and air traffic management (ATM) will be performed by AAI. BIAL shall, in consideration for the grant of concession by GoI, pay to GoI a fee amounting to four percent (4%) of the gross revenue annually.

The GoK extended a soft loan of Rs. 350 crores to BIAL as a state support for which a State Support Agreement (SSA) was executed by GoK with BIAL. Further, GoK has also provided a total of 4008 acres of land on a lease rent and a Land lease agreement (LLA) was also executed in this regard.

At the time of financial closure and commencement of construction, the initial phase of Bengaluru International Airport (renamed as Kempegowda International Airport on 17th July 2013) was designed for handling about 4.5 million passengers per annum and the project cost was Rs. 1411.79 crore. However, owing to significant increase in aviation traffic, BIAL redesigned the initial phase midway through the implementation of the project, increasing the capacity of the airport to 11.4 million passengers per annum and the project cost to Rs. 1930.29 crore, so that the airport, at the Airport Opening Date (AOD), had the requisite capacity to handle the aviation traffic at the required/ prescribed service levels. The additional cost was met by increase in debt from lenders. Subsequently,

certain project extension works were taken up with a supplemental expenditure budget of Rs. 540 crores (which was funded partly by raising additional equity from the shareholders and partly by further additional debt from lenders) taking the total project cost to Rs. 2470.29 crores.

The airport commenced operations on 24th May 2008. The shareholding pattern of the company as per BIAL is given below:

Table 6: Shareholding pattern as per BIAL's submission (FY 2020)

Shareholder	**Shareholding (in %)**
Fairfax Holdings	54%
Siemens Project Ventures GmbH	20%
Airports Authority of India – (GoI)	13%
Karnataka State Industrial Infrastructure Development Corporation Limited (GoK)	13%
Total	100%

1.3 Traffic Analysis

1.3.1 Passenger Traffic

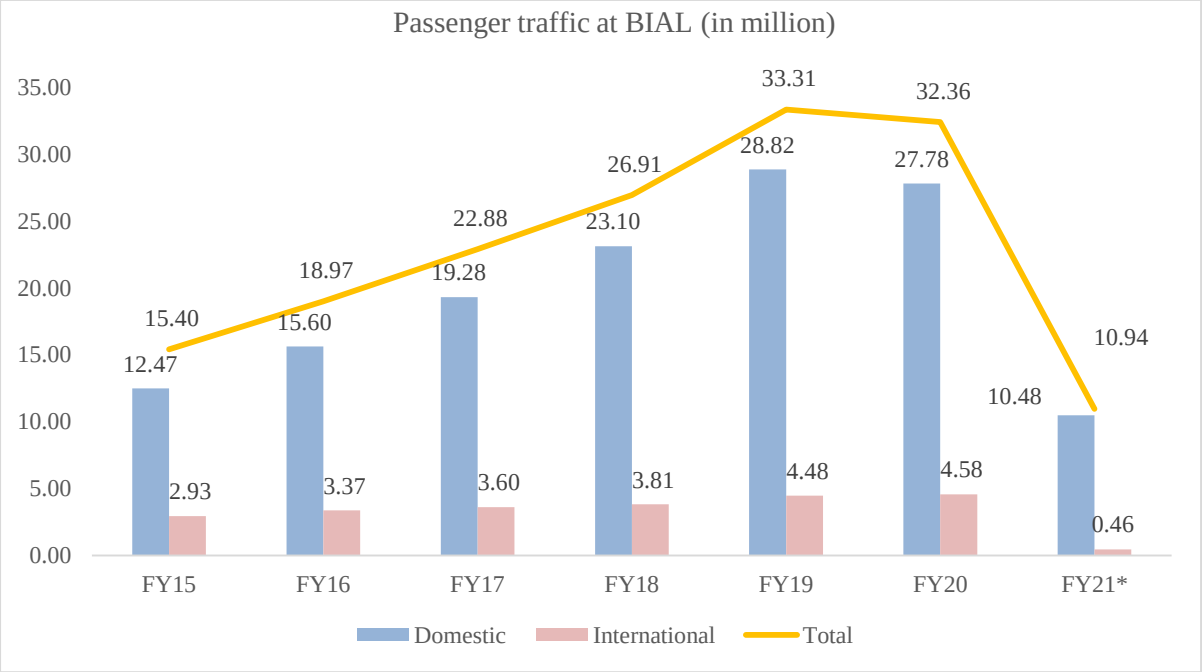
Passenger traffic at BIAL grew at a CAGR of 17.4% and 9.3% for FY 2015 – FY 2020 for domestic passengers and international Passengers respectively. The passenger traffic trend at BIAL over the last seven years is given in the table below:

Table 7: Passenger traffic at BIAL (million pax)

Traffic (in mppa)	2015	2016	2017	2018	2019	2020	2021*	Total
Domestic	12.47	15.60	19.28	23.10	28.82	27.78	10.48	137.53
International	2.93	3.37	3.60	3.81	4.48	4.58	0.46	23.23
Total	**15.40**	**18.97**	**22.88**	**26.91**	**33.31**	**32.36**	**10.94**	**160.77**

Source: AAI *Traffic for FY21 is forecasted based on actuals till February 2021

Figure 1: Passenger traffic at BIAL (FY 2015 – 2021)



Source: AAI *Traffic for FY21 is forecasted based on actuals till February 2021

1.3.2 Air Traffic Movements (ATMs)

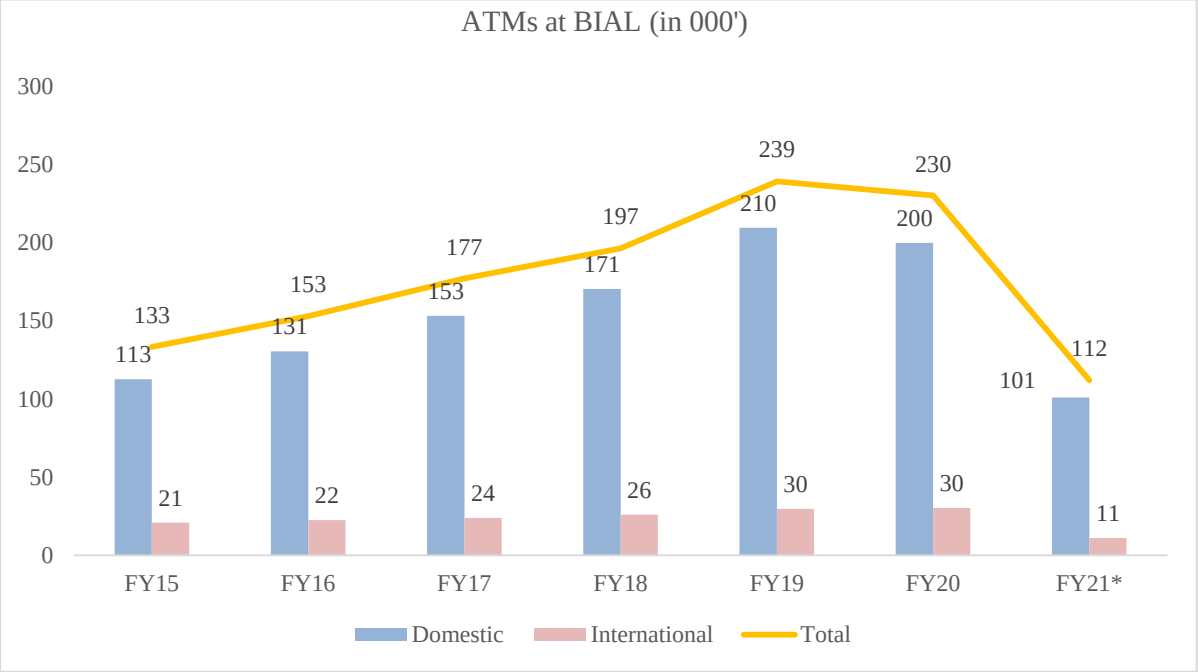
Air traffic movements (ATMs) at BIAL grew at a CAGR of 12.2% and 7.8% for FY 2015 – FY 2020 for domestic ATMs and international ATMs respectively. The air traffic movements trend at BIAL over the last seven years is given in the table below:

Table 8: Air traffic movements at BIAL (in '000)

ATMs (in '000)	2015	2016	2017	2018	2019	2020	2021*	Total
Domestic	113	131	153	171	210	200	101	1,078
International	21	22	24	26	30	30	11	165
Total	**133**	**153**	**177**	**197**	**239**	**230**	**112**	**1,242**

Source: AAI *Traffic for FY21 is forecasted based on actuals till February 2021

Figure 2: ATMs at BIAL (FY2015 – 2021)



Source: AAI *Traffic for FY21 is forecasted based on actuals till February 2021

1.3.3 Cargo traffic

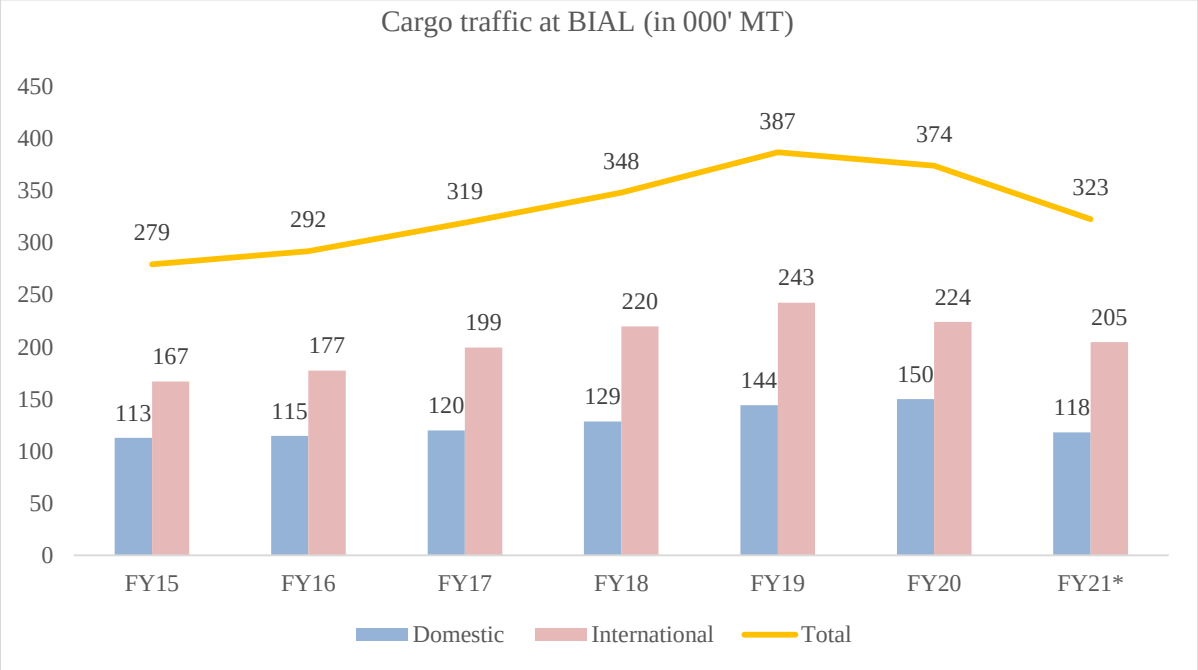
Cargo traffic at BIAL grew at a CAGR of 5.9% and 6.1% for FY 2015 – FY 2020 for domestic cargo and international cargo respectively. The cargo traffic trend at BIAL over the last seven years is given in the table below:

Table 9: Cargo traffic at BIAL (in MT)

Cargo (in MT)	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021***	**Total**
Domestic	112,687	114,646	119,878	128,504	144,223	150,009	118,153	888,100
International	166,788	177,304	199,466	219,899	242,626	224,053	204,662	1,434,798
Total	**279,475**	**291,950**	**319,344**	**348,403**	**386,849**	**374,062**	**322,815**	**2,322,898**

Source: AAI *Traffic for FY21 is forecasted based on actuals till February 2021

Figure 3: Cargo traffic at BIAL (FY2015 – 2021)



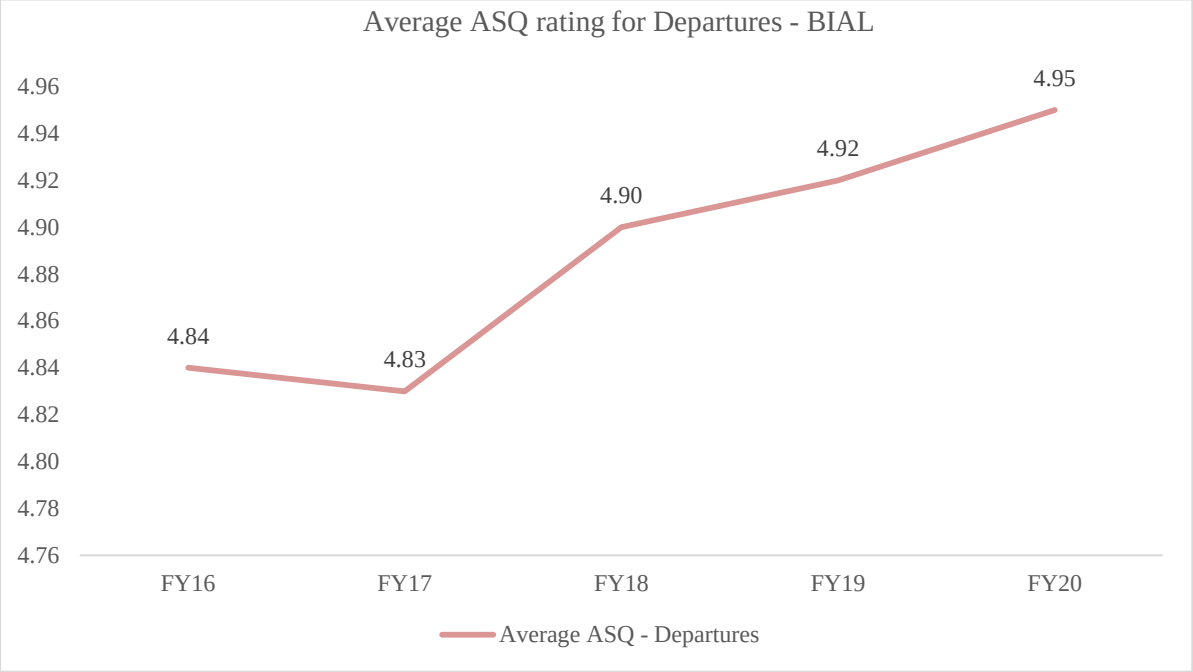
Source: AAI *Traffic for FY21 is forecasted based on actuals till February 2021

1.4 Airport Service Quality (ASQ)

BIAL has submitted that it has undertaken several initiatives to increase customer delight and improve service quality at the airport.

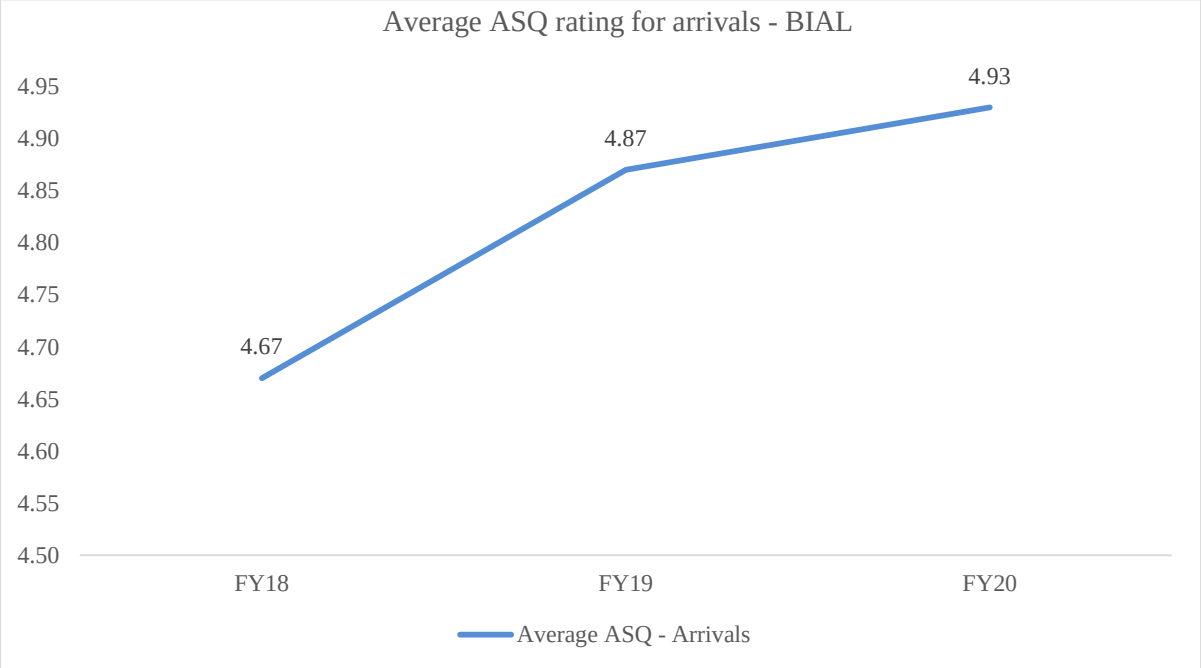
As submitted by BIAL, these initiatives have resulted in departure Air Service Quality (ASQ) rating increasing from 4.84 in Q2 (2016) to 4.97 in Q2 (2020). In addition, BIAL submitted that it has started participating in the arrival survey from Q2 (2018) and that has also increased over the years. The ASQ trend over the years for departures and arrivals is shown in the below graphs:

Figure 4: ASQ rating for departures at BIAL as per BIAL's submission



Source: BIAL

Figure 5: ASQ rating for arrivals at BIAL as per BIAL's submission



Source: BIAL

As submitted by BIAL, following are the recognitions and awards received by it:

a) Customer Experience

i. World's best airport in ASQ arrivals and best in Asia Pacific (25 – 40 mppa)
ii. First airport to receive the best airport award in departures and arrival category
iii. Skytrax award for best regional airport in India and Central Asia (2017, 2018 and 2020)
iv. Best greenfield airport – Cargo at India cargo awards 2020

v. Best airport at ASSOCHAM awards on Civil aviation and cargo

b) People

i. Golden peacock HR excellence award
ii. World HRD congress – Times Ascent – Dream companies to work
iii. World HRD congress – Global HR excellence award for managing health at work

c) Sustainability

i. Retained Airport carbon accreditation level 3+ i.e. neutrality level for carbon management process
ii. CII GreenCo Star performers Awards 2019
iii. Energy efficient unit at the national energy awards for excellence in energy management 2018 by CII

d) Others

i. Moodies award 2020 for CSR programme Namma Shikshana for best CSR/cause advocacy
ii. Moodies award for the Music terminal part of BIAL's 10-year anniversary celebration
iii. Director general ACI world appreciated the role played by BIAL in fostering improvements in safety across aerodrome operations worldwide

1.5 Chapter Summary

i. BIAL was formed as a joint venture of private and public sector agencies in order to develop and operate the airport. The Karnataka State Industrial and Infrastructure Development Corporation (KSIIDC), a Public sector undertaking of the Government of Karnataka (GoK) and Airports Authority of India (AAI), a Government of India (GoI) undertaking, together hold 26% equity and the strategic joint venture partners hold the remaining 74%.
ii. The airport commenced operations on 24th May 2008 with a capacity of handling 11.4 million passengers.
iii. Passenger traffic at BIAL grew at a CAGR of 17.4% and 9.3% for FY 2015 – FY 2020 for domestic passengers and international Passengers respectively.
iv. Air traffic movements (ATMs) at BIAL grew at a CAGR of 12.2% and 7.8% for FY 2015 – FY 2020 for domestic ATMs and international ATMs respectively.
v. Cargo traffic at BIAL grew at a CAGR of 5.9% and 6.1% for FY 2015 – FY 2020 for domestic and international cargo respectively.
vi. BIAL through its endeavour to increase customer delight has seen its Air Quality Service (ASQ) increasing from 4.84 in Q2 (2016) to 4.97 in Q2 (2020) for departure ASQ and increasing from 4.67 (FY 2018) to 4.93 (FY2020) for arrival ASQ.
vii. BIAL has also been rewarded for its initiatives in the forms of various recognitions and awards.

2 SEGREGATION OF COSTS FOR THE SECOND CONTROL PERIOD

2.1 Cost Collection Methodology

The process of aggregation of costs and their allocation into respective cost centres as submitted by BIAL is given below:

2.1.1 Purchase Controls

BIAL has a procurement policy to establish uniform procedures, define responsibilities, provide guidance, controls and checks in place. In addition, BIAL has a delegation of authority/authority matrix with the limits of various approving authorities. The construct of the delegation of authority is in such a way that for any transaction, joint approval by minimum two approvers is required.

The purchase controls can be further classified as procurement related control and process related control, the details for which are as follows:

2.1.1.1 Procurement related control

The procurement related control includes:

a) Budgeted spends: These are budgeted as part of annual planning exercise undertaken by BIAL and approved by BIAL's Board. These spends include opex, sustaining capex and the future expansion related capex spends.

b) Contingency spends: Utilization of contingency up to 80% of the approved contingency amounts must be approved jointly by the CFO and MD & CEO. Contingency disbursement report showing the drawdown needs to be brought to the notice of the Board, at its subsequent meeting. Any utilization of contingency amount in excess of 80% of the AERA approved amounts must also be reviewed and approved by the Management Committee/Board. Exceeding the contingency beyond AERA approved levels is not permitted, unless specifically examined and approved by the Board of BIAL.

c) Tendering process: All procurements are made by BIAL through its web portal (less than INR 50 Lakhs) and BIAL tendering website (above INR 50 Lakhs) for the purpose of transparency, market competitiveness and market/price discovery. Manual submission of tenders is strictly restricted by BIAL.

d) Direct online procurement: To meet out exigencies and to encourage online procurement (where better rates are available online), procurement through corporate credit card, subject to maximum limit of Rs. 2 Lakhs/transaction is allowed by BIAL.

2.1.1.2 Process related control

The process related control includes:

a) Process controls at various stages of procurement include controls relating to direct enquires, RFQ/RFP/EoI process depending on the value on proposed contract/works, process related to single source procurement and limited tender approach, pre-bid meetings, evaluation of submitted proposals, negotiation, selection of vendor, award of contract, repeat orders, rate contract etc.

b) BIAL has adopted certain clauses from the Karnataka Transparency in Public Procurements Act, 1999.

2.1.1.3 Cost centre tagging process at Purchase Order stage

BIAL submitted that it carries out Enterprise Resource Planning (ERP) through SAP that integrates various departments and/or process such as Operations, HR, Finance, Procurement, Marketing, etc into a single system.

BIAL has around 49 cost centres for mapping of costs to the relevant cost centre through ERP. All PRs are mapped to the relevant cost centres. A two-stage mapping is followed by BIAL – Initiating cost centre and End user cost centre. Though initiating cost centre could be E&M, ICT, etc. based on the technical requirements, End user cost centre captures the cost centre that will be utilizing the product/service procured. BIAL has submitted that this approach helps them in mapping the costs as Aero/Non-Aero/Common based on end user identification.

Cost centre tagging is undertaken by BIAL as part of its annual budgeting exercise which becomes the source document for mapping cost centre at PR level. This flows into all subsequent documents such as Purchase order, Goods receipt document, Invoice accounting document and expense reporting/Fixed asset register (in case of capex spend). Any change in cost centre at PR level triggers subsequent approval process.

All PR have to be approved by the Cost Centre Head, Finance Controlling team and by Head of Department based on the value limits as defined in delegation of authority. BIAL submitted that this ensures only approved spends are being requisitioned to be procured and the details of cost centre, budget allocation, etc are documented properly and correctly in the document.

BIAL submitted that it engages with independent external auditors to scrutinise all the Purchase Orders and the related documents to ensure that all awarded Purchase Orders are in line with the requirements mentioned in the Procurement Policy.

BIAL submitted that the independent auditors appointed for providing report on cost allocation of expenses, also audits the expenses accounted in various departments. This ensures that cost centres are correctly tagged in the Purchase Order and subsequent documents to provide true and fair view of cost allocation between Aero and Non-Aero.

2.1.1.4 Invoice accounting process

The invoice accounting process submitted by BIAL is described below:

a) On receipt of materials/services, concerned stores/user department generates GRN in SAP upon verification with PO. A bill booking annexure is prepared and approved. Bill Booking Annexure includes copy of GRN entry, CRF, Installation certification (in case of capex), Bill and other essential supporting documents for booking the bill.

b) Senior Executive – F&A (Payable team) checks the completeness of the Bill Booking annexure with appropriate approvals and submits it to DGM-F&A/VP/Head-F&A as per authorization matrix. Accounts Payable Executive checks the approvals and verifies the Bill Booking annexure with the supporting documents to ensure compliance with the PO terms/SLA.

c) Non-PO expenses, which are only for emergency/ certain one-time / non-recurring expenses etc. are routed through Finance Controllers for a thorough review and verification before the same is processed by the Finance team. Finance & Accounts (Payable team) accounts for and releases the payment towards Non-PO expenses that are not routed via PO/ WO, upon receipt of documents from user department.

2.1.1.5 Purchase order amendment controls

BIAL has submitted the internal controls with specific guidelines on purchase order amendments which covers both capex and opex related POs as described below:

A. Purchase order amendment for Capex

The process submitted by BIAL is as follows:

a) Capex PO amendments are classified under two categories:

   i. Change initiated by External Agencies (Contractor's/Consultant's/Suppliers engaged by BIAL) through a Change Request process.
   ii. Change initiated by BIAL team members.

b) All such Purchase order amendments require approval from Change Management Committee which comprises Chief of the department along with CFO. The committee is responsible to ensure that the PO amendment is in line with the approved process. The Committee meets periodically to review such requests for amendment.

c) Approval of Purchase order amendments: Cumulative changes up to 20% of the original contract value shall be managed and approved by CFO and MD & CEO. Any cumulative changes above 20% of the original contract value shall be approved by the Management Committee/Board. Any deviation to the above shall be reported in the subsequent Audit Committee meeting.

d) Without prior approval, no change approval shall be provided to the External Agency. MIS on all changes are sent periodically to CFO and MD & CEO with time and cost overruns.

B. Purchase order amendment for operational expenditure

BIAL's internal policy guidelines mandates that all Purchase order evaluations are jointly approved as per the value limit prescribed in the authority matrix/delegation of authority. In case of opex purchase order amendment, all such cases are routed for approval one level above.

As part of BIAL's monthly financial book closing, open purchase orders for all departments are reviewed in detail and action taken for short closing orders, where works were completed.

Detailed explanation is obtained from respective user departments where orders must be kept open for reasons such as performance, delivery milestones to be met etc. In case of capex open purchase orders, the same is also validated against the capital work in progress accounted so far.

Apart from monthly internal review, quarterly audit and review of open PO is also done by statutory auditors as part of quarterly financial performance reporting.

2.2 Expenses segregation principles adopted by BIAL

2.2.1 Segregation logic adopted by BIAL as per their MYTP submission

BIAL has submitted the auditor's certificate from Sreedar Mohan and Associates on the allocation of expenses (excluding depreciation, finance costs and tax expenses) based on the books of accounts of BIAL from FY 2017 to FY 2020.

The auditor has given the statement of allocation of expenses into aeronautical and non-aeronautical based on the allocation methodology/ policy certified by the management of BIAL.

BIAL in its submission has divided the operational costs into following major heads:

a) Personnel Cost

b) Operation and maintenance cost

c) General administrative cost

d) Marketing and advertisement expenses

e) Concession fee

f) Utility cost

g) Land lease rent

h) Rates and taxes

i) Insurance cost

BIAL has bifurcated the personnel cost, operation and maintenance cost, general administrative cost and marketing and advertisement expenses based on the department wise cost centres as follows:

a) BIAL has segregated these expenses into 32 major cost centres which are then further segregated into 63 sub-cost centres.

b) All the expenditure in a sub-cost centre attributable directly to aeronautical or non-aeronautical services were allocated accordingly.

c) Expenditure in the remaining sub-cost centres, which cannot be directly attributable to either aeronautical or non-aeronautical heads, are considered as common expenses.

d) These common expenses for personnel expenses, O&M expenses and general administration expenses have been segregated into aeronautical and non-aeronautical based on the expense allocation ratio (computed based on directly attributable cost for the particular expense) for the year being computed.

e) The common expenses for marketing and advertisement expenses (excluding collection charges) have been bifurcated by BIAL based on the average ratio of earlier years, that is, 85:15 while the collection charges have been considered as 100% aeronautical.

BIAL has bifurcated the remaining expenses as follows:

a) Concession fee – Bifurcated based on the revenue ratio.

b) Land lease rent and rates and taxes – BIAL has submitted that out of the total 4008 acres of land leased to BIAL, a significant portion of the land is being used for airport related activities. Hence, the entire property and other tax amounts and the land lease rent is classified as aeronautical. BIAL submitted that till FY20 the land specifically used for the current non-airport activities is negligible and it is forecasted to remain same for FY21 also.

c) Utility cost – Utility cost (net of recovery) has been considered by BIAL as aeronautical.

d) Insurance cost – These expenses are bifurcated based on asset ratio.

The allocation ratio submitted by BIAL as part of its MYTP submission is given in the table below:

Table 10: Allocation ratio submitted by BIAL as part of their MYTP submission

Operational expenditure*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**
Personnel Expenses	94.11%	94.11%	92.83%	92.10%	92.10%
Operations & Maintenance	88.63%	89.41%	87.61%	89.01%	89.70%
Lease Rent	100.00%	100.00%	100.00%	100.00%	100.00%
Utility (Net)	100.00%	100.00%	100.00%	100.00%	100.00%
Insurance	90.79%	90.34%	90.03%	90.03%	90.03%
Rates & Taxes (other than IT)	100.00%	100.00%	100.00%	100.00%	100.00%
Collection cost	100.00%	100.00%	100.00%	100.00%	100.00%
Marketing and Advertising	94.68%	89.51%	88.27%	86.42%	86.42%
Total General Administration Costs	99.05%	97.69%	94.92%	91.33%	91.33%
Total operational expenditure - BIAL	**89.30%**	**89.04%**	**87.51%**	**87.46%**	**90.79%**

*numbers for FY17-FY20 are based on actuals as submitted by BIAL while numbers for FY21 are forecasted by BIAL

The aeronautical operational expenditure submitted by BIAL as part of its MYTP submission is given below:

Table 11: Aeronautical operational expenditure submitted by BIAL as part of their MYTP submission

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
Personnel expenses	116.01	118.27	146.58	186.17	203.47	770.50
O&M	83.92	98.84	99.15	117.12	120.27	519.29
Lease Rent	13.01	13.42	13.83	14.24	14.67	69.17
Utility	37.72	42.64	34.68	36.45	33.08	184.58
Insurance	1.60	2.26	1.97	3.19	7.70	16.72
Rates & taxes (other than IT)	8.72	6.53	9.36	8.90	9.16	42.68
Marketing & Advertising	8.09	9.25	15.31	19.88	15.61	68.14
CSR	3.72	4.81	16.00	19.51	16.42	60.46
General admin costs	26.59	33.65	28.69	32.74	36.01	157.68
Total operating expenses - Aero	**299.37**	**329.67**	**365.58**	**438.20**	**456.40**	**1,889.23**
Less: Disallowance - Interest/hotel cost						-
Concession fee	32.67	37.06	29.29	22.95	7.80	129.76
Waiver and bad debts	-	0.60	11.15	2.74	-	14.49
Total Operating Expenditure – Aero	**332.05**	**367.33**	**406.02**	**463.89**	**464.20**	**2,033.48**

*numbers for FY17-FY20 are based on actuals submitted by BIAL while numbers for FY21 are forecasted by BIAL

2.3 Segregation principles and methodology applied in study

The sub-cost centres submitted by BIAL have been reviewed and a basis is developed for segregating them into aeronautical, non-aeronautical and common. Broadly, the principles for segregation of costs are as follows:

a) **Aeronautical costs**: Costs incurred for operation and maintenance of aeronautical assets. Aeronautical services are as defined under the AERA Act. These include costs incurred on runways, taxiways, aprons, ARFF related assets, BHS, ground handling, cargo terminals, approach roads, airside lighting etc.

b) **Non-aeronautical costs**: Costs incurred for operation and maintenance of non-aeronautical assets. These include costs incurred on car parking, lounges, advertisement, commercial real estate development, etc.

c) **Common costs**: Common costs are the costs which benefit both Aeronautical and Nonaeronautical activities. Common costs are apportioned between aeronautical and non-aeronautical based on an appropriate methodology.

2.4 Reconciliation of total costs with audited financials

This section reviews reconciliation of the costs submitted as part of the MYTP submission by BIAL for the 2nd control period and actual costs as per the audited financial statements from FY17 to FY20. The audited financial statements for FY21 are not available and therefore, the data for FY21 is taken as per the submission of BIAL for comparison purposes in Table 12, Table 13 and Table 14.

Table 12: Total Operating expenditure as per the MYTP submission of BIAL

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
Personnel expenses	123.27	125.67	157.90	202.14	220.92	829.90
O&M	94.69	110.55	113.17	131.58	134.08	584.07
Lease Rent	13.01	13.42	13.83	14.24	14.67	69.17
Utility	37.72	42.64	34.68	36.45	33.08	184.58
Insurance	1.76	2.50	2.19	3.54	8.56	18.55

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
Rates & taxes (other than IT)	8.72	6.53	9.36	8.90	9.16	42.68
Marketing & Advertising	8.25	9.60	16.47	21.86	17.79	73.97
CSR	3.72	4.81	16.00	19.51	16.42	60.46
General admin costs	26.84	34.44	30.23	35.85	39.43	166.80
Total operating expenses	317.98	350.16	393.84	474.08	494.12	2,030.18
Less: Disallowance - Interest/hotel cost	0.00	0.00	0.00	0.00	0.00	0.00
Concession fee	53.86	61.78	59.00	53.59	17.19	245.40
Waiver and bad debts	-	0.60	11.15	2.74	-	14.49
Total operating expenditure	**371.84**	**412.54**	**463.99**	**530.40**	**511.31**	**2,290.07**

*numbers for FY17-FY20 are based on actuals as submitted by BIAL while numbers for FY21 are forecasted by BIAL

Table 13: Total Operating expenditure as per audited financial statements of BIAL

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
Personnel expenses	118.72	121.28	153.17	195.97	220.92	810.06
O&M	99.29	116.74	117.27	138.58	134.08	605.96
Lease Rent	13.01	13.42	13.83	18.73	14.67	73.66
Utilities	39.04	44.46	37.38	33.28	33.08	187.24
Insurance	1.76	2.50	2.18	3.53	8.56	18.53
Rates & taxes (other than IT)	8.72	6.55	9.36	8.90	9.16	42.69
Marketing & Advertising	2.93	3.24	9.80	14.56	17.79	48.32
CSR	3.72	4.81	16.00	19.52	16.42	60.47
General admin costs	31.38	30.84	27.3	33.79	39.43	162.74
Total operating expenses	**318.57**	**343.84**	**386.29**	**466.86**	**494.12**	**2,009.68**
Less: Disallowance - Interest/hotel cost	0.00	0.00	0.00	0.00	0.00	0.00
Concession fee	53.86	61.78	59.00	53.59	17.19	245.42
Waiver and bad debts	0.00	0.60	11.15	2.74	0.00	14.49
Total operating expenditure	**372.43**	**406.22**	**456.44**	**523.19**	**511.31**	**2,269.59**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

The reconciliation of MYTP submission with audited financial statements is given below:

Table 14: Reconciliation of MYTP submission with financial statements of BIAL

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
Total expenditure as per audited financial statement	372.43	406.22	456.44	523.19	511.31	2,269.59
Total expenditure as per MYTP submission	371.84	412.54	463.99	530.40	511.31	2,290.07
Difference	**-0.59**	**6.32**	**7.55**	**7.21**	**0.00**	**20.48**

*numbers for FY17-FY20 are based on actuals while numbers for FY21 are forecasted

The difference in the audited financial statements based on IGAAP and MYTP submission has been noted in the above table. BIAL has submitted that it has considered the operational expenditure as per the MIS for the MYTP submission. BIAL submitted that the profit after tax for FY 2017 to FY 2020 in the MYTP submission, which is based on the MIS, is matching with the audited financial statements based on IGAAP.

As per the AERA guidelines, the study has considered the operational expenditure as per the audited financial statements based on IGAAP with the below adjustments:

a) Collection cost is considered as a marketing and advertisement expense. Since, the aeronautical revenues are also increased by the collection cost, the net impact on the over/ under-recovery is nil.

b) Exchange losses are excluded from the General Admin cost

c) BIAL has submitted the following regarding the reclassification entry of INR 4.49 cr. in lease rent and utility expenses:

"The roof top Solar electricity expenses are recognised as 'lease expense' for the purposes of I-GAAP hence this reclassification entry was passed in the books.

For business purposes these are electricity expenses only, hence the same is correctly considered in the Business Plan under Utility expenses. In the Business Plan, the Lease Rentals paid to the GoK for Land Lease has been consistently shown under "Lease Rentals"."

Accordingly, for the purposes of the study, lease rent of FY 2020 is considered based on the lease deed of BIAL, that is, INR 14.24 cr. Accordingly, lease rent as per the audited financial statement for FY 2020 is reduced by INR 4.49 cr. and the utility cost is increased by the same amount so that the impact on the total operational expenditure is nil.

After the above adjustment to the operational expenditure as per the audited financial statements, the study has considered the total operational expenditure for allocation between aeronautical and non-aeronautical components as per the table below:

Table 15: Revised total operational expenditure as per the audited financial statements after adjustments

Operating expenses*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021***	**Total**
Total expenditure as per audited financial statement	**372.43**	**406.22**	**456.44**	**523.19**	**511.31**	**2,269.59**
Add: Collection cost to marketing and advertisement expenses	5.27	6.31	6.57	7.27		**25.42**
Less: Exchange losses from General Admin cost	-6.77	-0.87	-0.01	0		**-7.65**
Add: Reclassification entry to Utility expenses				4.49		**4.49**
Less: Reclassification entry to lease rent as per lease deed of BIAL				-4.49		**-4.49**
Less: Adjustment to FY21 opex as per the unaudited numbers from Apr, 2020 to Dec, 2020 and forecast of Jan, 2021 to Mar, 2021					-46.05	**-46.05**
Total adjusted expenditure	**370.93**	**411.66**	**463.00**	**530.46**	**465.26**	**2,241.31**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5 Segregation of costs

The segregation of personnel cost, O&M cost, marketing and advertisement expenses and general administration cost into aeronautical, non-aeronautical and common expenses has been undertaken based on the sub-cost centre wise allocation.

Sub-cost centre wise allocation of Personnel Cost, Operation and Maintenance (O&M) cost and General Administration (GA) and Marketing and Advertising (M&A) cost into aeronautical (A), non-aeronautical (N) and common (C) based on this study has been provided in the table below:

Table 16: Revision of the allocation of sub-cost centre based on the study

S no	Sub-cost centre	Personnel		O&M		GA and M&A		Remarks
		BIAL	Study	BIAL	Study	BIAL	Study	
1	Director Operations	A	A	A	A	-	-	
2	Quality Management	A	C	-	-	A	C	The Quality Management team works towards the overall improvement of the airport operations and hence taken as common. Similar treatment was considered by AERA for other airports.
3	Corporate Affairs	A	C	A	C	A	C	Corporate Affairs exist to support both Aeronautical and Non - Aeronautical activities and hence, considered as common. Similar treatment was considered by AERA for other airports.
4	Terminal Operations	A	C	A	A*	A	C	Terminal operations cost includes costs related to maintenance, upkeep and running of the terminal. Since both aeronautical and non - aeronautical services are managed and provided within the terminal, hence expenses under this head are considered as common. Similar treatment was considered by AERA for other airports. Terminal operations is

S no	Sub-cost centre	Personnel		O&M		GA and M&A		Remarks
		BIAL	Study	BIAL	Study	BIAL	Study	
								considered as aeronautical for O&M expenses with some cost items containing F&B, lounges (except VIP) being reclassified from aeronautical to non-aeronautical.
5	Airside Operations	A	A	A	A	A	A	
6	Aviation Marketing and Contracts	A	A	A	A	A	A	
7	BDMS-Marketing	C	C	C	C	C	C	
8	Aviation Safety	A	A	A	A	A	A	
9	Emergency & BCM	A	A	A	A	A	A	
10	Security	A	A	A	A	A	A	
11	Security - Inline Screening	A	A	-	-	A	A	
12	Ops Planning & Project Co-ordination	A	C	A	C	A	C	Involves planning and coordination of the entire airport which includes aeronautical as well as non - aeronautical services
13	ARFF	A	A	A	A	A	A	
14	Innovation Lab	A	C	A	C	A	C	Aimed at innovation in the airport and its operations which caters to aeronautical as well as non - aeronautical services
15	ICT Aviation	A	A	A	A	A	A	
16	Chief Commercial officer	C	C	-	-	C	C	
17	Landside Traffic	N	N	N	N	N	N	
18	Landside Technical	N	N	N	N	N	N	
19	Facilities	C	C	C	C	C	C	

S no	Sub-cost centre	Personnel		O&M		GA and M&A		Remarks
		BIAL	Study	BIAL	Study	BIAL	Study	
20	Commercial Centre Management	N	N	N	N	N	N	
21	Marketing and Advertising	N	N	N	N	N	N	
22	Real Estate Developmen t	C	C	Non-airport	N	Non-airport	N	Considered as non-aero for O&M, GA and M&A. Considered common for personnel cost in accordance with the submissions made by BIAL (real estate personnel are involved in filing the property tax and managing contracts of cargo, ground handling, etc.)
23	Planning & project management earlier and post start of T1A it was changed to Projects	C	C	C	C	C	C	
24	VP - Engineering & Maintenance	C	C	C	C	C	C	
25	Landside Maintenance - Building	C	C	C	C	C	C	
26	Landside Maintenance - Electrical	C	C	C	C	C	C	
27	Landside Maintenance - Special Equipment	A	C	A	C	A	C	Includes central air conditioning unit of terminal and hence considered as common
28	Utility - Water Supply	A	C	A	C	A	C	Utility are provided to both aero and non-aero service users and hence taken as common
29	Environment	A	A	A	A	A	A	
30	Landside Maintenance	C	C	C	C	C	C	

S no	Sub-cost centre	Personnel		O&M		GA and M&A		Remarks
		BIAL	Study	BIAL	Study	BIAL	Study	
	- Services							
31	Airfield Maintenance - Civil	A	A	A	A	A	A	
32	Airfield Maintenance - Electrical	A	A	A	A	A	A	
33	Utility - Power Systems	A	C	A	C	A	C	Utility are provided to both aero and non-aero service users and hence taken as common
34	Airfield Maintenance - Services	A	A	A	A	A	A	
35	Airfield Services- Vehicle & Equipment	A	A	A	A	A	A	
36	Airfield Services- Horticulture & Landscaping	A	A	A	A	A	A	
37	Airfield Services - Wild life control	A	A	A	A	A	A	
38	ICT Communications	C	C	-	-	C	C	
39	ICT Network	C	C	-	-	C	C	
40	ICT Value added services	C	C	-	-	C	C	
41	ICT Others	N	N	-	-	-	-	
42	MD and CEO Office	C	C	C	C	C	C	
43	Finance	C	C	C	C	C	C	
44	Human Resources	C	C	C	C	C	C	
45	Administration	C	C	C	C	C	C	
46	Company Secretary & Legal	C	C	C	C	C	C	
47	Corporate Communications	A	C	A	C	A	C	Corporate Communication exist to support both aero and non-aero activities and hence, considered as

S no	Sub-cost centre	Personnel		O&M		GA and M&A		Remarks
		BIAL	Study	BIAL	Study	BIAL	Study	
								common. Similar treatment was considered by AERA for other airports.
48	ICT-Common	C	C	C	C	C	C	
49	Chief Operations Officer	A	C	A	C	A	C	COO is responsible for managing the operations of airport as a whole and hence its costs are taken as common. Similar treatment was considered by AERA for other airports.
50	Cust Engagement and Service Quality	A	C	A	C	A	C	Similar to ops planning and project coordination
51	Infra - ICT	C	C	C	C	C	C	
52	Center of Excellence	C	C	C	C	C	C	
53	Strategy & Development	C	C	C	C	C	C	
54	Forecasting and Slots	A	A	A	A	A	A	
55	Corporate Social Responsibility	C	C	C	C	C	C	
56	Corporate Strategy & Business Development	C	C	-	-	C	C	
57	ORAT for PAL 1 Projects	C	C	-	-	C	C	
58	Marketing	N	N	-	-	N	N	
59	Passenger Fee	-	-	A	A	-	-	
60	Airside Infrastructure	-	-	-	-	A	A	
61	Chief Infrastructure Officer	-	-	-	-	C	C	
62	President - Airport operations	A	C	A	C	A	C	Similar to Chief Operations Officer.
63	Marketing	-	-	-	-	-	-	

S no	Sub-cost centre	Personnel		O&M		GA and M&A		Remarks
		BIAL	Study	BIAL	Study	BIAL	Study	
	Fund							

For the segregation of common cost, the expense allocation ratio (based on the directly attributable cost) has been used. This expenses allocation ratio has been computed by revising the opex allocation. For eg, the below table provides an example with the computation of a sample expense of INR 100 with aeronautical expenses ratio of 90%.

Table 17: Sample computation of the aeronautical expense ratio

Particulars	Reference	Amount (INR)
Aeronautical expenses	A	63
Non-aeronautical expenses	B	7
Common expenses	C	30
Total expense	**D = A + B + C**	**100**
Aeronautical expenses ratio (directly attributable ratio)	**E = A/ (A+B)**	**90%**
Aeronautical component of common expenses	F = C*E	27
Non-aeronautical component of common expenses	G = C*(1-E)	3
Total aeronautical expenses	H = A + F	90
Total non-aeronautical expenses	I = B + G	10
Aeronautical expenses ratio	**J = H/ (H+I) = E**	**90%**

The below table shows the methodology adopted to segregate the Operation and Maintenance costs for the second control period of BIAL into aeronautical, non-aeronautical and common.

Table 18: Basis of segregation of operational expenditure among aero and non-aero services as per this study

Operational expense head	Basis for segregation of O&M cost
Personnel cost	The personnel costs have been bifurcated into aeronautical, non-aeronautical and common costs based on the allocation of sub-cost centre wise expenses. These common costs have then been further bifurcated into aeronautical and non-aeronautical costs based on the expense allocation ratio (based on directly attributable expenses).
O&M costs	The O&M costs have been bifurcated using the same methodology used for personnel costs. Some expenses related to F&B, lounges (except VIP) under the head terminal operations are classified as non–aeronautical expenses.
General administrative costs	The general administrative costs have been bifurcated into aeronautical, non-aeronautical and common costs based on the allocation of sub-cost centre. These common costs have then been further bifurcated into aeronautical and non-aeronautical costs based on the expense allocation ratio (based on directly attributable expenses). Donations have been considered as non – aeronautical while provision for doubtful debts have been excluded from General administrative costs.
Marketing & advertisement costs	The marketing and advertisement expenses (other than collection charges) are bifurcated department wise into aeronautical, non-aeronautical and common. The common costs are then apportioned in the ratio of 85:15 which is the average of

	the previous years. Collection charges are considered as aeronautical expense.
Concession fee	As per the concession agreement signed between BIAL and GoI, BIAL has to pay a concession fee amounting to 4% of the gross annual revenue. Since the tariff computation for BIAL is undertaken on hybrid till, the aeronautical concession fee for BIAL is computed as 4% of the aeronautical revenues. The study has considered the CGF revenues as part of the aeronautical revenues for computing the aeronautical concession fee.
Utility Cost	The utility cost has been adjusted for the utility recoveries from aeronautical concessionaires as per AERA's second control period order for BIAL. The net amount has been considered 100% aeronautical expenses.
Lease Rent	The lease rent is calculated as per the lease deed signed between BIAL and KSIIDC. The lease rent is calculated as per the following: i. The lease rental from airport opening date till end of 7 years will be 3% of total land cost. ii. For the 8th year, the lease rental shall be 6% of total land cost iii. For every following year, the lease rent shall be equivalent to lease rental of previous year plus additional 3%. Land usage by BIAL has been primarily for airport with very low utilization under real estate development till FY 2020 and it is forecasted to remain the same in FY 2021. Accordingly, the lease rent is considered as aeronautical.
Rates and taxes	Land usage by BIAL has been primarily for airport with very low utilization under real estate development till FY 2020 and it is forecasted to remain the same in FY 2021. Accordingly, the lease rent is considered as aeronautical.
Insurance	Insurance expenses have been bifurcated based on the adjusted gross fixed asset ratio.
CSR expense	CSR expense has been considered as operational expenditure as per the directions of the TDSAT judgement dated 16 Dec 2020. These are categorized as common and aeronautical CSR expense is computed based on the aeronautical profit before tax. Additionally, the numbers for FY 2021 have been revised based on revised estimates submitted by BIAL.
Waiver and bad debts	Waivers and bad debts have been excluded from the operational expenses

2.5.1 Personnel Costs

Personnel costs include:

a) Salaries, bonuses and allowances

b) Contribution to provident fund and other funds

c) Staff recruitment and training

d) Staff welfare

BIAL's segregation logic

BIAL has bifurcated the personnel costs into aeronautical, non-aeronautical and common costs based on the allocation of sub-cost centre wise expenses. These common costs have then been further bifurcated into aeronautical and non-aeronautical costs based on the expense allocation ratio (based on directly attributable expenses).

Revision as per the study

It is noted that the personnel cost has increased from FY18 to FY19; however, it is further noted that the employee cost per pax has seen a decreasing trend from FY 2018 to FY 2019 due to increase in the passenger traffic (refer 3.4.1). The increase in the personnel cost from FY19 to FY20 is on account of the commissioning of the new south parallel runway in December 2019 and increase in the area of operations. Due to capacity addition by BIAL, the employee cost per pax has increased which

is expected to gradually fall with the increase in utilization levels. The increase in the personnel cost from FY20 to FY21 is on account of the full year cost of the employees who joined in FY20 as well as the induction/hiring of the employees who were already given offers by BIAL (refer 3.4.1 for details).

On examining the department wise bifurcation of aero, non-aero and common submitted by BIAL for personnel costs, it was noted that bifurcation for some of the departments was considered 100% aeronautical whereas these departments exist to support both aeronautical and non-aeronautical activities. Accordingly, these departments have been reclassified as per Table 16.

The following departments have been reclassified from aeronautical to common:

a) Quality management
b) Corporate affairs
c) Terminal operations
d) Ops planning and project coordination
e) Innovation lab
f) Landside – special equipment
g) Utility – water supply
h) Utility – power systems
i) Corporate communication
j) Chief operations officer
k) President – Airport operations
l) Customer engagement and service quality

The revised aeronautical personnel costs is given in the table below:

Table 19: Revision in segregation logic of personnel costs as per this study

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
BIAL submission						
Total Personnel cost – as per BIAL (in INR Cr.) (A)	123.27	125.67	157.90	202.14	220.92	829.90
Aeronautical ratio – BIAL (B)	94.11%	94.11%	92.83%	92.10%	92.10%	
Aeronautical personnel cost as per BIAL (C = A*B)	116.01	118.27	146.58	186.17	203.47	770.50
Revision as per the study						
Total Personnel cost considered in the study (in INR Cr.)* (D)	118.72	121.28	153.17	195.97	211.14	800.28
Revised segregation ratio (E)	90.44%	91.05%	89.71%	88.94%	88.94%	
Aeronautical personnel cost based on revised logic (INR cr.) (F = D*E)	**107.37**	**110.43**	**137.41**	**174.29**	**187.78**	**717.27**
Impact of revision in segregation logic (INR cr.) (G = F – C)	**-8.64**	**-7.84**	**-9.18**	**-11.88**	**-15.69**	**-53.23**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.2 Operation & Maintenance (O&M) Cost

The operation & maintenance expenses of BIAL are bifurcated into the following categories:

a) Consumption of stores and spares

b) Repair & maintenance

c) Machinery and others

BIAL's segregation logic

BIAL has bifurcated the O&M costs into aeronautical, non-aeronautical and common costs based on the allocation of sub-cost centre wise expenses. These common costs have then been further bifurcated into aeronautical and non-aeronautical costs based on the expense allocation ratio (based on the directly attributable expenses).

Revision as per the study

The O&M expenses as a % of gross block has increased from FY 2017 to FY 2019 due to increase in minimum wages and increased utilization of the terminal and single runway. The increase in O&M expenses in the FY 2020 is on account of the commissioning of the new south parallel runway. The O&M expenses as a % of assets has decreased in FY 2020 due to increase in the asset base (refer 3.4.2 for details).

On examining the department wise bifurcation of aero, non-aero and common submitted by BIAL for O&M costs, it was noted that bifurcation for some of the departments was considered as 100% aeronautical, while these departments exist to support both aeronautical and non-aeronautical activities. The reclassification of departments has been undertaken as per Table 16.

Terminal operations is considered as aeronautical for O&M expenses after excluding exceptional cost items under terminal operations sub-cost centre containing F&B, lounges (except VIP).

The revised O&M expenses are given in the table below.

Table 20: Revision in segregation logic of O&M expenses as per this study

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
BIAL submission						
Total O&M Costs – as per BIAL (in INR Cr.) (A)	94.69	110.55	113.17	131.58	134.08	584.07
Aeronautical ratio – BIAL (B)	88.63%	89.41%	87.61%	89.01%	89.70%	
Aeronautical O&M Costs as per BIAL (C = A*B)	83.92	98.84	99.15	117.12	120.27	519.29
Revision as per the study						
Total O&M Costs considered in the study (in INR Cr.)* (D)	99.29	116.74	117.27	138.58	133.98	605.86
Revised segregation ratio (E)	83.62%	84.78%	82.66%	84.49%	89.64%	
Aeronautical O&M Costs based on revised logic (F = D*E)	**83.03**	**98.97**	**96.93**	**117.09**	**120.09**	**516.11**
Impact of revision in segregation logic (G = F – C)	**-0.89**	**0.13**	**-2.21**	**-0.03**	**-0.18**	**-3.18**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

Based on the revised segregation logic, the revised segregation ratio is lower than the aeronautical ratio of BIAL. However, the decrease in O&M expenses (as per the study) is limited since the actual O&M costs is considered as per the audited financial statements of BIAL.

2.5.3 General administrative cost

General administrative cost is the cost incurred for the airport administration which has the following major components:

a) Communication

b) Donation
c) Exchange gain (net)
d) Legal and professional fees
e) Printing and stationery
f) Provision for doubtful debts
g) Replacement costs
h) Technical consultancy
i) Travelling and conveyance
j) Miscellaneous

BIAL's segregation logic

BIAL has bifurcated the personnel costs into aeronautical, non-aeronautical and common costs based on the allocation of sub-cost centre wise expenses. These common costs have then been further bifurcated into aeronautical and non-aeronautical costs based on the expense allocation ratio (based on directly attributable expenses).

Revision as per the study

On examining the department wise bifurcation of aero, non-aero and common submitted by BIAL for general administrative costs, it was noted that bifurcation for some of the departments was considered as 100% aeronautical, while these departments exist to support both aeronautical and non-aeronautical activities. Accordingly, these departments have been reclassified. The reclassification of departments has been undertaken as per Table 16 for general administrative costs.

Donations have been considered as non–aeronautical while provision of doubtful debts have been excluded from the general administrative costs (as per AERA's 2nd control period order for BIAL). The revised general administrative cost is provided in the table below:

Table 21: Revision in segregation logic of general administrative cost as per this study

Particulars	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
BIAL submission						
Total general administrative cost – as per BIAL (INR Cr.) (A)	26.84	34.44	30.23	35.85	39.43	166.80
Aeronautical ratio – BIAL (B)	99.05%	97.69%	94.92%	91.33%	91.33%	
Aeronautical general administrative cost as per BIAL (C = A*B)	26.59	33.65	28.69	32.74	36.01	157.68
Revision as per the study						
Total general admin cost considered in the study (INR cr.)* (D)	24.61	29.95	27.29	33.71	26.77	142.33
Revised segregation ratio (E)	95.10%	91.27%	63.34%	59.03%	90.00%	
Impact of revision in segregation logic (F = D*E)	**23.40**	**27.34**	**17.28**	**19.90**	**24.09**	**112.02**
Aeronautical general administrative cost based on revised logic (INR cr.) (G = F-C)	**-3.18**	**-6.31**	**-11.41**	**-12.84**	**-11.92**	**-45.67**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.4 Marketing & Advertisement

Marketing & advertisement expenses constitute collection charges, airline launch events, Pinnacle awards, branding/marketing of new terminal, event costs etc.

BIAL's segregation logic

BIAL has bifurcated the expenses (except collection charges) department wise into aeronautical, non-aeronautical and common expenses. The common expenses are allocated into aeronautical and non-aeronautical on the ratio of 85:15, which is the average ratio of the previous years. Collection charges are considered as aeronautical.

Revision as per the study

On examining the department wise bifurcation of aero, non-aero and common submitted by BIAL for marketing & advertisement costs, it was noted that bifurcation for some of the departments was considered as 100% aeronautical, while these departments exist to support both aeronautical and non-aeronautical activities. The reclassification of departments has been undertaken as per Table 16.

Pinnacle event has been considered 100% aero by BIAL while it has participation from non–aero concessionaires as well. Hence, the same was reclassified from 100% aero to common.

More than 85% of the expenses are attributable to two major heads namely Aviation marketing and contracts and BDMS – Marketing. The Aviation marketing and contracts constitutes roadshows, pinnacle event, airline route launches, sponsorships and travel expenses while BDMS marketing constitutes branding, brochures, event management and social and digital marketing. Increased spend on branding and marketing of the airport has resulted in increased cost/pax over these years. BIAL has not provided the justification for the increase in marketing and advertising costs. Therefore, the marketing and advertising expenses have been considered as per Table 46 based on the growth in passenger traffic and inflation (refer 3.4.4 for details).

The revised marketing and advertisement expenses is provided in the table below:

Table 22: Revision in segregation logic of Marketing & advertisement expenses as per this study

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
BIAL submission						
Collection Cost as per BIAL (in INR Cr.) (A)	5.27	6.31	6.57	7.27	1.74	27.16
Marketing Expenses as per BIAL (in INR Cr.) (B)	2.97	3.29	9.91	14.59	16.05	46.81
Total Marketing & Advertisement cost – as per BIAL (in INR Cr.) (C = A+B)	8.25	9.60	16.47	21.86	17.79	73.97
Collection cost - Aeronautical Ratio as per BIAL (D)	100%	100%	100%	100%	100%	
Marketing expenses - Aeronautical Ratio as per BIAL (E)	94.68%	89.51%	88.27%	86.42%	86.42%	
Aeronautical Marketing & Advertisement cost – as per BIAL (F = A*D + B*E)	**8.09**	**9.25**	**15.31**	**19.88**	**15.61**	**68.14**
Revision as per the study						
Collection Cost – considered in the study* (G)	5.27	6.31	6.57	7.27	2.34	27.76
Marketing expenses – considered in the study (refer Table 46)* (H)	2.93	3.24	7.47	4.12	4.40	22.16
Total Marketing & Advertisement cost – considered in the study (I = G+H)	8.20	9.55	14.03	11.39	6.74	49.91

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
Revised segregation ratio - Collection Cost (J)	100%	100%	100%	100%	100%	
Revised segregation ratio - Marketing expenses (K)	89.82%	83.60%	85.17%	84.80%	84.80%	
Aeronautical Marketing & Advertisement cost based on revised logic (L = G*J + H*K)	**7.90**	**9.02**	**12.93**	**10.77**	**6.07**	**46.68**
Impact of revision in segregation logic (M = L – F)	**-0.18**	**-0.23**	**-2.39**	**-9.11**	**-9.54**	**-21.46**

*Costs for FY17 to FY18 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.5 Concession Fee

As per Clause 3.1 of the concession agreement signed between BIAL and the Government of India, BIAL has to pay a concession fee amounting to 4% of the gross annual revenue every year.

BIAL's segregation logic

BIAL has segregated the concession fee in the proportion of aeronautical and non-aeronautical revenues.

Revision as per the study

Since the tariff computation for BIAL is undertaken on hybrid till, the aeronautical concession fee for BIAL is computed as 4% of the aeronautical revenues. It is noted that BIAL has not considered the Cargo, Ground Handling and Fuel (CGF) revenues (aviation concession revenues and rent and land leases from CGF) for the computation of aeronautical concession fee. The study has considered the CGF revenues as part of the aeronautical revenues for computing the aeronautical concession fee.

The revised aeronautical concession fee is given in the table below:

Table 23: Revision in segregation logic of concession fee as per this study

Particulars (in INR Cr.)	Ref.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
BIAL submission							
Aviation revenues	A	816.86	926.39	732.18	573.71	187.11	3,236.26
Aviation concession revenues	B	173.16	188.66	219.59	242.57	90.58	914.56
Non-aero revenues	C	341.33	394.03	463.63	508.28	133.30	1,840.57
Other income	D	20.36	41.63	66.51	21.43	18.67	168.59
Total revenues as per BIAL	**E = A + B + C + D**	**1,351.71**	**1,550.71**	**1,481.91**	**1,345.99**	**429.66**	**6,159.98**
Total concession fees as per BIAL[#]	**F = E*4%**	**53.86**	**61.78**	**59.00**	**53.59**	**17.19**	**245.40**
Aero concession fee as per BIAL	**G = A*4%**	**32.67**	**37.06**	**29.29**	**22.95**	**7.80**	**129.76**
Revision as per the study							
Aviation revenues	H	816.86	926.39	732.18	573.71	219.1	**3,268.25**
Aviation concession (CGF) revenues	I	173.16	188.66	219.59	242.57	100.30	**924.28**
Add: Lease rent from CGF as aero	J	6.03	6.64	7.50	12.23	13.24	**45.64**
Less: Collection cost[*]	K	(5.27)	(6.31)	(6.57)	(7.27)	(2.34)	**(27.76)**
Total aero revenues as per the study	**L = H + I + J + K**	**990.78**	**1,115.38**	**952.71**	**821.24**	**330.30**	**4,210.41**
Non-aero revenues	M	335.3	387.4	456.1	496.1	114.0	**1,788.87**
Other income	N	20.36	41.63	66.51	21.43	18.74	**168.66**
Total revenues as per the	**O = L +**	**1,346.43**	**1,544.40**	**1,475.35**	**1,338.72**	**463.04**	**6,167.94**

Particulars (in INR Cr.)	Ref.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
study	**M + N**						
Total concession fees as per the study	**P = O*4%**	**53.86**	**61.78**	**59.00**	**53.59**	**18.52**	**246.74**
Aero concession fee as per the study	**Q = L*4%**	**39.63**	**44.62**	**38.11**	**32.85**	**13.21**	**168.42**
Impact of revision in segregation logic	**R = Q - G**	**6.96**	**7.56**	**8.82**	**9.90**	**5.42**	**38.65**

#Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021; data for the aeronautical revenues is not available in the audited financial statements from FY17 to FY20; * collection charges on User Development Fee is INR 5 per applicable departing pax, concession fee is not payable on the collection cost as the amount is paid to the airlines

2.5.6 Utility cost

Utility cost includes power, water and fuel expenses. Power expenses comprise of payments to Bangalore Electricity Supply Company Limited (BESCOM), Airport electricity charges, Open access solar power from Cleanmax, open access from Bosch plant etc.

As per BIAL, the infrastructure for the utility from the source (located within the airport) to the consumption (located in the concessionaire area) is created and owned by BIAL. Additionally, the supply and distribution of the utility within the airport campus to each of the concessionaires is undertaken by BIAL itself.

Further, BIAL also shared that the invoice to the concessionaires is a combination of utility charges and service charges. The invoice contains two components; components from tariff provided by government agencies and components corresponding to service charges like infrastructure capex recovery and associated maintenance costs, administration fees etc.

BIAL is also responsible for measuring and monitoring the utility supplied for each of the concessionaire. For concessionaires (for whom meters are not provided because of the scale of consumption) and for common areas, apportionment of costs model is considered by BIAL.

As per BIAL, for offices and storage spaces provided to partners in the terminal, who cannot be given individual meters, the consumption is tracked through common meters. The supplied amount and the costs are evenly distributed among these occupants.

Utility costs for the Public areas, such as passenger circulation areas like arrival, departure halls and kerb areas etc. are borne by BIAL.

The power and water consumption submitted by BIAL for the period from FY 2017 to FY 2020 is shown in the table below:

Table 24: Power and water consumption by BIAL as per their submission

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020
Power Consumption				
Power Consumption	74,893,946	76,251,051	78,438,998	80,978,764
Less: Recovery	29,264,851	30,551,081	32,339,230	37,823,827
Net Consumption	**45,629,095**	**45,699,970**	**46,099,768**	**43,154,937**
Water Consumption				
Non - potable Water Consumption	237,905	360,000	229,500	134,900
Potable Water Consumption	524,640	638,610	788,810	827,247
Total consumption	762,545	998,610	1,018,310	962,147
Less: Recoveries	330,933	389,122	380,631	382,777
Net Consumption (in KL)	**431,612**	**609,488**	**637,679**	**579,371**

*Based on actuals submitted by BIAL

BIAL's segregation logic

BIAL has taken utility costs (net of recovery) as aeronautical. The rationale provided in the CA certificate shared by BIAL states that "utility consumption of BIAL offices situated at terminal building, airside buildings and other administrative buildings have negligible portion of utility costs".

Revision as per the study

BIAL has considered the utility recoveries from aeronautical concessionaires such as cargo, ground handling, fuel farm and CUTE/ CUSS as non-aeronautical revenues. These utility recoveries have been excluded from the aeronautical utility expenses and only utility recoveries from non-aeronautical concessionaires are considered as non-aeronautical revenues. Accordingly, the aeronautical utility recoveries is adjusted from the aeronautical utility cost.

The utility (net of recovery) cost has been considered as aeronautical. The revised aeronautical utility cost is given in the table below:

Table 25: Revision in segregation logic for utility expenses as per this study

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
BIAL submission						
Total Utility Costs – as per BIAL (in INR Cr.) (A)	37.72	42.64	34.68	36.45	33.08	184.58
Aeronautical ratio – BIAL (B)	100%	100%	100%	100%	100%	
Aeronautical Utility Costs as per BIAL (C = A*B)	37.72	42.64	34.68	36.45	33.08	184.58
Revision as per the study						
Total Utility Costs - considered in the study (INR cr.)* (D)	39.04	44.46	37.38	37.76	25.82	184.46
Utility recovery from aeronautical concessionaires (INR cr.) (E)	2.59	2.54	2.52	3.54	2.42	13.60
Net utility costs adjusted for utility recoveries (INR cr.) (F = D – E)	36.45	41.92	34.86	34.22	23.41	170.86
Aeronautical ratio (G)	100%	100%	100%	100%	100%	
Aeronautical Utility Costs based on revised logic (H = F*G)	**36.45**	**41.92**	**34.86**	**34.22**	**23.41**	**170.86**
Impact of revision in segregation logic (I = H – C)	**-1.27**	**-0.72**	**0.18**	**-2.23**	**-9.68**	**-13.72**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.7 Lease Rent

A land lease deed was executed between Karnataka State Industrial Investment and Development Corporation Limited (KSIIDC) and BIAL on 30th April 2005 according to which:

a) The lease rental from airport opening date till end of 7 years will be 3% of total site cost (INR 175 cr.).

b) For the 8th year, the lease rental shall be 6% of total site cost (INR 175 Cr.).

c) For every following year, the lease rent shall be equivalent to lease rental of previous year plus additional 3%.

Additional land was leased to BIAL by KSIIDC as per the following terms:

a) The lease rental from airport opening date till end of 7 years will be 3% of total cost of additional land (INR 36.78 Cr.).

b) For the 8th year, the lease rental shall be 6% of the additional land cost (INR 36.78 Cr.).

c) For every following year, the lease rent shall be equivalent to lease rental of previous year plus additional 3%.

BIAL's segregation logic

BIAL has submitted that its land usage for real estate till FY20 is negligible and it is forecasted to remain same in FY21. Therefore, BIAL has considered the lease rentals cost as aeronautical.

The lease rental has been considered as aeronautical based on the actual land usage at the airport and no change in the lease rent is undertaken as part of the study.

Table 26: Revision in segregation logic for lease rentals as per this study

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
Total Lease Rent (in INR Cr.)	13.01	13.42	13.83	14.24	14.67	69.17
Aeronautical ratio	100%	100%	100%	100%	100%	
Aeronautical lease rent	**13.01**	**13.42**	**13.83**	**14.24**	**14.67**	**69.17**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.8 Rates and Taxes

Rates and taxes include the property taxes paid by BIAL.

BIAL's segregation logic

As stated in lease rentals, BIAL has submitted that its land usage for real estate till FY 2020 is negligible and it is forecasted to remain same in FY21. Therefore, BIAL has considered the rates and taxes (property tax) as aeronautical.

Revision as per the study

The rates and taxes have been considered as aeronautical based on the actual land usage at the airport. However, the rates and taxes for FY 2021 has been updated based on the actuals upto Dec 2020. The revised rates and taxes is given below:

Table 27: Revision in rates and taxes as per this study

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
BIAL submission						
Total Rates & Taxes – as per BIAL (in INR Cr.) (A)	8.72	6.53	9.36	8.90	9.16	42.68
Aeronautical ratio – BIAL (B)	100%	100%	100%	100%	100%	
Aeronautical Rates & Taxes as per BIAL (C = A*B)	8.72	6.53	9.36	8.90	9.16	42.68
Revision as per the study						
Total Rates & Taxes – considered in the study (in INR Cr.)* (D)	8.72	6.55	9.36	8.90	8.29	41.82
Revised segregation ratio (E)	100%	100%	100%	100%	100%	5.00
Aeronautical Rates & Taxes based on revised logic (F = D*E)	**8.72**	**6.55**	**9.36**	**8.90**	**8.29**	**41.82**
Impact of revision in segregation logic (G = F-C)	**0.00**	**0.02**	**0.00**	**0.00**	**-0.87**	**-0.86**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.9 Insurance

The insurance expenses include the premium paid by BIAL for Industrial all risk (IAR), Advance loss of profit (ALOP), Terrorism, Airport operator's liability (AOL) etc.

BIAL's segregation logic

BIAL has classified the insurance expenses on the basis of asset ratio.

Revision as per the study

It is noted that the insurance premium would cover risks for both aeronautical and non-aeronautical activities at the airport and hence, the insurance cost has to be bifurcated. Therefore, the insurance expenses have been bifurcated based on the adjusted gross fixed asset ratio as per the study on asset allocation for BIAL. The revised aeronautical insurance expenses are given below:

Table 28: Revision in segregation logic for Insurance expenses as per this study

Particulars	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
BIAL submission						
Total Insurance – as per BIAL (in INR Cr.) (A)	1.76	2.50	2.19	3.54	8.56	18.55
Aeronautical ratio – BIAL (B)	91%	90%	90%	90%	90%	
Aeronautical Insurance as per BIAL (C = A*B)	1.60	2.26	1.97	3.19	7.70	16.72
Revision as per the study						
Total Insurance considered in the study (in INR Cr.)* (D)	1.76	2.50	2.18	3.53	6.21	16.18
Revised segregation ratio (E)	89.3%	88.9%	89.0%	92.0%	90.9%	
Aeronautical Insurance based on revised logic (F = D*E)	**1.57**	**2.22**	**1.94**	**3.25**	**5.64**	**14.62**
Impact of revision in segregation logic (G = F-C)	**-0.02**	**-0.04**	**-0.03**	**0.06**	**-2.06**	**-2.10**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.10 CSR expenses

BIAL's segregation logic

BIAL has considered CSR expenses as 100% aeronautical.

Revision as per the study

As per the directions of Hon'ble TDSAT in its judgement dated 16th December 2020, the CSR expenditure is considered as part of operating expenditure. The decision of TDSAT is produced below for reference:

"…The decision of the Authority to not allow CSR expenditure as a cost of the Airport Operator is not proper and is set aside. The Authority shall pass consequential orders so as to prevent loss of or reduction in the determined fair return to the equity holders. Necessary truing-up exercise shall be done accordingly…"

The CSR expenses have been categorized as common and aeronautical CSR expense is computed based on the aeronautical profit before tax. The revised aeronautical CSR expenses are given below:

Table 29: Revision in segregation logic for CSR expenses as per this study

Particulars	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total

Particulars	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
BIAL submission									
Total CSR Costs – as per BIAL (in INR Cr.) (A)				3.72	4.81	16.00	19.51	16.42	60.46
Aeronautical ratio – BIAL (B)				100%	100%	100%	100%	100%	
Aeronautical CSR Costs as per BIAL (C = A*B)				3.72	4.81	16.00	19.51	16.42	60.46
Revision as per the study									
Aero revenues (D)	488	707	864	996	1,122	959	829	333	6,297
30% of non-aero revenues (E)	0	0	0	0	0	0	0	0	0
Aero operational expense (F)	-234	-283	-288	-323	-359	-370	-422	-408	-2,687
EBITDA (G = D+E-F)	254	423	576	673	763	590	406	-76	3,610
Aero Depreciation (H)	-130	-191	-184	-187	-190	-276	-193	-250	-1,601
Interest expenses (I)	-96	-180	-153	-144	-106	-94	-118	-162	-1,053
Aero PBT (J = G – H – I)	**29**	**53**	**239**	**342**	**467**	**220**	**95**	**-488**	**956**
Average Aero PBT (last 3 financial years) (K)				**107**	**211**	**349**	**343**	**261**	**1,271**
Aeronautical CSR expenses as per the study (2% of average PBT) (L = 2%*K)				**2.14**	**4.22**	**6.98**	**6.85**	**5.21**	**25.41**
Impact of revision in segregation logic (M = L – C)				**-1.58**	**-0.59**	**-9.02**	**-12.66**	**-11.21**	**-35.05**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.5.11 Waiver and Bad debts

BIAL's segregation logic

BIAL has considered Waiver and bad debts as 100% aeronautical.

Revision as per the study

The Authority in the second control period order had not allowed waiver and bad debts (with the exception of bad debts related to Kingfisher) as part of operating expenditure since the airport operator is expected to recover the same in the normal course of business. Hon'ble TDSAT in its judgement dated 16th December 2020 has agreed with AERA's approach and gave the following decision:

"…Allowing bad debts to be recovered as operating expenses is a bad precedent and should not be followed in future because users should not be put to penalty for no fault of theirs. However, for pragmatic reasons such decision for the First Control Period is not set aside…"

Accordingly, the waiver and bad debts have been excluded from the operating expenses of BIAL. The revised aeronautical waiver and bad debts expenses are given below:

Table 30: Revision in segregation logic for waiver and bad debts as per this study

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
BIAL submission						
Total Waiver and Bad debts – as per BIAL (in INR Cr.) (A)	-	0.60	11.15	2.74	-	14.49
Aeronautical ratio – BIAL (B)	100%	100%	100%	100%	100%	
Aeronautical Waiver and Bad debts as per BIAL (C = A*B)	-	0.60	11.15	2.74	-	14.49
Revision as per the study						
Aeronautical Waiver and Bad debts Costs based on revised logic (D)	-	-	-	-	-	-
Impact of revision in segregation logic (E = D – C)	**0.00**	**-0.60**	**-11.15**	**-2.74**	**0.00**	**-14.49**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

2.6 Improvements to BIAL's cost accounting

The work performed in this study is based on the cost records produced by BIAL. In undertaking this study, we have identified the below shortcomings in BIAL's cost accounting and methodology/approach towards computation of segregation ratio for aeronautical operational expenses:

2.6.1 Usage of data from MIS for regulatory purposes

The operational expenditure in the MYTP submission of BIAL is based on the MIS and therefore, it is not consistent with the audited financial statements leading to a variation as shown in Table 14: Reconciliation of MYTP submission with financial statements. As a result, it is advised to use data from audited financial statements for the regulatory purposes, computation and submission.

2.6.2 Enhancement of cost centres to allocation between terminal and outside terminal

The cost centres submitted by BIAL may be further segregated to determine the costs incurred within the terminal and costs incurred outside the terminal.

2.6.3 Addition of cost centres

The number of cost centres used by BIAL may be increased to include the housekeeping expenses for comparison with other airports and also for the allocation of the operational expenditure.

2.7 Chapter Summary

The below table provides the summary of adjustment as detailed in the earlier sections:

Table 31: Summary of adjustments to the Aeronautical expenses as segregated by BIAL

Operation and Maintenance expense[#]	FY 2017 - FY 2021*	Section Ref.	Table Ref.
Total O&M expense during second control period as per BIAL's MYTP submission	**2,290.07**		
Aeronautical expenses as per BIAL	**2,033.48**		
Non - aeronautical expense as per BIAL	**256.59**		
Impact due to change in segregation logic			
Personnel expenses	-53.23	2.5.1	Table 19

Operation and Maintenance expense#	**FY 2017 - FY 2021***	**Section Ref.**	**Table Ref.**
O&M	-3.18	2.5.2	Table 20
Lease Rent	0.00	2.5.7	Table 26
Utility	-13.72	2.5.6	Table 25
Insurance	-2.10	2.5.9	Table 28
Rates & taxes (other than IT)	-0.86	2.5.8	Table 27
Marketing & Advertising	-21.46	2.5.4	Table 22
CSR	-35.05	2.5.10	Table 29
General admin costs	-45.67	2.5.3	Table 21
Concession fee	38.65	2.5.5	Table 23
Waiver and bad debts	-14.49	2.5.11	Table 30
Total impact on aeronautical expenses due to changes in segregation logic	**-151.10**		
Total adjusted aeronautical expenses for second control period	**1,882.38**		

*For the study, costs for FY17 to FY20 are based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021 #Difference due to rounding off

The year wise Aeronautical O&M expenses for the second control period is as follows:

Table 32: Year wise adjusted operating and maintenance expenses for the second control period as per this study

Operating expenses adjustments*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Personnel expenses	107.37	110.43	137.41	174.29	187.78	717.27
O&M	83.03	98.97	96.93	117.09	120.09	516.11
Lease Rent	13.01	13.42	13.83	14.24	14.67	69.17
Utility	36.45	41.92	34.86	34.22	23.41	170.86
Insurance	1.57	2.22	1.94	3.25	5.64	14.62
Rates & taxes (other than IT)	8.72	6.55	9.36	8.90	8.29	41.82
Marketing & Advertising	7.90	9.02	12.93	10.77	6.07	46.68
CSR	2.14	4.22	6.98	6.85	5.21	25.41
General admin costs	23.40	27.34	17.28	19.90	24.09	112.02
Total operating expenses - Aero	**283.59**	**314.08**	**331.52**	**389.51**	**395.26**	**1713.96**
Concession fee	0.00	0.00	0.00	0.00	0.00	0.00
Waiver and bad debts	39.63	44.62	38.11	32.85	13.21	168.42
Total operating expenditure – Aero as per study	**323.22**	**358.70**	**369.63**	**422.36**	**408.47**	**1882.38**
Total Operating expenditure – Aero as per BIAL	**332.05**	**367.33**	**406.02**	**463.89**	**464.20**	**2,033.48**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

3 TREND ANALYSIS IN O&M COSTS FOR THE SECOND CONTROL PERIOD

3.1 Budgeting and review process at BIAL

The budgeting and review process followed by BIAL in operating expenditure is given in the below section (as submitted by BIAL):

3.1.1 Budgeting Process as submitted by BIAL

The steps followed during the budgeting process by BIAL are as follows:

a) The budget preparation is an annual exercise undertaken to decide the budget for the next financial year.

b) The Finance Controlling team is responsible for preparing the annual budget in close co-ordination with cost centre heads & HODs by taking their inputs.

c) Draft inputs from the Cost Centre heads / process owners is verified and checked for completeness and accuracy. The proposed budget is then discussed for optimization and improvement. The scope of improvements is suitably incorporated in the budgets and then presented to department HODs and CXOs.

d) The draft budget is then presented to CFO and MD & CEO for their approval.

e) The approved budget is later submitted to Board for their approval. The Board approved budget is then shared with cost centre heads, HODs and other process owners for necessary implementation and action and uploaded in the SAP ERP system for variance analysis during Performance reporting.

The guidelines shared by BIAL with the departments for preparing the budget are given below:

Table 33: Guidelines shared with the departments for budget preparation as per BIAL

Department	Guidelines
General	a) Budget files are prepared month wise, GL wise, cost centre wise and department wise. b) All revenue / expense budget needs to be justified with necessary supporting explanations.
Revenue	a) The new identified revenue streams have to be included in the revenue budget. b) In case of any reduction/decrease in revenue budget compared to previous year's performance, proper justification is to be provided.
Personnel Cost	a) Headcount shall be decided by the HR after discussions with respective cost centre heads / HODs / CXOs. b) HR team is required to provide salary costs in terms of cost centres month wise c) Staff activity expenses, recruitment expenses, education & training and staff transportation expenses are forecasted on a monthly basis with required analysis and justification
O&M expenses	a) AMC: All AMC contracts must be justified, reviewed and considered on a case to case basis. b) Spares: The spares budget should be for actual consumption of spares and not for procurement of spares. A separate cash flow budget for procurement of spares also needs to be provided. c) One-time initiatives: Only the critical / essential initiatives for business continuity are budgeted.
Consultancy & marketing expenses	a) Budget to be backed by details like purpose / description of expense & the time period during which services are to be obtained / expense to be incurred.

Department	Guidelines
	b) These expenses are further categorized as Existing / New and type of spend like Contractual, Mandatory and Discretionary.
Office cost and other expenses	This budget is to be supported with specific needs and timelines.
Travelling expenses	Domestic travel a) All domestic travel related to business / business conferences to be budgeted by respective cost centres. b) All training related travel to be budgeted by HR. International travel c) All international travel budget to be supported by purpose of travel. d) All business-related travel needs to be justified e) All training related travel will be budgeted by HR.
Special repair / Minor projects / Sustaining Capex	a) Budget to be backed with proper justification for investment. b) Capex investments resulting in revenue enhancement, cost savings, operational efficiency, safety compliance will only be considered. c) CRF raising time, Tentative procurement time and asset ready to use time is recorded. d) Line item wise, cost centre wise, investments is captured. e) Requirements are analysed based on – • Criticality to the business operation – High / Medium / Low • Investment value – ABC analysis • Type of asset – Aero / Non- Aero / Common f) As a general practice, unutilized approved CRF for which PRs are shared with Procurement and POs have not been raised have to be carried forward to next year (lapses at the end of six months)

3.1.2 Review Process as submitted by BIAL

The review process followed by BIAL post the budgeting includes a finance controlling team which is responsible for financial reporting on a monthly basis (Monthly performance report / MIS) which is submitted to the management & other stakeholders by 5th of the following month as per the reporting timelines defined at the start of the year.

Some other important details regarding the review process are summarized in the table below:

Table 34: Major details of the review process as per BIAL

Particulars	Details/Steps
Books closing	1. The accruals required for completion of revenue accounting and necessary provisioning for expenses are received from the respective process owners. 2. The Accounts team analyses the monthly financial performance with previous month's performance for increase/decrease of expenses in correlation with revenue for the month, impactful one-time transactions etc, impact of excess/shortage of expense provisions in earlier month(s) and any other reason and completes the necessary entries in ERP system.
Performance review	1. After the books closing and necessary inputs from Accounts team on actuals, the Finance Controlling team reviews the actual performance with Operations, Commercial and Maintenance department. 2. The detailed analysis for performance of respective businesses, for the MTD and YTD, as against budget / forecast are undertaken. 3. The Controlling team aanalyses the monthly financial performance with budgeted performance explaining reasons for increase/decrease of revenue value viz a viz traffic numbers, change in contractual terms with

Particulars	Details/Steps
	concessionaries - MAG, Revenue share etc, introduction of new airlines, new revenue stream etc, impact of waivers, one time transactions etc, impact of excess/shortage of provisions and any other reasons.
Performance review with cost center heads	After completion of MIS reporting to Management, controlling team reviews the Cost Centre's performance with the respective Cost Centre Heads on operating costs and initiatives underlying these expenses. The variance analysis also includes discussion on cost optimization / cost effective measures to be undertaken through process improvements.

3.2 Projections vs. Actual costs for Second Control Period

The comparison of the projected operational expenses by AERA as part of its 2nd control period (Table 49 of the Order no. 18/ 2018-19 for BIAL) and the actual operational expenses incurred by BIAL from FY 2017 to FY 2020 and forecasted operational expenditure for FY 2021 is given below:

Table 35: Projected aeronautical operational expenses of BIAL in second control period order of AERA vide order no. 18/2018-19

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
Personnel expenses	107.77	128.73	146.7	164.6	193.92	741.72
O&M	82.73	95.14	109.41	125.82	144.69	557.79
Lease Rent	13.03	13.42	13.83	14.24	14.67	69.19
Utility	40.64	42.77	48.88	51.4	60.32	244.01
Insurance	3.54	4.54	4.81	6.08	8.86	27.83
Rates & taxes (other than IT)	8.72	8.8	8.87	8.96	9.4	44.75
Marketing & Advertising	7.58	8.69	9.83	11.12	12.58	49.80
CSR	0	0	0	0	0	-
General admin costs	19.66	10.56	23.79	26.17	28.78	108.96
Total Operating expenses - Aero	**283.67**	**312.65**	**366.12**	**408.39**	**473.22**	**1,844.05**
Less: Disallowance - Interest / Hotel cost	-0.2	-0.28				
Concession fees	39.89	44.89	29.48	35.2	42.03	191.49
Total Operating expenditure - Aero	**323.36**	**357.26**	**395.6**	**443.59**	**515.25**	**2035.54**

*numbers are based on AERA Order no. 18/2018-19 for BIAL

The aeronautical operational expenditure submitted by BIAL as part of its MYTP submission is given below:

Table 36: Aeronautical operational expenditure submitted by BIAL as part of their MYTP submission

Operating expenses*	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Total
Personnel expenses	116.01	118.27	146.58	186.17	203.47	770.50
O&M	83.92	98.84	99.15	117.12	120.27	519.29
Lease Rent	13.01	13.42	13.83	14.24	14.67	69.17
Utility	37.72	42.64	34.68	36.45	33.08	184.58
Insurance	1.60	2.26	1.97	3.19	7.70	16.72
Rates & taxes (other than IT)	8.72	6.53	9.36	8.90	9.16	42.68
Marketing & Advertising	8.09	9.25	15.31	19.88	15.61	68.14
CSR	3.72	4.81	16.00	19.51	16.42	60.46

Operating expenses*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
General admin costs	26.59	33.65	28.69	32.74	36.01	157.68
Total operating expenses - Aero	**299.37**	**329.67**	**365.58**	**438.20**	**456.40**	**1,889.23**
Less: Disallowance - Interest/hotel cost						-
Concession fee	32.67	37.06	29.29	22.95	7.80	129.76
Waiver and bad debts	-	0.60	11.15	2.74	-	14.49
Total Operating Expenditure – Aero	**332.05**	**367.33**	**406.02**	**463.89**	**464.20**	**2,033.48**

*numbers for FY17-FY20 are based on actuals submitted by BIAL while numbers for FY21 are forecasted by BIAL

The difference in aeronautical operational expenditure submitted by BIAL and approved by AERA for the second control period is given below:

Table 37: Difference in operational expenditure approved by AERA in the second control period order and submitted by BIAL as part of their MYTP submission

Operating expenses*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Personnel expenses	(8.24)	10.46	0.12	(21.57)	(9.55)	(28.78)
O&M	(1.19)	(3.70)	10.26	8.70	24.42	38.50
Lease Rent	0.02	(0.00)	0.00	(0.00)	0.00	0.02
Utility	2.92	0.13	14.20	14.95	27.24	59.43
Insurance	1.94	2.28	2.84	2.89	1.16	11.11
Rates & taxes (other than IT)	(0.00)	2.27	(0.49)	0.06	0.24	2.07
Marketing & Advertising	(0.51)	(0.56)	(5.48)	(8.76)	(3.03)	(18.34)
CSR	(3.72)	(4.81)	(16.00)	(19.51)	(16.42)	(60.46)
General admin costs	(6.93)	(23.09)	(4.90)	(6.57)	(7.23)	(48.72)
Total Operating expenses - Aero	**(15.70)**	**(17.02)**	**0.54**	**(29.81)**	**16.82**	**(45.18)**
Less: Disallowance - Interest / Hotel cost	(0.20)	(0.28)	-	-	-	(0.48)
Concession fees	7.22	7.83	0.19	12.25	34.23	61.73
Waiver and bad debts	-	(0.60)	(11.15)	(2.74)	-	(14.49)
Total Operating expenditure - Aero	**(8.69)**	**(10.07)**	**(10.42)**	**(20.30)**	**51.05**	**1.58**

*numbers for FY17-FY20 are based on actuals while numbers for FY21 are forecasted

It has been observed that the actual operational expenditure is less than the forecasted operational expenditure (excluding CSR expenses).

Basis the revisions proposed in Section 2.5, the revised aeronautical operational expenses after considering adjustments is given below:

Table 38: Actual aeronautical operational expenses (after considering the adjustments of this study) of BIAL for the second control period

Operating expenses*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
Personnel expenses	107.37	110.43	137.41	174.29	187.78	717.27
O&M	83.03	98.97	96.93	117.09	120.09	516.11
Lease Rent	13.01	13.42	13.83	14.24	14.67	69.17
Utility	36.45	41.92	34.86	34.22	23.41	170.86
Insurance	1.57	2.22	1.94	3.25	5.64	14.62
Rates & taxes (other than IT)	8.72	6.55	9.36	8.90	8.29	41.82
Marketing & Advertising	7.90	9.02	12.93	10.77	6.07	46.68

Operating expenses*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY2021**	**Total**
CSR	2.14	4.22	6.98	6.85	5.21	25.41
General admin costs	23.40	27.34	17.28	19.90	24.09	112.02
Total Operating expenses - Aero	**283.59**	**314.08**	**331.52**	**389.51**	**395.26**	**1713.96**
Less: Disallowance - Interest / Hotel cost	0.00	0.00	0.00	0.00	0.00	0.00
Concession fees	39.63	44.62	38.11	32.85	13.21	168.42
Total Operating expenditure - Aero	**323.22**	**358.70**	**369.63**	**422.36**	**408.47**	**1882.38**

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

AERA had projected higher operating expenses in the second control period in comparison to the actual operating expenses on account of the commissioning of the Terminal 2 and other capital expenditure projects which have been shifted by BIAL to the third control period.

3.3 Cost reduction measures adopted by BIAL

BIAL has submitted that it is undertaking a BIAL 2.0 program which is aimed at redefining the workflow to achieve cost savings and productivity improvements. The program focusses on two key action areas, which are: quick win measures and long-term measures. These measures are given below:

3.3.1 Quick Win measures as per BIAL

a) Initiatives that can have a quick turnover with a focus into known specific areas

b) Direct & Indirect costs, Procurement process and policy, etc.

c) Review of contracts being renegotiated or expected to be awarded in the next 3-6 months:

d) Explore room for modifying procurement process and leveraging tools

e) Control consumables & common heads spread across all workstreams

3.3.2 Long term measures as per BIAL

a) Redesign to free up existing Resources

b) Relook all structural, contractual and process related measures

3.3.3 Cost reduction measures planned by BIAL under BIAL 2.0

a) Headcount and Personnel costs

   i. Freeze on all new hires for FY 2021
   ii. Increments not considered for FY 2021
   iii. Only rolled out new appointments are being on-boarded

b) Productivity improvements

   i. T2 related manpower requirements have been phased out over a period of 3 years
   ii. BIAL aims to achieve productivity improvements resulting in costs reduction (other Personnel costs) which has been factored in the submissions of MYTP for the third control period

c) Other Measures

   i. Reduction in travel costs with foreign travel reduced to nil
   ii. Most external consultancy contracts cancelled except for the required ones – legal, AERA, tax, audit etc.

iii. Events like Pinnacle awards, stakeholders' events being conducted on digital platforms
iv. All discretionary spends are cancelled

d) Key Liquidity initiatives

i. Seek government support to defer / waiver of concession payments, land lease rentals and property tax
ii. Explore additional working capital limits and opt for all moratorium offers by banks
iii. Customer dues – close monitoring to drive collections

e) BIAL has factored planned overall costs reduction of Rs. 25 crores in FY 2021

3.4 Trend analysis of inflation adjusted expenses

A trend analysis exercise is undertaken for the O&M expenses as per the below steps:

a) The nominal value of the expenses is taken which are measured in terms of actual expenses at that time

b) The real value of expenses is then derived by adjusting the nominal expenses for inflation

c) Wholesale Price Index (WPI) is used as the price index for this calculation which is available on the Office of Economic Advisor – GoI website

d) The aim is to ensure that the expenses are adjusted with the real increase or decrease over a period of time to ensure right comparison

The formula used for calculating the real expenses is mentioned below:

Real Expenses = ((Nominal expense of the current year) / (WPI of current year)) * (WPI of base year)

Trend analysis is undertaken to compare the O&M costs and understand the reasons behind the pattern/ trend over a period of time. For the trend analysis to yield the right results, the data should not have an outlier non-recurring event. However, for BIAL, FY 2021 has been severely affected by COVID-19 pandemic with a drastic reduction in passengers. The operational expenditure of FY 2021 cannot be directly compared with the previous years as the utilization of the asset has fallen while the airport might have taken some time for adjustment to the new normal. Therefore, the trend analysis has been limited from FY 2017 to FY 2020 for this study.

The index for the period FY 2017 – FY 2020 is as under:

Table 39: Index numbers used for calculating real expenses

Particulars	FY 2017	FY 2018	FY 2019	FY 2020
Index adjusted for base of FY 2017	100.0	103.0	107.3	109.1

Source: Office of Economic Advisor – Government of India

3.4.1 Personnel Cost

The trends in personnel cost for BIAL is given in the table below:

Table 40: Trends in personnel cost

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	CAGR	Total
Personnel cost	118.72	121.28	153.17	195.97	18.2%	589.14
Inflation index	100.0	103.0	107.3	109.1		
Inflated adjusted personnel cost	118.7	117.8	142.7	179.6	14.8%	558.76
Number of employees	811	881	1052	1227	14.8%	3971

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP

BIAL has given the following reasons for the increase in the headcount:

"Headcount increase was mandated due to increase in passenger traffic, commissioning of New south parallel runway during FY 2019-20 and the increased area of operations."

It is noted that BIAL's employee per million pax has decreased from FY18 to FY19 as can be seen from Figure 8. The increase in BIAL's employee from FY19 to FY20 is on account of the commissioning of the new south parallel runway.

The inflation adjusted personnel cost has grown at a CAGR of 14.5% while the number of employees has increased at a CAGR of 14.8% which is in line with the personnel cost growth.

The performance indicators for personnel costs are evaluated below:

Table 41: Analysis of personnel cost

Particulars	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**CAGR**	**Total**
Number of Employees	811	881	1052	1227	14.8%	3971
Inflation adjusted personnel cost	118.7	117.8	142.7	179.6	15%	558.76
Number of Passengers	22.88	26.91	33.31	32.36	12.25%	115.46
Number of ATMs	177271	196560	239395	230359	9.12%	843585
Employee cost/Pax	51.9	43.8	42.8	55.5	2.3%	
Employee cost/ATMs	6697	5993	5960	7795	5.2%	
Employees/Million Pax	35	33	32	38	2.3%	
Inflation adjusted salary/employee	0.15	0.13	0.14	0.15	0.0%	

*Based on data submitted by BIAL

The trends in employee cost/pax and employee cost/ATMs can be further understood from the below graphs:

Figure 6: Employee cost/Pax for BIAL

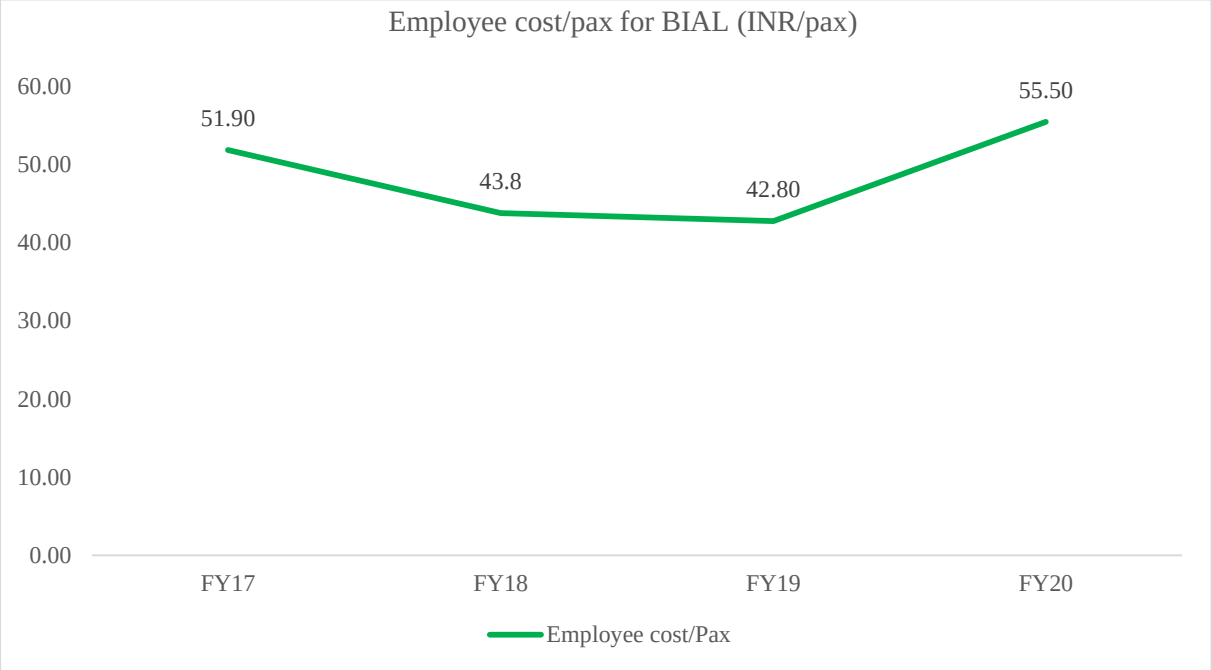


Figure 7: Employee cost/ATM

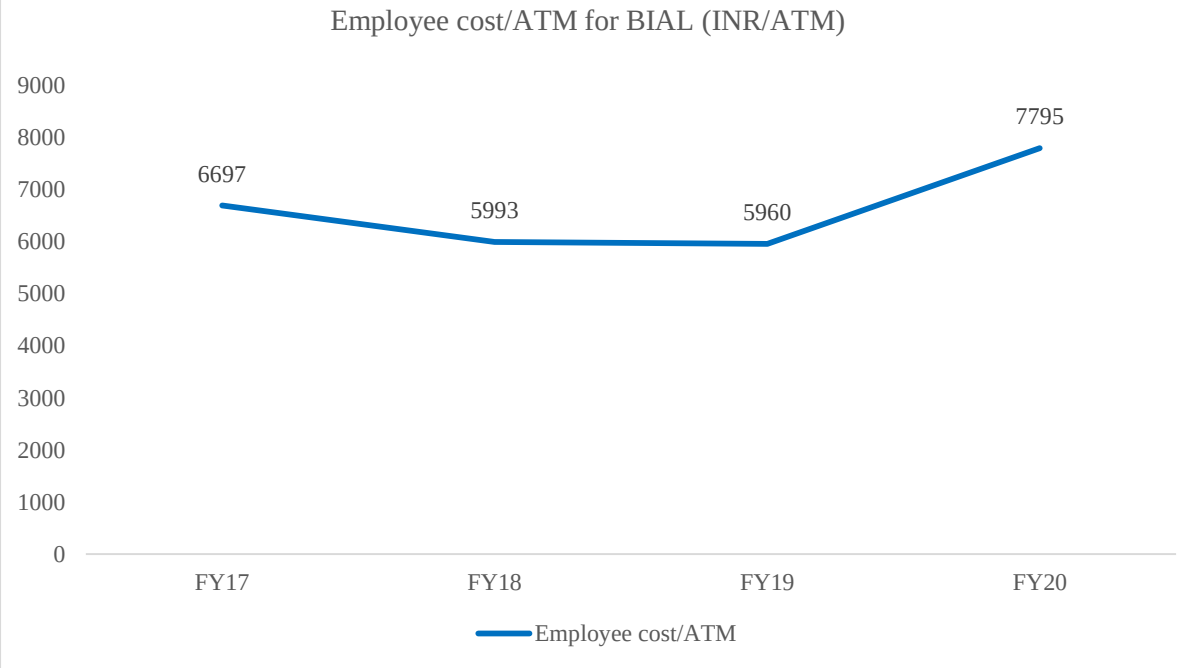
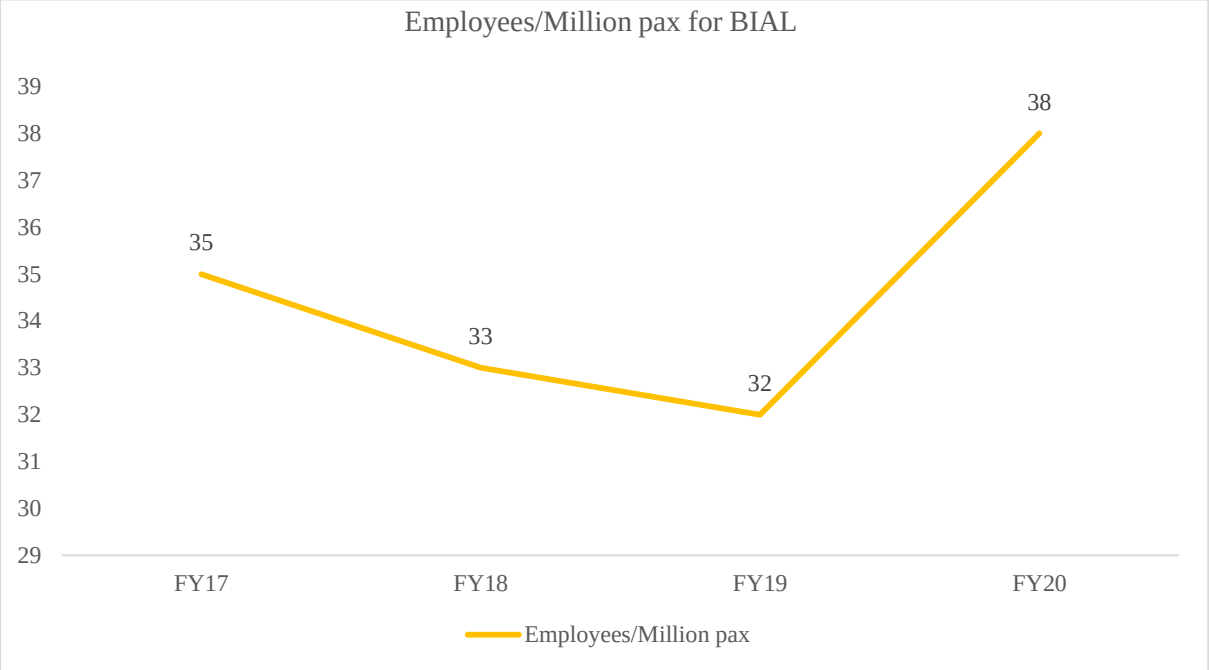


Figure 8: Employees/Million pax for BIAL



It is noted that the inflation adjusted salary per employee has remained constant from FY17 to FY20 indicating stable inflation adjusted salaries per employee at BIAL. The increase in the personnel cost during FY17 to FY20 is in line with the increase in the number of employees. BIAL has given the following reasons for the increase in the headcount:

"Headcount increase was mandated due to increase in passenger traffic, commissioning of New south parallel runway during FY 2019-20 and the increased area of operations."

It is also noted from the responses of BIAL that the increase in the number of employees in FY 2020 is mainly on account of the commissioning of the new south parallel runway in Dec, 2019 and increase in area of operations which has resulted in increase in employee/million pax, employee cost/ pax and employee cost/ ATM. However, the utilization of any new asset will take time to reach its threshold capacity and therefore, in the initial years (such as FY20) it is expected to result in higher cost/ pax which will gradually fall due to increase in utilization levels.

It is noted that the FY21 was affected by COVID-19 pandemic but the projected personnel cost for FY21 has increased from FY20. BIAL has provided rationale for increase in personnel cost in FY21 as follows: *"certain employees joined during the year in FY20 and hence the full year cost is considered for projections in FY21 and offers already rolled out have been honoured by BIAL"*.

3.4.2 Operations & Maintenance (O&M) expenses

O&M expenses of BIAL comprise of the repair and maintenance cost of the airport. Repair and maintenance cost is generally a function of the assets requiring the maintenance and new assets require less maintenance cost compared to the older assets. Further, the usage of the asset also directly affects the repair and maintenance.

The O&M expenses as a % of gross block are evaluated. The trend in O&M expenses for BIAL is given below:

Table 42: Trend analysis of the inflation adjusted O&M expenses

Particulars*	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**CAGR**	**Total**
O&M expenses – as per BIAL (in INR Cr.)	99.29	116.74	117.27	138.58	11.8%	471.88
Inflation index	100	103	107	109		

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	CAGR	Total
Inflation adjusted O&M expenses	99.3	113.4	109.2	127	8.5%	448.90
Gross Block (Net of grants)	3877.5	4044.2	4203.1	6228.5	17.1%	18,353.4
O&M expenses as % of gross block	2.6%	2.9%	2.8%	2.2%	-4.6%	

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP

The O&M expenses are increasing at a CAGR of 11.7% while the O&M expenses as a % of gross block are also increasing from FY 2017 to FY 2019 and later reducing in FY2020. Clarification was sought from BIAL on the same. BIAL submitted the following response:

"Costs relating to Operations & Maintenance are due to increased utilization of the single Terminal and the single Runway beyond the planned capacities due to increase in passenger and ATM traffic witnessed in Bangalore during this period of FY 2016-17 to FY 2019-20. The Central Minimum Wages released by Ministry of Labour & Employment vide Notification dated 20th Apr 2017, the revision resulting into an increase of Minimum Wages (Basic & VDA) by 40% to 65% depending on the nature of work."

Based on BIAL's responses, the O&M expenses as a % of gross block has increased from FY 2017 to FY 2019 due to increase in minimum wages and increased utilization of the terminal and single runway. The increase in O&M expenses in the FY 2020 is on account of the commissioning of the new south parallel runway. The O&M expenses as a % of assets has decreased in FY 2020 due to increase in the asset base.

3.4.3 Housekeeping expenses

The breakup of housekeeping expenses as per BIAL is given below:

Table 43: Housekeeping expenses incurred by BIAL (FY 2017 – FY 2020)

Particulars*	Area	FY 2017	FY 2018	FY 2019	FY 2020	Total
Adityavani facility services private limited	HK - VIPT & Lounges	3.4	4.9	3.4	4.1	15.7
BVG India Ltd	HK - PTB Domestic & Int	4.1	3.4	1.4	0.0	9.0
Faber Sindoori Management	HK - PTB Domestic Area	0.0	0.0	2.4	4.3	6.7
Karnataka Commercial & Industrial	HK - Landside & Buildings	2.9	4.6	1.6	0.0	9.1
Quess Corp Limited	HK - PTB Intl Area	0.0	0.0	2.0	3.6	5.6
VAR Facility Management	HK - Airside	1.1	1.2	3.8	5.5	11.6
Total		11.5	14.1	14.7	17.6	57.8

*Based on data submitted by BIAL

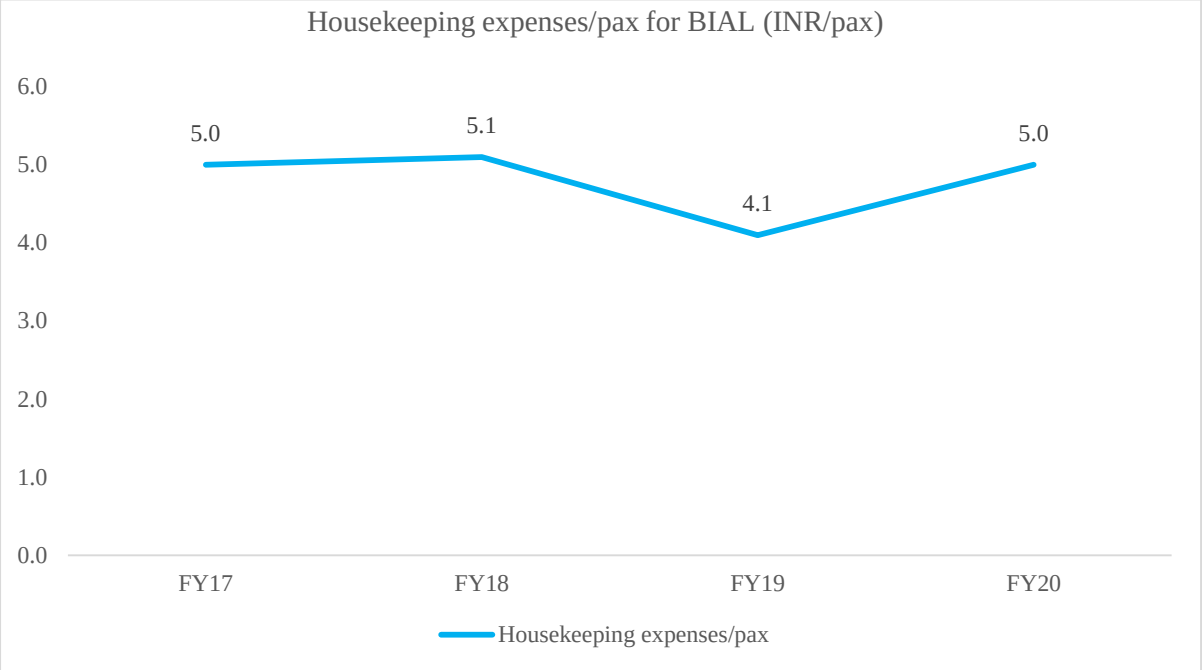
The trends in housekeeping expenses can be seen below:

Table 44: Trends in housekeeping expenses

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	Total
Housekeeping expenses	11.5	14.1	14.7	17.6	57.8
Inflation index	100.0	103.0	107.3	109.1	
Inflation adjusted housekeeping expenses	11.5	13.7	13.7	16.1	54.9
Number of passengers	22.88	26.91	33.31	32.36	115.5
Housekeeping expenses/pax	5.0	5.1	4.1	5.0	

*Based on data submitted by BIAL

Figure 9: Trends in Housekeeping expenses/pax



Primary driver of the housekeeping keeping expenses are the airport area, manpower salaries and passenger traffic. BIAL's housekeeping expenses/ pax have remained approximately constant from FY 2017 to FY 2020.

3.4.4 Marketing & Advertisement expenses

The marketing and advertisement expenses constitute marketing of the terminal, events, airline launch events etc. To promote Bangalore as a gateway to South India, BIAL has undertaken marketing & advertisement for the airport.

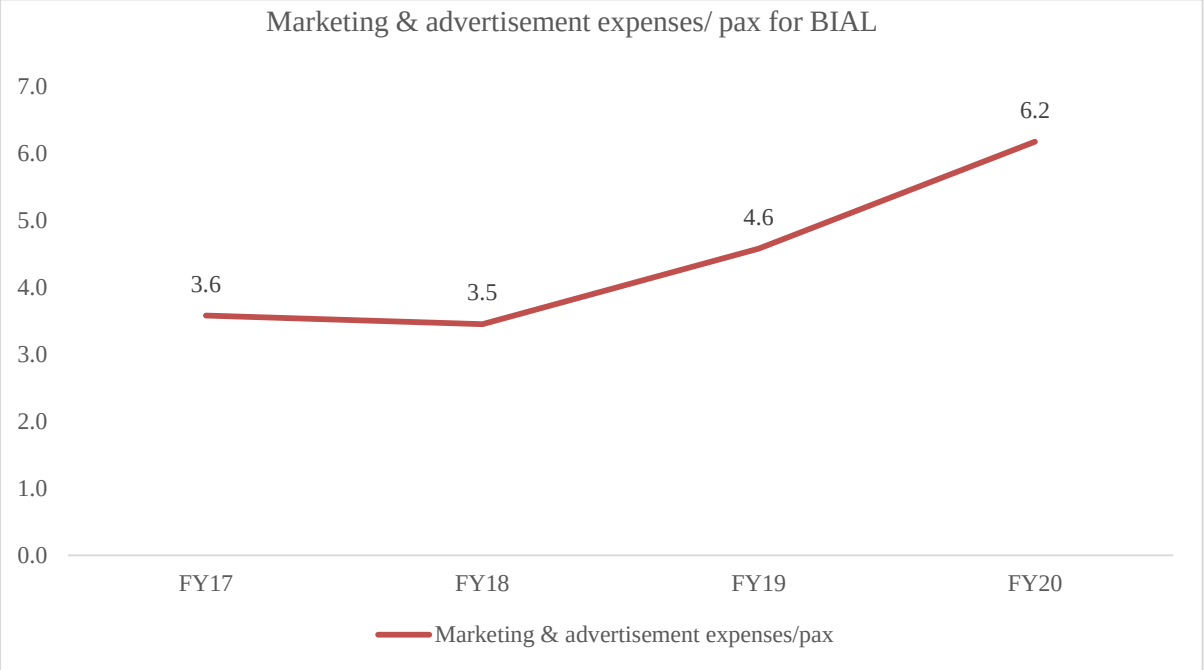
The trend analysis of marketing and advertisement expenses are shown below:

Table 45: Trend in Marketing & advertisement expenses

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	CAGR	Total
Marketing & Advertisement expenses	8.20	9.55	16.37	21.83	38.6%	55.95
Inflation index	100.0	103.0	107.3	109.1		
Inflation adjusted marketing & advertisement expenses	8.2	9.27	15.25	20.00	34.6%	52.73
Number of Passengers	22.88	26.91	33.31	32.36	12.2%	115.5
Marketing & advertisement expenses/Pax	3.58	3.45	4.58	6.18		

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP after adjustment of collection costs

Figure 10: Marketing and advertisement expenses/pax



The marketing and advertisement expenses have grown at a CAGR of 38.4% for the period FY17 to FY20. On analysing the expenses submitted by BIAL, it was observed that more than 85% of the expenses are attributable to two major heads namely Aviation marketing and contracts and BDMS – Marketing. The Aviation marketing and contracts constitutes roadshows, pinnacle event, airline route launches, sponsorships and travel expenses while BDMS marketing constitute branding, brochures, event management and social and digital marketing. Increased spend on branding and marketing of the airport has resulted in increased cost/pax over these years. BIAL has submitted the below justification for the increase in the cost:

"Out of the total cost, we have incurred the following Event related cost (forming part of Marketing & Advertisement expenses) :

- *FY 17-18 – Rs 2.27 crs*
- *FY 18-19 – Rs 7.42 crs*
- *FY 19-20 – Rs 5.30 crs*

1. In FY18, Rs 1.4 crs was spent towards Pinnacle and Season of Smiles celebrations

2. In FY19, the major expenses are towards -

a) 10th anniversary of Airport opening and hence we have spent around Rs 3.3 crs towards this celebrations. This was a "one-off" expense incurred by BIAL. We had organized an event, which had performances by artistes, music concerts and workshops, besides giving commerative gifts to its employees.

b) An amount of Rs 16.5 lakhs was incurred towards launching the company's vision, mission and values. We had not formally created such a platform previously and hence for the first time, we had created this for dissemination to the external world and to BIAL employees.

c) Spent an amount of Rs 1.72 crs on annual Pinnacle awards.

BIAL Pinnacle awards are organised to recognize & reward various KIAB partners who have contributed to KIAB success and achieved distinction in their areas of operations. Every success and milestone this airport has achieved is a collective showcase of passion and perseverance by our

partners who have contributed towards creating an unparalleled travel experience at KIAB. All the business partners are eligible for these awards including Airlines, Commercial Concessionaires, Operations Concessionaires and Authorities working at BLR Airport

d) Around Rs 1 crs was spent towards 'Season of Smiles" :

The calendar year beginning is celebrated at KIAB as 'Season of Smiles' festival. The airport, in collaboration with its stakeholders, will do a bright and festive look, setting the stage for varied activities and performances in contribution to the community. Through tie ups with city based associations, we will bring alive the festive spirit surrounding Christmas, New Year, Pongal and Sankranti. All through this time, passengers can participate in lucky draw and win daily prizes and mega prizes. The Season of Smiles encourages city's growing musical talent by giving them a platform to perform at the airport. In December they will elevate spirits at the airport with festive carols and songs.

e) Dussehra is an important state festival and we have incurred Rs 37 lakhs approx. in regards to the celebration of the same which represents of the same

3. In FY20, the major expenses are towards -

- *Around Rs 2.1 crs was spent towards Pinnacle Awards*
- *Around Rs 1.3 crs was spent towards Season of Smile campaign.*
- *The details of the Pinnacle awards and Season of Smile campaign are already explained in the FY 19 section*
- *Rs 47 Lakhs towards Dussehra celebrations*
- *Rs 27 lakhs towards Passenger Experience Management Group of IATA"*

It is noted from BIAL's response that it has incurred a one-time expense of INR 3.30 cr. in FY 2018-19 for 10th anniversary celebration. However, BIAL has not provided the details to justify the increase in the marketing and advertisement expenses in FY 2018-19 and FY 2019-20. Therefore, it is proposed to consider the marketing and advertising expenses of FY 2018-19 and FY 2019-20 for regulatory purposes based on the growth in traffic and inflation. Accordingly, the marketing and advertising expenses considered for the study is given in the table below:

Table 46: Revision of the marketing and advertising expenses considered in the study

Particulars	**Ref**	**2017**	**2018**	**2019**	**2020**	**Total**
Marketing and advertising expenses (excluding collection cost) - as per audited financial statements	**A**	**2.93**	**3.24**	**9.80**	**14.56**	**30.53**
Revised variable M&A	B = MIN(A, B_{t-1}*(1+E)*(1+F))	2.93	3.24	4.17	4.12	14.46
Revised one-time M&A - 10th anniversary celebrations	C			3.30		3.30
Total revised M&A (excluding collection cost) as considered in the study	**D = B+C**	**2.93**	**3.24**	**7.47**	**4.12**	**17.76**
Pax traffic growth	E		17.6%	23.8%	-2.9%	
Inflation	F		3.0%	3.9%	1.9%	
Impact of revision on total M&A	**G = D-A**	**0.00**	**0.00**	**-2.33**	**-10.44**	**-12.77**

**Costs for FY17 to FY20 based on the audited financial statements based on IGAAP

3.4.5 General Administration expenses

The general administration expenses constitute Consultancy & legal expenses, travel expenses and office costs. The trends in general administration expenses can be seen in the table below:

Table 47: Trends in general administration expenses

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	CAGR	Total
Consultancy & Legal	10.2	16.2	10.9	14.6	12.7%	51.9
Travel costs	5.5	3.6	4.8	5.7	0.9%	19.5
Office costs	11.2	14.7	14.5	15.6	11.8%	56.0
Total General Admin costs	26.8	34.4	30.2	35.8	10.1%	127.4
Inflation index	100.0	103.0	107.3	109.1		
Inflation adjusted general admin costs expenses	26.84	33.45	28.16	32.85	7.0%	121.3
Number of Passengers	22.88	26.91	33.31	32.36	12.2%	

*Costs for FY17 to FY20 based on the numbers submitted by BIAL since the audited financials did not have the breakup

It is observed that the General admin costs increased at a CAGR of 10.1% for the period FY17 to FY20. Clarification was sought from BIAL on the same. BIAL responded stating that this increase is reasonable and due to the size of the airport and passenger traffic. It is observed that the inflation adjusted general administration expenses have increased at a lower CAGR than the passenger traffic.

3.4.6 Utility expenses

Utility expenses include the power and water expenses which is dependent on the terminal capacity, airfield capacity and passenger movement. With passenger traffic growing at a CAGR of 12.2% between FY 2017 – FY 2020, the utility expenses are expected to increase due to increased utility consumption in the terminal.

The trends in utility expenses are given in the table below:

Table 48: Trends in utility expenses

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020
Power Costs				
Power Consumption (A)	74,893,946	76,251,051	78,438,998	80,978,764
Power Recovery (B)	29,264,851	30,551,081	32,339,230	37,823,827
Net Consumption (C=A-B)	**45,629,095**	**45,699,970**	**46,099,768**	**43,154,937**
Power expenses (D)	64.9	69.8	60.9	61.2
Power Recovery (E)	29.7	30.3	30.8	30.3
Power utility cost (F = D-E)	**35.2**	**39.5**	**30.1**	**30.9**
Water Costs				
Non - potable Water Consumption (G)	237,905	360,000	229,500	134,900
Potable Water Consumption (H)	524,640	638,610	788,810	827,247
Total consumption (I = G + H)	**762,545**	**998,610**	**1,018,310**	**962,147**
Less: Recoveries J	330,933	389,122	380,631	382,777
Net Consumption (in KL) (K = I – J)	**431,612**	**609,488**	**637,679**	**579,371**
Water expenses (L)	5.80	6.80	8.10	9.00
Water Recovery (M)	3.3	3.6	3.5	3.5
Water utility cost (N = L -M)	**2.5**	**3.2**	**4.6**	**5.5**
Total Utility cost (O = F + N)	**37.70**	**42.70**	**34.70**	**36.40**
Inflation Index	100	103	107	109

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020
Inflated adjusted power cost	37.7	41.5	32.3	33.4
Inflated adjusted water cost	2.5	3.1	4.3	5.0
Inflated adjusted utility cost	40.2	44.6	36.6	38.4
Number of Passengers	22.88	26.91	33.31	32.36
Power cost per pax	16.5	15.4	9.7	10.3
Water cost per pax	1.1	1.2	1.3	1.6
Power consumption/pax	2.0	1.7	1.4	1.3
Water consumption/pax	0.02	0.02	0.02	0.02

*Based on data submitted by BIAL

The power cost/pax & water cost/pax and power consumption/pax and water consumption/pax are evaluated.

Figure 11: Power cost and water cost/pax for BIAL

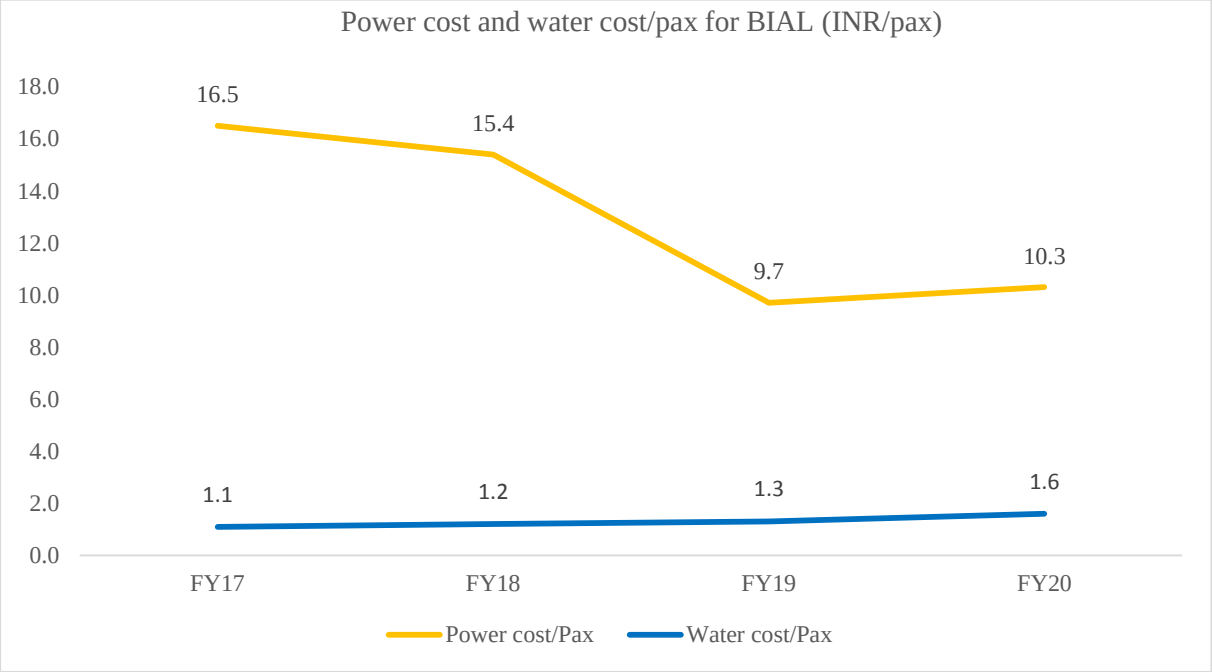


Figure 12: Power consumption/pax for BIAL

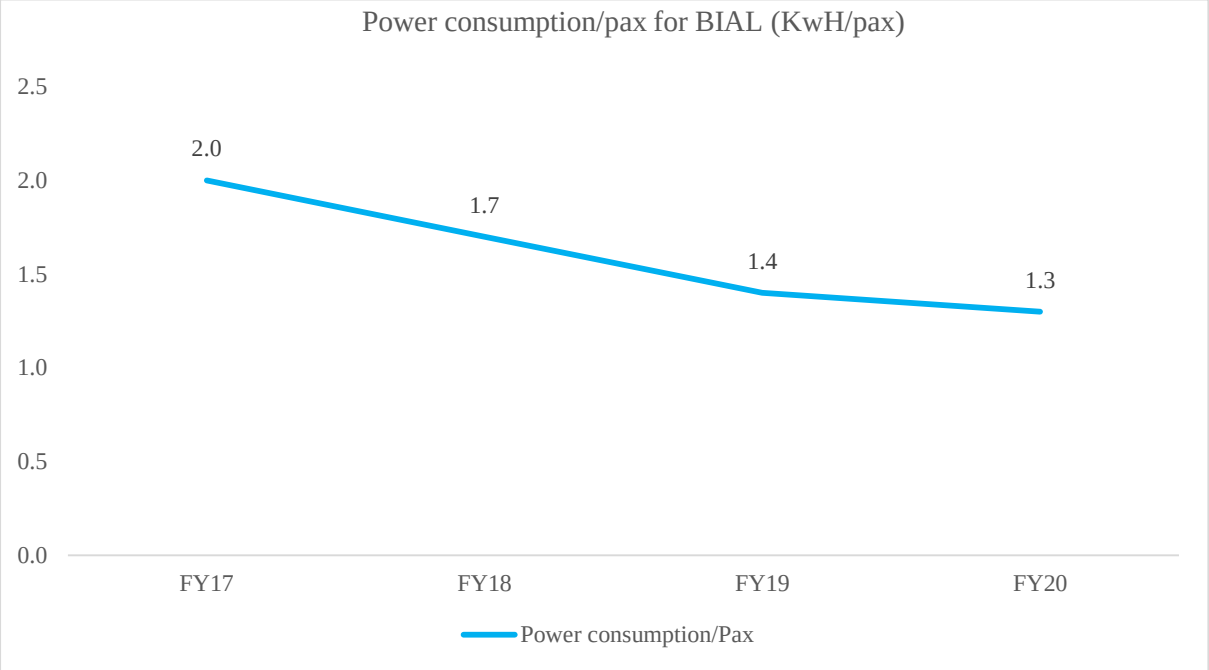
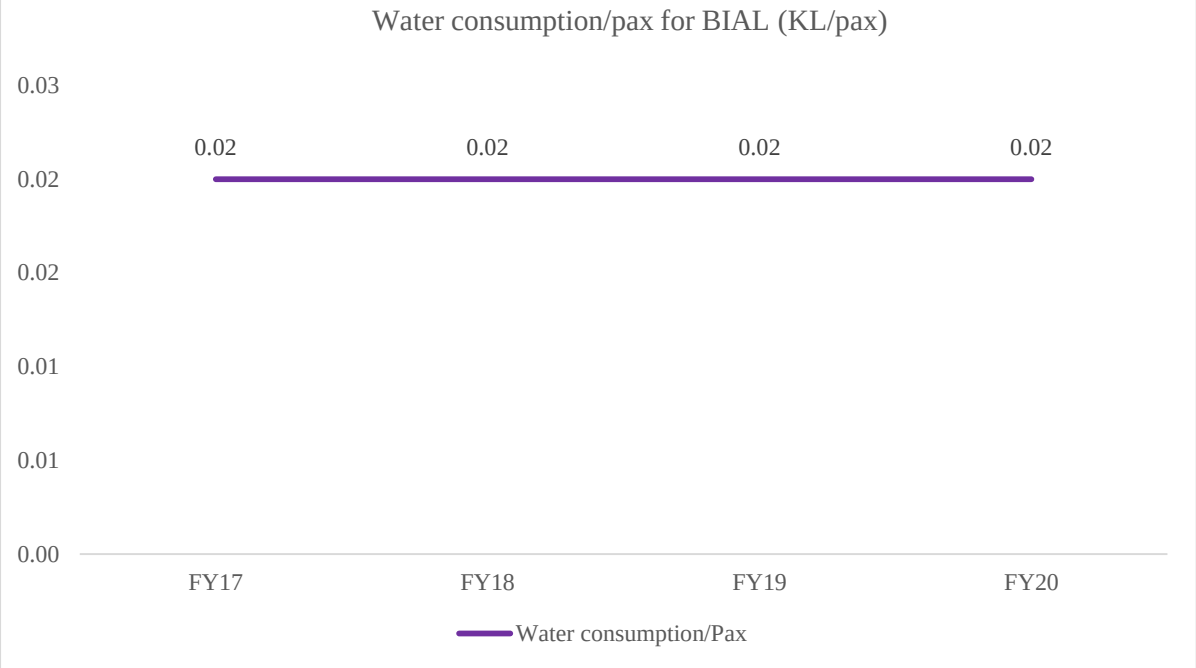


Figure 13: Water consumption/pax



The power and water consumption per pax has shown a decreasing trend from FY 2017 to FY 2020 mainly due to increase in passenger traffic at the airport.

3.4.7 Insurance cost

The insurance expenses include the premium paid by BIAL for Industrial all risk (IAR), Terrorism policy, motor policy, Airport operator liability (AOL) etc. The details of insurance expenses as per BIAL is given in the table below:

Table 49: Insurance expenses details as per BIAL

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	CAGR	Total
Industrial All Risks Policy #	0.74	1.57	1.21	2.40	48%	5.91
Airport Operator Liability	0.62	0.54	0.41	0.60	-1%	2.17
Terrorism Policy	0.29	0.24	0.37	0.40	11%	1.30
Motor Policy	0.10	0.15	0.20	0.13	9%	0.58
Others	0.01	0.01	0.00	0.02	37%	0.03
Total	1.76	2.50	2.19	3.55	26%	10.00

*Based on data submitted by BIAL #Industrial All Risks mainly includes Mega risk, All risk, Money, Fidelity, PL Act, Plate Glass, CAR/EAR & D&O renewal

The trends for insurance cost are given in the table below:

Table 50: Trends in Insurance cost

Particulars*	FY 2017	FY 2018	FY 2019	FY 2020	CAGR	Total
Insurance expenses	1.76	2.50	2.18	3.53	26.1%	9.97
Inflation index	100.0	103.0	107.3	109.1		
Inflation adjusted insurance expenses	1.76	2.43	2.03	3.23	22.5%	9.45
Gross Block (Net of grants)	3877.5	4044.2	4203.1	6228.5	17.1%	18353.4
Insurance expenses as % of gross block	0.05%	0.06%	0.05%	0.06%		

*Costs for FY17 to FY20 based on the audited financial statements based on IGAAP

It is observed that the Insurance expenses have increased at a CAGR of 26.3% from FY17 to FY20. Clarification was sought from BIAL regarding the same. BIAL gave the following response:

"General Insurance Corporation (GIC Re), the country's national reinsurer, has increased its premiums for the insurance. The General insurance companies have moved towards risk-based pricing which have led to increase in premiums. This is because overall, the industry has seen a lot of catastrophic events, risk events and there were a lot of losses."

We understand that the increase in insurance cost is due to the move towards risk-based pricing leading to an increase in premium.

3.5 Chapter Summary

The trend analysis of the various components of the inflation adjusted operational expenditure is undertaken for the period from FY 2017 to FY 2020. Due to increase in the passenger traffic and addition of new facilities such as new south parallel runway, the operational expenditure has increased over this period. The following is noted on the operational expenditure of BIAL in the second control period:

a) Personnel cost - Personnel cost has increased from FY18 to FY19; however, it is noted that the employee cost per pax has seen a decreasing trend from FY 2018 to FY 2019 due to increase in the passenger traffic. The increase in the personnel cost from FY19 to FY20 is on account of the commissioning of the new south parallel runway in December 2019 and increase in the area of operations. Due to capacity addition by BIAL, the employee cost per pax has increased which is expected to gradually fall with the increase in utilization levels. The increase in the personnel cost from FY20 to FY21 is on account of the full year cost of the employees who joined in FY20 as well as the induction/hiring of the employees who were already given offers by BIAL.

b) Operational and maintenance (O&M) expenses - The O&M expenses as a % of gross block has increased from FY 2017 to FY 2019 due to increase in minimum wages and increased utilization of the terminal and single runway. The increase in O&M expenses in the FY 2020 is on account of the commissioning of the new south parallel runway. The O&M expenses as a % of assets has decreased in FY 2020 due to increase in the asset base.

c) Marketing and advertising (M&A) expenses – More than 85% of the expenses are attributable to two major heads namely Aviation marketing and contracts and BDMS – Marketing. The Aviation marketing and contracts constitutes roadshows, pinnacle event, airline route launches, sponsorships and travel expenses while BDMS marketing constitutes branding, brochures, event management and social and digital marketing. Increased spend on branding and marketing of the airport has resulted in increased cost/pax over these years. BIAL has not provided the justification for the increase in marketing and advertising costs. Therefore, the marketing and advertising expenses have been considered as per Table 46 based on the growth in passenger traffic and inflation.

d) Housekeeping expenses – Housekeeping expenses/ pax have remained approximately constant from FY 2017 to FY 2020.

e) General administration expenses - The inflation adjusted general administration expenses have increased at a lower CAGR than the passenger traffic.

f) Utility expenses - The power and water consumption per pax has shown a decreasing trend from FY 2017 to FY 2020 due to increase in the passenger traffic.

The trend in costs with respect to growth in traffic and capacity augmentation indicate that BIAL has maintained the efficiency in operational costs during the second control period.

4 BENCHMARKING OF COMPARABLE DOMESTIC AIRPORTS

A benchmarking analysis has been undertaken based on the documents available in public domain. Internal benchmarking or self-benchmarking is the analysis of the airport's own operational performance over a period of time

4.1 Internal Benchmarking

The internal benchmarking for BIAL was undertaken by analysing the following expenses undertaken by BIAL over a period of time (FY 2012 – FY 2021):

a) Personnel expenses
b) Total administrative and general expenses
c) Printing and stationery expenses
d) Travelling and conveyance
e) Communication costs
f) Advertisement
g) Other admin expenses
h) Total terminal maintenance/operating expenses
i) Utility cost
j) Repair & maintenance cost
k) Housekeeping and manpower services
l) Insurance

The trends based on data given by BIAL for Personnel expenses, terminal operating cost and administrative and general expenses is shown in the table below:

Table 51: Administrative & general, personnel and terminal operating expenses as submitted by BIAL

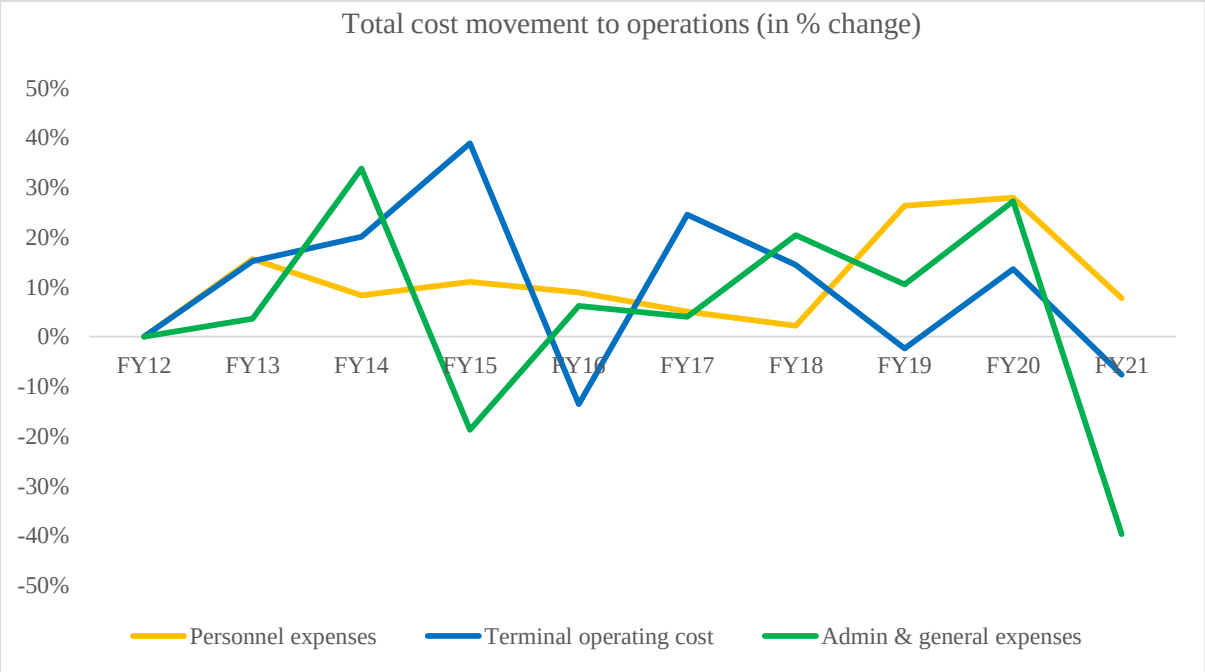
Particulars *	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**CAGR (FY12-16)**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**Total**	**CAGR (FY17-20)**	**CAGR (FY12-20)**
Control Period	First Control Period						Second Control Period							
Personnel Expenses	75	86	94	104	113	10.92%	119	121	153	196	211	1,272	18.18%	12.82%
Operations & Maintenance	39	51	50	58	62	11.82%	99	117	117	139	134	865	11.75%	17.03%
Concession Fee	25	25	27	37	46	15.96%	54	62	59	54	19	408	-0.17%	9.77%
Lease Rent	6	6	6	6	12	16.71%	13	13	14	14	15	106	3.06%	10.61%
Utilities	22	23	25	36	40	16.18%	39	44	37	38	26	330	-1.11%	7.05%
Insurance	2	2	2	2	2	0.57%	2	3	2	4	6	27	26.11%	7.11%
Rates & Taxes	1	0	13	27	13	101.58%	9	7	9	9	8	96	0.68%	35.00%

Particulars *	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**CAGR (FY12-16)**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**Total**	**CAGR (FY17-20)**	**CAGR (FY12-20)**
(other than IT)														
Marketing and Advertising	4	5	11	6	8	14.53 %	8	10	16	22	7	97	38.59 %	22.06 %
Waivers & Bad Debts	1	48	-	-	2	10.91 %	-	1	11	3	-	65		10.45 %
CSR	-	-	-	-	1		4	5	16	20	13	58	73.77 %	
OMSA Fee	8	7	10	15	3	-23.75 %	-	-	-	-	-	42		
Total General Administration Costs	22	22	25	23	24	2.19%	25	30	27	34	27	259	11.06 %	5.51%
Total Operating Expenses	206	276	263	315	325	12.06 %	371	412	463	530	465	3,626	12.66 %	12.55 %

*Costs for FY16-FY20 based on BIAL's business plan, FY17-FY20 based on audited financials statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

The trends can be seen from the below graphs:

Figure 14: Total cost movement to operations



It is difficult to interpret the above trend without analysing the root cause i.e. trend / growth in passenger and air traffic growth. This will help us to better understand the reasons for change in total cost to the movement of operations. The analysis of the same is given in the next section.

4.1.1.1 Passenger traffic and Air traffic movements

The passenger and air traffic movements at BIAL has shown an increasing trend over the years as shown in the tables below:

Table 52: Passenger traffic at BIAL

Passenger Traffic (In Mil)	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	Total	CAGR#
Domestic	10.3	9.5	10.2	12.5	15.6	19.3	23.1	28.8	27.8	10.48	167.6	13%
International	2.4	2.5	2.6	2.9	3.4	3.6	3.8	4.5	4.6	0.46	30.7	9%
Total	12.71	11.99	12.87	15.40	18.97	22.88	26.91	33.31	32.36	10.94	198.3	12%

*Number for FY12-FY16 are as per BIAL's business plan, FY17-FY20 based on AAI traffic news and FY21 numbers are forecasted based on actuals till February 2021

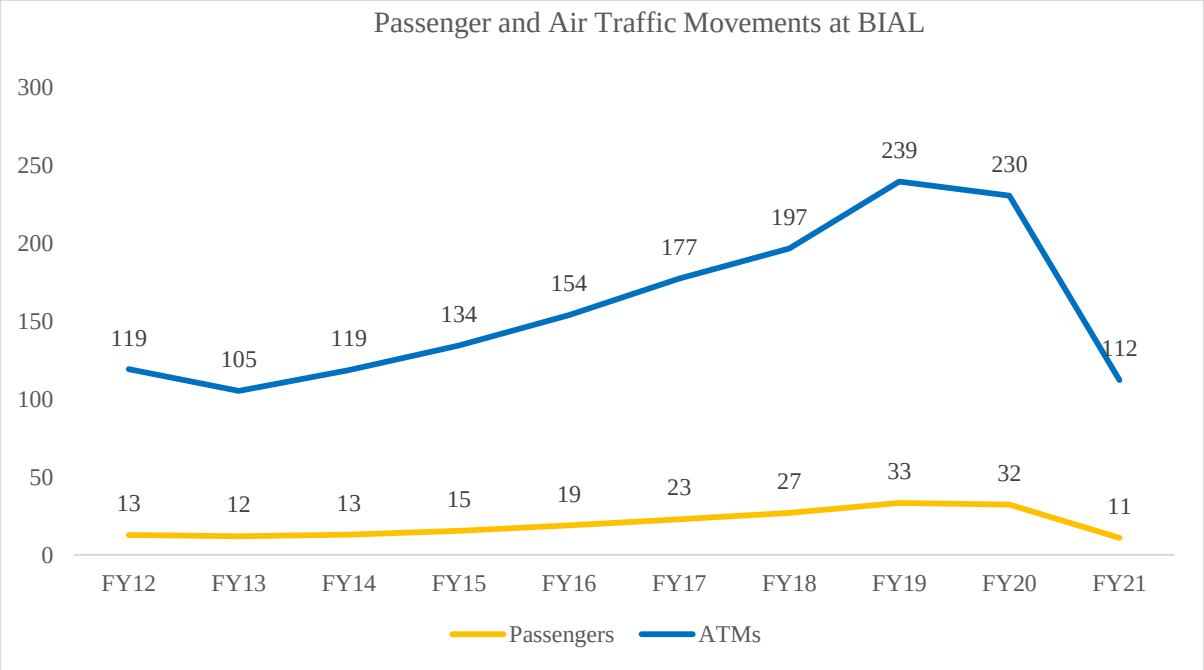
Table 53: ATM as submitted by BIAL

ATMs (In 000')	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	Total	CAGR#
Domestic ATMs	101	87	99	113	131	153	171	210	200	101	1,366	9%
International ATMs	18	18	19	21	22	24	26	30	30	11	220	7%
Total ATMs	18	18	19	21	22	24	26	30	30	11	1,587	9%

*Number for FY12-FY16 are as per BIAL's business plan, FY17-FY20 based on AAI traffic news and FY21 numbers are forecasted based on actuals till February 2021 #FY12-FY20

The trends can be better understood from the passenger and air traffic movements graphs given below:

Figure 15: Trends in passenger and ATMs at BIAL



The growth of total cost of BIAL versus the growth in cost per pax and per ATM at BIAL is compared below. The following table shows the comparison:

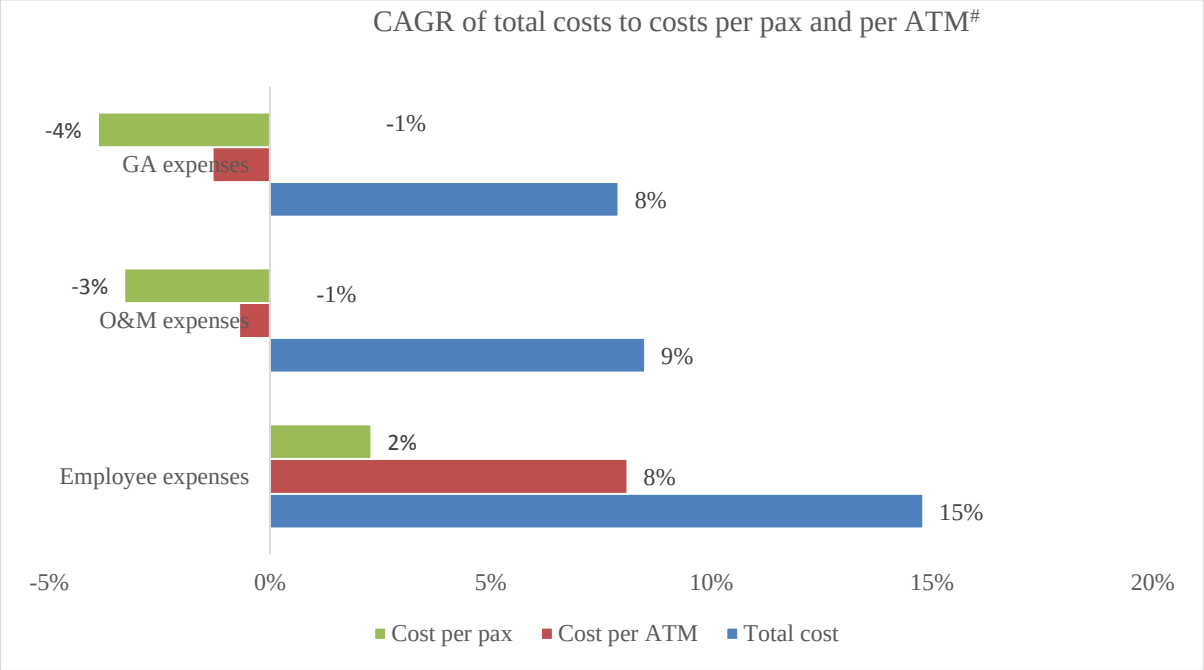
Table 54: Growth in total cost versus growth in cost per pax and per ATM inflation adjusted

Particular	FY	FY	FY	FY	FY	CA	FY	FY	FY	FY	FY	Tot	CA	CA

s*	12	13	14	15	16	GR (FY 12-16)	17	18	19	20	21	al	GR (FY 16-20)	GR (FY 12-20)
	First Control Period						Second Control Period							
Employee expenses	75	86	94	104	113	11%	119	121	153	196	211	1,272	18%	13%
WPI		100	105	107	103		104	107	112	114	118			
Inflation - Employee expenses	75	86	89	97	110	10%	114	113	137	172	179	1,172	15%	11%
O&M expenses	39	51	50	58	62	12%	99	117	117	139	134	865	12%	17%
WPI		100	105	107	103		104	107	112	114	118			
Inflation - O&M expenses	39	51	47	54	60	11%	95	109	105	122	114	682	9%	15%
General admin expenses	22	22	26	24	24	2%	25	30	27	34	27	234	11%	6%
WPI		100	105	107	103		104	107	112	114	118			
Inflation - GA expenses	22	22	24	23	24	2%	24	28	24	30	23	221	8%	4%
Cost / Pax - Employee	59	72	69	63	58	0%	50	42	41	53	164	507	2%	-1%
Cost / ATM - Employee	6,505	8,577	8,210	8,018	7,592	4%	6,873	6,300	6,504	8,689	30,250	67,268	8%	4%
Cost / Pax - O&M	31	42	37	35	32	1%	42	40	31	38	104	328	-3%	2%
Cost / ATM - O&M	3,431	5,061	4,133	4,204	4,030	4%	5,506	5,642	4,444	5,393	16,277	41,843	-1%	6%
Cost / Pax - GA	17	19	19	15	12	-8%	10	10	7	9	21	119	-4%	-8%
Cost / ATM - GA	1,912	2,232	2,147	1,755	1,585	-5%	1,365	1,447	1,034	1,312	3,252	14,790	-1%	-5%

*Costs for FY16-FY20 based on BIAL's business plan, FY17-FY20 based on audited financials statements based on IGAAP; costs for FY21 based on the non-audited data of Apr 2020 to Dec 2020 and forecast for Jan 2021 to March 2021

Figure 16: CAGR of total costs to CAGR of cost per pax and cost per ATM



#Prepared based on data for the period FY17-FY20

4.1.1.2 Proportion of Domestic and International Traffic

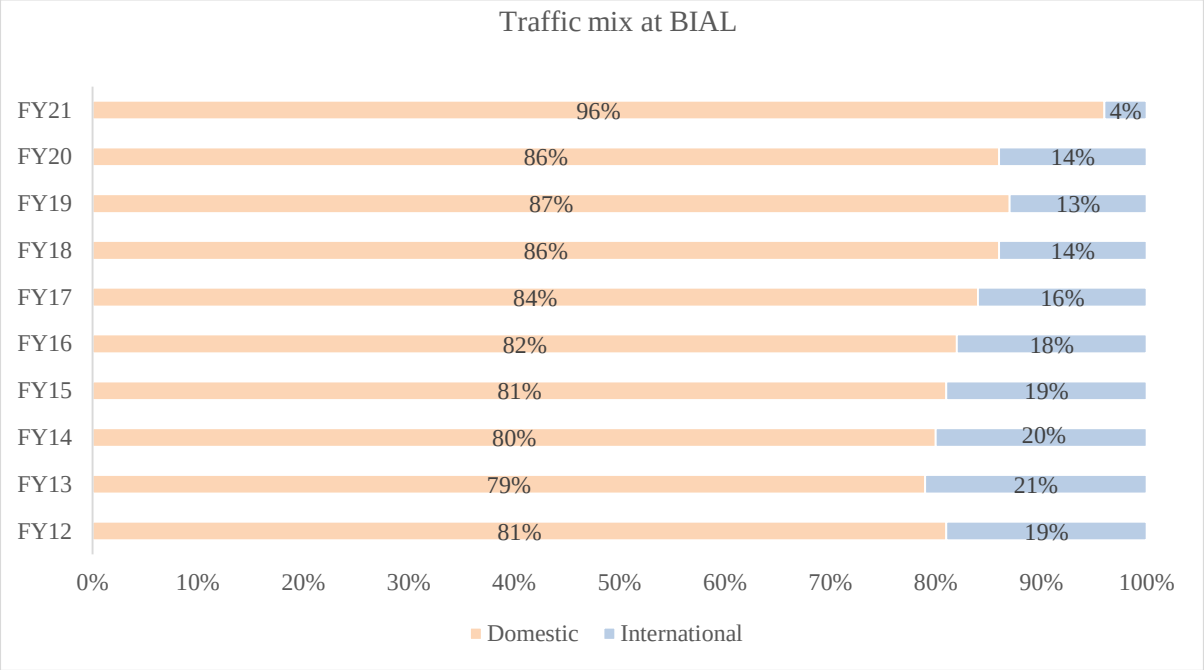
It is also important to look at the mix of traffic at BIAL. Domestic passenger movement is generally low cost and leads to a higher gate utilisation while the international passenger movement involves relatively high cost and amenities and lower gate capacity utilisation. Therefore, high international passenger traffic will lead to higher cost of operations. The proportion of domestic and international passengers availing services at BIAL are given in the table below:

Table 55: Proportion of domestic and international passengers

Passenger Category*	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**
Domestic	81%	79%	80%	81%	82%	84%	86%	87%	86%	96%
International	19%	21%	20%	19%	18%	16%	14%	13%	14%	4%

*Traffic numbers for FY12-FY16 based on BIAL's business plan, FY17-FY20 based on AAI traffic news and FY21 based on actuals till February 2021 and forecasted for March 2021

Figure 17: Traffic mix at BIAL



4.2 External Benchmarking

External benchmarking was undertaken for BIAL to assess its operational, financial and other parameters to understand its performance viz-a-viz airports in the same competing environment.

The domestic benchmarking has been undertaken with comparable airports in India (private airports in India). The airports for which benchmarking has been undertaken are given in the table below:

Name of the Airport	Major Shareholder	Commencement of Operations	Green/Brownfield
Bengaluru International Airport Limited (BIAL)	Fairfax Financial Holdings Limited	May 2008	Greenfield
Delhi International Airport Limited (DIAL)	GMR Airports Limited	April 2006	Brownfield
Hyderabad International Airport Limited (HIAL)	GMR Airports Limited	March 2008	Greenfield
Mumbai International Airport Limited (MIAL)	Adani Airports Limited	April 2006	Brownfield

Source: Media Articles

The benchmarking exercise has been undertaken for the period from FY 2017 to FY 2020 since audited FY 2021 data is not yet available.

The study is aimed at comparing the operational expenditure incurred by these airports for the below major heads:

a) Personnel cost
b) Utility cost
c) Insurance
d) O&M expenses
e) Total operational expenses

The data for this benchmarking exercise has been taken from the annual reports of the respective airports for the relevant financial years. Operational expenditure is expressed in terms of per passenger, per ATM basis or per gross block basis for the comparison between airports.

It is noted that all the above airports differ from each other in many ways. Some of these differences include layout of the terminal building, capacity of the runway/ terminal/ apron, passenger mix, natural or man-made disruptions in operations, cost of living of a city, etc. These differences have significant impact on the operational expenditure at the airport. For example, the development and operational cost of an airport with a single level linear terminal building is different from the cost at a multilevel terminal building. Additionally, airport infrastructure is developed in phases and an airport may operate at a traffic level which is lower than its future design capacity. As cost such as maintenance is dependent on terminal area, airports operating at different level of their design capacities may show different levels of efficiencies. Thus, external benchmarking is limited by such difference in characteristics of airports.

4.2.1 Comparison between airports on various factors affecting O&M expenses

The differences between these airports which affect the benchmarking exercise are as follows:

a) Passenger volume

b) Passenger mix

c) Air traffic movements

d) ATM mix

e) Size and number of terminal(s)

f) Size and number of runways

The details of each of the above factors are covered in the section below.

A. Passenger traffic and mix

Operational costs for an airport have fixed and variable components. The variable components such as consumables vary in proportion to the passenger traffic. The comparison of operational cost per pax between airports is an often-used metric for benchmarking. Further, increase in passenger traffic helps an airport operator to maximize the utilization of the asset and provides an opportunity to bring efficiency in the fixed component of operational expenditure such as utility expenses.

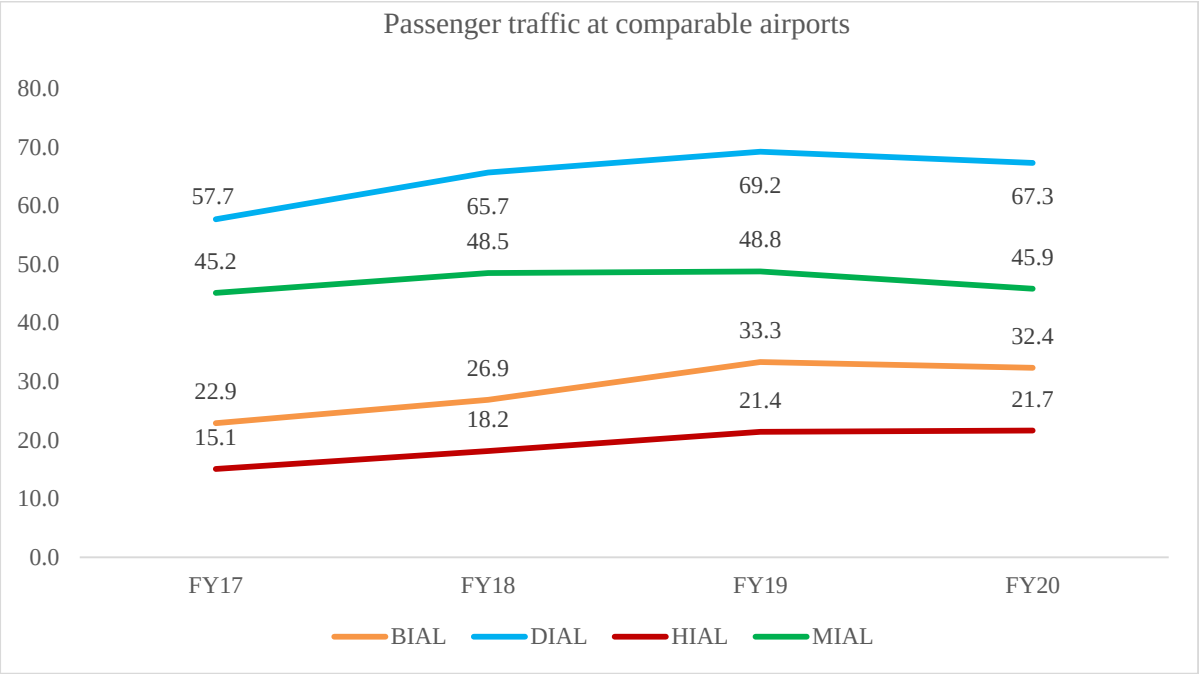
The passenger traffic for the period FY 2017 – FY 2020 for the above four airports are given in the table below:

Table 56: Total Passenger traffic at comparable airports in India

Airports	FY 2017	FY 2018	FY 2019	FY 2020	CAGR
BIAL	22.88	26.91	33.31	32.36	12.2%
DIAL	57.70	65.69	69.23	67.30	5.3%
HIAL	15.10	18.16	21.40	21.65	12.8%
MIAL	45.15	48.50	48.82	45.87	0.5%

Source: AAI

Figure 18: Passenger traffic at comparable airports

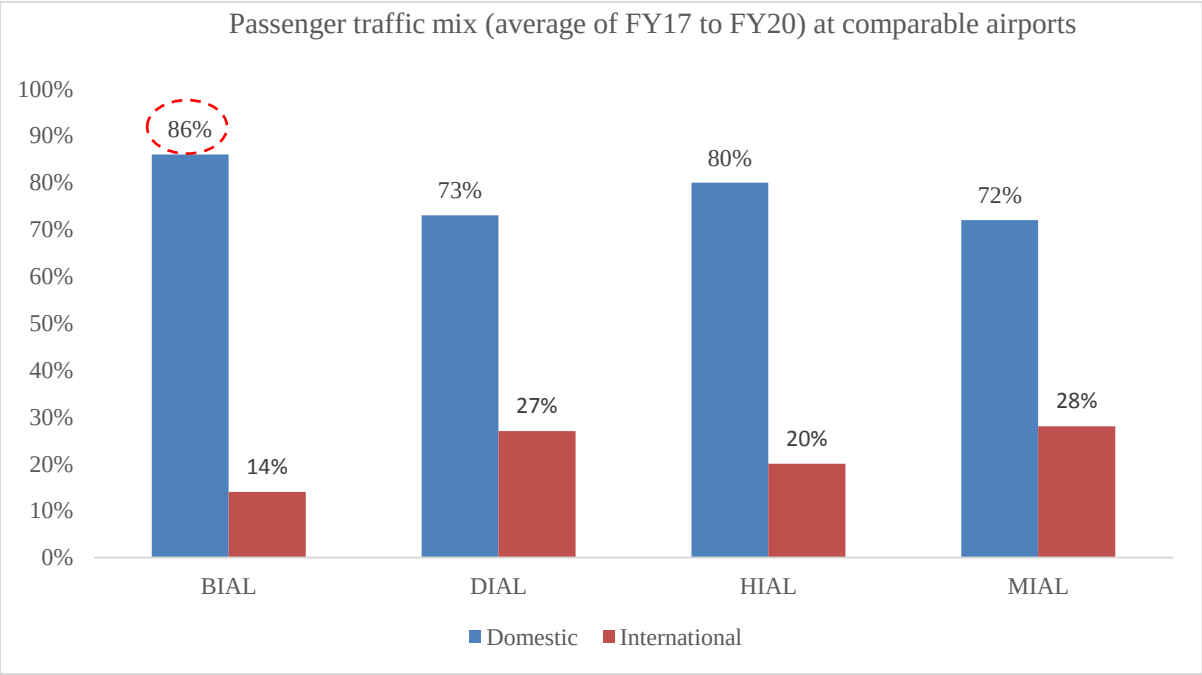


Source: AAI

As per the above data, BIAL and HIAL have shown comparable CAGR growth in passenger traffic over the comparison period which is higher than CAGR for MIAL and DIAL.

BIAL also has the highest share of domestic passengers in the total passengers at 86% as compared to the benchmarked airports. The trend in terms of mix of domestic and international passengers is given below:

Figure 19: Passenger traffic mix at comparable airports



Source: AAI

B. ATM traffic and mix

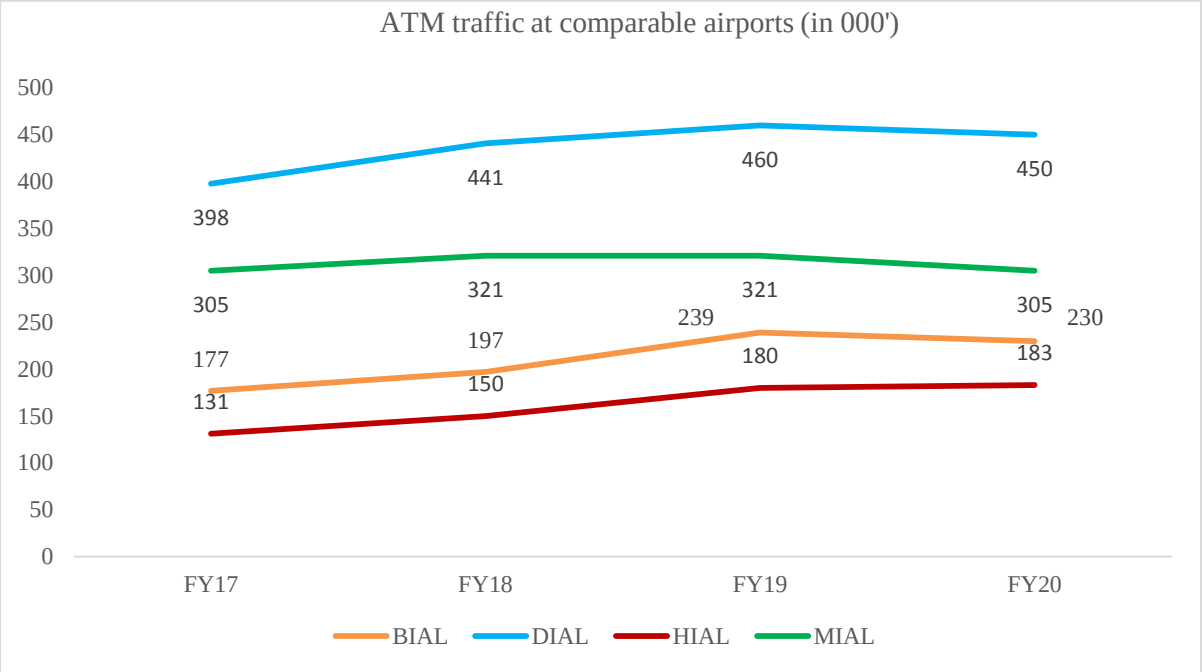
Similar to passenger traffic, operational expenditure per ATM is used for comparison between airports. The ATMs for the period FY 2017 – FY 2020 for the comparable airports are given in the table below:

Table 57: ATM traffic at comparable airports in India

Airports	FY 2017	FY 2018	FY 2019	FY 2020	CAGR
BIAL	177271	196560	239395	230359	9.1%
DIAL	397799	441299	460429	450012	4.2%
HIAL	130713	149581	179606	183450	12.0%
MIAL	305465	320689	321263	304675	-0.1%

Source: AAI

Figure 20: ATM traffic at comparable airports

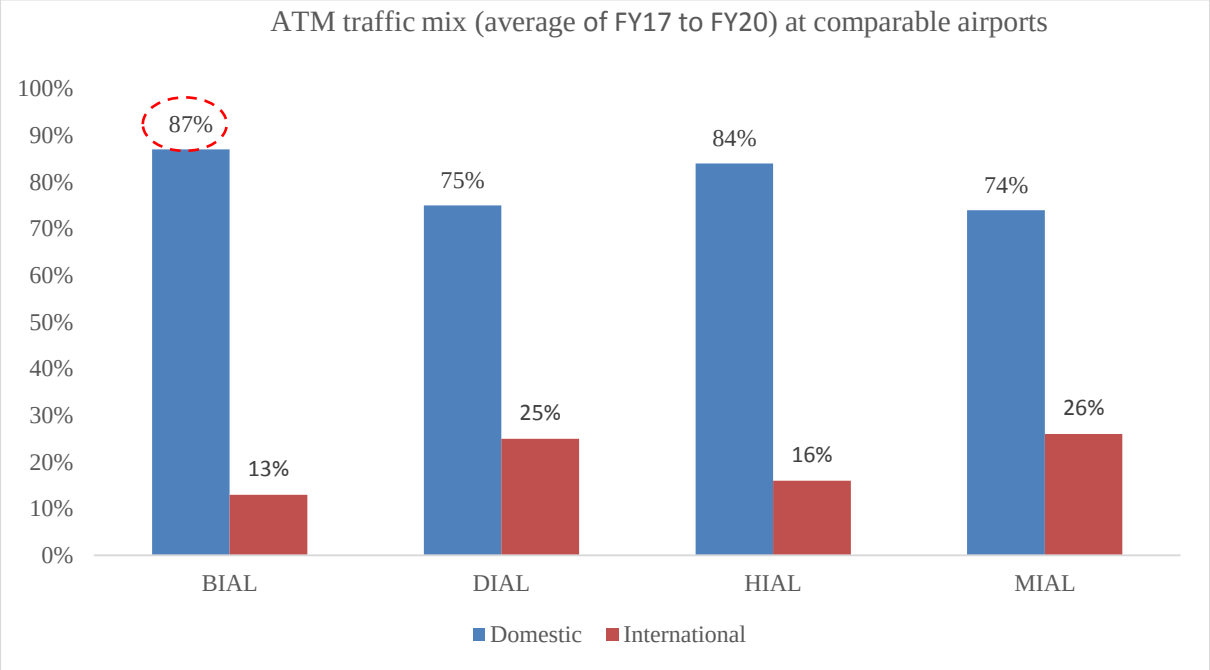


Source: AAI

As per the above data, BIAL and HIAL have shown a higher CAGR growth in ATMs over MIAL and DIAL which indicates higher capacity addition by airlines out of these airports.

The trend in terms of mix of domestic and international ATMs is given below:

Figure 21: ATM mix at comparable airports



Source: AAI

Similar to the trend followed for passengers, domestic ATMs at BIAL dominate the total ATMs with a share of 87% indicating the significant capacity addition by low cost carriers out of Bangalore.

C. Number and size of terminals

The terminal (size and number) also affects various operational expenses some of which are as follows:

a) Maintenance and housekeeping expenses

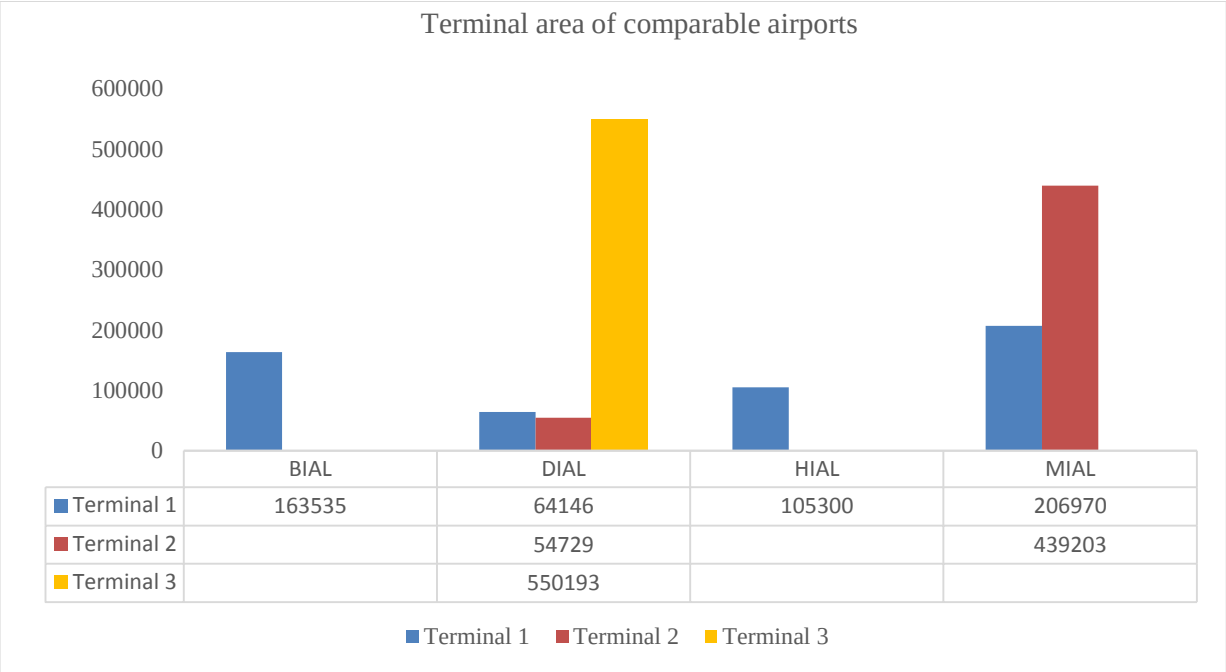
b) Security costs

c) Utility expenses

d) Consumables

Based on the data available in public domain, the size of the terminals (in Sqm) for various comparable airports are given below:

Figure 22: Size of terminals of comparable airports (in Sqm)



	BIAL	DIAL	HIAL	MIAL
Terminal 1	163535	64146	105300	206970
Terminal 2		54729		439203
Terminal 3		550193		

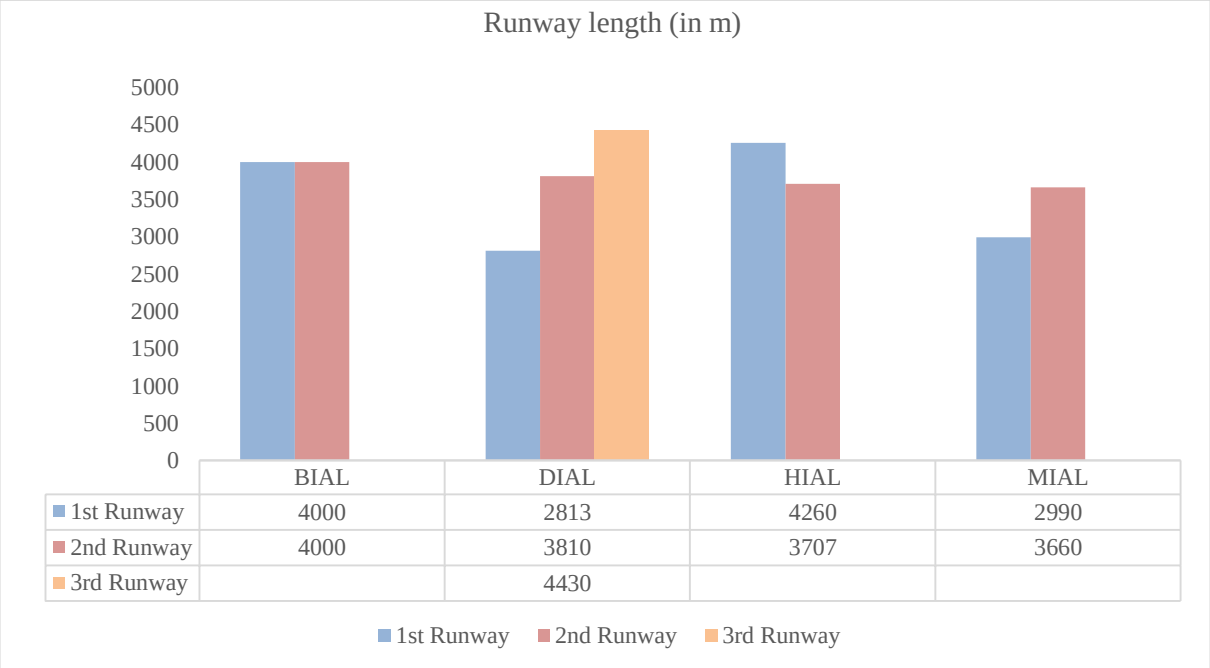
Source: BIAL, DIAL, HIAL and MIAL 3rd control period order

It is to be noted that BIAL is constructing a new terminal building which would significantly enhance the terminal area at the airport.

D. Number and size of runways

Another factor impacting the operational expenditure is the number and size of runways as additional and longer runways mean higher maintenance costs and higher number of personnel for managing the additional assets. This additional cost will be in terms of personnel cost, airside lightning, firefighting, safety & security and ground transportation & control. The runway lengths and breaths of comparable airports are given below:

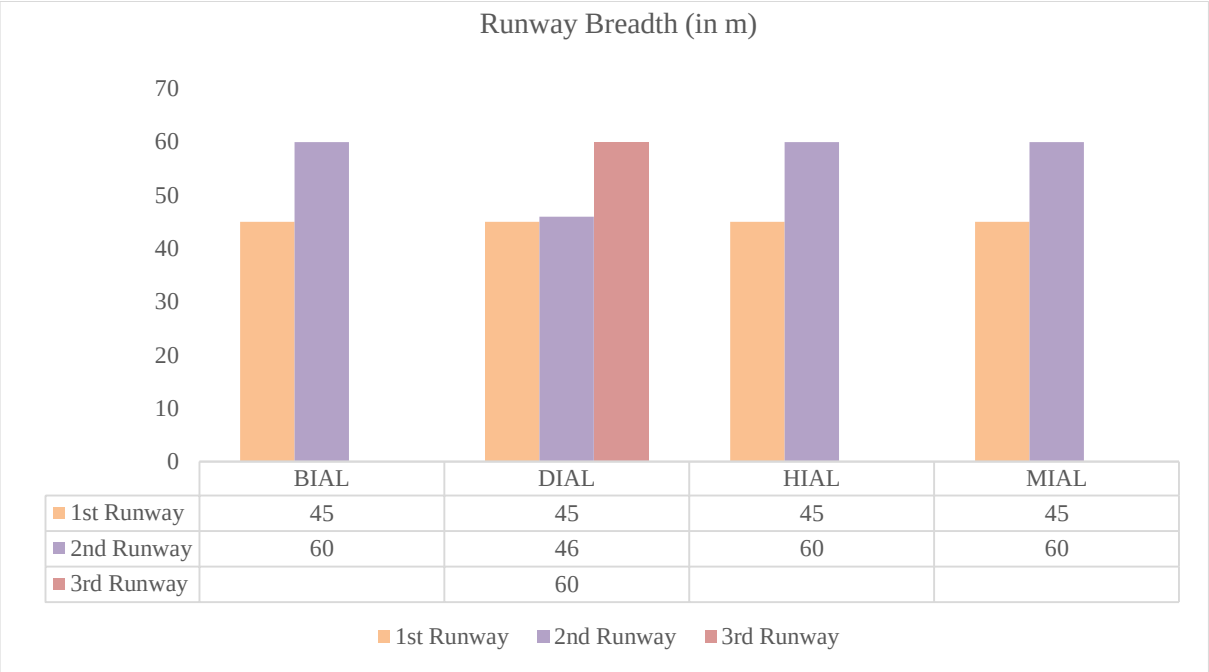
Figure 23: Runway length (in m)



	BIAL	DIAL	HIAL	MIAL
1st Runway	4000	2813	4260	2990
2nd Runway	4000	3810	3707	3660
3rd Runway		4430		

Source: Airport website

Figure 24: Runway breadth of comparable airports



Source: Airport website

4.2.2 Benchmarking of components of operational expenses

In the above section, it is noted that the operational cost is a function of multiple factors and characteristics of an airport which results in limitation on direct comparison between airports. After understanding these limitations, the major heads of operational expenditure which are similar in nature for these airports have been reviewed in this section.

4.2.2.1 Personnel Cost

The personnel cost for comparative airports is given in the table below:

Table 58: Personnel cost for comparable airports (FY 2017 – FY 2020)

Airports	FY 2017	FY 2018	FY 2019	FY 2020	CAGR
BIAL	118.72	121.28	153.17	195.97	18%
DIAL	129.47	165.24	186.48	209.38	17%
HIAL	59.65	72.41	100.85	117.93	26%
MIAL	196.71	197.93	202.58	201.73	1%

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order

The benchmarking for personnel cost has been undertaken on per pax and per ATM basis:

Table 59: Personnel cost/pax for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	51.9	45.1	46.0	60.6
DIAL	22.4	25.2	26.9	31.1
HIAL	39.5	39.9	47.1	54.5
MIAL	43.6	40.8	41.5	44.0

Table 60: Personnel cost/ATM for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	6697.1	6170.1	6398.2	8507.2
DIAL	3254.7	3744.4	4050.1	4652.8
HIAL	4563.4	4840.9	5615.1	6428.5
MIAL	6439.7	6172.0	6305.7	6621.3

Figure 25: Trends in Personnel cost/pax

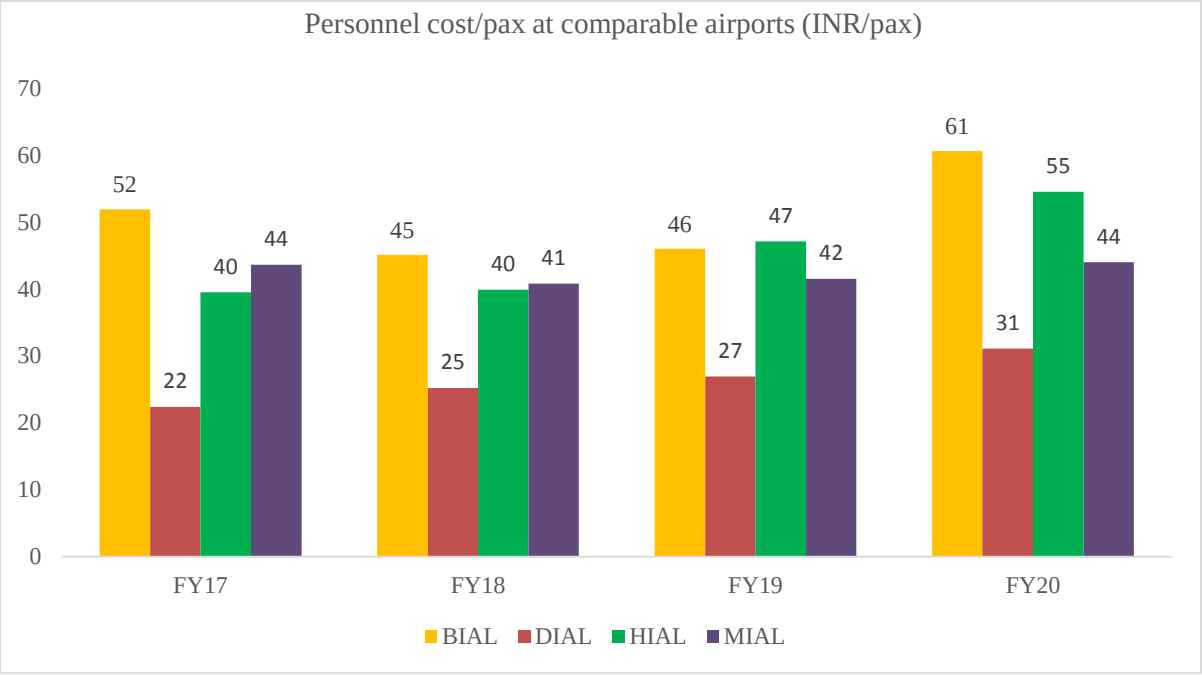
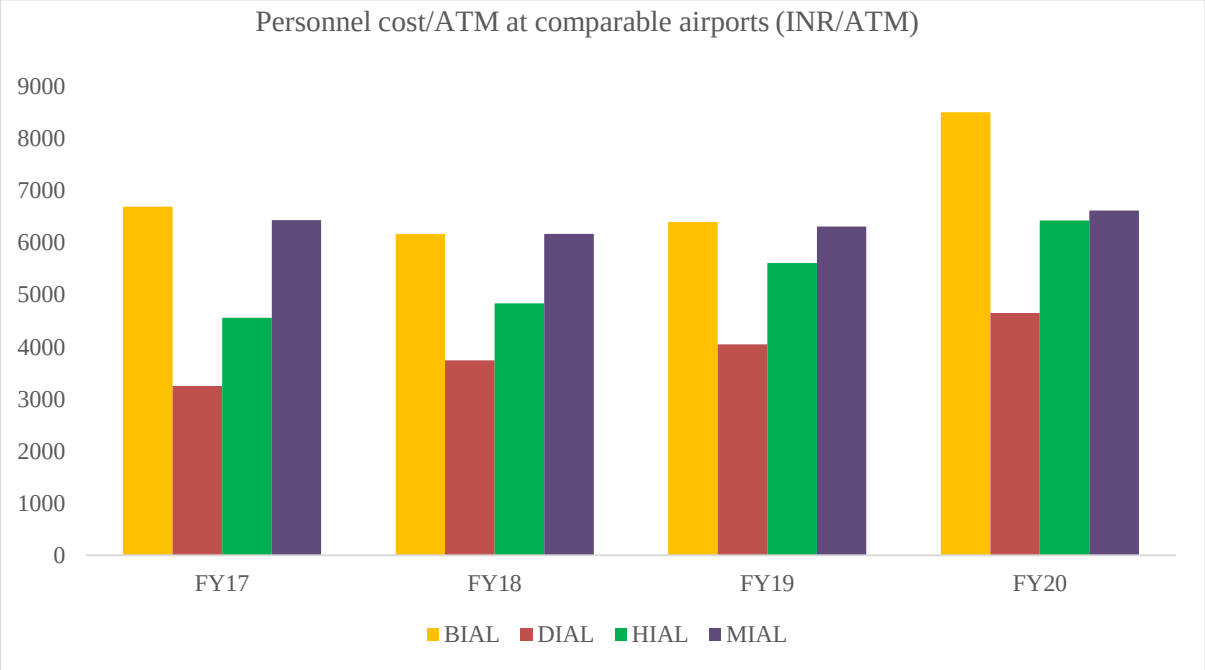


Figure 26: Trends in personnel cost/ATMs



The above comparison is based on the personnel cost on the rolls of the airport operator. It is noted that an airport might outsource a service to a third party whereas other airports might undertake such services through its own employees.

For example, DIAL's personnel cost per pax is noted as being lowest among the compared airports. However, DIAL also outsources corporate services the cost of which would appear under a different head as part of its operational expenditure. Similar trend is noted for HIAL. Therefore, personnel cost per pax as an individual metric may not provide a reasonable comparison and needs to be reviewed as part of the overall cost benchmarks at the airport.

4.2.2.2 Utility Expenses

The utility expenses for comparative airports is given in the table below:

Table 61: Utility expenses for comparable airports (FY 2017 – FY 2020)

Airports	FY 2017	FY 2018	FY 2019	FY 2020	CAGR
BIAL	39.04	44.46	37.38	33.28	-5%
DIAL	106.54	113.20	103.35	69.70	-13%
HIAL	17.49	16.33	19.35	18.70	2%
MIAL	93.48	112.67	109.61	147.30	16%

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order

The benchmarking for utility expenses has been undertaken on per pax and per ATM basis:

Table 62: Utility expenses/pax for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	17.06	16.52	11.22	10.28
DIAL	18.46	17.23	14.93	10.36
HIAL	11.58	8.99	9.04	8.64
MIAL	20.70	23.23	22.45	32.11

Table 63: Utility expenses/ATM for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	2202	2262	1561	1445
DIAL	2678	2565	2245	1549
HIAL	1338	1092	1077	1019
MIAL	3060	3513	3412	4835

Figure 27: Trends in utility expenses/pax

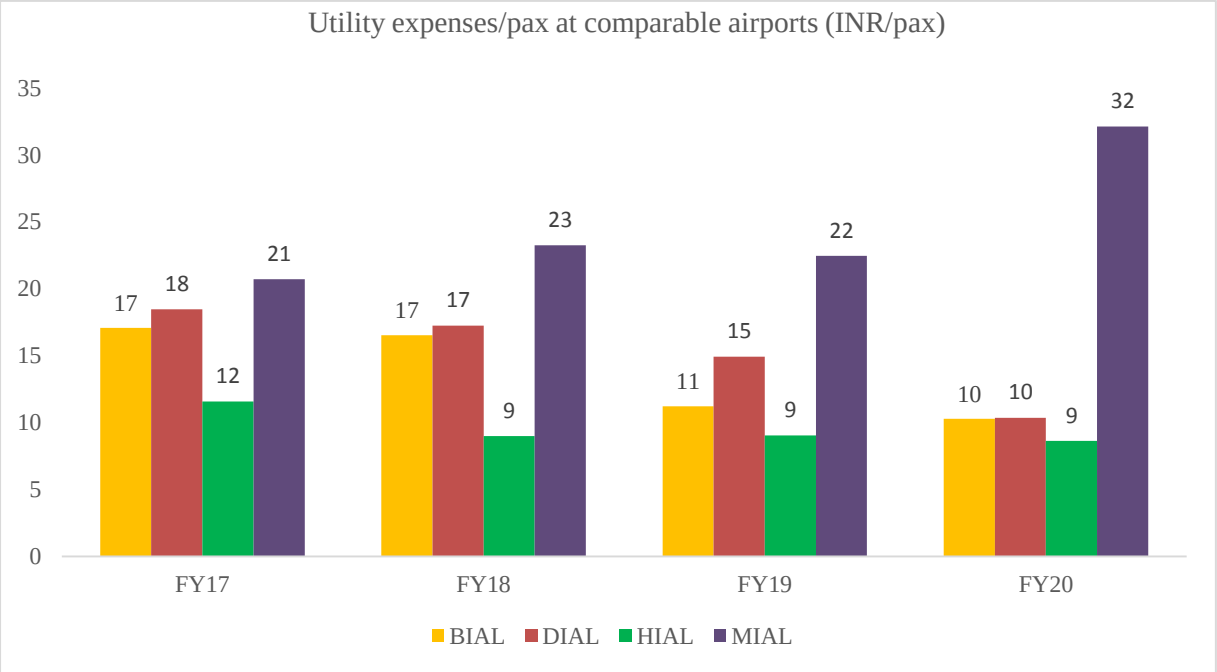
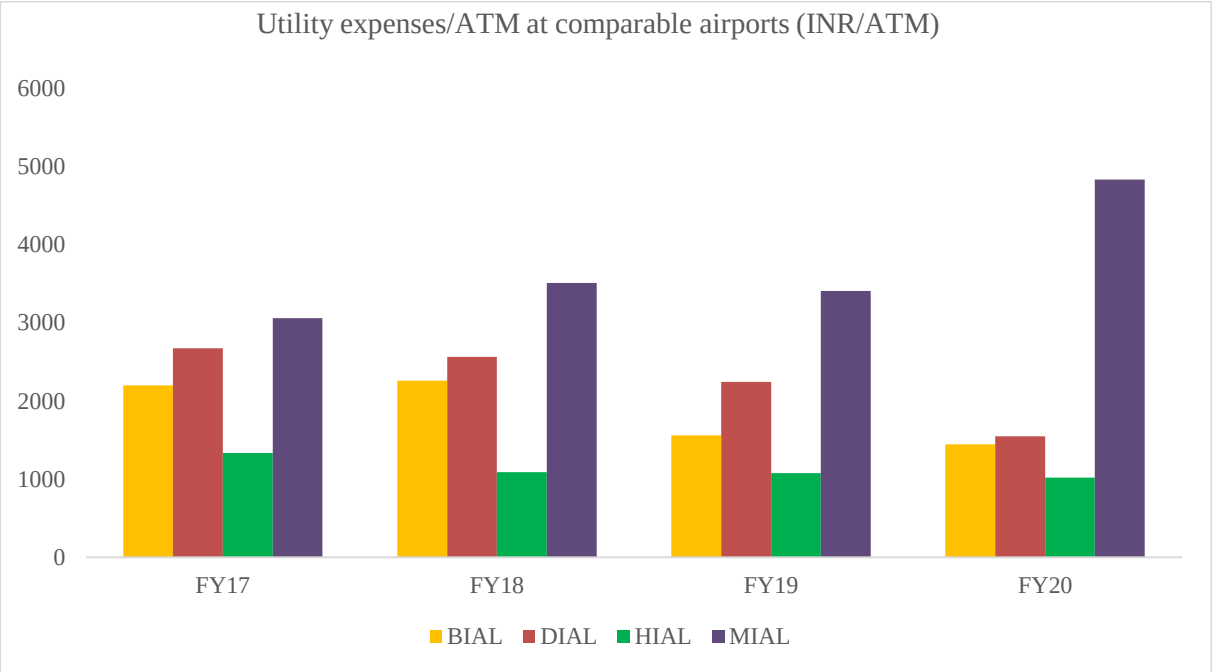


Figure 28: Trends in utility expenses/ATMs



Utility expenses are a function of the cost per unit consumption and the number of units consumed. Cost per unit consumption is dependent on the tariffs levied by the electricity distribution company which varies between the airports. Number of units consumed by the airport depends on the terminal area, layout of the airport, number of runways, etc. It is noted that BIAL has maintained its utility expenses at a similar level since FY2017 with an increase in traffic.

4.2.2.3 Insurance

The insurance expenses for comparable airports is given below:

Table 64: Insurance expenses for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	1.76	2.50	2.19	3.53
DIAL	7.16	6.63	5.65	10.97
HIAL	1.85	2.44	2.28	2.78
MIAL	3.94	4.15	4.93	4.58

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order

It is noted that insurance expenses at the BIAL, MIAL and HIAL are at comparable levels.

4.2.2.4 Operations & Maintenance (O&M) expenses

The Repair & maintenance expenses (total) for comparable airports is given below:

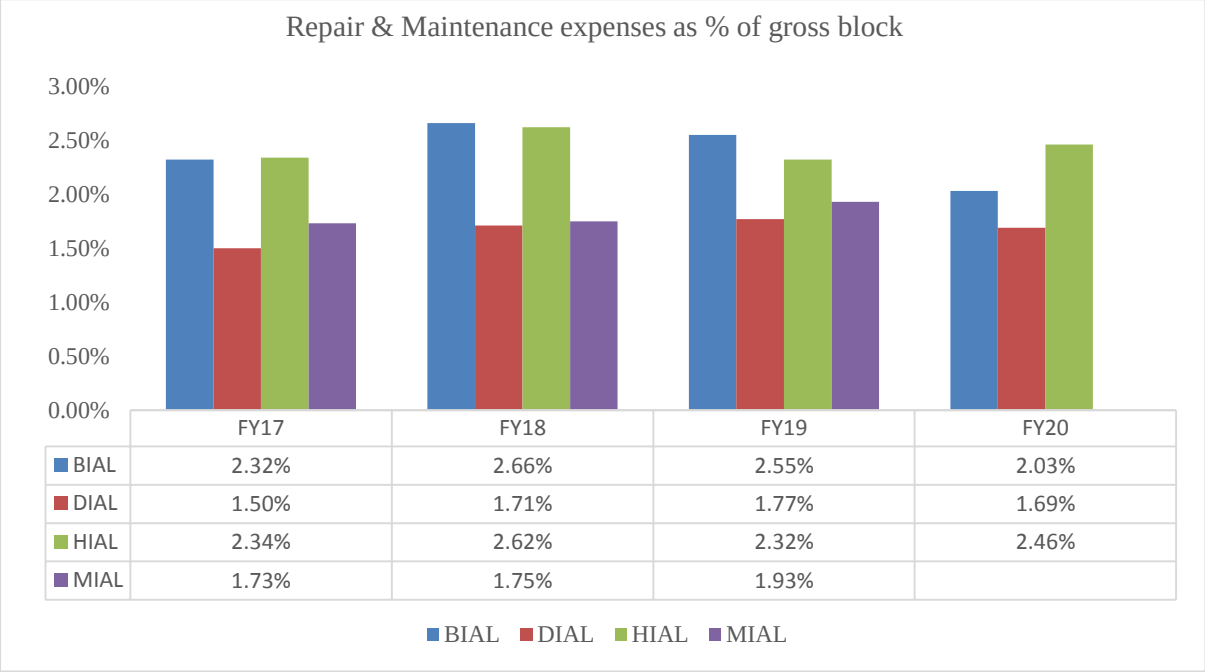
Table 65: Repair & maintenance expenditure at comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	90.02	107.74	107.01	126.27
DIAL	163.42	186.40	199.06	193.56
HIAL#	49.58	56.99	64.30	78.52
MIAL#	234.60	249.90	290.35	277.91

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order # includes operating and maintenance expenses

Repair & maintenance expenses as a % of gross block is given below:

Figure 29: Repair & maintenance expenses as a % of gross block



	FY17	FY18	FY19	FY20
BIAL	2.32%	2.66%	2.55%	2.03%
DIAL	1.50%	1.71%	1.77%	1.69%
HIAL	2.34%	2.62%	2.32%	2.46%
MIAL	1.73%	1.75%	1.93%	

Maintenance cost is dependent on the airport size, age of the assets and non-recurring repair cost at the airport. From the above graph, it is noted that the R&M cost at BIAL appears reasonable in range of other airports.

The stores and spares expenses for comparable airports is given below:

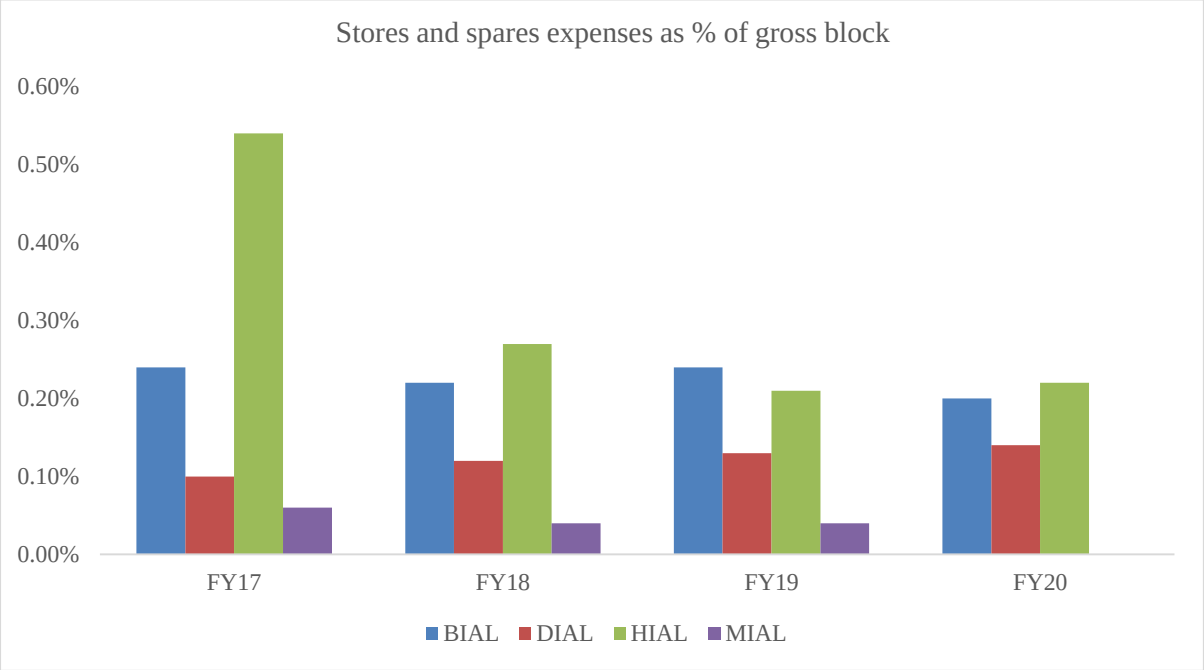
Table 66: Stores and spares expenses at comparable airports

Airports	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
BIAL	9.27	9.00	10.26	12.31
DIAL	11.30	12.73	14.62	16.27
HIAL	11.47	5.87	5.78	7.16
MIAL	8.23	6.07	6.60	6.34

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order

Stores and spares expenses as a % of gross block is given below:

Figure 30: Stores and spares as a % of gross block



Stores and spares cost are dependent on the airport size and age of the assets. From the above graph, it is noted that the R&M cost at BIAL appears reasonable in range of other airports.

4.2.2.5 General admin & Marketing and advertisement

The General admin & Marketing and advertisement expenses for comparable airports is given below:

Table 67: General admin & Marketing and advertisement expenses for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	25.52	29.77	33.34	43.30
DIAL	123.34	116.13	111.45	161.14
HIAL	31.34	47.74	49.29	79.19
MIAL	103.12	97.95	103.70	88.10

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order

The benchmarking for General admin & Marketing and advertisement expenses has been undertaken on per pax and per ATM basis:

Table 68: General admin & Marketing and advertisement expenses/ pax

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	11.15	11.06	10.01	13.38
DIAL	21.37	17.68	16.10	23.94
HIAL	20.75	26.29	23.03	36.57
MIAL	22.84	20.20	21.24	19.20

Table 69: General admin & Marketing and advertisement expenses/ ATM

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	1440	1515	1393	1880

DIAL	3101	2632	2421	3581
HIAL	2398	3192	2744	4317
MIAL	3376	3054	3228	2892

Figure 31: General admin & Marketing and advertisement expenses/pax

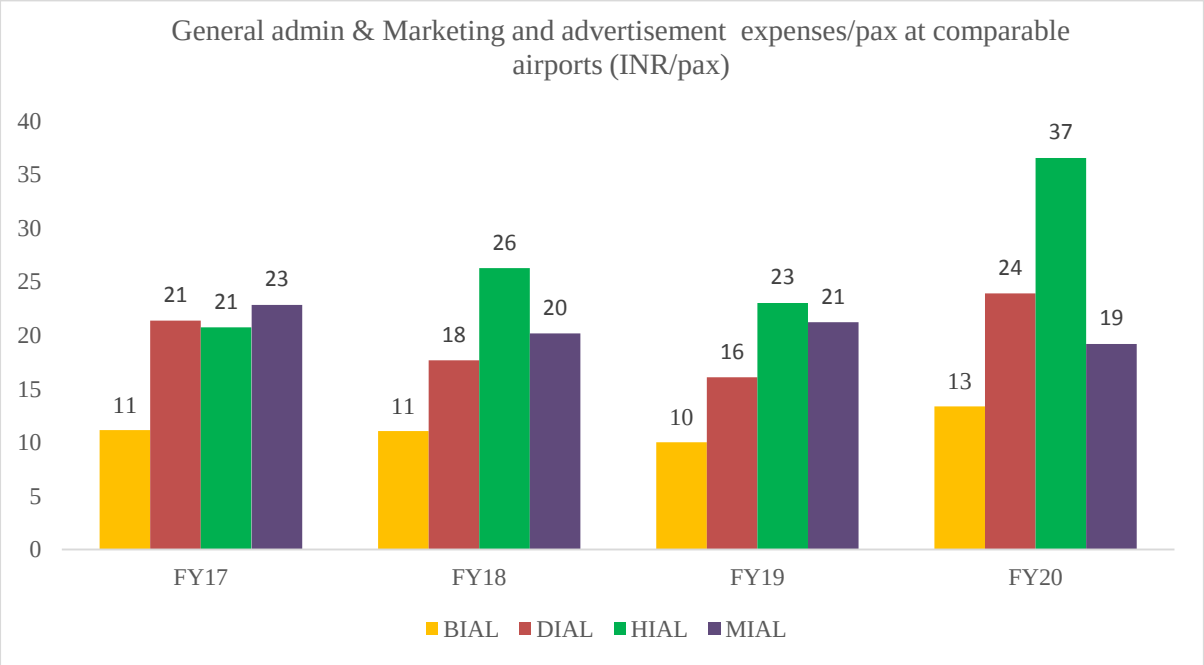
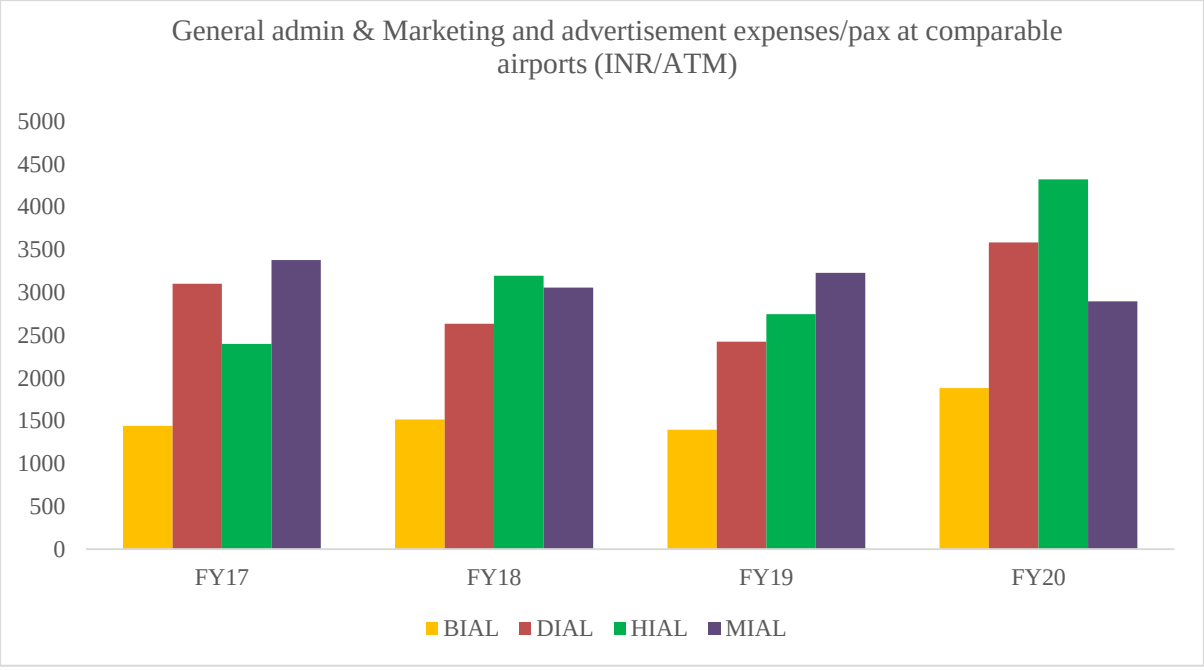


Figure 32: General admin and Marketing & advertisement expenses / ATM



From the above graphs, it is noted that the general admin & marketing and advertisement expenses at BIAL is lower than comparable airports.

4.2.2.6 Other Operational expenditure items

The other operational expenditure items at comparable airports (excluding the heads covered in the above sections) is given below:

Table 70: Other operational expenditure other than those covered above

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	34.24	29.69	54.10	54.94
DIAL[#]	422.61	496.59	538.86	427.66
HIAL	85.65	113.44	131.26	165.46
MIAL*	38.92	49.33		94.07

*Data for FY2019 is not available #includes manpower outsourcing charges, airport operator fee, commercial property development etc.

It is noted that other operational expenses at BIAL are lower than comparable airports.

4.2.2.7 Total Operational expenditure

The total operational expenditure for comparable airports is given below:

Table 71: Total operational expenditure for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL[#]	318.57	344.44	397.44	469.60
DIAL	963.84	1096.92	1159.47	1088.68
HIAL[#]	257.03	315.22	373.11	469.74
MIAL[*]	679.00	718.00		820.03

Source: Annual reports of BIAL, DIAL and HIAL, MIAL 3rd CP order #excludes concession fees *Data for FY2019 is not available

The benchmarking for total operational expenditure has been undertaken on per pax and per ATM basis:

Table 72: Total operational expenditure/pax for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	139.23	127.99	119.32	145.11
DIAL	167.03	166.98	167.47	161.76
HIAL	170.19	173.61	174.32	216.95
MIAL[*]	150.37	148.05		178.76

*Data for FY2019 is not available

Figure 33: Total operational expenditure/pax for comparable airports

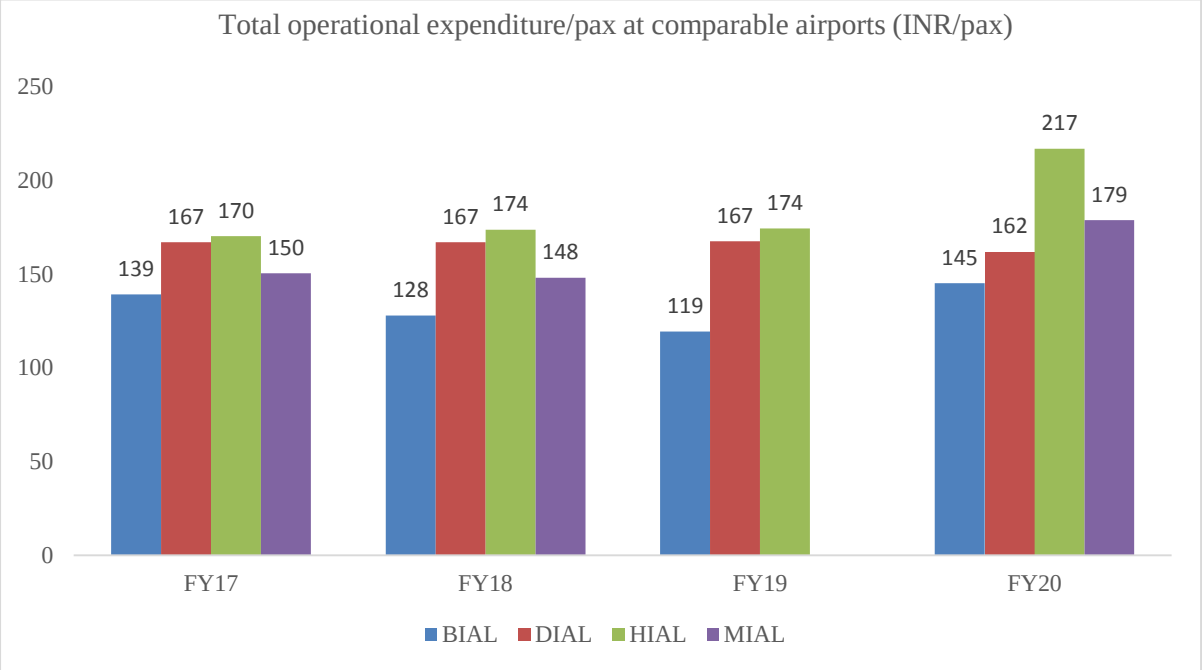
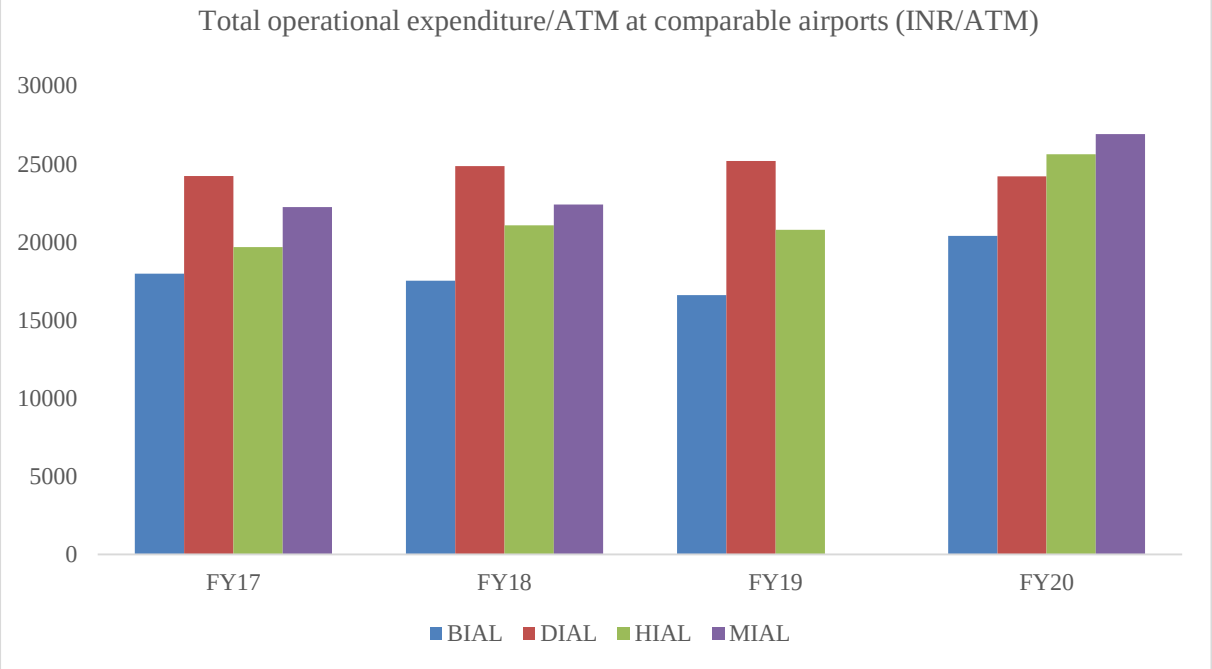


Table 73: Total operational expenditure/ATMs for comparable airports

Airports	FY 2017	FY 2018	FY 2019	FY 2020
BIAL	17971	17523	16602	20386
DIAL	24229	24857	25182	24192
HIAL	19664	21074	20774	25606
MIAL*	22228	22389		26915

*Data for FY2019 is not available

Figure 34: Total operational expenditure/ATM at comparable airports



It is noted from above analysis that, the overall (total) operational expenditure incurred by BIAL for the period FY 2017 – FY 2020 appears reasonable in range of other private airports in India.

4.3 Chapter Summary

This first section of this chapter focusses on performing internal benchmarking of BIAL's O&M costs by studying and analyzing the growth trends of various O&M cost components for the period FY 2012 – FY 2021. It is observed from internal benchmarking that for the period FY12 – FY21, the inflation adjusted costs per pax at BIAL has decreased for major heads except O&M which has shown a marginal increase due to the increase in capacity at the airport. The passenger mix at BIAL has been mainly domestic which constitutes more than 80% of total traffic at BIAL.

The second section of this chapter reviews external benchmarking of BIAL's O&M costs with other private airports in India namely DIAL, HIAL and MIAL.

In the external benchmarking review, it is noted that the airports differ from each other in many ways such as layout of the terminal building, capacity of the runway/ terminal/ apron, passenger mix, natural or man-made disruptions in operations, outsourcing of services, cost of living of a city, etc. These differences have significant impact on the operational expenditure at the airport.

Additionally, airports may follow varied approaches towards outsourcing of services at an airport. This can result in costs being recorded under different heads of operational expenditure for different airports. While differences on account of characteristics of an airport would have an impact on any comparison between airports, the difference on account of outsourcing is addressed to an extent while comparing overall costs between airports. It is noted that the metrics on overall (total) operational expenditure incurred by BIAL for the period FY 2017 – FY 2020 appears reasonable in range of other private airports in India.

5 SUMMARY OF THE STUDY

a) BIAL was formed as a joint venture of private and public sector agencies in order to develop and operate the airport. The Karnataka State Industrial and Infrastructure Development Corporation (KSIIDC), a Public sector undertaking of the Government of Karnataka (GoK) and Airports Authority of India (AAI), a Government of India (GoI) undertaking, together hold 26% equity and the strategic joint venture partners hold the remaining 74%.

b) The airport commenced operations on 24th May 2008 with a capacity of handling 11.4 million passengers.

c) The total passenger traffic grew at a CAGR of 12.25%, CAGR of air traffic movement was 9.12% and CAGR of cargo traffic was 5.41% for the period FY2017 – FY2020.

d) The Airport Service Quality (ASQ) of BIAL has shown an increasing trend in the second control period increasing from 4.84 in Q2 (2016) to 4.97 in Q2 (2020) for departure ASQ and 4.67 in FY2018 to 4.93 in FY2020

e) BIAL has around 49 cost centres for mapping of costs to the relevant cost centre through ERP. All PRs are mapped to the relevant cost centres. A two-stage mapping is followed by BIAL – Initiating cost centre and End user cost centre. Though initiating cost centre could be E&M, ICT, etc. based on the technical requirements, End user cost centre captures the cost centre that will be utilizing the product/service procured. BIAL has submitted that this approach helps them in mapping the costs as Aero/Non-Aero/Common based on end user identification.

Segregation of costs

f) There are 32 major departments/cost centers at BIAL that are further divided into 63 sub-cost centers and the segregation of all operation and maintenance costs into aeronautical, non-aeronautical and common is based on the nature of the sub-cost center. The common costs have been segregated based on the expense allocation ratio (based on directly attributable expenses).

g) The summary of adjustments to the aeronautical expenses based on the results of this study is given in Table 31.

Trend Analysis

h) The trend analysis of the various components of the inflation adjusted operational expenditure is undertaken for the period from FY 2017 to FY 2020 in comparison to the increase in the passenger traffic and capacity augmentation as given in Section 3. Based on the trend analysis, the reasons determined for increase in cost heads are given below:

   i. Personnel cost – Personnel cost has increased from FY18 to FY19; however, it is noted that the employee cost per pax has seen a decreasing trend from FY 2018 to FY 2019 due to increase in the passenger traffic. The increase in the personnel cost from FY19 to FY20 is on account of the commissioning of the new south parallel runway in December 2019 and increase in the area of operations. Due to capacity addition by BIAL, the employee cost per pax has increased which is expected to gradually fall with the increase in utilization levels. The increase in the personnel cost from FY20 to FY21 is on account of the full year cost of the employees joined in FY20 and the hiring of the already rolled out offers by BIAL.
   ii. Operational and maintenance (O&M) expenses - The O&M expenses as a % of gross block has increased from FY 2017 to FY 2019 due to increase in minimum wages and increased utilization of the terminal and single runway. The increase in O&M expenses in the FY 2020 is on account of the commissioning of the new south parallel runway. The O&M expenses as a % of assets has decreased in FY 2020 due to increase in the asset base.

iii. Marketing and Advertising - More than 85% of the expenses are attributable to two major heads namely Aviation marketing and contracts and BDMS – Marketing. The Aviation marketing and contracts constitutes majorly of roadshows, pinnacle event, airline route launches, sponsorships and travel expenses while BDMS marketing constitute branding, brochures, event management and social and digital marketing. Increased spend on branding and marketing of the airport has resulted in increased cost/pax over these years. BIAL has not provided the justification for the increase in marketing and advertising costs. Therefore, the marketing and advertising expenses have been considered as per Table 46 based on the growth in passenger traffic and inflation.

i) The trend in costs with respect to growth in traffic and capacity augmentation indicate that BIAL has maintained the efficiency in operational costs during the second control period.

Internal and External Benchmarking

j) The internal benchmarking of BIAL's O&M costs is undertaken by studying and analyzing the growth trends of various O&M cost components for the period FY 2012 – FY 2021. It is observed from internal benchmarking that for the period FY12 – FY21, the inflation adjusted costs per pax at BIAL has decreased for major heads except O&M which has shown a marginal increase due to the increase in capacity at the airport.

k) The external benchmarking of BIAL's O&M costs is undertaken with other private airports in India namely DIAL, HIAL and MIAL. It is observed that the metrics on overall (total) operational expenditure incurred by BIAL for the period FY 2017 – FY 2020 appears reasonable in range of other private airports in India.

Conclusion

l) The airport operator, that is, BIAL had proposed a total operational expenditure of INR 2,290.07 cr., the aeronautical operational expenditure as INR 2,033.48 cr. and the non-aeronautical operational expenditure as INR 256.59 cr. for the second control period.

m) Based on the study, the total operational expenditure is INR 2,241.31 cr. (based on audited financial statements) and the proposed aeronautical operational expenditure is INR 1,882.38 cr. for the second control period. Thus, resulting in a reduction of INR 151.10 cr. in the aeronautical operational expenditure for the second control period. The opex allocation ratio for the second control period as submitted by BIAL is 88.80% while that considered in the study is 83.99%.