Infrastructure Advisory

CRISIL
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# NITI Aayog

## New Approaches to PPP focusing on the Airport Sector

Picture credit: Construction Review Online

### Final Report

May 2019

# Acknowledgement

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**DISCLAIMER:**

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# 1. Executive Summary

## 1.1 Engagement objective

The aviation sector in India has witnessed peaks and troughs in terms of private sector participation. This can, to a large extent, be attributed to various types of public private partnership (PPP) frameworks that are applied in the sector. For instance, in brownfield projects, Delhi and Mumbai airport are relatively successful PPP airports. However, Jaipur and Ahmedabad airports were facing challenges in attracting private participation and bidding out the projects due to the concession structure. This was largely resolved through the recent privatization process for six airports that includes Jaipur & Ahmedabad airports in addition to Lucknow, Guwahati, Mangalore & Thiruvananthapuram airports.

Airport PPP frameworks have evolved significantly since signing of the first concession agreement for Kochi airport that involved multiple private players. A number of foreign private players had initially shown interest in investing in the sector. However, there has been a perceptible decline in the interest of foreign players of late as seen in bidding for Navi Mumbai airport where only one foreign bidder applied. While a few domestic players are keen on bidding for various aviation projects, the investment demand of the sector is so large that a growing need for attracting wider pool of private sector investment is felt. Currently, the private sector is facing multiple challenges with the existing concession agreements such as long equity lock in period, ambiguity in existing tariff structure, non-defined expansion triggers etc. Therefore, suitable amendments in the existing PPP framework are of vital importance to achieving the objective of attracting private sector investment.

With regard to the above issue, NITI Aayog intends to carry out a study for amending PPP framework adopted by the erstwhile Planning Commission for Greenfield and brownfield airport. The client plans to suitably amend the document in line with the recent developments in the sector, which benefits both the private players and the concessioning authority. For this purpose, CRISIL Risk and Infrastructure Solutions Limited (CRIS) was mandated by NITI Aayog to carry out the said study and suggest recommendations/ changes in the existing PPP document. As part of the engagement, CRIS has carried out the study with an extensive stakeholder consultation and secondary research for arriving at the key recommendations.

## 1.2 Execution approach

The methodology adopted for designing the recommendations involved extensive stakeholder interactions which provided basis for suggested interventions. Since the purpose of the engagement was to provide a holistic view on the PPP framework the inputs from each category of stakeholders were thoroughly studied, analysed and corroborated with existing framework. The various category of stakeholders included the following (details provided in annexure):

- **Government**
    - to critically evaluate clauses of the Model Concession Agreement which can be modified and understand the level of risk sharing possible for future projects
- **Existing Operators**
    - to understand the key operational issues and suggest mitigation measures
- **Potential Investors**
    - to assess key pain points of potential investors and adopt corrective measures to encourage increased private sector participation in future

Based on the feedback and insights received from the stakeholders, we have identified key parameters that are required to be studied in the existing signed concession agreements. We have conducted comparative analysis for both greenfield and brownfield airport concession agreements. In consultation with NITI Aayog, we have kept the Model Concession Agreement (MCA) drafted by the erstwhile Planning Commission as the base and critically examined deviations from the MCA in Draft Concession Agreements (DCA). In addition, we have studied PPP

frameworks adopted in aviation sector of countries such as Turkey, Australia and United Kingdom. We have derived key learnings from these frameworks and incorporated them as applicable in India's aviation scenario.

## 1.3 Summary of recommendations

We have divided our recommendation into greenfield and brownfield projects. We have recommended amends in the MCA and required structural changes in the regulatory framework for the airports. In addition, we have provided a study on asset monetization models (bundling of airports) and recommended changes in concession agreement for Jaipur and Ahmedabad airport. We have recommended clause wise amends/ additions in the MCA for both greenfield and brownfield airport.

Our analysis suggests that the following broad changes are needed in the MCAs to vitalize PPP in the aviation sector:

| Provision name | Recommendation |
|---|---|
| **Concession period** | **Greenfield** – 40+20 years based on Authority's approval<br>**Brownfield** – 50 years with no extension in period |
| **Right-of-way - land acquisition clearance and approvals** | **Greenfield** - 90% of the land transferred on the effective date should include **100% of the land pertaining to airport operations**<br>**Brownfield -** 100% of the land transferred on the transfer date |
| **Expansion of the airport** | Expansion triggers for **capital expenditure linked to annual passenger capacity and average peak hour capacity** to form part of the MCA for phased expansion |
| **Bid parameter/ Concession fee** | Greenfield - An inflation linked parameter - **'INR per passenger'** may be suitably adopted to minimize revenue leakage.<br>Brownfield – Fee for each domestic and international passenger to be shared with Authority |
| **Termination payment linked to actual project cost** | **Greenfield** - The termination payment to be linked to a **value which is some percentage (as determined by the authority) higher than the defined total project cost**.<br>**Brownfield** – The termination payment definition to be linked to invested value in aeronautical and non –aeronautical assets as determined by the regulator |
| **User fee - ambiguity in tariff structure** | Providing **clear definition as well as method for calculating each parameter**, with each sub-parameter defined as per the airport category, will eliminate interpretation issues for both the concessionaire and regulator. This will help reduce the disputes. |
| **Concession Fees – moratorium period** | **Providing concession fees moratorium** up to sufficient number of years subject to an upper ceiling of 15 years will help the concessionaire to bear the initial debt burden. |
| **Definition of change in ownership/ Equity lock-in period** | **Equity lock-in period will be extended to five years** to ascertain the operational compliance of the concessionaire in the MCA. |
| **Concession period linked to target traffic** | **Modification in concession period** with respect to difference in target traffic and actual traffic as on target year determined by the Authority. |

Apart from the changes in the MCAs, other recommendations include strengthening the regulatory scenario which are illustrated below:

**Adoption of two stage bidding process for both greenfield and brownfield PPP projects**

All the PPP airports developed in the past have been awarded through a two stage bidding process which has proved to be the most efficient and effective method for award of PPP projects. However it is important to define and adhere to the timelines of bidding process set out for the specific project to gain maximum benefit out of this type of bidding.

**Prolonged Litigation Process**

- The litigation process before the Tribunal to be resolved within 90 days of appeal, which will speed up the resolution process
- The panel to have representation from an independent aviation expert for effective dispute resolution

The report examines various models of tariff determination that may be adopted for future PPP airports which are under consideration. Comparative analysis of following types of models have been considered:

1. **Cost plus model with highest gross revenue share and tariff regulated by AERA**

Based on stakeholder interactions, apart from strengthening the existing tariff filing guidelines and effective and timely dispute resolution, this model is widely accepted. *However our analysis suggests that a bid-parameter which can virtually have a zero-risk of revenue leakage to the Concessionaire can be a better alternative.*

2. **Pre-fixed revenue share (8 -12%) with the lowest tariff as bid parameter**

Although the lowest tariff will be beneficial for end users, aggressive bidding may lead to stalling of projects during the execution phase

3. **Pre-determined tariff with highest premium (up to 50%) and review by AERA every five years as suggested in the MCA**

This model will help avoiding gold plating by private players. But aggressive bidding may again lead to stalling of projects during the execution phase. This may be partly addressed by procuring an additional security deposit for five years to ensure operational compliance.

4. **Max yield per passenger pre-determined by the Authority, termed as Maximum Blended Aeronautical Yield(MBAY) and fixed fees per passenger as bidding parameter**

Similar to the pre-determined tariff regime, fixed yield may be considered for both greenfield airports as the yield will be based on assets to be built/existing assets and future expansion plans.

We have made the following recommendations:

1. **Bidding Parameter:** Concession fee per passenger in terms of an inflation linked **INR per passenger**
2. **Tariff Structure:** A pre-determined, inflation-linked/adjusted and MBAY-derived tariff structure with a detailed schedule of user fees appended to the concession agreement right at the outset which would be subjected to periodic review by AERA/designated competent authority.

For brownfield airports, the recommendation has been proposed in line with the latest DCA implemented by AAI for six airports. The regulatory framework followed in the DCA is Cost Plus model with highest per passenger fee and tariff regulated by AERA.

We have made the following recommendations:

1. **Bidding Parameter:** Concession fee per passenger in terms of an inflation linked **INR per passenger**
2. **Tariff Structure:** As followed by AERA as per AERA act 2008 and the addendums issued for the act.

In addition to the above, bidding out airports on O&M contract may be a viable option provided issues related to scope of work, equity lock in period, bidding parameter, concession period are suitably modified to suit the appetite of private investors.

Recommendations pertaining to asset monetization have also been incorporated as part of the report. Since there is a significant requirement for investment in the airport sector (USD 45-50 billion), it is government's prerogative to

efficiently utilise its resources to create a conducive environment for private investment. The various models through which this can be achieved in the airport sector have been analysed and it has been observed that bundling of airports is not suggested at this stage as high potential airports will attract private parties on standalone basis provided the deal value is attractive.

# 2. Introduction

## 2.1 About the project

With the Indian government's thrust on public private partnerships (PPPs) in the infrastructure sector, multiple models have been formulated to channel private sector investments into various projects. These models, with suitable legal and regulatory frameworks in place, have been used in actual infrastructure projects across sectors, albeit with varying degrees of success. Given that infrastructure projects are inherently capital-intensive and susceptible to cost overruns, the positioning of private sector players as stakeholders through PPPs has incentivised robust project management practices. Learnings from operational PPP models led to the development of newer models, which addressed challenges and evolved with time.

While the past PPP initiatives in the airports sector have been successful in attracting private investments, there were a number of challenges both the government regulators and private investors faced. Given the pace of traffic growth across several airports in India, capacity augmentation of existing airports and the development of newer airports have become increasingly important. The National Civil Aviation Policy of 2016 estimates domestic passenger traffic to be 500 million by 2027. Against this backdrop, it is essential that a rigorous PPP framework for the airport sector be put in place to enable the development of required infrastructure.

With this objective, NITI Aayog intends to carry out a study on PPP frameworks in the airports sector. The study will be carried out both for brownfield and greenfield airports. A thorough understanding of the existing model concession agreements (MCAs) is a key starting point for this study. The guiding objective of the study is to identify areas of improvement in the existing MCAs in the light of recent developments in the sector, adapt best practices from around the globe and find out alternative models of financing.

## 2.2 Objectives of the study

The study should focus on:

- Understanding the key attributes and issues in the Operations and Maintenance(O&M) model adopted by the Ministry of Civil Aviation (MoCA) for Jaipur and Ahmedabad airports
- Exploring the possibility of alignment of the existing Operations and Maintenance (O&M) model with the TOT/asset recycling model with provision for capacity augmentation
- Analysis of the differences in structuring of PPP projects as adopted by the Ministry of Civil Aviation (MoCA) in the airports vis-à-vis the Model Concession Agreements (MCAs) prepared earlier by the Planning Commission
- Exploring the best option suited to greenfield airports- comparative analysis
- Making recommendations on suitable amendments to the existing Model Concession Agreements

To undertake this study, NITI Aayog has appointed CRISIL Risk and Infrastructure Solutions Ltd (CRIS), which is a 100% subsidiary of CRISIL Ltd, an S&P Global company.

## 2.3 Structure of the report

The overall report is segregated into six sections as described below:

| | | |
|---|---|---|
| ***Section 1*** | Executive summary | Summary of key findings from the study conducted |
| ***Section 2*** | Introduction | Narrative about the project, the overarching objectives and the approach and methodology adopted to conduct the study |
| ***Section 3*** | Overview of the airports sector in India | Study of the airports sector landscape in India |
| ***Section 4*** | PPP trend in the airport sector | Study of PPP models adopted in the airport sector globally and in India including evolution of PPP models, key considerations and challenges in PPP and importance of selecting the right PPP model |
| ***Section 5*** | PPP framework in Greenfield airport | Study of PPP model in Greenfield development, deep dive analysis of the MCAs with comparative analysis and subsequent issues faced by the authority and private operator. Recommend suitable amendments in the existing MCAs published by the erstwhile Planning Commission and existing Draft Concessions Agreements of PPP airports. |
| ***Section 6*** | PPP framework in brownfield airport | Study of PPP model in brownfield privatization, explore suitable framework. Recommend suitable amendments in the existing MCAs published by the erstwhile Planning Commission and existing Draft Concessions Agreements of PPP airports. |
| ***Section 7*** | Asset recycling framework to monetize airports | Study of asset recycling framework, current landscape in India and applicability of the framework in airport sector |

# 3. Overview of airports sector in India

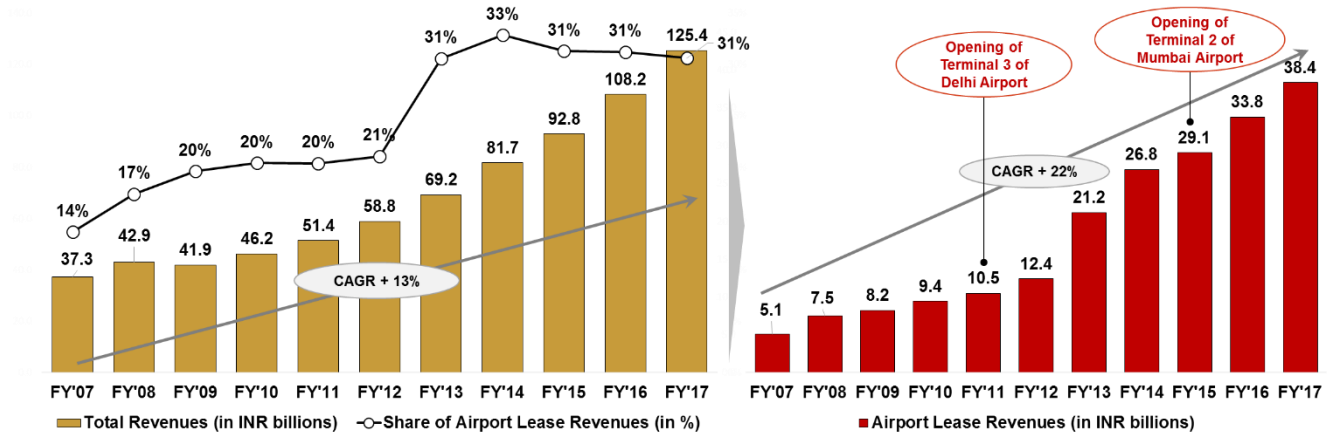
The rapid rise in India's aviation sector has increased the requirement for new airports. In the last 2-3 years, India has become the fastest growing aviation market, clocking a Compound Annual Growth Rate (CAGR) of 20%. In terms of size, the country is ranked ninth, with the market valued at USD 16 billion in fiscal 2018. A large part of the rise was due to increase in domestic passenger traffic, owing to the low cost of airline tickets and expanding incomes, thereby making flying more accessible. In fact, during the year[1], domestic passenger traffic increased ~18.3% year -on-year to 243.28 million. By 2020, the government envisages India's aviation sector to become the third largest. The government is also targeting 1 billion trips per year by leveraging the development potential in tier 2 and 3 cities.

Development of airports is another key reason for the increase in domestic passenger traffic. There is considerable activity around airport development owing to a liberalised foreign direct investment (FDI) policy, increasing adoption of information technology, and focus on improving regional connectivity.

Currently, India has 464 airports and airstrips. Out of this, 125 are managed by Airports Authority of India (AAI) and the rest by state governments, government subsidiaries and private players. AAI was established in 1994 under the Airports Authority Act and is primarily responsible for financing, developing, operating and maintaining all government airports. It currently manages 90 operational airports, nine non-operational airports and 26 civil enclaves. AAI airports primarily cater to freight traffic, out of which 64% is international freight. This is followed by passenger traffic, which is dominated by domestic passengers via 66 domestic airports and 17 international airports. AAI is planning to invest USD 2.32 billion in fiscal 2019 to expand existing terminals and construct 15 new terminals.[2]

From fiscal 2007 to 2017, AAI's revenue grew at 13% CAGR, with revenue from airport leasing rising at 22% CAGR, thereby doubling its share in the revenue pie to 31% from 14%. This was driven largely by revenue from Delhi and Mumbai airports, which are now run as joint ventures between AAI and private players following privatisation of the two in 2006.

**Figure 1: Trend in overall revenue of AAI and revenue from airport leasing**




*Source: Annual Reports-Airports Authority of India, CRIS Analysis*

The private sector operates five airports - Delhi, Bengaluru, Hyderabad, Kochi and Mumbai - catering to more than 50% of the country's passenger air traffic. Delhi and Mumbai were the first brownfield airports that were given on PPP. Kochi airport was the first PPP greenfield airport, followed by Hyderabad and Bengaluru.

*1 IBEF report on aviation sector, 2018; passenger traffic incudes departing and arriving passengers*

*2 IBEF report on aviation sector, 2018*

These airports have witnessed increase in passenger traffic, primarily because of better level of service, adoption of technology (electronic boarding pass, check-in kiosks, etc.) and provision for traveler comfort. However, these airports are reaching saturation levels. Delhi airport is 70% utilised and Mumbai airport is 80%. These airports are likely to saturate their passenger capacity by 2022.

**Table 1: Passenger traffic in private airports**

| Name of airport | Passenger traffic volume (in millions) | | | | | |
|---|---|---|---|---|---|---|
| | 2016 | Percentage share in total passenger traffic | 2017 | Percentage share in total passenger traffic | 2018 | Percentage share in total passenger traffic |
| Delhi | 48 | 21.5% | 57.7 | 21.9% | 65.69 | 21.3% |
| Mumbai | 41.7 | 18.7% | 45.2 | 17.1% | 48.5 | 15.7% |
| Hyderabad | 12.4 | 5.6% | 15.24 | 5.8% | 18.16 | 5.9% |
| Bengaluru | 19 | 8.5% | 22 | 8.3% | 26.91 | 8.7% |
| Kochi | 7.7 | 3.5% | 8.7 | 3.3% | 10 | 3.2% |
| Total | 128.8 | 57.8% | 148.84 | 56.4% | 169.26 | 55.0% |

*Source: AAI*

With airports, private and public, reaching saturation levels there is an urgent need for capacity augmentation at the existing airports or development of new airports near existing airports. These investments are partly expected to increase via the Public Private Partnership route. While the private sector has shown considerable interest in the airport sector, the level of interest has been decreasing owing to lack of safeguards in the present concession agreements. As the airport sector is a high-risk asset, with very high capital cost, investors and operators require a level of comfort in terms of adequate risk allocation.

The government is providing policy level support and incentives to attract private players. As per the National Civil Aviation Policy 2016, the incentives offered are:

- 100% FDI under the automatic route for greenfield and brownfield airports
- 49% FDI in scheduled airlines and regional air transport services through the automatic route, and beyond 49% with government approval. For non-resident Indians (NRIs), 100% FDI is permitted under the automatic route
- 100% FDI via the automatic route for non-scheduled air transport services, helicopter services/sea plane services requiring Directorate General of Civil Aviation (DGCA) approval, manufacture, repair and overhaul (MRO), flying training and technical training institutions, and ground handling services, subject to security clearance and sectoral regulations
- Exemption from service tax with respect of the amount of viability gap funding (VGF) payable to the airline operator for providing the services of transport of passengers by air and Indian aircraft MRO service providers are exempted from customs and countervailing duties terminating in a Regional Connectivity Scheme (RCS) airport, for one year from date of commencement of operations of the RCS airport
- Exemption of customs and excise duty for tools and tool-kits used in MRO works
- Removal of restriction of one year for utilisation of duty free parts
- Revision of notification on Standard Exchange Scheme to allow import of unserviceable parts by MROs for providing exchange / advance exchange
- Foreign aircraft brought to India for MRO work allowed to stay up to six months or as extended by the DGCA. The aircraft can carry passengers at the beginning and end of the stay period in India

- Airport royalty and additional charges not to be levied on MRO service providers for five years from date of approval

In addition to the incentives, the government is encouraging ease of doing business for foreign pilots, companies, MRO/original equipment manufacturers, experts, etc.

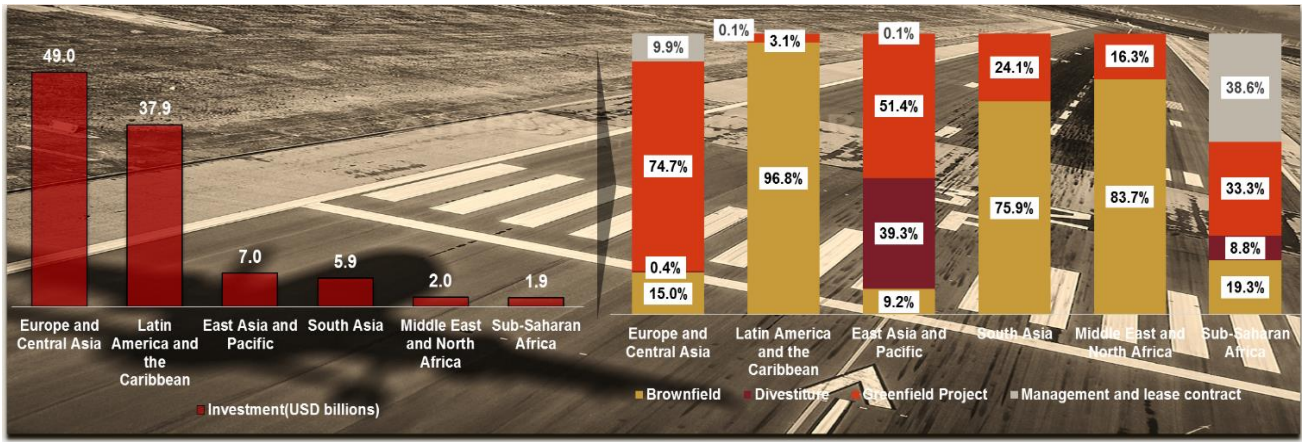
With increasing passenger traffic, the government realises the need to develop airports and increase capacity at existing airports. The introduction of Nabh (NextGen airports for Bharat) Nirman initiative aims for a five-fold increase in passenger traffic to a billion trips per year. Key aspects of Nabh Nirman include fair and equitable land acquisition, long term master plan for airport and regional development, and balanced economics for all stakeholders. In addition, the potential of airport development in tier 2 and 3 cities is being targeted by the Ude Desh Ka Aam Nagrik or UDAN scheme that promotes regional connectivity. The industry is, therefore, targeted to become the third-largest aviation market by 2020, and the largest by 2030.

# 4. PPP trend in the airport sector

## 4.1 Background

Globally airports have transformed from government-controlled public infrastructure facilities to competitive service providers over the past few decades. This was largely driven by increasing privatisation, which brought in several benefits such as improved efficiency, greater levels of customer satisfaction, access to private capital, spreading of ownership, rapid build-out of augmentation infrastructure, greater transparency in operations and more skilled workforces. Running airports as self-contained businesses has demonstrated significant improvement in their profitability.

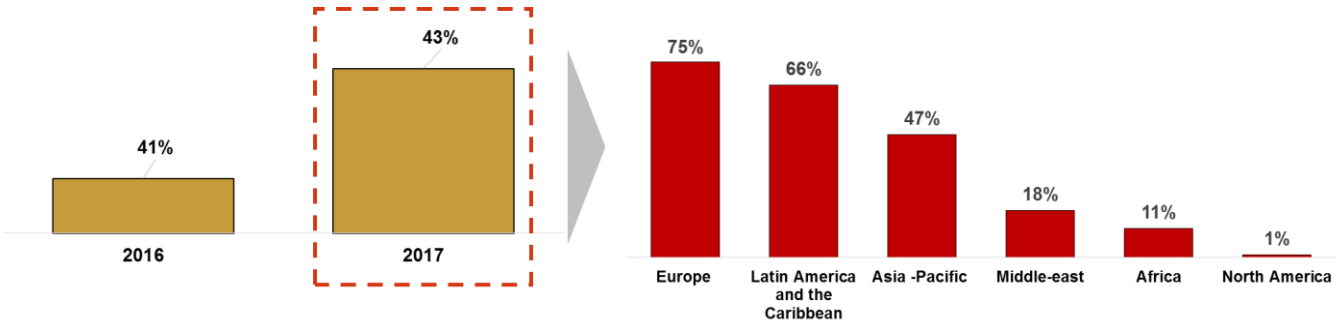
**Figure 2: Region wise size of investments (in USD billions) in the airport sector involving private participation (between 1990 and 2017), and region-wise split of investment size by project/contract type**




*Source: Private Participation in Infrastructure Database, World Bank, CRIS Analysis*

Historically, Europe, Central Asia, Latin America and the Caribbean regions have received large private sector investments in the airport sector. In Europe and Central Asia, a majority of such investments were in greenfield projects. However, in Latin America, the Caribbean, South Asia, the Middle East and North Africa, the major share of investments were in brownfield projects. Divestiture in the sector was prominent in the East Asia and Pacific regions. Europe has been the frontrunner in terms of privatisation, with 75% of the traffic in 2017 handled by airports with private sector investments.

**Figure 3: Growth in share of passenger traffic at airports with private participation from 2016 to 2017 and region-wise share of passenger traffic handled by airports with private sector participation in 2017**

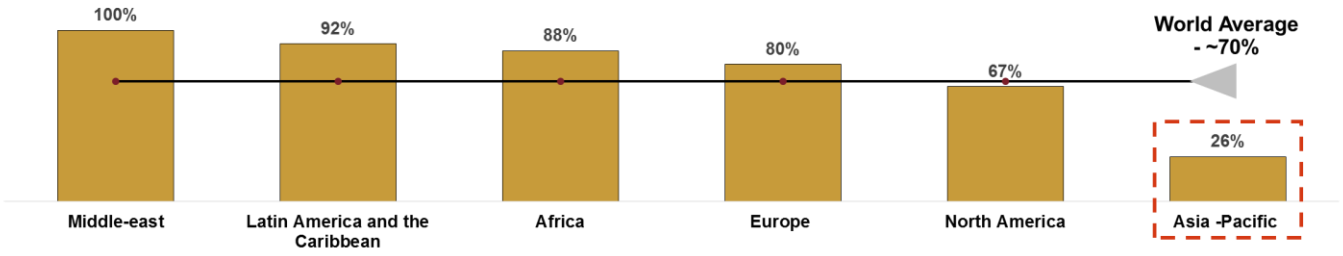



*Source: ACI Inventory of Privatized Airports (2018), Policy Brief - Creating fertile grounds for private investment in airports, Airports Council International, 2018.*

One way to gauge the private sector interest in airport privatisation of a region is to look at the presence of international players in the pool of bidders for a particular project. The greater the number of international bidders in successive

privatisation initiatives the stronger the credentials of that region's airport sector. It has been observed that there is greater international interest in airports in regions such as the Middle East and Africa, despite airports with private participation there having lesser passenger traffic share. Meanwhile, the Asia Pacific region has witnessed far lesser international bids. The share of airport privatisation projects with participation of international bidders stands at nearly 26%.[3]

**Figure 4: Region-wise share of airport privatisation exercises with the participation of international bidders**




*Source: ACI Inventory of Privatized Airports (2018) - Evaluated for a sample size of 255 airports, Policy Brief - Creating fertile grounds for private investment in airports, Airports Council International, 2018.*

Globally, private players from Turkey have been part of the largest investments in the sector. Fraport AG of Germany, GMR Group of India, and Changi Airports International of Singapore are some of the prominent companies that made significant investments in the sector.

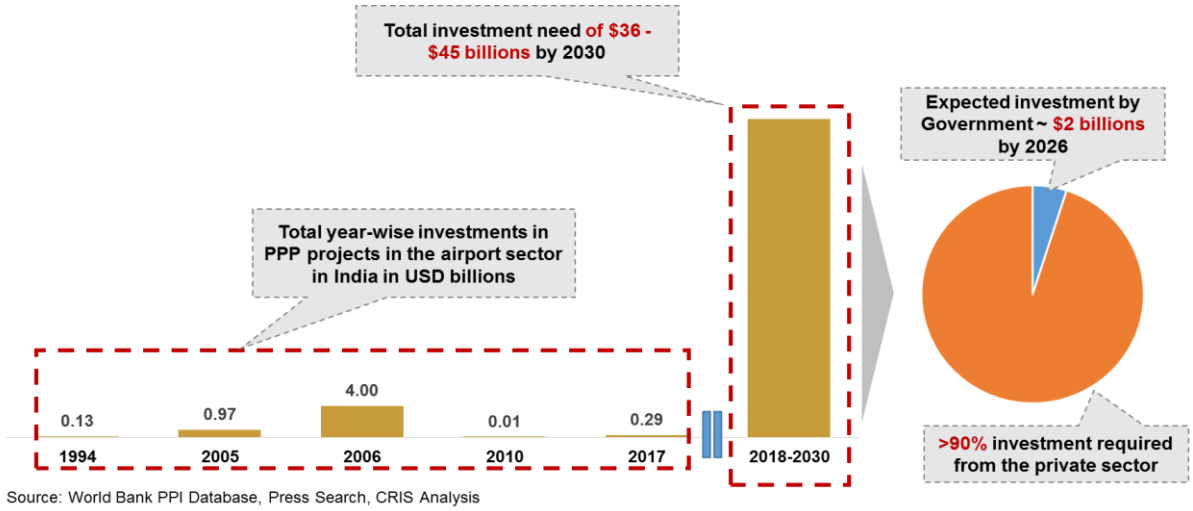
[3] Reference: *Policy Brief - Creating fertile grounds for private investment in airports*, Airports Council International, 2018.

## 4.2 Overview of PPP in airports in India

PPP stems from a demand for quality infrastructure, robust investment, proficient project management and technological advancement. PPP bridges the gap in infrastructure investment. It not only brings in additional capital, but also enables both players to bring their experiences and strengths, resulting in efficient development of infrastructure assets and improve the quality of service.

After liberalisation of the sector in 2013, there has been an increase in private sector investment. By 2027, the sector is expected to receive private investments totaling USD 25 billion. Key private players include GMR Group, GVK, Larsen & Toubro, Siemens, Unique and Maytas Infra.

**Figure 5: Private sector investment in India's aviation sector**

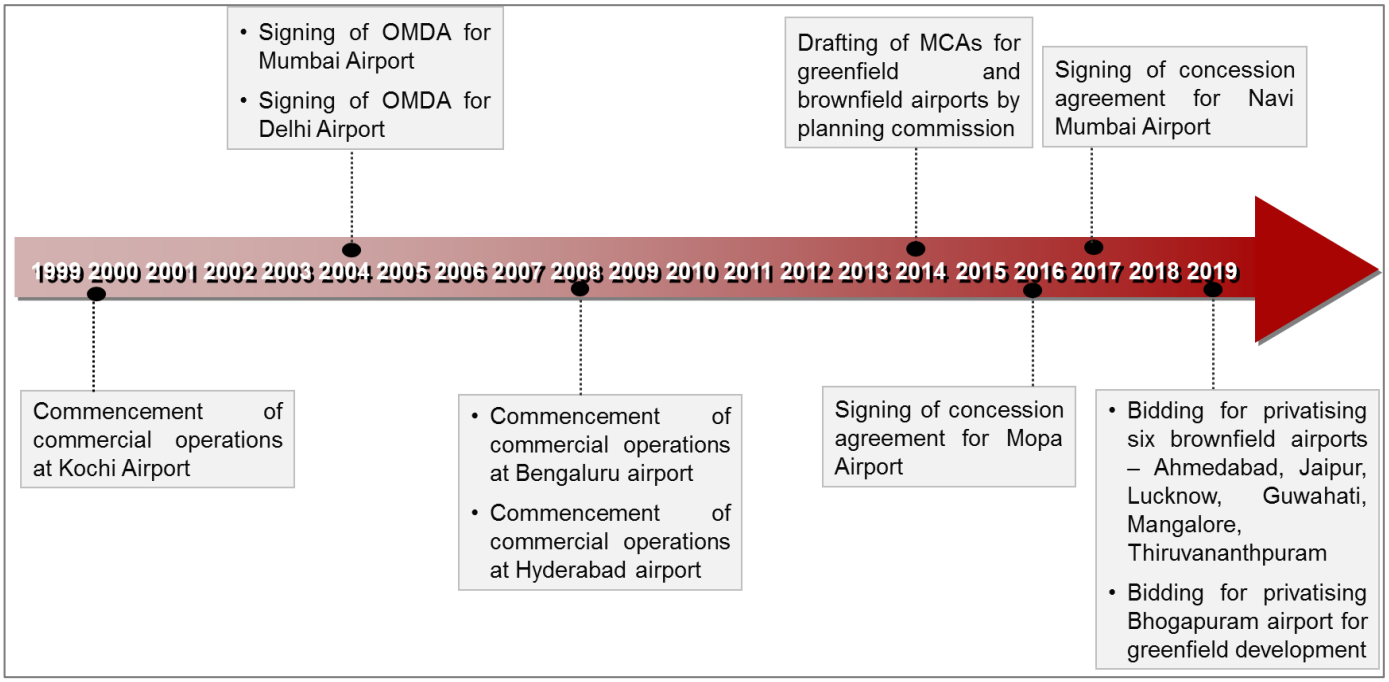



There is a huge investment gap in the sector. Through incentives and schemes, the government intends to attract considerable investments. In addition, there has been a significant increase in FDI inflows. During 2014 to 2016, USD 435.81 million inflows were reported vis-à-vis USD 61.84 million during 2012 to 2014. Apart from foreign players, domestic players have shown significant interest in entering the space.

## 4.3 Evolution of PPP structure in airports sector

As is the case with other infrastructure sectors, the airport sector has seen changes in the PPP structure. This evolution took place by imbibing past learnings from the concession agreements and mitigating challenges faced during implementation. The aim is primarily to formulate a robust concession agreement with required safeguards built in.

**Figure 6: Evolution of PPP structures**




*Source: CRIS Analysis*

***Greenfield airports***

The PPP mode for greenfield airports has undergone a structural change between signing of the Kochi airport in 1994 and signing of the Navi Mumbai airport in 2017.

Kochi was the first greenfield airport in the country involving private participation. It set an example for suitable application of PPP in India's airport sector. The airport is managed by Cochin International Airports Ltd, which was incorporated in 1994 with the Government of Kerala, financial institutions, airport service providers and foreign countries as shareholders.

Financing of airport largely involved government funding, interest free loans and donations from NRIs, airport users, foreign countries, etc. Currently, the Kerala government and the central government hold 13% each, with the rest held by the public. As multiple entities are involved, the airport follows a dividend-sharing model.

Bengaluru and Hyderabad airports were awarded to private entities on PPP basis in 2004. The key objective of this move was to develop world class airports. The scope of work primarily included construction and design of greenfield airports, operation and maintenance of the airports during the concession period, and expanding the airports when required. There was a need to revamp the airports as operations were lacking. Both airports started commercial operations in 2008. The concession period is for 30 years, with 30 years of extension if requested by the concessionaire. The concession fee is fixed at 4% of gross revenue, which is to be shared with AAI.

Mopa airport is the first PPP concession agreement, signed after the issuance of MCA by erstwhile planning commission in November 2016. The concession period is for 40 years, with 20 years extension if requested by the concessionaire. The concession fee is Re 1 per annum with an annual premium chargeable at 36.99% of gross revenue which is paid by the concessionaire to AAI starting from the sixth year of commencement of development.

Navi Mumbai airport is the most recent PPP concession agreement signed on January 2018. The initial concession period is for 30 years and is extendable by 10 years. The airport is expected to cater to the growing passenger traffic at Mumbai airport. There is a pre-determined concession fee starting from 5 crores from 1$^{st}$ year and increasing to 1,940 crores by the 40$^{th}$ year. In addition, the concessionaire will be sharing 12.6% of gross revenue with AAI.

**Table 2: Shareholding pattern for Greenfield airports**

| Name of airport | Shareholding pattern | |
|---|---|---|
| | Shareholder | Percentage of share |
| Bengaluru airport | Fairfax capital | 54% |
| | Siemens Project Ventures GmbH | 20% |
| | Karnataka State Industrial and Infrastructure Development Corporation Ltd | 13% |
| | AAI | 13% |
| Hyderabad airport | GMR Group | 63% |
| | Government of Andhra Pradesh | 13% |
| | AAI | 13% |
| | Malaysia Airports Holdings Berhad | 11% |
| Mopa airport | GMR group | 100% |
| Navi Mumbai airport | GVK Industries, Airports Company South Africa & Bidvest | 74% |
| | City and Industrial Development Corporation of Maharashtra Ltd. | 26% |

*Source: IBEF report on Aviation sector, 2018; economictimes.indiatimes,com; GMR website*

In November 2018, Andhra Pradesh Airports Development Corporation Limited (APADCL) issued an RFP for the new airport at Bhogapuram. The scope of work involves design, build, finance, construction, development, up-gradation, modernisation, operation and maintenance of the airport. The concession period is for 40 years, extendable by 20 years. The bid parameter was on per passenger fee basis. GMR emerged as the winner by quoting Rs 303 per domestic passenger as a share of revenue. Signing of concession agreement is currently in process.

***Brownfield airport***

An operation, management and development agreement (OMDA) was signed for the modernisation and operation of Indira Gandhi International Airport (Delhi International Airport Ltd) in Delhi and Chhatrapati Shivaji International Airport (Mumbai International Airport Pvt Ltd) in Mumbai. The OMDA laid out contractual terms of the PPP structure. The concession period is for 30 years, with 30 years of extension if requested by the concessionaires. The concessionaires have to pay upfront fee of Rs 150 crore to AAI. For DIAL, as an annual premium, the concessionaire has to pay 45.99% of projected revenue of that year to AAI. For MIAL, as an annual premium, the concessionaire has to pay 38.7% of projected revenue of that year to AAI.

Recently, six airports – Ahmedabad, Jaipur, Lucknow, Guwahati, Mangalore and Thiruvananthapuram – were bid out by AAI. The concession period for these airports is 50 years with no extension of concession period. This privatization process is a pioneering step in the PPP landscape of airport sector since the bid parameter has shifted from a traditional revenue share arrangement to a fee that the concessionaire pays to AAI for each domestic and international passenger. Adani has emerged as the winner for all six airports. The airports have been awarded to the successful bidder and signing of concession agreements is in process. The winning quotes for the same is mentioned below:

**Table 3: Quoted fee per passenger by winning bidder**

| Name of airport | Quoted per domestic passenger fee (in Rs.) |
|---|---|
| Sardar Vallabhbhai Patel International Airport, Ahmedabad | 177 |
| Jaipur International Airport, Jaipur | 174 |

| | |
|---|---|
| Chaudhary Charan Singh International Airport, Lucknow | 171 |
| Lokpriya Gopinath Bordoloi International Airport, Guwahati | 160 |
| Trivandrum International Airport, Thiruvananthapuram | 168 |
| Mangalore International Airport, Mangalore | 115 |

***MCAs by erstwhile Planning Commission***

MCAs were published by the erstwhile Planning Commission during the Twelfth Five-Year Plan as part of recognising the need for investment in the infrastructure sector. The MCAs played a key role in restructuring the concession agreements for greenfield and brownfield airports.

In the MCA for greenfield airports, the following scope of work was defined:

- Construction and operation of the airport and commercial exploitation of specified areas
- City-side development in the form of hotels, convention centers and airport-related businesses
- The concessionaire will be responsible for all future expansion of the terminal building
- The master plan of the terminal is to be included as part of the concession agreement, and should specify the land use and other restrictions on development of the terminal

In the MCA for brownfield airports, the following scope of work was defined:

- Operation and management of the terminal building, cargo complex and car parking, including the commercial exploitation of specified areas
- City-side development in the form of hotels, convention centres and airport-related businesses
- The concessionaire is expected to meet the expenditure relating to operation, management and development of the terminal building from revenue that it generates from user fees, commercial activities and city-side development

The MCA enlists key performance indicators relating to aeronautical assets, terminal building, cargo terminal, etc. It mentions penalties for failure to achieve levels of performance as well, especially in terms of user services. It also includes a passenger charter that the concessionaire should publish and implement for the benefit of users of the airport terminal, increasing the accountability of the concessionaire.

## 4.4 Key considerations in airport PPPs

### 4.4.1 Traffic drivers[4]

Some of the major traffic drivers that can influence the PPP design are:

1. **Competition between airlines**

   The growth of low cost carriers (LCCs) can increase affordability and provide more route options, thereby facilitating passenger and freight traffic growth. LCCs are driven by the need to push down costs in order to be able to charge lower fares. Hence, when it comes to selecting a hub, LCCs need to identify airports where they can expect an optimal annual increase in passenger traffic as well as stable airport costs[5]. Thus, it is in the airport's best interests to keep charges at levels that are conducive to LCCs, and, in turn, improve their traffic level.

[4] Reference: *Airport PPPs: Benefits, Drivers and Success Factors,* January 2015 - World Bank

[5] *Reference: Mandić, A., Teklić, M., Petrić, L. (2017), The effects of the low cost carriers' presence on airport performance: evidence from Croatia, Tourism and Hospitality Management, Vol. 23, No. 1, pp. 17-34, https://doi.org/10.20867/thm.23.1.4*

2. **Maturity of region's aviation space**

   As the aviation market approaches saturation, traffic levels can plateau. An airport operating at excess capacity can either augment capacity or build a new airport in proximity. Thus, meeting passenger and airline demand is a key rationale for a greenfield airport. In such cases, traffic levels can be expected to pick up rapidly, as the new airport can meet the earlier unmet demand for airport capacity.

3. **Status as hubs**

   Small countries such as Singapore and the UAE have sustained high traffic levels because of their positioning as aviation hubs. Thus, an airport that can become a junction for aviation routes and facilitate the transfer of passengers across routes can see high traffic volume. In this way, an airport can generate higher revenue from in-transit passenger spending.

4. **Demographic changes and population mix**

   Rising population can lead to higher number of air travelers. Regions that have high migrant population also exhibit strong air traffic growth. Economic development (as reflected in rising disposable incomes) can also boost air traffic.

5. **Nature of geography**

   The need for air transportation is higher in island nations, or regions located at considerable distances from big cities, or main commercial centres, or locations that are less readily accessible through other means of transportation. Such areas can witness growth in air traffic volume with better connectivity.

### 4.4.2 Concession structure [6]

It is imperative to assess the typical challenges faced in structuring an airport PPP. Factors impacting the structure of a concession are:

1. **Regulatory framework for tariff setting**

   It is imperative to formulate an optimum tariff structure, given that sustained revenue from operations hold the key to recovery of investments. Deciding between a flexible tariff structure (that can be reset owing to inadequate traffic levels or inflation), or a pre-determined tariff structure (fixed on maximum yield per passenger or fixed fee) is key to the feasibility of the airport project. The methodology and the basis of tariff calculation need to be clearly stated as these are areas of concern for investors and developers in the airport sector.

2. **Traffic risk**

   The main rationale behind any investment decision in an airport project is the expectation that over time traffic at the airport will reach levels that will ensure that there is assured and adequate revenue. However, in the event this does not materialise, then operating the airport could become unviable. Protection against traffic risk is important for investors as there are multiple reasons for a sudden decrease in traffic, such as political, strikes, bad publicity of the city, etc.

3. **Inflation**

   It is necessary for the earnings of an airport operator to be commensurate with costs. However, inflation can significantly impact earnings in case it is not effectively captured in the tariff structure. Therefore, it is important that at the concession structuring stage there is adequate clarity on the methodology of indexation as well as the frequency of revision by the regulator.

[6] Reference: *Airport PPPs: Benefits, Drivers and Success Factors,* January 2015 - World Bank

4. **Protection against foreign exchange risk**

   Protection against foreign exchange volatility is important to attract bids from international construction companies. Relevant safeguards need to be built into the concession agreement to cover this risk, thereby ensuring increased participation.

5. **Arbitration**

   An efficient arbitration set up and process has been key desirables in past airport concessions. In some instances, the absence of airport sector experts in the arbitrating panels was considered to impair the fairness of the arbitration process. In addition, institutionalising the arbitrator is favourable to the concessionaire, as an independent agency is bound to be unbiased.

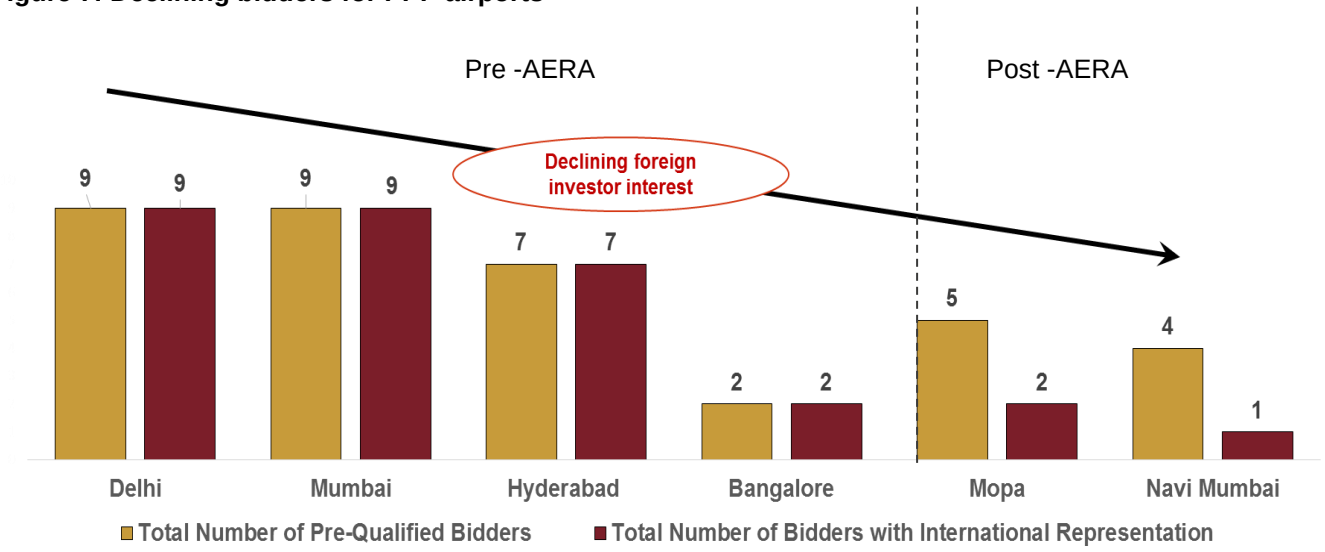
6. **Termination**

   The most important aspect in termination of payments is the basis for calculation of the termination amount, which is often taken to be a cost that is calculated at the project's design stage. The key pre-requisite to ensuring a fair termination transaction is having a fair assessment of the actual project cost associated with the airport project. In the course of development of the project there could be cost increases because of escalation in prices of materials or even inflation.

## 4.5 Key challenges in PPP airports sector

As India is heading towards becoming the 3rd largest aviation market overall surpassing UK by 2025-26[7], it is imperative to create enabling infrastructure to sustain the market boom. As illustrated in the previous section, India needs to invest at least 50 billion USD in next decade for capacity additions and investment pipeline. If the growth rate continues at this pace, most Indian airports may reach saturation between 2025 to 2030. The government alone with its limited resources may not be able to pump in such high investments which entails PPP as the preferred mode for development. In such a scenario, it is imperative to attract foreign investments which will aid in sustaining the growth in the sector. However, there has been a declining interest of foreign players to invest in Indian airports and it poses a serious concern for future development.

**Figure 7: Declining bidders for PPP airports**




There are manifold issues stated by the investor community which need to be tackled at the earliest in order to open avenues for attracting foreign investment in the sector. Additionally, the domestic developer community has also cited

[7] *Source:IATA*

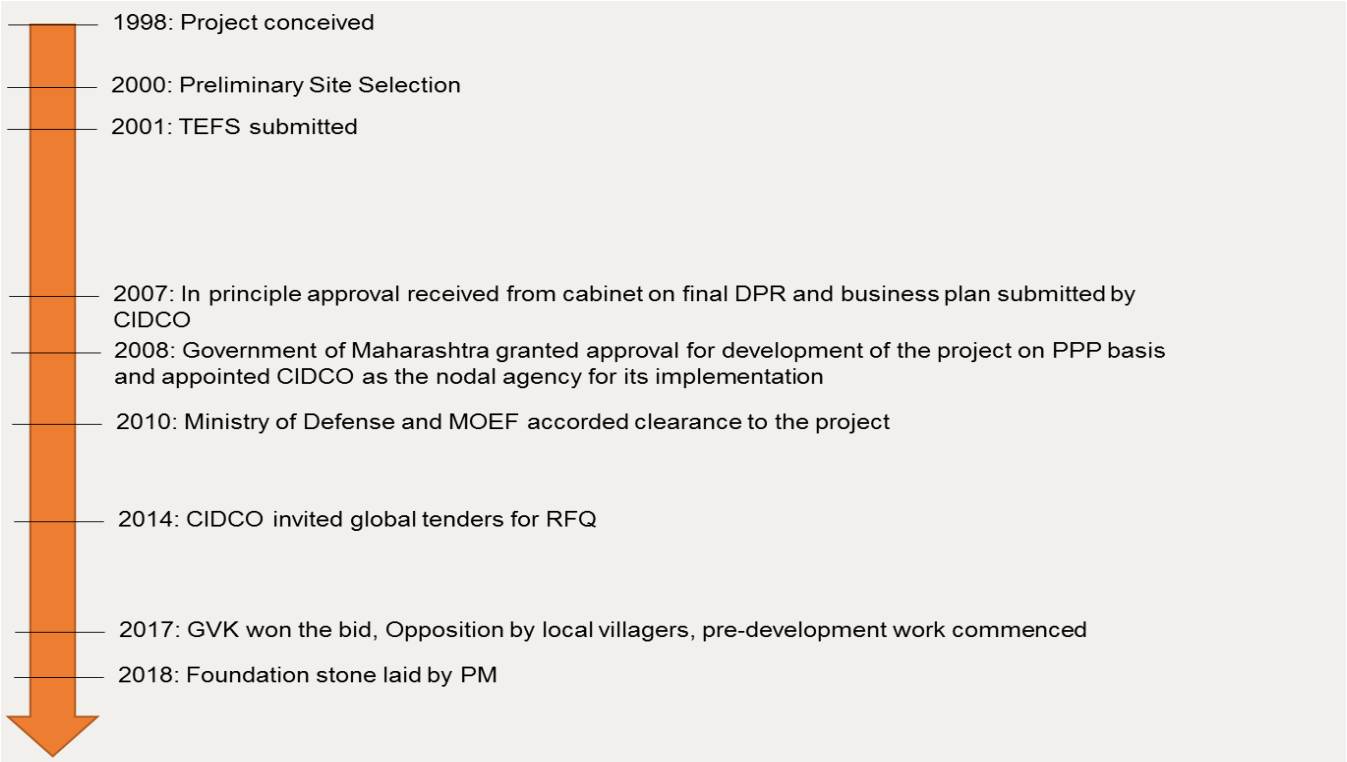
problem areas. Identifying these problem areas are imperative to identify the gaps in the existing PPP framework and to recommend possible amendments to the concession agreements. The key challenges faced by the private sector based on stakeholder interactions are illustrated below:

**1. Land acquisition and clearance approvals**

For the greenfield airports, land is provided by the state governments, Most of the airports are in congested parts of the city where there is limited scope for growth. In such a scenario, it gets difficult to acquire land in fully constructed areas around airports is difficult. Value capture financing mechanisms such as land pooling system have also faced impediments. Therefore, this process takes a lot of time, leading to time and cost overruns. For instance, delay in land acquisition for Navi Mumbai airport has delayed the project timelines:

***Case Study: Navi Mumbai International Airport: Project Timeline - Delay in Project Execution***

The classic example is development of Navi Mumbai Airport which has been delayed due to several regulatory and non-regulatory issues for past two decades as shown below:




**2. Tariff uncertainty**

The tariff structure currently followed by AERA for major airports has components that are ambiguous in nature. This leads to uncertainty in terms of cash flow expectations for the developer. Due to this regulatory regime, the developers/ operators are uncertain about the treatment of their revenue throughout the concession period. Therefore, revenue leakage risk is higher in the current regime. A few issues are illustrated below:

- Cost of Equity of 16% is generally accepted by AERA. However, it is in the process of determining the COE value for various airports and this value may be upgraded;
- Cost of debt is dependent on prevalent market rate and is based on period of filing;
- As per the recent order of Telecom Disputes Settlement and Appellate Tribunal for Delhi airport, a return is expected on Returnable Security Deposit for city side, however, whether it should be treated as debt or equity is still unclear. This may have impact on D/E ratio which will affect the value of Cost of Equity;

- The deficit between expected yield and actual yield is used for tariff revision and charging of UDF. The first few years of operation based on ad-hoc tariff for new projects may create a revenue shortfall which will then make case for charging of UDF in the first control period;
- Since the cost involved in a greenfield airport is much higher, there should be a separate methodology for greenfield and brownfield airport;
- Dispute over clauses mentioned in CA taking precedence over AERA tariff guidelines. For example: in Bangalore airport, the CA considered ground handling, fuel charges & cargo handling charge as non-aeronautical revenue. However, the guidelines were issued post signing of CA and considers these elements in aeronautical revenue. This is a cause for dispute till now.

**3. Regulatory uncertainty**

The Regulatory uncertainty is one of the major factors inhibiting private investments especially the foreign investors. Right from prolonged tariff setting exercise to delayed dispute resolution, the investors are wary of assuming the risk related to regulatory issues.

**4. Long bidding process**

The bid process undertaken right from calling for Expression of Interest to signing of concession agreements spans over 3-4 years. Such prolonged bid process has negative impact on the project viability. Not only the cost escalates but the macroeconomic factors may also change which may further alter the economics of the project. The interest of the bidders further decline during prolonged bidding process.

*(Key parameters are identified for the concession agreements and proposed recommendations are covered in the subsequent section.)*

**5. Issues in current MCA in terms of concession period, equity lock in period, definition of actual project cost etc. are some of the reasons cited as hindrance to future investments**

## 4.6 Importance of selecting the right PPP model

Success of a PPP is mainly determined by the level of detailing in the process and its design. It must be ensured that the deal structure leads to the outcomes envisaged, while keeping public interest in mind.

At the outset, engagement with the aviation industry and other stakeholders is critical to bring about a successful delivery of this process. Bids must be assessed on balanced criteria, and the concession terms must be conducive to bringing about improvement in efficiency, quality of service and levels of investment for the benefit of the airlines as well as the travelers.

The rationale for a PPP is not just private funding, but also the specialist expertise that can be imbued in the running of an airport with private participation.

In the long run, efficiency, sustained traffic levels and overall positive socio-economic impact that a privatised airport can make are some of the key reasons for pursuing airport privatisation.

# 5. PPP framework in Greenfield airport

***Brief Background***

PPP or concession models are arrangements wherein a government authority grants rights to a private company to operate an airport and control multiple airport activities (except reserved services such as air navigation services) for a defined period of time, and bear the risk and reward potential that would be associated with the airport. This model has steadily gained prominence in Greenfield airport projects.

These models are also suited to scenarios where an airport is already in operation, but has limited management or operational capability and is expected to witness growth in demand and infrastructure requirements. In cases where there are constraints in government funding and in seeking external avenues for financing, the PPP model is chosen as a preferred mode for enabling the required infrastructure development (such as a new terminal in the airport or an additional runway). The PPP and concession contracts can be broad in scope and encompass financing, development, operations and maintenance services. The variation in such contracts applicable to Greenfield development of an airport is outlined below:

1. **Build Operate Transfer (BOT)**

   The concessionaire undertakes investments and operates the facility for a fixed period of time after which the ownership reverts back to the public sector. In this type of arrangement, operating and investment risk can be substantial for the concessionaire. The government retains the ultimate ownership and controls policy. Therefore, it can allocate risks to suitable parties and leverage it to remove any incompetency. This is a common model adopted in airport development in Turkey.

   This model may require formation of a special purpose vehicle (SPV) for implementing and operating the project. It may be formed as a joint venture company amongst multiple private sector parties and the public sector. For equity participation of government, it may provide capital grants or other financial incentives to a BOT project.

2. **Build Operate Own Transfer (BOOT)/ Design Build Finance Operate Transfer (DBFOT)**

   The private sector builds, owns and operates the airport, and sells the airport to the concessionaire. Another variation of this model is DBFOT. The model aggregates design, finance, construction and operation of infrastructure services into one contract. As the same entity builds and operates the services, and is only paid for the successful supply of services at a pre-defined standard, it has limited opportunity for compromising quality or quantity of services. It further reduces the risks of cost overruns during the design and construction phases or of choosing an inefficient technology, since the operator's future earnings depends on controlling costs. The public sector's main advantages lie in the relief of burdening costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation. A few examples of the concession structure in airport sector are Bangalore airport and Hyderabad airport in India.

Typically, a PPP contract in the airport sector can last over 30 years and can be even longer when there is a higher capital spend requirement. Longer contracts can match the long-term nature of capital investments, and incentivise the efficient deployment of money, whole lifecycle costing and prudent asset management.

**Case Study: BOT model adopted for Istanbul New Airport, Turkey**

Istanbul New Airport (INA) is an under-construction greenfield international airport in Turkey slated to be opened in October 2018.

***Key features:***

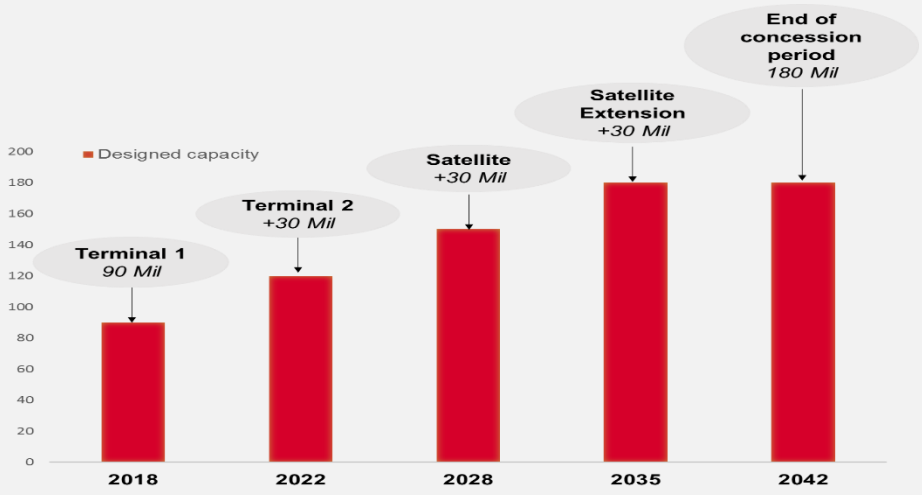
- *PPP model:* Build-operate-transfer with 3.5 years of construction phase and 25 years' operating phase.
- *Concession parties:* Awarded in 2013 by the General Directorate of State Airports Authority of Turkey (DHMI) to a consortium of five firms, namely *Cengiz, Limak, Kolin, Kalyon,* and *Mapa*, each having a 20% stake in the

joint venture. The joint venture is called Istanbul Grand Airport or IGA. Therefore, it is a dividend sharing model among the JV members.

- *Concession fee:* Concessionaire will pay €22.2 billion during the course of the 25-year operating phase as long-term lease. The cost of the airport is €10.2 billion which is borne by the concessionaire.
- *Bidding parameter:* The highest concession fee/ lease paid over the concession period.
- *Expansion triggers:* The expansion will be undertaken when passenger demand increases design capacity of the airport.

Phase I of the airport, slated for completion in October 2018, will have a capacity of 90 million passengers per annum. It is expected to become the largest airport in the world with a target capacity of 150 million passengers per annum by 2028.[8]

- *Tariff determination:* Aeronautical charges are fixed and published by DHMI every year, separately for DHMI airports and PPP airports. However, both aeronautical and non-aeronautical charges are collected by the airport operator.
- *Revenue windfall/ gain:* DHMI guarantees a certain number of passengers, ensuring a minimum level of operating income to airport operators. In case the traffic is below pre-determined volume, DHMI will make payments to the operators. However, in case the passenger volume is larger than guaranteed, DHMI receives the excess revenue.




***Key learnings***

- For large investments, there should be more number of players as part of the JV in order to share construction risk and operation risk
- Tariff is pre-determined with schedule of fees published every year. This ensures avoidance of ambiguity while calculating revenues from aeronautical services
- Due to fixed fee, safeguards are built for revenue windfall/ gain which is linked to expected passenger volume. Revenue risk does not fall on the concessionaire

*Source: ICAO case study, IGA report on INA*

***PPP scenario in greenfield airports in India***

The first greenfield airport to be built as a public-private partnership in India was Cochin International Airport in the state of Kerala in 1999[9]. Since then two further airports were completed in 2008 namely the airports at Hyderabad in Telangana and Bengaluru in Karnataka. In addition, two airports have been awarded on PPP namely the airports at Mopa and Navi Mumbai. Another airport at Bhogapuram is in process of getting awarded. The PPP features of these airports have been discussed below to glean lessons which could be applied while considering suitable frameworks for future airport projects in the country.

[8] *Source: https://centreforaviation.com/data/profiles/newairports/istanbul-new-airport-istanbul-grand-airport, Accessed on July 17, 2018*
[9] *Source: http://www.apaoindia.com/?page_id=158, Accessed on February 19, 2019*

### 1. Rajiv Gandhi International Airport, Hyderabad

In 2008, Rajiv Gandhi International Airport (RGIA) became the second greenfield airport to be developed through a Public-Private Partnership arrangement in India.[10] Located in Shamshabad roughly 24 kilometers to the south of the city of Hyderabad, the airport is built to a capacity of 12 million passengers per annum and has a single terminal building, a cargo terminal and two runways. The airport handled over 18 million passengers in FY'2018. In 2018 capacity expansion work was begun at the airport, to lift the airport's passenger traffic capacity to 30 million passengers per annum. Passenger traffic growth has been strong at the airport as demonstrated by the fact that this expansion was started three years ahead of the planned phased expansion.[11]

Some of the major features of this airport's concession agreement have been presented below.

- *PPP model:* Build, Own, Operate and Transfer (BOOT) basis.[12] The Ministry of Civil Aviation signed the concession agreement with a consortium headed by GMR Infrastructure Limited in December 2004. Designing, financing, construction, operation, maintenance and management of the airport was mandated to GMR Hyderabad International Airport Limited (GHIAL), the Special Purpose Vehicle or SPV for the project.
- *Ownership structure:* As per the Shareholders' agreement as of the date of the concession agreement, the state promoters, Airports Authority of India and the Government of Andhra Pradesh held 26% of the issued and paid-up share capital of the SPV whereas the consortium led by GMR held the remaining 74%.[13]
- *Concession period:* 30 years (with an additional extendable period of 30 years)
- *Concession fee:* 4% of the gross revenue is paid annually by the concessionaire
- *Expansion covenants:* A master plan for the development of the airport was prepared prior to the signing of the concession agreement. The agreement set the ultimate passenger handling capacity of the airport at 40 million passengers per annum. However the concession agreement mandates the concessionaire to review the master plan at an interval of 5 years. Further development of the airport has also been set under the purview of the concessionaire.
- *Tariff determination:* Tariff determination for aeronautical services provided by the airport was done following the single-till model after the release of Tariff Determination Guidelines by the Airports Economic Regulatory Authority of India in 2011. Under this model, all non-aeronautical revenues are deducted in the calculation of the aggregate revenue requirement for the airport.

However at the time of signing of the concession agreement, the charges for aeronautical services were set to Airports Authority of India rates effective from 2001.

***Key learning:*** Land adjoining an airport should necessarily be considered as an important component of a concessionaire's future revenue. City-side/non-aeronautical revenue sources form a major source of total revenue earned by a concessionaire.

[10] *Source: https://www.indiatoday.in/latest-headlines/story/countrys-first-greenfield-airport-in-hyderabad-inaugurated-23648-2008-03-14, Accessed on February 18, 2019*

[11] *Source: https://www.thehindubusinessline.com/economy/logistics/gmr-begins-work-on-hyderabad-airport-expansion/article23336535.ece, Accessed on February 18, 2019*

[12] *Reference: https://www.adb.org/sites/default/files/project-document/80396/47083-002-sddr-02.pdf, Accessed on February 18, 2019*

[13] *Reference: Concession Agreement dated December 20, 2004 between the Ministry of Civil Aviation and Hyderabad International Airport Limited, Source: https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/ppp_testdumb/documents/CA0HIAL0singned020122004.pdf, Accessed on February 18, 2019*

### 2. Kempegowda International Airport, Bengaluru

In May 2008, Kempegowda International Airport became the third greenfield airport to be developed through a Public-Private Partnership arrangement in India.[14] The airport currently has a single terminal with a capacity of 20 million passengers per annum catering both to international and domestic passenger traffic.[15] Like Hyderabad airport, KIA also has witnessed strong traffic growth. Passenger traffic at the airport in 2017-18 stood at 26.9 million.[16]

Some of the major features of this airport's concession agreement have been presented below.

- *PPP model:* Build, Own, Operate and Transfer (BOOT) basis
- *Ownership structure:* At the time of signing of the agreement, 74% of the concessionaire's equity was held by a consortium consisting of Siemens, Zurich Airport and Larsen and Toubro[17] whereas 26% was held by the Airports Authority of India and the Government of Karnataka in equal share.
- *Concession period:* 30 years (with an additional extendable period of 30 years)
- *Concession fee:* 4% of the gross revenue is paid annually by the concessionaire
- *Tariff determination:* Like Hyderabad airport, the concessionaire was mandated to charge AAI tariffs which were effective from 2001. However, the airport moved under the regulatory purview of the Airports Economic Authority of India subsequently

***Key learning:*** Traffic growth is pertinent to greenfield development to attract potential investors. Foreign capital will be attracted to invest within a short span of time since the airport's traffic growth was promising since its inception.

### 3. Mopa airport, Goa

In 2016, the concession agreement for the airport was signed. Nearly 1,500 acres of land was acquired to construct the airport. Construction started in November 2016 and is expected to get completed by 2020. Currently, the design works are in process of getting completed.

Some of the major features of this airport's concession agreement have been presented below:

- *PPP model:* Build, Own, Operate and Transfer (BOOT) basis
- *Ownership structure:* GMR holds a 100% equity stake in the project
- *Concession period:* 40 years (with an additional extendable period of 20 years)
- *Concession fee:* 36.99% of the gross revenue is paid annually by the concessionaire, to the Government of India.
- *Expansion covenants:* The airport will be expanded phase wise. Schedule of the concession agreement defines the design capacity and expansion triggers. The same is outlined below:

| Phasing | Traffic Design Capacity (Million Passengers Per Annum) | Trigger for phasing |
|---|---|---|
| Phase I | 4.4 | - |
| Phase II | 5.8 | 80% of Phase I capacity |
| Phase III | 9.4 | 80% of Phase II capacity |
| Phase IV | 13.1 | 80% of Phase III capacity |

[14] *Source: https://www.indiatoday.in/latest-headlines/story/countrys-first-greenfield-airport-in-hyderabad-inaugurated-23648-2008-03-14, Accessed on February 18, 2019*

[15] *Source: https://www.business-standard.com/article/current-affairs/bangalore-airport-capacity-to-grow-3x-by-2028-expansion-to-cost-2-bn-118050300356_1.html , Accessed on February 18, 2019*

[16] *Source: https://timesofindia.indiatimes.com/city/bengaluru/kempegowda-international-airport-sees-32-8-jump-in-passenger-traffic/articleshow/65295980.cms, Accessed on February 18, 2019*

[17] *Source: https://www.airport-technology.com/projects/bangalore/, Accessed on February 18, 2019*

- *Tariff determination:* Tariff determination for aeronautical services provided by the airport was done following the hybrid-till model as per the National Civil Aviation Policy 2016. Under this model, 30% of non-aeronautical revenues is deducted in the calculation of the aggregate revenue requirement for the airport.

***Key learning:*** Phase wise expansion triggers shall be established during signing of concession agreement for better project planning in terms of capital requirement, operational expenses and revenue streams during concession period.

**4. Navi Mumbai airport**

The concession agreement for the airport has been recently signed in January 2018. The airport is currently under design stage. The project cost of the airport is envisaged to be ~16,000 crores. Being Mumbai's second airport, it is expected to decongest the traffic at MIAL. The envisaged traffic is 10 million passengers per annum in the beginning of operation period, increasing to 60 million passengers per annum by 2030.

- *PPP model:* Build, Own, Operate and Transfer (BOOT) basis
- *Ownership structure:* 74% of the concessionaire's equity was held by a consortium consisting of GVK industries, Airports Company South Africa & Bidvest and the rest is held by City and Industrial Development Corporation of Maharashtra Ltd (CIDCO).
- *Concession period:* 30 years (with an additional extendable period of 10 years)
- *Concession fee:* 12.6% of the gross revenue is paid annually by the concessionaire
- *Expansion covenants:* The airport will be expanded phase wise wherein the first phase shall have minimum 10 million passenger handling capacity and 260,000 tonnes cargo handling capacity. The concessionaire needs to indicate the traffic linked expansion triggers in the master plan.
- *Tariff determination:* Tariff determination for aeronautical services provided by the airport was done following the hybrid-till model as per the National Civil Aviation Policy 2016. Under this model, 30% of non-aeronautical revenues is deducted in the calculation of the aggregate revenue requirement for the airport.

Definition of gross revenue was further strengthened in the CA by addressing major points of dispute such as:

- Insurance proceeds arising out of revenue loss or business interruption is included as part of administration and general expenses;
- Monies received on behalf of the Authority and credited by the concessionaire to the Authority are not to be considered as expenses;
- Any deposit amounts refunded to the relevant sub-licensee or any other person authorized by the Authority in a particular Concession Year (provided these pertain to past deposits on which Premium has been paid to the Authority) are not to be considered as expenses;
- It is clarified that gross Revenue will be computed on an annual basis for an Accounting Year, in accordance with the Indian Generally Accepted Accounting Principles, as applicable on March 31, 2016. Since the principles are defined, it is a good reference point for unforeseeable revenue and expenses and eradicates possible legal disputes;
- Authority's decision is final in case of ambiguity, discrepancy and dispute. This may be detrimental to the private player, however, this clause in in favour of the Authority

***Key learning:*** Definition of Gross Revenue is robust leading to resolving ambiguity issues and subsequent revenue leakage risk.

5. **Bhogapuram airport, Andhra Pradesh**

The concession agreement is in process of getting signed for the airport. The project was proposed in November 2018. The concession structure of the airport has an important change wherein the bidding parameter changed from gross revenue to per passenger fee.

- *PPP model:* Build, Own, Operate and Transfer (BOOT) basis
- *Concession period:* 40 years (with an additional extendable period of 20 years)
- *Concession fee:* Fee paid for each domestic and international passenger – inflation linked fee
- *Expansion covenants:* The airport will be expanded phase wise. Schedule of the concession agreement defines the design capacity and expansion triggers. The same is outlined below:

| Phasing | Traffic Design Capacity (Million Passengers Per Annum) | Trigger for phasing |
|---|---|---|
| Phase I | 6 | - |
| Phase II | 12 | 80% of Phase I capacity |
| Phase III | 18 | 80% of Phase II capacity |
| Subsequent phases | As per assessed capacity | 80% of Phase III capacity |

- *Tariff determination:* Tariff determination for aeronautical services provided by the airport was done following the hybrid-till model as per the National Civil Aviation Policy 2016. Under this model, 30% of non-aeronautical revenues is deducted in the calculation of the aggregate revenue requirement for the airport.

The bid parameter was on per passenger fee basis. GMR emerged as the winner by quoting Rs 303 per domestic passenger as a share of revenue. Signing of concession agreement is currently in process.

***Key learning:*** Fee per passenger makes the sharing mechanism with the authority convenient and easy to determine.

As observed in the five airports, the concession agreement may not be the same but the transaction structure is similar. In the rest of the chapter we shall adopt the key learnings from these airports and propose a suitable framework with respect to the transaction structure and regulatory framework.

## 5.1 Suitable PPP framework

Tariff structure and bidding parameter of the concession define transaction structure of the airport. The privatized airports have been following cost plus model with highest gross revenue share. The regulatory body for the airports is AERA that sets the tariffs for each airport and reviews it in every five years (called control periods). Although, the bidding parameter of Bhogapuram airport is per passenger fee, it follows the same regulatory framework. However, the framework is envisaged to witness changes in the near future.

The Parliament has passed a bill to amend the AERA Act, 2008 by adding a clause for allowing determination of tariffs for greenfield airports prior to bidding. This model will help eliminate regulatory uncertainty with respect to the potential revenue to be generated from an airport as tariffs will be fixed prior to bidding for the airport project. The land cost, service standards, and airport design and, most importantly, planned investments will be taken into account for deciding tariffs. The airport tariff will be indexed appropriately to factor in changes in inflation, foreign exchange rates, and interest rates against future uncertainties. The Mactan Cebu International Airport in Phillipines operated by GMR and Megawide Corporation has been developed on this philosophy.

The table below has a comparative analysis of different type of tariff determination models under consideration for defining a suitable PPP framework:

**Table 4: Comparative matrix of tariff structure and bid parameter**

| Type of model | Bid parameter | Points for consideration | | Recommendations |
|---|---|---|---|---|
| | | *Government* | *Private Player* | |
| **Cost plus model with tariff regulated by AERA** | Highest gross revenue share | • Regulated by AERA<br>• Better returns to the Authority | • Regulatory uncertainty<br>• Operational and investment flexibility | Based on stakeholder interactions, with strengthening the existing tariff filing guidelines and effective and timely dispute resolution, this model is and will be widely accepted |
| **Pre-fixed revenue share (8 -12%)** | Lowest tariff | • Cost-effective<br>• Economically beneficial for government and users | • Lowest tariff will lead to aggressive bidding<br>• Disputes may arise during expansion phase | Although the lowest tariff will be beneficial for end users, aggressive bidding may lead to stalling of projects during the execution phase |

| Type of model | Bid parameter | Points for consideration | | Recommendations |
|---|---|---|---|---|
| | | *Government* | *Private Player* | |
| **Pre-determined tariff with review by AERA every five years as suggested in the MCA** | Highest premium (up to 50%) | • Cost-effective<br>• Economically beneficial for government and users<br>• Focus to shift to quality of infrastructure and service<br>• Pre-determined tariff only includes aeronautical charges | • Lowest tariff will lead to aggressive bidding<br>• Disputes may arise during expansion phase<br>• Lower risk of regulatory uncertainty | This model will help avoiding gold plating by private players. But aggressive bidding may again lead to stalling of projects during the execution phase. This may be partly addressed by procuring an additional security deposit for five years to ensure operational compliance. |
| **Max yield per passenger pre-determined (a fixed MBAY or Maximum Blended Aeronautical Yield) by the Authority** | Fixed fees per passenger | • Similar to pre-determined tariff<br>• Economically beneficial for government and users | • Not attractive in terms of expected returns<br>• The pre-determined MBAY will vary from project to project<br>• Disputes may arise during expansion phase<br>• Lower risk of regulatory uncertainty | Similar to pre-determine tariff regime and may be considered for brownfield airports as the yield will be based on existing assets and future expansion. |

*Source: CRIS analysis*

Although, the market is in wide acceptance of the existing cost plus model, the impediments cited in the previous section continue to thrive. There are several challenges with respect to accounting process and prolong disputes. In this context, a bid parameter which has a near-zero risk of revenue leakage may be considered. A detailed analysis of the bidding parameter is illustrated below:

**Table 5: Comparative analysis of revenue share & per passenger fee as bidding parameter**

| Player/ Bidding parameter | Revenue share | | Per passenger fee | |
|---|---|---|---|---|
| | ***Advantage*** | ***Disadvantage*** | ***Advantage*** | ***Disadvantage*** |
| **Government – Concessioning Authority** | • Established tariff structure - well accepted in the market<br>• Revised definition of gross revenue clearly mentions that in case of any ambiguity or discrepancy, decision of the, at its sole discretion, is final. This gives more power to the authority to rightfully determine the accounting principles and its treatment. It will also lessen the number of disputes over tariff determination.<br>• For determination of treatment of revenue sources & expenses, it is clarified that it will follow the Indian Generally Accepted Accounting Principles, as applicable on March 31, 2016. It is easier to determine the treatment of an unforeseeable revenue source or expense by referring to this principle. | • Unclear definition of gross revenue and difficulty in monitoring revenue sources making revenue leakage possible. | • Easy to determine and calculate future earnings<br>• In medium to long term period, potential of revenue leakage will get minimized as it is majorly linked to traffic numbers. | • Possible loss in earning potential as the 'per passenger fee' is offered from the Non – aeronautical revenue since aeronautical charges are regulated. |

| Player/ Bidding parameter | Revenue share | | Per passenger fee | |
|---|---|---|---|---|
| | *Advantage* | *Disadvantage* | *Advantage* | *Disadvantage* |
| **Private developer/ operator/ investor** | • As per revised definition of gross revenue, insurance proceeds arose out of revenue loss or business interruption is included as part of administration and general expenses.<br>• As per revised definition of gross revenue, monies received on behalf of the Authority and credited by the concessionaire to the Authority will not be considered as expenses. | • Ambiguous definition of gross revenue leading to uncertain treatment of revenues<br>• Long legal disputes over revenue share determination<br>• Revised definition of gross revenue clearly mentions that the Authority is the final decision maker in case there is any ambiguity in definition of gross revenue. It dilutes the position of concessionaire to determine revenue share. | • Per passenger fee is linked to inflation which accounts for increase in development cost and other economic risks.<br>• Since the fee is linked to traffic, any distortion in traffic will be accounted. Also, the Authority will also lose out on earnings, therefore it may take necessary steps to combat any fall in traffic.<br>• It is easier to estimate revenue to be shared by the Authority with less ambiguity on type of revenue source to be shared. | • Aggressive bidding with high 'concession fee' quoted can lead to disproportionately high percentage of revenue being given to Authority, leading to high level of financial stress in the initial years.<br>• Adjustment in tariff on account of falling traffic will be possible once every 5 years when AERA revises the tariff rate card. 5 years in context of an infrastructure project is a long time. |

*Source: CRIS analysis*

The per passenger fee concept is fairly new to India's aviation sector. The phenomenon was introduced primarily to combat revenue leakage and minimize legal disputes on determining revenue sources & expenses. The concept was briefly tested in Brazil, however, due to difference in economic, political and financial stability of Brazil and India, it does not make for a suitable case. The concept is well accepted by the market, which is observed by the number of interested bidders for Bhogapuram, Ahmedabad, Lucknow, Guwahati, Jaipur, Thiruvananthapuram and Mangalore airport.

***Bidding Parameter***

CRIS recommends the bidding parameter to be **INR per passenger,** which is a pre-determined inflation linked user fee payable to the Concessioning Authority**.** However**,** fixed inflation-linked/adjusted MBAY with user charges adjusted every five years by AERA/competent authority will also generate certain range-bound user fees. It is pertinent to note that the concept of MBAY needs to be carefully examined in terms of specific aeronautical revenue streams to be considered and related regulations to be modified so as to avoid any misinterpretation by the bidders and minimize associated regulatory uncertainty

In the event however that bidders feel that the proposed Maximum Blended Aeronautical Yield would not be adequate to cover their expenses and business risks, a **'Negative Concession Fee'** is permitted to be quoted**.** However, a detailed scrutiny on the appropriate pre-specified ceiling is required to not affect **'affordability'.** In this regard, instead of only adopting a 'Negative Concession Fee', the Authority can consider combining the negative fee with a one-time grant support. In this way, both the viability of the project can be enabled as well as users' tariffs can be kept reasonable. However, the maximum grant provided by the Concessioning Authority must also be capped.

***Tariff structure***

CRIS recommends using a **pre-determined, inflation linked user fee as a suitable structure for tariffs**. This is also a well understood concept in the Indian infrastructure and PPP space specified by the erstwhile Planning Commission MCA (as provided through Clause 32.1.1 and Schedule S in the Model Concession Agreement). However, fixed inflation-linked/adjusted MBAY[18] with user charges adjusted every five years by AERA/competent authority will also generate certain range-bound user fees.

Considering that the success of either the per-passenger basis bidding parameter or a pre-determined tariff structure would hinge essentially on the accuracy of MBAY. It needs to be carefully examined in terms of the considered aeronautical revenue streams and related regulations to avoid any misinterpretation and associated regulatory uncertainty. In addition, MBAY definition should also include elements of non-aeronautical revenue so that tariff determination / adjustment exercise takes into account non-aeronautical revenue. Currently only aeronautical revenue seems to be included. The National Civil Aviation Policy of 2016 explicitly states that 30% of non-aeronautical revenue will be used to cross subsidise aeronautical charges (NCAP 2016 12. (c)). Given that 'affordability' is the stated goal of the proposed transaction structure in the NABH Nirman note, some part of non-aeronautical revenue should also form part of MBAY.

In conclusion, we make the following recommendations: -

1. **Bidding Parameter:** Concession fee per passenger in terms of **INR per passenger.**
2. **Tariff Structure:** A pre-determined, inflation-linked/adjusted and MBAY-derived tariff structure with a detailed schedule of user fees appended to the concession agreement right at the outset which would be subjected to periodic review by AERA/designated competent authority.

[18] *Components of MBAY include:*

a. *Landing, housing and parking charges levied on all aircraft*
b. *Revenue of Concessionaire from cargo, ground handling agencies, aircraft fueling, inflight catering, aerobridge charges, Common User Terminal Equipment, Common User Self-Service, Baggage Reconciliation System etc.*
c. *Passenger service fee- facilitation component (PSF-FC)*
d. *Normative interest on security deposit from aeronautical stakeholders*
e. *Revenue from any new aeronautical service offered with approval from the Regulator*

## 5.2 Recommendations on concession structure

The development of airport infrastructure in India primarily rests on the alignment of policies and actions of the Centre and the state. It is crucial for the Ministry, together with support from key decision-makers, to devise short- and long-term plans to address issues under their respective remit.

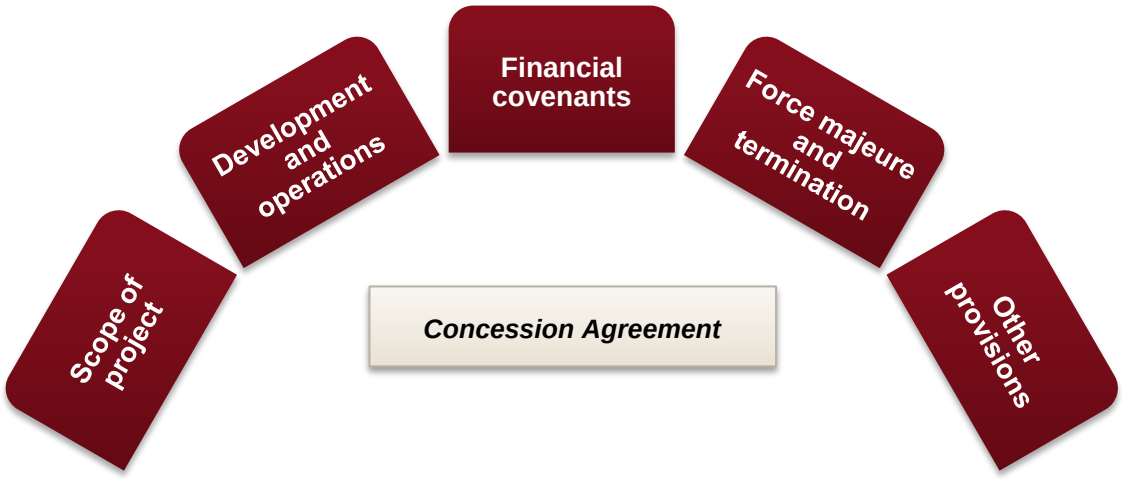
The aviation sector encompasses gamut of stakeholders and understanding the perspective of each is the key to arriving at legitimate modifications in the current regime. The approach towards designing key recommendations is based on engaging in detail discussion with each category of stakeholders:

| | |
|---|---|
| Government | • to critically evaluate clauses of the Model Concession Agreement which can be modfied and undestand the level of risk sharing possible for future projects |
| Existing Operators | • to understand the key operational issues and suggest mitigation measures |
| Potential Investors | • to assess key pain points of potential investors and adopt corrective measures to encourage increased private sector participation in future |

Interactions with these stakeholders (details of representatives met attached in Appendix) highlighted several issues with regards to the PPP models adopted in the airport sector. These need to be considered and interventions made by the Centre and the state.

To capture key aspects of the concession agreement, we have divided our recommendations as per the structure followed by the MCA drafted by the erstwhile Planning Commission. The recommendations have been segregated into five buckets, which have been evaluated against the components of the MCA, with the course of action suggested based on secondary research, analysis and primary interactions.

**Figure 8: Structure of the Model Concession Agreement**




This section breaks down the components of MCA into sub-sections. These include deviations from the MCA published by the erstwhile Planning Commission (stated as MCA in the subsequent chapters) in the concession agreements (stated as CA in the subsequent chapters) of the most recent projects, i.e., Mopa, Navi Mumbai and Bhogapuram airports.

Suitable amendments have been identified after analysing the impact of the same on multiple stakeholders, which can be incorporated in the MCA.

## 5.2.1 Scope of project

### 5.2.1.1 Concession period

***Existing provision***

The MCA follows a concession period of 40 years, which can be extended by 20 years. However, the condition of extension is not specified.

***Clause no. 3.1.1***

*Subject to and in accordance with the provisions of this Agreement, Applicable Laws and the Applicable Permits, the Authority hereby grants to the Concessionaire the concession set forth herein including the exclusive right, license and authority to construct, operate and maintain the Airport (the "Concession") for a period of 40 (forty) years commencing from the Appointed Date, and the Concessionaire hereby accepts the Concession and agrees to implement the Project subject to and in accordance with the terms and condition set forth herein.*

*Provided that the Concessionaire shall, at any time no earlier than 5 (five) years, but no later than 3 (three) years prior to completion of the aforesaid Concession Period of 40 (forty) years, upon issuing a notice to this effect to the Authority, be entitled, be entitled to an extension of 20 years in the Concession Period under and in accordance with the provisions of Clause 42.5*

***Recent example***

- The concession period for previously privatized airports is captured in the table. As can be observed, there is no consistency in terms of the concession period offered.
- In the CA for Mopa airport, the concession period is 40 years. However, extension of the concession period is subject to right of first refusal (ROFR). The authority can rebid the airport, and the existing operator can match the bid of the highest bidder if the operator's bid falls within the 5% margin of the highest bid.
- In the CA for Navi Mumbai airport, the concession period is 30 years, with extension of 10 years based on the operator's performance. For a further extension of 20 years, the operator has the ROFR. The authority rebids the airport and the existing operator can match the bid of the highest bidder if the operator's bid falls within the 10% margin of the highest bid.

| Sr No | Airports | Concession Period |
|---|---|---|
| **1.** | Bangalore | 30+30+30 |
| **2.** | Hyderabad | 30+30+30 |
| **3.** | Delhi | 30+30 |
| **4.** | Mumbai | 30+30 |
| **5.** | Mopa | 40+20 (through rebidding) |
| **6.** | Navi Mumbai | 30+10+20(through rebidding) |
| **7.** | Bhogapuram | 40+20 (through rebidding) |

*Decreasing trend*

- In the CA for Bhogapuram airport, the concession period is 40 years, with extension of 20 years based on the operator's performance. For a further extension of 20 years, the operator has the ROFR. The authority rebids the airport and the existing operator can match the bid of the highest bidder if the operator's bid falls within the 10% margin of the highest bid

***Challenge***

While price discovery of an airport concession extension through rebidding seems to be a fair in theory, however, there are a number of issues with regards to ROFR. First, it leads to subdued interest as players may not be keen to bid for a project where the existing operator can match the bid. This may translate into lack of bids and failure to carry out the bid process. Second, carrying out bidding process for just 20 year concession extension can lead to sub-optimal price discovery and also impede any new concessionaire's ability to carry out significant expansion works

***Recommendation***

In order to curb distortion with regards to competition and the resources of the players involved in the bid process, the concession period should normally be long enough to enable the Concessionaire to recover its investment with a reasonable rate of return, especially with respect to real estate development component. This would enable the Concessionaire to realise the full potential of the project and thus offer a competitive bid. Hence, it is better to follow the structure suggested in the MCA, where extension is subject to the authority's approval.

***Concession period should be 40 years with extension of 20 years based on the authority's approval and mutual consent***

#### 5.2.1.2 Conditions precedent to be fulfilled by the authority

***Existing provision***

The conditions precedent to be fulfilled by the authority in the MCA does not include the appointment of an independent engineer

***Clause no. 4.1.2***

*The Concessionaire may, upon providing the Performance Security to the Authority in accordance with Article 9, at any time after 90 (ninety) days from the date of this Agreement or on an earlier day acceptable to the Authority,*

***Recent example***

- The Navi Mumbai CA has incorporated appointment of independent engineer as a condition precedent

  *'4.1.2 (d) procured the appointment of Independent Engineer, in accordance with the provisions of Article 23 hereof'*

***Recommendation***

The role of an independent engineer is important for monitoring the construction and ascertain the quality of the asset keeping the timeliness of project execution in check. Therefore, it would be prudent that the independent engineer is appointed by the authority before construction begins.

***Appointment of independent engineer should be a part of the conditions precedent to be fulfilled by the authority. In addition, 'Duties & Functions' of an Independent Engineer will need to clearly enunciated as a separate article in the DCA (Please refer to Article 23 and Schedule N of Navi Mumbai International Airport Concession Agreement)***

#### 5.2.1.3 Obligations relating to refinancing

***Existing provision***

Obligations relating to refinancing refer to conditions / requirements of the concessionaire when it seeks to secure refinancing for the project with consent from the authority in the MCA.

***Clause no. 6.5***

*Upon request made by the Concessionaire to this effect, the Authority shall, in conformity with any regulations or guidelines that may be notified by the Government of India or the Reserve Bank of India, as the case may be, permit and enable the Concessionaire to secure refinancing……..*

***Recent Example***

This clause is mentioned in the CAs of Mopa, Navi Mumbai and Bhogapuram airports.

***Recommendation***

Although the right of refinancing gives comfort to potential bidders, it is also important to protect the interests of the authority. During financial closure, the financing documents need to be submitted by the concessionaire that form a part of the CA. To avoid any ambiguity at the time of refinancing, the concession agreement should supersede other financing documents and an undertaking / clause to this effect should be contained in all financing documents. Any subsequent financing documents, due to refinancing obligations, should also explicitly contain clause that 'in case of any conflict between CA and financing document, clause of the CA will stand'. This will provide clarity to the bidders while drafting their financing documents.

***Clause 6.5 should be suitably modified to state that the concession agreement will supersede the clauses of refinancing documents in case of any conflict between CA and financing document***

## 5.2.2 Development and operations

### 5.2.2.1 Right-of-way - land acquisition clearance and approvals

***Existing Provision***

As per the MCA, right-of-way is one of the condition precedent for the authority in the model, with 90% on prior or at appointed date and the balance 10% within 90 days.

***Clause no. 10.3.2***

*……the Parties hereto agree that on or prior to the Appointed Date, the Authority shall have granted vacant access and Right of Way such that the Appendix shall not include more than 10% (ten per cent) of the total area of the Site required and necessary for the Airport, and in the event Financial Close is delayed solely on account of delay in grant of such delays of such vacant access and Right of Way, the Authority shall be liable to payment of Damages……*

***Clause no. 10.3.4***

*The Authority shall make best efforts to procure and grant, no later than 90 (ninety) days from the Appointed Date, the Right of Way to the Concessionaire in respect of all land included in the Appendix……*

***Recent Example***

Same clause is adopted in the CAs of both Mopa, Navi Mumbai and Bhogapuram airports.

***Challenge***

Getting the necessary clearances and approvals is a pre-requisite for any project. However, it is understood that majority of the airports developed through the privatisation route have faced time and cost overruns owing to delays in obtaining statutory approvals from various government departments. Land acquisition is one of the main hurdles in implementation of any project. There have been delays in getting the balance 10% of the land. In some cases, the balance 10% consists of pockets that form part of the core airport operational area, hampering the progress of construction of even basis aeronautical infrastructure.

***Recommendation***

After deliberations with multiple stakeholders, it was advised that the project be divided into areas critical for the airport's operations and real estate assets. The complete land earmarked for the airport's operations should form part of the initial 90% land transferred on the effective date.

***90% of the land transferred on the effective date should include 100% of the land pertaining to airport / aeronautical operations***

#### 5.2.2.2 Expansion of the airport

***Existing Provision***

As per the provisions of the MCA, expansion of the airport is to be undertaken on a need basis. It is triggered when aeronautical, non-aeronautical and terminal building fall short of the norms and standards specified by the ICAO documents, applicable guidelines of the DGCA, etc. The concessionaire can then undertake expansion at his own cost.

***Clause no. 12.8***

*12.8.1 At any time during the Scheduled Completion Date, if the Aeronautical Assets, Terminal Building and Non-Aeronautical Assets, as the case may be, fall short of the norms and standards specified by ICAO Documents and Annexes, the applicable guidelines of DGCA, Good Industry Practice and the provisions of this Agreement, the Concessionaire shall undertake capacity addition and expansion thereof, at its own cost and expense, to meet shortfall.*

***Recent Example***

The CA of Mopa, Navi Mumbai and Bhogapuram Airports clearly define the trigger points for phased expansion which helps in minimizing the risk of uncertainty related to capital expenditure. Navi Mumbai Airport concession agreement has defined expansion triggers in terms of 1) Actual peak hour passengers vis-à-vis design peak hour passengers and 2) Annual passenger traffic vis-à-vis throughput capacity

***Challenge***

Airport projects have a long concession period with high volatility related to traffic and capital expenditure. Hence, investors need flexibility to be able to react to changes, capitalise on opportunities, and grow the business. It is also pertinent to note that there is critical link between airport capacity, investment and charges. Therefore, any possibility of expansion of an airport needs to be planned and linked to trigger points to envisage capital investments. Hence, expansion triggers need to be clearly defined with no scope of ambiguity so that investors have a clear view to the time period in which it will need to start on project expansion

***Recommendation***

It is critical for both parties to envisage the quantum of capital investment that will be required during the concession period, which can then be linked to the capacity triggers (average peak hour capacity, passenger traffic, etc.) in the concession agreement, upfront. . The investments made need to be recovered with an appropriate return. This will provide transparency in investments to be made and also ensure phased development of the airport to meet traffic requirements.

***Expansion triggers for capital expenditure can be linked to annual passenger capacity and average peak hour capacity, in line with provisions of Navi Mumbai Airport, to form part of the MCA for phased expansion as follows:***

***The concessionaire will initiate construction works for subsequent phases after phase I, within three months upon the earlier occurrence of any one of the following traffic triggers:***

- *Actual peak hour passengers exceeds the design peak hour passengers for 50% of the time in a period of six months on rolling basis*
- *Annual passenger traffic in any accounting year is projected to exceed 75% of the design throughput capacity of the airport, by taking into account the observed traffic growth rate over the preceding six months*

## 5.2.3 Financial covenants

### 5.2.3.1 Interpretation of bid parameters as concession fee

***Existing Provision***

In the MCA, the bid parameter is the highest annual premium on total realisable fee (calculated from schedule of fees) or lowest grant. Together with the premium, the Concessionaire has to pay a concession fees of Re. 1 per annum

***Clause no. 31.1***

*In consideration of the grant of concession, the Concessionaire shall pay to the Authority by way of concession fee a sum of Re.1 per annum and the Premium specified in clause 31.2 (the "Concession fees")*

***Clause no. 31.2***

*The concessionaire agrees to pay to the Authority for the year commencing from the {day falling after …….. days of the occurrence of COD}, a premium* ***(the ''Premium'')*** *in the form of an additional Concession Fee equal to {1% (one per cent)} of the total Realisable Fee during that year, net of any taxes on Fee……..*

***Recent Example***

The Mopa and Navi Mumbai airports have the highest gross revenue share (determined by tariff set by AERA) as the bidding parameter. The Bhogapuram airport has the highest per passenger fee as the bidding parameter. These airports are following the 30% hybrid-till model.

Definition of gross revenue was further strengthened in the Navi Mumbai CA by addressing major points of dispute such as:

- Insurance proceeds arising out of revenue loss or business interruption is included as part of administration and general expenses;
- Monies received on behalf of the Authority and credited by the concessionaire to the Authority are not to be considered as expenses;
- Any deposit amounts refunded to the relevant sub-licensee or any other person authorized by the Authority in a particular Concession Year (provided these pertain to past deposits on which Premium has been paid to the Authority) are not to be considered as expenses;
- It is clarified that gross Revenue will be computed on an annual basis for an Accounting Year, in accordance with the Indian Generally Accepted Accounting Principles, as applicable on March 31, 2016. Since the principles are defined, it is a good reference point for unforeseeable revenue and expenses and eradicates possible legal disputes;

- Authority's decision is final in case of ambiguity, discrepancy and dispute. This may be detrimental to the private player, however, this clause in in favour of the Authority

Also together with the gross revenue share or per passenger fee, the Concessionaire has to pay concession fees as per the schedule given in the concession agreement.

***Challenge***

The bidding parameter for all privatised airports, except Bhogapuram airport, has been highest percentage of gross revenue offered. Although the definition of gross revenue is established in the concession agreement, there have been cases of disputes between the authority and the concessionaire during the concession period owing to parameters such as inclusion of lease deposits and exclusion of depreciation in the estimation of gross revenue.

***Recommendation***

Investors prefer clarity and transparency for the entire project lifecycle, which helps in accounting for all risks before proceeding with the bidding process, and induces confidence regarding government's attempts to minimise risks and uncertainties in the project lifecycle.

'INR per passenger' which is a pre-determined inflation linked user fee can be the bid parameter. However, it is imperative for the Government/Concessioning Authority to optimally share the risk of passenger volume with the Concessionaire as Greenfield airport projects are highly capital intensive and sensitive to macro-economic factors. The same has been taken into consideration by way of higher MBAY in subsequent years. Concession Fee payable to the Authority in terms of 'INR per passenger' may be suitably modified so as to allow for all relevant heads under the aeronautical revenue to be suitably absorbed in MBAY. Hence, it is equally important that there is adequate clarity on the methodology of obtaining the key input to the calculation of MBAY (aeronautical revenue).

As suggested in the NABH NIRMAN note, there could arise a possibility that at certain airports bidders may feel that the proposed Minimum Blended Aeronautical Yield (or MBAY) would not be adequate to cover their expenses and business risks. In such an instance, bidders may be permitted to quote a **'Negative Concession Fee'.** Although the note proposes that at no point will the increase in MBAY for various interventions such as revenue shortfall loan, traffic variance, service quality incentives or change in scope etc. shall exceed 50% of the base rate of MBAY for that year, the same has not been capped in case of negative concession fees in case of unviable airports. However in this case there needs to be a detailed scrutiny on the appropriate pre-specified ceiling or the level of pass-through that should be made to the MBAY so as to not affect **'affordability'.** In this regard, instead of only adopting a 'Negative Concession Fee', the Authority can consider **combining the negative fee with a one-time grant support.** In this way, both the viability of the project can be enabled as well as users' tariffs can be kept reasonable. However, the maximum grant to be granted by the Concessioning Authority must also be capped.

Unlike the complicated calculation of gross revenue and total realizable fee, 'INR per passenger' is likely to have a simplistic calculation, making it easier to predict. Therefore, it may be suitable to adopt as a bid parameter.[19]

***A pre-determined inflation linked parameter - 'INR per passenger' may be suitably adopted to minimize revenue leakage.***

#### 5.2.3.2 Effect of variations in traffic growth

***Existing Provision***

In the MCA, the target Passenger traffic (6% CAGR over the base traffic assumed for the airport) in the target year (15 years from date of concession agreement) is defined. Any variation whether upside or downside is directly linked to the concession period.

[19] *Refer to Table 5 for detailed analysis*

***Clause no. 34.1 Effect of Variation in traffic growth***

*The Authority and the Concessionaire acknowledge that the passenger traffic in (2040) (the 'Target Year') is estimated to be ***** (the 'Target Traffic), and hereby agree that for determining modifications to the concession period under ……...*

***Clause no. 34.2 Modification in the concession period***

*Subject to the provisions of clause 34.1.2, in the event of Actual Average Traffic shall have fallen short of the target Traffic, then for every 1% (one per cent) shortfall of the target traffic ……*

***Recent Example***

The effect of variation in passenger traffic on the concession period is not considered in the recent CAs. However, phased development is linked to expansion triggers in terms of peak hour traffic and annual passenger traffic in Navi Mumbai Concession Agreement. In Mopa and Bhogapuram, the capacity expansion is linked to achieving target passenger traffic per annum.

***Challenge***

The variation in passenger traffic is generally taken into consideration while fixing the tariff for the next control period by AERA but not linked to proportional modification of concession period.

***Recommendation***

For the pre-determined tariff regime, the effect of variation from the traffic projected in the target year may be retained as per Clause 34 of the MCA which specifies that any shortfall of traffic by more than 2.5% then for every 1% shortfall the concession period shall be extended by 1.5% provided such extension will not exceed 20% of the total concession period. Similarly, for every 1% excess in the target traffic, the concession period will be reduced by 1% provided such reduction does not exceed 10% of concession period. In addition, to this, the concessionaire may elect to pay a further premium equal to 20% of the realisable fees in the respective years for the period waived off.

***Effect of variation from the traffic projected in the target year may be retained as per Clause 34 of the MCA.***

## 5.2.4 Force majeure and termination

### 5.2.4.1 Termination payment linked to actual project cost

***Existing Provision***

In the MCA, the termination payment is linked to the total project cost which is defined as the lowest of:

a) The capital cost, as set forth in the financial package
b) A sum determined by the authority

***Clause no. 42.3***

*42.3.3 Upon termination on account of Concessionaire Default during the Construction Period, no Termination Payment shall be due and payable for and in respect of expenditure comprising the first 40% (forty per cent) of the Total Project Cost and in the event of expenditure exceeding such 40% (forty per cent) and forming part of Debt Due……*

***Recent Example***

In the CA for Mopa, Navi Mumbai and Bhogapuram airports, the total project cost is defined as the lowest of

a) Actual capital costs of the construction works incurred in relation to the construction, implementation and commissioning
b) The capital cost, as set forth in the financial package
c) Estimated Project Cost (e.g. INR 37,49,00,00,000 in case of Navi Mumbai airport)

***Challenge***

The actual capital cost is included in the definition of total project cost. However, it is unlikely the actual cost will be the lowest of the components illustrated. Authority-determined total project cost, which is lower than actual capital cost, becomes an impediment for the concessionaire as the termination payment received will be lower than the actual capital cost incurred. Also, the financial institutions are skeptical as the termination payments are linked to the total project cost and in the event of termination, they will have to bear the brunt. Therefore, to protect the interests of the concessionaire, the termination clause should be amended.

***Recommendation***

The amendment will incorporate a linkage of the termination payment to capital cost, which is a percentage higher than the total project cost. As an example, the termination payment can be linked to a value which is 20% higher than the total project cost defined in the CA. This will provide a fair treatment to the concessionaire at the time of termination. The percentage escalation will depend on project to project basis and quantum of investment involved. It will also factor in the delays on account of Authority's default and provides a comfort to the investors.

***The termination payment to be linked to a value which is some percentage (as determined by the authority) higher than the defined total project cost.***

## 5.2.5 Other provisions

### 5.2.5.1 User fee - ambiguity in tariff structure

***Challenge***

The key issue arising in the current concession agreement for both greenfield and brownfield is the misconception in key parameters for determining the tariff in the control period. For example, interpretation of regulated asset base and return on equity are some of the parameters which are important determinants of the aggregate revenue requirement but are often a source of contestation mainly for the privatised airport. Generally, the investor's ability to recover operating and capital expenses and earn a return on the capital employed must reflect the risk-reward trade-off the investor faces.

***Recommendation***

When a regulation is required, clear and stable economic regulation is essential for the private operator. This should include a transparent and clear framework stating how charges will be regulated. A lack of clarity concerning the regulatory framework will increase risk, put into doubt the operator's ability to earn a return on investment, and limit or even preclude needed investment.

***Providing clear definition as well as method for calculating each parameter, with each sub-parameter defined as per the airport category, will eliminate interpretation issues for both the concessionaire and regulator. This will help reduce the disputes.***

### 5.2.5.2 Concession Fees - moratorium

***Existing Provision***

In greenfield MCA, Concession fee will be a fixed sum of Re. 1 per annum for the concession period. The Concessionaire shall, commencing from the 15th year of the concession period, pay a Premium equal to 1 per cent of the total realisable fee which shall be increased every year by an additional 1 per cent of the total realisable fee subject to an upper ceiling of 30%.

***Clause 31.2 – footnote***

*In the event of the Concessionaire commencing a payment of 1% of Realisable Fee from COD or from any date thereafter, but no later than the 15th (fifteenth) anniversary of COD.*

***Recent Example***

In CA Mopa airport, the moratorium period for payment of concession fee is 5 years, whereas in CA Bhogapuram airport, the moratorium period is 10 years.

***Challenge***

For greenfield projects, the initial capital expenditure creates a lot of financial burden for the concessionaire especially debt service obligations would entail substantial outflows. It is important to give due consideration to this and allow for a concession fee moratorium recognizing this cash flow pattern.

***Recommendation***

In the operation period the Concessionaire will have an increasing surplus in its hands on account of the declining debt service on the one hand and rising revenues on the other, hence it is prudent to offer concession fees moratorium for greenfield projects. The moratorium period will be decided on project to project basis subject to an upper limit of 15 years.

***Providing concession fees moratorium up to sufficient number of years subject to an upper ceiling of 15 years will help the concessionaire to bear the initial debt burden.***

#### 5.2.5.3 Definition of change in ownership/ Equity lock-in period

***Existing provision***

In the MCA, the aggregate holding of the selected bidder or consortium member in total equity will be maintained at 51% during construction period and until the first Commercial Operation Date, and by 26% for the rest of concession period.

***Clause 53.1***

*''Change in ownership'' means a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the {selected bidder/consortium members} together with {its/their} Associates in the total Equity to decline below (i) 51% (fifty one per cent) thereof during the Construction Period and until the 1st (first) anniversary of COD, and (ii) 26% (twenty six per cent) thereof, or such lower proportion as may be permitted by the Authority during the remaining Concession Period……*

***Challenge***

The CAs for Navi Mumbai, Mopa and Bhogapuram airports have an equity lock-in of seven years.

The equity lock-in period is an important aspect of the concession agreement for potential investors, developers and operators. These players are more comfortable investing in assets that have a minimal equity lock-in period. To protect the interests of the government and keep a check on the operational quality of the airport, it is imperative to keep a balanced equity lock-in period. We have observed the conditions of the lock-in period and 100% divestiture in other sectors:

| S no | Sector | Equity lock-in period in years | 100% divestiture allowed post lock-in period |
|---|---|---|---|
| **1.** | Planning commission MCAs for airports | 3 | X |
| **2.** | NMIAL/Mopa/ Bhogapuram | 7 | X |
| **3.** | Highways | 2 | ✓ |
| **4.** | Ports | 2 | ✓ |

***Recommendation***

Since an airport is a complex infrastructure asset, it is prudent to keep the equity lock-in period for at least five years to test the operational compliance of the airport by the concessionaire in the initial years. After serving that lock-in period, the concessionaire can decrease the equity stake and can completely exit in 10 years. Divestiture of 100% put players in a comfortable position to invest in the airport assets, leading to an increase in private sector participation.

***Equity lock-in period will be extended to five years to ascertain the operational compliance of the concessionaire in the MCA.***

## 5.2.6 General recommendations

### 5.2.6.1 Two stage bidding process

***Recommendation:***

As per the Ministry of Finance and erstwhile Planning commission model PPP documents, a two- stage bidding process is to be adopted for PPP projects. In the first stage, eligible and prospective bidders are shortlisted. This stage is generally referred to as Request for Qualification (RFQ) or Expression of Interest (EoI). The objective is to short-list eligible bidders for stage two of the process. In the second and final stage, which is generally referred to as the Request for Proposal (RFP) or invitation of financial bids, the bidders engage in a comprehensive scrutiny of the project before submitting their financial offers

The objective of first stage (RFQ) is to identify credible bidders who have the requisite technical and financial capacity for undertaking the project. Only the pre-qualified bidders will then participate in the RFP stage which will also help in reducing the number of bidders for the RFP stage and the winning bid will be selected based on the biding criteria laid out in RFP and CA.

All the PPP airports developed in the past have been awarded through a two stage bidding process which has proved to be the most efficient and effective method for award of PPP projects. However it is important to define and adhere to the timelines of bidding process set out for the specific project to gain maximum benefit out of this type of bidding.

### 5.2.6.2 Prolonged litigation process

***Challenge***

The Appellate Tribunal under AERA Act, 2008 is mandated to resolve disputes arising out of tariff fixation by the regulator. However, the Act also allows for appeal in the Supreme Court within 90 days of the order issued by the Tribunal. This creates a prolonged delay in arriving at a concrete resolution, affecting both the operator and users negatively. Recently, the Appellate Tribunal under AERA was merged with the Telecom Dispute Settlement Appellate Tribunal, which will further delay resolution of disputes. This is because the TDSAT is already mandated to settle disputes for the telecom and cyber security sectors. Also, representation of an independent aviation expert in the panel is necessary for effective dispute resolution.

***Recommendation:***

- The litigation process before the Tribunal to be resolved within 90 days of appeal, which will speed up the resolution process
- The panel to have representation from an independent aviation expert for effective dispute resolution

#### 5.2.6.3 Revise tariff guidelines

There are multiple issues with treating revenue sources and expenses as per the revised tariff guidelines. As per interactions with multiple players, a few issues and recommendations are identified and illustrated below:

**Table 6: Issues & recommendations of tariff guidelines[20]**

| S. No. | Issue | Recommendation |
|---|---|---|
| 1 | Cost of Equity of 16% is generally accepted by AERA. However, it is in the process of determining the COE value for various airports and this value may be upgraded | The cost of equity shall be fixed to ease determination of Weighted Average Cost of Capital and project returns |
| 2 | Cost of debt is dependent on prevalent market rate and is based on period of filing | Similar to cost of debt which is capped at market rate plus 3%, AERA shall limit the cost of debt to avoid project losses |
| 3 | As per the recent order of Telecom Disputes Settlement and Appellate Tribunal for Delhi airport, a return is expected on Returnable Security Deposit for city side, however, whether it should be treated as debt or equity is still unclear. This may have impact on D/E ratio which will affect the value of Cost of Equity | Clarity in terms of treatment of returnable security deposit as debt or equity shall be given by TDSAT |
| 4 | The deficit between expected yield and actual yield is used for tariff revision and charging of UDF. The first few years of operation based on ad-hoc tariff for upcoming projects may create a revenue shortfall which will then make case for charging of UDF in the first control period | Tariff filing control period shall be linked to appointed date / transfer date of the airport |
| 5 | No difference in tariff determination methodology of greenfield and brownfield airport | Since the cost involved in a greenfield airport is much higher, there should be a separate methodology for greenfield and brownfield airport |
| 6 | Dispute over clauses mentioned in CA taking precedence over AERA tariff guidelines. For example: in Bangalore airport, the CA considered ground handling, fuel charges & cargo handling charge as non-aeronautical revenue. However, the guidelines were issued post signing of CA and considers these elements in aeronautical revenue. This is a cause for dispute till now. | Regulator shall ensure CA provisions to be in tandem with tariff guidelines to avoid disputes and discrepancies |

*Source: CRIS analysis*

[20] *We cannot comment on the methodology of tariff determination by AERA as it is an extensive exercise that goes beyond our scope of work*

# 6. PPP framework in Brownfield airports

***Brief Background***

Brownfield airports are in general more amenable to successfully transitioning to a PPP arrangement as they are functioning airports with established revenue streams. Privatisation in brownfield airports can range from asset and scope specific concessions to leasehold sales of the entire airports to a private players. However certain issues can emerge in deciding values of initial upfront payments that an Authority can claim from a private player as it would be linked to an accurate and agreeable valuation of the airport's assets, at the time of its privatization. Several privatization models in brownfield airports in practice globally have been discussed below.

***Types of privatization models***

**1. Government-ownership with private sector participation**

These are operating models, wherein a government endeavors to meet certain objectives without engaging in sale of assets or transfer of material control to a private player[21]. There are sub types of this model as outlined in the table below:

Table 7: A few examples of government-ownership with private sector participation

| # | Model | Characteristics in brief | Example airport[22] |
|---|---|---|---|
| 1. | **Service contracts** | • Procurement of specialist services to run particular functions within an airport<br>• Is not a mechanism to raise capital receipts or finance capital expansion plans<br>• Can be combined with other models as part of a broader financial and commercial strategy to achieve a host of strategic objectives of the government.<br>**Contract Span: 1-3 years** | **Dubai International Airport : Baggage handling service contract,**<br>**Delhi International Airport:**<br>**IT services contract** |
| 2. | **Management contracts** | • Similar to service contracts but more complex and maybe performance-based; they require the private operator to be exposed to demand and revenue risk<br>• Risk passed on to the operator, but short-term costs are increased<br>• Can also be combined with other models to achieve the government's strategic objectives<br>**Contract Span: 3-5 years** | **Airport Management Contracts in the Kingdom of Saudi Arabia** |
| 3. | **Lease contracts** | • Effectively shorter-duration PPP concessions<br>• In some cases, the authority is required to underwrite a certain number of passengers to ensure a minimum level of operating income to the operators[23]<br>**Contract Span: 5-15 years** | **İzmir -Adnan Menderes Airport, Turkey** |

[21] *Reference: Airport Ownership and Regulation, IATA Guidance Booklet, June 2018*

[22] *These examples also include cases, where the referred PPP model was implemented in the past.*

[23] *Source: https://www.icao.int/sustainability/CaseStudies/Turkey.pdf, Accessed on July 3, 2018*

| # | Model | Characteristics in brief | Example airport[22] |
|---|---|---|---|
| 4. | **Technical assistance** | • A management agreement, wherein private player executes business plan<br>• Reviewing and auditing of existing airport operations to increase efficiency and planning for future expansion of the airport[24]<br>• Providing professional assistance and support on airport services-related matters<br>**Contract Span: ~10 years** | **Astana Airport, Kazakhstan** |

*Sources: World Bank, International Air Transport Association*

### 2. Minority equity sale & full divestiture

In this model, the government authority sells a minority stake in an airport and retains the ownership. This enables it to access external equity financing and raise capital for further investments in new airports. The investors in the airport asset would also be expected to improve its management and financial efficiency. A key point in this could be that investors are more likely to be keen on a stake sale in which the government authority does not possess a "control premium". Since the equity on sale can fetch a higher price in the market, the interested buyers would normally expect a higher gain with some level of control over the airport. In a lot of cases, minority equity sale is a part of a process of full divestiture.

A full divestiture entails the transfer of ownership of an airport from a government authority to the private sector. Although ceding control of an airport may not always be an attractive proposition to a government authority, the valuation of the airport can increase, as investors would typically be willing to pay a control premium in such cases.

**Case Study: Minority equity sale & full divestiture of Heathrow Airport, London**

An early example of airport privatisation is the floating of shares of the British Airports Authority on the London Stock Exchange in 1987. Until September 2003, the UK Secretary of State possessed a golden share in the airport to prevent a take-over by foreign investors. However, in 2006 BAA Plc was de-listed when it was acquired by a consortium led by the Spanish group Ferrovial. BAA. Ferrovial, owned and operated a number of airports, including Aberdeen, Edinburgh, Gatwick, Glasgow, Naples International Airport and Stansted Airport. However, by 2014, the group had sold off all of its other airports, to focus solely on Heathrow Airport in London. Currently, the group operates under the name of Heathrow Airport Holdings. The group also has a subsidiary, the Heathrow Express Operating Company, which runs the Heathrow Express, an airport rail link between Paddington Station and Heathrow Airport.

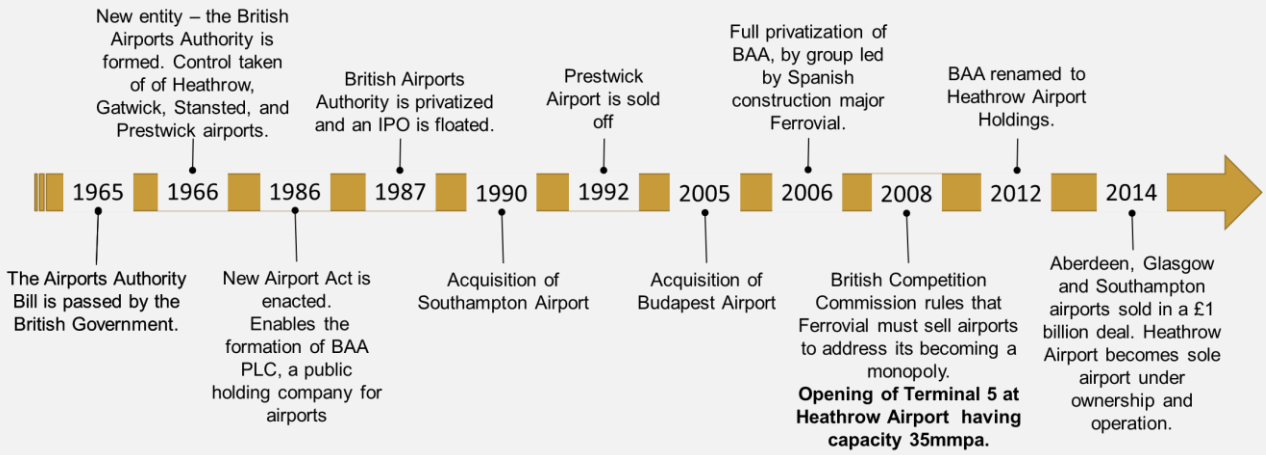
Heathrow airport served over 78 million passengers in 2017.

***Current ownership structure (as of May 2017)***

Ferrovial holds maximum equity share – 25%. This is followed by Qatar Holding (20%), CDPQ (12.62%), GIC SI (11.2 %), Alinda (11.18%), CIC (10%) and USS (10%).

***Heathrow Airport Privatisation - Timelines***

[24] *Source: http://www.malaysiaairports.com.my/?m=media_centre&c=news&id=265, Accessed on July 3, 2018*




***Tariff Features at Heathrow Airport***

- Heathrow Airport is subject to the Airport Charges Regulation 2011, a UK law which was derived from a European Directive for its member states
- The level of charges that is levied every year is in accordance with a pricing formula set by the Civil Aviation Authority
- Single till framework applied for tariff calculation.
- Tariff is revised every five years to calculate the five-year increase in aeronautical tariffs allowing expected EBIT to equal allowed EBIT

Passengers X aeronautical tariffs = aeronautical revenue + non-aeronautical revenue – opex – depreciation = ***expected EBIT***

Average Regulated Asset Base (RAB) X allowed return (7.75%) **= *allowed EBIT***

***Key learnings***

- Encouraging multiple private parties as part of ownership structure is beneficial in avoiding monopoly in the sector
- Single till framework disincentivises the operator to undertake investments in non-aeronautical services. Due to this reason, Heathrow Airport faced underinvestment causing airport closure in 2010. Therefore, tariff framework shall be devised in a way to encourage private participation

*Source: AMP capital, Ferrovial/ BAA – A transforming Acquisition*

## Case Study: Sydney Airport Privatisation Programme

In 2002 Sydney Airport in Australia, was privatised, which till then was owned and managed by the Federal Airports Corporation. The airport was sold with long-term leases of 50 years with a 49 year extension option. Subsequently several other regional airports were also privatised. These privatised airports are either listed companies or privately owned by large investment funds. The Australian Government's objectives were mainly to increase the international competitiveness of these airports as well as to improve their operational efficiencies.

The other important objectives were to minimise unnecessary compliance costs and facilitate commercial negotiations in airports' operations.

The airports were sold on a leasehold basis by the Commonwealth of Australia for certain upfront and outright payments. Thus there was no revenue share arrangement as such between these private companies and the Australian Government. For the companies which are subidiaries of parent holding companies or held in part by institutional investors, a dividend sharing model exists.

In the case of Sydney Airport, the airport is owned and operated by Sydney Airport Corporation Limited[25] which actually is a separate subsidiary of a holding company by the name of Sydney Airport Limited.

**Key features:**

- *Lease tenure*: Long term leases of 99 years
- *Tariff regime:* Light-handed regulation, full dual-till approval.
- *Regulatory features*: Australian Competition and Consumer Commission (ACCC) is the overseeing authority
    - Monitoring of service quality done annually.
    - Price determination undertaken if negotiations between airports and airlines fail
    - Major capex for expansion can only be taken with State intervention

**Key learnings**

- The absence of price regulation under light handed regulation was not fully able to contain the market power of the four major Australian airports
- Full divestiture with respect to lease/ concession contracts enables more

*Source: AMP Capital, Airport Ownership and Regulation: IATA Guidance Booklet*

***PPP scenario in brownfield airports in India***

Early in 2003, a Cabinet Decision was taken to restructure Delhi and Mumbai airports. The intent was to involve the private sector in this process by setting up Joint Ventures or JVs for both the airports, with the Airports Authority of India as a partner in each. A special agreement termed as the Operations, Management and Development Agreement or OMDA was released in August 2005. As a concession structure of Delhi and Mumbai OMDA is similar.

In 2004, a consortium led by the GMR Group was awarded the concession to operate, manage and develop the Indira Gandhi International Airport. The group was allowed to acquire ~4600 acres of land against an equity contribution of Rs. 2450 crores.[26] Traffic at the airport has more than double in the present decade from 25.8 million passengers in 2010 to 63.5 million in 2017.[27]

Some of the key features of the concession agreement which was signed then have been presented below -

- *Concession Period:* The total concession period for this arrangement was set at 30 years which was further extendable by 30 years.
- *Ownership structure of the JVC:* It was mandated in the bid document that airport operators must necessarily be part of the consortium of private players who would form the JV with the Airports Authority of India. The airport operators were required to hold a minimum of 10% equity for the first five years of the concession period. After five years, the requirement for the minimum collective equity stake of the private sector consortium was set at 26%.
- *Expansion of the airport:* The concession agreement required the concessionaire a master plan for the airport for a 20 year horizon. A key tenet needed of this master plan was for it provide identifiable traffic triggers for undertaking specific capital expenditure projects and capacity expansions. Further the concessionaire was also required to physically develop the airport at specific points as identified by this master plan. For capital expenditure projects costing over Rs. 100 crores, concessionaire was also required to prepare a Major Development Plan.

[25] *Source:https://assets.ctfassets.net/v228i5y5k0x4/7qQkThyOPKmwAycmQIOmOc/37f1710697644fe2fd8c1ca6790ad7dc/2017_Sydney_Airport_Annual_Report.pdf, Accessed on February 19, 2019*

[26] *Source: https://www.livemint.com/Companies/nue0TiYimtU2WDG8GcqHEM/CBI-looking-into-GMRs-Delhi-airport-transaction.html, Accessed on February 19, 2019*

[27] *Source: CAPA*

- *Sharing of revenues by the concessionaire with the Authority:* The bidding parameter was the share of revenues that a prospective bidder would pay to the Authority. For Delhi airport, it was 45.99% of projected revenue for a given year and for Mumbai airport, it was 38.7%.
- *Framework for calculation of aeronautical tariffs:* At the time of the transactions for Delhi and Mumbai airports, the present regulator namely the Airports Economic Authority of India had not yet been instituted. The concession therefore directed that the aeronautical charges which the airport could impose be determined as per provisions of the State Support Agreement.

**Successful bidding for privatizing six brownfield airports**

Recently, AAI floated a tender for privatization of six airports – Ahmedabad, Jaipur, Guwahati, Lucknow, Mangalore and Thiruvananthapuram. It had a positive response on the participation of bidders. The financial closure of the same is currently in process.

Some of the key features of the concession agreement which was signed then have been presented below -

- ***Concession Period:*** The total concession period for this arrangement is set at 50 years.
- ***Expansion of the airport****:* The concession agreement required the concessionaire a master plan for the airport. A key tenet needed of this master plan was for it provide identifiable traffic triggers for undertaking specific capital expenditure projects and capacity expansions. Further the concessionaire was also required to physically develop the airport at specific points as identified by this master plan.
- ***Sharing of revenues by the concessionaire with the Authority:*** The bidding parameter is the share of fee for each domestic and international passenger that a prospective bidder would pay to the Authority.
- ***Framework for calculation of aeronautical tariffs:*** This is determined by Airport Economic Regulatory Authority (AERA) as per AERA act 2008 and issued amendments thereafter.

Adani has emerged as the winner for all six airports. The airports have been awarded to the successful bidder and signing of concession agreements is in process. The winning quotes for the same is mentioned below:

**Table 8: Quoted fee per passenger by winning bidder**

| Name of airport | Quoted per domestic passenger fee (in Rs.) |
|---|---|
| Sardar Vallabhbhai Patel International Airport, Ahmedabad | 177 |
| Jaipur International Airport, Jaipur | 174 |
| Chaudhary Charan Singh International Airport, Lucknow | 171 |
| Lokpriya Gopinath Bordoloi International Airport, Guwahati | 160 |
| Trivandrum International Airport, Thiruvananthapuram | 168 |
| Mangalore International Airport, Mangalore | 115 |

- ***Key Learning:*** Brownfield airport with promising traffic has a better chance for successful privatization. The private player will be willing to share a higher gross revenue in such a case.

## 6.1 Suitable PPP framework

An assessment of the most recent PPP frameworks which were tried for the privatization of brownfield airports in India has been carried out below. This has been done to guide thinking on the building blocks needed for a suitable PPP framework for brownfield airport projects in India.

**1. Partial privatization of Jaipur and Ahmedabad airports in 2017-18**

The Airports Authority of India (AAI) started the process of partial privatisation of Ahmedabad and Jaipur airports, through O&M contracts, in early 2017. This was following the Authority twice declining proposals made by Singapore's Changi Airports International in 2016 for undertaking O&M activities at the two airports. The original intent of the Authority was to hand over terminal management of the two airports to private operators, thereafter relocating the existing manpower and equipment therein. Certain areas termed "Select Areas" were put forward as the package of airport assets to come under the ambit of O&M of the selected private player. These essentially comprised the passenger terminal buildings, including the airport operations control centre, fire control room, kerb side approach road and passenger boarding bridges, apron areas (excluding cargo side apron areas) and surface car parks.

Some of the major issues in the terms which surfaced and had to be looked into are illustrated below:

**i. Concession period**

- The concession period for the O&M contract was first set at 10 years, and later revised to 15 years. However, a contract length of 20 years was also requested during the bidding stages.
- In the first year of operations, an operator can be expected to have limited potential for building revenue margins owing to planning and sub-contracting. A shorter tenure of 10 years limits the effective "on contract" tenure of the operator.
- A longer contract tenure can allow the airport operator to engineer its revenue contracts in a manner that maximises the revenue potential of the airport.

**ii. Bidding parameter**

The bidding parameter, on the basis of which a prospective operator was to be selected, was fixed as **the lowest revenue share**. Given the restricted scope of the project, the potential for revenue was considered to be limited, making a revenue-share model unattractive to a bidder. Subsequently, the bidding parameter was revised to **highest per passenger fee**. It was observed that post the modification of the bidding parameter, the cut-off quote for the same had to be revised downwards in subsequent corrigenda issued by the Authority.

**iii. Scope of operations and maintenance contract**

- Initially, the scope of operations and maintenance was limited only to the non-aeronautical infrastructure of the airport such as the passenger terminal building, surface car park and terminal approach roads. As per the latest draft concession agreement, the scope also includes multi-level car park and any new passenger terminal building, if constructed during the concession period.
- The perception was that the revenue potential from simply managing the terminal-related infrastructure of the airport was inadequate. The scope also excluded future expansion of the airport, which was also not attractive to the bidders. Including management of the aeronautical infrastructure in the scope was a key desirable amongst the bidders.

**iv. Equity lock-in period**

- Initially, when the duration of the contract was set at 10 years, the required equity lock-in period of five years was considered too stringent.
- For equity-lock in to be comfortable to an O&M operator, a longer concession period would be more meaningful.

## Case Study: Management Contract implementation at King Fahd International Airport

Changi Airports International (CAI) in 2008 was awarded a **six-year** management contract to operate King Fahd International Airport (KFIA) in Dammam, Saudi Arabia. The mandate was mainly to drive the transformation of the airport into a best-in-class international airport[28]. Focus areas for undertaking management contract were improvement in service quality and upskilling of the airport's resident management and staff. This involved multiple visits from Singapore to support the resident team with respect to human capital, airport commercial and retail management, operations efficiency and service quality management. CAI also got an extension of 7 months, the maximum concession period extension permissible under concession agreement.

***Key features:***

- ***Scope:*** Knowledge transfer for enhancing airport service quality to increase passenger traffic and work closely with the resident team
- ***Payment to Concessionaire:*** $ 43 million
- ***Involvement in Capex decision:*** Not with the concessionaire

***Key learnings***

- Procurement of specialist management expertise together with retention of government ownership of the airport. For example, in collaboration with the local management team of the airport, Changi Airports International (CAI) implemented a hub development programme[29], which over time significantly improved traffic at the airport.[30]
- Knowledge and skill transfer is at times pertinent to enhance quality. Both KFIA management and staff underwent extensive training through the period of the management contract in areas of airport operations.

**Trend in passenger traffic (in millions) at King Fahd International Airport, Saudi Arabia (2003-2015)**


*Source: General Authority of Civil Aviation, Kingdom of Saudi Arabia*

In the above case study, the purpose of the management contract was well defined with limited scope wherein the private player stands to gain in the short concession period. However, in Jaipur and Ahmedabad management contract, the purpose of the contract was ambiguous and misleading. We have critically analysed the case, and recommended changes to the agreement structure, based on stakeholder inputs and the aforementioned case studies. The following modifications in the concession agreement may possibly lead to the success of the partial privatization model of Jaipur and Ahmedabad airports.

- **Management of aeronautical assets and capex decision should be included in the scope of the concession agreement**

  A wider O&M scope, encompassing airside and cargo operations, together with capex decisions, in addition to terminal management, can be given to airport operators.

[28] *Source: Changi Airports International – Corporate Brochure 2018*
[29] *Source: Changi Airports International – Corporate Brochure 2018*
[30] *Traffic at KFIA grew over 110% by 2016 from its 2008 levels.*

- **The concession period should be set for a duration of more than 15 years**

  Longer contract tenures can enable operators to build more flexible revenue contracts and plan operations management at the airport with a long-term mindset.

- **The bidding parameter should be retained as per passenger fee, rather than highest revenue share**

  A longer contract tenure, coupled with a per passenger fee basis of payment to the Authority by the operator, is a better incentive for attracting private participation in O&M contracts. Highest per-passenger fee is recommended to be retained as the bidding criterion for future O&M bid invitations.

- **Equity lock-in period should be retained as five years**

  Equity lock-in is a way to nudge prospective operators to take a long-term interest in the profitability of the asset they would be operating. Imposing a reasonable equity lock-in period is recommended for future O&M bids.

### 2. Operations, Management and Development Model issued in December 2018

In December 2018, The Airports Authority of India invited bids for privatization of six airports - Ahmedabad, Jaipur, Lucknow, Guwahati, Mangalore and Thiruvananthapuram. The bids for Ahmedabad and Jaipur airports were re-invited following the earlier inconclusive exercise carried out in the year. Unlike the earlier tender process wherein the scope of services comprised only of operations and management of select areas of the airports, this tender included the operation and maintenance of the entire airport including city side development and expansion of airports, if required. This model's transaction structure is similar to the 2006 OMDA model which was implemented for Delhi and Mumbai airports, except the bid parameter which was revenue-share in the earlier model. The tender is in process to be awarded to the highest bidder and the concession agreement will be signed shortly.

Some of the major features of the present model have been described below.

- *Concession structure*

The bid parameter to be quoted by private players is *per passenger fee for domestic passengers.* For international passengers, the quoted fee will be doubled. Successful bidder means the qualified bidder quoting the highest per passenger fee for domestic passengers. The concession period is **50 years** from commencement of Commercial Operation Date (COD).

The concessionaire is required to pay to the Authority a share of his total revenues by way of a monthly concession fee which would be calculated using the following formula.

**Monthly Concession Fee** =

**Per Passenger Fee for International Passengers * International Passenger Throughput for that month +**

**Per Passenger Fee for Domestic Passengers* Domestic Passenger Throughput for that month**

- *Revision of Per Passenger Fee*

The Per Passenger Fee payable by the concessionaire is subject to be revised annually as per two given formulae given separately for two periods (for the period spanning the first fifteen years and the period following that spanning the remaining thirty five years of the concession).

Growth in Per Passenger Fee for Domestic Passengers **in the first 15 (fifteen) years of the concession**:

**Per Passenger Fee for Domestic Passengers of previous year X (1 + 85% of CPI (IW) increase)**

Growth in Per Passenger Fee for Domestic Passengers in the rest of the concession period (35 years):

**Per Passenger Fee for Domestic Passengers of previous year X (1 + 50% of CPI (IW) increase)**

Negative growth in inflation rate not considered, therefore even after sudden fall in inflation rate, the per passenger fee shared with the Authority will remain high.

- *Initial upfront payments required of the Concessionaire*

The concessionaire is expected to make an upfront payment to the Authority within 365days of COD. This comprises the value of the aeronautical asset base of the airport (termed as the **Deemed** Regulatory Asset Base (**RAB**)).

- *Equity Lock-in Period*

The concessionaire has to maintain equity in the project until the 5th year from COD. In addition, the concessionaire is required to continue to have a financial standing and technical capacity better than or at par with their present levels until the expiry of 5 years from the COD.

- *Regulatory Framework*

The main premise of the regulatory framework for the operations of the selected bidder is that the *aeronautical charges* that the bidder can impose would be subject to review *once in every five years.* An airport's aeronautical charges would be set for a period of five years (referred to as the **control period**) by the regulator viz. the Airports Economic Authority of India (or AERA). The hybrid-till approach (also referred to as "Shared Till Approval") is used for determination of the aeronautical tariffs for the control period.

In this approach the total revenue requirement needed to provide the needed return is calculated considering 30% of non-aeronautical revenues as a cross-subsidising factor, instead of 100% non-aeronautical revenue as cross-subsidising factor in single till framework. The benefit in doing so is that this brings down the per-passenger shortfall of revenues which leads to a lesser tariff being passed on to passengers.

- *City-Side Development*

The Concessionaire is entitled to undertake development, finance, operation and maintenance of real-estate on the available city-side land of the airport and to deploy it for commercial use. The Concessionaire thus can earn additional non-aeronautical revenue in two ways –develop the property and earn rentals (developer model) or give the land to a developer in return for a revenue share arrangement (lease model).

Some of the major issues that may potentially surface are illustrated below:

1. **Revenue risks**
   - A downside in inflation rate is not considered for revision in year-on-year growth in per passenger fee, therefore even after sudden fall in inflation rate, the per passenger fee shared with the Authority will remain high
   - In case there is deficiency in physical conditions of assets such as terminal building, city side land etc., which may impact the quality of service provided by the concessionaire, the concessionaire has no recourse against the authority if it negatively impacts the traffic
   - In case there is a change in regulatory philosophy, there is no relief available to the concessionaire for the first 7 years.
2. **Financial risks**
   - AERA is in the process of determining the COE value for various airports and this value may be upgraded. The Fair Rate of Return will increase in case the cost of equity is revised to be at a higher rate
   - Cost of debt is dependent on the prevalent bank rate during period of filing. The Fair Rate of Return will increase in case the cost of debt increases across control periods
3. **Other risks**
   - In waterfall mechanism for withdrawal of funds, the provision of debt service due is after payments to Authority
   - Provisions regarding city side development with respect to subleasing, assigning or creating any encumbrance is ambiguous

The table below presents a comparative analysis of the two recent models in the brownfield airport development in India:

| Type of model | Points for consideration | | Recommendations |
|---|---|---|---|
| | *Government* | *Private Player* | |
| **Partial privatization model – Jaipur and Ahmedabad (2017-18)** | • The authority largely retained control of management of aeronautical infrastructure of the airports.<br>• The authority also retained power for capex-intensive expansion projects at the airport. | • The scope for the private player was largely restricted to management of the terminals and non-aeronautical infrastructure such as car-parking.<br>• Short concession period of 15 years with equity lock-in period of 5 years. | A wider scope for O&M encompassing airport operations and capacity expansion power to the private player is recommended. With the increase in scope, the concession period is also expected to increase from the proposed 15 years. |
| **New O&M Model – privatisation of six airports (2018-19)** | • Significant upfront payments to be received by the Authority for each airport which can be used for capex funding of other smaller airports.<br>• Per-passenger fee payable by the concessionaire is different for international and domestic passengers. Rising international traffic at the airport can create a significant upside in the eventual yearly revenue shared by the concessionaire. | • Full aeronautical operations (except traffic control and navigation services) brought under the ambit of the private operator.<br>• Freedom in deciding the best utilisation for city-side land.<br>• Traffic risk to be borne by the player with a termination in contract due to fall in traffic by 20% in two consecutive years | This is similar to privatization of Mumbai and Delhi Airport which had resulted in positive results in upgrading these airports. Also, in the longer term, the concessionaire stands to gain considerably from city-side revenue. This presents an attractive opportunity to the concessionaire, therefore this is a suitable PPP framework. |

The latest O&M model adopted by AAI is well received by the private players and has attracted participation. Moreover, the private players are interested in a long term participation in brownfield airports. Therefore, it is a suitable concession structure for privatizing future brownfield airports.

***Bidding Parameter***

CRIS recommends the bidding parameter to be **highest fee per passenger,** which is an inflation linked fee payable to the Concessioning Authority**.**

In the event however that bidders feel that the airport is not profitable enough, they can chose to propose a lower per passenger fee that would be adequate to cover their expenses and business risks.

***Tariff structure***

CRIS recommends using the tariff structure followed by AERA as per AERA act 2008. This will be reviewed by the entity in every 5 years.

In conclusion, we make the following recommendations: -

1. **Bidding Parameter:** Concession fee in terms of **INR per passenger.**
2. **Tariff Structure:** As followed by AERA as per AERA act 2008 and the addendums issued for the act.

## 6.2. Recommendations on concession structure

We have analysed the DCA floated by AAI for the recent privatization of six brownfield airports in India. Based on this DCA and suggestions received from stakeholders, the following modifications in the concession structure of the MCA is outlined below:

### 6.1.1 Scope of project

#### 6.1.1.1 Concession period

***Existing provision***

The MCA for brownfield airports follows a concession period of 30 years, which can be extended by 30 years. However, the condition of extension is not specified.

***Clause no. 3.1.1***

*Subject to and in accordance with the provisions of this Agreement, Applicable Laws and the Applicable Permits, the Authority hereby grants to the Concessionaire the concession set forth herein including the exclusive right, license and authority to construct, operate and maintain the Airport (the ''Concession'') for a period of 30 (thirty) years commencing from the COD, and the Concessionaire hereby accepts the Concession and agrees to implement the Project subject to and in accordance with the terms and condition set forth herein.*

*Provided that the Concessionaire shall, at any time no earlier than 5 (five) years, but no later than 3 (three) years prior to completion of the aforesaid Concession Period of 30 (thirty) years, upon issuing a notice to this effect to the Authority, be entitled, be entitled to an extension of 30 years in the Concession Period under and in accordance with the provisions of Clause 42.5*

***Provision in revised DCA released by Airports Authority of India on December 2018***

Specifies a concession period of **50 years** without any further period of extension.

***Challenge***

A shorter concession period restricts the concessionaire's potential to leverage city-side development and achieve adequate returns in proportion to the initial investment.

***Recommendation***

As is applicable for greenfield projects, to curb distortion with regards to competition and the resources of the players involved in the bid process, the concession period should be adequately long to enable the Concessionaire to recover its investment with a reasonable rate of return, especially with respect to real estate development component. This would enable the Concessionaire to realize the full potential of the project and thus offer a competitive bid.

***Concession period should be for 50 years for brownfield airports with no extension of period***

### 6.1.2 Development and operations

#### 6.1.2.1 Right-of-way - land acquisition clearance and approvals

***Existing Provision***

As per the MCA, right-of-way is one of the condition precedent for the authority in the model, with 90% on prior or at appointed date and the balance 10% within 90 days.

***Clause no. 10.3.2***

*……the Parties hereto agree that on or prior to the Appointed Date, the Authority shall have granted vacant access and Right of Way such that the Appendix shall not include more than 10% (ten per cent) of the total area of the Site required and necessary for the Airport, and in the event Financial Close is delayed solely on account of delay in grant of such delays of such vacant access and Right of Way, the Authority shall be liable to payment of Damages……*

***Clause no. 10.3.4***

*The Authority shall make best efforts to procure and grant, no later than 90 (ninety) days from the Appointed Date, the Right of Way to the Concessionaire in respect of all land included in the Appendix……*

***Provision in revised DCA released by Airports Authority of India in 2019***

The AAI DCA specifies 90% of assets to be transferred prior to COD or latest by 90 days from COD. However, as per some sources, this was changed to complete (100%) transfer of assets. .

***Challenge***

Getting the necessary clearances and approvals is a pre-requisite for any project. However, it is understood that majority of the airports developed through the privatisation route have faced time and cost overruns owing to delays in obtaining statutory approvals from various government departments. Land acquisition is one of the main hurdles in implementation of any project. There have been delays in getting the balance 10% of the land. In some cases, the balance 10% consists of pockets that form part of the core airport operational area, hampering the progress of construction of even basis aeronautical infrastructure.

***Recommendation***

Since in brownfield airport, the airport assets are owned by the authority, the complete land earmarked for the airport's operations should be transferred on the effective date.

***100% right of way shall be given to the land pertaining to airport / aeronautical operations and city side development***

#### 6.1.2.2 Expansion of the airport

***Existing Provision***

As per the provisions of the MCA, expansion of the airport is to be undertaken on a need basis. It is triggered when aeronautical, non-aeronautical and terminal building fall short of the norms and standards specified by the ICAO documents, applicable guidelines of the DGCA, etc. The concessionaire can then undertake expansion at his own cost.

***Clause no. 25.3***

*12.8.1 At any time during the Scheduled Completion Date, if the Aeronautical Assets, Terminal Building and Non-Aeronautical Assets, as the case may be, fall short of the norms and standards specified by ICAO Documents and Annexes, the applicable guidelines of DGCA, Good Industry Practice and the provisions of this Agreement, the Concessionaire shall undertake capacity addition and expansion thereof, at its own cost and expense, to meet such shortfall.*

***Provision in revised DCA released by Airports Authority of India in 2019***

AAI's DCA directs expansion of the airport to be undertaken under similar conditions as those in the MCA

***Challenge***

Airport projects have a long concession period with high volatility related to traffic and capital expenditure. Hence, investors need flexibility to be able to react to changes, capitalise on opportunities, and grow the business. It is also pertinent to note that there is critical link between airport capacity, investment and charges. Therefore, any possibility of expansion of an airport needs to be planned and linked to trigger points to envisage capital investments. Hence, expansion triggers need to be clearly defined with no scope of ambiguity so that investors have a clear view to the time period in which it will need to start on project expansion

***Recommendation***

It is critical for both parties to envisage the quantum of capital investment that will be required during the concession period, which can then be linked to the capacity triggers (average peak hour capacity, passenger traffic, etc.) in the concession agreement, upfront. The investments made need to be recovered with an appropriate return. This will provide transparency in investments to be made and also ensure phased development of the airport to meet traffic requirements.

The MCA and AAI's DCA do not explicitly specify the exact terms under which expansion of the airport should be undertaken. However, the same is specified in the greenfield CA's of Mopa and Navi Mumbai should be linked to peak hour capacity or annual passenger traffic.

***The concessionaire will initiate construction works for subsequent phases after phase I, within three months upon the earlier occurrence of any one of the following traffic triggers:***

- *Actual peak hour passengers exceeds the design peak hour passengers for 50% of the time in a period of six months on rolling basis*
- *Annual passenger traffic in any accounting year is projected to exceed 75% of the design throughput capacity of the airport, by taking into account the observed traffic growth rate over the preceding six months*

## 6.1.3 Financial covenants

### 6.1.3.1 Interpretation of bid parameters as concession fee

***Existing Provision***

In the MCA, the bid parameter is the highest annual premium on total realisable fee (calculated from schedule of fees) or lowest grant. Together with the premium, the Concessionaire has to pay a concession fees of Re. 1 per annum

***Clause no. 31.1***

*In consideration of the grant of concession, the Concessionaire shall pay to the Authority by way of concession fee a sum of Re.1 per annum and the Premium specified in clause 31.2 (the "Concession fees")*

***Clause no. 31.2***

*The concessionaire agrees to pay to the Authority for the year commencing from the {day falling after …….. days of the occurrence of COD}, a premium* ***(the ''Premium'')*** *in the form of an additional Concession Fee equal to {1% (one per cent)} of the total Realisable Fee during that year, net of any taxes on Fee……..*

***Provision in revised DCA released by Airports Authority of India in 2019***

The concessionaire has to pay a monthly concession fee to the Authority as calculated from the following formula –

(Per Passenger Fee for International Passengers * International Passenger Throughput for that month) + (Per Passenger Fee for Domestic Passengers* Domestic Passenger Throughput for that month)

Where **Per Passenger Fee** for Domestic Passengers is the ***bidding parameter*** and;

Per Passenger Fee for International Passengers: **2 times the Per Passenger Fee for Domestic Passengers**

***Challenge***

The bidding parameter for all privatised airports till date has been highest percentage of gross revenue offered. Although the definition of gross revenue is established in the concession agreement, there have been cases of disputes between the authority and the concessionaire during the concession period owing to parameters such as inclusion of lease deposits and exclusion of depreciation in the estimation of gross revenue.

***Recommendation***

Investors prefer clarity and transparency for the entire project lifecycle, which helps in accounting for all risks before proceeding with the bidding process, and induces confidence regarding government's attempts to minimise risks and uncertainties in the project lifecycle.

Unlike the complicated calculation of gross revenue and total realizable fee, 'INR per passenger' is likely to have a simplistic calculation, making it easier to predict. Total passenger traffic is a more transparent and easily verifiable figure over which disputes are not expected to arise. Therefore, it may be suitable to adopt it as the bidding parameter.

***An inflation linked parameter - 'INR per passenger' may be suitably adopted to minimize revenue leakage.***

## 6.1.4 Force majeure and termination

### 6.1.4.1 Termination payment

***Existing Provision***

In the MCA, the termination payment is linked to the total project cost which is defined as the lowest of:

c) The capital cost, as set forth in the financial package
d) A sum determined by the authority

***Clause no. 42.3.3***

*42.3.3 Upon termination on account of Concessionaire Default during the Construction Period, no Termination Payment shall be due and payable for and in respect of expenditure comprising the first 40% (forty per cent) of the Total Project Cost and in the event of expenditure exceeding such 40% (forty per cent) and forming part of Debt Due……*

***Provision in revised DCA released by Airports Authority of India in 2019***

AAI's DCA has outlined a formula for the calculation of termination payment which is not linked to the total project cost but the aeronautical and non-aeronautical assets.

Termination Payment =

1. Amount of Deemed Initial RAB as included by the Regulator in its latest tariff determination of Aeronautical Charges, depreciated as per the Airport rates considered by the Regulator +
2. Depreciated value of investment by the Concessionaire in any Aeronautical Assets post COD, as considered by the Regulator during the latest tariff determination of Aeronautical Charges, +
3. Depreciated book value of the investment in Non-Aeronautical Assets, not being assets forming part of City Side Development, using the overall asset value and allocation ratio between Aeronautical Assets and Non-Aeronautical Assets considered by the Regulator during the latest tariff determination of Aeronautical Charges;+

*Lower of the following:*

4. Depreciated value of any additional Aeronautical Assets which may have been constructed, acquired or installed by the Concessionaire after the latest tariff determination of Aeronautical Charges by the Regulator as certified by the Independent Engineer;+
5. Depreciated book value of all Project Assets forming part of the City Side Development in the books of the Concessionaire;+
6. Actual costs, as assessed by the Independent Engineer, incurred by the Concessionaire in the works-in-progress handed over to the Authority by the Concessionaire as on the Transfer Date.+

Or

7. Sum of the replacement values net of depreciation of the assets set out above, as determined by an Approved Valuer, who shall be selected and appointed by the Authority within 15 days of the Transfer Date, and who shall submit its determination within 30 days of appointment.

The termination amount which would be paid by the Authority to the concessionaire on account of the concessionaire's default would be an amount equal to 70% of the termination payment amount (as arrived at from the above formula) with a deduction of the admitted and paid Insurance Cover.

***Challenge***

The definition of termination payment does not completely capture the investments made by the concessionaire. In addition, investment in non-aeronautical assets is usually significant and the same should be considered while calculating termination payment value. Also, the financial institutions are skeptical in providing funds where only depreciated value is considered. Therefore, to protect the interests of the concessionaire, the definition of termination payment should be amended.

***Recommendation***

The termination payment calculation AAI's DCA shall be linked to the invested value of aeronautical assets and non-aeronautical assets as determined by the regulator (AERA or Airports Economic Regulatory Authority of India). This is a more transparent method of accounting for costs and hence the termination payment amount finally arrived at can be expected to have the confidence of all stakeholders viz. the Authority, the concessionaire as well as lenders. It is therefore recommended that the termination payment amount in the event of the concessionaire's default be modified as per the provisions laid down in AAI' DCA. The methodology for calculation of the termination payment amount may also be modified as per the formula contained (as detailed above) in AAI's DCA.

***The termination payment formula should be modified to invested value for aeronautical and non-aeronautical assets as determined by the regulator***

### 6.1.5 Other provisions

#### 6.1.5.1 User fee - ambiguity in tariff structure

***Challenge***

The key issue arising in the current concession agreement for both greenfield and brownfield is the misconception in key parameters for determining the tariff in the control period. For example, interpretation of regulated asset base and return on equity are some of the parameters which are important determinants of the aggregate revenue requirement but are often a source of contestation mainly for the privatised airport. Generally, the investor's ability to recover operating and capital expenses and earn a return on the capital employed must reflect the risk-reward trade-off the investor faces.

***Recommendation***

When a regulation is required, clear and stable economic regulation is essential for the private operator. This should include a transparent and clear framework stating how charges will be regulated. A lack of clarity concerning the regulatory framework will increase risk, put into doubt the operator's ability to earn a return on investment, and limit or even preclude needed investment.

***Providing clear definition as well as method for calculating each parameter, with each sub-parameter defined as per the airport category, will eliminate interpretation issues for both the concessionaire and regulator. This will help reduce the disputes.***

#### 6.1.5.2 Concession Fees - moratorium

***Existing Provision***

In brownfield MCA, Concession fee will be a fixed sum of Re. 1 per annum for the concession period. The Concessionaire shall, commencing from the 15th year of the concession period, pay a Premium equal to 1 per cent of the total realisable fee which shall be increased every year by an additional 1 per cent of the total realisable fee subject to an upper ceiling of 30%.

***Clause 31.2 – footnote***

*In the event of the Concessionaire commencing a payment of 1% of Realisable Fee from COD or from any date thereafter, but no later than the 15$^{th}$ (fifteenth) anniversary of COD.*

***Challenge***

In the recent AAI bid for six airports, there is no moratorium for payment of concession fee. However, for brownfield projects where expansion works such as development of terminal building, apron and taxiways are required to be undertaken, the initial capital expenditure creates a lot of financial burden for the concessionaire especially debt service obligations would entail substantial outflows. It is important to give due consideration to this and allow for a concession fee moratorium recognizing this cash flow pattern.

***Recommendation***

In the operation period the Concessionaire will have an increasing surplus in its hands on account of the declining debt service on the one hand and rising revenues on the other, hence it is prudent to offer concession fees moratorium for greenfield projects. The moratorium period will be decided on project to project basis subject to an upper limit of 15 years.

***Providing concession fees moratorium up to sufficient number of years subject to an upper ceiling of 15 years will help the concessionaire to bear the initial debt burden.***

#### 6.1.5.3 Definition of change in ownership/ Equity lock-in period

***Existing provision***

In the MCA, the aggregate holding of the selected bidder or consortium member in total equity will be maintained at 51% during construction period and until the first anniversary of Commercial Operation Date, and by 26% for the rest of concession period.

***Clause 53.1***

*''Change in ownership'' means a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the {selected bidder/consortium members} together with {its/their} Associates in the total Equity to decline below (i) 51% (fifty one per cent) thereof during the*

*period prior to 3rd anniversary of COD, and (ii) 26% (twenty six per cent) thereof, or such lower proportion as may be permitted by the Authority during the remaining Concession Period……*

***Challenge***

The latest DCA have an equity lock-in of five years.

The equity lock-in period is an important aspect of the concession agreement for potential investors, developers and operators. These players are more comfortable investing in assets that have a minimal equity lock-in period. To protect the interests of the government and keep a check on the operational quality of the airport, it is imperative to keep a balanced equity lock-in period. We have observed the conditions of the lock-in period and 100% divestiture in other sectors:

| S no | Sector | Equity lock-in period in years | 100% divestiture allowed post lock-in period |
|---|---|---|---|
| **1.** | Planning commission MCAs for airports | 3 | X |
| **2.** | NMIAL/Mopa/ Bhogapuram | 7 | X |
| **3.** | Ahmedabad/ Jaipur/ Lucknow/ Guwahati/ Mangalore/ Thiruvananthapuram | 5 | X |
| **3.** | Highways | 2 | ✓ |
| **4.** | Ports | 2 | ✓ |

***Recommendation***

Since an airport is a complex infrastructure asset, it is prudent to keep the equity lock-in period for at least five years to test the operational compliance of the airport by the concessionaire in the initial years. After serving that lock-in period, the concessionaire can decrease the equity stake and can completely exit in 10 years. Divestiture of 100% put players in a comfortable position to invest in the airport assets, leading to an increase in private sector participation.

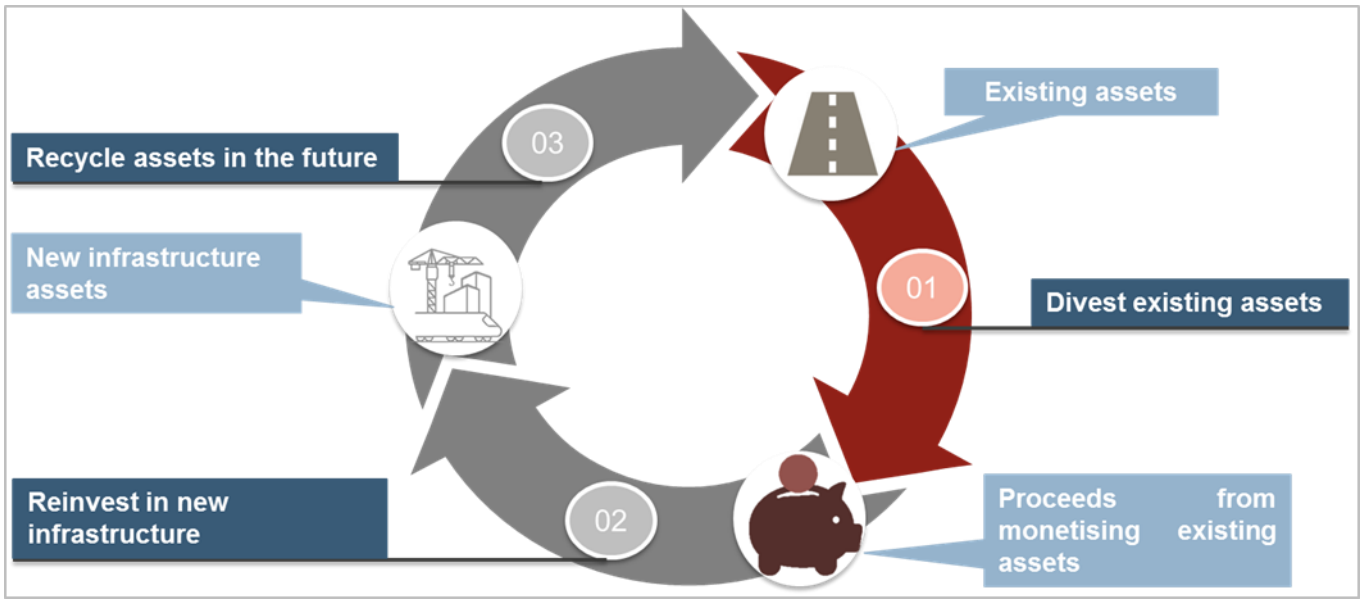
***Equity lock-in period will be extended to five years to ascertain the operational compliance of the concessionaire in the MCA.***

# 7. Asset recycling framework to monetize airports

## 7.1 Background

Asset recycling, also known as partial privatization, aims to minimize the risks associated with development within the infrastructure sector. It enables filling funding gap by privatising existing government owned infrastructure assets and utilizing the proceeds to finance the development of new infrastructure assets (or refurbish existing assets). However, the cost-benefit analysis of the new infrastructure asset is imperative to avoid loss of capital to the government. This analysis is only justified when the net present value of benefits exceeds the capital cost of the asset, further exhibiting a clear net positive benefit. The assessment of benefits of asset recycling may be determined by considering factors like type of asset (monopoly, regulated), structure of sale or lease, usage of proceedings and overall fiscal position of the economy. The asset recycling is believed to be favorable in a fiscally constrained economy where increasing taxes and taking new debt is not a feasible option. Economically, the asset shall augment the long term productive capacity. The pension funds, investment banks, insurance firms, PE firms etc. form the market for potential investors since infrastructure assets are economically regulated along with low risks.

**Figure 9: Asset recycling process**




*Source: CRIS analysis*

Private sector investment witnesses impediments such as inability to borrow, overstressed balance sheets and hedging risk. However, there is an increase in investor appetite for infrastructure since global financial crisis. Private players are interested in investing in infrastructure assets with long-term contractual arrangements and regulation is a way to reduce portfolio risks through diversification, and access higher risk-adjusted returns.

**Step 1:**

While the concept of a derisked model suits private investors, there are different degrees of divestiture that may be considered by the government. It depends on the objective of monetising the asset. The four main options to divest existing assets are:

- **Temporary ownership**

  Complete control of the asset can be transferred temporarily through a lease/concession agreement with a defined lease/concession period, for example of 30, 50 or 99 years. This is a standard agreement which is utilised in India's infrastructure sector such as airports (Delhi and Mumbai airport), highways (Hybrid annuity projects) etc.

- **Partial ownership**

  Private investor invests in a partial or minor equity stake in a public asset on a permanent basis, for example 49% of ownership, and earns returns on the basis of dividend share. For example, in Cochin Airport, multiple private players have invested in the airport and earn on a dividend share basis.

- **Temporary – partial ownership**

  A temporary-partial ownership is a combination of the above, such as under a shared ownership structure but only for a few years post which the private investor may sell off the stake. This is a standard agreement used in the Greenfield development in India's airport sector such as in Hyderabad and Bangalore airports.

- **Full ownership**

The private sector gets full control over the asset on a permanent basis, which is also known as privatization. A 99 lease period may also be witnessed as full ownership. This is usually not adopted in India's airport sector yet. In asset recycling, the most preferred option for divesting assets is temporary ownership through a lease or concession agreement. This is because governments can maintain a direct stake in the asset as an equity shareholder, ensure regulation of user fees, draft an agreement with safeguard clauses, and assure return of full ownership of the asset in the future. And the private sector takes full responsibility of operating the asset along with obeying terms and conditions set out in the agreement.

**Step 2:**

Next step to the process is to decide on the strategy to reinvest the proceeds from asset divestment. Although potentially there are many ways to utilise the proceeds, a few common options is given below:

- **Traditional procurement**
  The government utilises the proceeds to pay contractors who design and build other assets (design and build contracts). It is a direct public finance and bears the risk associated with managing the delivery of Greenfield projects, such as construction delays, time and cost overruns etc. It is suitable for mature governments with the capability to plan and procure such projects.

- **Joint Venture**

  Governments may associate with an investor/ developer/ operator and enter directly into a joint venture for one or more similar Greenfield infrastructure projects. The government uses the capital proceeds from divested assets to cover their equity stake in the special purpose vehicle (SPV) alongside the private partner. This is suitable in a nation where successful and well-established public-private partnerships exist between the government and private consortiums led by pension funds/ developers/ operators and supported by infrastructure investors.

- **Greenfield PPP concessions**

  Asset recycling can also help to enhance Greenfield PPPs. For example, it can use the capital proceeds to provide guarantees to investors in the form of a standby line of credit (liquidity pool). However, this will only be made available if the risks materialized in Greenfield stages. This provides an assurance to the private sector investor and protects the project from failing. It is suitable in emerging markets where there may be perceived higher political risks by investors.

**Step 3:**

The last stage in the process is the option of recycling newly built assets by the governments. However, this may only be possible if the complete ownership of the asset is transferred to the government in a PPP concession or the government plans to divest its stake in a joint venture. In all cases, an asset recycling strategy focuses on reusing the capital proceeds from divested assets to provide new infrastructure for future requirements.

Australia is one of the countries where the concept of asset recycling has been widely adopted through Asset Recycling Initiative (ARI). The initiative provides monetary incentive to states that engage in asset recycling to boost infrastructure development. When a state monetizes an asset (through sale or lease), and uses the proceeds to reinvest in new

infrastructure, it receives an additional 15 percent of the estimated proceeds from the federal government. This financial contribution is managed through the Asset Recycling Fund (ARF), which is used to make payments to the states. By June 2016, of the ~$3 billion available for the ARF, ~$2.35 billion[31] was allocated to the participating states. This allocation of $2.35 billion is expected to incentivise $16.3 billion in infrastructure investment. As of May 2018, twelve major public assets have been implemented under ARI across the country.

The asset recycling process is adopted by various countries and the implementation is dependent on the dynamics of the infrastructure sector, maturity of the government and affordability of the private sector. The subsequent section explores the asset recycling model adopted in India and provides an insight into the willingness of the relevant stakeholders to implement such models in the country.

## 7.2 Asset recycling in India

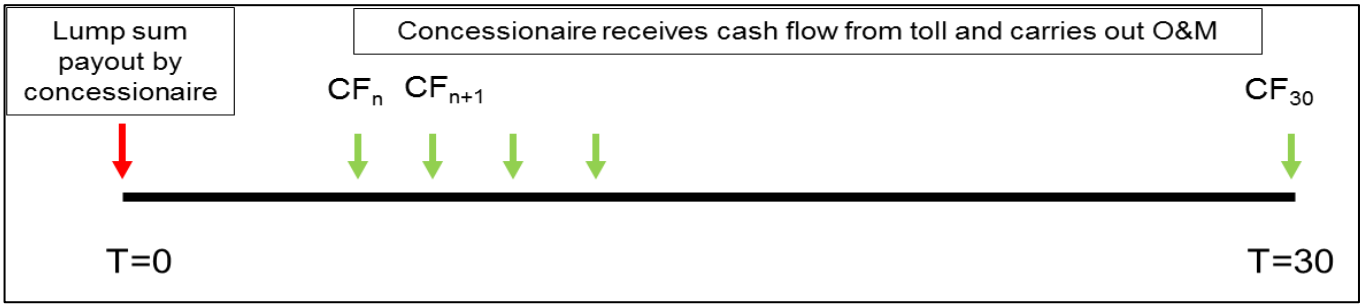
The asset recycling process has been implemented in the road and highways sector in India by adopting Toll – Operate – Transfer (TOT) model. TOT is an innovative infrastructure project financing mechanism which is gaining prominence across the world. Countries such as Australia, USA, Puerto Rico and Malaysia have been monetizing infrastructure assets using TOT like structures. The investment bank group Macquarie in a consortium with one of the largest private transport infrastructure developers, Cintra invested USD 1.83 billion in the Chicago Skyway for a concession period of 99 years. This was the first privatization of an existing toll road in the United States. Infrastructure Australia has initiated one of the most aggressive programs of infrastructure asset sales / leasing to fund future infrastructure development.

In India, the Government has prepared a roadmap for an asset recycling model. The Ministry of Road, Transport & Highways (MoRTH) has chosen to recycle its operational road assets, constructed under EPC and BOT (Annuity) model, through a Toll Operate Transfer (TOT) model. Under the model, stretches of national highways constructed by the NHAI are bundled together and transferred out to the private sector. This helps monetise the low to medium yield assets which are bundled with premium assets. The idea is for profitable assets to cross-subsidise unprofitable ones and provide economic and social benefits across the country. This model seeks to tap the potential cash flows of existing and functional road assets which can then be utilized to fund newer projects. This is the first of its kind PPP model where the concessionaire has access to a developed asset class for a long term investment and the Authority receives a lump sum as a front ended payment. The model has successfully attracted the interest from large private equity funds, pension funds and sovereign wealth funds. The model's concession structure and other key features are illustrated below:

- **Source of revenue:** Toll collection undertaken by Concessionaire
- **Bidding parameter:** Highest upfront concession fee payable to NHAI
- **Concession period:** 30 years with 100% exit option after 2 years
- **Method of securitisation:** NHAI calculates Initial Estimated Concession Value (IECV) as upfront fee payable by concessionaire. IECV is the discounted value (discounted at rate equal to 3% above the Bank Rate for debt and normative rate for equity return) of net free cash flow expected to be generated by the project highway from the valuation date until end of concession period of 30 years.
- **Target investors:** Minimal construction risk allows for investment from pension funds, sovereign wealth funds etc.

[31] *1 Australian dollar = 0.71 U.S. dollar*

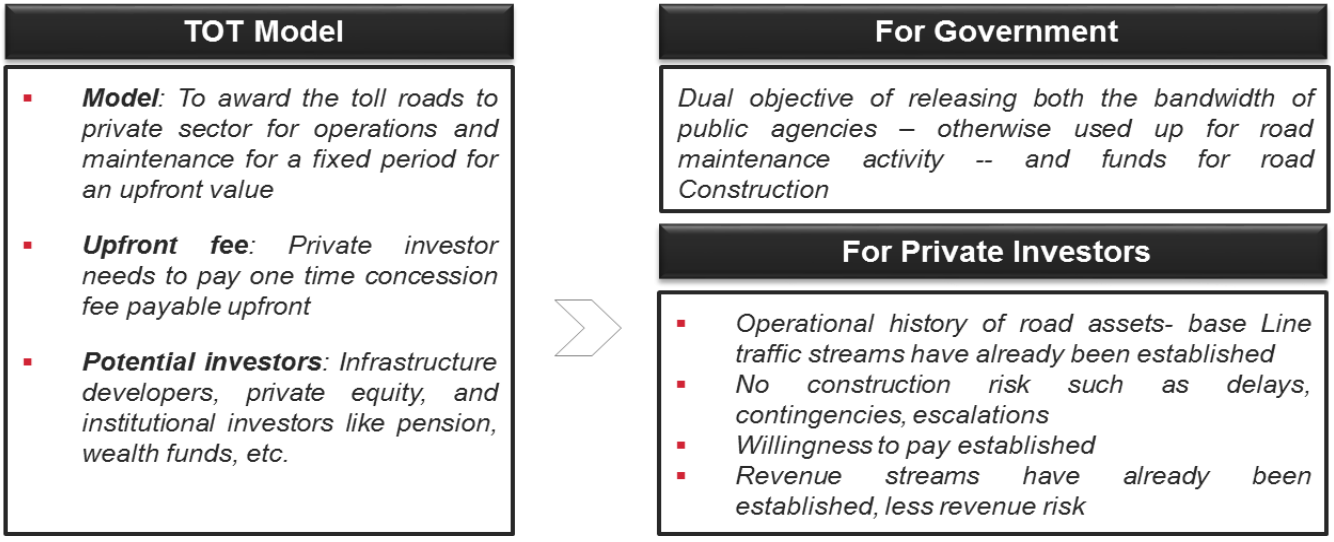
**Figure 10: Mechanism of TOT Model**




In terms of project risks, TOT is free from construction risk, but is subject to market risk. The long term concession period allows a drop in concessionaire risk. The risks are attributed to a number of factors such as state-of-the-art tolling technologies such as e-tolling/radio frequency identification, project-specific mechanism for determination of concession period based on minimum lump-sum concession fee and revenue projections based on traffic growth.

The model creates opportunities for the private players to invest in low risk highway assets. It minimizes revenue risk due to defined baseline traffic streams and revenue streams. Also, there is no construction risk to the concessionaire such as delay in construction, interest rate, escalation, contingencies etc. Due to these reasons, a willingness to pay has been established amongst the private players.

**Figure 11: TOT model and its benefits**




Some of the key clauses in the TOT concession agreement are as follows:

- **Capacity augmentation** of road stretches to be undertaken if average daily traffic of PCUs in any accounting years exceeds the designed capacity of 40,000 PCU and shall continue to exceed designed capacity for 3 consecutive accounting years thereafter
- **Variation in toll collection** will be assessed at 2 target points, Target Point 1 and Target Point 2. In case of shortfall, concession period to be increased by 1.5% for every 1% shortfall in actual fees as compared to target fee. In case of excess fee, concession period to be decreased by 0.75% for every 1% excess actual fee as compared to target fee.
- **The concession period** is not to be reduced by more than 5 years, and is not to be increased by more than 10 years.
- **Dispute resolution** is to be done either by mediation, conciliation or arbitration. Mediation is to be done by Independent Engineer, conciliation and arbitration is to be resolved by the Rules of SAROD and provisions of Arbitration & Conciliation Act, 1996, as amended from time to time.

The first bundle was bid out by NHAI in 2018. The bundle constituted of nine road stretches traversing ~682 kms of roads. Six road stretches are situated in Andhra Pradesh, and three road stretches are situated in Gujarat. IECV estimated by the authority was Rs 6,258 Crore. The consortium of MAIF Investments India Pvt. Ltd and Ashoka Buildcon Limited emerged as the highest bidder, by bidding Rs. 9681 crores, ~1.5 times the IECV of the Authority. The financial closure of the bundle was achieved on 29th August 2018. This shows significant private sector interest and the model achieved its purpose.

Bids for the second bundle was issued on 6th August, 2018. The bundle constitutes of eight road stretches traversing ~586 kms. These stretches are situated in four different states- Rajasthan, Gujarat, Bihar and West Bengal across 12 toll plazas. However, the bids received were less than the estimated IECV value by NHAI. The bundle is expected to get re-bid.

The participation of global funds is not new to the India's road and highway sector. In the past, Macquarie, Brookfield, Cube Highways, and other such global funds took equity in National Highway projects worth INR 4,150 crore. The TOT model expects to attract international pension funds as they have greater appetite to stay in an investment for longer duration. This is contradicting to other types of private investors who look for quick results. The bundles are created to increase the value of an auction and subsequently gaining traction of the pension funds and sovereign wealth funds.

The subsequent section describes the concept of asset recycling in airport sector and explores the applicability of the same in India's airport sector.

## 7.3 Asset recycling in airport sector

As discussed in the first section, there are four key options available in asset recycling frameworks – temporary ownership, partial ownership, temporary – partial ownership and full ownership. Temporary ownership is the most common model adopted by governments across the globe. The same is applicable to India's road and highway sector. However, its implementation framework requires bundling of infrastructure assets. This section, therefore intends to focus on the options available (single airport or bundling) under temporary ownership model in the airport sector and assess applicability of these options to India's airport sector.

### 7.3.1 Single airport divestiture

***Brief Background***

This model involves a concession/ lease agreement between the authority and the operator. It is usually applicable to brownfield airports where revenue streams are established. The agreement period may range from 25 to 30 years. The government gives the right to collect user fees to the operator. In addition to the upfront concession fee, the government may collect a percentage of gross revenue from the concessionaire. The user fees is regulated by the regulatory body and reviews the escalation of charges periodically.

**Case Study: Galeão International Airport**

With the aim of introducing private efficiency in the operation of its airports, the Federal Government of Brazil launched tender for multiple airports that laid the groundwork for future concessions of major airports. One of the airports was Rio de Janeiro/Galeão–Antonio Carlos Jobim International Airport, also known as Galeão International Airport. It is the largest airport in Brazil in terms of total area and it supports business and tourism activity in Rio de Janeiro, serving as a major air transportation hub for the country and region. It was managed by the state owned company Empresa Brasileira de Infra-Estrutura Aeroportuaria (Infraero) till it was bid out in 2014. Aeroporto Rio de Janeiro S/A comprising of Odebrecht TransPort (60 per cent) and Singapore's Changi (40 per cent) won the bid by quoting $7.9 billion, which was nearly four times the minimum bid and 31% higher than the runner up bid.

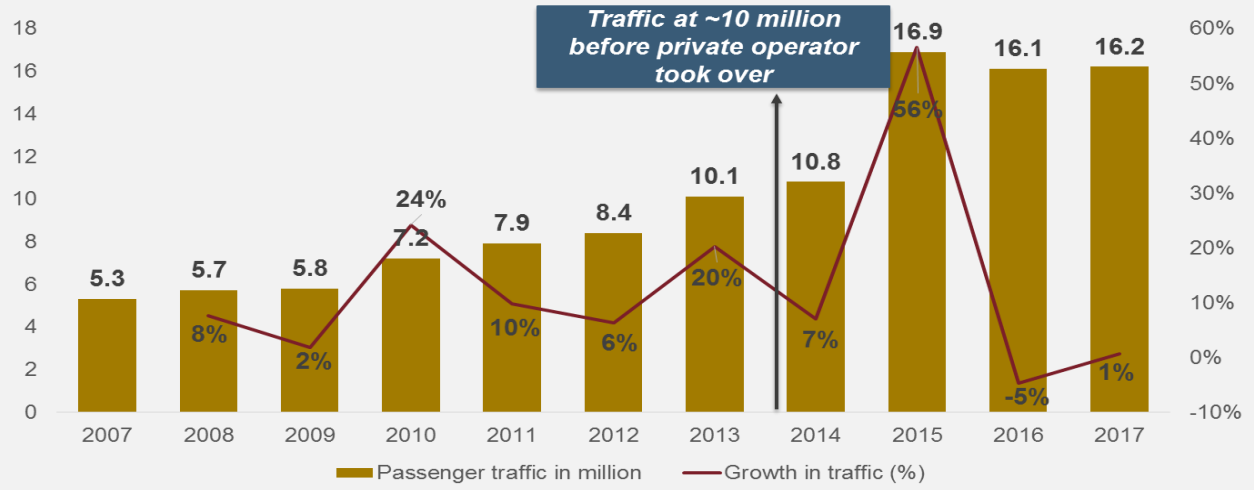
***Key features***

- *Concession period and concession Fee:* 25 years concession period; fixed fee as quoted by the bidder ($7.9 billion) to be paid upfront and variable fee of 5% of total annual gross revenue to be paid throughout the concession period
- *Ownership structure:* 51% stake of Aeroporto Rio de Janeiro S/A and 49% of Infraero;
- *Expansion trigger:* Construction of an independent 10/28 runway system to be completed before reaching 262,900 passenger movements per year
- *Regulatory framework:* Charges regulated as per domestic law

***Key learnings***

- Deal structuring is an important aspect of asset recycling where it is possible to achieve a win-win scenario with respect to the government, the investor and general public.
- Infrastructure assets with strong traffic history has a better chance of stimulating competitive bids

**Figure 12: Traffic at Galeão International Airport (2007 – 2017) in million**




- With the government's minority stake in the project, the government may intervene in operations whenever required

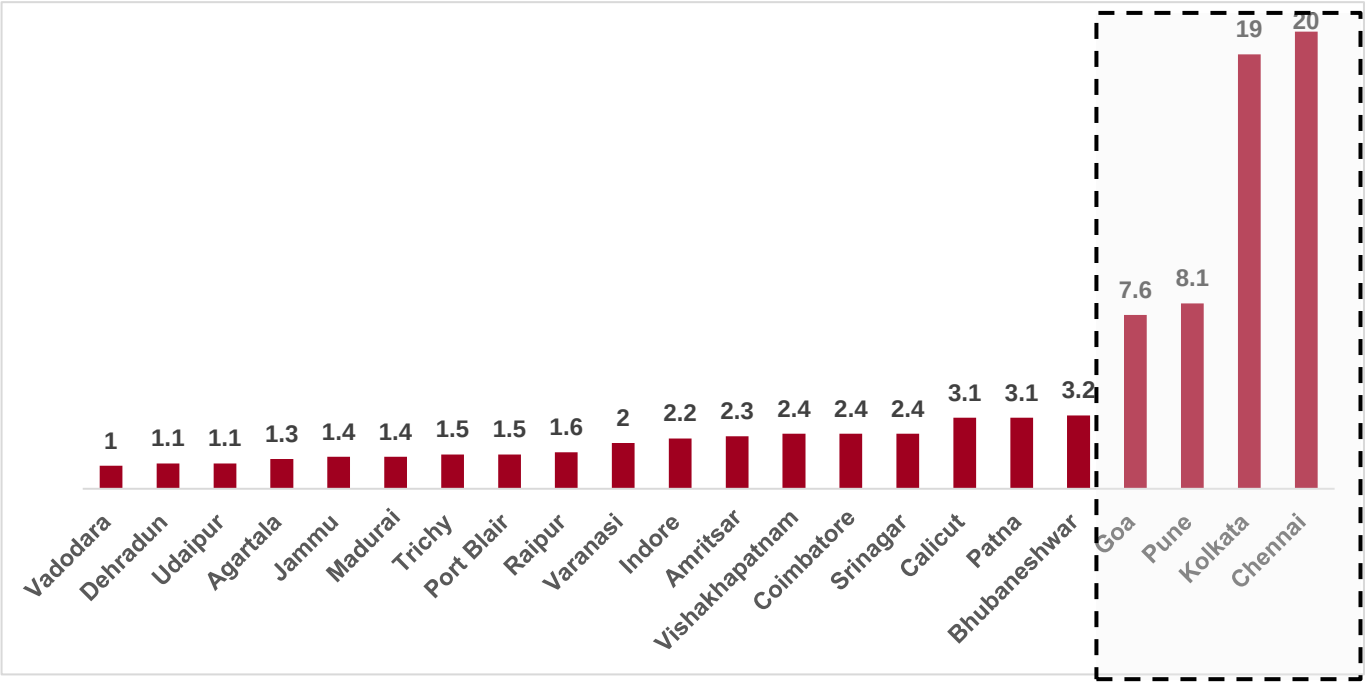
*Source: PPP stories by IFC, PPP case study by ICAO*

***Applicability in India's airport sector***

In India, single airport divestiture has been implemented with upfront payment for Delhi and Mumbai airports. Moreover, in the latest privatization of six airports, the concessionaire requires to pay an upfront fees for adjustment in Regulatory Asset Base and capital expenditure of ongoing projects. It is a pioneer step towards asset recycling of brownfield airports. These proceeds may be utilized by AAI for developing other airports.

From past learnings, it has been observed that strong passenger traffic is pertinent for stimulating competition for divesting an airport asset. To analyse the applicability of the said model in India's airport sector, domestic (including custom) and international airports operated solely by Airport Authority of India (AAI) with more than one million passenger traffic are considered.

**Figure 13: Total passenger traffic of international and domestic airport (in million) in FY 2018**




*Source: Airport Authority of India*

As observed in the above figure, the range of passenger size of these airports is wide. Only four airports – Chennai, Kolkata, Pune and Goa - have a robust passenger traffic number that can attract a sizeable upfront investment by private sector. Other airports have a lower passenger number for undertaking asset recycling process. However, the growth rate has been more than 15% in the last five years of most airports and may be taken up for privatisation when the traffic increases to a reasonable level. The history of privatisation the few shortlisted airports has been defined below:

1. **Chennai International Airport**

   AAI planned to privatise the airport in 2015 and issued a Request for Qualification (RFQ) proposing a similar structure to Delhi and Mumbai Operation, Management and Development contracts. It received a good response with about eight bidders expressing interest in participating. Before the issuance of the same, AAI had undertaken Rs 2,400 crore to construct a new terminal building and other aeronautical infrastructure at the airport. The concessionaire was expected to invest Rs 492 crore to modify the old international terminal building, provide connectivity tube to metro rail and upgrade the taxiways and runway. The bids were eventually withdrawn by the bidders since AAI did not want to let go of the expensive upgrade at the time. It received a sanction of Rs 1,000 crores for modification of old terminal building. The concession structure was then converted into a management contract. However due to tepid response, the privatisation proposition was finally dropped. The authority may decide to give the airport on asset recycling model since the airport may hit saturation levels soon. However, it may face the following impediments:

- Space is not available for further expansion of airport making capacity expansion challenging;
- Land for another airport is in process of getting earmarked. It may get proposed 40-50 km away from the existing airport, giving strong competition to Chennai International Airport.

2. **Netaji Subhash Chandra Bose International airport, Kolkata**

   The airport shared the same fate as Chennai International airport. AAI undertook investment in expansion of the airport and was not willing to privatise it. RFQ for the airport was issued along with Chennai airport leading to strong response. However, the bids were withdrawn by the bidders. Eventually, the concession structure was proposed to be converted to a management contract. There was low response for such a contract and the

privatisation plan got dropped. The authority may decide to give the airport on asset recycling model given that there is limited political risk.

As observed in the case study, one of the reasons for the bidding success of Galeão International Airport was robust passenger traffic numbers. It led to a good response on the quoted concession fee. In India, the success of the model will be dependent on the upfront payment received by AAI enabling the authority to utilise the proceedings and fund most part of the capital expenditure. In line with the latest privatization of six brownfield airports, AAI may privatize suitable airports that can offer profitable returns to the private sector players.

### 7.3.2 Bundled airports divestiture

***Brief Background***

Bundling is a technique of asset recycling mechanism. This technique is particularly applicable to brownfield projects where the assets are bundled to give a positive return to the operator and cross subsidize less profitable assets. The arrangement between the authority and the concessionaire varies depending on the level of control that the authority intends to maintain. While investors would be open to such privatisation models, due diligence needs to be observed while packaging airports together to ensure the government reaps maximum benefits, while ensuring operational efficiencies and profit maximisation for private players. The upfront value earned from such a monetisation exercise may be diverted to construct regional, commercially unviable airports to enhance national connectivity. In practice, airports in a bundle may range between 2 to 3 in number.

**Case Study: Bundling of airports in Republic of Congo**

Three airports in the Republic of Congo, namely, Brazzaville, Pointe Noire and Ollombo, are brownfield airports that were bundled. The government had invested in the development of the terminals and other airport infrastructure. However, the entity was looking for an operator who can undertake further development and improve overall quality and efficiency of the airport. Egis along with SEGAP won the bid for operating the airport.

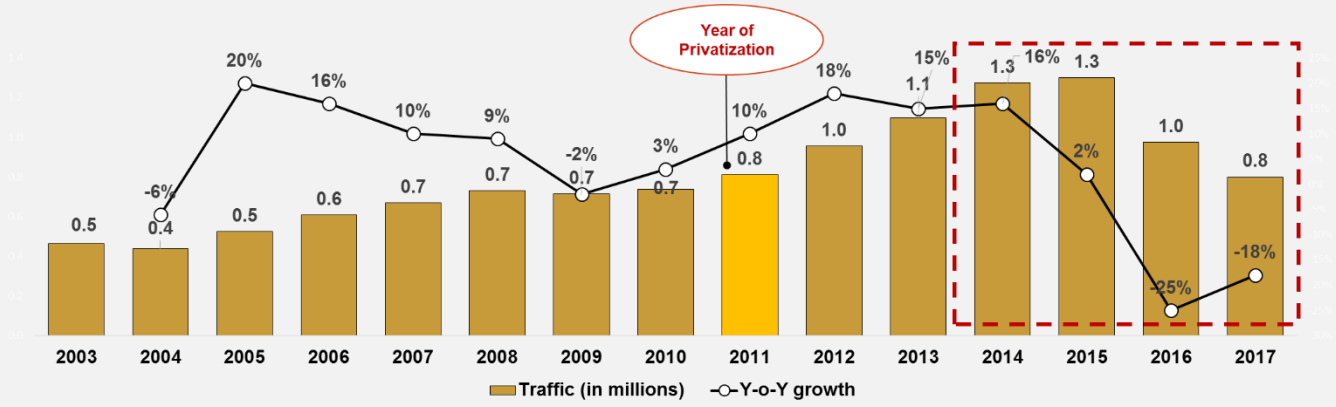
***Key features***

- *Concession period and concession Fee:* 25 years concession period; fixed fee is paid to the government in every six months and concession fee with respect to a percentage share of revenue is paid every three months
- *Bid process:* Single stage process for inviting bids and evaluation was based on operational efficiency of the operator
- *Ownership structure:* 29.5% owned by Egis followed by 25.5% owned by Marseille Provence CCI and 15% by the Republic of Congo and 30% by Private Congolese Investors
- Regulatory framework: Single till framework with review of charges in every five years.

***Key learnings***

- The concession agreement provided for capital and operational flexibility to the operator as the airports came along with a high traffic risk. This flexibility helped in creating investor confidence. Anticipated traffic risk did materialize at an airport in 2016 but the flexibility in the concession structure ensured that the privatization could go ahead in 2011.

**Traffic trend at Brazzaville International Airport (2003-2017)**




- Revenue earned from operations can be utilised for further development of the airport

*Source: ACI Policy Brief 2018, CRIS Analysis*

***Applicability in India's airport sector***

Bundling of airports in India may be carried out in two possible ways:

**Option 1:**


**In this model, an existing airport is bundled with a new airport** in its vicinity or in the same state. This is mainly to achieve two objectives:

1. to reduce the tariff at the new airport significantly
2. managing marginal increase in tariff at the existing airport

The existing airport will cross-subsidise the functioning of the new airport in the initial years, post which the new airport will be fully equipped to handle the burgeoning traffic. This model will help in reducing the overall tariff burden of the new airport while ensuring quality services. The model's success is largely dependent on the choice of airports to be bundled together, which, if done right, can minimise traffic and revenue risk for investors while ensuring higher returns for the Authority. However, the choice of airports may be subjected to the following uncertainties/ hurdles:

1. Regulatory framework – As major airports fall under the purview of AERA (airports having traffic above 1.5 million passengers per annum), and minor airports under MoCA, tariff filing for the private player may be challenging
2. Having the same tariff for both airports may not be beneficial for users as it will restrict competition and create monopolistic behavior

**Option 2:**


The investor community is inclined towards privatisation of existing brownfield airports with proven track records. However, considering the Authority's current airports portfolio, it would be prudent to privatise high potential airports on a standalone basis, and bundling medium-sized airports to create a decent deal value (~USD 100 million). A high potential airport will attract investors either way and bundling it with a medium to low-yield airport may dampen the returns that could be earned from a single airport deal. The idea of cross-subsidising the smaller airport with the larger one may face the same hurdles as mentioned in option 1.

## 7.4 Conclusion

Asset recycling does not have a defined model which gives flexibility to the government to design the concession structure. It enables the authorities to maximize the value of their infrastructure assets. A successful model is the one which is a win-win for both the government and the private investor. Since the concept of asset recycling has not been implemented in India's airport sector, factors that AAI may consider before implementing privatization on asset recycling are:

**Table 9: Critical factors to be considered for implementing asset recycling**

| Factor | Description |
|---|---|
| **Infrastructure requirement** | Infrastructure requirement in the airport is well assessed and exceed available capital even after debt |
| **Authority debt level** | If debt level is high and borrowing more endangers credit rating, and there are limited options for financing other expenses |
| **Assessment of infrastructure for new airport** | New airports created out of proceeds from asset recycling shall be assessed thoroughly to avoid cash flow losses to the authority |
| **Government capabilities to build new airport** | The government can access capabilities to efficiently build new airport and minimize dependability on private sector |
| **Effective operation of existing airport** | The private sector can effectively operate existing airport |
| **Supportive regulatory framework** | Regulatory environment shall be conducive to retain interests of long-term investors |
| **Political support in the community** | Asset recycling shall be supported by the community to minimize political risks |
| **Maintaining control over core services** | Authority can implement safeguards to ensure high quality service and protect sovereign interest in critical infrastructure |
| **Private-sector readiness** | Competitive and private sector environment with capable players and potential investors to be involved (e.g. pension funds) |

*Source: CRIS analysis*

Till date, AAI has already explored the asset recycling model with eight brownfield airports. AAI can continue to explore recycling of single airports with good traffic size and robust traffic growth rate. Although bundling of airports may seem attractive to increase the deal size, the immediate requirement is for privatisation of high potential airports hitting capacity saturation and requiring amenable investments.

# 8. Summary of key findings

| Concession Period |
|---|
| ***Greenfield – 40+20 years based on Authority's approval*** |
| ***Brownfield – 50 years with no extension of period*** |
| **Right-of-way - land acquisition clearance and approvals** |
| ***Greenfield - 90% of the land transferred on the effective date should include 100% of the land pertaining to airport operations*** |
| ***Brownfield – 100% land transferred on the transfer date*** |
| **Expansion of the airport** |
| ***Expansion triggers for capital expenditure linked to annual passenger capacity and average peak hour capacity to form part of the MCA for phased expansion*** |
| **Bidding parameter/ Concession Fee** |
| ***Greenfield - An inflation linked parameter - 'INR per passenger' may be suitably adopted to minimize revenue leakage.*** |
| ***Brownfield – Fee for each domestic and international passenger to be shared with the Authority*** |
| **Termination payment linked to actual project cost** |
| ***Greenfield - The termination payment to be linked to a value which is some percentage (as determined by the authority) higher than the defined total project cost.*** |
| ***Brownfield – The termination payment definition to be linked to invested value of aeronautical and non –aeronautical assets as determined by the regulator*** |
| ***Concession Fees – moratorium period*** |
| ***Providing concession fees moratorium up to sufficient number of years subject to an upper ceiling of 15 years will help the concessionaire to bear the initial debt burden.*** |
| **User fee - ambiguity in tariff structure** |
| ***Providing clear definition as well as method for calculating each parameter, with each sub-parameter defined as per the airport category, will eliminate interpretation issues for both the concessionaire and regulator. This will help reduce the disputes.*** |
| **Definition of change in ownership/ Equity lock-in period** |
| ***Equity lock-in period will be extended to five years to ascertain the operational compliance of the concessionaire in the MCA.*** |
| **Concession period linked to target traffic** |
| ***Modification in concession period with respect to difference in target traffic and actual traffic as on target year determined by the Authority.*** |

# 9. Appendix

## 9.1 List of Stakeholder Consultations

| Stakeholder Segment | Organisation Name | Officer Met | E-mail ID |
|---|---|---|---|
| Developers | GMR Group - Delhi International Airport Limited | Mr. Siddharth Kapur, President<br>Mr. Manomay Rai, Vice President<br>Mr. Harsh Gulati, Head Regulatory, Finance and Accounts | sidharath.kapur@gmrgroup.in |
| | BIAL | Mr. Hari Marar, CEO | hari.m@BIALAIRPORT.COM |
| | Association of Private Airport Operators (Scheduled) | Mr. Satyan Nayar, Secretary General | snayar@apaoindia.com |
| | MIAL/NMIAL | Mr. Rajeev Jain, CEO<br>Mr. Vinod Hiran, CFO (NMIAL)<br>Mr. Vinay Chudiwala, GM | Rajeev.Jain@gvk.com<br>Vinod.Hiran@gvk.com<br>vinay.chudiwala@gvk.com |
| Government Agencies | Ministry of Civil Aviation | Shri Arun Kumar - Joint Secretary | arun.kumar63@nic.in, |
| | Airports Economic Regulatory Authority | Shri. Manchendranathan, Chairman<br>Ms. Puja Jindal, Secretary<br>Shri. S. Samanta, Member | chairperson@aera.gov.dot.in,<br>puja.jindal@nic.in |
| | Director General of Civil Aviation | Shri J.S. Rawat, Joint Director General | dgoffice.dgca@nic.in |
| | Airports Authority of India | Shri. Guruprasad Mohapatra, IAS, Chairman<br>Shri. S. Suresh, Member Finance | chairman@aai.aero<br>memberfin@aai.aero |
| Investors | Canada Pension Plan Investment Board | Ms. Kavita Saha, Senior Principal, Infrastructure Real Assets | ksaha@cppib.com |

| Stakeholder Segment | Organisation Name | Officer Met | E-mail ID |
|---|---|---|---|
| | IDFC Alternatives | Mr. Milind Joshi, Partner (Infrastructure) | milind.joshi@global-infra.com |
| | Brookfield Asset Management | Mr. Hardik Shah, Senior Vice President | hardik.shah@brookfield.com |
| | Macquarie Infrastructure and Real Assets | Mr. Suresh Goyal, Country Head, Mr. Deep Gupta, Managing Director, and Mr. Abhimanyu Diwan, Manager | suresh.goyal@macquarie.com, deep.gupta@macquarie.com, abhimanyu.diwan@macquarie.com |
| | National Investment and Infrastructure Fund | Mr. Prasad Gadkari, Head - Investment Strategy and Policy | prasad.gadkari@niifindia.in |

## 9.2 List of upcoming greenfield and brownfield airports

| S. No. | Name of district/ city and state of greenfield airports | Estimated cost (INR crores) |
|---|---|---|
| 1 | Mopa, Goa | 3,100 |
| 2 | Navi Mumbai, Maharashtra | 16,704 |
| 3 | Shirdi, Maharashtra | 321 |
| 4 | Sindhudurg, Maharashtra | 520 |
| 5 | Bijapur, Karnataka | 150 |
| 6 | Gulbarga, Karnataka (initial phase) | 14 |
| 7 | Hasan, Karnataka | 592 |
| 8 | Shimoga, Karnataka | 38.9 |
| 9 | Kannur, Kerala | 1892 |
| 10 | Durgapur, West Bengal | 670 |
| 11 | Dabra, Madhya Pradesh | 200 |
| 12 | Pakyong, Sikkim | 553.5 |
| 13 | Karaikal, Puducherry | 170 |
| 14 | Kushinagar, Uttar Pradesh | 448 |
| 15 | Dholera, Gujarat | 1,712 |
| 16 | Dagadarthi Mendal, Andhra Pradesh | 293 |
| 17 | Bhogapuram, Andhra Pradesh | 2,260 |

| S. No. | Name of district/ city and state of greenfield airports | Estimated cost (INR crores) |
|---|---|---|
| 18 | Oravakallu, Andhra Pradesh | 200 |
| | **Total** | **29,517** |

| S. No. | Name of district/ city and state of Brownfield airports recently received in-principle approval for development on PPP |
|---|---|
| 1 | Ahmedabad |
| 2 | Jaipur |
| 3 | Mangalore |
| 4 | Thiruvananthapuram |
| 5 | Lucknow |
| 6 | Guwahati |

## 9.3 Deviations from MCA drafted by erstwhile Planning Commission – greenfield airports

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| 53.1 | Definition of Adjusted Depreciation Value | Planning Commission | Mentions **written down value method** to be applied in case of buildings and permanent structures at 3% annual depreciation rate | Buildings and permanent structures should be depreciated using the depreciation methodology and not on the basis of fluctuations in price index. Therefore, clause in MCA may persist |
| | | Mopa Airport | Mentions **written down value method** to be applied in case of buildings and permanent structures at 3% annual depreciation rate | |
| | | Navi Mumbai Airport | Does not mention this method of calculation | |
| 53.1 | Definition of Adjusted Equity | Planning Commission | After the 4th anniversary, the adjusted equity is the sum equal to Base Adjusted Equity, reduced by **0.11%** at the commencement of each month | No framework is given on the revision of TPC when price index increase by more than 3%. Therefore to avoid ambiguity, the clause In MCA may persist. |
| | | Mopa Airport | After the 4th anniversary, the adjusted equity is the sum equal to Base Adjusted Equity, reduced by **0.11%** at the commencement of each month | |
| | | Navi Mumbai Airport | After the 4th anniversary, the adjusted equity is the sum equal to Base Adjusted Equity, reduced by **0.17%** at the commencement of each month. **Also, in case the price index increases by more than 3% between Reference Date and Phase I COD, then the parties shall meet and revise the effect of this increase on Total Project Cost** | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| 2.1/ 53.1 | Scope of project/ Definition of aeronautical assets | Planning Commission | Includes city side development | Definition of aeronautical assets and city side development may change from project to project basis |
| | | Mopa Airport | Includes city side development | |
| | | Navi Mumbai Airport | Includes Land Development Work to be completed under LDS Agreements | |
| 53.1 | Definition of Aeronautical services | Planning Commission | **52 services** defined listed as part of definition | An exhaustive list of services should be given to avoid ambiguity in terms of charges that forms the part of tariff determination. |
| | | Mopa Airport | Services as per AERA act where only **6 services** are listed along with an ambiguous point that the stakeholders for which the charges are to be determined by the authority | |
| | | Navi Mumbai Airport | Services as per AERA act where only **6 services** are listed along with an ambiguous point that the stakeholders for which the charges are to be determined by the authority | |
| 34.2 | Impact of revenue windfall/ gain on tariff determination | Planning Commission | Target traffic has been provided and any shortfall or gain is compensated by adjusting concession period. | Passenger traffic should be linked to the revenue windfall or gain in order to:<br>1. Capture increase in revenue due to increase in passenger traffic<br>2. Guarantee compensation to the concessionaire in case of reduction in traffic<br>The MCA clause to prevail |
| | | Mopa Airport | Under recovery and over recovery of aeronautical revenues for the first control period is adjusted/ carried forward in the next control period, which is based on the difference of allowed yield per passenger for the first control period and higher of actual per passenger yield per passenger for first control period or approved yield per passenger for Dabolim airport. | |
| | | Navi Mumbai Airport | Under recovery and over recovery of aeronautical revenues for the first control period is adjusted/ carried forward in the next control period, which is based on the difference of allowed yield per passenger for the first control period and higher of actual per passenger yield per passenger for first control period or approved yield per passenger for CSIA airport. | |
| 4.2 | Damages for delay by the Authority | Planning Commission | Incorporated in case of non-fulfilment of condition precedent by the authority | Damages shall be paid by the authority in case on non-fulfilment of condition precedent |
| | | Mopa Airport | Incorporated in case of non-fulfilment of condition precedent by the authority | |
| | | Navi Mumbai Airport | Not mentioned | |
| 4.1 | Time period allowed to the Authority to fulfill condition precedent | Planning Commission | 90 days from the date of agreement | 90 days is a fair amount of time for fulfilling condition precedent. The MCA clause to prevail. |
| | | Mopa Airport | 45 days from the date of agreement | |
| | | Navi Mumbai Airport | 60 days from the date of agreement | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| 5.1 | Obligations of the Concessionaire | Planning Commission | 1. No clause is mentioned relation to **compliance with DGCA and BCAS**<br>2. Concessionaire to make reasonable efforts to **facilitate land acquisition and procure environmental and forest clearances**<br>3. **Provide or cause to be provided ground handling services at the airport**<br>4. Scenario in case of **reduced stake of O&M associate** is not mentioned | 1. Concessionaire to comply with instructions and requirements of DGCA and BCAS and allow DGCA and BCAS to inspect the site at their own cost. This should be added to ensure safety.<br>2. Concessionaire should not facilitate in land acquisition and clearance as it comes under the purview of the authority<br>3. Provide or cause to be provided Aeronautical Services and Non-Aeronautical Services at the Airport. Providing services comes under the purview of the concessionaire.<br>4. The O&M contractor should remain an associate of the preferred bidder for a period of at least 3 years from Phase I COD. This ensures O&M obligations of the concessionaire. |
| | | Mopa Airport | 1. **Concessionaire to comply with instructions and requirements of DGCA and BCAS and allow DGCA and BCAS to inspect the site at their own cost**<br>2. No clause on concessionaire's effort on facilitating land acquisition and other clearances<br>3. Provide or cause to be provided ground handling services at the airport<br>4. Scenario in case of reduced stake of O&M associate is not mentioned | |
| | | Navi Mumbai Airport | 1. No clause is mentioned relation to compliance with DGCA and BCAS<br>2. No clause on concessionaire's effort on facilitating land acquisition and other clearances<br>3. **Provide or cause to be provided Aeronautical Services and Non-Aeronautical Services at the Airport**<br>4. The O&M contractor shall remain an associate of the preferred bidder for a period of at least 3 years from Phase I COD. In case the associate no longer remains the associate, the concessionaire shall execute service performance contract with the O&M associate | |
| 5.4 | Obligations relating to shareholding of the authority/ Obligations relating to golden share | Planning Commission | No percentage share of equity mentioned in the shareholder's agreement | Percentage share shall be mentioned. This may change from case to case basis. However, Golden share would ensure Authority's control. |
| | | Mopa Airport | No percentage share of equity mentioned in the shareholder's agreement | |
| | | Navi Mumbai Airport | Issuance and allotment of 26% (twenty six percent) Equity of the Concessionaire to the Authority | |
| 5.5 | Obligations relating to DGCA license | Planning Commission | The Authority shall endeavor to provide necessary support to the Concessionaire for obtaining the Applicable Permits from DGCA **no later than 60 (sixty) days** | DGCA should be given 90 days to ensure |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | from the date of filing of the due and complete application by the Concessionaire with the DGCA | compliance to safety requirements |
| | | Mopa Airport | The Authority shall endeavor to provide necessary support to the Concessionaire for obtaining the Applicable Permits from DGCA **no later than 60 (sixty) days** from the date of filing of the due and complete application by the Concessionaire with the DGCA | |
| | | Navi Mumbai Airport | The Authority shall endeavor to provide necessary support to the Concessionaire for obtaining the Applicable Permits from DGCA **no later than 90 (ninety) days** from the date of filing of the due and complete application by the Concessionaire with the DGCA | |
| 5.8 | Obligations relating to employment of trained personnel | Planning Commission | The Concessionaire shall ensure that the personnel engaged by it in the performance of its obligations under this Agreement are at all times properly trained for their respective functions | The Concessionaire should comply with the Applicable Laws and the Applicable Permits in relation to the hiring of local personnel. This addition ensures that the concessionaire trains the local personnel as per the limits set out in applicable laws. |
| | | Mopa Airport | The Concessionaire shall ensure that the personnel engaged by it in the performance of its obligations under this Agreement are at all times properly trained for their respective functions | |
| | | Navi Mumbai Airport | The Concessionaire shall ensure that the personnel engaged by it in the performance of its obligations under this Agreement are at all times properly trained for their respective functions. The Concessionaire shall **comply with the Applicable Laws and the Applicable Permits in relation to the hiring of local personnel**, and shall endeavor to employ as many local personnel including but not limited to the Project Affected Persons and/ or any of their family personnel during the implementation, development and operations of the Project. | |
| 5.10 | Obligations relating to non-discriminatory access | Planning Commission | The concessionaire shall not, in any month occurring **after the 3rd anniversary of COD**, handle the aircrafts or cargo of an associate firm or a**ny other person in whom it has a direct or indirect financial interest if such aircraft/ cargo exceed 50%** of the total number of aircrafts or volume of cargo. | Clause in MCA may prevail to ensure that the concessionaire does not pursue other interests that falls out of scope of the concession agreement |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | Mopa Airport | No such sub clause mentioned in the DCA | |
| | | Navi Mumbai Airport | No such sub clause mentioned in the DCA | |
| 5.11 | Obligation relating to competition | Planning Commission | The concessionaire shall not directly or indirectly or through associate firms, or in any manner **acquire control over an airport situated within a radius of 150 km from the airport and exceed a share of 25% of such control.** In addition, the concessionaire has to ensure the same for its own airport | Concessionaire interest in competing facilities be minimized to avoid monopoly in any region. Clause in MCA may prevail. |
| | | Mopa Airport | No such clause mentioned in the DCA | |
| | | Navi Mumbai Airport | No such clause mentioned in the DCA | |
| 5.13 | Obligation relating to aesthetic quality of the airport | Planning Commission | The concession has to ensure high standards in terms of aesthetic quality and achieve integration | Aesthetic quality is imperative to achieve world class airports status. Therefore, clause in MCA may prevail. |
| | | Mopa Airport | No such clause mentioned in the DCA | |
| | | Navi Mumbai Airport | No such clause mentioned in the DCA | |
| 6.1 | Obligation of the Authority | Planning Commission | 1. Concessionaire may request to procure applicable permits relating to **environmental protection and conservation of airport** (excluding city side development), **at the cost and expense of the concessionaire** 2. Authority to make best endeavors to **procure that no local tax, toll or charge is levied or imposed on the use of whole or any part of the airport** 3. Authority to assist the concessionaire in **procuring police assistance for regulation of traffic, removal of trespassers and security on airport** | Clause in MCA may prevail as the authority shall undertake these activities to ensure protection and safety of the airport. |
| | | Mopa Airport | 1. Concessionaire may request to procure applicable permits relating to **environmental protection and conservation of airport** (excluding city side development), **at the cost and expense of the concessionaire** 2. Authority to make best endeavors to **procure that no local tax, toll or charge is levied or imposed on the use of whole or any part of the airport** 3. Authority to assist the concessionaire in **procuring police assistance for regulation of traffic, removal of trespassers and security on airport** | |
| | | Navi Mumbai Airport | No such clause mentioned in the DCA | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| 12.4 | Construction of the Airport | Planning Commission | The 1095th (one thousand ninety fifth) day from the Appointed Date shall be the scheduled date for completion of the Phase I of the Project | The date of construction shall change from case to case basis and should be as realistic as possible |
| | | Mopa Airport | The 1095th (one thousand ninety fifth) day from the Appointed Date shall be the scheduled date for completion of the Phase I of the Project | |
| | | Navi Mumbai Airport | The 1245th (one thousand two hundred forty fifth) day from the Appointed Date shall be the scheduled date for completion of the Phase I of the Project | |
| 12.2 | Concessionaire and Authority obligation on submission of Master plan of the airport | Planning Commission | Not mentioned | The concessionaire should be obligated to submit the master plan to avoid any delay in construction start date |
| | | Mopa Airport | Not mentioned | |
| | | Navi Mumbai Airport | 1. Within **30 (thirty) days of the submission of the Master Plan**, the Authority shall provide to the Concessionaire, any comments or suggested changes that the Authority may have on the Master Plan. The concessionaire shall address the same within 30 days.<br>2. If the Concessionaire does not submit the initial Master Plan to the Authority, the **Authority has the right to levy liquidated damages on the Concessionaire at the rate of Rs. 10,00,000/-** (Rupees Ten Lakh) for every day of delay, provided that, the Concessionaire's total liability in such case shall not exceed Rs. 5,00,00,000 (Rupees Five Crore).<br>3. The Concessionaire further agrees to update and resubmit the Master Plan periodically, every 5 (five) years to the Authority for its review and comments | |
| 14.2 | Completion certificate | Planning Commission | No later than **30 (thirty) days** prior to the likely Completion of the relevant Phase of the Airport, the Concessionaire shall notify the Authority and the Independent Engineer of its intent to subject the Airport to the Tests. | 90 days is a fair amount of time for the same and clause needs to be modified |
| | | Mopa Airport | No later than **90 (ninety) days** prior to the likely Completion of the relevant Phase of the Airport, the Concessionaire shall notify the Authority and the Independent Engineer of its intent to subject the Airport to the Tests. | |
| | | Navi Mumbai Airport | No later than **90 (ninety) days** prior to the likely Completion of the relevant Phase of the Airport, the Concessionaire | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | shall notify the Authority and the Independent Engineer of its intent to subject the Airport to the Tests. | |
| 16.1 | Change of scope | Planning Commission | Works with regards to expansion of aeronautical and non-aeronautical assets will not be considered as change of scope and costs and expenses will be borne by the concessionaire | Clause in MCA may prevail as the concessionaire will benefit from any expansion of aeronautical or non-aeronautical assets |
| | | Mopa Airport | If the capital expenditure incurred due to change of scope is accepted and considered by AERA for the determination of tariff, then all expenditure will be borne by the concessionaire. If the Authority grants any payment for the same, the concessionaire shall refund the amounts received from the Authority in not more than 60 days of AERA accepting such capital expenditure | |
| | | Navi Mumbai Airport | Any costs incurred by the Authority herein, shall be informed by the Authority to the Concessionaire on the completion of such works or services. The Concessionaire shall submit a statement of such costs along with its application for the determination of the Aeronautical Charges to AERA, and pay to the Authority, all such amounts in 12 (twelve) equal monthly instalments thereof. | |
| 27.1 | Appointment of independent engineer | Planning Commission | The appointment of the Independent Engineer shall be made within **180 (one hundred eighty) days** of the date of execution of this Agreement, and such appointment shall be valid for a period of 3 (three) years. | Clause in MCA shall prevail as the time period for appointment takes time |
| | | Mopa Airport | The appointment of the Independent Engineer shall be made within **180 (one hundred eighty) days** of the date of execution of this Agreement, and such appointment shall be valid for a period of 3 (three) years. | |
| | | Navi Mumbai Airport | The appointment of the Independent Engineer shall be made within **30 (thirty) days** of the date of execution of this Agreement, and such appointment shall be valid for a period of 3 (three) years. | |
| 29.1 | Time period for achieving financial close | Planning Commission | The Concessionaire hereby agrees and undertakes that it shall achieve Financial Close within 180 (one hundred eighty) days from the date of this Agreement and in the event of delay, it shall be entitled to | Clause in MCA may prevail as the process of financial close is a time consuming process |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | a further period not **exceeding 120 (one hundred twenty) days**. | |
| | | Mopa Airport | The Concessionaire hereby agrees and undertakes that it shall achieve Financial Close within 180 (one hundred eighty) days from the date of this Agreement and in the event of delay, it shall be entitled to a further period not **exceeding 120 (one hundred twenty) days**. | |
| | | Navi Mumbai Airport | The Concessionaire hereby agrees and undertakes that it shall achieve Financial Close within 180 (one hundred eighty) days from the date of this Agreement and in the event of delay, it shall be entitled to a further period not **exceeding 60 (sixty) days**. | |
| 46.1/ 46.2 | Change in Law | Planning Commission | In case of increase or reduction in scope, if the financial effect exceed higher than **1 crore or 0.5% of realisable fee**, then the authority will notify concessionaire and propose amendments. | In order to give comfort to the concessionaire, it is imperative to include clause relevant to change in law. Clause in MCA may prevail. |
| | | Mopa Airport | In case of increase or reduction in scope, if the financial effect exceed higher than **1 crore or 0.5% of aeronautical charges**, then the authority will notify concessionaire and propose amendments. | |
| | | Navi Mumbai Airport | Any event or occurrence at any time during the term of this Agreement that may constitute a 'change in law' or alleged 'change in law', **shall not be a ground for any alteration or amendment to any term hereof or of any rights and obligations flowing from this Agreement in favour of the Concessionaire.** | |

*Clause numbers are as per MCA drafted by erstwhile Planning Commission*

## 9.4 Deviations of DCA for six airports from MCA drafted by erstwhile Planning Commission – brownfield airports

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| **Article 2.** | **Scope of the Project** | Planning Commission MCA for brownfield airports | The scope of the Project **(the "Scope of the Project")** shall mean and include during the concession period:<br>(a) Operation, management and development of the Airport, on the site set forth, in accordance with the provisions of this agreement<br>(b) Development of the airport as specified together with provision of Project Facilities as specified and in conformity with the Specifications and Standards set forth<br>(c) development, operation and maintenance of City Side on the Site as specified and in accordance with the Agreement's provisions<br>(d) performance and fulfilment of all other obligations of the Concessionaire in accordance with the Agreement's provisions and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under the Agreement | The new DCA has explicitly mandated the designing and financing of the airport whereas the MCA mandates the development of the airport in accordance with the requirements of the Master Plan (together with descriptions of Aeronautical Assets, Terminal Building, Non-aeronautical assets, reserved area, city side developments and funded works) which is to form a part of the concession agreement.<br>Thus the new DCA puts the onus of expansion related-works from design to development directly on the concessionaire. Further this DCA also specifies that the development has to be phased.<br>It is recommended that the freedom for development decisions be allowed to the concessionaire in line with the new DCA, rather than having further expansion-related designs pre-specified in the concession agreement at the time of its signing. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | The scope of the Project ("Scope of the Project") shall mean and include, during the Concession Period, the operations, management and development of the Airport covering:<br>(a) design, development, financing, construction, upgradation and expansion of the Airport in a phased manner, on the Site and as per the requirements broadly set forth in *Schedules* together with provision of respective Project Facilities as specified, and in conformity with the Specifications and Standards set forth, and in accordance with the Applicable Laws and Applicable Permits;<br>(b) operations, maintenance and management of the Airport in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits;<br>(c) development, operation and maintenance of City Side, in accordance with the provisions of this Agreement, and, in particular, Schedule A, Schedule B and Schedule C; and<br>(d) performance and fulfilment of all other obligations of the Concessionaire and matters incidental thereto or necessary for | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | the performance of any or all of the obligations of the Concessionaire under this Agreement, in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits. | |
| **Article 5.3** | **Obligations related to Change in ownership** | Planning Commission MCA for brownfield airports | The Concessionaire cannot undertake or permit any Change in Ownership, except with the prior written approval of the Authority.<br>Acquisition of >=25% equity of the concessionaire or any direct/indirect control of the Board of Directors of Concessionaire shall constitute a change in ownership. | According to the new DCA an equity transfer of 15% or more would be treated as a change of ownership which is less than the limit of 25% as specified in Planning Commission's MCA.<br>The DCA makes it more stringent for a concessionaire's equity holders to dilute their stakes. This could aid in attracting only investors with a long-term horizon at the time of bidding.<br><br>It is therefore recommended that the provision in the MCA for brownfield airports pertaining to change of ownership be suitably modified along the lines of that in the DCA. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | The Concessionaire cannot undertake or permit any Change in Ownership, except with the prior written approval of the Authority.<br>Acquisition of >=15% equity or any direct/indirect control of the Board of Directors of Concessionaire shall constitute a change in ownership. | |
| **Article 6.4** | **Obligations in respect of Existing Contracts** | Planning Commission MCA for brownfield airports | The MCA requires the following conditions pertaining to existing contracts to be fulfilled -<br>• Authority will, during the Inception Period, perform and comply with all its obligations under the Existing Contracts, at its own cost and expense, procure novation of such contracts and agreements in favour of the Concessionaire<br>• If the Authority is unable to procure novation of any Existing Contract it shall execute a power of attorney, effective on and from the COD, designating the Concessionaire (acting through its authorised representative) as its attorney<br>• The Authority shall endeavor not to (i) renew any Existing Contracts that are due to expire within the inception period (**period commencing from the date of the agreement and expiring upon the occurrence of COD**) | The DCA's terms pertaining to obligations in respect of existing contracts are similar to those contained in the Planning Commission MCA.<br>With regard to consulting with the concessionaire in the matter of renewal of existing contracts due to expire the MCA gives a time window of 5 days to a concessionaire to consider a contract and so does the DCA,<br>It is recommended that tine window be increased as 15 days instead of 5 days<br>. It is recommended that the Authority bear the costs for novation, including stamp duties.<br>It is therefore recommended that the MCA be modified to state under this clause that stamp |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | • Prior to renewing any Existing Contract and/or execution of a new contract, the Authority shall consult with the Concessionaire and consider its comments for which purpose the Authority shall provide **5 business days** | duties would be borne by the Authority and that the time period for consideration of renewal of existing contracts be increased to 15 days instead of 5 days. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | The agreement requires the following conditions pertaining to existing contracts to be fulfilled -<br>• Authority will, during the Inception Period, perform and comply with all its obligations under the Existing Contracts, at its own cost and expense, procure novation of such contracts and agreements in favour of the Concessionaire<br>• If the Authority is unable to procure novation of any Existing Contract it shall execute a power of attorney, effective on and from the COD, designating the Concessionaire (acting through its authorised representative) as its attorney<br>• The Authority shall endeavor not to (i) renew any Existing Contracts that are due to expire within 3 months of the COD.<br>• Prior to renewing any Existing Contract and/or execution of a new contract, the Authority shall consult with the Concessionaire and consider its comments for which purpose the Authority shall provide 5 business days. | |
| **Article 10** | **Right of Way** | Planning Commission MCA for brownfield airports | The parties hereto agree that on or prior to the COD, the Authority shall have granted vacant access and Right of Way such that the Appendix shall not include more than 10% of the total area of the Site required and necessary for the Airport. For the avoidance of doubt, the Authority acknowledges and agrees that the Appendix shall not include any land which may prevent or delay the construction of Mandatory Works required to be completed before the 2nd anniversary of COD. (excerpt from 10.3.2)<br><br>The Authority shall make best efforts to procure and grant, no later than 90 days from COD, the Right of Way to the Concessionaire in respect of all land included in the Appendix and in the event of delay for any reason other than Force Majeure or breach of this | Essentially both the MCA and DCA provide for 90% of right of way prior to COD.<br>The concession agreement should explicitly specify that full 100% Right of Way should be granted to the concessionaire prior to COD or latest by a fixed period of time, say 90 days, from the COD.<br>This would completely remove any uncertainty that a concessionaire would have relating to status of available land prior to signing of the agreement.<br>It is recommended that the MCA be modified to provide for 100% |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | Agreement by the Concessionaire, it shall pay to the Concessionaire Damages in a sum calculated at the rate of Rs. 1000 per day for every 500 square meters.. Commencing from the 91st day of the COD and until such Right of Way is procured. (excerpt from 10.3.4) | access instead of partial access prior to COD. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | Without prejudice to the provisions of Clause 10.3.1, the Parties hereto agree that on or prior to the COD, the Authority shall have granted vacant access, Right of Way and lease such that **the Appendix shall not include more than 10% (ten percent) of the total area of the Site,** required and necessary for the Airport, and in the event Financial Close is delayed solely on account of delay in grant of such access Right of Way and lease, the period for the achievement of the Financial Close shall be extended by the Authority in accordance with the provisions of Clause 4.1.2. **The Appendix shall not include any land which may prevent or delay the construction of Aeronautical Assets and the Terminal Building without which the Completion or Provisional Completion may not be granted**. | |
| **Article 15** | **Operation of the Terminal Building** | Planning Commission MCA for brownfield airports | The Concessionaire agrees and undertakes that the level of service in the Terminal Building shall, during the Peak Hour, be no inferior to 'Level of Service – D' as specified by IATA from time to time and in the event the level of service is inferior to Level of Service – D in any Accounting Year, the Concessionaire shall pay Damages to the Authority which shall be determined at the rate of 1% of the total revenues from Fees for that Accounting Year. (15.2.1 of PC MCA) | The DCA sets a higher standard than the MCA to be attained by the concessionaire in Level of Services (IATA – Optimum).<br>Further the DCA specifies that the monitoring of Level of Service at the terminal building would be done on a quarter to quarter basis, rather than on an accounting year basis.<br>A more frequent monitoring can ensure greater consistency on the part of the concessionaire to maintain the specified IATA Level of Service at the terminal.<br>Hence it is recommended that the MCA be modified to keep the required Level of Service at IATA – Optimum (Level of Service – 'C') and also require the concessionaire to maintain such level overall in successive quarters rather than in successive accounting years. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | The Concessionaire agrees and undertakes that the level of service in the Terminal Building shall, during the Peak Hour, not be inferior to **'Level of Service C' (optimum standards)** as specified by IATA from time to time and in the event it is observed that the level of service is inferior to IATA 'Level of Service C' (optimum standards) during Peak Hours in any quarter and does not cure within 90 (ninety) days from the occurrence of such degradation of level of service in any Concession Year, the Concessionaire shall pay Damages to the Authority which shall be determined at the rate of 0.5% (zero point five percent) of the total revenue from Fees for the immediate preceding quarter. | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| **Article 31** | **Concession Fee** | Planning Commission MCA for brownfield airports | In consideration of the grant of Concession, the Concessionaire shall pay to the Authority by way of concession fee a sum of Re.1 per annum and the Premium (as specified in the next clause). (31.1)<br>The Concessionaire agrees to pay to the Authority for the year commencing from <> days of the occurrence of COD a premium in the form of an additional Concession Fee equal to **x%** *<to be quoted by the bidder at the time of bidding>* of the Total Realisable Fee, net of any taxes on Fee; and for each subsequent year thereafter, the Premium shall be determined by increasing the proportion of Premium to the total Realisable Fee in the respective year by an additional 1% as compared to the immediately preceding year. | In the MCA the bidding parameter is basically a share of the total revenues that the Concessionaire would earn in a year, whereas in the DCA, the bidding parameter has been changed to per-passenger fee (with the fee payable per international passenger being twice that payable for a domestic passenger).<br><br>Payment on a per-passenger basis removes all ambiguity that can arise in the definition of revenue to be considered for determining the share that would be payable by the concessionaire to the Authority.<br><br>Further the total passenger traffic is a more transparent and easily verifiable figure over which disputes are not expected to arise.<br><br>It is therefore recommended that the MCA be suitably be modified to require the concessionaire to pay a monthly fee to the Authority calculated in the basis of a pre-bid per-passenger fee multiplied by the total passenger traffic in a given month, along the lines of what has been provided in the DCA. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | The concessionaire has to pay a monthly concession fee to the Authority as calculated from the following formula -<br><br>(**Per Passenger Fee for International Passengers * International Passenger Throughput for that month) + (Per Passenger Fee for Domestic Passengers* Domestic Passenger Throughput for that month)**<br>Where Per Passenger Fee for Domestic Passengers is the bidding parameter and;<br>Per Passenger Fee for International Passengers: **2(two) times the Per Passenger Fee for Domestic Passengers** | |
| | **Termination for fall in Passenger Traffic** | Planning Commission MCA for brownfield airports | *No indication regarding termination payment in the event of passenger traffic decline has been provided in the Model Concession Agreement.* | The DCA lessens traffic risk to which the concessionaire could be susceptible to by providing an exit mechanism for the concessionaire in the event the traffic at the airport in a year falls below a certain threshold (if passenger traffic change is negative by 20% or more for more than two successive years).<br><br>This provision of the DCA are recommended for incorporation in the MCA, as it lends comfort to an investor/concessionaire in |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | **In case the passenger traffic change is negative by 20%** or more for than two consecutive years, the agreement may be terminated by either party by 180 days from the date of expiry of the second concession year, by giving a notice of 30 days.<br>Upon such Termination, the Authority shall be liable to pay to the Concessionaire an amount equal to **70% (seventy percent) of the Termination Payment**. | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | | the aspect of foreseeable traffic growth at the airport. An additional provision that should be included in the concession agreement is a prohibition on development of any new airport by the Authority within 50 kilometers of the airport for the first ten years of the concession period. This shall also help in containing traffic risk in the short term. |
| **Article 42.3** | **Termination Payment at the end of the Concession Period** | Planning Commission MCA for brownfield airports | Upon Termination on expiry of the Concession Period by efflux of time, Termination Payment equal to the product of 24 (twenty four) and the Realisable Fee recovered for and in respect of the last month of the Concession Period shall be due and payable to the Concessionaire; provided that in the event any Project Assets, essential for the efficient, economic and safe operation of the Airport shall have been acquired and installed after the 25th anniversary of COD, with prior written consent of the Authority, a Termination Payment equal to 80% of the Adjusted Depreciated Value of such Project Assets shall be made by the Authority to the Concessionaire. | The DCA links the termination payment to the value of City Side Development and *omits* linking it also to investments in airside infrastructure which the Concessionaire would have made over the course of the Concession Period.<br><br>However the MCA links termination payment to approved Project Assets which form part of the actual aeronautical infrastructure of the airport, while City Side Development assets are excluded.<br><br>It is recommended that the termination payment payable by the Authority to the Concessionaire at the end of the Concession Period be linked to both the Airside and City Side assets which the concessionaire would have invested in over the course of the concession period. The MCA may be suitably modified incorporating this. |
| | | Draft Concession Agreement released by Airports Authority of India in December 2018 | Upon Termination on expiry of the Concession Period by efflux of time:<br>The Authority shall pay to the Concessionaire an amount equal to 50% of the lower of:<br>(i) the depreciated book value, if any, of such Project Assets forming part of the City Side Development, which have been capitalized in the books of the Concessionaire by the 30th anniversary of COD<br>(ii) the replacement value of such Project Assets net of depreciation forming part of the City Side Development, which have been capitalized in the books of the Concessionaire by the 30th anniversary of COD, as determined by an approved Valuer who shall be selected and appointed within 15 days of the Transfer Date, and who shall submit its | |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | | determination within 30 days of his appointment. | |

## 9.5 Deviations from MCA drafted by erstwhile Planning Commission – Airport Terminal

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| 2.1 | Scope of Project | Planning Commission | 1. Operation, management and development of the Terminal on the site<br>**2. Construction and procurement of the aeronautical assets**<br>**3. Construction and procurement of the terminal building**<br>4. **Construction and procurement of the non-aeronautical assets (including cargo facilities, car park, flight kitchens, warehousing facilities, airline offices, administrative offices and associated facilities)** | To attract more bidders, the scope may include development aspect of the aeronautical and non-aeronautical assets as followed by the Planning Commission MCA. |
| | | Jaipur and Ahmedabad airport | 1. Operation and maintenance of select areas:<br>• Passenger terminal building situated on the O&M Operator Facilities, including the airport operations control centre, fire control room, kerbside approach road and passenger boarding bridges<br>• Apron area including management of ground handling services through approved ground handling agencies<br>• Surface car park<br>• Multi-level car park developed by the Authority in accordance with the provisions<br>• All terminal approach roads<br>• All other areas, structures, assets, equipment, facilities and machinery forming part of the O&M operator facilities<br>• Any new passenger terminal building, apron area or terminal approach road<br>2. Provision of User Services and Non-aeronautical services at the O&M Operator Facilities<br>3. Performance and fulfilment of all other obligations in the agreement | |
| 3.1.1 | Concession period | Planning Commission | The concession period is for **30 years**, which is extendable by 30 years on concessionaire request. | If the concessionaire has the right to construct the terminal, then the concession period should be 30 years. However, if the scope of project is limited to O&M, then concession period of 15 years is a fair amount of time as a concession period. |
| | | Jaipur and Ahmedabad airport | The concession period is for **15 years**. | |
| 31.1 | Concession fee | Planning Commission | The concession fee is INR 1 per annum along with a premium of the total realizable fee. | The concession fee In the form of premium per |

| Clause No. | Clause of Deviation | Name of Concession Agreement | Deviation | Recommendation |
|---|---|---|---|---|
| | | Jaipur and Ahmedabad airport | Monthly concession fee for any month is **per passenger fee multiplied by Total Passenger Throughput** for that month in the previous year and escalated by passenger growth.<br>The concessionaire also has to pay a Variable Terminal Operator Fee, which is calculated as the difference between amounts deposited in the deposit account and aggregate of fixed O&M operator monthly amount. | passenger should be used |
| 32.1 | User fees | Planning Commission | The tariff structure is followed as per the **schedule of fixed fee** which is a part of the concession agreement. | The tariff structure followed in Jaipur and Ahmedabad airport may be used |
| | | Jaipur and Ahmedabad airport | **The operator is entitled to set the fees and charges** for the user services. In case the same is regulated by AERA, then the operator can't charge a fee higher than that. | |
| 53.1 | Equity lock in/ Exit mechanism | Planning Commission | The selected bidder along with its associate has to hold **51% during the period prior to 3rd anniversary of COD**. In addition, 26% or such lower proportion may be permitted by Authority during the remaining concession period. | Equity lock-in period shall be for five years to ascertain the operational compliance of the concessionaire in the MCA. As much as 26% of equity can be maintained for the next 10 years. |
| | | Jaipur and Ahmedabad airport | **Prior to fifth anniversary, the aggregate holding of the player with O&M experience in the total equity shall not decline below 51% and of player with development and expansion experience shall not decline below 26%**. On or after 5th anniversary, the aggregate holding shall be at least 51% of total equity, individually or collectively. | |

*Clause numbers are as per MCA drafted by erstwhile Planning Commission*

## 9.6 Revenue Streams

The income sources an airport play a significant role in structuring the overall transaction. The two categories of airport income sources are aeronautical revenues and non-aeronautical revenues. The concession fees defined in the concession agreements is dependent on the combination of these revenues.

| Aeronautical Revenues | Non-Aeronautical Revenues |
|---|---|
| • Landing Fees<br>• Terminal Area Air Navigation Fee<br>• Aircraft Parking & Hangar Charges<br>• Airport Noise Charge<br>• Passenger Service Charge<br>• Security Charge<br>• Ground Handling Charges<br>• En Route Air Navigation Fee<br>• Night flight fees | • Concession fees for Aviation Fuel & Oil<br>• Concession fees for Commercial Activities<br>• Revenues from Car Parking & Car Rentals<br>• Rental of Airport Land, Space in Buildings & Assorted Equipment<br>• Fees charged for Airport Tours, Admissions etc.<br>• Other non-airport Revenues |

*Source: World Bank*

For calculation of revenue streams, tariff determination can be either on the basis of a single-till mode, wherein both aeronautical and non-aeronautical activities are accounted for, whereas on a dual till mode only aeronautical activities are accounted for. Whereas a single-till basis leads to lower charges for airlines, a dual-till approach increases revenues for the airport operator.[32]

## 9.7 Regulatory framework

The key agencies in India's aviation sector are being manages by Ministry of Civil Aviation (MoCA). MoCA is the nodal agency for formulating national policies and programmes in the aviation sector and monitor implementation of these policies. The key agencies that form a part of the ministry are illustrated below:

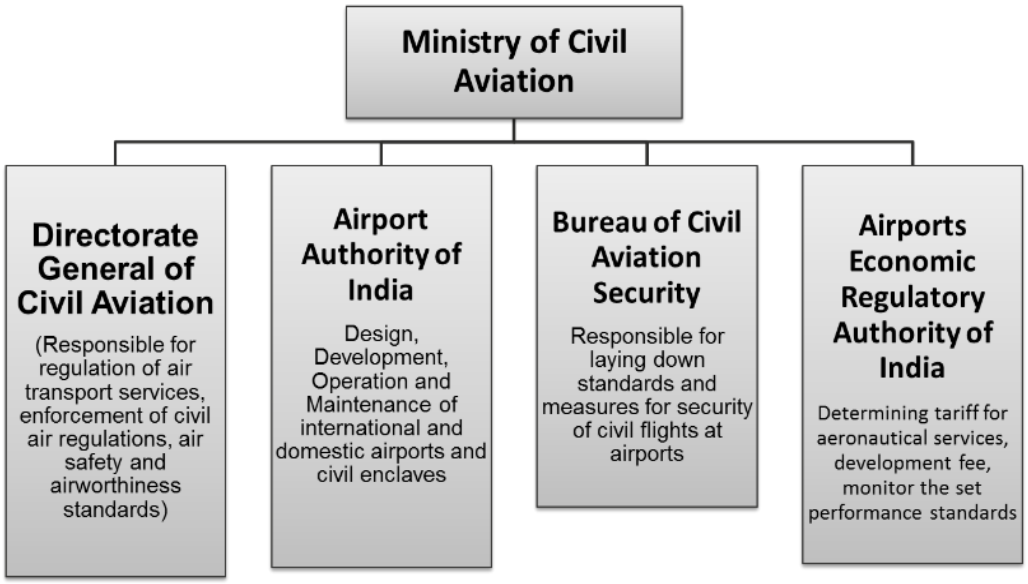
- *Directorate General of Civil Aviation (DGCA)*

  The key agenda of the entity is to ensure safety by through regulation and safety oversight system.
- *Airport Authority of India (AAI)*

**Figure 14: Key agencies that regulate aviation sector**

[32]*Source: https://www.business-standard.com/article/economy-policy/airports-to-get-boost-via-hybrid-model-116041500050_1.html, Accessed on July 17, 2018*

AAI is responsible for provision of communication, navigational and surveillance aids. As discussed, it is




responsible for design, development, operation and maintenance of passenger terminal and provision of passenger facilities and information systems

- *Bureau of Civil Aviation Security (BCAS)*

  BCAS started as a cell under DGCA and was primarily responsible for coordination, monitoring, inspecting and training personnel under security division. However, it was later recognised as an independent body in 1987. It is also responsible for laying down aviation security standards in accordance with ICAO for airport operators and their security agencies.
- *Airports Economic Regulatory Authority of India (AERA)*

The core function of AERA is to set tariffs for aeronautical services and determine the development fees for major airports. The entity also plans to monitor performance standards relating to quality, continuity and reliability of services. It undertakes functions set out in the AERA act 2008.

## About CRISIL Limited

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CRISIL Infrastructure Advisory is a leading advisor to regulators and governments, multilateral agencies, investors, and large public and private sector firms. We help shape public policy and enable infrastructure development. Our services span a wide array of infrastructure development activities. Our work in the areas of policy formulation, regulation, design and implementation of public-private partnership (PPP) frameworks and infrastructure financing mechanisms helps create a vibrant ecosystem for infrastructure development. Our services at the project level include bid process management, valuations and due diligence to enable investment decisions. We are known for our core values of independence and analytical rigour combined with deep domain expertise. Our teams have expertise across the complete range of infrastructure sectors - urban development, energy, transport and logistics, natural resources, education, and healthcare. We have a rich understanding of PPP and financing related issues. We operate in India and 22 other emerging economies in Asia, Africa, and the Middle East. CRISIL Infrastructure Advisory is a division of CRISIL Risk and Infrastructure Solutions Limited, a wholly owned subsidiary of CRISIL Limited.