

Delhi International Airport (P)Limited

Letter No: DIAL/2011-12/Fin-Acc/2342

Dt; February 29th, 2012

The Secretary
Airports Economic Regulatory Authority of India
AERA Building
Administrative Complex
Safdarjang Airport
New Delhi – 110 003

Madam,

Sub: Submission of response on Consultation Paper No. 32/2011-12

This is in reference to the Consultation Paper on "Determination of Aeronautical Tariff in respect of IGI Airport, New Delhi for the 1st Regulatory Period (01.04.2009 to 31.03.2014)" issued by the Authority on 3rd January, 2012.

At the outset, we would like to place our sincere appreciation to the Authority for giving us an opportunity to submit our comments and suggestions to the subject consultation paper. We have carefully studied the consultation paper and our response to the same is enclosed for your kind consideration.

We request the Authority to consider our submissions while finalizing tariff order in respect of DIAL. In case the Authority may require any further clarifications, we would be glad to provide the same.

Yours sincerely,

For Delhi International Airport Private Limited

Sidharath Kapur

(Chief Financial Officer - Airports)

<u>Enclosed:</u> Response to Consultation Paper No. 32/2011-12 on Determination of Aeronautical Tariff for 1st Regulatory Period (01.04.2009 – 31.03.2014) IGI Airport, New Delhi along-with annexures referred therein.

CC: The Secretary, Ministry of Civil Aviation





Registered office: New Udaan Bhawan,

Opp. Terminal 3, IGF Airport, New Delhi 110037, India + +91 11 47197000

+91 11 47197181 www.newdelhiairport.in Response to Consultation Paper No. 32/2011-12 on Determination of Aeronautical Tariff for 1st Regulatory Period (01.04.2009 – 31.03.2014) IGI Airport, New Delhi

Delhi International Airport Private Limited

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I. INTRODUCTION

Airports Economic Regulatory Authority of India 'Authority' has come out with a Consultation Paper No. 32/2011-12 on Determination of Aeronautical Tariff in respect of IGI Airport, New Delhi for the 1st Regulatory Period (01.04.2009 - 31.03.2014) on 3rd January, 2012.

We appreciate the Authority for a detailed and elaborate analysis laid out in its consultation paper. We welcome the steps taken by the Authority to invite comments and suggestions from the stakeholders on the tariff proposal submitted by us and hereby present our comments in the following sections.

The consultation process had invited stakeholders to present written evidence. DIAL by way of evidence is also submitting expert opinions of Prof. Martin Cave, Dr. Harry Bush, Prof. Jayanth Varma, Leigh Fisher, KPMG Management Consultants, KRTPL, Amarchand & Mangaldas & Suresh A. Shroff & Co., Advocates & Solicitors etc. in support of this submission.

We request the Authority to favourably consider our submissions while finalizing the tariff Order of IGI Airport, New Delhi.

II. DEVIATIONS FROM CONCESSION AGREEMENT

At the outset, we appreciate Authority's acknowledgement of the provisions of SSA and OMDA while determining the tariff of IGI Airport. However, we submit that the Authority has not completely taken cognizance of the provisions in the aforesaid agreements and have made certain deviations that are contrary to the provisions of OMDA. We again request the Authority's to reconsider the deviations made and ensure that the terms and framework for tariff determination in case of IGI Airport is carried out in accordance with the provisions of the SSA read with the provisions of OMDA. It is also pertinent to mention that the provisions of the SSA and OMDA w.r.t tariff determination formed key and central components of the bidding. The investment decisions were accordingly undertaken in respect of IGI Airport.

Further, the AERA Act, 2008 itself mandates the Authority to consider the concession offered in their totality and not in isolation. Para 54 of the said Consultation Paper highlights the fact that the Ministry of Civil Aviation (MoCA) has advised the Authority to consider OMDA and all the Project Agreements as listed in clause 1.1 of OMDA as "concession offered" by the Central Government in terms of Section 13 (1) (a) (vi) of the AERA Act. Therefore, it is requested that the Authority be guided by the provision of OMDA and SSA.

Deviation from the provisions of the Concession Agreement:

Inter-alia, there have been the following deviations from the concession agreement:

Treatment of Cargo handling:

- 1.1. Authority has treated revenues from Cargo handling as Aeronautical for the period DIAL was undertaking direct handling of Cargo (not concessioned out). This treatment is contrary to the provisions of OMDA where Schedule 6 clearly lists Cargo handling as Non Aeronautical Service.
- 1.2. Further, the Authority has not applied the above approach consistently. While on one hand, the Authority has considered Cargo handling revenues as Aeronautical, on the other hand Cargo has been treated as Non-Aeronautical for the purposes of calculating the Hypothetical Asset Base.
- 1.3. The aforementioned approaches are self-contradicting and should be rectified by taking uniform stand that is clear, consistent and unambiguous. We are of the view that based on concession agreement Cargo must be treated as Non-

Aeronautical even during the period it was being operated by DIAL. In case the Authority is constrained to treat Cargo as Aero for the year of determination of HRAB, it should adopt a consistent approach on its treatment of Cargo for computation of HRAB.

2. Quality:

- 2.1. Authority has proposed additional penalty and quality provisions over and above mandated in concession agreement. We state that the provisions for maintaining service quality and penalty, if any, for non-compliance is explicitly stated in OMDA and thus proposing additional parameters, monitoring mechanism and penalty is contrary to the concession documents and a double whammy for DIAL.
- 2.2. We have provided our detailed response in a separate chapter on Service Quality in the later part of this document.

3. CPI-X

- 3.1. The methodology of calculation of CPI-X as given in SSA has not been appropriately followed.
- 3.2. SSA lays down the mechanism of application of CPI index while determining the tariff. SSA warrants that the calculation of the X factor should be independent of any CPI adjustments at the first stage. Thereafter, CPI based indexing should be carried out on the base airport charges after adjusting for the value of X so derived at stage one.

We therefore request the Authority to reconsider its proposed approach in light of the aforesaid facts and be guided by the provision of OMDA and SSA for determining tariff of IGI Airport.

In addition we would also like to highlight instances of other sectors wherein it was held that the <u>integrity and sanctity of the concessions needs to be adhered</u>. We are citing such judgements, pronouncement and instances for the perusal of the Authority as **Annexure A**.

Summary

The tariff fixation exercise should be conducted by Authority so as to be compliant with the principles enshrined in the OMDA and the SSA while preserving the integrity and sanctity of these contracts. The tariffs should be determined in a manner which recognizes the rights and does not in any manner encroach on it.

III. EXPERT OPINIONS

Given that this was the first full-fledged tariff determination exercise of a major private airport of complex nature; to bring an expert advice on the table we sought opinions from independent and globally renowned regulatory experts. Thus as part of this submission we are also submitting opinions from the following:

- 1. Prof. Martin Cave, Current Deputy Chairman of the UK Competition Commission
- 2. Dr. Harry Bush, Ex-Regulator of the Civil Aviation Authority of the UK
- 3. Prof. Jayanth R Varma, IIM Ahmedabad
- 4. Leigh Fisher, Aviation Consultants
- 5. KPMG, Management Consultants
- Credit Analysis and Research Ltd (CARE) through their advisory subsidiary Kalypto Risk Technologies Private Limited (KRTPL).
- 7. Amarchand & Mangaldas & Suresh A. Shroff & Co., Legal Counsel

The backgrounds of the above experts are as follows:

PROF. MARTIN CAVE, DEPUTY CHAIRMAN OF THE UK COMPETITION COMMISSION

Martin Cave is currently Deputy Chairman of the UK Competition Commission.

Prof. Martin has held professorial positions in the last dozen years in the economics department of Brunel University, where he was also deputy vice chancellor, at Warwick Business School in the University of Warwick, and in the Law Department at the London School of Economics.

Prof. Martin Cave is a visiting professor at Imperial College Business School

He is a Regulatory Economist specialising in the communications and transport sectors. He is also co-author or co-editor of the Oxford Handbook of Regulation (Oxford University Press 2010) and Understanding Regulation (Oxford University Press 2011). He has also conducted several independent regulatory reviews for UK government ministers in 2008/9 and also chaired a committee set up to advise the UK Secretary of State for Transport on airport regulation.

In 2003/4 he has also advised the UK Civil Aviation Authority on price controls for airports in the South East of England.

He has provided commentary on the Consultation Paper and specifically on the following issues:

- WACC:
- Hypothetical Regulatory Asset Base;
- RAB;
- Traffic forecasts:
- Non-aeronautical revenue forecasts; and
- Calculation of CPI-X.

Opinion received from him is submitted as Annexure B

2. DR. HARRY BUSH, EX-CHAIRMAN OF THE UK COMPETITION COMMISSION

Dr. Bush was a regulator in UK Civil Aviation Authority; the oldest regulatory authority, He spent eight years on the board of the UK Civil Aviation Authority as Group Director Economic Regulation, responsible for the Authority's economic output and in particular its price controls on designated airports and air traffic control.

He was responsible for the setting of price controls for Heathrow, Gatwick and Stansted and also, in two regulatory cycles, for price controls on NATS En Route Ltd (NERL), the UK's provider of en route air traffic services.

Dr. Bush was a senior civil servant. He spent 23 years in the UK Treasury, dealing with issues relating to implementation of PPPs, privatization and economic regulation.

In all above cases the determination of the WACC (and within that the cost of equity) was a key part of the overall decision.

Dr. Bush has provided comments and opinion on high level assessment from a regulatory perspective of the approach to the cost of equity in AERA's recent proposal for price caps to apply to DIAL.

Opinion received from him is submitted as Annexure C

3. PROF. JAYANTH R. VARMA FROM IIM-AHMEDABAD

Prof. Varma is currently Professor in the Finance and Accounting Area at the Indian Institute of Management, Ahmadabad where he teaches courses in capital markets, fixed income and corporate finance. He has been the Dean of the Indian Institute of Management, Ahmadabad for three years.

PROF. VARMA did his post-graduation in management from IIM Ahmadabad where he was awarded a Gold Medal for scholastic performance. Subsequently, he

obtained his doctorate in management from the Indian Institute of Management, Ahmadabad. He is also a qualified cost accountant.

Prof. Varma was a **full time Member** of **SEBI** for a year and part time member of SEBI for three years. He has been the Chairman of the Secondary Markets Advisory Committee and several other committees of SEBI.

He has also been Chairman of several committees set up by the Forward Markets Commission and the Ministry of Finance and Company Affairs. Prof. Varma was a member of the Raghurama Rajan Committee on Financial Sector Reforms and is currently a member of the Financial Sector Legislative Reforms Commission.

Prof. Varma is currently a director on the Board of Infosys BPO Limited (a subsidiary of Infosys Technologies Limited), and of Onmobile Global Ltd. He has also been a Director on the Board of Axis Bank Limited and of Punjab National Bank.

Prof. Varma has carried out extensive research in the field of Indian financial markets and finance theory.

Prof. Varma' current research interests are principally in the area of fihancial markets including equity, debt, currency and derivative markets. He is also interested in broader issues related to the financial sector as also in mathematical modelling and computer simulation.

Prof. Varma has provided opinion on the methodology adopted for determining cost of equity:

- Risk Free Rate
- Usage of Leveraging in estimation of Equity Beta for cost of equity and Weighted Average Cost of Capital (WACC)

Opinion received from him is submitted as Annexure D.

4. LEIGHFISHER

Leigh Fisher has provided a report on methodology for estimation of Cost of Equity and traffic growth.

Opinions received from them on cost of equity and traffic forecast are submitted as **Annexure** E and **Annexure** F respectively.

5. KPMG

KPMG have provided an independent point of view on treatment of specific elements of capital and operating expenditure for determination of Regulatory Asset Base (RAB) and basis for proposing a fair rate of return.

Opinion received from them is submitted as Annexure G.

6. CREDIT ANALYSIS AND RESEARCH LTD THROUGH ITS SUBSIDIARY KALYPTO RISK TECHNOLOGIES PRIVATE LIMITED.

CARE is India's second largest credit rating agency and is majority owned by

IDBI Bank (25.79%) Canara Bank (22.81%) State Bank of India (9.61%) Federal Bank (6.20%)

CARE has provided a report on treatment of Refundable Security Deposits.

Opinion received from them is submitted as Annexure H.

AMARCHAND, MANGALDAS SURESH & SHROFF (AMSS)

AMSS is renowned legal firm of impeccable credentials. They have provided Legal opinion on:

- a) Service Quality
- b) Consideration of efficient cost in valuation of Hypothetical Asset Base

Opinion received in this regard is being submitted as Annexure I.

IV. COST OF EQUITY

At the outset we recapitulate that DIAL, in its submission, had based its request of the cost of equity of 24% on a logical and well-supported report of Leigh Fisher. The Authority has used the study undertaken by NIPFP for its approach on Cost of Equity based on which it has proposed a cost of equity of 16%. The computation of cost of equity proposed to be adopted by the Authority, based on the study of NIPFP suffers from various lacunae and infirmities. We are bringing to the attention of the Authority these issues along with various other facets as follows:

- 1.1. Risk free rate: Methodology
- 1.2. Selection of Betas
- 1.3. Equity Risk Premium
- 1.4. Levering and De-levering methodology based on market value of equity.
- 1,5. Indicative Cost of Equity at time of bidding.
- Other issues 1.6.
 - 1.6.1. Comparative Risk of airports vis-a-vis other sectors.
 - 1.6.2. Residual value of assets at end of concession.
 - 1.6.3. Expectation of investors.
 - 1.6.4. Stabilization of interest cost not confirmed.

1.1. Risk free rate (RFR)

The Authority has considered the recommendation of National Institute of Public Finance and Policy (NIPFP) who have considered an average yield of past 10 years Government of India bonds as nominal risk free rate at 7.35%. In the aforesaid report, NIPFP have taken a simple average of ten years nominal GOI bond yields from 2001 and 2010. We have evaluated the aforesaid approach and have the following observations:

a) It is not appropriate to use the historic nominal figures (under historic inflationary conditions), especially where these do not provide an appropriate indicator of forward-looking risk free rate. Inflation index have moved quite erratically during period under consideration and therefore the underlying risk free rate should not be, in any case, Influenced by such abnormal anomalies. To consider an example, in case, we go by the recommendations of NIPFP of 7.35% as nominal risk free rate and considering inflation forecast of 7%, the resultant real risk free rate is 0.33% [Based on Fisher's formula]. This is erratically low compared to real risk free rate suggested by Varma and Barua (2.60%) and UK Regulators 2.50%.

b) The risk free rate estimate incorporated in CAPM assessments of the cost of equity, is usually based on establishing a forward looking rate for the expected return on Government debt, which in turn is then used as a proxy for the return on a notional risk free investment.

c) Opinion of Prof. Jayanth R. Varma from IIM Ahmedabad:

Prof Jayanth R Varma, has opined the following on Risk Free Rate:

"AERA's consultant proposes to estimate the risk free rate of return by taking the arithmetic average of the daily yield on 10-year government bonds over the period January 1, 2001 to December 31, 2010. In my opinion, this averaging is completely inappropriate. For computing the cost of capital on any given date, what is relevant is the risk free rate prevailing on that date, and not the average of what the rate has been in the past.

The cost of capital is used to discount future cash flows, and the past is completely irrelevant except in so far as it provides some guide to the future. In the case of a market determined bond yield, the yield at any point of time represents the market's expectation of what the average interest rate will be during the life of the bond (plus appropriate risk premia). Since long term interest rates already represent an average of expected future short rates, a further averaging of these rates does not make any sense.

Moreover, an average of past bond yields is a purely mathematical construct devoid of any economic significance. By contrast, the long term interest rate is the risk free cost of capital today, it is the rate that would have to be paid today to finance a risk free project, and is therefore economically highly meaningful and relevant.

A case could also be made that interest rates of maturities longer than ten years might be appropriate if airport assets have an average economic life exceeding ten years. Ten year yields might be used for estimation purposes because of their greater liquidity, but it might be appropriate to add a small term structure spread of say 25 basis points to reflect the longer average economic life of the assets."

d) Opinion of Leigh Fisher:

Leigh Fisher, in their opinion, has commented the following on Risk Free rate:

"The risk free rate estimate incorporated in CAPM assessments of the cost of equity, is usually based on establishing a forward looking rate for the expected return on Government debt, which in turn is then used as a proxy for the return on a notional risk free investment,

AERA is intending to calculate a nominal cost of capital and it is therefore appropriate that a risk free rate should be calculated in nominal terms. However, this does not mean that it is best practice simply to use the historic nominal figures (under historic Inflation conditions), where these do not provide an appropriate Indicator of what a forward looking risk free rate would be.

In general we would expect the nominal risk free rate to take account of two factors:

- An underlying real rate of return;
- A forward looking inflation rate.

This reflects the fact that it is more realistic to assume that the real rate of return is consistent over time, rather than to assume that Investors have a consistent view of the nominal rate and would, by implication, feel equally satisfied with (say) a nominal 9% return if inflation were at 5% as they would be if the same 9% nominal rate were offered and the inflation rate were 15%.

As a result, if government debt costs are to be used as a proxy for nominal risk free rates, it is important that the inflation expectations at the time are taken into account - so as to establish the best estimate level for a forward looking nominal benchmark."

Summary

- a. We submit that Authority consider the average nominal risk free rate for the underlying period. Thereafter, the same should be adjusted for average inflation, prevalent during the same period to arrive at the real risk free rate, so as to remove any inconsistency or anomaly in any of the variables. The real risk free rate so arrived should be indexed with the forecasted inflation to arrive at the forward-looking nominal risk free rate. This approach has also been endorsed by Prof. Varma and Leigh Fisher.
- b. A key issue here is consistency. The inflation rate considered for arriving at the nominal risk free rate should be consistent with other aspects of regulatory calculations and in particular financial forecasts. The risk free rate of 7.35% recommended by NIPFP, would effectively imply a real risk free rate of 0.33% by application of 7% inflation, which is very low real risk free rate by any comparable standards.
- c. The Authority is requested to consider the risk free rate of 8.3% which has been used by Leigh Fisher in their report and based on the valid principles enunciated above based on which the cost of equity of 24% was worked out.

1.2. Selection of Betas

NIPFP has produced an estimate for airport beta based on the average from a sample of 25 companies. Having calculated this average, it has then reduced the figure by a mitigation factor linked to a possible stabilisation mechanism derived from the application of a User Development Fee (UDF). However, there remain significant problems with beta assessment of NIPFP, which mainly related to:

- a) Source and quality of NIPFP beta estimates.
- b) The complete rejection of the evidence of higher betas for airports in emerging economies.

- a) Source and quality of NIPFP Beta estimates;
 - a.1. The NIPFP paper derives the betas used in its cost of equity estimates from evidence provided to the New Zealand Commerce Commission (NZ Commission) by the Strategic Finance Group (SFG) (acting for Air New Zealand). While such evidence is potentially relevant, it is important to note that it was provided by an interested party whose assessment may not be fully balanced. What is more important from the Authority's perspective is the view taken by the New Zealand Commission to this submission. Significantly more weight could have been placed on the SFG submission had it been endorsed by that NZ Regulator.
 - a.2. New Zealand Regulator did not rely on the submission of SFG while making their final assessment of cost of equity for New Zealand Airports. The relevant extract from the NZ Commission's paper, on the evidence provided on beta by SFG which have been relied by NIPFP, are as follows:-

'E8.27 SFG [the Strategic Finance Group] (for Air NZ) increased the size of the comparator sample (from that used by the Commission in its Draft Reasons Paper). Using the same approach as outlined by the Commission SFG concluded that the Commission's estimate of beta was overstated and a more appropriate asset beta value was in the order of 0.5

E8.28 In its cross-submission NZZA [New Zealand Airports Association] supplied an expert report from PwC which critiqued Air NZ's expert reports on the asset beta.

E8.29 PwC found two technical errors in the SFG analysis, a gearing adjustment that was not consistent with the Commission's approach and anomalies in a number of SFG's beta estimates. PwC considered that remedying these errors alone would raise the asset beta estimate using SFG's preferred method and Air NZ's preferred sample from 0.50 to approximately 0.70. PwC also disagreed with SFG's estimation of equity betas using a very long period of observations, and using its preferred set of comparable entities generated an asset beta estimate of approximately 0.70 (this is comparable to the asset betas derived by the Commission and Europe Economics). The Commission Identified similar technical issues with the NZIER [New Zealand Institute for Economic Research acting for the Board of Airline Representatives New Zealand] and SFG expert reports on the asset beta analysis.'

Source: New Zealand Commerce Commission Input Methodologies (Airport Services) Reasons Paper. December 2010

a.3. This failure to accept the evidence on beta provided by SFG to the NZ Commerce Commission raises serious questions about the reliance that NIPFP has placed on it and the role it is now playing in Authority's regulatory assessment for DIAL. The betas of SFG, which has been relied upon by NIPFP, has significantly less credibility than the final set of betas used by the NZ regulator themselves following their close examination of the evidence from all

- sources. It is the NZ Commission's final betas, which had been used by Leigh Fisher in its own report.
- a.4. It should also be noted that the set of comparators adopted by the SFG for Air New Zealand submission include companies which were not directly involved in operating and managing airports. Brief additional information on the companies concerned, taken from the SFG/Air New Zealand evidence, is shown below, together with possible reasons why NZ Commerce Commission regarded them as non-comparable to Auckland.

Company	SFG Description	LF Assessment of Possible Reasons for ANZ Rejection	Beta
Beijing Airport High-Tech Park Co Ltd (600463; Chinal	The Company is primarily engaged in the development and sale of land and leasing of standard factories. The Company is also involved in the management of properties and the construction and building business. Other activities include the provision of consultancy services.	Not involved in airport ownership or management	0.4
Derichebourg (DBG; France)	Derichebourg provides airport services including runway assistance, passenger assistance, coordination and control of stopovers, aircraft cleaning, logistics and baggage handling.	Involved in airport services and handling rather than airport ownership or management	0.7
Dynacorp International (DCP; USA)	DynaCorp International Inc. (DynaCorp International) is a provider of specialized, mission critical professional and support services outsourced by the United States military, non-military United States governmental agencies and foreign governments. The Company's expertise is in law enforcement training and support,	rather than the	0.6

	security services, base and logistics		
	operations, construction		
	management, aviation services		
	and operations, and linguist		
	services. It also provides logistics		
	support for all of its services. The		
	Company's customers include the		
	United States Department of		
	Defence (DoD), the United States		
	Department of State (DoS), foreign		
	governments, commercial	11.	
	customers and certain other	1	
	United States federal, state and		
	local government departments		
	and agencies. Revenue from the		
	United States government		
	accounted for approximately 96%		
	of total revenue during the fiscal		
	year ended April 3, 2009 (fiscal	l A	
	2009).		
Infratil	The Company is listed on the New	Substantial	0.0
	Zealand Exchange and owns	proportion of	
	airports In New Zealand and	holdings not	
	Europe as well as electricity, waste	related to	
	to energy and port investments in	airports	
	New Zealand and Australia.		
Multiplus S.A.	Multiplus provides loyalty program	Activities entirely	0.3
(MPLU3; Brazil)	management, administration and	unconnected	
	operation services for customers of	with the	
	its commercial partners.	operation or	
		management of	
		airpo r ts	

In the current circumstances it is incorrect for NIPFP to rely upon the SFG report which had included the above non-airport companies (including one entity which for some strange reason has zero beta) - which together make up a fifth of its sample.

a.5. As mentioned above, the New Zealand Regulator, having considered the evidence of SFG finally did not accept the SFG report and produced its own set of betas based on a sample of 25 international airports (which did not include any of the companies noted above]. A list of these companies with the *Commerce Commission's own description is shown below together with its determination of the monthly betas - the approach to betas used in the Leigh Fisher report (NIPFP also uses monthly betas).

Company	Country	Commerce Commission Description	Monthly Betas
Aerodrom Ljubljana	Slovenia	Operates Ljubljana airport, providing a range of airport and ground handling services	1.08
Aeroporto di Firenze	Italy	Manages Florence airport and provides services to airlines, retailers and other concessionaires	0.59
Aeroports de Paris	France	Manages all of the civil airports near Parls and provides air transport related services and business related services	0.69
Airport Facilities	Japan	Manages and leases airport facilities at Haneda airport (Tokyo city), and manages Narita airport facilities	0.32
Airports of Thailand	Thailand	Operates Bangkok airport and the main provincial airports, and	0.74
		provides services to airlines, retailers and other concessionaires	
Auckland International Airport (AIAL)	New Zealand	Operates Auckland airport and provides a range of services to airlines, retailers and other concessionalres	0.75
Australian Infrastructure	Australia	Principally owns a number of Australian provincial airports	0.76
Beijing Capital International Airport	China	Provides both aeronautical and non-aeronautical services at Beijing airport	1.02

Flughafen Wien	Austria	Manages, maintains and operates Vienna airport, providing terminal, air-side and ground-side services	0.78
Flughafen Żurich	Switzerland	Operates Zurich airport, providing flight operation and security services and leasing airport facilities to commercial entities	0.49
Fraport	Germany	Operates Frankfurt airport, providing traffic and terminal management, ground handling, security and facilities management services	0.62
Gemina	Italy	Operates Rome airports (Flumicinoand Ciampino), providing airportrights, handling, security, retail and parking services	0.49
Grupo Aeroportuario Del Centro Norte	Mexico	Operates international airports in the northern and central regions of Mexico, providing aeronautical and non-aeronautical services	1.04
Grupo Aeroportuario del Pacifico	Mexico	Operates airports in the Pacific and central regions of Mexico, providing air transport support and commercial services	0.64
Grupo Aeroportuario del Sureste	Mexico	Manages airports in southern Mexico, providing a range of airport and commercial services	0.85
Guangzhou Baiyun International Airport	China	Operates Guangzhou Baiyun airport, providing ground, passenger, aircraft maintenance, food and space rental services	0.56

Hainin Mellan International Airport	China	Operates Hainan Meilan airport, providing airfield, terminal facilities, ground handling, passenger, cargo, retail and car parking services	1.29
Kobenhans Lufthavne	Denmark	Owns and operates Copenhagen airport providing services to airlines and concessionalres	0.39
Japan Airport Terminal	Japan	Manages and maintains passenger terminals and airport facilities at Haneda and Narita airports	0.58
MAP Group	Australia	Owns Sydney airport and stakes In some other airports	0.66
Malta International Airport	Malta	Manages Malta airport, providing aircraft landing / parking, ground handling and concessionaire services	0.47
SAVE	Italy	Operates Venice airport, providing airport, infrastructure management and retail services	0.82
Shanghai International Airport	China	Operates Shanghai airport, providing air traffic control, terminal management, ground handling and space rental services	0.70
Shenzhen Airport	China	Operates Shenzhen airport, providing ground operation, logistics and space rental services	0.82
Xiamen International Airport	China	Operates and maintains Gaoqi airport, providing air transport support, space rental, logistics and car parking services	0.75

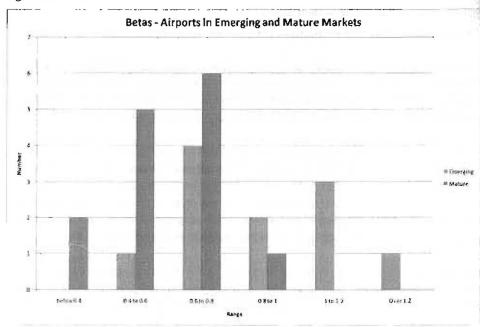
- a.6. While clearly there are arguments as to which report to be preferred, logically the report compiled by an expert and relied upon by an independent regulator after detailed examination of the evidence, would normally be preferred over the one submitted by an interested commercial party and not relied upon by an independent regulator - particularly where there are significant issues around the relevance of some of the betas as reported by the SFG. Leigh Fisher has adopted the beta set of companies finally used by NZ Commerce Commission in its evidence to the Authority together. We suggest strongly that these should be preferred to the list NIPFP has derived from the SFG report.
- a.7. Sense check of NIFPF betas: NIPFP have not done a sense check of the asset beta adopted by them. Asset Beta of 0.40 as proposed by NIPFP for Delhi Airport and also the beta of 0.50 proposed by the Authority are not even comparable to the betas of matured airports of the UK (Heathrow 0.47 and Gatwick 0.52). The beta proposed by the Authority is also lower than beta of 0.60 assessed by the CAA for NERL's monopoly provision of en route air traffic control services.
- b) The complete rejection of the evidence of higher betas for airports in emerging economies

Leigh Fisher divided the sample of airports betas as used by the NZ Commerce Commission into 'emerging' and 'mature' markets. This reflected the fact that the betas of the two groups are different and that Indian airports had more in common in terms of general characteristics (and, as a result risk) with other airports in emerging markets than those in European, Australasian and mature markets.

The difference between emerging and mature countries betas in the full 25 airport New Zealand Commerce Commission sample is shown in the chart below - which uses the monthly betas approach applied in the Leigh Fisher study (and also in the SFG/Air New Zealand cited by NIPFP). The evidence suggests that although there is a degree of overlap, there appear to be two distinct groups. The averages for the two groups are significantly different - 0.84 for emerging economy airports and 0.63 for mature economy airports. This fact is evident from the table below:

Monthly Betas	Developing	Mature
Aerodrom Ljubljana		1.08
Aeroporto di Firenze		0.59
Aeroports de Paris		0.69
Airport Facilitles		0.32
Airports of Thailand	0.74	
AIAL		0.75
Australian Infrastructure		0.76
Beijing Capital International Airport	1.02	
Flughafen Wien		0.78
Flughafen Zuerich		0.49
Fraport		0.62
Gemina		0.49
Grupo Aeroportuario del Centro Norte	1.04	
Grupo Aeroportuario del Pacifico	0.64	
Grupo Aeroportuario del Sureste	0.85	
Guangzhou Baiyun International Airport	0.56	
Hainam Meilan International Airport	1.29	
Japan Airport Terminal		0.58
Kobenhavns Lufthavne		0.39
MAP Group		0.66
Malta International Airport		0.47
SAVE		0.82
Shanghai International Airport	0.70	
Shenzhen Airport	0.82	
Xiamen International Airport	0.75	
Average	0.84	0.63

All emerging market airports have a beta of above 0.5.A Mann-Whitney U test applied to the values support the hypothesis that the distributions are different at a 95% significance level.



Source New Zealand Commerce Commission

Additionally, it is also seen that:

- The logic of using service quality standards to compare and adopt betas, which
 is a designator of systemic risks, is illogical.
- b. The logic of using UDF as risk mitigation tool and as a factor to evaluate beta has been completely misunderstood by NIPFP. UDF, in the context of Authority's approach is a passenger fee and not a revenue balancing/enhancing tool.
- c. The large sample size to estimate the beta by including the non-airport companies is further distorting the results of NIPFP.

c) OPINION OF DR. HARRY BUSH, Ex Regulator of CAA, UK

Dr. Harry Bush, in his opinion has also highlighted the aforesaid infirmities. We reproduce an extract of the opinion of Dr Harry Bush hereunder which is self-explanatory:

".....there could be significant reservations about the NIPFP's approach to assessment of the beta.

...... NIPFP's argument for broadening the comparator list beyond emerging markets is to eliminate the 'bias' that such a restricted list entails but, if that involves downplaying of the comparisons that investors would themselves make, it risks identifying a beta – and a cost of equity – that is not commensurate with the risks involved.

Given India's state of economic development, airports In emerging markets look to be an important and distinct reference point in any full analysis. Their betas are likely to be impacted by broadly similar factors, in particular (significantly) higher rates of economic growth and income elasticity of demand than in more mature markets, both of which would tend to increase the susceptibility of airport revenue and profitability to economic fluctuation.

While there might be discussion about the relative relevance of different airports in any list, a wholesale move to excluding such considerations and moving solely to an alternative basis for comparison requires very clear identification of factors which are relevant to the risks which the beta is attempting to measure.

In this respect the NIPFP's Identification of size and ASQ scores as reasons for broadening the pool of comparators do not appear to bear directly, to any significant degree, on the systematic risk to which airports are subject. In particular, ASQ scores largely reflect passenger perceptions of service quality and ambience. Airports with similar betas may have very different ASQ scores and vice versa. They do not relate directly to the risk that investors bear.

Some factors might, in my view, tend to suggest a higher beta for Delhi than some comparators. For example, the high degree of competition for transfer traffic which has developed across the Middle East and Asia may have an effect, as in economic downturns reduced transfer traffic may disproportionately

impact the less well established and competitive hubs. This could suggest a higher beta for Indian airports compared to some other emerging market hubs.

The operational leverage implied by the Government's high share of revenues might also be a factor arguing for a higher beta.

There may be other, different factors which might argue for either higher or lower betas and affect the weight to be attached to any particular average of emerging market betas or to any individual comparators. But using emerging market airport betas as a higher reference point alongside other approaches, in the sort of range discussed earlier in this note, would create a clearer framework for a regulatory judgment about the appropriate level of beta and the risks to investment that might be involved in any choice.

It is sometimes useful to perform a cross check of the results that emerge from regulatory consideration. The result of NIPFP's approach, even as amended by AERA, is that Delhi airport's beta is assessed to be in the same region as those which the UK regulatory authorities determined as applying to Heathrow and Gatwick (0.5 compared to 0.47 and 0.52 respectively) and to be lower than that assessed by the CAA for NERL's monopoly provision of en route air traffic control services (0.6).

It also results in a cost of equity broadly similar, possibly below, those applying to the mainstream of Indian infrastructure/utilities. These are strongly counterintuitive results.

Heathrow and Gatwick operate in one of the world's most mature aviation markets subject to significant capacity constraints, factors which would both tend to dampen the response of traffic to economic volatility. The NERL result depended to an extent on the operational leverage to which the business was judged to be subject, a factor which is also present in the Delhi case."

d) OPINION OF PROF. MARTIN CAVE, CURRENT DEPUTY CHAIRMAN, COMPETITION COMMISSION, UK

Prof Martin Cave in his opinion has also highlighted the various incongruities in the NIPFP report relied upon by the Authority.

- " 18 The following suggest that an asset beta estimate of around 0.60 for airports in developed countries would be in line with expectations:
- The New Zealand Commerce Commission has estimated asset betas for New Zealand airports to be 0.60, which is in line with previous estimates undertaken by the Commission.
- The British Civil Aviation Authority (CAA) has estimated the asset betas for airports other than Gatwick and Heathrow to be 0.61.

19 An asset beta estimate of around 0.60 for airports in developed countries would therefore be in line with expectations, as two regulators have

independently reached very similar conclusions. As discussed elsewhere in this paper, in my view a higher figure is appropriate for a developing country such as India.

20 A sense check would also be likely to reveal that 0.50 is too low in respect of DIAL. The UK CAA has estimated an asset beta for Heathrow Airport in London at 0.47. Heathrow Airport is one of the largest and busiest international airports in the world, which suggests that the asset beta estimate for DIAL should be much higher than the 0.47 estimate for Heathrow Airport.

This result is not, of itself, a criticism of SFG Consulting's attempt to compile a larger sample set to increase statistical robustness of the asset beta estimate. However, it is relevant to any residual discretion of the regulator that the asset beta estimate is likely to be underestimated. On this basis, an estimate of at least 0.70 and probably higher (In the 0.75 to 0.85 range) would be within expectations. This is in line with the estimates produced in reliance on the New Zealand Commerce Commission's analysis, once the distinction between developing and developed countries is taken into account.

As mentioned above, using the Commission's data set is preferable because it is more up to date than the SFG Consulting data, is larger, and has the additional credibility of endorsement by an independent regulator and its expert advisors.

However, it is also relevant to note that both the SFG Consulting and New Zealand Commerce Commission data sets include both developed and developing countries. The table shows that the average [mean] beta of observations taken from Western Europe, the United States, Australia, New Zealand and Japan is 0.56 whereas the average of observations from other countries is 0.86.[1] In my view, this is consistent with the observation that macroeconomic shocks are likely to be strongly transmitted to the alroport sector in a period of high traffic growth[2]. Conversely, developed countries are likely to face lower risk, which explains this result.

Therefore, the available data is likely to underestimate asset betas for Indian airports, due to the inclusion of airports from developed countries. On this footing the appropriate beta estimate is at least 0.70 and probably higher – In the 0.75 to 0.85 range. "

Summary

- a. The beta used in NIPFP report is not reliable, inter alia, due to the following reasons;
 - i. Betas cited by NIPFP (which were from the SFG report for Air New Zealand) have not been considered by the New Zealand Commerce Commission. Instead the Commission had carried out its own independent analysis and estimated the beta.
 - ii. The sample of betas in NIPFP report also includes companies which are irrelevant to the ownership and management of airports.
- b. Based on the Betas adopted by NZ Commerce Commission in their final report, the

betas of developing countries (Monthly average) i.e. 0.84 is close to our submission of 0.80 and the same should be used for the purpose of cost of equity determination.

- c. The above conclusion has also been endorsed by Dr Harry Bush, Professor Martin Cave and Leigh Fisher.
- d. We request the Authority to consider the asset beta of 0.80 for DIAL for computing the Cost of Equity, which was used to compute the cost of equity of 24%.

1.3. Equity Risk Premium

The NIPFP report relies on the work of eminent Professor Damodaran in its derivation of the equity risk premium. In evaluating risk premium for individual countries, Professor Damodaran advocates the adoption of an approach, which is based on using the equity risk premium for a well-established mature economy market (for example the United States) and adjusting for relative country risk.

Leigh Fisher, in their report, also cited Damodaran's estimate of the equity risk premium for India, alongside other evidence derived directly from the Indian historic record in its own evidence on the cost of capital. Damodaran preferred approach used the following formula:

Country Equity Risk Premium - Country default spread X standard deviation equity/standard deviation bond.

The principle behind this is that the country's default spread is an indicator of the risk inherent in the country as expressed by its relative debt price, with the ratio of the variance of equity and bond which factors this up for the relative risk of country equity and country debt. Damodaran notes the volatility of measures of the standard deviation ratio across countries and time and tends to use an averaged ratio. He comments;

'In 2011, for instance, there were 33 emerging markets, where both the equity market volatility and the government bond volatility numbers were available, at least for 100 trading days...The median ratio, across these markets, of equity market volatility to bond price volatility was approximately 1.88. We apply this median ratio to compute country risk premiums for all the countries." Source Equity Risk Premiums: The 2011 Edition Ashwath Damodaran 2011

Damodaran nevertheless notes however that on his website, he continues to use the figure of 1.5 reflecting the historic value of this ratio.

Damodaran also discusses methods based simply on the country default spread and equity market risk ratios but concludes

We believe that the larger country risk premiums that emerge from the last approach (the approach cited here) are the most realistic for the immediate future, but that country risk premiums will decline over time. Just as companies mature and become less risky over time, countries can mature and become less risky as well. '

Source Equity Risk Premiums: The 2011 Edition Ashwath Damodaran 2011

In our evidence we cited Damodaran's latest available application of this methodology to India which used a mature market equity risk premium of 5% (based on a forward looking rather than historic approach), the 1.5 standardised multiple and a default spread of 2.4 to give an equity risk premium of 8.6% (Source Country Default Spreads and Risk Premiums July 2011 Ashwath Damodaran). It would, of course be possible to use as an alternative estimate for mature market equity risk premium - such as the 4.31% geometric rate for the US employed by NIPFP. It would also be possible, on the other hand, to use the most up to date estimate of relative equity volatility of 1.88 along with default spread of 2.4 as noted by Damodaran. If these two adjustments were combined the resulting answer would be 8.82%. (4.31% + 2.4% X 1.88).

Scenario	Mature Market Equity Risk Premium (US)	Country Default Spread [India]	Volatility	Equity Risk Premium (India)
Risk Premium-NIPFP Approach	4.31%	2.40%	10-1-10-	6.71%
Risk Premium-Corrected NIPFP Approach using	4.31%	2.40%	1.88	8.82%

NIPFP's estimate of 6.71% does not correctly follow the preferred Damodaran methodology in full. It instead uses a lower value of 4.31% for the mature market risk premium based on one assessment of US historic figures and adds a default spread of 2.4% which is not factored (adjusted) up by relative volatility (as specified in Damodaran's preferred methodology) as discussed in the foregoing para. NIPFP has not followed the complete approach and does not follow the recommendations of Damodaran methodology in full and the result thereof is flawed.

In the Leigh Fisher report submitted in our earlier filing, the equity risk premium estimated by Damodaran is compared with results from other sources to substantiate a risk premium of 9%.

Summary

a) The approach stated by Prof. Damodaran, which NIPFP has also cited, has not been correctly applied. NIPFP has omitted the application of the adjustment of standard deviation (equity market volatility to bond price volatility ratio) to the Country Default Spread. This correction itself will lead ERM of 8.82% which is closer to 9% ERP submitted by us.

b) Therefore the Authority is requested to consider the Equity Risk Premium (ERP) of 9%, as submitted by us, based on a scientific and methodological calculation in its computation of Cost of Equity.

1.4. Levering and Delevering methodology based on market value of equity

NIPFP has used the market value of DIAL equity for the purpose of calculating cost of equity. There are the following inherent flaws in the methodology adopted by NIPFP in using the above methodology:

- 1. NIPFP have used the Market Value of DIAL equity to calculate equity beta but Authority has not adopted the same treatment while calculating WACC.
- 2. The source relied by NIPFP for the market value of equity had, in all likelihood, estimated a probable regulatory outcome to determine the market value. As such there is an inherent circularity in this process; thus making the approach flawed.
- 3. Market value of equity by an analyst in the case where a stock is not listed can have varying range and therefore cannot be a reliable basis for tariff determination.

The Authority therefore, should use the book value of DIAL's equity and the same be applied consistently for determination both the equity beta as well as the WACC.

4. OPINION OF LEIGH FISHER:

"In principle, the debt and equity in CAPM calculations (and cost of capital calculations in general) should be based on market value. However in many applications the accounting values are used, either in the interests of simplicity and stability, or because there are no direct ways of ascertaining the values of the debt or equity concerned especially for forward looking estimates."

In the case of Delhi, the airport is only one of a wide range of assets in GMR's portfolio and there is no directly available market value for it. We have not seen the basis of the analyst's valuation employed by NIPFP. However, for a valuation based on projected earnings (such as this purports to be four factors are likely to apply:-

- There will be a range of potential valuations in the market very possibly a wide range;
- The valuation of Delhi is likely to be only a limited portion of a 'sum of the parts' valuation: The amount of effort applied to valuing the airport in isolation will reflect this;
- The valuation will inevitably need to make assumptions about the aeronautical revenue which the airport will earn -introducing a circularity for regulatory purposes;

The valuation will also need to make an assumption about the cost of equity (which may, or may not, be right) again reflecting a circularity - especially as this cost of will imply assumptions on the debt/equity ratio.

In short, any market value adopted in these circumstances will inevitably be imprecise, potentially contentious and circular.

It is clearly essential that the same weightings of debt and equity are used in both the equity determination and the WACC. It is entirely inconsistent, for example, to use a market based estimate for the debt/equity ratio for the cost of equity in isolation and a higher accounting based estimate of gearing for the WACC calculation. Such an approach would both lead to a lowering of the cost of equity (by minimising the debt/equity ratio for re-levering purposes) and to a lowering of the importance of equity in the WACC in the overall calculation. In consequence, it would be likely to lead to a significant underestimate of the final WACC. Two consequences arise from this:

- It is likely to be highly misleading to compare the cost of equity in different determinations unless the debt/equity ratio has been corrected for;
- If the regulator decides to use an accounting rather than a market based value for the debt equity ratio for the purposes of calculating the WACC (thus avoiding the regulator needing to endorse and defend a specific valuation for the company) the cost of equity proposed will need to be correspondingly based on an accounting based approach."

5. OPINION OF PROF. JAYANTH R VARMA

Prof Varma in his opinion also highlights the fallacies of the equity market value based approach that is used to determine Cost of Equity proposed by the Authority. Some of his observations are reproduced herein:

"AERA's consultant applies the market value leverage ratio (instead of the book value ratio) to re-lever the asset beta into an equity beta. In theory, this makes eminent sense, because book values are an accounting fiction with no economic significance.

However, it is important to be completely consistent in this regard. If market value weights are used to determine equity betas, it is absolutely imperative that market value weights be used also for computing the weighted average cost of capital. Using market value weights in one place and book value weights in the other produces results, which are manifestly absurd.

But if anybody were to attempt a hotchpotch of taking (a) the market value based equity beta and cost of equity, and (b) applying book value leverage in computing the weighted average cost of capital, he would end up with the absurdity.

While the use of market values is theoretically the best approach, a consistent use of book value leverage might be a tolerable approximation under certain conditions. However, mixing the two approaches is an absolute disaster.

The AERA guidelines that define the FRoR as a weighted average cost of Capital do not explicitly mention whether the gearing (or leverage) ratio is based on book value or market value weights, but it is apparent from a reading of the entire quidelines, that book value weights are intended. If this reading is correct, then the choice of market value weights for levering the beta and computing cost of equity is completely indefensible and inappropriate. Despite the theoretical merit of the market value approach, there might be practical advantages to the use of book values consistently everywhere.

Since DIAL is an unlisted company, the determination of the market value of equity is highly problematic. In fact, the purported market value used by the consultant is merely an analyst opinion and not a true market price. There are issues of transparency, objectivity and fairness in a regulator using an estimate of an analyst who bears no accountability to the regulator at all. The analyst estimate of the market value of equity would (explicitly or implicitly) be based on some projected earnings or cash flows. These earnings or cash flow estimates would be based on some assumption about the tariff that would be fixed by AERA. There is an inherent circularity in the regulator setting the tariff using an analyst's estimate of the market value of equity (and therefore the analyst's estimate of the tariff that the regulator would set). It would be akin to a snake trying to swallow its own tall.

It is evident that when FROR is applied to the Regulatory Asset Base (RAB), the book value of RAB is used. There is no logical inconsistency in using market values in both steps of computing FRoR, and then using book value to compute RAB. This is because the RAB is not the totality of assets of the company and the cost of capital is for the whole company. Yet, there is probably an appeal of simplicity which might lead to a regulatory preference for using book values in all three steps (two steps in computing FRoR and the third step in computing RABJ. For these reasons, I would like to be pragmatic about this and state that AERA would be perfectly justified in taking one of the following two approaches:

- Compute FRoR using estimated market value of equity at both stages (first to estimate equity beta and cost of equity; and second to compute the gearing ratio for computing FRoRJ but use book value of assets to compute RAB.
- Use book values for all three purposes (first to estimate equity beta and cost of equity; second to compute the gearing ratio for computing FRoR; and third to compute RABJ.

The first approach is theoretically sound and the second is practically feasible, and without being dogmatic about it, I am of the opinion that all things considered, the second approach is on balance more appropriate in the present regulatory framework."

6. OPINION OF PROF. MARTIN CAVE

Prof. Martin also reiterates the lacunae in the approach taken by NIPFP. Extracts from his opinion are as under;

"NIPFP's approach to calculating leverage seeks to determine actual leverage with reference to actual debt (in accordance with figures provided by DIAL) and an estimate of the market value of equity as presented in a recent Bank of America/Merrill Lynch report in respect of GMR Infrastructure, a member of the DIAL joint venture consortium.(1) AERA has adopted this approach.

Calculating actual leverage with reference to the market value of equity is a very challenging approach in the case of an unlisted airport business. Reliance on the book value of equity, in my experience, may very well be preferable. With all its imperfections, it may be a more objective measure of the value of equity. The problem with market value of equity estimates is that they may fluctuate over time and differ from one estimator to another.

The potential inaccuracy of the market value of equity estimate used by the NIPFP is highlighted by the number of conflicting analysts' estimates available. Notably, Bank of America/Merrill Lynch has even revised its equity estimate in October 2011 to Rs 4755 crores.[2] down from Rs 5316 crores in August. Even more confusingly, another analyst report estimates that DIAL has a negative value of equity.[3] These significant divergences are indicative of the lack of robustness surrounding the single estimate relied on by NIPFP.

This risk of an inaccurate estimate of the value of equity is heightened in this case because there is no evidence that NIPFP has taken appropriate steps to ensure the robustness of the market value of equity estimate used to calculate leverage. The estimate used is an independently-prepared estimate, which provides some credibility. However:

- a single estimate may not be sufficiently robust unless the relevant methodology is subject to critical examination, including testing of all relevant data and assumptions. There is no evidence that this type of scrutiny has been undertaken in this case;
- the most effective means of achieving such scrutiny is for the methodology to be made available to submitters for scrutiny, after

^[3]BNP Paribus "GMR Infrastructure" (5 December 2011) at page 3.

The Bank of America report does not appears to have been made available as part of the current consultation process, nor is it publicly available. For that reason it is difficult to derive comfort on the usefulness of the report for regulatory purposes.

comfort on the usefulness of the report for regulatory purposes.

[2] Bank of America/Merrill Lynch "GMR Infrastructure Ltd" (16 October 2011) at page 5.

AERA has reached an initial view that any data or assumptions relied on are reasonable; and

in the absence of such close scrutiny, statistical robustness can only be achieved with a significantly larger sample set. In this respect, reference to just a handful of additional data points would add to the robustness of the market value of equity estimate.

If sufficient robustness cannot be attained in respect of the estimate of the market value of equity, then it may be more appropriate to adopt a nominal (rather than an actual) leverage assumption. A nominal leverage figure does not purport to provide an accurate estimate of actual leverage, but in appropriate circumstances it can provide a workable, non-arbitrary leverage assumption on which to base the cost of equity calculation.

In this case, there is a principled basis on which a reasonably robust nominal leverage assumption can be produced. The book value of equity for DIAL is an objective estimate of the value of equity that has not been produced for regulatory purposes. At provides a consistent and reasonable basis to found an assumption of leverage, and is not inherently skewed towards a higher or lower value. On that basis, the amount of debt and the book value of equity can be used to produce a meaningful nominal leverage assumption. If the process for determining the market value of equity is not made available to interested parties, then adoption of a nominal leverage based on the book value of equity is preferable."

7. MARKET VALUATION OF DIAL'S EQUITY BY OTHER ANALYSTS:

We are enclosing two reports similar to the report of Bank of America used by NIPFP as **Annexure J**. These reports are by:

- UBS: Values DIAL equity at NIL.
- BNP Paribas: Values DIAL equity at negative

This clearly goes on to prove that the valuation by analysts are subjective and can lead to erroneous and unreliable results. Thus, placing reliance on these subjective reports for the purpose of an objective fixation of cost of equity for the critical purpose of fixation of tariff is incorrect.

Summary

- Using Market Value of equity for the purpose of leveraging and deleveraging beta and using book value of equity for computation of WACC is inconsistent and incorrect.
- b. The book value of equity for DIAL provides a consistent and reasonable basis to

form an assumption of leverage, and is not inherently skewed towards a higher or lower value.

- c. Leigh fisher in their report on cost of equity submitted along with tariff proposal had used book value of equity (based on which cost of equity was worked out at 24%) to compute the equity beta and WACC and request the Authority to accept the same.
- d. This approach has been endorsed by International experts like Leigh Fisher, Prof. Martin Cave and Prof. Jayanth Varma

1.5. Indicative Cost of Equity at time of bidding

At the time of bidding of Delhi Airport, the indicative cost of equity used to determine the WACC for bidding purposes was 22.8%. The bidders in their evaluation, considered this critical factor.

1.6. Other Issues

The following additional issues related to cost of equity and debt are as under:

1.6.1. Comparative Risk of airports vis-a-vis other sectors.

The Authority in its consultation paper has stated that:

246. During several discussions with the merchant bankers, regulated entities, mutual funds etc., it has been suggested that the Authority should benchmark Its proposed return on equity with the returns given by other sectoral regulators. Otherwise, the airport sector will be perceived as less attractive for investment, which will not be in the long term interest of the sector. In this background, an attempt has been made to review the RoE in other sectors.

247. Central Electricity Regulatory Commission (CERC), in its Terms and Conditions of Tariff Regulations for 2009-14 Issued on 20.01.2009, vide regulation 15, computes the RoE at the base rate of 15.5% in the manner indicated therein. The Authority, has noted that in its regulatory framework the Corporate Tax is being allowed as a cost pass through and the RoE on CAPM.

248. It is understood that State Electricity Regulatory Commissions normally consider 16% as cost of equity in respect of distribution companies.

249. In the Port sector, the Tariff Authority of Major Ports (TAMP) is understood to be using 16% as return on equity. However, the model of tariff determination of TAMP is understood to be different - TAMP finalizes and announces the tariff upfront and then bids out with revenue share as the decision or selection parameter.

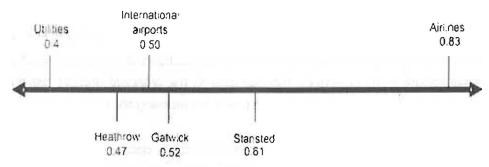
250. In case of National Highways, the NHAI is also understood to determine the toll upfront. In a recent report, a Committee headed by Shri B.K. Chaturvedi, Member, Planning Commission has stated that Equity IRR of upto 18% may be acceptable for certain types of projects.

While the principle approach of comparing the returns with other sectors is fine, in practice this approach would not do justice unless we compare the risks associated of airports with those in other sectors. The Authority in the aforesaid analysis has not considered relative higher risk of airports, as a factor, in proposing the cost of equity.

As part of our tariff filing we had submitted a cost of equity determination for Indian airports as prepared by KPMG under aegis of Association of Private Airports Operators (APAO). The report carried an analysis of the risks faced by Airports Vis a Vis other utilities.

Risk Factors	Risk Severit	y Ports	Power Generation	Power Distribution	Roads	Airports
Traffic Volatility	THE REST	5 M(2)	L(1)	L(1)	H(3)	L(1)
Multi Sector Revenue		3 L(1)	L(1)	L(1)	L(1)	M(2)
Revenue Collection		3 L(1)	L(1)	H(3)	M(2)	M(2)
Regulatory Risk		3 M(2)	L(1)	L(1)	L(1)	M(2)
Self Performance		2,L(1)	H(3)	H(3)	L(1)	M(2)
Performance of other stakeholders		1 1(1)	1.(1)	M(2)	L(1)	H(3)
Capital Cycle Risk		3 L(1)	L(1)	1(1)	M(2)	H(3)
Political Risk		2 M(2)	L(1)	M(2)	M(2)	H(3)
Total Score		1.	45 1.11	3 1.59	1.8	2 2.05

Similar conclusion was reached by CAA UK in their comparison of the risks.



Source: CAA report on the economic regulation of airports

This clearly goes on to show higher risks of airports vis-a-vis other utilities.

- a) It will also not be out of place to mention that CERC in its Draft 'CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources)

 Regulations, 2012' have proposed a rate of 20% for first 10 years and 24% return on equity from 11th year onwards.
- b) Comparing returns and risks between sectors (KPMG Analysis)

In its opinion KPMG also raises certain other fundamental issues, which need to be considered while comparing returns and risks between sectors. KPMG has analysed the return and risk of other sectors vis-a-viz airport. An extract from their opinion is as follows:

In case of power sector, it has been observed that actual return available to an equity investor is more than 16% because the equity invested is not depreciated while calculating return. It has been illustrated with a simple example:

Equity investment of INR 1000 crore in a power project is expected to yield the following returns:

Parameter	1st year	10th year	20th year	30 th year
Equity investment	(1,000)			
Y-o-y return		160	160	160
Depreciation on equity component		34	34	34
Cash flows for equity	(1000)	194	194	194
EIRR		_		19.33%

Note. For the sake of brevity, only 4 years have been represented in the table above. However, similar approach has been adopted for entire 30 years

Equity investment of INR 1000 crore in an airport project is expected to yield the following returns:

Parameter	l ^{si} year	10 th year	20th year	30 th year
Closing RAB for equity contribution	1000	690	345	0
Y-o-y return	0	113	58	3
Depreciation on equity component		34	34	34
Cash flows for equity	(1000)	147	92	37
EIRR				15.65%

Note. For the take of brevity, only 4 years have been represented in the table above. However, similar approach has been adopted for entire 30 years.

1.6.2. Residual Value of assets at end of concession.

In case of DIAL it is a fixed period contract and the assets [Transfer Assets according to OMDA] will be transferred at end of concession to AAI and no appreciation will accrue to promoters on these assets. This is different from other sectors where investments are owned by the private entity and at end of concession its market value accrues directly to the shareholders.

Hence, there needs to be a distinction made between the investments made in other sectors which continue to be owned by shareholders where the increase in market value of the business accrue to shareholders and a concession like DIAL where this does not happen.

For example, in case of a power plant owned by GMR (at Chennai) there is provision of payment of residual value at the end of the contract to GMR through a formula based on depreciated replacement cost. Thus at end of contract, a part of the appreciation in the value of assets accrues to GMR over and above the Equity Return. However no such proviso exists in case of concession agreement of DIAL.

Thus it's not a fair comparison when we compare the cost of equity for airports with that in other sectors. Therefore in light of the aforementioned facts, the cost of equity for DIAL needs to be higher.

Similar conclusions have been reached by KPMG. The relevant extract from the report has been depicted below;

Ownership of Assets: Assets, including land, are owned by the private developer in case of power sector. At the end of life of the power plant, private developer can sell these assets, including land, at the market value. This is expected to increase the returns to equity investor.

1.6.3. Stabilization of Interest cost not confirmed.

The Authority has disallowed an increase in interest costs for the purpose of computation of WACC. The interest rates have increased over the past three years. While there have been stray reports of peaking of interest rate cycle, these are yet to be substantiated and there have also been reports to the contrary. As such there is no rationale for disallowance of a reasonable proposed increase in interest costs during the regulatory period.

Summary:

Risk Free Rate

We submit that Authority consider the average nominal risk free rate for the underlying period. Thereafter, the same should be adjusted for average inflation prevalent during the same period to arrive at the real risk free rate so as to remove any inconsistency or anomaly in any of the variables. The real rate so arrived should be indexed with the forecasted inflation to arrive at the forward-looking nominal risk free rate. This approach has also been endorsed by Prof. Varma and Leigh Fisher based on which cost of equity of 24% was worked out. Using simple historic average of risk free rate is not correct as it is vitiated by the vagaries of past inflation. The Authority should consider the risk free rate of 8.3% which has been used by Leigh Fisher in their report.

Beta

We request the Authority to consider the betas submitted by us and take 0.80 as the asset beta. The betas used in NIPFP report are not reliable;

- a. NZ Commerce Commission carried out its own independent analysis and the betas adopted in their final report are more credible. Betas cited by NIPFP (which were based on SFG report for Air New Zealand) have not been considered by the New Zealand Commerce Commission.
- b. The sample of betas in NIPFP report also includes companies which are apparently irrelevant to the ownership and management of airports.
- c. Betas used by NZ Commerce Commission of the developing countries (Monthly average) i.e. 0.84 is close to our submission of 0.80 and the same should be used for the purpose of cost of equity determination.

Equity Risk Premium

Equity RIsk Premium (ERP) of 9% filed by us is based on a scientific and methodological calculation and the Authority should accept the same. The approach advocated by Prof. Damodaran, has been accepted by NIPFP but not been applied correctly. NIPFP has omitted the application of standard deviation

(equity market volatility to bond price volatility ratio) to the Country Default spread. This correction itself will lead ERM of 8.82% which is close to the number submitted by us.

Consistent usage of Gearing in computing cost of equity and WACC

- a. The methodology of using market value of equity for levering and de-levering and thereafter using book values of equity to compute WACC is incorrect. In our submission we had used book value of equity to compute the equity beta and WACC and shall request the Authority to accept the same.
- b. This approach has been endorsed by international experts like Prof. Martin Cave, Leigh Fisher and Prof. Jayanth R Varma.

Bid cost of equity

Bidders in their evaluation considered the indicative cost of equity of 22.8% during the privatization of Delhi Airport.

Other factors

- a. Authority should also give due credence to other factors like high risk profile of the airport industry, lack of any appreciation in the value of underlying assets and higher returns in other sectors like Power while comparing with other sectors for a holistic comparison.
- b. We also request the Authority to reconsider its position w.r.t interest cost of debt and provide a reasonable increase.

We had proposed a cost of equity of 24% based on a scientific and systematic CAPM methodology duly endorsed by independent experts and professionals in the field. Considering the aforesaid, we request the Authority to consider a cost of equity of 24%.

V. QUASI EQUITY

The Authority has accepted the approach as outlined in the OMDA and SSA, in respect to the revenues (currently lease rentals) from Non Transfer Assets (NTA) to be kept outside the regulatory purview of tariff determination. However, the upfront deposits generated from the same lease agreements, used for part financing the project cost, have not been allowed any return whatsoever.

- i. It is evident from the above arrangement that cash flows from NTA's, used in financing of the Aeronautical RAB, have to be considered on arms-length basis. Assigning zero return to such deposits disregard their economic significance and their intrinsic cost and in effect tantamounts to providing a 100% cross subsidy in the tariff determination when zero cross subsidy is envisaged on the concession documents from NTA. This aspect had been clearly highlighted in our earlier submissions, which, however, has not been given due considerations, contrary to provision of the concession agreement.
- ii. Had DIAL on its part could have invested this money in any other venture, it would have earned a return and was not under any compulsion to structure the land monetization to receive large security deposits which it did in the larger interests of ensuring requisite funds to ensure timely completion of the expansion and modernization project.
- **iii.** We have provided our detailed response to the **observations** of the Authority as under:

a) Authority's Argument

As regards DIAL's argument that this amount was available to DIAL to be used as it wished, and without the requirement of using it for the airport project, this appears to be a matter of interpretation of the covenants of SSA and OMDA, which is in the domain of GoI and AAI. However, it is observed from the records that the DIAL have been consistently projecting RSD as a distinct head in the means of finance and separate from equity.

DIAL Response

The OMDA and SSA do not discuss Refundable Security Deposits (RSD) as a source of financing. However it is clear that the revenues from NTA should not be used for cross subsidizing the aeronautical charges. It is also clear that RSDs have been used for funding the modernization and up gradation project of Delhi Airport. Providing a zero return on these funds, thus in spirit tantamount to cross subsidizing the aeronautical charges which is not the intent of the OMDA and SSA. The depiction by DIAL of RSD as a distinct head separate from equity is a presentation issue and this does not change the nature of deposits as

being quasi-equity or funds having the underlying element of equity. It is also important to note that lenders, majority of who are public sector banks, have treated RSD as quasi-equity for the purpose of Debt-Equity covenant of lenders.

b) Authority's Argument

Further, DIAL has been permitted to levy DF after exhausting all other means of finance including RSD. The Authority has separately stated that it will permit DF only as a measure of last resort. Therefore, DF would not have been permitted to DIAL in case it would have applied a ready source of finance like RSD for any other purpose. In this light, the argument that RSD amount was available to DIAL to be used as it wished can at best be termed as hypothetical.

DIAL Response

No doubt DIAL has used the RSDs for funding the Delhi Airport project and sought and obtained DF for the shortfall that could not be met from any other sources. However this does not imply that DIAL should not be permitted any return on these funds.

- We had taken equity to maximum extent possible and are allowed a return on them.
- We had taken debt to maximum extent possible and are allowed a return on the same.
- We had taken deposits to maximum extent possible; however we are not being allowed any return on the same.

This treatment is not appropriate.

c) Authority's Argument

261. The cost of this amount to DIAL is zero as the security deposits are interest free.

Further, SSA contemplates a return on RAB on WACC basis, which has been defined therein as under:

"WACC = nominal post-tax weighted average cost of capital, calculated using the marginal rate of corporate tax"

Thus, WACC has to be calculated by taking into account the cost of each component of capital, which in the case of RSD is zero. In this light, the Authority is not persuaded to consider RSD as quasi-equity and proposes to consider its actual cost, i.e., zero for computation of WACC.

DIAL Response

The argument that a zero interest deposit has no inherent cost is incorrect and fallacious. By this argument we will be building the fallacious logic that equity should also not be allowed any return since it has no designated or promised return. Further, DIAL could had invested the RSD into alternate avenues which

would have enhanced the bottom line and reserves, which could have been used for distribution of dividends and/or capitalization of reserves i.e for creation of further equity capital. Therefore, RSDs are akin to equity and should get equity-benchmarked returns.

iv. KPMG Report-Return on Deposits in other infrastructure sectors

KPMG has assessed other sectors where a return on the investment is allowed, even if they are funded from deposits. The relevant extract from the report is as under;

a) Compressed Natural Gas & Natural Gas:

"PNGRB, in its guidelines, has clearly acknowledged that security deposits would form part of the company's liability and it should not be reduced from the total capital employed while determining the network tariff. Further the guidelines allow the entity to earn a reasonable rate of return on entire Capital Employed. Relevant extract from the regulation are stated below:

- Entity may collect refundable interest free security deposit as specified under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities for Laying, Building, Operating or Expanding City or Local Natural Gas Distribution Networks) Regulations, 2008. Such deposit is towards the safe-keeping of the meter and is to be refunded in full to the domestic PNG customer in case of a dis-connection. Further, since the amount collected as interest-free refundable security deposit shall exist as a liability in the books of accounts of the entity, the same shall not be reduced from the total capital employed while determining the network tariff."
- The reasonable rate of return shall be the <u>rate of return on capital employed</u> <u>equal to fourteen percent post-tax</u> considering the rate of return on longterm risk-free Government securities and the need to incentivize investments in creation of CGD infrastructure

b) Ports: TAMP Guidelines

"Return will be allowed on Capital Employed (ROCE), both for Major Port
Trusts and Private Terminal Operators, at the same pre-tax rate, fixed in
accordance with the Capital Asset Pricing Model (CAPM)."

"Conclusion: The Authority has proposed to provide zero returns on capitalized airport asset funded through RSD. However, it is evident that there is an opportunity cost associated with RSD in terms of the forgone lease rentals. Also, lenders have treated the RSD funding as part of promoters contribution (quasi-equity), therefore, RSD utilised to fund the capex is expected to have risk inherent to that associated with equity. Additionally, there are examples from other infrastructure sectors where

regulator provides return on the capital employed by the Concessionaire and does not consider the cost of funds while calculating tariff."

v. Opinion of CARE (Credit Analysis and Research Limited)

We had appointed CARE to give us an opinion on the treatment of the RSD. CARE through their advisory subsidiary Kalypto Risk Technologies (P) Ltd gave us an independent opinion on the treatment of return to be allowed on RSD. They have opined as under:

The relevant extract from their report is as follows:

"In light of these facts, the amount mobilised through RSD exhibits equity like features and as such qualifies for being treated as quasi equity and thus being eligible for close to equity returns."

Summary

- a. Assigning zero return on the amount invested from RSD tantamount to cross subsidization of aeronautical charges, which is against the provisions of OMDA and SSA.
- b. RSD have opportunity cost which needs to be acknowledged in the form of equity denominated returns.
- c. The Authority has permitted DF as funding of last resort. However that does not conclude that the RSDs carry no cost.
- d. Regulators in other sectors have recognized a fair rate of return on RSD and allowed a return on capital employed irrespective of its source.
- e. The above has been ratified by independent opinions from KPMG and CARE (KRTPL).

We request the Authority to allow a return equivalent or close to the cost of equity on the RSD.

VI. TRAFFIC FORECAST

As part of the tariff submission, DIAL had commissioned an independent traffic forecast for IGI Airport from the Madras School of Economics (MSE forecast). The MSE forecast used up-to-date advanced time series techniques and examined "the short run as well as long run relationship between air-travel demand and other economic factors", with a key objective being to "compare the results across various benchmark studies already existing for India."

The consultation paper does not adopt the forecasts of MSE. Instead, it proposes to use traffic forecasts derived from historical data; specifically, 10 year CAGR figures for 2001-02 to 2010-11. The Authority's dismissal of the MSE forecast is based on two premises:

- Firstly, there were variations between the MSE forecasts and long term historical trends as calculated by AERA; and
- Secondly, comments by Professor N.R. Bhanumurthy were critical of the model.

We have the following submissions in this context:

 Forecast proposed by the Authority are much higher than the forecasts done by Independent Professional bodies:

Tariff growth proposed by the Authority in the Consultation Paper is substantially higher than the MSE forecast and other comparable recent forecasts (such as those undertaken by ACI, Mott McDonalds, and MSE).

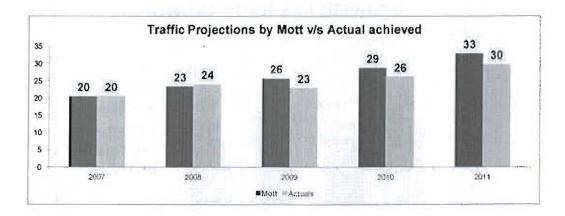
1.1. Background of ACI Forecast:

ACI requested DKMA to undertake a study to evaluate the current profile of traffic in India and determine its likely future evolution during the next six years. The report presents an unconstrained passenger traffic development at a country level covering 2010-2015 and passengers are split into domestic and international. Passenger traffic forecast report of ACI attached as **Annexure K**.

1.2. Background of Mott MacDonald Forecast

DIAL as part Master Planning exercise, required under the OMDA, had to carry out a traffic study for IGI Airport. DIAL assigned Mott MacDonald to undertake an independent traffic study for IGI Airport. This study was the basis of Master Planning required under the OMDA. This study has stood the test of time as has proved 90% accurate so far, which is as good as it can get, for a traffic forecast. Their base case

forecast and the comparison of the same with actual traffic is reproduced for a ready reference:



Relevant extracts of the forecasts of passenger traffic and ATM's from the Mott MacDonald report is attached as Annexure L.

1.3. Background of ICAO Forecast;

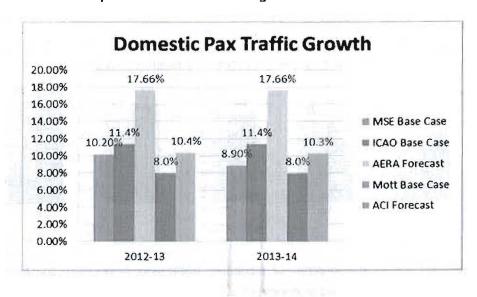
Airport Authority of India had also appointed ICAO to carry out traffic forecast study and establish traffic demand over next 20 years from 2011 for the National Capital Region (NCR). This is one of the most recent and an independent and credible forecast carried out on behalf of AAI/GoI by the foremost aviation body.

1.4. Comparison of forecasts:

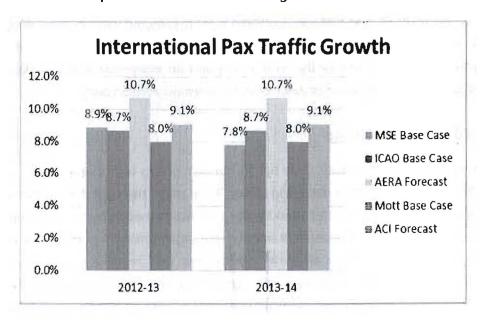
A comparison of the forecasts done by independent bodies with that assumed by the Authority is given in the following charts. These charts highlight the significant variances between the forecast used for the tariff determination by the Authority and those provided by independent and reputed organizations. It is important to note that the forecasts by all these independent and reputed organizations marginally vary among themselves but significantly vary as a group with the forecast of the Authority which raise questions over reliance on historical trends for its proposed traffic forecasts without considering current factors impacting traffic. A comparison of the traffic forecasts is given hereunder for an instant appreciation:

Comparative forecasts set out in graphical form as under

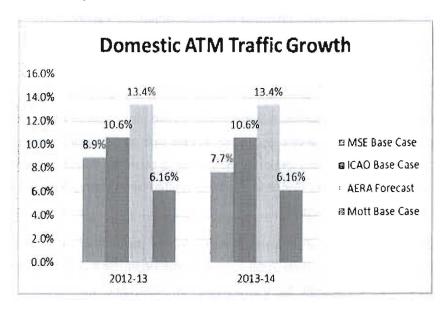
1.4.1. Comparison of Domestic Passenger Forecast:



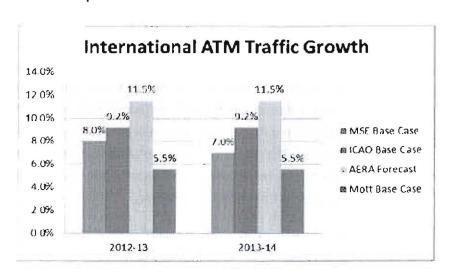
1.4.2. Comparison of International Passenger forecast:



1.4.3. Comparison of Domestic ATM forecast:



1.4.4. Comparison of International ATM forecast:



Faced with such a significant variations, best practice would suggest that the Authority give due credence to comprehensive submissions provided by stakeholders and experts, particularly where these submissions reflect commercial experience in the relevant field.

2. Methodological forecasts are better than simplistic historical average:

2.1. Authority has projected the traffic growth based on historical data. However this approach fails to consider the various dimensions influencing air traffic growth. Mere historical data alone will not substantiate that the future growth

would be the same. Many studies worldwide reveal that air travel is influenced by economic, social and geo-political factors which are dynamic and change over a period of time. The study carried out by various civil aviation organizations like ACI, & aircraft manufacturers like Boeing & Airbus incorporates various parameters to derive the growth of air travel.

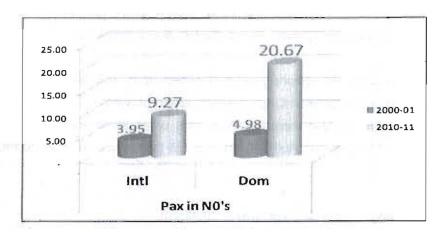
- 2.2. Global & regional economic turmoil: In the recent past, most of the regions of the World are facing severe economic turmoil due to financial instability and high inflation. This would influence the emerging countries GDP, trade, tourism, employment and travel. Hence the traffic projected by Authority excludes these very important parameters.
- 2.3. MSE report: Historical data were also analysed by the MSE to oversee the 10 years' time series data from 2000-2009 to substantiate their predicted growth with forecasting model. So the model very well fitted the forecast while comparing with 10 years period historical data.
- 2.4. Further, there are material issues with historical trend analysis which are likely to favour the use of a more sophisticated forecast model in this instance:
 - 2.4.1. First, historical trends are overly simplistic: As discussed in the MSE forecast, predictions are subject to a degree of risk and uncertainty. Air traffic volumes are affected by a variety of influences including fares, income levels and external events, and although these determinants cannot be fully accounted for, forecasts should at least attempt to address the major influences. The simplistic nature of historical trend analysis glosses over these factors, relying only on historical information which may have limited relevance to forecasting future events.
 - 2.4.2. Second, historical data incorporates transient one-off events that have significantly affected past traffic but are unlikely to recur.

As a result, there are issues in treating the proposed forecasts as reasonable.

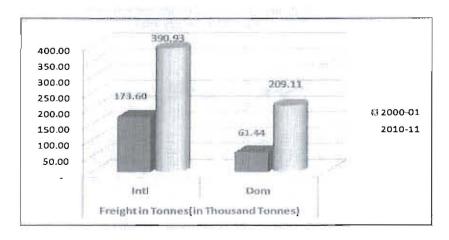
3. A high base cannot sustain high growth percentage:

The traffic growth percentage as forecasted by the Authority is based on a low base of the year 2001. The same growth cannot be sustained on a higher base. The current base on which these growth levels are being projected are almost impossible to achieve. A comparison of these bases is being presented herein:

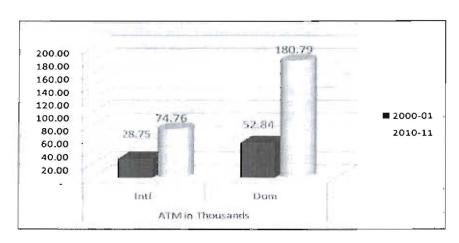
3.1. Comparison of Passenger base numbers:



3.2. Comparison of Freight base numbers:



3.3. Comparison of ATM base numbers:

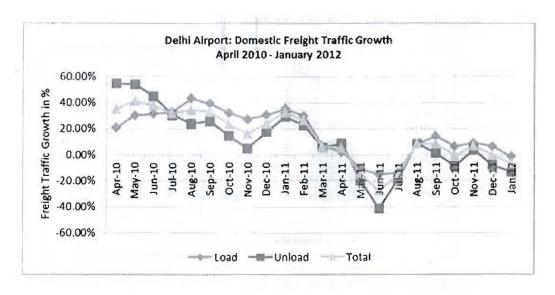


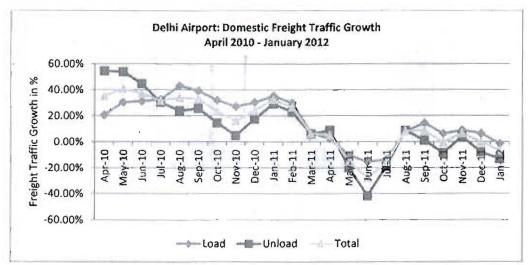
4. Cargo growth

Recent traffic trend in cargo handling shows that negative growth has started. Cargo registered negative growth during the last two quarters over the previous years.

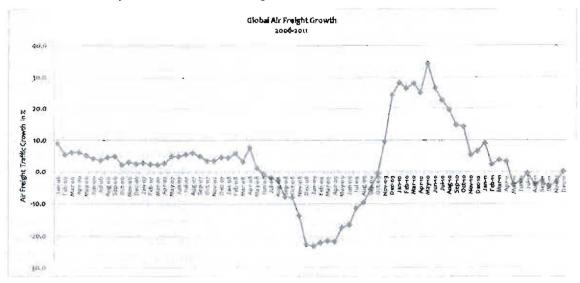
This is evident from the graphs produced herein. It is well known historical precedence that a slowdown in Cargo is a pre-cursor of slowdown in economy and passenger growth. As such there are clear signs of an imminent slowdown in passenger and ATM growths. Authority is requested to give due credence to these factors.

4.1. The declining trend in Cargo growth at IGI Airport.

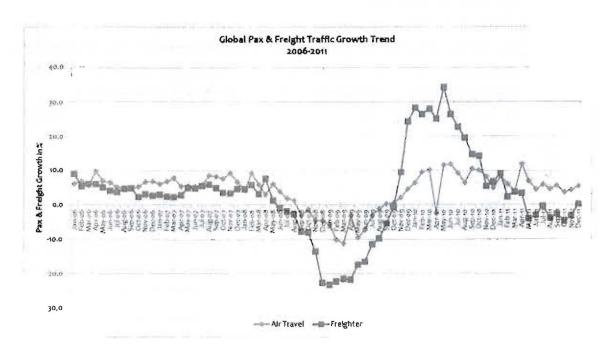




4.2. This trend is replicated in Global air freight as well:



4.3. It is an internationally accepted fact that Cargo growth signals a trend in passenger traffic as evident from this graph:



Source: IATA monthly traffic report.

5. Band:

AERA has laid down the following as regards to traffic band:

422. The Authority, in its Order No.13/2010-11 dated 12.01.2011, had stated that the forecast correction mechanism will provide a useful tool for sharing the risk between stakeholders in the light of variations in traffic forecasts and help to minimize the need to re-open the tariff determination in light of traffic variations and that the system should-be symmetrical with the upper and lower band

percentages being equal. The Order envisaged that as part of the tariff determination process, the Airport Operators would be required to provide proposals for the values of the bands, supported by evidence for the rationale of such bands and that the Authority will review the operation of the bands and determine the final bands for the tariff determination. The Authority had also clarified that any variation outside of the bands will be shared equally between the Airport Operator and users.

423. The Authority has noted that DIAL has not indicated any Traffic Band while forecasting for traffic projection. Therefore, in normal course, it would be assumed that DIAL is not seeking any corrections in respect of traffic forecast errors. However, as discussed herein above, the Authority proposes to use 10 year CAGR figures instead of figures projected by DIAL. The proposed figures are substantially higher than the DIAL projections. Therefore, it is possible to argue that traffic risk may have enhanced due to the proposed action of the Authority. In this light, the Authority has considered proposing a symmetrical band of say (+/-) 5% of the forecast percentages.

In this regard we submit as under:

The band represents the risk that an Airport Operator is willing to shoulder. In practice the band can be provided once the Airport Operator has more visibility on the traffic forecast being used for the tariff determination and the true up mechanism. Hence our not submitting a band in the application for tariff determination may not be construed as DIAL not seeking an error correction.

We have no objection to the traffic band of (+/-)5% of forecast percentages proposed by the Authority.

6. PAX/ATM error.

Traffic Projected by AERA: The projected traffic growth as indicated by Authority has inconsistency in the passenger / aircraft ratio. Going forward, one would expect that the airlines would attempt to improve load factors and operating efficiencies to stay buoyant in a very aggressive / competitive environment. Therefore there is no way the PAX / ATM ratio would decline as the Authority projected figure highlights. On the contrary, this ratio is bound to show an increase year after year. In the case of domestic, the passenger / aircraft ratio also appears to be over optimistic. Another important factor is fleet rationalization. The airlines may use medium sized aircraft in the domestic sectors instead of small sized aircraft, and secondly airlines may rationalize the routes and also increase the loads by curtailing the frequencies of an aircraft as domestic airlines have been doing, off late.

7. COMMENTS OF LEIGH FISHER:

"It is Leigh Fisher's view that it is a mistake to pay too much attention to historic traffic performance as this is distorted by the highly regulated nature of the Indian domestic market and also the non-rational behaviour of some of the airlines in the market, including provision of excess capacity in the past.

The Indian market is immature in terms of demand and in terms of the way it is served. Of key concern in the Indian market at present is the chronic unprofitability of most airlines operating domestic routes. The traditional solution for chronic unprofitability is for weaker airlines – to withdraw capacity and fares to rise – has not happened.

This means that the alrline capacity market is out of step with the market, as there is an oversupply of capacity, which in turn has led to an overstimulation of demand by low fares due to airlines wishing to fill seats. Capacity growth projections should be treated with caution, for if there is any softness in demand, airlines may cut capacity below what is currently planned.

An examination of past performance suggests a rapidly maturing market. In Leigh Fisher's view, the Impact of deregulation has now passed through the system and the market now has a much more mature relationship to GDP. In addition there is a price factor at play as well as some positive impact from capacity constraints at Mumbai that may or may not continue.

It is not possible to derive the price directly from air fares as no data is available but in certain years there is evidence that there was a price factor at work in terms of either increases in fares or cuts in capacity due to profitability issues.

In addition in the last year or so, constraints on airfield capacity at Mumbai appear to be driving some traffic to New Delhi.

.....In addition, in 2010-11, Leigh Fisher expect that there has been a positive boost to traffic at Delhi due to congestion/lack of capacity at Mumbai which has forced Air India in particular to reroute capacity via Delhi rather than Mumbai as evidenced by their decision to make New Delhi IGIA their hub. Without adjusting for these factors (capacity, price and congestion at Mumbai), it is unlikely that any forecast will be reliable.

Significant risks still exist to any forecast. These include the risk of airline closure, especially in the domestic market and the risk of lower capacity and demand, due to the current global situation. Network carriers are struggling across India and Kingfisher's situation remains volatile despite recent efforts to improve the debt situation.

8. COMMENTS OF PROF. MARTIN CAVE

"The MSE forecast remains the most attractive option with respect to traffic forecasting. There are numerous concerns with AERA's forecasts - particularly their variation from other benchmarks, their application of historical trend analysis and the use of a low 2001-02 base - and adopting them would present a clear difficulties. I recommend that the final Tariff Determination adopt the methodologies and figures as set out in the MSE forecast."

Summary

- a. The traffic forecast of the Authority, based on historic growth, is significantly higher than the scientific and analytical forecasts of independent reputed organizations and thus needs to be corrected to realistic levels.
- b. A methodological forecast is better than a simple historical average.
- c. A higher base cannot sustain a higher growth. The base year for current year was a year when the traffic growth was negatively impacted and as such this will result in a higher CAGR.
- d. Cargo forecast is high considering the growth trend of Cargo as seen for the last few quarters, which has turned negative.
- e. Cargo generally is a precursor for the trend in passenger and ATM growth. As such based on the negative growth of cargo traffic we need to rationalize our forecast downwards.
- f. Apart from the study undertaken by MSE, the Mott MacDonald forecast used at the time of Master Planning has been tested over a period of past 5 years and proven to be an accurate forecast.
- g. The overall declining GDP forecasts, the news of various cancellations of aircraft orders by Airlines etc. IATA and airline bodies also echoed this during the consultation meeting called by the Authority on January 18th 2012. Therefore, the same needs to be reduced to realistic levels.

It is an earnest request to the Authority not to use forecast based on 10 year CAGR and use the forecast of MSE or Mott MacDonald submitted by us for determination of tariff for IGI Airport in this control period.

VII. REGULATED ASSET BASE (RAB)

The Issues related to RAB are classified under the following heads:

- Hypothetical Regulated Asset Base calculation:
 - i. Efficient Operation and Maintenance cost
 - ii. Cargo be treated as Aero
 - iii. Classification of Cute Counter charges as Aeronautical
- 2. Other issues:
 - The Revised RAB mix should be applied in place after incorporating disallowances of DF order.
 - Future capex

T. Hypothetical RAB

A. Background:

The Schedule 1 of State Support Agreement (Sovereign Agreement signed by DIAL with and on behalf of The President of India by the Government of India 'Gol' through Ministry of Civil Aviation 'MoCA') requires that in computing the initial asset base of DIAL, the values of the Aeronautical Assets in the books and the value of Hypothetical Regulatory Asset Base (HRAB) is to be aggregated.

The HRAB shall be computed using the then prevailing tariff and the revenues, operation and maintenance cost, corporate tax pertaining to Aeronautical Services at the Airport during the financial year preceding the date of such computation.

From the 4th year after the Effective Date, the Aeronautical Charges are to be determined in accordance with the formula set forth in Schedule 1 of the SSA.

The Schedule 1 lay down a comprehensive mechanism and formulae for determination of the Target Revenue. One of the components in the determination of the Target Revenue is the Regulatory Asset Base (RAB) pertaining to the Aeronautical Assets. The mechanism set forth in the SSA for the computation of the Regulatory Base of Aeronautical Assets in any given year is based on the following formula:

$$RB_i = RB_{-1} - D_i + I_i$$

The RAB of the Aeronautical Assets in any year (RB) is the Regulatory Base for the immediately preceding year (RB₊₁), subject to negative adjustment on account of depreciation (D_i) and positive adjustment on account of investments in the relevant year (4).

Schedule 1 of the SSA specifies 'RBo' as follows:

(i) the Book Value of the Aeronautical Assets in the books of the JVC; and (ii) the 'hypothetical regulatory base' computed using the then prevailing tariff and the revenues, operation and maintenance cost, corporate tax pertaining to Aeronautical Services at the Airport, during the financial year preceding the date of such computation

RBo is the Regulatory Asset Base at the start of the regulatory period. DIAL was mandated under the Schedule 6 of the SSA to levy the existing AAI charges defined as Base Airport Charges 'BAC' in Schedule 8 of the SSA for the initial period of two years from the effective date (May 3rd 2006). BAC was AAI charges for Aeronautical Services and was continued at the same level by AAI when handling IGI Airport operation directly.

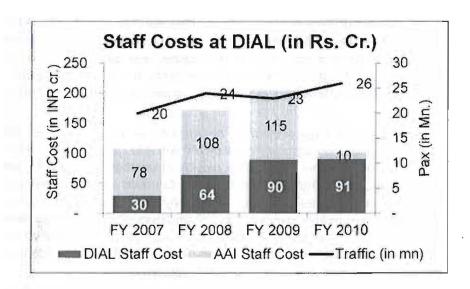
There are 3 critical issues related to determination of HRAB:

- 1. Efficient Cost: The Authority, based on the principle of efficiency, should consider only efficient costs in calculation of HRAB.
- 2. Cargo Classification: While we are of the view that based on the Concession agreement Cargo must be treated as Non Aeronautical even during the period it was being operated by DIAL, in case the Authority is constrained to treat Cargo as Aero for the year of determination of HRAB, it should adopt a consistent approach on its treatment of Cargo for computation of HRAB.
- 3. Cute Counter Charges: Cute Counter Charges are Non Aeronautical as these are rental charges. However in case Authority is constrained to treat it as Aero, the effect of the same needs to be reflected in valuation of HRAB.

B. Our submission on valuation of HRAB

	Figures in Rs. Crores
	2008-09
Aero Revenue [A]	434
Landing Charges	244
Parking & Housing Charges	13
Passenger Service Fees	85
Baggage X-Ray Revenue	4
In-Line X-Ray Revenue	15
Fuel Throughput Revenue	72
Aero Expenses [B]	385
Less: Expenses Not Conisdered [C]	82
DIAL Manpower Cost	81
Runway 11,29 Operations & Maintenance cost	1
Eligible Expenses [D=B-C]	304
Nero EBIDTA [A-D]	130
VACC *	11.60%
Typothetical Asset Base	1,119

We had submitted to the Authority that in the year 2008-09 there was an overlap of manpower costs of AAI staff as well as DIAL staff. From a valuation point of view the manpower cost of only AAI staff for the relevant period is considered (Operational Support Cost) to result in a fair valuation. The manpower cost of DIAL staff has been excluded as the AAI staff was mandated to support the working of existing terminals for that period while the DIAL staff was getting oriented and trained.



C. Stand taken by the Authority

- 1. Authority has taken a view that in terms of the State Support Agreement, HRAB is to be computed taking into account the following factors:
 - (i) Revenues at prevailing tariffs in the year;
 - (ii) Operation and Maintenance cost; and
 - (iii) Corporate tax pertaining to Aeronautical Services at the Airport.
- 2. Authority believes that the State Support Agreement does not make any reference to efficient operation and maintenance costs. Instead, it is referring to the prevailing, i.e., actual cost of operation and maintenance.
- Authority further believes that accordingly, there is no mandate under the State Support Agreement to exclude the manpower cost of DIAL staff from the operation and maintenance costs while calculating Hypothetical RAB.

D. Legal opinion on Efficient Cost:

We have obtained an opinion from AMSS on the treatment of operating cost by the Authority in the calculation of Hypothetical Asset Base.

The relevant extract of AMSS opinion is as under:

"In terms of Articles 6.1.1, 6.1.2 and 6.1.4 of the OMDA, AAI is required to provide, and DIAL is required to avail of operations support from AAI for a period of 3 years from the Effective Date under the OMDA. Further, during this three year period, all General Employees of AAI, were required to continue working at the Airport. On or prior to the end of the said 3 years period, DIAL was required to make an offer to at least 60% of such General Employees to become employees of DIAL, and such General Employees would be entitled to accept or reject the said offer, at the their sole discretion. The relevant provisions are set out below:

- 6.1.1 For a period of 3 (three) years from the Effective Date (herein referred to as the "Operation Support Period"), AAI shall provide operational support to the JVC through the General Employees in the manner and subject to the terms provided herein (such support is hereinafter referred to as "Operation Support"). The estimated annual Operation Support Cost ..., as per the break-up in Schedule 23.
- 6.1.2 [i] General Employees shall be retained at the Airport for the duration of the Operation Support Period by the AAI and shall be dealt with in the manner provided herein. In order to provide Operation Support, AAI shall procure that the General Employees perform such functions and undertake such duties, and in such capacities, as may be required by JVC, subject to compliance with Applicable Law and the existing terms of employment of such employees. For the limited purposes of provision of Operation Support, the AAI shall act for and on behalf of the JVC and shall direct the General Employees to undertake such functions and duties as may be reasonably directed by JVC.
- 6.1.4 At any time during the Operation Support Period but not later than three (3) months prior to the expiry of the Operation Support Period, the JVC shall make offers (on terms that are no less attractive in terms of salary, position, etc, than the current employment terms of such employees) of employment to the General Employees that it wants to employ. Provided however that JVC shall be required to make offers to a minimum of 60% of the General Employees (as reduced for retirements, transfers, death and any fractions to be rounded off to the nearest whole number). Any offers already made and accepted during the Operation Support Period will be counted for the purposes of such minimum number of offers. The General Employees shall have the option of accepting or declining the offers within one month. The General Employees accepting the employment offers of the JVC, upon resigning from AAI, shall cease to be AAI employees from the date of acceptance of the offer or completion of the Operation Support Period, as applicable. The JVC shall be the new employer for these employees on terms and conditions mutually agreed between the JVC and such employees. Provided however that if less than 60% of the General Employees (as reduced for retirements, transfers, resignations and death and any fractions to be rounded off to the nearest whole number) accept the offers of employment made by the JVC, then the JVC shall pay to AAI Retirement Compensation for such number of General Employees as represent the difference between 60% of the General Employees (as reduced for retirements, transfers, death and any fractions to be rounded off to the nearest whole number) and the number of General Employees accepting offers of employment made by JVC, including cumulatively the offers made and accepted during the Operational Support Period.

- I. I. It is therefore clear from the foregoing that the General Employees of AAI were mandatorily required to continue to work at the Airport for a maximum period of 3 years from the Effective Date. However, at the end of 3 years, there was no guarantee as to the number of the AAI General Employees who would become employees of DIAL. Therefore, in the absence of employment of a separate staff, there may have been a possibility that upon the expiry of 3 years, DIAL may not have had adequate staff to run the Airport, let alone meet the subjective and objective quality standards as prescribed under the OMDA.
- 1.2. Therefore, effectively In order for DIAL to ensure continuity in the availability and the operations of the Airport, after the expiry of the 3 year period (that is, after the year 2008-09) it was Imperative for DIAL to employ its own staff in addition to the AAI staff, However, these additional DIAL staff could not be said to be necessary for the Airport, since the existing AAI General Employees were already providing all Aeronautical Services at the Airport.
- 1.3. Further, since the existing AAI General Employees was the entire set of employees at the Airport at the time of the takeover of the Airport by DIAL, it is clear that it was only that extent of staff that was necessary or pertained to the actual provision of Aeronautical Services at the Airport. This being the case, given that the computation of Hypothetical RAB is based on the operations and maintenance costs pertaining to the Aeronautical Services, it would not be appropriate to include the cost of DIAL's staff in calculating the same, since such staff were not necessary to provide the Aeronautical Service, but were only necessary to ensure continued operations.

On account of the foregoing proposition and positions, it would not be appropriate to include the cost of both AAI staff and DIAL staff as part of the operations and maintenance expense in computing Hypothetical RAB, and only those staff, (that is the AAI Staff) should be treated as part of the costs that actually <u>pertained</u> to the provision of Aeronautical Service. "

E. Cargo Classification:

1. In our tariff filing, we had computed an amount of Rs. 1,119 Crores as the value of HRAB as described on page 53.

In our calculation we had assumed Cargo as Non Aeronautical as per the classification mandated by concession agreement. However the Authority is treating the revenue from direct cargo handing prior to concessioning as Aeronautical revenue.

For the year 2008-09, DIAL was directly operating cargo activity. In such a case, the value of HRAB needs to be suitably adjusted. Detailed working of the same, as per SSA formula, is as follows:

The Aero revenue will be as under

Income FY 2008-09	As Per Filling	Revised Amount
Landing & Parking	257 Crs	257 Crs
Passenger Service Fee-Facilitation	85 Crs	85 Crs
Baggage X-ray & In-line X-Ray income	19 Crs	19 Crs
Fuel Throughput Income	72 Crs	72 Crs
Cargo Handling Income	197-31-79	212 Crs
Total Aeronautical Revenue	434 Crs	645 Crs

The revised aero expenses calculation is as under:

Total Expenses FY 2008-09	f. Hereit	As Per Filing	Revised Amount
Total Expenses	Α	445.31 Crs.	445.31 Crs.
Less Aero Expenses (cargo expenses treated as aero)	B III	MEN CHES	15.35 Crs.
Balance Expenses to be allocated	C=A-B	445.31 Crs.	429.96 Crs.
Aeronautical Cost Allocation Mix %	D	86.5%	86.5%
Allocated Aero Expenses	E= C X D	385.23 Crs.	371.95 Crs.
Add Pure Aero expenses (cargo expenses treated as aero)	n Challen	- 400 sil short Carlo un une i	15.35 Crs
Aeronautical Costs	F≖E+B	385.23 Crs	387.30 Crs
Less: Excluded Costs ¹ (DIAL Manpower & R/w 29/11 o&m cost)	G	81.56 Crs	81.56 Crs
Balance	H=F-G	303.68 Crs	305.75 Crs
		=304 Crs.	=306 Crs.

The revised calculation of HRAB is as under:

Details	Tariff filing	Revised
Aero Revenue	434 Crs.	645 Crs.
Aero efficient costs	304 Crs.	306 Crs.
Aero EBIDTA	130 Crs.	339 Crs.
WACC	11.60%	11,60%
HRAB	1,119Crs	2,928 Crs.

2. Authority, in its consultation paper has dealt with this issue as under:

198. DIAL, vide their email dated 07.12.2011, have stated that "Besides the regular aeronautical revenues like landing, parking and housing fee, passenger fee, we had considered fuel farm royalty as aeronautical for the first tariff filing. From discussions, it appears that while the Authority is treating the concession fee received by DIAL from cargo concessionaires as non-aero, it is considering treating the revenue of DIAL from direct cargo handing prior to concessioning as DIAL's aeronautical revenue. Given this premise, for the year 2008-09, DIAL was directly operating cargo activity. In such case the value of Hypothetical RAB needs to be revised......."

199. Based on the above submissions DIAL have proposed revision of hypothetical RAB, as under:

Particulars	Tariff Filling	Revised
Aero Revenue	434 crs	645 crs
Aero efficient Costs	304 crs	306 crs
WACC	11.60%	11.60
Hypothetical Asset Base	1,119 Cr	2,928 Crs

200. It is observed that the solely the Hypothetical Asset Base is to be determined in line with the SSA provisions as there is no provision in this regard in the Act. As already indicated in para 61 above, the Authority proposes to take the following approach towards determination of tariffs for aeronautical services provided by DIAL – i.e., be guided by provisions of the SSA read with the provisions of OMDA and other agreements as far as these are consistent with provisions of the Act; and wherever possible, have recourse to principles of tariff determination contained in its Airport Order and Guidelines. As per the Schedule 6 of the OMDA, Cargo handling and Cargo Terminals are —Non Aeronautical services. Further, as per the Schedule 1 of the SSA (refer para 176 above), the book value of —Aeronautical Assets in the books of the JVC and —.... prevailing tariff and the revenues, operation and maintenance cost, corporate tax pertaining to Aeronautical Services at the Airport.....shall be considered for computation of hypothetical RAB.

201. In view of the above, the Authority is not persuaded to accept this latest proposal for revision of hypothetical RAB.

It is our humble submission that the Authority is adopting a contradictory stand in the treatment of Cargo and we request the Authority to adopt a consistent approach in respect of treatment of Cargo.

3. Opinion of Prof. Martin Cave

"...... HRAB calculation suggests an intention to ensure a fair and reasonable commercial valuation of the aeronautical assets at the time of concession. The certainty afforded by a relatively fixed formula, coupled with a calculation based on actual revenues and costs (a basis for determining commercial value) provides an objective basis for the determination of the HRAB by limiting the influence of arbitrary factors after the concession has been granted, and promoting consistent treatment."

Treatment of cargo revenue

- 1 AERA has taken the view that revenues from cargo handling ought not to be included in the calculation of aeronautical revenue for the purposes of the HRAB. AERA has reached this view based on the fact that DIAL is not directly providing cargo handling services directly in the current financial year. Cargo handling services are currently provided by Celebi Delhi Cargo Terminal Management India Pvt. Ltd by way of concession.
- 2 In my view, this approach is appropriate, but only if cargo revenue is consistently treated as non-aeronautical revenue throughout the tariff calculation. If, however, revenue from cargo handling is treated as part of the aeronautical asset base, then that decision must be reflected in a consistent treatment of cargo revenue in the HRAB.
- 3 This approach is also consistent with the fair value approach implied by the HRAB calculation. The HRAB ought to be defined consistently with the ongoing treatment of such revenues, as this reflects the actual commercial value of the relevant assets. Excluding from the HRAB the revenues (and costs) generated by services treated as aeronautical skews the valuation of the aeronautical assets away from a fair commercial valuation. This result ought to be avoided.

It is concerning to note, therefore, that despite its approach to the HRAB, AERA's approach in respect of determining aeronautical revenues for the current regulatory period is to treat cargo handling services as integral to the management of aeronautical assets (see draft Tariff Determination, paragraph 403 (vii)). AERA notes that it is usual practice to treat revenue arising from any aeronautical services as aeronautical revenue, presumably because It cannot be provided without the use of aeronautical

Further the draft Tariff Determination states that:

the revenue received by DIAL from the cargo services during the part period of 2009-10 (when DIAL themselves were providing the services) may be treated as aeronautical revenue; and

the revenue and costs relating to cargo screening, which is still carried out by DIAL, ought to be treated as aeronautical.

This reasoning potentially compromises the consistent treatment of assets that the HRAB ought to promote. While I understand that DIAL's preference is for cargo revenues to be treated as nonaeronautical revenues on a consistent basis, my principal concern is that a consistent approach be adopted.

Treatment of staff employment costs

The HRAB raises a question in respect of the treatment of staff employment costs. There is an argument that some costs associated with the "double up" of staff (the result of the terms of the concession agreement entered into with the Government) might be legitimately excluded from the calculation of aeronautical operation and maintenance costs in the HRAB. I understand that there was some considerable overlap of AAI staff and DIAL staff during the 2008/09 financial year due to the need to the requirements of the concession agreement to retain a significant proportion of existing staff (in the order of 60%) for an initial period following concession. However, AERA has rejected this argument and declined to exclude these additional staff costs from aeronautical operation and maintenance costs in the HRAB.

AERA's reasoning is that the HRAB refers to "prevailing" (meaning actual) costs rather than "efficient" costs. In AERA's view, therefore, it appears that the only grounds on which a reduction on operating costs might be justified is to apply an efficient operator standard, but such an approach is excluded by the definition of the HRAB.

In my view, such costs ought to be excluded. Again, it is useful to bear in mind the aim of achieving a fair commercial valuation of aeronautical assets through the HRAB. A fair valuation will only be achieved if the actual costs genulnely associated with the operation of aeronautical activities are included in the HRAB calculation. These costs must be understood as the commercial costs of operating those assets. The exogenous staff costs associated with the concession and are not an integral part of the operation of the aeronautical assets. They cannot realistically be considered a commercial cost associated with the operation of those assets. This is evident in the fact that such costs are a oneoff resulting from the timing of the concession award to DIAL, and is not a cost that will be incurred in future. These costs are therefore better understood as resulting from contractual arrangements that are conceptually separate from the commercial operation of aeronautical assets. Their inclusion can therefore be expected to artificially inflate the costs of operating aeronautical assets, and prevent a fair commercial valuation.

Accordingly, It is, in my view, mistaken to conceive of the exclusion of such costs as a question of efficiency. The incurring of such costs is not related at all to the extent to which commercial activities are undertaken in a cost-efficient manner. The relevant question is whether such costs may be properly considered costs of operating the aeronautical assets. Where the goal is to arrive at a fair commercial value, such costs must be excluded as they do not relate to the operation of the assets on an on-going commercial basis.

KPMG opinion

KPMG have also expressed their opinion on considering duplicate manpower cost while making valuation of HRAB. Extract of KPMG remarks are as under;

"Conclusion: Duplication of manpower is maximum in FY 2009 because it is the last full financial year in the OSP. Also, duplication of manpower cost is not a recurring cost. For the purpose of calculation of HRAB, only the sustainable manpower cost, i.e. the manpower cost related to AAI staff may be considered. Additionally, a consistent approach may be adopted for treating of cargo revenue."

F. Cute Counter Charges:

CUTE Counter charges are Non-Aeronautical in nature as they are akin to rentals. However if Authority is constrained to treat them as Aero, the relevant revenues for 2008-09 need to be included to compute HRAB. The revised calculation based on our filing, after considering the aforementioned issues, will stand at Rs. 1,142 Crores up as per the following calculation:

Cia.	vices in Dr. Crores
1 200	jures in Rs. Crores
Hypothetical RAB (considering CUTE Charges as Aer	THE RESERVE THE PERSON NAMED IN COLUMN 2 IS NOT THE PERSON NAMED I
Aero Revenue [A]	436
Landing Charges	244
Parking & Housing Charges	13
Passenger Service Fees	85
Baggage X-Ray Revenue	4
In-Line X-Ray Revenue	15
Cute Counter Charges	3
Fuel Throughput Revenue	72
Aero Expenses [B]	385
Less: Expenses Not Conisdered [C]	82
DIAL Manpower Cost	81
Runway 11/29 Operations & Maintenance cost	1
Eligible Expenses [D=B-C]	304
Aero EBIDTA [A-D]	133
WACC *	11.60%
Hypothetical Asset Base	1,142

II. DF Order dis-allowances and details of future capex

The following are additional issues related to RAB:

- The revised RAB mix needs to be applied after incorporating disallowances of DF order.
- 2. Future capex
- The revised RAB mix needs to be applied after incorporating disallowances of DF order.

DIAL, in its initial submission dated June 20th 2011, had submitted the allocation of assets duly certified by our statutory auditors M/s Brahamayya & Co. The allocation of the assets was carried out and based on the information available after considering the terminal area allocation exercise which was carried out M/s Jacobs Consultancy.

Authority had issued the DF Order dated November 14th 2011 in which Rs. 79.49 Crores [Rs. 96.99 Crores less Rs. 17.50 Crores allowed as operating expenditure] were disallowed from the project cost pertaining to Apron, R/w 10-28 and escalation for reinforcement. In addition to the above dis-allowance, a sum of Rs. 107.14 Crores was further dis-allowed by the Authority which on account of cost of Gross Floor Area (GFA) 8,652 Sq. Mtrs of retail area in Terminal 3 (Excluded Area).

Post this development, the position taken by the Authority excluding the capital cost of the Excluded Area as was analysed. Accordingly, we submitted the following for the consideration of the Authority;

- Firstly, since in the Authority had dis-allowed the capital cost of the Excluded Area, any revenue generating from the said Excluded Area would not be used for the purpose of cross-subsidy.
- Secondly, the asset allocation exercise as referred above was based on the terminal area allocation exercise carried out M/s Jacobs Consultancy, submitted as part of our initial submission, which did not envision any disallowance in terminal area.

In light of the above development, M/s Jacobs Consultancy also revised their area allocation report, duly considering the view of the Authority with respect to the Excluded Area. The impact was evident only in respect to Terminal 3 which has been depicted by comparison with the initial submission.

Terminal	Aeronautical Area %-Initial	Aeronautical Area %-Revised
Terminal 3	82.32	84,07
Terminal 1A	96.00	96.00
Terminal 1C	75.00	75.00
Terminal 1D	83.00	83.00
Terminal 1 (A,C & D)	84.00	84.00
Terminal 2	84.20	84.20
Overall Weighted Average	82.70	84.10

The Statutory Auditor thereafter issued the revised asset allocation certificate, after considering the revised area allocation report of M/s Jacobs Consultancy, which was submitted to the Authority.

The overall split of asset in percentage for Aeronautical and Non Aeronautical is depicted as under;

Scenario	Aeronautical	Non Aero
Initial submission	89.25%	10.75%
Post dis-allowance	90.69%	9.31%

AERA has dealt with the issue as under:

DF Disallowances - DIAL submitted a certificate from its Auditor on the revised allocation of assets into Aeronautical and Non-Aeronautical Assets considering the disallowances in the DF order. However, the disallowances in the DF Order is directly attributable to non-aeronautical services, in the Gross Floor Area of T3 does not impact the use of such dual-use or mixed-use assets. The other costs disallowed, i.e., Rs.23.82 crores (Apron Area) and Rs.37.50 crores (Rehabilitation of Runway 10-28) are directly attributable to aeronautical assets. Hence, it is felt that a disallowance in GFA of T3 may not necessarily result in a change in the allocation percentage towards aeronautical and non-aeronautical assets. It is proposed to go by the initial allocation of 89.25% for

AERA Observation: However, the disallowances in the DF Order is directly attributable to non-aeronautical services, in the Gross Floor Area of T3 does not Impact the use of such dual-use or mixed-use assets.

DIAL Response:

We humbly submit for the consideration of the Authority that the issue of change in asset mix has not been clearly understood. It is evident from the forgoing section that, the based on the position taken by the Authority, not considering the Excluded Area, has resulted in the change in the area allocation for Terminal 3 by 1.75%. The sequential impact on the mixed asset pertaining to

Terminal 3 would also undergo change and therefore change to the overall RAB. The Authority has not acknowledged the resultant impact on area allocation with respect of Excluded Area in Terminal 3 as pronounced by the Authority itself. We therefore again request the Authority to reconsider its proposed position, in light of the aforementioned facts and adopt the revised asset mix. The revised asset allocation certificates from our statutory auditor in this context have already been submitted to the Authority.

2. Opinion of Prof. Martin Cave

"The RAB should reflect the actual capital expenditure incurred by DIAL during the redevelopment of the airport. As such, AERA should not apply the same disallowances as adopted in the DF Determination, which relied on benchmarking and estimates from EIL, and should instead give weight to the actual cost figures provided by DIAL.

AERA should exempt the Excluded Area, from which DIAL is already prevented from recovering its proper economic costs, from the pool of revenue share assets considered for the purpose of setting the cross-subsidy from non-aeronautical revenues.

Should AERA apply the same disallowances as adopted in the DF Determination to the determination of the RAB, then it must update the division of aeronautical and non-aeronautical assets consistently and in a manner which reflects the final allocation of assets."

3. Future and Maintenance Capex details

DIAL had earlier submitted to the Authority details of Maintenance Capex of Rs. 64.79 Crores and Rs. 78.92 Crores for the years 2011-12 and 2012-13 respectively. However Authority has considered Rs. 48.86 Crores and Rs. 78.92 Crores for the respective said years.

The detail of Future Capex for FY 2011-12, FY 2012-13 and FY 2013-14 were not submitted to the Authority earlier as the Authority did not seek the same. We hereby further submit the details of Maintenance Capex for the FY 2013-14 and Future Capex for years FY 2011-12, FY 2012-13 and FY 2013-14 as Annexure M for the consideration of the Authority. The following table gives a summary:

		(figure in crores)		
Future and Maintenance Capex	2011-12	2012-13	2013-14	
Submitted by DIAL	93.08	180.83	200.26	
Considered by the Auhtority	48.86	78.92	-	
Difference	44.22	101.91	200.26	
Capex details submitted in Annexure	65.77	97.88	366.63	

Summary

- a. The cost of DIAL manpower for the purpose of computation of HRAB needs to be excluded on commercial and fair valuation principles. This has also been opined by Prof Martin Cave.
- b. Cost of DIAL manpower need to be also excluded from a legal point of view, as these costs were not pertaining to provision of Aeronautical Services. AMSS has clearly opined on this.
- c. While our request to the Authority is to treat Cargo as Non Aeronautical for the period it was being handled directly by DIAL. However in case the Authority is constrained to treat Cargo, during the period it was not concessioned out, it is requested that the Authority adopt a consistent approach for this treatment for the purpose of computation of HRAB. This has also been endorsed by Prof. Martin Cave.
- d. Cute Counter charges are, in our opinion, rentals and the same are Non Aeronautical. However if the Authority decides to treat them as Aeronautical then the same must be consistently followed include incorporating the same while determining the value of HRAB as well.
- e. The Authority is requested to consider the change in RAB due to allocation mix after considering the disallowance as per the DF Order. This will be a fair treatment and does not put DIAL in double jeopardy.
- f. The details of future capex as well as maintenance capex are submitted herewith and the same may please be considered as part of RAB for tariff determination

VIII. SERVICE QUALITY

- 1. AERA Act, 2008 and provisions of concession agreement
 - 1.1. OMDA prescribes fixed objective and subjective service quality standards, and also lays down the mechanism of penalty & fines in the event of a failure by DIAL to meet such service quality standards.
 - 1.2. Authority has evaluated the said position and concluded in paragraph 456 and 457 as follows:

456. The Authority is conscious that an argument which can be raised against the rebate mechanism could be that since OMDA itself provides for penalty mechanism in the event of default in respect of quality parameters, a separate rebate mechanism as part of tariff would tantamount to penalizing the default twice. However, it has been the stated position of the Authority that the penalties contemplated in the concession agreements / contractual arrangements are contractual requirements whereas fixation of tariff commensurate with the quality of service is a statutory requirement. Therefore, the system of reducing tariff in case of default in quality of service is a system which implements the mandate of the Section 13(1)(a) of the Act.

457. In view of the above, the Authority proposes to use the rebate mechanism as indicated in Order No.13/2010-11 dated 12.01.2011 and the Guidelines dated 28.02.2011 in the case of DIAL as well.

1.3. AERA Act, 2008 in its preamble sets out the scope and coverage of the AERA Act, as also the scope of the Authority's powers and functions there under. The preamble of the Act provides:

"An Act to provide for the establishment of an Airports Economic Regulatory Authority to regulate tariff and other charges for the aeronautical services rendered at airports and to monitor performance standards of airports and also to establish Appellate Tribunal to adjudicate disputes and dispose of appeals and for matter connected therewith or incidental thereto."

Further, in terms of Section 13(i) (d) of the AERA Act, the Authority has been vested with the function:

(d) to monitor the set performance standards relating to quality, continuity and reliability of service as may be specified by the Central Government or any authority authorised by it in this behalf;

From reading of the aforesaid provisions of the AERA Act, it is clear that the jurisdiction and functions of Authority is limited to monitoring the performance standards relating to quality, continuity and reliability of service as have been specified by the Central Government or any authority authorized by the Central

Government in this behalf, including under the Operations, Management and Development Agreement dated April 4, 2006. This position is also supported by the terms of the State Support Agreement between DIAL and the Government of India, which provides, in principle 7 in Schedule 1, that:

"...in undertaking its role AERA will monitor, pre-set performance in respect to service quality performance as defined in the Operations Management Development Agreement (OMDA) and revised from time to time."

- 1.4. Accordingly, on a combined reading of the terms of the AERA Act, the OMDA and the State Support Agreement, it is clear that the role and jurisdiction of the Authority is limited to monitoring compliance by DIAL of the service quality standards prescribed under the OMDA, and the prescription of any new services standards or going beyond monitoring methodologies prescribed in OMDA is not envisaged.
- 1.5. We note that while Section 13(1)(a)(ii) of the AERA Act permits the Authority to consider the services provided, its quality and other relevant factors in determining the tariff, there is no explicit power vested with the Authority to prescribe any penalties under the AERA Act in the event of a failure to meet service quality requirements. While the Authority has sought to term the mechanism of penalties for failure to meet services quality requirements as a 'rebate' on the tariff, the same is essentially in the nature of a penalty, since there is no correlation between the cost of services not provided and the rebate imposed and instead a pre-determined rebate is imposed in all cases.
- 1.6. We would further note that even in the event that Section 13(1)[a](ii) is interpreted as giving the Authority the power to impose penalties in the event of a failure by DIAL to meet service quality requirements, this consideration has to be balanced with the considerations in Section13(1)(a)(vi) and (vii). In this regard, it is pertinent to note that the Authority has in the Consultation Paper, and specifically in paragraph 61thereof already accepted the position that it is, in determining tariff to be guided by the terms of the State Support Agreement and the OMDA. Specifically, paragraph 61 of the said Consultation Paper provides as under:
 - 61. In view of the:
 - (i) provisions of Section 13 (1) (a) (vi) and (vii) of the Act; and
 - (ii) the fact that with respect to evolving its regulatory philosophy and approach for economic regulation of Airport Operators to give effect to its mandate under the Act, the Authority had undertaken extensive consultations with stakeholders, carefully perused all submissions, views and opinions expressed by stakeholders and had issued its Order No. 13/2010-11 dated 12th January 2011 in the matter;

the Authority proposes to adopt the following approach towards determination of tariffs for aeronautical services provided by DIAL:

(i) Be guided by provisions of the SSA read with the provisions of OMDA and other agreements as far as these are consistent with provisions of the Act; and

(ii) Wherever possible, have recourse to principles of tariff determination contained in Order No. 13/2010-11 dated 12th January 2011 and Guidelines embodied in Direction No. 5/2010-11 issued on 28th February 2011.

1.7. Further, in terms of the OMDA, and specifically Articles 9.1.1. and 9.1.2 thereof, there is already a set prescription for damages in case of a failure by DIAL to meet the service quality requirements as set forth therein. In this regard, Articles 9.1.1 and 9.1.2 of the OMDA provide as under:

9.1.1 (c) Default:

At any time after the expiry of two (2) Years after Effective Date, in the event that the Airport has not achieved ISO 9001:2000 certification, the JVC shall produce an action plan within 30 days that sets out how it will address the deficiencies and these initiatives shall be immediately implemented.

Should the JVC fail to produce such an action plan within 30 days or if the Airport (or any part thereof) continues not to achieve ISO 9001:2000 certification, for further 6 months from the date of submission of action plan or fails to maintain the certification at any time during the Term after having achieved certification, the JVC shall thereafter pay to the AAI 2.5% of the monthly Revenue (prior to default) for every month, that the Airport does not achieve or maintain ISO 9001:2000 certification, as the case may be, as liquidated damages provided however that the total llquidated damages payable hereunder shall not exceed 15% of the monthly Revenue (prior to default).

9.1.2 (c) Default

At any time after the JVC is obligated to achieve and maintain a particular Objective Service Ouality Requirement, in the event that the immediately succeeding quarterly report show that the Airport (or any part thereof) is rated below the respective Objective Service Quality Requirement, the JVC will achieve the particular Objective Service Quality Requirement within 30 days of the last submitted quarterly report.

Should the JVC fail to achieve the above, or if the Airport (or any part thereof) continues to perform below the targets mentioned in Schedule 3, the JVC shall pay to the AAI 0.5% of the monthly Revenue (prior to default) for every month, that the standards are below any of the Objective Service Quality Requirements, for each such performance area, as liquidated damages provided however that the total liquidated damages payable hereunder shall not exceed 1.5% of the monthly Revenue (prior to default).

1.8. In view of the Authority being required to take the terms of the State Support Agreement and the OMDA into consideration for determining tariff and in view of the OMDA read with the State Support Agreement already providing for a mechanism for penalties for failure to achieve service quality requirements, we note that for Authority to have taken into consideration the terms of the OMDA and the State Support Agreement, the Authority should not only take into consideration the service quality requirements, but also the penalties for failure to meet service quality requirements as set forth therein. Any penalties prescribed by the Authority for failure to meet the said service quality requirements would effectively tantamount to the Authority not taking into consideration the terms (including penalties) of the OMDA and therefore would not be consistent with the AERA Act.

2. Monitoring:

- 2.1. It is submitted that the methodology laid down by Authority is too complex and the intervals of the measurements are too stringent to be practically implemented.
- 2.2. The ultimate intent of the concession agreements is delivering superior passenger service by ensuring both Subjective Service Quality parameters (ACI-ASQ) & Objective Service Quality parameters (OSQ-OMDA Sch3)which is addressed by very well established and a comprehensive system to measure, monitor, control and report the performance against set standards for both ASQ & OSQ parameters. The methodology followed is detailed below:

3. Existing Monitoring practice (OSQ- OMDA);

- · 23 parameters are monitored
- Sample covered: 9500 sample/Quarter
- Monitoring Mechanism
 - Measurement is proportionately divided into lean & busiest hour of days (It covers all days of the week)
 - Daily monitoring for facilities related passenger touch points
 - Data is collected either through independent third party assessments or objective data sources
 - There exists an internal report & review mechanism at predefined intervals/appropriate levels
 - Performance score is calculated for every month& complied on quarterly basis for reporting to AAI as per the OMDA requirement.

This has resulted into continuous compliance/improvement respectively for OSQ and ASQ parameters.

The OMDA provides clear and objective mechanism of monitoring. The Authority has itself laid out the principle that it will "Be guided by provisions of the SSA read with the provisions of OMDA and other agreements as far as these are consistent with provisions of the Act". The adoption of monitoring mechanism enshrined in OMDA will be in line with this principle and will ensure the monitoring is done in a practical and feasible manner without costs and effort over and above that prescribed by the Concession documents.

Summary

In terms of Section 13(I) (d) of the AERA Act, the Authority has been vested with the role of monitoring the set performance standards relating to quality, continuity and reliability of service as may be specified by the Central Government or any authority authorised by it in this behalf. Further, Authority is also requested to consider the provision of the SSA, which clearly lays down that Authority, shall only monitor the standards as prescribed in OMDA and not impose any additional service quality standards and penalties which may be double jeopardy for DIAL. Thus the Authority is requested to continue with the methodology as prescribed under OMDA for compliance, monitoring and penalties for non-conformity.

IX. NON AERONAUTICAL REVENUES

We draw the attention of the Authority to various inconsistencies in approach adopted while considering the Non Aeronautical revenue forecast, specifically in relation to Scenario 3 as proposed by the Authority. These inconsistencies have been explained on the broad level in this section and are further supported by detailed facts (revenue head-wise) in Annexure N.

The Authority in the consultation paper has proposed three scenarios of nonaeronautical revenues which are as under:

Scenario 1 – As per the (Actuals upto 2010-11, base year for future projections 2010-11, further projections as per DIAL's forecast).

Scenario 2 – Actual revenues for the FY 2009-10 & FY 2010-11 and forecast for future years are done on FY 2010-11 as base and traffic growth as proposed by the Authority.

Scenario 3 – Taking the audited numbers of the base year 2008-09 and thereafter forecasted from FY 2009-10 to 2013-14. In this a comparison is done between the audited numbers of FY 2009-10 and FY 2010-11 with the forecasted numbers of FY 2009-10 and FY 2010-11 based on traffic growth as proposed by the Authority. In the proposed methodology, where ever the actual number are higher than the projected numbers, the higher numbers is considered for that financial year and thereafter, the same is taken as base number for the future revenue forecast.

Authority has proposed to consider the revenue projection as per Scenario 3. Our observations on the proposed approach are as under:

Forecasting for historical year when audited numbers available: The financials of the year FY 2009-10 and FY 2010-11 are already audited and the nonaeronautical revenues are part of these audited financials. To take hypothetical numbers for the historical years when the actual audited numbers are available is erroneous. It is akin to setting aside actual numbers and using hypothetical numbers for tariff determination which not only puts DIAL in a disadvantageous position as it cannot recover these hypothetical revenues. Given that the Authority has taken the actual audited costs of the year FY 2009-10 and FY 2010-11 for the purpose of tariff determination, it should also take the audited revenue for the historical audited years. If a higher revenue numbers are taken compared to the actual audited revenue it implies that 30% of the difference (which shall never be realised) is used to cross – subsidize aeronautical revenues;

when in reality that revenue will never accrue to DIAL. The following shows the extent of "Hypothetical" revenue that the Authority has used for higher cross subsidization:

Alfan Land Steel Selection	DI TEMPER	MANAGER	10000000	Libourne	(Fig. In R	Crores)	
		2009-10			2010-11		
Revenues	DIAL (Audited Figures)	AERA (Proposed Figures)	Variation	DIAL (Audited Figures)	AERA (Proposed Figures)	Variation	
Duty Free	120.03	120.03		81.08	133.92	52.84	
Advertisement	27.99	54.45	26.46	42.55	61.84	19.29	
Retail/Duty Paid	9.55	9.55		27.99	27.99		
Car Parking	26.07	26.37	0.30	10.09	29.95	19.86	
Forex			1141	29.94	29.94	-	
F&B and Lounge	31.19	31.19	less than the same	41.16	41.16		
Telecom	18.96	18.96		11.06	21.53	10.47	
Radio Taxi	3.06	3.36	0.30	7.04	7.04		
Other Commercial Income	4.72	12.15	7.43	7,13	13.79	6.66	
ASC	9		1			-	
Transit Hotel		+	(= 2) ((c = 1				
Flight Kitechen Royalty	13.00	14.43	1.43	28.87	28.87	-	
Land Space and Hangar	132.14	132.14	5	123.27	123.27		
Ground Handling	37.74	37.74	THE STATE OF	42.87	42.87	- 0	
Bridge Mount Equipment			C TO MA	1.60	1.60	Ec.	
Into Plane				0.80	0.80		
Total	424.45	460.37	35.92	455.45	564.57	109.12	

It is clearly evident that, in case of past historical years, additional revenue of almost Rs.150 Crores has been considered by Authority, which will never be recouped by DIAL.

- II. Variation in historical year revenues; Based on the Authority's request, we had submitted detailed reasoning of the variations in the individual revenues achieved in the past period. It was brought to the notice of the Authority that there have been changes on account of change in business models of certain individual revenue streams, change in the level of revenue shares from the previous contracted level considering the current market scenario, etc.
 - However the methodology proposed by the Authority ignores the business realities and dynamics, which were the basis of our submissions. Therefore, we again request the Authority to consider such submissions and be guided by the actual audited revenues of historical financial years and consider the changes in contracting terms and actual business dynamics which are very pertinent in a tariff determination exercise.
- III. Apparent inconsistencies; Considering the cross-subsidization (30%) of nonaeronautical revenue as proposed in scenario 3, the value so arrived does not

reconcile with the value considered as cross-subsidy in computing the target revenue as presented in the following table:

Non-Aeronautical Revenues	2009-10	2010-11	2011-12	2012-13	2013-14
Scenario 3	494.65	686.89	835.25	985.50	1145.65
Cross Subsidization (as per scenario 3)	148.39	206.07	250.58	295.65	343.70
Cross Subsidization (taken for calculation)	148	206	264	328	404

We understand that, as the numbers for the FY 2009-10 and FY 2010-11 are same in the both cases and the difference is only from the FY 2011-12 onwards, this might be due to escalating non-aeronautical of scenario 3 by inflation. There are revenue streams with long-term contracts where escalation on account of inflation is factored in the concession term. Therefore taking inflation again will be equivalent to escalating twice for same reason. The Authority is requested to please look into this aberration and rectify such errors.

- IV. Forecasting for future year: A forecast of numbers for future years should invariably consider the latest base numbers as they represent the current trends and will result in forecast numbers being closer to the actual realized numbers for future years. The Authority is requested to give credence to the fact that the Airport Infrastructure from FY 2008-09 to FY 2010-11 has undergone significant change. Therefore projecting revenues based on growth drivers without considering actual realities will not provide credible revenue forecast.
- V. Inconsistency in base year; Normally, while forecasting the base on which forecast are carried out is fixed. However in Scenario 3, against individual revenue streams there is continuous shifting of the base year. The base of FY 2008-09, as stated in the consultation paper, is not fixed. The same is illustrated for individual revenue streams as under:

			-	
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Revenue	2009-10	2010-11	2011-12	2012-13	2013-14
Duty Free	2009-10	2009-10	2009-10	2009-10	2009-10
Advertisement	2008-09	2008-09	2008-09	2008-09	2008-09
Retail/Duty Paid	2009-10	2010-11	2010-11	2010-11	2010-11
Car Parking	2008-09	2008-09	2008-09	2008-09	2008-09
Foreign Exchange	Selected 1	2010-11	2010-11	2010-11	2010-11
F&B and Lounge	2009-10	2010-11	2010-11	2010-11	2010-11
Telecom	2009-10	2009-10	2009-10	2009-10	2009-10
Radio Taxi	2008-09	2010-11	2010-11	2010-11	2010-11
Other Commercial Income	2008-09	2008-09	2008-09	2008-09	2008-09
ASC	14		2010-11	2010-11	2010-11
Transit Hotel			2010-11	2010-11	2010-11
Flight Kitechen Royalty	2008-09	2010-11	2010-11	2010-11	2010-11
Land Space and Hangar	2009-10	2010-11	2010-11	2010-11	2010-11
Ground Handling	2009-10	2010-11	2010-11	2010-11	2010-11
Bridge Mount Equipment		2010-11	2010-11	2010-11	2010-11
Into Plane		2010-11	2010-11	2010-11	2010-11

- VI. In some revenue streams (like land, space and hangar, airport service charges etc.) revenue are escalated additionally by traffic growth apart from contracted escalation. Linking growth in these revenues by traffic forecast is not correct, as these revenues are not linked with the traffic growth.
- VII. Based on the scenario 3 proposed by the Authority, there is a variation of 40% (amounting to Rs. 1,103 Crores) in Non-Aeronautical revenues, except Cargo, for the entire control period. Such high variations are almost impossible to achieve.

(fig. in Rs. Crores)

Non - Aero Revenues	Scenario 1 of CP	Scenario 3 (with CPI) proposed by Authority	Absolute Variation	% Variance
Duty Free	607.18	885.30	278.12	46%
Advertisement	234.83	436.11	201.28	86%
Retail/Duty Paid	175.44	182.27	6.83	4%
Car Parking	59.37	211.21	151,84	256%
Foreign Exchange	194.26	171.09	-23.17	-12%
F&B and Lounge	257.76	285.19	27.43	11%
Telecom	73.92	151.85	77.93	105%
Radio Taxi	35.16	46.80	11,64	33%
Other Commercial Income	33.24	81.57	48.33	145%
ASC	37.09	43.53	6.44	17%
Transit Hotel	5.84	7.80	1.96	34%
Flight Kitchen Royalty	145.44	159.73	14.29	10%
Land Space and Hangar	687.87	927.81	239.94	35%
Ground Handling	213.38	283.92	70.54	33%
Bridge Mount Equipment	19.46	8.69	-10.77	-55%
Into Plane	4,68	4.73	0.05	1%
Total	2,784.92	3,887.60	1,102.68	40%

There is a huge variation of 40% in the non-aeronautical revenue as can be seen from the above table. More than 75% of the variation of Rs. 1102 Crores is arising out of the Authority's aggressive forecast in respect of Duty Free, Land Space and Hanger, Advertisement and Car Parking.

 High 'year-on-year' growth proposed by the Authority on three accounts (increase in revenue due to traffic growth, increase in revenue due to increased penetration and increase by CPI i.e. considered @ 7%) is difficult to sustain. Existing revenue of FY 2010-11 is targeted to more than double in span of three years i.e. by FY 2013-14. Growth of this magnitude is highly aggressive and impractical and needs to be moderated.

VIII. Treatment of Cargo handling revenues:

- In line with recent trends, Cargo tonnage has seen sharp declines, which
 has also impacted revenues. This Authority is requested to moderate the
 Cargo tonnage growth.
- Authority has also not considered the fact that there are different revenue shares for different operators. Going forward, the cargo thruput will be shared by both operators and because of lower revenue share of the green field operator, the concession revenues to DIAL will reduce even if the revenue of the respective cargo operator are increasing.
 Authority has not appropriately considered this fact.
- Further, there is significant high variation of 34% in the revenue forecast for future year as compared to Scenario 1 of the Consultation Paper.
 Following table depicts the variance:

(fig. in Rs. Crores)

Cargo Revenue	Scenario 1 of CP	Scenario 3 (with CPI) proposed by	% Variation
2011-12	130.37	154.67	19%
2012-13	128.47	172.87	35%
2013-14	130.83	193.48	48%
Total	389,67	521.02	34%

^{*} This includes cargo sceeening revenue of Rs. 18.13 crores, Rs. 20.30 crores andRs. 22.72 crores for year 2011-12, 2012-13 and 2013-14 respectively which is considered as aeronoutical revenue by the Authority

- iX. Treatment of CUTE Counter revenue: Cute Counter charges are akin to rentals and should be treated as Non Aeronautical for the purpose of computing cross subsidy.
- X. Change in business environment not considered:
 - Advertisement: In case of Advertisement, revenue share has undergone significant change from earlier 70% to currently 55%. This is based on competitive bidding process and should be given due credence.

• Multi-Level Car Park (MLCP); In our initial filing dated 20.06.2011, we had appraised the Authority regarding change in the concession model in case of Car Park. The Authority while determining revenue forecast has not considered the same. We again reiterate that before Terminal 3 commissioning, both the terminals were served by surface car parks. The management of the car park was outsourced and the same was on revenue share model. However, post commissioning of Terminal 3, a new MLCP was constructed by the concessionaire. The MLCP involved heavy capex and considering the same the revenue share was accordingly lower.

Of late with more and more passengers and airport/airlines staff using Airport metro, the negative impact on the revenues of car parking is clearly visible. Therefore, Authority is requested to consider the ground realities and business consideration before finalizing the revenue forecasts.

- XI. Fuel Thruput Charges: The Authority has forecasted the revenue from fuel thruput charges after indexing the same with CPI Inflation. We would like to bring to the notice of the Authority that the revenue forecast submitted by us was in nominal terms i.e. after factoring in the inflation allowed as per the contract. Additionally, the methodology of forecast of fuel thruput is not clear even if we apply proposed ATM growth of the Authority. It appears that Authority has applied some additional variable over and above the forecasted ATM growth and inflation for arriving at the revenue forecast of Fuel Thruput. This aspect needs further clarification and correction, If any.
- XII. Revenue from 8,652 Sq. Mtrs of retail area disallowed as per DF Order: As submitted earlier vide our letter ref: DIAL/2011-12/Fin-Acc/1583 dated November 15th 2011, the revenue from the commercial area of 8,652 Sq. mts. disallowed in CIP/office area should not be used for the purpose of computing cross subsidization. A certificate from statutory auditors to this effect for revenue accruing from these areas as well as the calculation of projected revenues based on the above have already been submitted to the Authority. The above revenue should not be used for the purpose of cross subsidization as this puts DIAL in double jeopardy.

XIII. Expert opinion of Prof. Martin Cave

"The Draft Determination proposes a different approach to forecasting non-aeronautical revenue. It treats the 2008-09 figures as a baseline for forecasting FY 2009-10 to 2013-14, as adjusted by historical growth rates and an increase to reflect higher penetration.

As with traffic forecasts, AERA has considered a range of approaches to forecast non-aeronautical revenues and is proposing to select the approach which is significantly different. The graph at paragraph 375 of the draft Tariff Determination Illustrates this disparity: by 2013-14, AERA's forecast is Rs 314 and Rs 242 crores more than the other two scenarios considered.

The size of this variance should, at a minimum, raise questions over two aspects of AERA's proposed approach to forecasting of non-aeronautical revenue:

- the use of a 2008-09 base, as discussed below; and
- the use of its proposed traffic forecasts as an escalation factor over time.

The draft Tariff Determination's justification for its proposed decision to select the highest of the three approaches is that airports should strive to generate higher non-aeronautical revenue, and its proposed approach is the highest of all forecasts. However, this neglects the important reality that while airports do strive for higher revenues, forecasts should reflect the most likely actual outcome: not merely an overly-optimistic target. The draft Tariff Determination has simply presumed that the highest of the possible forecasts is the correct one.

Actual figures should be used where possible

The draft Tariff Determination proposes to "forecast" non-aeronautical revenue for 2009-10 and 2010-11. However, actual figures are readily available for these years. The use of forecasting when actual results are available would seem somewhat counter-intuitive, and this proposed approach is not justified in the draft Tariff Determination.

This leads to the unorthodox outcome of AERA retrospectively "forecasting" non-aeronautical revenues of Rs 495 crores for 2009-10 when the actual figure was Rs 605 crores. There is an equally implausible variation between the forecast and actual figures for 2010-11, which sees 2010-11 figures being "forecast" as Rs 687 crores when the actual figure was Rs 599 crores. Effectively, even though non-aeronautical revenue actually decreased slightly between 2009-10 and 2010-11, the proposed forecasts include a massive 38.8% increase over the same period.

As a result, the forecasts for 2011-12 to 2013-14 are subject to excessive inflation, as they build on from the overstated 2010-11 "forecasts".

These excesses will be further exacerbated by the application of the CPI from the start date (2008-09). Given that the CPI is approximately 7%, this will have a material Impact on the 2009-10 and 2010-11 "forecasts". The likely result is that the variance between these "forecasts" and the actual figures will become even greater.

Another disadvantage of AERA's proposed approach is that it does not recognise significant changes that occurred in the 2009-10 and 2010-11 years. As one example, car parking revenues in 2010-11 dropped significantly as a result of the concessionaire incurring the entire capex for a multi-level car park: car parking revenues dropped from Rs 26.1 crores in 2009-10 to Rs 10.1 Crores in 2010-11. However, the proposed "forecast" for car parking in 2010-11 increases up to Rs 28.95 crores. This is plainly contrary to actual events.

Vide DIAL's 20 June 2011 submission, I understand non-aeronautical revenue from T3 is expected to stabilise after the 2011-12 period, and the revenue forecasts should reflect this.

Recommendations

In light of the above issues with the proposed Scenario 3 – particularly the use of retrospective forecasting for years 2009-10 and 2010-11 and the use of passenger growth forecasts based on historical trends – I recommend that AERA adopt Scenario I for the purpose of tariff determination. This should be read in conjunction with my recommendations in relation to traffic forecasting.

Alternatively, should AERA decide to use passenger growth trends based on historical trends, I recommend that AERA adopt Scenario 2 for the purpose of tariff determination. While I continue to harbour strong concerns at the use of historical trends to forecast passenger growth, Scenario 2 at least has the advantage of using actual figures where these are available (i.e., for 2009-10 and 2010-11). It therefore represents a more accurate base for subsequent forecasts."

Summary

- a. In our tariff proposal, we had provided reasonable forecast revenue based on a credible methodology. The forecasts were computed based on the latest trends clocked in FY 2010-11 in which the New Terminal 3 was commissioned with all other terminals operating as against FY 2008-09 proposed as base year by Authority in which Terminal 3 was not commissioned. The methodology considered the sales generated of respective revenue streams during the period (Dec, 2010 to March, 2011) which was grossed up by passenger thruput during the corresponding period so as to remove any anomaly of seasonality to arrive at annualized sales values. Thereafter these values were enhanced by 5% p.a. considering growth in penetration. Finally, on the application of weighted average revenue share of the respective revenue streams, revenues were forecasted from FY 2011-12 onwards.
- b. The methodology proposed by the Authority has number of deficiencies and limitations as discussed aforesaid section. These include ignoring business realities, hypothetical non-aeronautical revenue numbers higher than achieved actuals, overly aggressive growth targets, forecasting contractual based revenues like land and space on basis of traffic, shifting base, etc

- c. We request the Authority to kindly reconsider their approach and consider our submission in respect to projecting Non Aeronautical revenues which have been generated based on duly supported auditor certificate for sales data and respective revenue shares.
- d. We would like to submit that the target of 40% set by the Authority in respect of Non-Aeronautical revenues other than cargo and 34% in case of cargo revenue forecasted for future years is overly aggressively. The growth of Non-Aeronautical revenues is reaching a saturation level and such aggressive targets are unlikely to be achieved. Imposing such huge and unrealistic targets puts DIAL in a disadvantageous position in the tariff determination exercise.

X. DISCOUNT AND COLLECTON CHARGES

The non-discriminatory discount for timely payment on landing charges was part of the Base Airport Charges as given in Schedule B of State Support Agreement. Based on the same principles, we had proposed a non-discriminatory discount for the healthy growth and acknowledging existing industry practice. It is requested that the Authority should allow this discount:

- 1. For honoring the concession agreement.
- 2. To ensure healthy growth of Industry and thereby safeguarding viability.

We acknowledge Authority's acceptance of allowing collection charges on PSF/UDF. On the similar lines, Authority is requested to approve the collection charges on DF as the same was mandated under the Order of MoCA and has been accordingly incurred by DIAL.

We request the Authority to approve an upfront increase (one-time) followed by CPI Inflation thereafter w.e.f April 1^{π} 2012. The equated increase [equal annual increase] as proposed by the Authority will lead to shortfall in the FY 2012-13 and significantly impact debt servicing and liquidity and viability of DIAL. Further it will lead to a huge increase in Aeronautical Charges in last year (FY 2013-14) of the control period. The rate card in the last year of the control period (FY 2013-14), based on the equated annual increase as proposed by the Authority, would works out to approx. six times the Aeronautical charges at the current level. As such the smoothening as proposed by Authority Is in fact imposing price shock on the users towards the end of the Control

The Consultation Paper lays down the following as regards to rate card:

438. Thus, SSA contemplates that DIAL would be free to impose charges within the overall price cap subject to conditions stated therein. In view of this, for the present, the rate card proposed by DIAL is placed for stakeholder consultation with the caveat that the charges proposed would be, in-principle, reduced proportionately In line with the final decision of the Authority in respect of price cap and disposal of objections, if any, that may be received from stakeholders on the grounds mentioned in the said Principle 10 of the SSA.

In respect of the above observation of the Authority, we have already appraised the Authority that the proportioning of the rate card:

- 1) Can be done only in case of upfront increase (one-time);
- 2) The proportioning is not going to be the same as the ratio been the X factor submitted and the X factor proposed because of the various reasons.

The copy of our letter is given as Annexure O. Therefore it is submitted that while the principle of proportioning of Rate Card is appropriate, it may be applied in such a manner to ensure achieving the target revenue (based on final approved 'X' factor) as an end result.

Summary

It is earnestly requested to Authority to approve an upfront one time increase which will be in the interests of preserving the debt servicing ability, liquidity and viability of DIAL and also will not impose an accentuated price shock in second year. It is also submitted that appropriate care needs to be taken in proportioning of the rate card to ensure target revenue.

XII. CPI-X

We wish to state that the position taken by Authority that the CPI adjustment is part of the X factor is incorrect and the correct position under the State Support Agreement is that the CPI minus X adjustment is to be made to the 'AC'. Authority's approach of calculating X factor including the effect of CPI is contrary to the provisions of SSA and is flawed due to the following facts;

- Based on the approach suggested by the Authority, the value of X factor has been determined by equating the present value (PV) of the target and the actual/project revenues. CPI value is thereafter extracted from the value of X. In the present case, Authority has arrived at 341.63% as the equating factor for matching the PV of target and actual projected revenue. Out of the above equating factor, Authority has subsumed CPI value of 7% and residual value of 334.63% as the value of X. If this approach was preferred approach, there appears no reason why CPI based indexing is stated in the SSA in the first place. Therefore, it would be not be logical to claim CPI as part of equalising factor.
- Secondly, the Authority while aggregating the target revenue from 5 building blocks has considered indexing only 2 blocks with inflation viz. Operation and Maintenance Costs and Non-Aeronautical revenues. The Authority has not indexed the remaining 3 building block i.e. (Return on RAB, Depreciation and Taxes]. Therefore, effectively with the proposed approach of the Authority, the value X factor is getting eroded due to partial buildup of CPI in two building blocks which is then fully stripped in overall revenue while de-indexing.
- Thirdly, it is also difficult to understand how the Authority has interpreted that CPI has been mandated to be allowed only on Operation and Maintenance Costs and Non-Aeronautical revenues and not any other building blocks in the SSA.

Opinion from Prof. Martin Cave

"DIAL has proposed that a CPI adjustment to the overall tariff (that is, a CPI adjustment is applied after the tariff has been calculated) to reflect the effects of inflation on the overall tariff. This is an orthodox approach that would be expected to be applied. Price controls based on the CPI-X formula are designed to replicate the discipline provided by market forces, by accommodating general inflationary trends (via the indexation of prices to the CPI) and then taking account of potential productivity growth above that prevailing in the economy as a whole, via the firm-specific 'X'. These dual objectives are most simply and transparently best reflected by adjustments to tariffs.

It is therefore surprising that AERA has rejected DIAL's proposal and appears to have built inflation adjustments into specific components of the building blocks formula.[1] Such an approach misunderstands the purpose of the CPI-X adjustment. It focuses myopically on aspects of the costs and revenues of the regulated business, where the focus should be on the overall potential for profits. This wider approach provides the necessary incentives for regulated firms to seek productivity gains, and both costs and revenues ought to be understood on this wider basis. I understand that this approach is also inconsistent with DIAL's interpretation of the concession agreement.

Recommendation

I recommend that AERA accept DIAL's proposed tariff-wide inflation adjustment as more consistent with the CPI-X approach to price control that has been adopted. "

Summary

CPI is tariff add-on to cover inflation and in this methodology the efficient way is to determine X factor without considering inflationary increases and only considering real increases in costs which provides an unadulterated X factor bereft of inflation. Thereafter the CPI inflation coverage on actual year on year basis is provided which ensures transparency and ease of computation. It is request that the Authority should first arrive at AC₁ as defined SSA without inflation and thereafter give the CPI inflation separately.

^[1] Specifically, operating costs and sharing of non-aeronautical revenue.

XIII. OPERATING EXPENSES

Authority should consider the effect of change to the cost allocation mix based on disallowance of the DF Order. The rationale of change in the allocation percentage has been explained in earlier section on page 61 and page 62.

Cost Heads	Allocation % Submitted by DIAL	Revised Allocation % Submitted by DIAL
Staff Cost	89.79%	91.44%
Administrative & General Expenses	70.28%	71.11%
Electricity & Water Charges	100.00%	100.00%
Operating Expenses	91.89%	93.31%
Airport Operator Fee	87.54%	88.78%
Property Tax	87.54%	90.69%

We accept the Authority's proposal of treating VRS payments as operating cost in lieu of amortization as proposed by DIAL. Further, we shall also like to clarify that VRS monetization referred by the Authority over the concession period is for period of 60 years (and not 30 as mentioned in Consultation Paper)

We request the Authority that the manpower cost of Inline Baggage screeners should either be allowed as an operating cost in the tariff determination or a clear direction be given in this regard so as to allow the same operating cost while determining the PSF-Security charge.

XIV. VIABLITY ISSUE

Based on our earlier submission to the Authority, we request the Authority to ensure and maintain IGI Airport's viability as has been enunciated in the AERA Act. We submit our cash flow position for the Authority perusal and humbly state that at the even with the proposed increase by the Authority, DIAL Airport would still be in cash deficit.

1. Cash Flows with assumption per the Consultation Paper (Tariff/Traffic/Opex/Revenues)-Upfront Increase (334.63%)

Cash How Statement		Figures in	Rs. Crores
	Quin 1	Quin 1	Quin 1
Financial Year Ending	2012	2013	2014
Profit After Tax	(1,039)	224	490
Add:			
Depreciation & Amortization	420	411	410
Change in Working Capital	(970)	(334)	(105,
Deferred Tax Liability/(Asset)	1	-	11.00
Increase /(Decrease) in Working Capital Loan	C. Takenskii Santa Standar	-	
Cash from operational activities	(1,588)	300	795
Increase /(Decrease) in Rupee Term Loan	146	79	(183)
Increase /(Decrease) In ECB	The second of the second	(39)	(137)
Short Term Loan Repayment	(600)	2	
Short Term Loan Drawdown	800	(896)	
Bridge Loan against OF	1,223	8	8
Cash from financing activities	1,569	(849)	(312)
Decrease / (Increase) in Maintenance & Future Capex	(49)	(79)	Time to a wife
Decrease / (Increase) in Fixed Assets	(570)	10-01-	5/17/2
Increase/(Decrease) in CWIP	196	-	- 10
Increase /(Decrease) in Lease Deposits	82		
Cash from investing activities	(342)	(79)	
Current Period Cashilows	(361)	(627)	483
Opening Balance	406	45	(582)
Cash Surplus/deficit during the year	(361)	(627)	483
Cash & Bank Balances	45	(582)	(99)
Free Cash Flow	(1,637)	222	795
EBIDTA	(1.7)	1,280	1,598
Less: Tax	(17)	56	1,398
Amount available from Debt service	(17)	1,224	1.476
Amount available from Debt Service	(17)	1,224	1,470
Debt Service			
-Interest Payment	602	685	575
-Principle Repayment	-	839	320
	602	1,524	895
DSCR Ratio	(0.03)	0.80	1.65

It is evident from the above statement that DIAL would face serious hardships in meeting its covenants under the financing agreement, which require a minimum DSCR of 1.20 to be maintained.

II. Cash Flows with assumption as per the Consultation Paper (Tariff/Traffic/Opex/Revenues)-Equated Annual Increase (148% YoY)

Cash How Statement		Figures in	Rs. Crores
	Quin 1	Quin 1	Quin 1
Financial Year Ending	2012	2013	2014
Profit After Tax	(1,039)	(377)	1,074
Add:			
Depreciation & Amortization	420	411	410
Change in Working Capital	(970)	(167)	(459)
Cash from operational activities	(1,588)	(134)	1,026
Increase /(Decrease) in Rupee Term Loan	146	79	(183)
Increase /(Decrease) in ECB		(39)	(137,
Short Term Loan Repayment	(600)	-	-
Short Term Loan Drawdown	800	(896)	
Bridge Loan against DF	1,223	8	8
Cash from financing activities	1,569	(849)	(312)
Decrease / (Increase) in Maintenance & Future Capex	(49)	(79)	
Decrease / (Increase) in Fixed Assets	(570)	-	-
Increase/(Decrease) in CWIP	196	-	-
Increase /(Decrease) In Lease Deposits	82	13000	
Cash from investing activities	(342)	(79)	Parinters.
Current Period Cashflows	(361)	(1,062)	713
Opening Balance	406	45	(1,017)
Cash Surplus/deficit during the year	(361)	(1,062)	713
Cash & Bank Balances (Incl. Liquid Investments)	45	(1,017)	(304)
EBIDTA	(17)	622	2,328
Less: Tax			269
Amount available from Debt service	(17)	622	2,060
Debt Service			
-Interest Payment	602	685	575
-Principle Repayment	302	839	320
The state of the s	602	1,524	895
DSCR Ratio	(0.03)	0.41	2.30

It is evident from the above statement that under the Equated annual increase scenario (which has been proposed by the Authority), DIAL would not be able to even manage to run its day-to-day operations. The debt servicing ability of DIAL, during 2012-13 is seriously impaired wherein the DSCR drops to 0.41 against the covenant under the financing agreement, which require a minimum DSCR of 1.20 to be maintained.

III. Cash Flow with Assumption as per DIAL filing with aero charges being increased @ 334%

Cash How Statement		Figures in	Rs. Crores	
	Quin 1	Quin 1	Quin 1	
Financial Year Ending	2012	2013	2014	
Profit After Tax	(1,114)	(87)	(2)	
Add:	La Seral II (c)			
Depreciation & Amortization	426	416	439	
Change in Working Capital	(1,164)	(269)	(50)	
Cash from operational activities	(1,852)	61	388	
Increase /(Decrease) in Rupee Term Loan	190	181	18	
Increase /(Decrease) in ECB	14	(39)	(138)	
Short Term Loan Drawdown	(600)		L	
	800	(896)		
Bridge Loan against DF	1,223	8	8	
Cash from financing activities	1,613	(747)	(112)	
Decrease / (Increase) in Maintenance & Future Capex	(93)	(181)	(200)	
Decrease / (Increase) in Fixed Assets	(570)			
Increase/(Decrease) in CWIP	196			
Increase /(Decrease) in Lease Deposits	82	4.18		
Cash from investing activities	(385)	(181)	(200)	
Current Period Cashflows	(624)	(867)	75	
Opening Balance	406	(218)	(1,085)	
Cash Surplus/deficit during the year	(624)	(867)	75	
Cash & Bank Balances (Including liquid investments)	(218)	(1,085)	(1,010)	

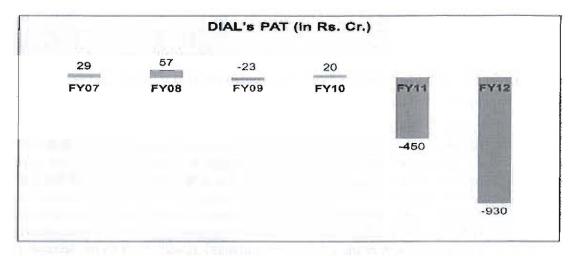
Based on the realistic assumptions submitted by us, the liquidity and viability of DIAL continues to be impaired at the proposed increase of 334% on one time basis. This requires that the Authority may please re-consider their assumptions and work out a higher reasonable increase based on our submitted assumptions and points raised in this response.

Lenders concerns-Lenders have also raised their concern against the proposed IV. equated annual increase. A letter in this respect received from M/s Canara Bank (lead consortium Rupee lender) is given as Annexure P for the perusal of the Authority. Canara Bank states:

> "Based on step up increase by in tariff proposed by AERA with effect from 1st April 2012, its impact on business plan will be as under.

> Delhi International Airport Pvt Ltd (DIAL) will not have adequate profits to meet the financial covenants and debt servicing requirements as per the financing documents*

Erosion of DIAL shareholders Net-worth-It is clearly evident from the chart depicted below that DIAL has incurred losses due to pending revision of aeronautical revenues which are not in line with costs. The losses over the last financial year and also the expected losses in current financial year will eroded the net worth of DIAL by over 50%:



Therefore, in light of the aforementioned facts, we request the Authority to consider the upfront increase to ensure the viability of DIAL.

XV. 10% INCREASE IN BASE AIRPORT CHARGES

As part of the said Consultation Paper, the position adopted by the Authority is set out at paragraph 433 of the Consultation Paper, as under:

This issue has been discussed in detail in the para 30 to 38 above. There is nothing on record, presently, to change the views earlier taken by the Authority. Further, as brought out in the section relating to sensitivity analysis, the draft determination is resulting in X factor of (-) 280.36%, which would result in a one-time increase of 287.36% (on account of CPI-X) in the airport charges on 1st February 2011, over and above the 10% increase (which DIAL received on 16th February 2009) in Base Airport Charges. Alternatively, considering an equated increase for each of the years in the regulatory period, the X factor becomes (-)71.95% which would result in increase of 78.95% (on account of CPI-X) in the airport charges on 1st February 2011, over and above the 10% increase (which DIAL received on 16th February 2009) in Base Airport Charges. In view of the proposed increase in tariff, the Authority further feels that the issue of allowing a 10% year-on-year increase in Base Airport Charges, as claimed by DIAL, has become an issue of academic interest only.

The issue pertaining to 10% increase in Basic Airport Charges was the subject matter of challenge before the Appellate Authority - Airport Economic Regulatory Authority Appellate Tribunal. The Appellate Authority, by its Order dated May 11th 2011 remanded the matter back to the Authority for a fresh consideration, to pass a reasoned order.

The relevant parts of the Order are extracted below:

"On perusal of the impugned order, we find that the Regulatory Authority has taken note of various stands of the parties and has in paragraph 9 summarized its opinion. There is no independent discussion on the various stands of the parties. In a case of this nature, it was imperative for the Regulatory Authority to indicate reasons in short of its conclusions.

Mere mention that it has considered the rival stands is not sufficient.

Therefore, without expressing any opinion on the merits of the case we set aside the impugned order and remit the matter to the Regulatory Authority to pass a reasoned order after grant of opportunity to the parties for hearing and to place further materials, if any."

The Authority also made an application I.A. No. 11 / 2011, praying that

"Direct/Permit the Applicant-Respondent to not restrict itself to the issue of 10% but proceed to undertake the entire tariff determination within a period of 16 weeks."

This prayer was not accepted by the Appellate Authority in its Order dated 19.10.2011, which only extended time.

On the issue of 10% increase (in BAC), the Consultation Paper (at para 433; 158), states as under:

There is nothing on record presently to change views earlier taken by the Authority."

In this aspect, we wish to state that the aforesaid matter is sub-judice and pending decision before the Hon'ble AERAAT. Notwithstanding, we reiterate our earlier stated position that the Aeronautical charges shall be set by the Authority after giving due adjustment of 10% increase in the Base Airport Charges as contemplated in the Schedule 6 of the SSA. Even though this provision does not have any bearing in the current tariff determination but the same will be relevant for future tariff determinations.

XVI. TRUE UP

We understand that the Authority proposes to only consider the following items for true up:

1. Within Control Period

- a. Actual CPI as against CPI used for tariff determination
- b. Variation in actual traffic compared to lower band or upper band forecasted (as the case may be)
- c. Mandated costs incurred due to directions issued by regulatory agencies like DGCA;
- d. Change in per unit rate of costs related to electricity and water charges as issued by the respective regulatory agencies;
- e. Statutory operating costs related to fees, levies, taxes and other such charges by Central or State Government or local bodies

2. Between Control Periods

- a. Impact of change in rate of tax on corporate income as computed in the forecast
- b. Difference between realized return on Regulatory Base adjusted at the end of the Control Period for (i) actual capital expenditure as reviewed by the Authority; and (ii) actual disposal values as reviewed by the Authority and forecast return on Regulatory Asset Base forecast at the beginning of the Control Period.

We also note the proposal of the Authority to true up the items of within Control Period only in next Control Period considering the fact that there are only two years remaining in the current Control Period. Further, we request the Authority to elaborate the truing up mechanism in its final order.

XVII. CONCLUSION

In the light of the above, it is submitted that the tariffs should be fixed in accordance with submissions set out above and the evidence (expert opinion) submitted by DIAL.

XVIII. LIMITED RESPONSE

The present reply of DIAL is limited to issues which have a possible bearing on the determination of tariff of DIAL. Some of the general issues raised in the Consultation Paper are not being addressed at present as they are not likely to affect tariff determination of DIAL in view of the principles applicable to it under the concession agreements.

The response being filed by DIAL should be considered in relation to the specific Issues identified by DIAL in this response. DIAL craves leave to file further response to the Consultation Paper if so deemed necessary, to assist the Authority on the various issues including those that have not been presently addressed by DIAL.

XIX. LIST OF ANNEXURES

No.	Description of Annexure	
Α	Case study of legal pronouncements and judgement by Indian	Courts on
	adherence to the Concession Agreement	
В	Expert opinion from Prof. Martin Cave	
C	Expert opinion from Dr. Harry Bush on cost of equity	
D	Expert opinion from Prof Jayanth R Varma on cost of equity	
Ε	Leigh Fisher analysis of cost of equity.	
F	Leigh Fisher comments on traffic forecast	
G	KPMG analysis of Return on RSD and Hypothetical Asset Base.	
Н	CARE report on treatment of RSD.	
	Opinion of M/s Amarchand Mangaldas on;	
F	a. Service Quality	
	b. Valuation of Hypothetical Asset Base	
J	UBS and BNP Paribas reports of the market valuation of equity of	DIAL.
K	Traffic report of A CI	
L	Traffic report of Mott McDonalds (Relevant extract)	3
M	Detail of maintenance and future capex	
N	Detailed Non Aeronautical revenue stream-wise write-up.	
0	Letter to Authority regarding proportioning of the Rate Card.	
P	Letter from Canara Bank	



ANNEXURE A

(Judicial Pronouncements & Instances)

Judicial Pronouncements & Instances

I. Freedom to contract must be respected

The freedom to contract is part of the public policy of India and is guaranteed under Article 19(1)(g). This right cannot be curtailed or restricted in any manner. The Supreme Court in Gherulal Parakh vs. Mahadeodas AIR 1959 SC 781 has accorded great weight to the integrity and sanctity of the contract and held that:

"the primary duty of a Court of Law is to enforce a promise which the parties have made and to uphold the sanctity of contracts which form the basis of society..."

ITC Limited v. State of Uttar Pradesh (2011) 7 SCC 493:

"...absolutely necessary to protect the sanctity of contracts and transfers....an effort should always be made to save the concluded transactions/transfers..."

2. The integrity and sanctity of contracts [i.e., the SSA and the OMDA] have to be upheld. A regulator should take steps which protect the sanctity of contracts. This has been given utmost importance by the Courts, which have held that:

MTNL vs. TRAI reported in AIR 2000 Del 208:

"The Authority may lay down guidelines regarding those arrangements, provided the guidelines are not contrary to the terms of a license or a policy taken by the Government.... The Authority has also provided that its Regulation will prevail over 'all licenses. Thus, in fact the Authority has varied the terms and conditions of license. The Authority has overridden provisions in a contract between the parties and affected the rights created by the license. The

authority has, in purported exercise of power under Section II(I)(d), converted a recommendatory functions into directory power. It is for the Government to decide what are to be the terms and conditions of a license to a service provider. The Authority cannot either directly or indirectly vary the terms and conditions, which are laid down by the Government in a license to a service provider. What it cannot do directly, it cannot do indirectly."

Sweet & Maxwell Ltd. v Universal News Services Ltd., [1964] 2 Q.B. 699

"The overriding public policy to be applied by the courts is the preservation of the sanctity of contracts..."

On Demand Information Pic and Another v Michael Gerson (Finance) Pic and Another, [2003] 1 A.C. 368

"As a matter of general contract law the court must respect the sanctity of contracts."

Niranjan Shankar Golikari v. Century Spg. And Mfg. Co. Ltd., (1967) 2 SCR 378:

"In such a case the general principle of freedom of trade must be applied with due regard to the principle that public policy requires for men of full age and understanding the utmost freedom of contract..."

AERA is the sectoral regulator. The OMDA and the SSA are binding contracts. Rights
have accrued and vested under the same. Giving sanctity to pre-existing agreements
is an essential feature of the regulatory process.

- 4. The regulatory philosophy is to respect the integrity and sanctity of contracts. This regulatory philosophy is enshrined in Section 13 of the AERA Act, which inter alia deals with the tariff fixation process. Section 13(1)(a)(vi) of the AERA Act provides that:
- *** 13(1) The Authority shall perform the following functions in respect of major
 - (a) to determine the tariff for the aeronautical services taking into consideration -
 - (vi) the concession offered by the Central Government in any agreement or memorandum of understanding or otherwise;"

The OMDA gives right to operate, maintain, develop, construct and manage the airport. Based on this other agreements have also been executed namely SSA, SHA and SGSA, lease deed etc. OMDA is the principal agreement and all other agreements, are based on it. The agreements are inextricably linked and have to be considered as a whole and in totality constitute 'concessions' offered by the Central Government.

- 5. The scheme of the Act is evident from the above provisions of Section 13, which prescribe an obligation on AERA to fix tariffs "taking into consideration" the concession agreement while fixing tariffs. The obligation to take into consideration the concession agreement [i.e., the OMDA and the SSA] under Section 13 of the AERA Act has to be read in the context and framework described above.
- 6. The powers under Section 13 of the AERA Act respect the freedom to contract under DIAL's contracts. The settled principles of regulatory jurisprudence and the provisions of Section 13 give due regard to the contractual arrangements. Accordingly, the integrity and sanctity of the SSA and the OMDA should be protected.

II. Position under other regulatory enactments

This is consistent with other regulatory enactments, which reflect the regulatory philosophy of the country.

Electricity

1. Section 63 of the Electricity Act, 2003 is consistent with this philosophy and provides that tariffs contractually agreed through a competitive bidding process shall be given sanctity to and shall be accepted by the Electricity Commission:

63. Determination of tariff by bidding process

Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government.

Telecom:

- Similarly, in the telecom sphere, TRAI as the regulator respects the freedom to contract. In its judgment dated 27.4.2005 [in BSNL vs. TRAI, Appeal No.11 of 2002], the TDSAT held that:
 - (a) Service providers under the TRAI Act, 1997 have to frame a Reference Interconnect Offer (RIO) which is a standard form of contract. BSNL had prepared a RIO. The TRAI (regulator as the telecom sector) had given a direction to BSNL to amend/change its RIO. This was challenged by BSNL before the TDSAT. The TDSAT by a judgment dated 27.4.2005 [BSNL vs. TRAI, Appeal No.11 of 2002] quashed the direction and upheld the freedom to contract, on the ground that the freedom of service provider to enter into mutual negotiations and agreements with other service providers in the matter of interconnection has to be given due recognition

and should not be undermined. The TRAI filed an appeal to the Supreme Court – but no stay was granted.

(b) The freedom to contract was recognized and upheld by the Adjudicatory Body.

A Regulator should respect the contractual commitments.

AERA should, as part of the tariff process, follow the settled principles [which are consistent with regulatory precedents].

III. OMDA and SSA confer vested rights, which cannot be taken away

- 1. DIAL has acquired vested rights under the OMDA and the SSA on execution of the agreements; these vested rights cannot be denied/ diluted, that too retrospectively.
- 2. It is a settled legal principle that rights which have vested in a person cannot be taken away as these rights are indefeasible. In J.S. Yadav v. State of Uttar Pradesh (2011) 6 SCC 570, it was held that:
 - "21. The word "vest" is normally used where an immediate fixed right in present or future enjoyment in respect of a property is created. With the long usage the said word "vest" has also acquired a meaning as "an absolute or indefeasible right"...

Thus, "vested right" is a right independent of any contingency."

3. Accordingly, rights which have vested in DIAL under the SSA and the OMDA are indefeasible and non-derogable. The exercise of powers by a statutory body should be in conformity with law/ legal principles and should promote/ ensure 'certainty' and clarity qua settled rights of stakeholders such as DIAL. The vested rights arising out of the OMDA and the SSA should be respected.

- 4. The Supreme Court in its judgment dt. 20.1.2012 Vodafone Intl. Holdings Ltd. vs. Union of India (SLP(C) No. 26529/ 2010) held that:
 - "3. Case in hand is an eye-opener of what we lack in our regulatory laws and what measures we have to take to take to meet the various unprecedented situations, that too without sacrificing national interest. Certainty in law in dealing with such cross-border investment issues is of prime importance, which has been felt by many countries around the world and some have taken adequate regulatory measures so that investors can arrange their affairs fruitfully and effectively."
- 5. Certainty requires that pre-existing contracts (OMDA and SSA) have to be respected.

 Uncertainty is contrary to the rule of law and will also negatively impact private investment, which is essential for development of the airport sector.
- 6. Regulatory decisions must bear a rational nexus and be consistent with the legislative/ government policy. The policy w.r.t. airport infrastructure recognises the need for development of strong airport infrastructure and modernisation of airports, the substantial capital investment required for this purpose and the need for attracting private capital and investment. The Policy on Airport Infrastructure of India issued under the aegis of the Ministry of Civil Aviation states:

"Both the reasons of bridging the yawning gap in resources as also to bring in greater efficiency in management of airports, the participation of private parties (including foreign ones) is a must. Government will take all possible steps to encourage such participation."

7. Pursuant to this policy, bidding was conducted for private participation in the management, maintenance and operation of the Delhi Airport. The bidding was based on the forms of the SSA and OMDA that were provided prior to bidding. The

OMDA and the SSA form the basic fabric based on which DIAL submitted its bid and has thereafter made substantial investments in the development of the airport infrastructure. The policy of the government and the contracts are the framework within which stakeholders discharge their respective functions – these provide the fundamental basis on which tariff fixation under Section 13 can be conducted.

Conclusion

In view of the above, the tariff fixation exercise has to be conducted by AERA in a manner which is consistent with the principles/ rights enshrined/ protected under the OMDA and the SSA - integrity and sanctity of these contracts must be respected.

ANNEXURE B

(Expert Opinion of Prof. Martin Cave)

Professor Martin Cave
2 Cannon Meadow
Bull Lane
Gerrards Cross
Bucks, SL9 8RE
UK

Tel 44(0)7958483709 Martin.e.Cave@btinternet.com

24 February 2012.

I confirm that the attached document entitled 'A note on AERA's Draft Tariff Determination for Delhi International Airport' represents my independent view of the matters discussed. It does not represent the view of any organisation with which I am connected.

Martin Cave

A note AERA's Draft Tariff Determination for Delhi International Airport Limited

Martin Cave

10 February 2012

Introduction

- I, Martin Cave, am a visiting professor at Imperial College Business School and, since January 2012, a Deputy Chairman of the UK Competition Commission. I have held professorial positions in the last dozen years in the economics department of Brunel University, where I was also deputy vice chancellor, at Warwick Business School in the University of Warwick, and in the Law Department at the London School of Economics. I am a regulatory economist specialising in the communications and transport sectors. I am the co-author or co-editor of the Oxford Handbook of Regulation (Oxford University Press 2010) and Understanding Regulation (Oxford University Press 2011). I have conducted several independent regulatory reviews for UK government ministers and in 2008/9 I chaired a committee set up to advise the UK Secretary of State for Transport on airport regulation. In 2003/4 I advised the UK Civil Aviation Authority on price controls for airports in the South East of England.
- Delhi International Airport Ltd (DIAL) has sought my independent advice on various aspects of the Airports Economic Regulatory Authority of India (AERA)'s draft "Determination of Aeronautical Tariff in respect of IGI Airport, New Delhi for the 1st Regulatory Period" (Tariff Determination).
- This paper is not intended to provide comment or cover every aspect of the Tariff Determination, but does touch on issues which are significant.

General comments

- 4 I make comments on the following six issues discussed in the draft Tariff Determination:
 - WACC;
 - hypothetical regulatory asset base;
 - project costs disallowed from the RAB;
 - traffic forecasts;
 - non-aeronautical revenue forecasts; and
 - the calculation of CPI-X.

Executive summary of recommendations

	Attachminion lies	Recommended politica # 1301
WACC. Assault and	AND RESIDENCE AND ADDRESS OF THE PARTY OF TH	
WACC: Asset beta estimate	AERA: (a) adopts a data set to calculate the asset beta which was ultimately not adopted by the regulator in question; and (b) appears to take no account of the difference between developed and developing nations in determining the asset beta.	AERA should adopt an asset beta estimate of at least 0.70, and probably in the range of 0.75 to 0.85 to reflect that India is a developing nation, based on the New Zealand Commerce Commission's asset beta data set adopted in substitution for the inferior estimate (which NIPFP chose to adopt).
WACC: "Sense Check"	AERA does not apply any "sense check" to the outcome of its WACC determination.	It is good practice for regulators to undertake some form of "sense check" to ensure that its asset beta estimate makes sense for the industry Involved. An estimate of at least 0.70 and probably higher (in the 0.75 to 0.85 range) would be within expectations.
WACC: The calculation of leverage	AERA has attempted to calculate actual leverage with reference to the market value equity and actual debt.	Because estimates of the market value of equity vary so widely, a preferable approach would be to determine leverage by using a nominal leverage assumption based on the book value of equity.
HRAB: Treatment of cargo revenue	AERA has concluded that revenues from cargo handling ought not to be included in the calculation of aeronautical revenue for the purposes of the HRAB.	The HRAB ought to be defined consistently with the ongoing treatment of such revenues, as this reflects the actual commercial value of the relevant assets. As such, cargo handling revenues should be treated as non-aeronautical revenues consistently throughout the tariff calculation (or alternatively as aeronautical revenues throughout).
HRAB: Treatment of staff training costs	AERA has declined to exclude additional employment costs (which appear to be the result of a "double up" due to the terms of the Concession Agreement) from aeronautical operation and maintenance costs in the HRAB.	Where the goal is to arrive at a fair commercial value, costs which do not relate to the operation of assets on an ongoing commercial basis ought to be excluded. As such, any costs relating to the "double up" of staff genuinely associated with the requirements of the concession agreement during the 2008/09 financial year should be excluded.
RAB disallowances: Aeronautical assets	AERA has disallowed capital expenditure totalling Rs. 96.99 crores in relation to aeronautical and mixed-use assets from the RAB on the basis that the expenditure was excluded from the allowable project cost in the DF Determination.	The RAB should reflect the actual capital expenditure incurred by DIAL during the redevelopment of the airport. As such, AERA should not apply the same disallowances as adopted in the DF Determination, which relied on benchmarking and estimates from EIL, and should instead give weight to the actual cost figures provided by DIAL

RAB disallowances: Non-aeronautical assets AERA has disallowed 8,652 m² (being designated as a food court and retail area on the CIP, hotel and office levels) from the RAB and from the allowed project cost used in the DF Determination for the purpose of setting the development fee (Excluded Area).

AERA should exempt the Excluded Area, from which DIAL is already prevented from recovering its proper economic costs, from the pool of revenue share assets considered for the purpose of setting the cross-subsidy from non-aeronautical revenues.

RAB disallowances: Mixed-use assets AERA's conclusion on disallowances from the RAB has not been consistently accounted for in the adjustment of the ratio between aeronautical and non-aeronautical assets. Should AERA apply the same disallowances as adopted in the DF Determination to the determination of the RAB, then it must update the division of aeronautical and non-aeronautical assets consistently and in a manner which reflects the final allocation of assets.

Traffic forecasts

AERA has rejected the MSE forecast, based on advanced modern time series techniques, and proposed to adopt traffic forecasts derived from historical data, resulting in figures significantly higher than contemplated by the MSE forecast and other comparable forecasts.

The MSE forecast remains the most attractive option with respect to traffic forecasting. There are numerous concerns with AERA's forecasts - particularly their variation from other benchmarks, their application of historical trend analysis and the use of a low 2001-02 base – and adopting them would present a clear difficulties. I recommend that the final Tariff Determination adopt the methodologies and figures as set out in the MSE forecast.

Non-aeronautical revenue forecasts AERA has considered a range of approaches to forecast non-aeronautical revenues and is proposing to select the approach which is significantly different to those presented, eschewing actual figures in favour of forecasts and ignoring the significant changes which occurred in the 2009-10 and 2010-11 years.

In conjunction with my recommendations on traffic forecasting, AERA should apply DIAL's projections (Scenario 1, as per the draft Tariff Determination). Alternatively, should AERA continue to rely on passenger growth trends based on historic data (about which I still harbour strong concerns), AERA should adopt its Scenario 2.

Calculation of CPI-X

AERA has built inflation adjustments into specific components of the building blocks formula. This focuses only on some aspects of the costs and revenues of the regulated business, whereas the focus should be on the overall potential for profits.

I recommend that AERA adopt a tariff-wide inflation adjustment as more consistent with the CPI-X approach to price control. This provides the necessary incentives for regulated firms to seek productivity gains.

Comments on WACC

- AERA's decision on the WACC is set out in paragraphs 206-209 of the draft Tariff
 Determination. That decision draws heavily on an expert report commissioned by AERA
 from the National Institute of Public Finance and Policy (NIPFP) on estimating the cost of
 equity for private airports in India. That report is set out in Annex IV to the draft Tariff
 Determination.
- 6 I address three aspects of AERA's decision here:
 - the methodology for determining the asset beta estimate;
 - the need for a "sense check" in respect of the asset beta estimate; and
 - the calculation of leverage.

Asset beta estimate

- AERA's approach to estimating the asset beta is set out at paragraphs 242-245. It consists of two components the generation of a data set on airport asset betas, and the use of those data to form a view of the cost of capital to DIAL.
- In relation to the first task, AERA's consultants have unfortunately chosen to rely for its basic data set on third party information without independently ensuring the robustness or accuracy of that data set. That third party information is analysis undertaken by Strategic Finance Group Consulting (SFG Consulting), which was commissioned by Air New Zealand in 2010 in the context of a New Zealand regulatory proceeding in respect of airports.
- There are a number of reasons to suggest that use of the SFG Consulting data set is *prima* facie inappropriate:
 - The SFG Consulting analysis was commissioned by an interested party to a particular regulatory proceeding (an airline customer of the regulated airports).
 - NIPFP fail to acknowledge that the SFG Consulting analysis was subject to stringent criticism and critique when it was exposed for public comment by other interested parties in the relevant regulatory proceeding, including from expert firms such as PricewaterhouseCoopers (PwC). This criticism identified significant methodological flaws in the SFG Consulting analysis, including issues with data points included in the sample set and with the calculation of asset betas within that sample. In summary, PwC's conclusions were:²

We found two technical errors in the SFG analysis, a gearing measurement that was not consistent with the [New Zealand

NIPPP has deliberately removed a small number of estimates from the data set on the basis of a lack of comparability, I make no comment of this aspect of NIPPP's methodology.

² PricewalerhouseCoopers (Australia) "Analysis of airport assel belas" (August 2010) at page 2.

Commerce] Commission's approach (which SFG appeared to intend to implement] and anomalies in a number of SFG's beto estimates. Remedying these errors alone would roise the osset beta estimate using SFG's preferred methad ... from approximately 0.50 to approximately 0.70. We also disagree with SFG's estimation of equity betas using a very long period of observations and provide our preferred set of comporable entities, the use of which generates an asset beto estimate that is materially the same as our re-working of SFG's analysis (that is, approximately 0.70).

- While this criticism, commissioned by another interested party, is not disinterested, NIPFP ought to have drawn AERA's attention to such criticism or addressed these methodological issues as part of its own analysis. At the very least it would be expected that NIPFP explains why it disagrees with those criticisms if it is to adopt the SFG Consulting data set.
- Most pertinently, when the decision was made by the New Zealand Commerce Commission, the relevant impartial and independent regulatory decision maker, the Commission agreed with submitters that there were significant flaws with the SFG Consulting analysis. On that basis, the Commerce Commission declined to endorse the SFG Consulting analysis, and produced its own analysis on which its final decision was based. In my view AERA ought to be extremely cautious in adopting analysis drawn from a particular regulatory proceeding that was rejected by the relevant regulator.
- The New Zealand Commerce Commission's statement in respect of the SFG Consulting analysis on which NIPFP so heavily relied is worth setting out in full:3

PwC found two technical errors in the SFG analysis, a georing measurement that was not consistent with the Commission's approach and anomalies in a number of SFG's beto estimates. PwC considered that remedying these errors alone would roise the asset beta estimate using SFG's preferred method and Air NZ's preferred sample from approximately 0.50 to approximately 0.70. PwC also disagreed with SFG's estimation of equity betas using a very long period of abservations and using its preferred set of comparable entities, generated on asset beta estimate of approximately 0.70 (this was also comparable to the asset betas derived by the Commission and Europe Ecanomics). The Commission identified similar technical issues with the NZIER [a research organisation] and SFG reports on the asset beta analysis. (emphasis added)

³ Commerce Commission (New Zealand) 'Input Methodologies (Airport Services) Reasons Paper' (December 2010) at para E8.29

- If AERA intends to rely on a recent data set drawn from a previous regulatory decision, the appropriate data set ought to be the sample set adopted by the New Zealand Commerce Commission in that proceeding, which formed the basis for its regulatory decision making in December 2010. The Commerce Commission's data set, which NIPFP does not appear to have considered as an option, has the benefit of being the decision of an impartial and independent decision maker following a process where a number of competing views were expressed. It includes a larger number of samples (27) than the SFG Consulting data set, is the most up-to-date data set available from the regulatory proceeding, and has been subject to close scrutiny by the Commission's independent, expert advisors.
- Even if the Commerce Commission's data set is not used, the Commerce Commission's position strongly suggests that it may be inappropriate to adopt the SFG Consulting analysis without subjecting it to much closer scrutiny.
- Turning now to the process of drawing inferences from the data set, I am aware that, in its submissions, DIAL has presented its own estimates of the cost of equity, which it continues to support. But my comments are concerned with how AERA might work within its own preferred framework, having given careful thought to replacing NIPFP's flawed data and analysis with the better data and analysis employed by the New Zealand Commerce Commission.
- The following table compares the SFG Consulting data with the data endorsed by the New Zealand Commerce Commission.

Company	Contract	110 A LEI Bell	NZ CONGON ARES	NT Conformation
			(N ₂ -10)	(Westly)
Aerodrom Ljubljana	Slovenia		1.08	0.88
Aeroporto di Firenze	Italy	-	0.59	0.34
Aeroports de Paris	France	0.7	0.69	0.71
Airport Facilities	Japan	-	0.32	0.37
Airports of Thalland	Thalland		0.74	0.69
Auckland Airport	New Zealand	0,3	0.75	0.79
Australian Infrastructure	Australia		0.76	0.65
Beljing Capital International Airport	China	0.4	1.02	1.19
Deerlchebourg SA	France	0.7	1110.24	¥
Dyncorp International	USA	0.6	The state of the s	
Flughafen Wien	Austria	0.5	0.78	0.59
Flughafen Zuerich	Switzerland	0.5	0.49	0.25
Frankfurt/Fraport	Germany	0.4	0.62	0.60
Gemina	Italy	0.5	0.49	0.25
Grupo Aeroportuario del Centro Norte	Mexico	1.0	1.04	0.82

Empatoy	(Astronomy)	NO Aries Date N7 Combins Assista		AT Componiation Pero Estatistic
			Byta Estémbro (Maranly)	(Weakly)
Grupo Aeroportuario del Pacifico	Mexico	t Car de la	0.64	0.74
Grupo Aeroportuario del Sureste	Mexico	0.7	0.85	0.51
Kobenhavns Luftavne	Denmark	0.7	0.39	0.30
Guangzhou Baiyun International Airport	China	0.2	0.56	0.54
Hainan Meilan International Airport	China	e Particular	1.29	0.62
Infratíl	New Zealand	0	E 411	THE REAL PROPERTY.
Japan Alrport Terminal	Japan	0.6	0.58	0.72
MAP Group	Australia	0.6	0.66	0.61
Malta International Airport	Malta		0.47	0.39
Multiplus SA	Brazil	0.3	Balley.	534
SAVE	Italy	0.9	0.82	0.54
Shanghal International Airport	China	0.2	0.70	0.73
Shenzhen Alrport	China	0.2	0.82	0.84
Singapore Airport	Singapore	0.8		= 3.0 = 1
Xlamen International Alrport	China	0.2	0.75	0.74
Mean		0.51	0.72	0.62
Median		0.50	0.70	0.62

12 A comparison demonstrates that the Commerce Commission data set:

- Adopts a different set of comparable entities (albeit with some overlap).

 Importantly, some asset beta estimates included in the SFG Consulting analysis have been removed for comparability (for example Infratil has been removed as it is an investment firm with interests that are wider then airports) even though NIPFP has included these estimates after its own comparability assessment.
- Adopts a more refined approach to the estimation of the asset betas for the entities in the sample set. Notably, the Commerce Commission's estimates are neither universally higher nor lower than those produced by the SFG Consulting analysis, which suggests that there is no inherent upwards or downwards bias in the Commerce Commission's approach.
- A simple average of the data set above suggests that the asset beta estimate for DIAL should be at least 0.62, or (using the monthly data endorsed by NIPFP) 0.72. Relevantly, both the median and the mean are consistent with each other (within 0.02) in each case.

- As mentioned above, using the Commission's data set is preferable because it is more up to date than the SFG Consulting data, is larger, and has the additional credibility of endorsement by an independent regulator and its expert advisors.
- However, it is also relevant to note that both the SFG Consulting and New Zealand Commerce Commission data sets include both developed and developing countries. The table shows that the average (mean) beta of observations taken from Western Europe, the United States, Australia, New Zealand and Japan is 0.56 whereas the average of observations from other countries is 0.86. In my view, this is consistent with the observation that macroeconomic shocks are likely to be strongly transmitted to the airport sector in a period of high traffic growth. Conversely, developed countries are likely to face lower risk, which explains this result.
- Therefore, the available data is likely to underestimate asset betas for Indian airports, due to the inclusion of airports from developed countries. On this footing the appropriate beta estimate is at least 0.70 and probably higher in the 0.75 to 0.85 range.

Sense check

- It is commonplace and good practice for regulators to undertake some form of "sense check" to ensure that its asset beta estimate makes sense for the reality of the industry involved. The aim of such a check is not necessarily to suggest an alternative of the estimate itself, but to ensure that any approximations or assumptions involved in the estimation methodology do not skew results significantly, resulting in an inappropriate or unreasonable estimate of asset beta. If a sense check reveals a result that is out of line with expectations then it will be necessary to revisit the methodology. This is an example of good regulatory practice, and is necessary as a result of the complexity of the task faced by the regulator.
- The following suggest that an asset beta estimate of around 0.60 for airports in developed countries would be in line with expectations:
 - The New Zealand Commerce Commission has estimated asset betas for New Zealand airports to be 0.60, which is in line with previous estimates undertaken by the Commission.
 - The British Civil Aviation Authority (CAA) has estimated the asset betas for airports other than Gatwick and Heathrow to be 0.61.
- An asset beta estimate of around 0.60 for airports in developed countries would therefore be in line with expectations, as two regulators have independently reached very similar conclusions. As discussed elsewhere in this paper, in my view a higher figure is appropriate for a developing country such as India.

⁴ These figures are based off the New Zealand Commerce Commission's monthly beta estimate data set, and so compare with a mean across all data points of 0.72.

⁵ See the data presented in paras 68 et seq below

- A sense check would also be likely to reveal that 0.50 is too low in respect of DIAL. The UK CAA in 2007 estimated an asset beta for Heathrow Airport in London at 0.47. Heathrow Airport is one of the largest and busiest international airports in the world, which suggests that the asset beta estimate for DIAL should be much higher than the 0.47 estimate for Heathrow Airport.
- AERA may also want to consider the implications of adopting a mistaken figure for the cost of capital. Too low a figure runs the risk of choking off investment in the airport sector, with serious detriment not only for the air travel sector but also for the whole economy. Too high a figure increases landing fees, and has a small effect on demand for air travel, based on the proportion of ticket prices accounted for by landing charges. It also benefits the public and private sector shareholders in the airport. But the multiplier effect on the economy is likely to be smaller.
- This result is not, of itself, a criticism of SFG Consulting's attempt to compile a larger sample set to increase statistical robustness of the asset beta estimate. However, it is relevant to any residual discretion of the regulator that the asset beta estimate is likely to be underestimated. On this basis, an estimate of at least 0.70 and probably higher (in the 0.75 to 0.85 range) would be within expectations. This is in line with the estimates produced in reliance on the New Zealand Commerce Commission's analysis, once the distinction between developing and developed countries is taken into account.

Leverage

- NIPFP's approach to calculating leverage seeks to determine actual leverage with reference to actual debt (in accordance with figures provided by DIAL) and an estimate of the market value of equity as presented in a recent Bank of America/Merrill Lynch report in respect of GMR Infrastructure, a member of the DIAL joint venture consortium. AERA has adopted this approach.
- Calculating actual leverage with reference to the market value of equity is a very challenging approach in the case of an unlisted airport business. Reliance on the book value of equity, in my experience, may very well be preferable. With all its imperfections, it may be a more objective measure of the value of equity. The problem with market value of equity estimates is that they may fluctuate over time and differ from one estimator to another.
- The potential inaccuracy of the market value of equity estimate used by the NIPFP is highlighted by the number of conflicting analysts' estimates available. Notably, Bank of America/Merrill Lynch has even revised its equity estimate in October 2011 to Rs 4755 crores, 7 down from Rs 5316 crores in August. Even more confusingly, another analyst

⁶ The Bank of America report does not appears to have been made available as part of the current consultation process, nor is it publicly available. For that reason it is difficult to derive comfort on the usefulness of the report for regulatory purposes.

Bank of America/Merrill Lynch 'GMR Infrastructure Ltd' (16 October 2011) at page 5

report estimates that DIAL has a negative value of equity. These significant divergences are indicative of the lack of robustness surrounding the single estimate relied on by NIPFP.

- This risk of an inaccurate estimate of the value of equity is heightened in this case because there is no evidence that NIPFP has taken appropriate steps to ensure the robustness of the market value of equity estimate used to calculate leverage. The estimate used is an independently-prepared estimate, which provides some credibility. However:
 - a single estimate may not be sufficiently robust unless the relevant methodology is subject to critical examination, including testing of all relevant data and assumptions. There is no evidence that this type of scrutiny has been undertaken in this case;
 - the most effective means of achieving such scrutiny is for the methodology to be made available to submitters for scrutiny, after AERA has reached an initial view that any data or assumptions relied on are reasonable; and
 - in the absence of such close scrutiny, statistical robustness can only be achieved with a significantly larger sample set. In this respect, reference to just a handful of additional data points would add to the robustness of the market value of equity estimate.
- 27 If sufficient robustness cannot be attained in respect of the estimate of the market value of equity, then it may be more appropriate to adopt a nominal (rather than an actual) leverage assumption. A nominal leverage figure does not purport to provide an accurate estimate of actual leverage, but in appropriate circumstances it can provide a workable, non-arbitrary leverage assumption on which to base the cost of equity calculation.
- In this case, there is a principled basis on which a reasonably robust nominal leverage assumption can be produced. The book value of equity for DIAL is an objective estimate of the value of equity that has not been produced for regulatory purposes. It provides a consistent and reasonable basis to found an assumption of leverage, and is not inherently skewed towards a higher or lower value. On that basis, the amount of debt and the book value of equity can be used to produce a meaningful nominal leverage assumption. If the process for determining the market value of equity is not made available to interested parties, then adoption of a nominal leverage based on the book value of equity is preferable.
- However leverage is determined, it is critical that the chosen value of equity (market value or book value) is applied consistently. This was the approach taken by NIPFP. However in the draft Tariff Determination AERA has applied the market value to establish the asset base, yet has used the book valuation in the calculation of WACC.

Recommendations on WACC

30 AERA ought to amend its approach to determining the WACC by:

⁸ BNP Paribus 'GMR Infrastructure' (5 December 2011) at page 3.

- adopting an asset beta estimate of at least 0.70, and probably in the range of 0.75 to 0.85 to reflect that India is a developing nation, which is consistent with a "sense check" of the estimate, based on the New Zealand Commerce Commission's asset beta data set and in substitution for the inferior SFG Consulting estimate;
- adopting a more robust approach to determining leverage by using a nominal leverage assumption based on the book value of equity; and
- Whether or not AERA amends it approach to determining WACC, leverage should be applied consistently.

Comments on hypothetical regulatory asset base

General comments - the purpose of the HRAB

- In applying the formula for determining the hypothetical regulatory asset base (HRAB), it is useful to bear in mind the likely purpose of the HRAB. In divining that purpose, two features appear to be relevant.
- First, it is relevant that the HRAB is required to be determined in accordance with a prescribed formula. Reference to a fixed formula militates against gaming (on the part of the regulated firm) and opportunism (on the part of the regulator). Second, the terms of the prescribed formula are themselves notable. Those terms refer to the book value of the aeronautical assets at the time of concession and the prevailing revenues and costs involved with managing those assets.
- In the present case, these features of the HRAB calculation suggest an intention to ensure a fair and reasonable commercial valuation of the aeronautical assets at the time of concession. The certainty afforded by a relatively fixed formula, coupled with a calculation based on actual revenues and costs (a basis for determining commercial value) provides an objective basis for the determination of the HRAB by limiting the influence of arbitrary factors after the concession has been granted, and promoting consistent treatment.
- This understanding is consistent with the established view that RAB calculations are a legitimate means of determining and recording a fair value for regulated assets. In these contexts, fair value may be defined as "the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction". As this definition indicates, a fair value is a fair *commercial* value.
- Consistent with this approach, it would be expected that application of the HRAB calculation should ensure that:
 - The treatment of all revenues and costs ought to reflect the commercial treatment of the relevant assets. Revenues and costs ought to be excluded from

⁹ See, for example, Deloitle (Australia) "Determining the fair value of Australia's water infrastructure assets" (March 2010) at page 6

¹º Australian Accounting Standard AASB 116 at para 6

- the HRAB if they are not considered to be aeronautical assets (though that conclusion itself ought to proceed on a principled basis).
- Only those revenues and costs genuinely associated with the operation of the aeronautical assets should be included in the calculation. Inclusion of exceptional revenues and costs would tend to over- or under-state the commercial value of the aeronautical assets, in turn over- or under-compensating DIAL relative to a fair valuation.
- From this perspective, two aspects of AERA's application of the HRAB calculation invite comment:
 - AERA's treatment of cargo revenue; and
 - AERA's treatment of staff training costs.

Treatment of cargo revenue

- AERA has taken the view that revenues from cargo handling ought not to be included in the calculation of aeronautical revenue for the purposes of the HRAB. AERA has reached this view based on the fact that DIAL is not directly providing cargo handling services in the current financial year. Cargo handling services are currently provided by Celebi Delhi Cargo Terminal Management India Pvt. Ltd by way of concession.
- In my view, this approach is appropriate, but only if cargo revenue is consistently treated as non-aeronautical revenue throughout the tariff calculation. If, however, revenue from cargo handling is treated as part of the aeronautical asset base, then that decision must be reflected in a consistent treatment of cargo revenue in the HRAB.
- This approach is also consistent with the fair value approach implied by the HRAB calculation. The HRAB ought to be defined consistently with the ongoing treatment of such revenues, as this reflects the actual commercial value of the relevant assets. Excluding from the HRAB the revenues (and costs) generated by services treated as aeronautical skews the valuation of the aeronautical assets away from a fair commercial valuation. This result ought to be avoided.
- It is concerning to note, therefore, that despite its approach to the HRAB, AERA's approach in respect of determining aeronautical revenues for the current regulatory period is to treat cargo handling services as integral to the management of aeronautical assets (see draft Tariff Determination, paragraph 403 (vii)). AERA notes that it is usual practice to treat revenue arising from any aeronautical services as aeronautical revenue, presumably because it cannot be provided without the use of aeronautical assets.
- 42 Further the draft Tariff Determination states that:
 - the revenue received by DIAL from the cargo services during the part period of 2009-10 (when DIAL themselves were providing the services) may be treated as aeronautical revenue; and

- the revenue and costs relating to cargo screening, which is still carried out by DIAL, ought to be treated as aeronautical.
- This reasoning potentially compromises the consistent treatment of assets that the HRAB ought to promote. While I understand that DIAL's preference is for cargo revenues to be treated as non-aeronautical revenues on a consistent basis, my principal concern is that a consistent approach be adopted.

Treatment of staff employment costs

- The HRAB raises a question in respect of the treatment of staff employment costs. There is an argument that some costs associated with the "double up" of staff (the result of the terms of the concession agreement entered into with the Government) might be legitimately excluded from the calculation of aeronautical operation and maintenance costs in the HRAB. I understand that there was some considerable overlap of AAI staff and DIAL staff during the 2008/09 financial year due to the requirements of the concession agreement to retain a significant proportion of existing staff (in the order of 60%) for an initial period following concession. However, AERA has rejected this argument and declined to exclude these additional staff costs from aeronautical operation and maintenance costs in the HRAB.
- AERA's reasoning is that the HRAB refers to "prevailing" (meaning actual) costs rather than "efficient" costs. In AERA's view, therefore, it appears that the only grounds on which a reduction on operating costs might be justified is to apply an efficient operator standard, but such an approach is excluded by the definition of the HRAB.
- In my view, such costs ought to be excluded. Again, it is useful to bear in mind the aim of achieving a fair commercial valuation of aeronautical assets through the HRAB. A fair valuation will only be achieved if the actual costs genuinely associated with the operation of aeronautical activities are included in the HRAB calculation. These costs must be understood as the commercial costs of operating those assets. The exogenous staff costs associated with the concession are not an integral part of the operation of the aeronautical assets. They cannot realistically be considered a commercial cost associated with the operation of those assets. This is evident in the fact that such costs are a one-off resulting from the timing of the concession award to DIAL, and are not costs that will be incurred in future. These costs are therefore better understood as resulting from contractual arrangements that are conceptually separate from the commercial operation of aeronautical assets. Their inclusion can therefore be expected to artificially inflate the costs of operating aeronautical assets, and prevent a fair commercial valuation.
- Accordingly, it is, in my view, mistaken to conceive of the exclusion of such costs as a question of efficiency. The incurring of such costs is not related at all to the extent to which commercial activities are undertaken in a cost-efficient manner. The relevant question is whether such costs may be properly considered costs of operating the aeronautical assets. Where the goal is to arrive at a fair commercial value, such costs must

be excluded as they do not relate to the operation of the assets on an ongoing commercial basis.

Recommendations on HRAB

- In my view, determining the HRAB in a manner consistent with its apparent underlying purpose regulres:
 - treating cargo handling revenues as non-aeronautical revenues consistently throughout the tariff calculation (or alternatively as aeronautical revenues throughout); and
 - excluding any costs relating to the "double up" of staff genuinely associated with the requirements of the concession agreement during the 2008/09 financial year from the calculation of operating and maintenance costs.

Comments on project costs disallowed from the RAB

- Determining the RAB is a critical component of price cap regulation. As part of determining the RAB applicable to DIAL, AERA has applied a series of disallowances adopted in its Order No 28/2011-12 in relation to the allowable project cost used to set the development fee levied to fund the redevelopment of Delhi airport (DF Determination). The relevant capital expenditure relates to investment in and enhancement of both aeronautical and non-aeronautical assets, as part of the airport's redevelopment.
- This paper does not consider the merit of those disallowances in the context of the DF Determination. However, it is crucial that AERA appreciates the particular task at hand and the importance of the RAB determination on efficiency and incentives going forward. A regulatory decision to deny incurred capital expenditure from the RAB at this stage creates "stranded assets" from which regulated entities cannot properly recover their investment. This increases the riskiness of investment, raises the cost of capital, and can lead to economic inefficiency; any such policy should be approached extremely cautiously by any regulator.
- However, should AERA persist in excluding the capital expenditure disallowed in the DF Determination from the RAB, then it must update the ratio it applies in allocating mixed-used assets to reflect the final ratio between DIAL's aeronautical and non-aeronautical assets.

Aeronautical assets

AERA has disallowed capital expenditure totalling Rs. 96.99 crores in relation to aeronautical and mixed-use assets from the RAB on the basis that the expenditure was excluded from the allowable project cost in the DF Determination. AERA has never questioned the merit of these particular aeronautical investments, but simply rejected DIAL's reported, actual costs in favour of benchmarking and estimates.

- It is beyond the scope of this paper to consider the merit of the decision to exclude the recovery of these actual costs by DIAL through the development fee. However, regardless of the outcomes of the DF Determination, It is appropriate to reconsider whether the assets should be excluded from the RAB.
- Regulatory intervention relating to capital expenditure is never easy. For example, the CAA described the challenges of approving or disallowing proposed capital expenditure by airports for the purpose of economic regulation as follows:¹¹

Such an approach would require the regulator to "second-guess" monagement decisions at periodic review points with less information and responsibility than the airport management, increasing regulatory risk and possibly removing incentives for the regulated business to optimise projects included in the regulatory capital programme.

- The challenges of assessing (and penalising) incurred capital expenditure are even more significant because a decision to disallow certain assets from the RAB creates "stranded assets" which may undermine economic efficiency, creating the risk of:
 - a loss in allocative efficiency because airport charges may not reflect the actual economic costs incurred in the provision of these services;
 - a loss in dynamic efficiency because:
 - where a company is prevented from recovering the costs of its
 investments, future investment may be deterred as investors and funders
 factor in the risk that their ability to earn an adequate return on the
 investment may be impaired;
 - there is no indication of how the stranded assets might be returned to the RAB in the future (reflecting the "benefit-sharing" of efficient investment inherent in a regulatory control period model, it is appropriate that any penalties for any investment considered "inefficient" should also be limited); and
 - productive efficiency may be undermined where the regulatory risk (that DIAL risks under-recovery on its investments) might result in a compensatory premium to DIAL's cost of capital.
- Accordingly, irrespective of its findings in the DF Determination, AERA should be slow to exclude actual, incurred capital expenditure from the RAB.

Non-aeronautical assets

AERA has also disallowed the inclusion of 8,652 m² (being designated as a food court and retail area on the CIP, hotel and office levels) from the RAB (Excluded Area). Again, this

¹¹ CAA 'Economic Regulation and Capital Expenditure' Consultation Paper (January 2001) at para (3.10).

- reflects AERA's earlier decision to disallow the investment in the Excluded Area for the purposes of setting the development fee.¹²
- AERA's previous decision relied on stakeholder submissions that the area "need not have been built" and that similar services were available in the arrival and departure levels.
- DIAL does not contest that the investment in the Excluded Area should not be included in the aeronautical RAB. The assets are clearly non-aeronautical. However, it seems illogical in a case where AERA decides to deny DIAL the ability to recover the cost of the Excluded Area, that the revenues from the Excluded Area are counted in the calculation of non-aeronautical revenue for the cross-subsidy.
- To deny cost recovery of the Excluded Area, either through inclusion in the RAB or through inclusion for the purposes of the development fee, but to count revenue derived from the Excluded Area for the purposes of non-aeronautical revenues not only is inconsistent but means DIAL is penalised twice for its investments decision: once through the exclusion of the investment from the allowable project cost and secondly through the 30% revenue contribution towards the aeronautical tariff.

Mixed-use assets

- If the capital expenditure disallowed in the DF Determination remains excluded from the RAB, then it is necessary to revise the ratio for allocating mixed-used assets to reflect the final allocation of aeronautical and non-aeronautical assets.
- Where AERA makes an adjustment to the allocation of assets, either through a disallowance or otherwise, it is important that the effect of the change in allocation is reflected through the inter-related components of the tariff determination. Accordingly, the total asset base should be reduced from Rs 12,415.63 crores (as provided in the auditor's certificate provided to AERA and dated 15 June 2011) to Rs 12,211.49 crores (assuming the full DF disallowance of Rs 204.14 crores).
- Division of the new total between aeronautical and non-aeronautical assets should then be as follows:

Tolor Lity July	14- AVE 1-17-4-1	Folal Marie
Rs 11,074.29 crores	Rs 1,137.20 crores	Rs 12,211.49 crores
90.69%	9.31%	100%

DIAL provides confirmation of this allocation from its auditors, M/s. Brahmayya & Co., dated 18 November 2011. The classification of assets has been conducted in accordance with the concept document which has been consistently applied by the auditor, and was accepted by AERA at [116] of the Tariff Determination.

AERA, "In the matter of fevy of Development Fee by Delhr International Airport (P)Ltd. at IGI Airport New Delhi Determination, Order No. 28/2011-12* (November 2011) at pages 27 - 29

Recommendation

- The RAB should reflect the actual capital expenditure incurred by DIAL during the redevelopment of the airport. As such, AERA should not apply the same disallowances as adopted in the DF Determination, which relied on benchmarking and estimates from EIL, and should instead give weight to the actual cost figures provided by DIAL.
- AERA should exempt the Excluded Area, from which DIAL is already prevented from recovering its proper economic costs, from the pool of revenue share assets considered for the purpose of setting the cross-subsidy from non-aeronautical revenues.
- Should AERA apply the same disallowances as adopted in the DF Determination to the determination of the RAB, then it must update the division of aeronautical and nonaeronautical assets consistently and in a manner which reflects the final allocation of assets.

Comments on traffic forecasts

Background

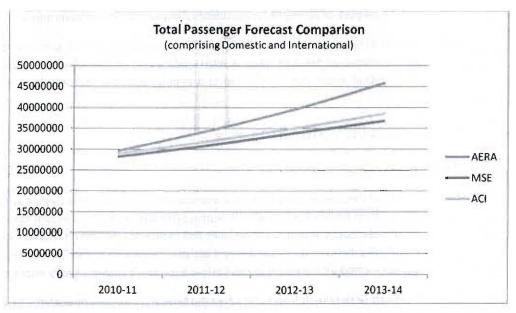
- As part of the consultation, DIAL has commissioned an independent traffic forecast for IGI Airport from the Madras School of Economics (the MSE forecast). The MSE forecast used advanced modern time series techniques and examined "the short run as well as lang run relationship between air-travel demand and other economic factors", with a key objective being to "compare the results ocross various benchmark studies already existing far India."
- The Draft Determination does not adopt the forecasts obtained through the MSE forecast. Instead, it proposes to use traffic forecasts derived from historical data; specifically, 10 year CAGR figures for 2001-02 to 2010-11. AERA's dismissal of the MSE forecast is based on two premises:
 - first, there were variations between the MSE forecasts and long term historical trends as calculated by AERA; and
 - second, comments by Professor N.R. Bhanumurthy were critical of the model.

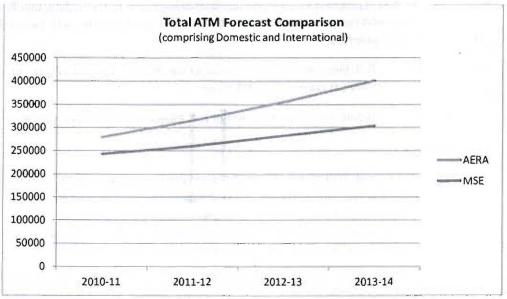
Summary

- 1 have some concerns with the traffic figures proposed in the draft Tariff Determination. Most importantly, they appear to be substantially higher than the MSE forecast and other comparable forecasts (such as those undertaken by Mott MacDonald, SH&E and DIAL itself). This significant variance should, at a minimum, raise some questions over AERA's decision to rely on historical trends for its proposed traffic forecasts.
- Faced with such a significant variation, best practice would suggest that a regulator should err on the side of caution by giving appropriate weight to comprehensive submissions provided by stakeholders and experts, particularly where these submissions reflect commercial experience in the relevant field.

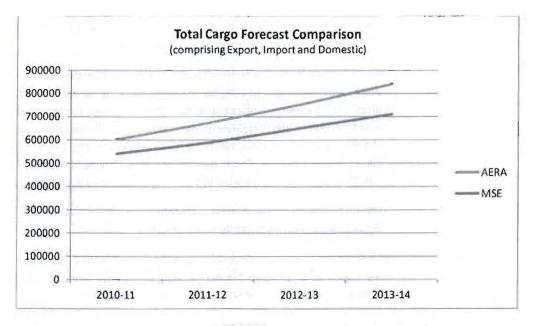
Forecast comparisons

The degree to which AERA's forecasts exceed the results produced by detailed forecast models is particularly striking in graphical form. I set out below three graphs comparing the AERA and MSE forecasts for passenger volume, ATMs and cargo. In the interests of space, I have combined sub-categories where possible. The passenger forecast comparison also includes passenger forecasts produced by DKMA for Airports Council International;¹³ again, AERA's forecasts are markedly higher.





DKMA, "Country Traffic Forecast: Iddia 2010-2015" (February 2010) The paper estimated passenger traffic at a national level, I have applied the predicted national percentage changes against a baseline for IGI Airport (the midpoint between the MSE and AERA figures for 2010-11) DKMA forecasts for freight and ATM growth were unavailable.



73 It is immediately evident that the AERA forecasts are substantially higher than those produced by MSE. Of particular note is the fact that, in all three of the graphs, the forecasts become increasingly divergent over time – as the graphs show, by 20-25% in a two-three year timeframe, which is an unusually large divergence.

74 While the above graphs depict only the AERA and MSE forecasts, I note also that the MSE forecast references a number of other traffic forecasts, such as those undertaken by Mott MacDonald, SH&E and DIAL itself. While I have not reviewed these other forecasts beyond what is included in the MSE comparative analysis, and note that the studies may not be exactly comparable, AERA's proposed figures are, or are close to, the highest of the projections for each metric compared in the MSE forecast. That alone is enough to raise questions.

I understand that the draft Tariff Determination acknowledges the substantial variation between the AERA and MSE forecasts (although not the progressive divergence). Indeed, this is given as a factor in dismissing the MSE forecast. However, AERA does not explain why, when faced with a substantial variation, it has assumed that one alternative (historical trends) is more appropriate than the other.

In considering the competing forecasts, weight should be given to the unique experience of DIAL as an airport operator. Like any airport operator, DIAL faces strong commercial incentives to ensure its forecasts are as accurate as possible. Airport capital expenditure is large, lumpy and long-term, and forecasts are a critical part of many airport business decisions. The draft Tariff Determination does not appear to recognise DIAL's non-replicable forecasting perspective.

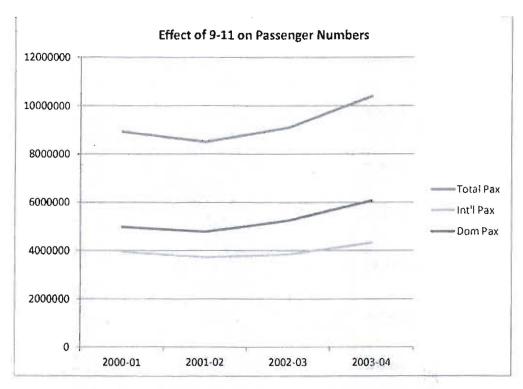
- Further, there are material issues with historical trend analysis which are likely to favour the use of a more sophisticated forecast model in this instance:
 - first, historical trends are overly simplistic: as discussed in the MSE forecast, predictions are subject to a degree of risk and uncertainty. Air traffic volumes are affected by a variety of influences including fares, income levels and external events, and although these determinants cannot be fully accounted for, forecasts should at least attempt to address the major influences. The simplistic nature of historical trend analysis glosses over these factors, relying only on historical information which may have limited relevance to forecasting future events.
 - second, historical data incorporates transient one-off events that have significantly affected past traffic but are unlikely to reoccur.
- As a result, there are likely to be difficulties for AERA in treating its proposed forecasts as reasonable. A substantial disparity between a range of different forecasts suggests a conservative approach; instead, AERA risks adopting a clear outlier.

The use of 2001-2002 as the beginning year is distortionary

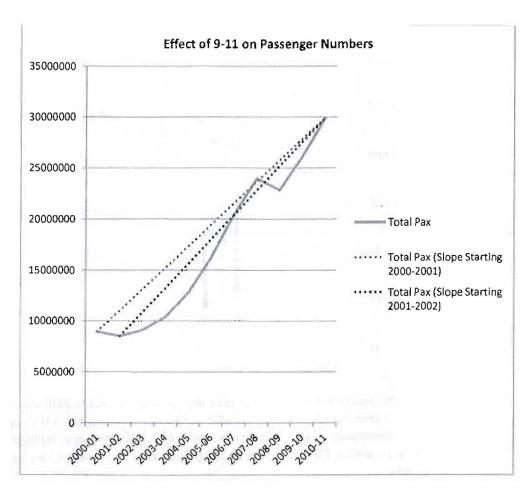
- AERA has proposed to use 10 year CAGR figures, to be calculated over the period commencing 2001-02 and ending 2010-11. As with all percentage change calculations, the choice of starting point is critical. The draft Tariff Determination does not detail why a 10 year period was chosen, other than noting that it includes both "depressed" and "buoyant" years and referring to AERA's previous Order No.28.
- In this instance, the 2001-02 figures are an inappropriate starting point, as they include the immediate repercussions of the September 2001 terror attacks. The negative effects of 9-11 on the aviation industry were felt globally, and they were felt most strongly in the twelve months following the attack. IATA has estimated that 9-11 cost airlines three years of growth. ¹⁴ Global passenger traffic (tonne kilometres performed) declined by 2.7% in 2001; one of only two years since 2000 in which global passenger traffic declined. ¹⁵
- The use of a non-representative, low base means that the size of the percentage growth in subsequent years is disproportionately inflated. Using that inflated percentage to forecast figures for years 2011-12 to 2013-14 is unlikely to lead to accurate results.
- The outlying nature of the 2001-02 figures is immediately obvious when illustrated graphically. The graph below shows the appreciable decrease in both domestic and International passenger numbers from 2000-01 to 2001-02, before recovering. In addition, I note that total freight carried also decreased in 2001-02, although I have not shown that drop on the same graph for reasons of scale.

12 IPIQ

¹⁴ IATA, "The Impact of September 11 2001 on Aviation", http://www.asa.org/cresstown/documents/impact 9-11-asadion.pdf



The following chart shows total passenger numbers from 2000-01 to 2010-11, with lines added to show the effect of using the 2001-02 figures as a starting point: the slope is significantly steeper as compared to that from a 2000-01 starting point, highlighting the significant effects of the September 2001 terrorist attacks on air traffic in the following 12 months.



The United Kingdom Civil Aviation Authority has discussed the effects of these "demand shocks". ¹⁶ It noted that "they are likely to affect forecast accuracy for the years during and immediately following the shock". The accuracy of historical trend-based forecasts that use a "demand shock" year as a base, are likely to be similarly affected. The graphical analysis present above is consistent with that conclusion.

Recommendations

- In light of the above issues, the MSE forecast remains the most attractive option with respect to traffic forecasting. There are numerous concerns with AERA's forecasts particularly their variation from other benchmarks, their application of historical trend analysis and the use of a low 2001-02 base and adopting them would present a clear difficulties
- I recommend that the final Tariff Determination adopt the methodologies and figures as set out in the MSE forecast.

¹⁵ CAA, "CAA reference to the Competition Commission for Stansted Airport" (April 2008) at page 278

In addition, and as a minimum, 2001-02 is a clear outlier and should not be used as the initial year for a CAGR calculation. This serves to highlight the inherent shortcomings of using historical trend analysis. If AERA does use a historical trend analysis using CAGR (which I strongly believe is not advisable in any case), then a different year should certainly be used. This alone will not, however, achieve the level of robustness that can be achieved by using the MSE forecasts.

Comments on non-aeronautical revenue forecasts

Background

- 88 DIAL has forecast the total turnover in FY2011-12 for non-aeronautical revenue such as:
 - car parking, entry ticket and left luggage facility revenue;
 - advertisement revenues;
 - duty free and duty paid;
 - F&B and lounge revenue;
 - radio taxí;
 - foreign exchange concessionaires; and
 - telecom.
- DIAL's projections were based on an annualized turnover of four months, this being the period during which all three terminals were operational. The FY2011-12 forecast figure was then adjusted for future traffic growth and a 5% p.a. increase to reflect higher penetration.
- The Draft Determination proposes a different approach to forecasting non-aeronautical revenue. It treats the 2008-09 figures as a baseline for forecasting FY 2009-10 to 2013-14, as adjusted by historical growth rates and an increase to reflect higher penetration.

Summary

- As with traffic forecasts, AERA has considered a range of approaches to forecast non-aeronautical revenues and is proposing to select the approach which is significantly different. The graph at paragraph 375 of the draft Tariff Determination illustrates this disparity: by 2013-14, AERA's forecast is Rs 314 and Rs 242 crores more than the other two scenarios considered.
- The size of this variance should, at a minimum, raise questions over two aspects of AERA's proposed approach to forecasting of non-aeronautical revenue:
 - the use of a 2008-09 base, as discussed below; and
 - the use of its proposed traffic forecasts as an escalation factor over time.

- The concerns (discussed earlier in this paper) regarding the suitability of AERA's proposed traffic forecasts will be magnified if those forecasts are also used in relation to non-aeronautical revenue. As the discrepancy between AERA's Scenarios 1 and 2 shows, applying the inflated traffic forecasts results in a difference of Rs 72 crores by 2013-14 even where the same baseline (2010-11) is used.
- The draft Tariff Determination's justification for its proposed decision to select the highest of the three approaches is that airports should strive to generate higher non-aeronautical revenue, and its proposed approach is the highest of all forecasts. However, this neglects the important reality that while airports do strive for higher revenues, forecasts should reflect the most likely actual outcome: not merely an overly-optimistic target. The draft Tariff Determination has simply presumed that the highest of the possible forecasts is the correct one.

Actual figures should be used where possible

- The draft Tariff Determination proposes to "forecast" non-aeronautical revenue for 2009-10 and 2010-11. However, actual figures are readily available for these years. The use of forecasting when actual results are available would seem somewhat counter-intuitive, and this proposed approach is not justified in the draft Tariff Determination.
- This leads to the unorthodox outcome of AERA retrospectively "forecasting" non-aeronautical revenues of Rs 495 crores for 2009-10 when the actual figure was Rs 605 crores. There is an equally implausible variation between the forecast and actual figures for 2010-11, which sees 2010-11 figures being "forecast" as Rs 687 crores when the actual figure was Rs 599 crores. Effectively, even though non-aeronautical revenue actually decreased slightly between 2009-10 and 2010-11, the proposed forecasts include a massive 38.8% increase over the same period.
- As a result, the forecasts for 2011-12 to 2013-14 are subject to excessive inflation, as they build on from the overstated 2010-11 "forecasts".
- I note that some of the "forecasts" for 2009-10 and 2010-11 set out in Scenario 3 match up with the actual figures for these years. ¹⁷ However, many of them do not. ¹⁸ It is not clear from the draft Tariff Determination why this different treatment has been applied to various elements of non-aeronautical revenue. Effectively, the draft Tariff Determination appears to use different base years for various elements of non-aeronautical revenue without justifying or explaining how it has selected the various base years.
- These excesses will be further exacerbated by the application of the CPI from the start date (2008-09). Given that the CPI is approximately 7%, this will have a material impact on the 2009-10 and 2010-11 "forecasts". The likely result is that the variance between these "forecasts" and the actual figures will become even greater.

¹² Including: Public Admission Fee; F&B Income and Lounges; Bridge Mounted Equipment; Retail, Foreign Exchange; Land, Space and Hangar; Airport Service Charges, Transil Hotel, Ground Handling and Into Plane Service

¹⁶ Including (for one or both of 2009-10 and 2010-11): Flight Kitchen Royalty; Advertsement; Telecom; Radio Taxi, Car Park, Cargo Revenue; and Other Commercial Income

- Another disadvantage of AERA's proposed approach is that it does not recognise significant changes that occurred in the 2009-10 and 2010-11 years. As one example, car parking revenues in 2010-11 dropped significantly as a result of the concessionaire incurring the entire capex for a multi-level car park: car parking revenues dropped from Rs 26.1 crores in 2009-10 to Rs 10.1 crores in 2010-11. However, the proposed "forecast" for car parking in 2010-11 increases up to Rs 28.95 crores. This is plainly contrary to actual events.
- 101 Vide DIAL's 20 June 2011 submission, I understand non-aeronautical revenue from T3 is expected to stabilise after the 2011-12 period, and the revenue forecasts should reflect this.

Recommendations

- In light of the above issues with the proposed Scenario 3 particularly the use of retrospective forecasting for years 2009-10 and 2010-11 and the use of passenger growth forecasts based on historical trends I recommend that AERA adopt Scenario 1 for the purpose of tariff determination. This should be read in conjunction with my recommendations in relation to traffic forecasting.
- Alternatively, should AERA decide to use passenger growth trends based on historical trends, I recommend that AERA adopt Scenario 2 for the purpose of tariff determination. While I continue to harbour strong concerns at the use of historical trends to forecast passenger growth, Scenario 2 at least has the advantage of using actual figures where these are available (i.e., for 2009-10 and 2010-11). It therefore represents a more accurate base for subsequent forecasts.

Comments on the treatment of CPI-X adjustments

- Finally, I comment briefly on the calculation of CPI-X adjustments. DIAL has proposed that a CPI adjustment be applied to the overall tariff (that is, a CPI adjustment be applied after the tariff has been calculated) to reflect the effects of inflation on the overall tariff. This is an orthodox approach that would be expected to be applied. Price controls based on the CPI-X formula are designed to replicate the discipline provided by market forces, by accommodating general inflationary trends (via the indexation of prices to the CPI) and then taking account of potential productivity growth above that prevailing in the economy as a whole, via the firm-specific 'X'. These dual objectives are most simply and transparently best reflected by adjustments to tariffs.
- 105 It is therefore surprising that AERA has rejected DIAL's proposal and appears to have built inflation adjustments into specific components of the building blocks formula. Such an approach misunderstands the purpose of the CPI-X adjustment. It focuses myopically on aspects of the costs and revenues of the regulated business, where the focus should be on the overall potential for profits. This wider approach provides the necessary incentives for regulated firms to seek productivity gains, and both costs and revenues ought to be

¹⁹ Specifically, operating costs and sharing of non-aeronautical revenue

understood on this wider basis. I understand that this approach is also inconsistent with DIAL's interpretation of the concession agreement.

Recommendation

106 I recommend that AERA accept DIAL's proposed tariff-wide inflation adjustment as more consistent with the CPI-X approach to price control that has been adopted.

ANNEXURE C

(Expert Opinion of Dr. Harry Bush)

Harry Bush CB MA DPhil FRAeS

22 Montagu Square London W1H 2LF

harry.l.bush1@gmail.com

18 January 2011

Dear Madhukar

Comments on Regulatory Approach to Determination of Cost of Equity

Attached as requested are my comments on the regulatory approach to the determination of the cost of equity, in response to the consultation paper from AERA on Determination of Aeronautical Tariff in respect of IGI Airport for the 1st Regulatory Period.

Yours sincerely

Dr Harry Bush

REGULATORY APPROACH TO DETERMINATION OF COST OF EQUITY

Introduction

1

I have been asked by Delhi International Airport (DIAL) to provide a high level assessment from a regulatory perspective of the approach to the cost of equity in AERA's recent proposal for price caps to apply to Delhi Airport for the period 2009/10 to 2013/14. I have not attempted a point by point analysis. There are clearly a number of detailed, though important issues, relating to the calculation of the cost of equity (and, indeed, the determination of the WACC more broadly) which are being dealt with in separate advice. My focus in this note is on how regulators best approach assessment of the cost of equity required by investors, bearing in mind the interests of users not only in the price they pay in the short term but also in the delivery of the service and investment required into the future.

In formulating this advice I draw on my experience both as a senior civil servant and a regulator. I spent 23 years in the UK Treasury, dealing in particular with issues relating to implementation of PPPs, privatisation and economic regulation. Subsequently, I spent eight years on the board of the UK Civil Aviation Authority as Group Director Economic Regulation, responsible for the Authority's economic output and in particular its price controls on designated airports and air traffic control. In this role I was responsible for the setting of price controls for Heathrow, Gatwick and Stansted and also, in two regulatory cycles, for price controls on NATS En Route Ltd (NERL), the UK's provider of en route air traffic services. In all cases the determination of the WACC (and within that the cost of equity) was a key part of the overall decision.

Developing a regulatory approach

There are two features of the WACC determination which make for particular difficulty in its treatment in price controls. First, the capital intensive nature of airports means, as the AERA document makes clear, that determination of the allowed WACC, and of the cost of equity within that, is highly material to any pricing review. This is the more so where a step change in capital expenditure means that the base to which the WACC is applied has expanded significantly.

Second, again as the AERA document recognises, the CAPM methodology generally used to assess WACC can give rise to a wide variation of outcomes, dependent on the assumptions used and the analysis conducted. In this sense CAPM is more a framework for assessing evidence, and making the necessary regulatory judgements, than a formula that can be automatically applied. The result is inevitable uncertainty about what the 'right' (or more accurately the 'best and most appropriate') answer actually is.

This combination of materiality and uncertainty has two particular implications. It bears on how a regulator should assemble and assess the evidence but also on how it seeks to balance conflicting pressures in the resulting judgment.

Turning first to assembly and assessment of the evidence, it seems to me important to recognise explicitly the uncertainty applying to almost all of the factors in CAPM so that stakeholders are clear what the range of possible or reasonable outcomes is, and therefore what options are open to the regulator. Typically, in the UK, this has been done through construction of ranges for individual elements in CAPM, adding up to a composite range within which the regulator can position its judgment. Such an approach adds to transparency in a number of ways. First, it reflects numerically the uncertainty that is universally understood to obtain. Second, it enables the regulator to take due account of all the evidence provided rather than plumping for a single opinion which, no matter how expert, will itself be based upon assumptions of varying strength and certainty, but where that variability is effectively submerged. Third, the use of ranges for individual CAPM components will more clearly indicate where the area for regulatory judgement on WACC lies and, depending on how individual component ranges cluster around that, what weight might be attached to any particular points within the range.

Of course, this approach may not be the only way to understand the degree of uncertainty around WACC estimation, but whatever technique is applied a degree of explicit recognition of this uncertainty is useful. This is because the regulator needs to understand and explain how its judgment bears on the interests of investors and users and what risks it may be running in relation to future investment in the industry. This is because the cost of equity - and the WACC more generally - is key to assuring investors that returns will be forthcoming for the investment undertaken that are commensurate with the risks that investors have borne. Failure to allow sufficient returns runs the risk of disincentivising investment, not only in the company concerned but in the industry more generally, and effectively attempting to force investors to make new capital expenditure where they perceive that each investment is losing them money is unlikley to lead to acceptable outcomes for and any of the parties involved. Recognition of this risk has meant that UK utility regulators have historically tended to aim up within CAPM ranges to reflect the greater adverse impact for consumers from lower than desired investment in the future relative to a price increase now. This is because absence of - or delay in - investment will mean that capacity and services that consumers want will not be available and, in the airport case, that will result in higher prices for air traffic services as the scarcity rents arising from constrained capacity are reflected in the market clearing fares charged by airlines (even if airport charges themselves are capped).

The potential for adverse longer term effects needs, therefore, to be weighed against the short term price advantage that may result from lower allowed returns for investors. This is the more so where future prospects for economic growth or (as in the UK case more usually) a history of underinvestment mean that significant, ongoing investment is likely to be required. In such cases the future detriment from disincentivising timely investment could be substantial and continuing. Indeed, there is a risk of cutting across the broader policy objective of encouraging private capital in the first place where this has, in part at least, been motivated by a desire to stimulate investment that the public sector has practically been unable to deliver.

None of this is to downplay the interests that users naturally have in lower prices, simply to suggest that the apparent trade-off between users' interests and those of investors is a lot less stark where appropriate account is taken of users' longer term interests in capacity and service being available. In such circumstances, users' interests might well be better served by a higher allowed cost of equity than its short term price impact would suggest. Put simply, it is in users' interests that that the cost of equity should not be excessive, but it is in all parties' interests that it should be enough.

It is apparent from the AERA document that consideration has been given to the short term impact on airport charges of different costs of equity but somewhat less evidence of the weight to be attached to the longer impacts of setting the cost of equity too low. Any future decision could be improved through greater and more explicit assessment of this balance, recognising the underlying economic reality that investment decisions (not only in respect of Delhi airport but for the Indian airport sector more generally) are made by private sector actors in a world where relative capital mobility means that investment opportunities are compared across countries and sectors. In this sense the objective of the regulator is to find that sweet spot where incentives provided to investors are sufficient, but no more than sufficient, to bring forward the investment that will be required by users. That means attaching due weight to that evidence that is most relevant to the decisions that investors will in practice be making (a point which bears particularly on some of the evidence relating to the cost of equity dealt with below). But it may also mean recognising that the uncertainties around evidence and behaviours means that the sweet spot may be difficult to determine, and that a properly cautious judgement is one best placed to secure investment and long term sustainable benefits for users, even if at the expense of short term price advantage. The minimum cost of capital that a properly prudent investor needs to undertake an investment to meet the needs of users may very well not be the answer that can be secured from any one mechanistic calculation.

Assessing the cost of equity

1

It is not my intention in this short note comprehensively to analyse AERA's approach to determining the cost of equity. But some of the points I have underlined above about assessment of evidence and better recognising and dealing with uncertainty seem to me to apply particularly to the derivation of an asset beta for Delhi airport.

Assessment of risk, and the associated derivation of betas in the absence of direct market observation, is inherently difficult and uncertain and, as a result, calls for assessment of evidence from a number of different angles. This is certainly how regulators in the UK have sought to proceed. In the airport cases, the existence of BAA trading data upto the point of takeover by the Ferovial-led consortium in 2006 provided something of an anchor. Not so with NERL, the provider of air traffic control, which had never been traded and where there were no other private sector operators to serve as comparators. However, in both cases the CAA (and for airports the UK Competition Commission as well) considered evidence in respect of utilities, airlines as well as other airport operators. The objective was to position the three regulated airports both in relation to one another

but also in relation to relevant comparators, reckoning that airports carried significantly more risk than utilities but less than airlines. We also made use of airport comparators but found, as is also apparent from the NIPFP report, that there was significant variability in airport betas. This meant that these comparators had to be handled with care, focussing on those likely to be more realistic comparators and attaching less weight to outlying observations that could not be adequately explained. We did not consider any simple averaging of what would inevitably have been an arbitrary list but rather sought to exercise informed judgment on how comparators should best be used. This meant recognising, for example, that Frankfurt was a more appropriate comparator for the specific case of Heathrow than Auckland New Zealand.

In my view, against this background, there could be significant reservations about the NIPFP's approach to assessment of the beta. There are issues, I understand, around the provenance of the airport beta list and the relevance of some of the entities on the list. But leaving those issues aside, there does seem to me a broader point about the merits of focussing on those airports that are likely to be most relevant to the Indian situation. NIPFP's argument for broadening the comparator list beyond emerging markets is to eliminate the 'bias' that such a restricted list entails but, if that involves downplaying of the comparisons that investors would themselves make, it risks identifying a beta – and a cost of equity – that is not commensurate with the risks involved.

Given India's state of economic development, airports in emerging markets look to be an important and distinct reference point in any full analysis. Their betas are likely to be impacted by broadly similar factors, in particular (significantly) higher rates of economic growth and income elasticity of demand than in more mature markets, both of which would tend to increase the susceptibility of airport revenue and profitability to economic fluctuation. While there might be discussion about the relative relevance of different airports in any list, a wholesale move to excluding such considerations and moving solely to an alternative basis for comparison requires very clear identification of factors which are relevant to the risks which the beta is attempting to measure. In this respect the NIPFP's identification of size and ASQ scores as reasons for broadening the pool of comparators do not appear to bear directly, to any significant degree, on the systematic risk to which airports are subject. In particular, ASQ scores largely reflect passenger perceptions of service quality and ambience. Airports with similar betas may have very different ASQ scores and vice versa. They do not relate directly to the risk that investors bear.

Some factors might, in my view, tend to suggest a higher beta for Delhi than some comparators. For example, the high degree of competition for transfer traffic which has developed across the Middle East and Asia may have an effect, as in economic downturns reduced transfer traffic may disproportionately impact the less well established and competitive hubs. This could suggest a higher beta for Indian airports compared to some other emerging market hubs. The operational leverage implied by the Government's high share of revenues might also be a factor arguing for a higher beta

There may be other, different factors which might argue for either higher or lower betas and affect the weight to be attached to any particular average of emerging market betas or to any individual comparators. But using emerging market airport betas as a higher reference point alongside other approaches, in the sort of range discussed earlier in this note, would create a clearer framework for

a regulatory judgment about the appropriate level of beta and the risks to investment that might be involved in any choice.

It is sometimes useful to perform a cross check of the results that emerge from regulatory consideration. The result of NIPFP's approach, even as amended by AERA, is that Delhi airport's beta is assessed to be in the same region as those which the UK regulatory authorities determined as applying to Heathrow and Gatwick (0.5 compared to 0.47 and 0.52 respectively) and to be lower than that assessed by the CAA for NERL's monopoly provision of en route air traffic control services (0.6). It also results in a cost of equity broadly similar, possibly below, those applying to the malnstream of Indian infrastructure/utilities. These are strongly counterintuitive results. Heathrow and Gatwick operate in one of the world's most mature aviation markets subject to significant capacity constraints, factors which would both tend to dampen the response of traffic to economic volatility. The NERL result depended to an extent on the operational leverage to which the business was judged to be subject, a factor which is also present in the Delhi case. As for other infrastructure/utilities, their sensitivity will depend on the precise operational or franchising characteristics involved. However, airports are usually judged to be significantly more risky than entities where, to a greater or lesser extent, the scope for substitution is more limited. I would therefore expect that, as we found in the UK, and other things (in particular debt/equity ratios) being equal, airports to have rather higher costs of capital than infrastructure/utilities generally.

Conclusion

As noted above, I have not attempted a comprehensive reassessment of the cost of equity—let alone the WACC - to be applied to Delhi airport. Rather, I have sought to identify how the regulatory judgment might best take account of the inevitable uncertainties around estimation, and how the risks to investment — and therefore users' interests in the longer term — might be better factored into the equation.

This is not an easy task. As a relatively new regulator AERA has the advantage of developing its approach and policies afresh. However, its freedom of manoeuvre may be rather less than this implies. This contrasts with my experience at the CAA where I inherited a significant history of past decisions. However, that had the corresponding advantage that, over time, clear understandings of what investors could reasonably expect — and the conditions under which they were prepared to invest - had built up. Effectively, investors had become familiar with — and accepting of — a well-established CAA approach. The credibility this gave meant that during my time we had latitude to innovate, for instance on service quality and capex incentives, which was derived from the reputation that had been built up generally but with investors also, and a perception that if they behaved reasonably investors could expect to make returns that corresponded realistically to the risks they faced. The current regulatory consideration therefore has to be seen in the context of the longer term development that will be possible as investor experience and regulatory credibility is built. The challenge is to build the confidence needed from all parties to lay that firm foundation for the future.

ANNEXURE D

(Expert Opinion of Prof. Jayanth Varma)

Cost of capital methodology for private airports

Prof. Jayanth R. Varma

1 Background

The Airport Economic Regulatory Authority (AERA) is mandated by the Airport Economic Regulatory Authority of India Act 2008 to determine the tariff for aeronautical services. The AERA has accordingly framed the Airport Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011. An important element in the fixation of tariff under these guidelines is the Fair Rate of Return (FRoR) applied to the Regulatory Asset Base (RAB) or FRoR*RAB. The guidelines provide that FRoR is to be computed as a weighted average of the cost of debt and the cost of equity, and also that the cost of equity is to be determined using the Capital Asset Pricing Model (CAPM).

AERA engaged a consultant to prepare a study report on estimating cost of equity for private airports in India, and proposes to use the methodology recommended in this study report for fixing the tariff for Delhi International Airport Limited (DIAL). DIAL has approached me to provide my opinion on two specific issues in the consultant's study report:

- . Usage of market value of equity in computation of cost of equity
- · Estimation of the risk free rate of return

This note presents my opinion on these two issues.

2 Risk free rate of return

AERA's consultant proposes to estimate the risk free rate of return by taking the arithmetic average of the daily yield on 10-year government bonds over the period January 1, 2001 to December 31, 2010. In my opinion, this averaging is completely inappropriate. For computing the cost of capital on any given date, what is relevant is the risk free rate prevailing on that date, and not the average of what the rate has been in the past.

The cost of capital is used to discount future cash flows, and the past is completely irrelevant except in so far as it provides some guide to the future. In the case of a market determined bond yield, the yield at any point of time represents the market's expectation of what the average interest rate will be during the life of the bond (plus appropriate risk premia). Since long term interest rates already represent an average of expected future short rates, a further averaging of these rates does not make any sense.

Moreover, an average of past bond yields is a purely mathematical construet devoid of any economic significance. By contrast, the long term interest rate is the risk free cost of capital today: it is the rate that would have to be paid today to finance a risk free project, and is therefore economically highly meaningful and relevant.

A case could also be made that interest rates of maturities longer than ten years might be appropriate if airport assets have an average economic life exceeding ten years. Ten year yields might be used for estimation purposes because of their greater liquidity, but it might be appropriate to add a small term structure spread of say 25 basis puints to reflect the longer average economic life of the assets.

3 Leverage or gearing ratio

AERA's consultant applies the market value leverage ratio (instead of the book value ratio) to relever the asset beta into an equity hota. In theory, this makes eminent sense, because book values are an accounting fiction with no economic significance. However, it is important to be completely consistent in this regard.

If market value weights are used to determine equity betas, it is absolutely imperative that market value weights be used also for computing the weighted average cost of capital. Using market value weights in one place and book value weights in the other produces results which are manifestly absurd.

It is easiest to see why this is so in an idealized Modigliani-Miller (MM) setting where there are no taxes and no capital market imperfections and debt is default free. As is well known, in the MM setting, the cost of capital does not depend on leverage at all. Suppose therefore, that R_f (and R_d) = 10%, $R_m - R_f = 5\%$ and $\beta_A = 1$. The cost of capital for the unlevered firm is 10% + 1 * 5% = 15%. In the MM setting, the cost of capital for the levered firm is also 15%. Consider a firm with book value leverage of 0.8 and market value leverage of 0.6. If we apply market value leverage consistently, we get $\beta_E = \beta_A/(1-0.6) = 2.5$,

 $R_E=R_f+\beta_E(R_m-R_f)=10\%+2.5*5\%=22.5\%$. The weighted average cost of capital is given by $WACC=0.4R_E+0.6R_D=0.4*22.5\%+0.6*10\%=15\%$ as required by the MM theorem. If we apply book value weights consistently, then also we get the same end result: $\beta_E=\beta_A/(1-0.8)=5$, $R_E=R_f+\beta_E(R_m-R_f)=10\%+5*5\%=35\%$ and

 $WACC = 0.2R_E + 0.8\dot{R}_D = 0.2*35\% + 0.8*10\% = 15\%$, again as required by the MM theorem. But if anybody were to attempt a hotchpotch of taking (a) the market value based equity beta and cost of equity, and (b) applying book value leverage in computing the weighted average cost of capital, he would end up with the following absurdity: $WACC = 0.2R_E + 0.8R_D = 0.2*22.5\% + 0.8*10\% = 12.5\%$. This purported result would violate the MM theorem, and would imply that the project has an implied beta of only 0.5 instead of 1.0.

The above example shows that while the use of market values is theoretically the best approach, a consistent use of book value leverage might be a tolerable approximation under certain conditions. However, mixing the two approaches is an absolute disaster. The AERA guidelines that define the FRoR as a weighted average cost of capital do not explicitly mention whether the gearing (or leverage) ratio is based on book value or market value weights, but it is apparent from a reading of the entire guidelines, that book value weights are intended. If this reading is correct, then the choice of market value weights for levering the beta and computing cost of equity is completely indefensible and inappropriate.

Despite the theoretical merit of the market value approach, there might be practical advantages to the use of book values consistently everywhere:

- As mentioned earlier, probably the AERA guidelines already contemplate the use of book value weights for computing FRoR and there might be some reluctance to amend these guidelines.
- Since DIAL is an unlisted company, the determination of the market value of equity is highly problematic.
 In fact, the purported market value used by the consultant is merely an analyst opinion and not a true market price. There are issues of transparency, objectivity and fairness in a regulator using an estimate of an analyst who bears no accountability to the regulator at all.
- The analyst estimate of the market value of equity would (explicity or implicitly) be based on some projected earnings or cash flows. These earnings or cash flow estimates would be based on some assumption about the tariff that would be fixed by AERA. There is an inherent circularity in the regulator setting the tariff using an analyst's estimate of the market value of equity (and therefore the analyst's estimate of the tariff that the regulator would set). It would be akin to a snake trying to swallow its own tail.
- It is evident that when FRoR is applied to the Regulatory Asset Base (RAB), the book value of RAB is used. There is no logical inconsistency in using market values in both steps of computing FRoR, and then using book value to compute RAB. This is because the RAB is not the totality of assets of the company and the cost of capital is for the whole company. Yet, there is probably an appeal of simplicity which might lead to a regulatory preference for using book values in all three steps (two steps in computing FRoR and the third step in computing RAB).

For these reasons, I would like to be pragmatic about this and state that AERA would be perfectly justified in taking one of the following two approaches:

- Compute FRoR using estimated market value of equity at both stages (first to estimate equity beta and cost
 of equity; and second to compute the gearing ratio for computing FRoR) but use book value of assets to
 compute RAB.
- Use hook values for all three purposes (first to estimate equity beta and cost of equity; second to compute
 the gearing ratio for computing FRoR; and third to compute RAB).

The first approach is theoretically sound and the second is practically feasible, and so I would not like to be dogmatic about the choice between the two approaches.

Leigh | Fisher
Management Consultants



REPORT

COST OF EQUITY RESPONSE TO NIPFP REPORT

23 January 2012

ANNEXURE E

(Leigh Fisher comments on Cost of Equity)

LeighFisher Ltd

Registered Office: 1180 Eskdale Road, Winnersh, Wokingham, RG41 5TU

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RESPONSE TO NIPFP ESTIMATE OF THE COST OF EQUITY.

Introduction

Following AERA's release of its consultation paper 'Determination of Aeronautical Tariff in respect of IGI Airport, New Delhi for the 1st Regulatory Period', LeighFisher has been asked to comment on the evidence produced for AERA by the National Institute of Public Finance and Policy (NIPFP) on Estimating Cost of Equity for Private Airports in India.

NIPFP's report, like that of LeighFisher, employs the standard form of the Capital Asset Pricing Model (CAPM). This paper examines each component of the approach reported by NIPFP and considers its suitability for use in equity determination in India. It identifies:

- One area the risk rate where NIPFP fails to follow best practice:
- One area betas where the evidence source cited by NIPFP is flawed; where they have disregarded important evidence on relative levels for airports in emerging and mature markets; and where they have made inappropriate adjustments to data (which have subsequently been rejected by AERA itself);
- One area the equity risk premium where NIPFP has failed to follow the approach recommended in the source they have cited without noting this fact; and
- One area the levering and delevering formula where there is a danger that NIPFP has
 used a debt equity ratio incompatible with that applied by AERA.

As an overall result we have significant concerns about the use of NIPFP's paper as evidence on the cost of equity for Delhi International Airport. Since the effect of each (individually and collectively) of NIPFP's departures from best practice is to reduce the cost of equity, there is a specific danger that this will lead to an estimate which is excessively low.

The remainder of this paper goes through the individual elements of the NIPFP approach to calculating the cost of capital in detail.

Risk Free Rate

The risk free rate estimate incorporated in CAPM assessments of the cost of equity, is usually based on establishing a forward looking rate for the expected return on Government debt, which in turn is then used as a proxy for the return on a notional risk free investment.

AERA is intending to calculate a nominal cost of capital and it is therefore appropriate that a risk free rate should be calculated in nominal terms. However, this does not mean that it is best practice simply to use the historic nominal figures (under historic inflation conditions), where these do not provide an appropriate indicator of what a forward looking risk free rate would be.

In general we would expect the nominal risk free rate to take account of two factors:

- An underlying real rate of return;
- A forward looking inflation rate.

This reflects the fact that it is more realistic to assume that the real rate of return is consistent over time, rather than to assume that investors have a consistent view of the nominal rate and would, by implication, feel equally satisfied with (say) a nominal 9% return if inflation were at 5% as they would be if the same 9% nominal rate were offered and the inflation rate were 15%.



As a result, if government debt costs are to be used as a proxy for nominal risk free rates, it is important that the inflation expectations at the time are taken into account - so as to establish the best estimate level for a forward looking nominal benchmark.

For the avoidance of doubt, the objective is not to produce a forecast of Government interest rates in their own right, it is to produce an estimate of the underlying risk free return. The use of government interest rates provides a proxy for these.

In the case of the LeighFisher study, the headline average interest rate of 7.9 % calculated by LeighFisher was adjusted for average inflation over the same period (of 5.6%) to produce an average real interest rate of 2.2%. This was then taken as a proxy for the real risk free rate. The resulting real rate was then converted to a forward looking nominal rate by incorporating forecasts of inflation. The LeighFisher estimate of the nominal risk free rate employed projections for forward looking inflation of 6% produced by the Survey of Professional Forecasters. This projected inflation rate was somewhat higher than actual inflation over the historic period used for calculating the real rate-leading to a correspondingly higher figure for the nominal risk free rate of 8.3%. The risk free rate derived in this way is, of course, dependent on inflation forecasts (as the best a proxy for inflation expectations) and so the regulatory conclusion should take account of the best inflation forecasts available at the time of the decision. A key issue here is consistency: the inflation rate implied by the risk free rate calculation should match that used in other aspects of regulatory calculations and in particular financial forecasts.

NIPFP have not applied the approach set out above, but have taken a simple average of ten year nominal bond rates between 2001 and 2010, without adjustment, and proposed that this should be used to represent forward looking nominal rates. No attempt has been made to allow for the difference between past and forward looking inflation rates. In doing this, NIPFP has derived a nominal risk free rate estimate of 7.35% based on the past, which, with future inflation rates forecast at 6% (as projected the Survey of Professional Forecasters) would be consistent with a real risk free rate estimate of 1.27%.

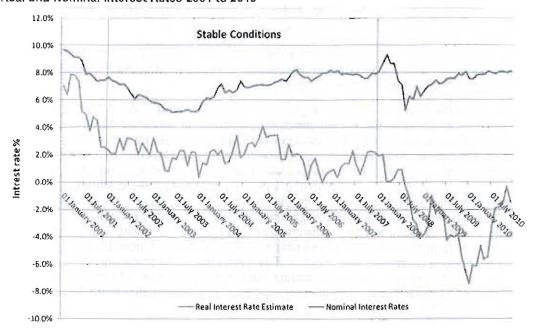
It should also be noted that debt costs may react very strongly to major financial crises. These may lead to sharp short term increases in individual countries if currency risk is seen as increasing, but may alternatively lead to falls if the Government embarks on a policy of credit easing. Where the effects have been global, there may well be distortions to interest rate structures - even in countries where the direct impact of the crisis has been less major.

The period taken by LeighFisher – the longest for which information was available - covered both periods of high and low real interest rates, which to a certain extent offset each other.

The 2001 to 2010 period taken by NIPFP is dominated by the impact of the most significant global financial crisis since the Second World War, between 2008 and 2010, when Indian interest rates were at unsustainably negative levels. There is a strong case for omitting this period, and (to avoid an imbalance) omitting also 2001 when real interest rates were high.



Real and Nominal Interest Rates 2001 to 2010



This leaves the period 2002 to 2007 when real rates were relatively consistent and unaffected by crisis. Over these 5 years real interest rates, were 2% (based on nominal interest rates of 6.9%). Using the 6% inflation rate forecast cited earlier this would give rise to a forward looking nominal risk free rate of 8.1%.

These nominal and real forecast risk free rates can be compared with:

- The current yield nominal yield on Indian 10 year bonds of 8.2% (the lowest rate since August 10 2011);
- Long term historic real rates on Indian bonds estimated by Varma and Barua, which are equivalent to 2.6% real for the period 1991 to 2005 (9.5% nominal);
- Estimates of long term risk free rates in the UK produced for UK regulators by Smithers and Co of 2.5%;
- Repeated use of estimates between 2% and 3% by UK regulators though a lower rate of 1.75% has recently been used for the NERL en route charges determination.

These comparisons suggest that, at forward looking inflation rates of 6%, the real interest rate of 1.27% implied by the NIPFP approach is excessively low.

Betas

NIPFP has produced an estimate for airport beta based on the average from a sample of 25 companies. Having calculated this average, it has then reduced the figure by a mitigation factor linked to a possible stabilisation mechanism derived from the application of a User Development Fee. We note that AERA has not accepted this NIPFP adjustment – a position which we would endorse. However, there remain significant problems with other aspects of NIPFP's beta assessment related to;

- The source and quality of NIPFP beta estimates
- The complete rejection of the evidence of higher betas for airports in emerging economies



Source and Quality of NIPFP Beta Estimates

The NIPFP paper derives the betas used in its cost of equity estimates from evidence provided to the New Zealand Commerce Commission by the Strategic Finance Group Consulting Group (acting for Air New Zealand). While such evidence is potentially relevant, it was provided by an interested commercial party to a regulatory deliberation. The weight that should be attached to it needs therefore to take proper account of that regulator's view of the evidence. Significantly more weight could be placed on it had it been endorsed by that regulator and reflected in its regulatory conclusions.

In practice, however, the comments of the regulator fall far short of an endorsement. The Commerce Commission's (CC's) views on the evidence provided on beta provided by the source used by NIPFP were as follows:

- "E8.27 SFG [the Strategic Finance Group] (for Air NZ) increased the size of the comparator sample (from that used by the Commission in its Draft Reasons Paper). Using the same approach as outlined by the Commission SFG concluded that the Commission's estimate of beta was overstated and a more appropriate asset beta value was in the order of 0.5
- E8.28 In its cross-submission NZZA [New Zealand Airports Association] supplied an expert report from PwC which critiqued Air NZ's expert reports on the asset beta.
- E8.29 PwC found two technical errors in the SFG analysis, a gearing adjustment that was not consistent with the Commission's approach and anomalies in a number of SFG's beta estimates. PwC considered that remedying these errors alone would raise the asset beta estimate using SFG's preferred method and Air NZ's preferred sample from 0.50 to approximately 0.70. PwC also disagreed with SFG's estimation of equity betas using a very long period of observations, and using its preferred set of comparable entities generated an asset beta estimate of approximately 0.70 (this is comparable to the asset betas derived by the Commission and Europe Economics). The Commission identified similar technical issues with the NZIER [New Zealand Institute for Economic Research acting for the Board of Airline Representatives New Zealand] and SFG expert reports on the asset beta analysis."

Source: New Zealand Commerce Commission Input Methodologies (Airport Services) Reasons Paper. December 2010

This failure to accept the evidence on beta provided by the SFG, raises serious questions about the weight that NIPFP has placed on it and the role it is now playing in AERA's regulatory assessment. It would appear to have less credibility than the final set of betas used by the regulators themselves following their close examination of the evidence from all sources. It is the Commerce Commission's final betas which have been used by LeighFisher in its own evidence.

We should also note that the set of comparators adopted by the Strategic Finance Group/Air New Zealand is in some aspects unusual. In particular we have not previously seen use made of Derichbourg, Dyncorp, Multiplus or Beijing Airport High Tech Park (as distinct from Beijing Capital International Airport) for airport regulation comparisons, and companies such as Infratil have wide non-airport interests. Interestingly, SFG's own original report makes clear that each of these companies was considered by Air New Zealand as specifically not comparable to Auckland International Airport.

Brief additional information on the companies concerned, taken from the SFG/Air New Zealand evidence, is shown below, together with our view of possible reasons why Air New Zealand regarded them as non-comparable to Auckland.



Company	SFG Description	LF Assessment of Possible Reasons for ANZ Rejection
Beijing Airport High-Tech Park Co Ltd (600463; China)	The Company is primarily engaged in the development and sale of land and leasing of standard factories. The Company is also involved in the management of properties and the construction and building business. Other activities include the provision of consultancy services.	Not involved in airport ownership or management
Derichebourg (DBG; France)	Derichebourg provides alrport services including runway assistance, passenger assistance, coordination and control of stopovers, aircraft cleaning, logistics and baggage handling.	Involved in airport services and handling rather than airport ownership or management
Dynacorp International (DCP; USA)	DynaCorp International Inc. (DynaCorp International) is a provider of specialized, mission critical professional and support services outsourced by the United States military, non-military United States governmental agencies and foreign governments. The Company's expertise is in law enforcement training and support, security services, base and logistics operations, construction management, aviation services and operations, and linguist services. It also provides logistics support for all of its services. The Company's customers include the United States Department of Defence (DoD), the United States Department of State (DoS), foreign governments, commercial customers and certain other United States federal, state and local government departments and agencies. Revenue from the United States government accounted for approximately 96% of total revenue during the fiscal year ended April 3, 2009 (fiscal 2009).	Involved in support services primarily to the US Government rather than the ownership and management of major civil airports
Infratil	The Company is listed on the New Zealand Exchange and owns airports in New Zealand and Europe as well as electricity, waste to energy and port investments in New Zealand and Australia.	Substantial proportion of holdings not related to airports
Multiplus S.A. (MPLU3; Brazil)	Multiplus provides loyalty program management, administration and operation services for customers of its commercial partners.	Acivities entirely unconnected with the operation or management of airports

In the circumstances it is somewhat surprising that NIPFP has chosen to include these companies - which together make up a fifth of its sample.

The New Zealand regulator, having considered the evidence of SFG and others ultimately produced its own set of 25 international airports (which did not include any of the companies noted above). A list of these companies with the Commerce Commission's own description is shown below together with its determination of the monthly betas - the approach to betas used in the LeighFisher report (NIPFP also uses monthly betas).



Company	Country	Commerce Commission Description	Monthly Betas
Aerodrom Ljubljana	Slovenia	Operates Ljubljana airport, providing a range of airport and ground handling services	1.08
Aeroporto di Fírenze	italy	Manages Florence airport and provides services to airlines, retailers and other concessionaires	0.59
Aeroports de Paris	France	Manages all of the civil airports near Paris and provides air transport related services and business related services	0.69
Airport Facilities	Japan	Manages and leases airport facilities at Haneda airport (Tokyo city), and manages Narita airport facilities	0.32
Airports of Thailand	Thailand	Operates Bangkok airport and the main provincial airports, and provides services to airlines, retailers and other concessionaires	0.74
Auckland · International Airport	New Zealand	Operates Auckland airport and provides a range of services to airlines, retailers and other concessionaires	0.75
Australian Infrastructure	Australia	Principally owns a number of Australian provincial airports	0.76
Beijing Capital International Airport	China	Provides both aeronautical and non- aeronautical services at Beijing airport	1.02
Flughafen Wien	Austría	Manages, maintains and operates Vienna airport, providing terminal, air-side and ground-side services	0.78
Flughafen Zurich	Switzerland	Operates Zurich airport, providing flight operation and security services and leasing airport facilities to commercial entities	0.49
Fraport	Germany	Operates Frankfurt airport, providing traffic and terminal management, ground handling, security and facilities management services	0.62
Gemina	Italy	Operates Rome airports (Fiumicino and Ciampino), providing airport rights, handling, security, retail and parking services	0.49
Grupo Aeroportuario Del Centro Norte	Mexico	Operates international airports in the northern and central regions of Mexico, providing aeronautical and non-aeronautical services	1.04
Grupo Aeroportuario del Pacifico	Mexico	Operates airports in the Pacific and central regions of Mexico, providing air transport support and commercial services	0.64
Grupo Aeroportuario del Sureste	Mexico	Manages airports in southern Mexico, providing a range of airport and commercial services	0.85



Company	Country	Commerce Commission Description	Monthly Betas
Kobenhans Lufthavne	Denmark	Owns and operates Copenhagen airport providing services to airlines and concessionaires	0.39
Guangzhou Baiyun International Airport	China	Operates Guangzhou Baiyun airport, providing ground, passenger, aircraft maintenance, food and space rental services	0.56
Hainin Meilan International Airport	China	Operates Hainan Mellan airport, providing airfield, terminal facilities, ground handling, passenger, cargo, retail and car parking services	1.29
Japan Airport Terminal	Japan	Manages and maintains passenger terminals and airport facilities at Haneda and Narita airports	0.58
MAP Group	Australia	Owns Sydney airport and stakes in some other airports	0.66
Malta International Airport	Malta	Manages Malta airport, providing aircraft landing / parking, ground handling and concessionaire services	0.47
SAVE	Italy	Operates Venice airport, providing airport, infrastructure management and retail services	0.82
Shanghai International Airport	China	Operates Shanghai airport, providing air traffic control, terminal management, ground handling and space rental services	0.70
Shenzhen Airport	China	Operates Shenzhen airport, providing ground operation, logistics and space rental services	0.82
Xiamen International Airport	China	Operates and maintains Gaoqi airport, providing air transport support, space rental, logistics and car parking services	0.75

While clearly there are arguments to be had as to the precise composition of any comparator list, one compiled by an expert and disinterested regulator after detailed examination of the evidence, would normally be preferred to that submitted by an interested commercial party – particularly where there are significant issues around the relevance of some of the comparators in the alternative. The set of companies finally used by CC has been adopted by LeighFisher in its evidence to AERA together with its estimate of monthly betas. We suggest strongly that these should be preferred to the list NIPFP has derived from the SFG report.

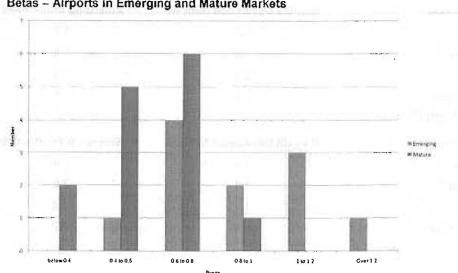


Use of Betas from Emerging Economies

Leigh Fisher divided the airports examined into 'emerging' and 'mature' markets. This reflected the fact that the betas of the two groups appear to be different and that Indian Airports had more in common in terms of general characteristics (and, as a result risk) with other airports in emerging markets than those in European and Australasian mature markets.

The difference between emerging and mature country betas in the full 25 airport New Zealand Commerce Commission sample is shown in the chart below - which uses the monthly betas approach applied in the LeighFisher study (and also in the SFG/Air New Zealand cited by NIPFP). The evidence suggests that:

- Although there is a degree of overlap, there appear to be two distinct groups;
- The averages for the two groups are significantly different 0.84 for emerging economy airports and 0.64 for mature economy airports;
- All emerging market airports have a beta of above 0.5;
- A Mann-Whitney U test applied to the values support the hypothesis that the distributions are different at a 95% significance level.



Betas - Airports in Emerging and Mature Markets

Source New Zealand Commerce Commission

NIPFP implies that Indian airports are fully comparable with airports in developing companies in terms of size and service performance and that as a result their risks should be considered as being similar. We would reject these arguments:

- We accept that service standards at airports such as Delhi are high but then so are those in a number of other airports in emerging economies notably Beijing, Shanghai and Kuala Lumpur. If anything it is service standards in airports in the mature economies (such as Paris or Vienna) which are now lagging. We see no strong reason why service standards would affect relative risk:
- We do not believe that size necessarily distinguishes mature airport airports from those in emerging countries. Guangzhou, Shanghai, and Bangkok are all large airports. This does not stop them from facing risks associated with emerging markets. In contrast, Malta, Venice or Auckland would be relatively small airports but that does not mean that the relevant economies are immature.



We have pointed to a number of factors which might make Delhi in particular risky and in our view AERA should take these into account.

NIFPF themselves have referred elsewhere in their report to a particular factor which might be expected to give airports in emerging markets a higher beta than those in mature markets- the sensitivity of traffic growth to economic factors. The table below shows the income elasticities cited by NIPFP for 'Developing Countries' and non US 'Developed Nations' (none of the airports specified by the New Zealand Commerce Commission is US). As can be seen, the elasticities for emerging economies are consistently significantly higher than those for non-US mature economies. This suggests strongly that traffic performance in emerging economies airports (and therefore in due course the value/share price of the airport) will be much more directly sensitive to the factors which affect the economy as a whole than those of airports in more mature markets.

It should be noted in this context that even though the prices at Delhi will be reset at regular intervals, it (like a number of other airports in the sample) will remain sensitive to within period traffic and other risks.

Intervistas Income Elasticities

National Level	Non-US Developed Nations	Emerging Economies
Short haul	1.3*	1.8
Medium haul	1.4	1.8
Long haul	1.5	2.0
Ultra long haul	2.2	2.5
*Note NIPFP gives this as 1.7		

Route Level	Non-US Developed Nations	Emerging Economies
Short haul	1.5	2.0
Medium haul	1.6	2.0
Long haul	1.7	2.2
Ultra long haul	2.4	2.7

Equity Risk Premium

The NIPFP paper relies solely on the work of Professor Damodaran in its derivation of the equity risk premium. In evaluating risk premia for individual countries, Professor Damodaran advocates the adoption of an approach which is based on using the equity risk premium for a well established mature economy market (for example the United States) and adjusting for relative country risk.

LeighFisher also cited Damodaran's estimate of the equity risk premium for India, alongside other evidence derived directly from the Indian historic record in its own evidence on the cost of capital.

While Damodaran mentions other methodologies, his preferred approach used the following formula:

Country Equity Risk Premium = Country default spread X standard deviation equity/ standard deviation bond



The principle behind this is that the country's default spread is an indicator of the risk inherent in the country as expressed by its relative debt price, while the ratio of the variance of equity and bonds factors this up for the relative risk of country equity and country debt. Damodaran notes the volatility of measures of the standard deviation ratio across countries and time and tends to use an averaged ratio. He comments:

'In 2011, for instance, there were 33 emerging markets, where both the equity market volatility and the government bond volatility numbers were available, at least for 100 trading days...The median ratio, across these markets, of equity market volatility to bond price volatility was approximately 1.88.We apply this median ratio to compute country risk premiums for all the countries.'

Source Equity Risk Premiums: The 2011 Edition Answath Damadorran 2011

Damodaran nevertheless notes however that on his website, he continues to use the figure of 1.5 reflecting the historic value of this ratio. (Source Equity Risk Premiums: The 2011 Edition Answath Damadorran 2011).

Damodaran also discusses methods based simply on the country default spread and equity market risk ratios but concludes:

'We believe that the larger country risk premiums that emerge from the last approach (the approach cited here] are the most realistic for the immediate future, but that country risk premiums will decline over time. Just as companies mature and become less risky over time, countries can mature and become less risky as well.'

Source Equity Risk Premiums: The 2011 Edition Answath Damadorran 2011

In our evidence we cited Damodaran's latest available application of this methodology to India which used a mature market equity risk premium of 5% (based on a forward looking rather than historic approach), the 1.5 standardised multiple and a default spread of 2.4 to give an equity risk premium of 8.6% (Source Country Default Spreads and Risk Premiums July 2011 Anwath Damodaran). It would, of course be possible to use as an alternative estimate for mature market equity risk premium – such as the 4.31% geometric rate for the US employed by NIPFP. It would also be possible, on the other hand, to use the most up to date estimate of relative equity volatility of 1.88 noted by Damodaran. If these two adjustments were combined the resulting answer would be 8.82%.

In practice, however, NIPFP's estimate of 6.71% does not follow the preferred Damodaran methodology. It instead uses a lower value for the mature market risk premium based on one assessment of US historic figures and adds a default spread of 2.4% which is not factored up by relative volatility (as specified in Damodaran's preferred methodology). The resulting estimates are nearly 2 percentage points lower than the result of 8.6% endorsed by Damodaran himself. The NIPFP does not discuss why it has adopted this alternative methodology.

In the LeighFisher report, the equity risk premium estimated by Damodaran is compared with results from other sources to substantiate a risk premium of 9%. We would contrast this with the NIPFP approach which considers only the results derived from a calculation from a single cited source; and where the methodology applied does not even follow the recommendations of that source.



Levering and Delevering

As the LeighFisher report comments:

"In principle, the debt and equity in CAPM calculations (and cost of capital calculations in general) should be based on market value. However in many applications the accounting values are used, either in the interests of simplicity and stability, or because there are no direct ways of ascertaining the values of the debt or equity concerned – especially for forward looking estimates."

In the case of Delhi, the airport is only one of a wide range of assets in GMR's portfolio and there is no directly available market value for it. We have not seen the basis of the analyst's valuation employed by NIPFP. However, for a valuation based on projected earnings (such as this purports to be) four factors are likely to apply:

- There will be a range of potential valuations in the market very possibly a wide range;
- The valuation of Delhi is likely to be only a limited portion of a 'sum of the parts' valuation:
 The amount of effort applied to valuing the airport in isolation will reflect this;
- The valuation will inevitably need to make assumptions about the aeronautical revenue which the airport will earn -introducing a circularity for regulatory purposes;
- The valuation will also need to make an assumption about the cost of equity (which may, or may not, be right) again reflecting a circularity – especially as this cost of will imply assumptions on the debt/equity ratio.

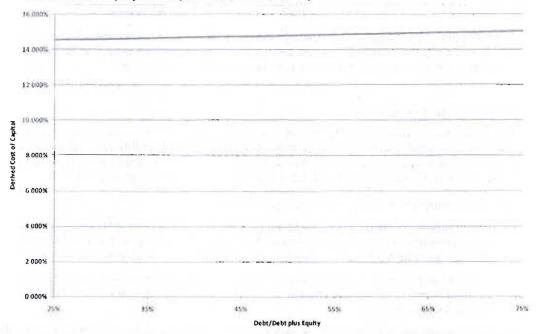
In short, any market value adopted in these circumstances will inevitably be imprecise, potentially contentious and circular.

However in principle, this should not have a substantial impact on the final WACC. As the debt equity ratio reduces, so the cost of equity decreases but there is more equity within the calculation and if a consistent approach is adopted these approaches should wholly or entirely cancel each other out, once the effects of taxation and changes to debt costs have been taken into account.

The chart below shows the effect on the final vanilla WACC of different debt/equity ratios using plausible illustrative assumptions set out in the box below, and applying the Miller relevering formula adopted by both LeighFisher and NIPFP. As can be seen, the resulting WACC varies relatively little over a wide range. Moreover, the illustrative example has allowed for the increased cost of debt as gearing rises, or of taxation. Adjusting for these would be likely to flatten the results for the WACC further.







Assumptions used in calculation of WACC under different debt/equity ratios (similar results would be expected with other plausible assumptions):

- Risk free rate 8%
- Equity risk premium 9%
- Asset beta 0.7
- Cost of debt 9% (constant across debt equity ratios)
- Relevering uses Miller formula

The relatively low variance of WACC over a range of gearing assumptions is a well known result for this methodology and may be one of the reasons why regulators in other jurisdictions have felt comfortable in taking a single regulator determined reference point for gearing.

One implication from this, however, is that it is clearly essential that the same weightings of debt and equity are used in both the equity determination and the WACC. It is entirely inconsistent, for example, to use a market based, estimate for the debt/equity ratio for the cost of equity in isolation and a higher accounting based estimate of gearing for the WACC calculation. Such an approach would both lead to a lowering of the cost of equity (by minimising the debt/equity ratio for relevering purposes) and to a lowering of the importance of equity in the WACC in the overall calculation. In consequence, it would be likely to lead to a significant underestimate of the final WACC.

Two consequences arise from this:

- It is likely to be highly misleading to compare the cost of equity in different determinations unless the debt/equity ratio has been corrected for;
- If the regulator decides to use an accounting rather than a market based value for the debt equity ratio for the purposes of calculating the WACC (thus avoiding the regulator needing to



endorse and defend a specific valuation for the company) the cost of equity proposed will need to be correspondingly based on an accounting based approach.

We have not seen the WACC calculation made by AERA and cannot therefore comment on whether the required consistency has been achieved - though we note that AERA does not seem to have cited a market based equity valuation for this purpose.

Overall Cost of Equity

In addition to examining directly derived evidence on the cost of equity for airports, AERA also considers the cost of equity found by other regulators looking, in this case, at Indian utilities. The NIPFP report estimates the cost of equity for airports at 12.7% (adjusted by the regulator to 14%. This compares with past findings for utility cost of equity of around 16%.

We would make three observations on such comparisons:

- Any comparison needs to be corrected for the debt/equity ratio assumed in the different calculation of the cost of equity (and for reasons noted above) applied in the calculation of WACC. Without such standardisation, the comparisons are of limited relevance;
- Similarly any such comparison would need to adjust for assumptions about forward looking inflation, since different assumed inflation rates would be expected to lead to different nominal costs of capital;
- Any comparison will need to take into account the relative risks of airports against other utilities – which are likely to be influenced by a number of factors including, in particular, the high level and relative volatility of the revenue growth rates.

We have already discussed the first two issues. We understand that the final issue will be covered by the work undertaken by other parties.

We would note, however, that in terms of regulatory precedents, the issue of the relative risk has been carefully considered by UK regulators, and there has been no real disputing the contention that airports would be expected to have higher risk (and therefore attract a higher cost of capital).

LeighFisher has already provided evidence to AERA on this issue. The point is well encapsulated in a paper commissioned by the UK Office of Rail Regulation from First Economics (The Riskiness of Network Rail Relative to Other Regulated Industries – June 2008).

The key conclusions, having reviewed a wide range of risk factors, are shown in the box below. These clearly support a view that:

- Airports are inherently more risky than Network Rail;
- Network Rail is seen as comparable in risk to the classic utilities of water and energy;
- Even a low risk airport, such as Heathrow, should have a cost of capital higher than Network
 Rail and therefore, by implication, the classic utilities.

Extract from Conclusions of The Riskiness of Network Rail Relative to Other Regulated Industries prepared by First Economics

- ...we feel confident about putting forward the following summary:
- it is extremely unlikely that investors will perceive Network Rail to be as risky as a regulated airport business. Although Network Rail's capex programme may be seen as containing greater downside risks, a combination of significantly lower demand risk, lower opex risk, lower-powered service quality incentives and the presence of explicit price control reopeners more than offset this risk; and

Leigh Fisher

in comparison with any other regulated company, there are both reasons why Network Rail might be
perceived as more risky and reasons why it could be seen as less risky. Overall, we feel that it would
be difficult mount a convincing argument that Network Rail's risk profile is materially different from
that of the other companies.

Having observed in section 3 of this paper how others have ranked the different sectors, our recommendations to ORR are as follows:

- when choosing a cost of equity for use in estimating Network Rail's cost of capital, ORR should treat
 the figures used by the CC in its determination for Heathrow as an absolute ceiling on the
 calculation. Since airports are almost certainly riskier stock market investments, ORR's chosen cost
 of equity should ideally sit a clear distance below the CC's estimate;
- regulated businesses (other than transmission) from the energy and water sectors are better comparators for a shareholder-owned Network Rail. It would not be unreasonable for ORR to use either actual share price data or Ofgem/Ofwat determinations as benchmarks for its own cost of capital conclusions; and
- in discussions with the credit rating agencies, ORR should encourage comparisons between the energy, rail and water sectors as a way of teasing out the inherent similarities between the risk profiles of the regulated networks in these industries.

In its evidence First Economics includes a review of the position of the energy regulator (OFGEM) shown below.

Extract from Energy Regulator Comparisons with Airports from The Riskiness of Network Rall Relative to Other Regulated Industries prepared by First Economics

the way that Ofgem presented its conclusions that it was conscious of comparisons to the findings of the CC [the Competition Commission] in a report on airport regulation published two months previously. The CC's cost of equity for Heathrow airport was 7.33% (based on gearing of 0.6) and Ofgem recognises in its determination that the GDNs face lower business than a regulated airport. This meant that the CC's cost of equity allowance to all intents and purposes acted as a ceiling on Ofgem's calculation.

Ofgem's approach was entirely consistent with the position taken by the CC in its work. Although the CC did not consider the riskiness of energy networks specifically, it did comment on the riskiness of airports relative to other regulated industries in general. In its final inquiry report the CC remarks that it is 'logical' that Heathrow and Gatwick airports should have higher betas (and, hence, a higher cost of equity) than utility businesses.

First Europe goes on to consider evidence provided to OFWAT – the water regulator.

Extract from Energy Regulator Comparisons with Airports from The Riskiness of Network Rail Relative to Other Regulated Industries prepared by First Economics

Confirmation of the picture emerging from last year's regulatory determinations can be found in a recent survey of investors by Water UK (the trade association for water and sewerage companies). At the start of 2008 Water UK interviewed around 40 representatives of the investor community and asked them to rank different types of company in order of risk. The results were as follows:

- electricity/gas transmission emerged as the sector in which risks were perceived to be lowest, with respondents citing the essential/strategic nature of the transmission infrastructure and revenue cap regulation as factors which limit risk;
- gas distribution, electricity distribution and water and sewerage were seen as more risky than
 transmission for a variety of reasons, most notably a sense of greater volatility in costs and
 revenues. However, no clear pattern emerged to suggest that investors see any one of these three
 sectors as more risky or less risky than the others; and
- respondents did, however, rank airports as more risky than traditional utility companies, generally highlighting airports exposure to demand risk in support of this position.



Although this work has qualitative value only, it does support the hierarchy (if not the specific figures within that hierarchy) that emerged from the work of Ofgem and the CC last year.

The report then refers to evidence from a ratings agency

Extract from Energy Regulator Comparisons with Airports from The Riskiness of Network Rail Relative to Other Regulated Industries prepared by First Economics

The two regulated sectors in which permanently higher risk is said to exist are telecoms and aviation. In the case of airports, Moody's states:

"Airport services [are] seen as moderately higher risk than water and electricity. For the airport sector, specifically BAA, we broadly apply a "one-notch discount" in our financial ratio guidelines compared with water and electricity (this means that, for the same leverage and coverage parameters, BAA would typically be rated one notch lower than a generic water or electricity company). BAA is more exposed to potential demand shocks, with less regulatory protection in relation to interim reviews."

The results of all these findings are consistent and clear. It should be stressed that First Economics concern in their work was with rail not airports. The lesser riskiness of airports has nevertheless been reported as a clear secondary conclusion of their work.

Conclusions

We have considered each of the elements of the NIPFP estimation of the cost of capital. We find that:

- the estimate of the forward looking nominal risk free rates using a methodology which does not allow for changes in inflation rates, or the possible exceptional effects of recent global economic conditions - is inappropriate;
- the evidence on betas from the source cited by NIPFP has been found to be unreliable by the New Zealand Commerce Commission (to which the evidence was originally put). The selected betas derived from this by NIPFP also include companies which are apparently irrelevant to the ownership and marketing of airports and which Air New Zealand (which originally commissioned the study) did not regard as comparable to Auckland Airport;
- NIPFP fails to consider important evidence on the higher betas of airports from emerging economies for reasons which are not convincing;
- NIPFP has used a methodology for the calculation of the Equity Risk Premium for India which does not correspond to the recommended approach of the source they cite (Damodaran). As a result they reach conclusions which are not compatible with Damodaran's own findings or results derived from alternative sources;
- NIPFP's derivation of the debt equity ratio, while not wrong in principle, gives rise to some significant practical problems. More importantly it may well not be compatible with the approach adopted by AERA in calculating the WACC;
- The resulting estimate of the cost of equity for airports at 12.7% (adjusted by AERA to 14%) is significantly lower than the cost of equity for Indian utilities, even though regulators elsewhere believe that airports are more risky than utilities and would therefore be expected to have a higher cost of capital.

In our view a low weight should therefore be given by AERA to this evidence.

LONDON

16 Connaught Place London, W2 2ES UK

+44 (0)20 7087 8777

SAN FRANCISCO

555 Airport Boulevard, Suite 300 Burlingame, California 94010 USA

+1 650 579 7722

OTTAWA

220 Laurier Ave. W., Suite 500 Ottwa, Ontario K1P 5Z9 Canada

+1 613 236 4318

NEW DELHI

242 Okhla Industrial estate, Phase III New Delhi. 110 020 India

+91 (0)11 2684 6500

ANNEXURE F

(Leigh Fisher comments on traffic forecast)



Report for Indira Gandhi Airport

COMMENTS ON TRAFFIC FORECAST

Prepared for Indira Gandhi Airport

January 2012

LeighFisher Ltd

Registered Office: 1180 Eskdale Road, Winnersh, Wokingham, RG41 5TU

Registered in England No: 2591354

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DELHI AIRPORT TRAFFIC FORECAST REVIEW

Traffic at New Delhi IGI Airport has experienced sustained growth in recent years. Behind this growth lies growth in the Indian economy and the deregulation of the Indian air transport sector. Forecasting air traffic going forward has to take account of a number of factors:

- Supply side: capacity likely to be operated and likely load factors; and
- Demand side: growth in the local economy and changes in fare levels.

It is LeighFisher's view that it is not advisable to pay too much attention to historic traffic performance as this is distorted by the highly regulated nature of the Indian domestic market and also the non-rational behaviour of some of the airlines in the market, including provision of excess capacity and pricing under cost in order to gain market share in the past.

Previous forecasts appear to have adopted a moving average approach to the forecasts, applying historic growth forward as a basis for the forecasts. We would disagree with this approach as this assumes that the operating environment now, is the same as it was in the past. This is clearly not the case.

- · Fuel prices are considerably higher;
- The airlines operating in the domestic sector are loss making;
- · There are capacity constraints at airports such as Mumbai; and
- Some airlines are adding capacity and cutting fares to fill seats even though these airlines are unprofitable.

Performance to 2011

Traffic has been growing at 27% for domestic traffic and 17% for international traffic through November 2011. Performance on a calendar year basis (in 000s) is shown below.

	. 2003	2004	2005	2008	2007	2005	2009	2010	2011
Domestic	5,748	7,445	9.589	12.957	16,180	15,470	17,128	19,582	24,478
International	3,945	4,519	5,292	6.174	6,903	7,588	7,900	8,717	10,025
Total Pastengers	9,693	11,964	14,861	19,131	23,089	23,058	25,028	28,299	34,502
Growth		23.4%	24.2%	28.7%	20 PH	-0.1%	9.5%	13 1%	21.9%

The above provides our estimate of growth to the end of 2011.

Supply Side Factors

The Indian market is immature in terms of demand and in terms of the way it is served. Of key concern in the Indian market at present is the chronic unprofitability of most airlines operating domestic routes. The traditional solution for chronic unprofitability is for weaker airlines – to withdraw capacity and fares to use – has not happened. This means that the airline capacity market is out of step with the market, as there is an oversupply of capacity, which in turn has led to an overstimulation of demand by low fares due to airlines wishing to fill seats.

Capacity growth projections should be treated with caution, for if there is any softness in demand, airlines may cut capacity below what is currently planned. Given the poor financial condition of some Indian airlines, this a particularly big risk in the current market, given high fuel prices.

Demand Side Factors

Typically, traffic growth is mainly driven by demand side factors, growth in the local economy and changes in prices.

An examination of past performance suggests a rapidly maturing market. In LeighFisher's view, the impact of deregulation has now passed through the system and the market now has a much more mature relationship to GDP. In addition there is a price factor at play as well as some positive impact from capacity constraints at Mumbai that may or may not continue.

It is not possible to derive the price directly from air fares as no data is available but in certain years there is evidence that there was a price factor at work in terms of either increases in fares or cuts in capacity due to profitability issues.

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_____International Airport

In addition in the last year or so, constraints on airfield capacity at Mumbai appears to be driving some traffic to New Delhi.

LeighFisher suspects a fare correction in 2008-09, followed by a downward correction in 2009-10 and again in 2010-11. In addition, in 2010-11, LeighFisher expect that there has been a positive boost to traffic at Delhi due to congestion/lack of capacity at Mumbai which has forced Air India in particular to reroute capacity via Delhi rather than Mumbai as evidenced by their decision to make New Delhi IGIA their hub.

Without adjusting for these factors (capacity, price and congestion at Mumbai), it is unlikely that any forecast will be reliable.

Risks and Conclusions

Significant risks still exist to any forecast. These include the risk of airline closure, especially in the domestic market and the risk of lower capacity and demand, due to the current global situation. Network carriers are struggling across India and Kingfisher's situation remains volatile despite recent efforts to improve the debt situation. Jet Airways has also shown a steady decline in profitability and yields over the past few years as low-fare airlines have taken market share from network carriers. In particular, Air India's future remains extremely uncertain. While the Government of India is keen to turn the airline around, there are still significant risks associated with this move. This could have a major effect on traffic at New Delhi IGIA given the recent move by Air India to use Terminal 3 at IGIA as a hub.

The growth of traffic at Tier-II cities and the increased point-to-point service will also affect New Delhi IGIA's traffic. As low-fare airtines increase their service to smaller cities, New Delhi will see a decrease in traffic. However, this is likely to be offset to a degree by LCCs offering international service and attempting to connect passengers through major airports.

It is not advisable to use historic growth rates to forecast future growth. The market has changed significantly, due to higher fuel prices and an imbalance between supply and demand which is leading to excess capacity. The forecasts need to reflect on the impact of likely capacity cuts either by a balanced reduction in capacity or a possible sudden failure or grounding of individual airlines. Any forecast approach needs to make allowances for the change in the market.

LONDON

16 Connaught Place London, W2 2ES UK

+44 (0)20 7087 8777

SAN FRANCISCO

555 Airport Boulevard, Surte 300 Burlingame, California 94010 USA

+1 650 579 7722

OTTAWA

220 Laurier Ave W., Suile 500 Oftwa, Ontano K1P 5Z9 Canada

+1 613 236 4318

NEW DELHI

242 Okhla Industrial estate, Phase III New Delhi, 110 020 India

+91 (0)11 2684 6500

www.leighfisher.com

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ANNEXURE G

(KPMG Report on RSD and HRAB)

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Delhi International Airport Private Limited

Point of View on treatment of specific elements of capital and operating expenditure for determining Regulatory Asset Base (RAB) and basis for proposing a fair rate of return on such investment

KPMG Advisory Services Private Limited February 2012

This report contains 21 pages



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- This report is provided to Delhi International Airport Private Limited (DIAL) pursuant to our Engagement Letter, dated 12 Jan 2012, and is subject in all respects to the terms and conditions of the engagement letter, including restrictions on disclosure of this report to third parties.
- If this report is received by anyone other than DIAL the recipient is placed on notice that
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Disclaimer

- This document is being submitted to Delhi International Airport Pvt. Ltd. (DIAL) as the Final Report for our engagement of Assisting DIAL on specific regulatory.
- This Final Report pertains to the scope of work as per LOE dated 12 January 2012.
- The report contains KPMG's analysis of the Consultation Paper, data provided by DIAL, secondary sources of published information and incorporates the inputs gathered through meetings with industry sources, which for reasons of confidentiality, cannot be quoted in this document. While information obtained from the public domain has not been verified for authenticity, we have obtained information, as far as possible, from sources generally considered to be reliable
- Our analysis is based on the prevailing market conditions and regulatory environment and any change may impact the outcome of our review
- Wherever our report makes reference to 'KPMG Analysis', it indicates that we have (where specified) undertaken certain analytical activities on the underlying data to arrive at the information presented; we do not accept responsibility for the underlying data. Wherever information was not available in the public domain, suitable assumptions were made to extrapolate values for the same
- We must emphasize that the realization of the prospective financial information set out within our report (based on secondary sources, as well as our internal analysis), is dependent on the continuing validity of the assumptions on which it is based. The assumptions will need to be reviewed and revised to reflect such changes in business trends, cost structures or the direction of the business as further clarity emerges. We accept no responsibility for the realization of the prospective financial information. Our inferences therefore will not and cannot be directed to provide any assurance about the achievability of the projections. Since the projections relate to the future, actual results are likely to be different from those shown in the prospective financial information because events and circumstances frequently do not occur as expected, and differences may be material. Any advice, opinion and/ or recommendation indicated in this document shall not amount to any form of guarantee that KPMG has determined and/ or predicted future events or circumstances



List of Abbreviations

Term	Description
AAI	Airports Authority of India
AERA	Airports Economic Regulatory Authority of India
Capex	Capital Expenditure
CAPM	Capital Asset Pricing Model
CGD	City Gas Distribution
Consultation Paper	Consultation paper issued by AERA on Determination of Aeronautical Tariff in respect of IGI Airport for the 1 st Regulatory period
D/E	Debt Equity
DF	Development Fee
DIAL	Delhi International Airport Private Limited
FRoR	Fair Rate of Return
HRAB	Hypothetical Regulatory Asset Base
IGI Airport	Indira Gandhi International Airport
MoCA	Ministry of Civil Aviation
NPV	Net Present Value
NTA	Non Transfer Asset
OMDA	Operation, Management and Development Agreement
OSC	Operation Support Cost
OSP	Operation Support Period
PNGRB	Petroleum and Natural Gas Regulatory
RAB	Regulatory Asset Base
RoCE	Return on Capital Employed
ROE	Return on Equity
RSD	Refundable Security Deposit
SSA	State Support Agreement
ТАМР	Tariff Authority of Major Ports
WACC	Weighted Average Cost of Capital
у-о-у	Year on year

14:



1 Background

Delhi International Airport Pvt. Ltd. (DIAL) has filed a proposal for levy of aeronautical tariffs at the IGI Airport, New Delhi to Airports Economic Regulatory Authority (AERA/ the Authority). DIAL has sought KPMG's assistance in evaluating the consultation paper issued by AERA and preparing a point-of-view document on treatment of specific elements of capital & operating expenditure for the purpose of determining the Regulatory Asset Base (RAB) and the basis for proposing a fair rate of return (FRoR) on such investment. These are as detailed below:

A. Refundable Security Deposits (RSD)

- a. treatment of lease (refundable security) deposits as quasi-equity based on
 - i. analysis of approach taken by the regulator on similar airport sector transactions internationally, on a best-effort basis, using data available in the public domain
 - ii. analysis of approach taken by regulator in other infrastructure sectors on comparable transactions based on data available in secondary domain
- b. treatment of fair rate of return on such deposits

B. Hypothetical Regulatory Asset Base (HRAB)

Rationale for including only efficient operational costs for fair valuation of HRAB

C. Return on Equity

Case study on return on equity (RoE) from Power Sector

2 Refundable Security Deposits (RSD)

The analysis of return on capital expenditure (capex) funded through RSD has been carried out considering:

- a. AERA's observations on whether DIAL should get return on capex funded through RSD?
- b. the expected rate of return based on
 - i. logical reasoning on cost of capital funded through RSD
 - ii. lenders recognition of RSD as sponsor's contribution
 - iii. comparables in infrastructure services under a regulated environment
- 2.1 **AERA's Observation:** In its consultation paper dated 3 January 2012, AERA has observed that:
 - a. Operation, Maintenance, Development Agreement (OMDA), defines "Equity" and the capex funded through RSD does not come under the



- purview of this definition. Hence, RSD component is not Equity as per OMDA.
- b. As per State Support Agreement (SSA), return on RAB is available on weighted average cost of capital (WACC) basis, where WACC has to be calculated considering the cost of each component of capital. Since, RSD under discussion is interest free, AERA has proposed to consider zero cost for WACC computation.
- c. In addition to the above, AERA has proposed that RSD funds were not available to DIAL for utilization for any other purpose. Development fund (DF) would not have been permitted to DIAL in case it would have utilized RSD for any other purpose.

2.2 Logical reasoning: Loss of revenues from lower annual lease rentals

While structuring the transaction for lease of commercial land (part of Non-Transfer Assets (NTA)), DIAL had foregone a part of annual lease rentals in favour of upfront RSD. DIAL utilized such RSD to part fund the equity requirement for the project to the tune of INR 1,471 crore. The estimated loss in revenues to DIAL is as illustrated below:

- a. DIAL had received upfront RSD of INR 1,471 crore and annual lease rentals of INR 46 crore for first year (FY2010) and INR 79 crore for the second year (FY2011).
- b. Annual lease rentals would escalate at least (minimum escalation rate as per existing agreements) by the rate of 5.50% y-o-y for next 57 years, starting from third financial year (FY2012).
- c. Below are the NPV calculation under three scenarios considering discount rate of 16.16% (proposed WACC rate by DIAL)²:
 - i. base case- with no investment of upfront RSD;
 - ii. AERA's approach viz. zero returns on RSD invested in aeronautical capex; and
 - iii. hypothetical scenario- where RSD is invested in non aeronautical business

Table 1: Base case (amount in INR crore)

Parameter	1st year	2 nd year	30th year	57th year
Upfront RSD	1,471	1,311,5		(1,471)
Yearly lease rentals	46	79	354	1,501
Total Income	1,517	79	354	30
NPV @ 16.16%	1,941			

¹ Source: Facts of the illustration are based on discussion with DIAL's officials

² Source: Discussion with DIAL and as per Consultation Paper



Table 2: AERA's approach (amount in INR crore)

Parameter	1st year	2 nd year	30 th year	57th year
Upfront RSD	1,471			(1,471)
Yearly lease rentals	46	79	354	1,501
Investment in Aero assets	(1,471)			
Depreciation on RSD investment in Aero assets		54	0	0
Total Income	46	133	354	30
NPV @ 16.16%	924			

Table 3: Hypothetical Scenario (amount in INR crore)

Parameter	1st year	2 nd year	30 th year	57 th year
Upfront RSD	1,471		4110.2	(1,471)
Yearly lease rentals	46	79	354	1,501
Investment in other sector	(1,471)			
Return on such investments @ 25%		368	368	368
Return of investment*				1,471
Total Income	46	447	721	1,869
NPV @ 16.16%	2,633			

*Note: For the purpose of above illustration, it has been assumed that there is no change in market valuation at the end of 57th year. However, in a practical scenario, market valuation of INR 1,471 crore is expected to be higher.

- d. Hypothetical scenario is based on the assumption that, in case DIAL did not invest in aeronautical assets, DIAL might have invested the RSD in non aeronautical businesses. An equity return of 25% has been assumed for the purpose of above calculation to reflect the higher risk associated with the non-aeronautical business.
- e. It is evident that there is an opportunity cost associated with RSD in terms of difference in NPV of receivables, as represented below:

Difference in NPV AERA's approach and Base Case				Amount in crore

f. Even though RSD is interest free, it is evident from above that there is a cost attached to it in terms of foregone lease rentals.

³ Source: Indicative returns based on no market study



2.3 Logical reasoning: WACC is determined based on opportunity cost

Professor Aswath Damodaran, defines cost of capital as "opportunity cost of all the capital invested in an enterprise⁴". "Opportunity cost is what you give up as a consequence of your decision to use a scarce resource in a particular way". By this definition, the opportunity cost of RSD, in DIAL's case, ought to be measured by the foregone lease rentals or returns from RSD in the next best use, and NOT the actual cost of funds.

- 2.4 Logical reasoning: Risk Reward relationship for an Investment
- 2.4.1 In business practice, it is expected that the returns from investing or lending should be commensurate with the risk associated with the project. For example, lenders determine the price of debt based on the risk related to project and associated opportunity cost. Similarly, return on equity is determined based on risk associated with the project and the opportunity cost.
- 2.4.2 In the current scenario, DIAL has already received RSD from real estate business, which has been recognized as liability in the books⁵. These are refundable by DIAL in the event of termination of lease agreement. DIAL has utilized these funds to part fund the aeronautical assets, however, there is no dilution in DIAL's liability. In case of early termination of lease of NTA, DIAL or shareholders of DIAL would be responsible to refund RSD to the lessee, subject to the conditions of the agreement. Therefore, it is evident that these funds have been infused as DIAL's contribution, which is similar to equity share capital.
- 2.4.3 Principle I of Schedule I of the SSA states that:

"Incentives Based: The JVC will be provided with appropriate incentives to operate in an efficient manner, optimising operating cost, maximising revenue and undertaking investment in an efficient, effective and timely manner and to this end will utilise a price cap methodology as per this Agreement."

Providing zero return on RSD would not be in line with the Principle of SSA.

Zero return on RSD at this stage may not set the right precedent for any future investment by any private player in airport sector in India. Importantly, it contradicts Principle I of the SSA by not providing any incentive for investment of RSD or equivalent sources of funds in the aeronautical business.

⁵ Source: Discussion with DIAL

Source: http://pages.stern.nyu.edu/~igiddy/articles/wacc_tutorial.pdf



- 2.4.5 Lenders have recognized this funding as part of sponsor's contribution making this investment riskier than debt (covered in detail in next section). Hence, it can be concluded that return on RSD should be at the least commensurate to the risk associated with investment in the aeronautical business.
- 2.5 Lenders Recognition of RSD as Equity / Quasi Equity
- 2.5.1 DIAL had raised debt to part fund the development of IGI Airport by a consortium of 10 banks⁶. Nine out of ten banks are nationalized banks, one being a publicly listed infrastructure investment firm. All the lenders treated RSD (to be realized at a later time) as sponsor's contribution (part of equity) while determining D/E ratio and determining the cost of debt. If RSD were not considered as part of equity:
 - a. Higher leverage and more risk for banks resulting in higher cost of debt
 - b. higher pass through cost in terms of higher interest cost
- 2.5.2 Lenders have treated RSD as part of sponsor's contribution, while sanctioning debt. RSD utilised to fund the capex has risk inherent to that associated with equity. Accordingly, for the purpose of FRoR calculation, returns equivalent to equity may be considered for RSD.
- 2.6 Other Infrastructure Sectors: Regulators in other infrastructure sectors do not consider source of funding while calculating returns for the project
- 2.6.1 City Gas Distribution (CGD): Petroleum & Natural Gas Regulatory Board (PNGRB), the market regulator, has not explicitly disallowed distribution companies to fund their subsequent capex through the security deposits received from their consumers. The guidelines allow the entity to earn a reasonable rate of return on entire capital employed. Moreover, PNGRB, in its guidelines, has clearly acknowledged that these security deposits would form part of the company's liability and it should not be reduced from the total capital employed while determining the network tariff. Relevant extract from the regulation are stated below:
 - a. "Entity may collect refundable interest free security deposit as specified under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities for Laying, Building, Operating or Expanding City or Local Natural Gas Distribution Networks) Regulations, 2008. Such deposit is towards the safe-keeping of the meter and is to be refunded in full to the domestic PNG customer in case of a dis-connection. Further, since the amount collected as interest-free refundable security deposit shall exist as a liability in the books

⁶ Source: DIAL,



- of accounts of the entity, the same shall not be reduced from the total capital employed while determining the network tariff (emphasis supplied)."⁷
- b. "The reasonable rate of return shall be the rate of return on capital employed equal to fourteen percent post-tax considering the rate of return on long-term risk-free Government securities and the need to incentivize investments in creation of CGD infrastructure"
- c. Other factors to consider from the CGD guidelines:
 - i. PNGRB guidelines regulates tariff for CGD networks, which applies directly to end-users. PNGRB allows the security deposits provided by end users to be invested in the business and earn return on such investments, whereas in case of DIAL, security deposits have been availed from lessees of NTA, who are not the end users.
 - Demand risks are less for a CGD network as compared with traffic risk at an airport. Additionally, tariffs for CGD networks are for an essential commodity.
 - iii. Guidelines issued by PNGRB are one of the most recent guidelines in the Infrastructure sector in India and should have considered learnings from other regulated sectors.
- 2.6.2 Port Sector: Tariff Authority for Major Ports (TAMP) sets tariff following the Cost plus Return on Capital Employed approach. Capital Employed is calculated by adding Net Fixed Assets and Working Capital. TAMP does not consider the source of funding for each project while calculating the return. Additionally, the guidelines do not state that while calculating Capital Employed for tariff setting, lease deposits, if any, would not be considered. Relevant extract from the regulation are stated below:
 - a. "Return will be allowed on Capital Employed (ROCE), both for Major Port Trusts and Private Terminal Operators, at the same pre-tax rate, fixed in accordance with the Capital Asset Pricing Model (CAPM)."
 - b. "Capital Employed will comprise Net Fixed Assets (Gross Block minus Depreciation minus Works in Progress) plus Working Capital⁸"
- 2.6.3 Refer Annexure 1 for detailed case studies.
- 2.7 Conclusion: The Authority has proposed to provide zero returns on capitalized airport asset funded through RSD. However, it is evident that there is an opportunity cost associated with RSD in terms of the forgone lease rentals. Also, lenders have treated the RSD funding as part of promoter's contribution (quasiequity), therefore, RSD utilised to fund the capex is expected to have risk inherent

⁸ Source: Notification issued by TAMP with G.No 39, dated 31 March 2005

⁷ Source: Petrolcum and Natural Gas Regulatory Board (Determination of Network Tariff for City or Local Natural Gas Distribution Networks and Compression Charge for CNG) Regulations, 2008, point 2, Attachment 3 to Schedule A

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to that associated with equity. Additionally, there are examples from other infrastructure sectors where regulator provides return on the capital employed by the Concessionaire and does not consider the cost of funds while calculating tariff.



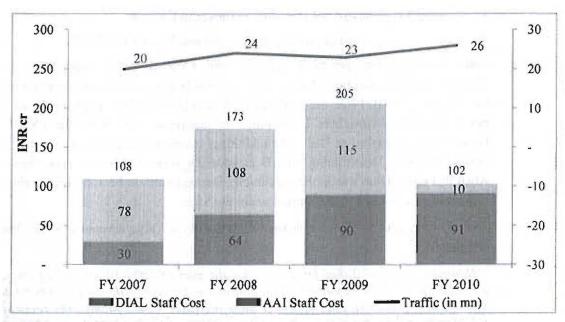
3 Hypothetical Regulatory Asset Base (HRAB)

- 3.1 AERA's observations on duplicated manpower cost: In the consultation paper, AERA has observed following points with regard to HRAB:
 - a. "With respect to the issue of considering sustainable operating and maintenance costs... no such guidance is provided in the SSA..."
 - b. Further, the Authority has also quoted "Principle 5, Schedule 1 of the SSA Economic Efficiency" "... Further in respect of regulation of Aeronautical Services the approach to pricing regulation should encourage economic efficiency and only allow efficient costs to be recovered through pricing, subject to acceptance of imposed constraints such as the arrangements in the first three years for operation support from AAI" Based on the quote, the Authority has stated that "...there appears to be no warrant in the SSA to exclude the manpower cost of DIAL staff..."
- 3.2 Logical reasoning: Apparent intent of the SSA and its implications
- 3.2.1 As per Chapter VI of OMDA, AAI had to provide operational support, through General Employees, to DIAL during three years after the Effective Date. With respect to this, DIAL had to bear the operational support cost (OSC) including manpower cost of AAI staff related to IGI, Airport.
- 3.2.2 Therefore, it appears that the *apparent intent* behind including the extra cost incurred due to such imposed constraints as part of Principle 5, Schedule 1 of the SSA was to *enable and safeguard* the private developer, while determination of tariff based on economic efficiency, against the uncertainties and duplication of cost as a result of such constraints.
- 3.2.3 Graph 1 below presents the breakup of manpower in terms of manpower cost of AAI and manpower cost of DIAL. It can be observed that during the operation support period (OSP), financial years (FY) 2007, 2008 & 2009, DIAL has slowly ramped up its manpower. Manpower cost is the highest in FY2009, which is the last year of operation support period. In FY2009, in addition to AAI' manpower, DIAL's manpower was in full force because it had to take full charge of the operation of the airport from the next FY.



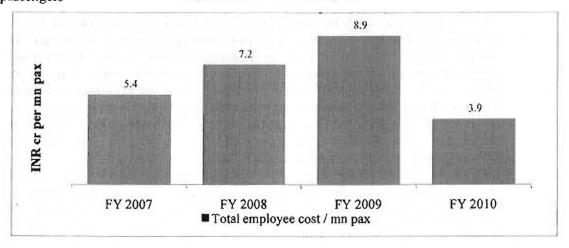
Graph 1: IGI Airport - Breakup of Total manpower cost (including aeronautical & non aeronautical) compared with total passenger traffic9

K



It can also be observed from the graph that the real reason for growth in total manpower cost for IGI Airport was not the growth in traffic, but duplication of manpower. Graph 2 demonstrates this point more clearly that total personnel cost per million passenger was highest in FY 2009.

Graph 2: Total manpower cost (including aeronautical & non aeronautical) per million passengers 10



⁹ Source: DIAL's Annual reports
¹⁰ Source: DIAL's Annual report and Minutes of Stakeholder Consultation Meeting held on 18.01.2012



- 3.2.4 It can be inferred from the above two graphs that:
 - a. Duplication of manpower cost was maximum in FY2009
 - b. Total manpower cost per million passengers was highest in FY2009
- 3.2.5 Since the regulatory period is starting from FY2010, entire expenditure for FY2009, including duplicated manpower cost has been considered while assessing the value of HRAB. From the above chart, it is evident that this duplicated cost is not a recurring cost. There is reduction in manpower cost from the FY2010 because of termination of OSP. The additional manpower cost was incurred only during the OSP. Determining HRAB considering entire duplicated expenditure, when this duplication was at the maximum, does not seem to be appropriate, since it is clearly a one-off cost recognised under the SSA
- 3.3 AERA's treatment of Cargo revenue: In its review of cargo revenues, AERA has mentioned:

"However, it is noted that DIAL was, for the part of 2009-10, providing cargo services on its own before the concessionaire Celebi Delhi Cargo Terminal Management India Pvt. Ltd., took over these activities. Consequently, the revenue received by DIAL from the cargo services during the part period of 2009-10 (when DIAL themselves were providing the services) may be treated as aeronautical revenue. Further, DIAL continues to provide cargo screening services at the concessioned out Cargo Terminals. The revenue and costs relating to cargo screening would, therefore, also need to be treated as aeronautical"

However, the Authority has considered entire cargo revenue as non aeronautical revenue while determining HRAB. AERA has mentioned:

"It is observed that solely the Hypothetical Asset Base is to be determined in line with the SSA provisions as there is no provision in this regard in the Act. As already indicated in para 61 above, the Authority proposes to take the following approach towards determination of tariffs for aeronautical services provided by DIAL – i.e. be guided by provisions of the SSA read with the provisions of OMDA and other agreements as far as these are consistent with provisions of the Act; and wherever possible, have recourse to principles of tariff determination contained in its Airport Order and Guidelines. As per the Schedule 6 of the OMDA, Cargo handling and Cargo Terminals are —Non Aeronautical services. Further, as per the Schedule 1 of the SSA (refer para 176 above), the book value of —Aeronautical Assets in the books of the JVC and —.... prevailing tariff and the revenues, operation and maintenance cost, corporate tax pertaining to Aeronautical Services at the Airport.... shall be considered for computation of hypothetical RAB."



- 3.3.1 As per OMDA Schedule 6, Cargo handling and Cargo terminals are non aeronautical services.
- 3.3.2 As per 'The Airports Economic Regulatory Authority of India Act, 2008', -
 - "The Authority shall perform the following functions in respect of major airports, namely—
 - a. To determine the tariff for the aeronautical services taking into consideration –
 - (vi) The concession offered by the Central Government in any agreement or memorandum of understanding or otherwise"
- 3.3.3 The different approaches used by the Authority for the treatment of the same revenue under the same tariff determination mechanism are not in line with principles of consistency. It is expected that unless warranted by strong reasoning, the approach followed in determining the components of tariff regulation mechanism would remain consistent for the same component. Further, the treatment of cargo revenue as aeronautical is not in line with the principles of OMDA.
- 3.4 Conclusion: Duplication of manpower is maximum in FY2009 because it is the last full financial year in the OSP. Also, duplication of manpower cost is not a recurring cost. For the purpose of calculation of HRAB, only the sustainable manpower cost, i.e. the manpower cost related to AAI staff may be considered. Additionally, a consistent approach may be adopted for treating of cargo revenue.



4 Return on Equity - Case study from Power Sector

4.1 **AERA's observation:** In the consultation paper, AERA has benchmarked the Return on Equity (ROE) for airport sector with other infrastructure sectors including power sector. AERA has mentioned:

"Central Electricity Regulatory Commission (CERC), in its Terms and Conditions of Tariff Regulations for 2009-14 issued on 20.01.2009, vide regulation 15, computes the RoE at the base rate of 15.5% in the manner indicated therein. The Authority, has noted that in its regulatory framework the Corporate Tax is being allowed as a cost pass through and the RoE on CAPM.

It is understood that State Electricity Regulatory Commissions normally consider 16% as cost of equity in respect of distribution companies."

4.2 As per CERC guidelines, tariff for supply of electricity comprises of capacity charge comprising of Annual Fixed Cost and energy charge. Relevant extract is as below:

"The tariff for supply of electricity from a thermal generating station shall comprise two parts, namely, capacity charge (for recovery of annual fixed cost consisting of the components specified to in regulation 14) and energy charge (for recovery of primary fuel cost and limestone cost where applicable)."

- 4.3 Following comprises of Annual Fixed Cost of a generating or a transmission system:
 - a. Return on equity;
 - b. Interest on loan capital;
 - c. Depreciation;
 - d. Interest on working capital;
 - e. Operation and maintenance expenses;
 - f. Cost of secondary fuel oil (for coal-based and lignite fired generating stations only);
 - g. Special allowance in lieu of R&M or separate compensation allowance, wherever applicable.
- 4.4 Method of calculating return: Return on equity is calculated on the basis of the base rate multiplied by Equity. Relevant extracts are produced below:

"Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation:

Provided that in case of projects commissioned on or after $1_{\rm SI}$ April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline

Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

¹¹ Source: Notification issued by CERC dated 19 January 2009



Rate of pre-tax return on equity = Base rate / (1-t)Where t is the applicable tax rate in accordance with clause (3) of this regulation."

As per CERC guidelines, post tax return on equity of 16% is available for projects which have commissioned on or after 1 April 2009 and are completed within time line.

4.5 In case of power sector, it has been observed that actual return available to an equity investor is more than 16% because the equity invested is not depreciated while calculating return. It has been illustrated with a simple example:

a. Equity investment of INR 1000 crore in a power project is expected to yield

the following returns:

Parameter	1 st year	10 th year	20 th year	30 th year
Equity investment	(1,000)			
Y-o-y return		160	160	160
Depreciation on equity component		34	34	34
Cash flows for equity	(0001)	194	194	194
EIRR				19.33%

Note: For the sake of brevity, only 4 years have been represented in the table above. However, similar approach has been adopted for entire 30 years

 Equity investment of INR 1000 crore in an airport project is expected to yield the following returns:

Parameter	1 st year	10 th year	20 th year	30 th year
Closing RAB for equity contribution	1000	690	345	0
Y-o-y return	0	113	58	3
Depreciation on equity component		34	34	34
Cash flows for equity	(1000)	147	92	37
EIRR				15.65%

Note: For the sake of brevity, only 4 years have been represented in the table above. However, similar approach has been adopted for entire 30 years



- 4.6 Ownership of Assets: Assets, including land, are owned by the private developer in case of power sector. At the end of life of the power plant, private developer can sell these assets, including land, at the market value. This is expected to increase the returns to equity investor.
- 4.7 In case of airports no such upside would be available to a private developer. Developer has been granted only the limited rights as part of OMDA. Assets, excluding NTA, would be transferred to AAI at the zero value at the end of 60th year. NTA does not include return on sale of land.
- 4.8 Conclusion: Even though the CERC guidelines state that the post tax return of 16% would be allowed to the private investor in power sector, the actual returns available to the equity investor in power sector are expected to be higher than 16%.



5 Annexure - 1

Case Study: Compressed Natural Gas & Natural Gas

5.1 Gujarat Gas' Balance Sheet

Treatment of such deposits by Gujarat Gas: Gujarat Gas has outstanding customer deposits of INR 203 crore in FY10 (INR 151 crore in FY09) in comparison to the cash and bank balance of INR 4.8 crore in FY 10 (INR 7 crore in FY09). It is evident from the above, that Gujarat Gas would have invested the amount received from security deposit in the business.

BALANCE SHEET AS AT DECEMBER 31, 2010

S.	chedule		As at 31-12-2010	Asal 31-12-2009
3	CITE COMP	Rs. in million	the to million	Rs mmillion
SOURCES OF FUNDS				
SHAREHOLDER'S FUNDS				
Stear Stear III	5.	400.50		400.50
Stock October Ocestambing Accounts	2	37.96		21,29
Sessings and supplies	1	7,911.61		7,123,63
ETA TOOL IN SUPPLY			8,350.07	7,545.47
DEFERRED TAX LIABILITY (Net)			718.52	60486
Refer Notes, Maryl 29 on Schedule (9)				
DIPOSITS				
Refer Note 20 on School de 101			Olle III - III Dept II - 1	on thinkwall
tonic events		2,034,81		1,514.81
noro (Adr. (Extra) Limited		38.69		38.60
			2,073.50	1,553.50
YOYAL			11,142,09	9,703,78
PPLICATION OF FUNDS				
FIXED ASSETS	4			19-11
ross BL - L		9,669,54		8,580,93
en Discussion		3,181.42		2,686.46
ray In partie of these		29 37		3463
		6,458.75		5.859.84
ess trace legicinal Adjustment Account		118,86		118.86
Not Beas		6,339,89		5,740.98
apituli vices i ci perigecis.		780.23		865 73
and a trive to a c		517.68		489.96
A plant of the state of the sta			7,637.80	7,096.67
NVESTMENTS	Acres 1		5,348.74	4,121,54
MOUNT RECOVERABLE FROM ESOP TRUST			343.02	243,00
Refer to the transfer to the text (19)				
TURRENT ASSETS, LOANS AND ADVANCES				
own tony	6	105.91		110.92
ease Tarrenda's	1	72.97		99,45
defeative the break	9	1 411 17		1.138.08
and ratio Barrie Rukawan_	9 :	48.59	CENTRE 31.	72.36
884 A	N. I	156.89	CITY OF THE PARTY OF	266.22
		1.795.53		1,687.73
ESS: CURRENT LIABILITIES AND PROVISIONS	**	######################################		
outeur wife by a		2,076.67		2,116.65
COLONI SER		1,906.33		1,329,40
		3,983.00		3,446.05
IET CURRENT ASSETS			(2.187.47)	(1,758.32)
AISCELLANEOUS EXPENDITURE	1.			0.89
to the example waternal or adjusted)	40.00		DV MIE	
TOTAL			11,142.09	9,703.78
ignificant Accounting Policies and Notes to Accounts	27			

^{24.} Deposits from customers have been considered as a source of long term funds since the same are refundable only on termination/modification of the gas sale agreement.



5.2 Indraprastha Gas Limited (IGL) Balance Sheet

BALANCE SHEET AS AT MARCH 31, 2011

PARTICULARS	Schedule Reference	As at 31.03.2011 (Rs. Lakhs)	As at 31.03.2010 (Rs. Lakhs)
SOURCES OF FUNDS		7	
SHAREHOLDERS' FUND			
Share capital	Ť	14,000.02	14,000.02
Reserves and surplus	2	86,386.19	68,544.04
		100,386.21	82,544.98
LOAN FUNDS	3	A	
Secured loans		30,215.46	- 0
Unsecured loans		4,434.20	
		34,649,74	
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
DEFERRED TAX LIABILITY	4	4,076.87	2,381,46
	4	200 A 4 10 10 10 10 10 10 10 10 10 10 10 10 10	2,381,46 5,522,25
DEPOSIT FROM CUSTOMERS	4	4,076.87	
DEPOSIT FROM CUSTOMERS		4,076 <i>5</i> 7 11,680,18	5 522 25
DEPOSIT FROM CUSTOMERS (Refer Note 6 of Schedule 17)	4	4,076 <i>5</i> 7 11,680,18	5 522 25
OEPOSIT FROM CUSTOMERS (Refer Note 6 of Schedule 17) APPLICATION OF FUNDS		4,076 <i>5</i> 7 11,680,18	5 522 25
DEPOSIT FROM CUSTOMERS (Refer Note 6 of Schedule 17) APPLICATION OF FUNDS	5	4,076.87 11,680,18 150,783.00	5 502 25 90,448,67
DEFERRED TAX LIABILITY DEPOSIT FROM CUSTOMERS (Refer Note 0 of Schedule 17) APPLICATION OF FUNDS FIXED ASSETS (At cost) Gross block Less: Accumulated depreciation		4,076 <i>5</i> 7 11,680,18	5 502 25 90,448,67
OEPOSIT FROM CUSTOMERS (Refer Note 0 of Schedule 17) APPLICATION OF FUNDS FIXED ASSETS (At cost) Gross block		4,076.87 11,680,18 150,783.00	5 502 25 90,448.67 110.529.80 45,389.03
OEPOSIT FROM CUSTOMERS (Refer Note 0 of Schedule 17) APPLICATION OF FUNDS FORED ASSETS (At cost) Gross block Less: Accumulated depreciation	\$	4,076.87 11,680.18 150,783.00 171,604.63 65,689.62	5 522 25

Treatment of such deposits by IGL

Deposits from customers of natural gas, refundable on termination/elteration of the gas sales agreements, are considered as long term funds

ANNEXURE H

(Report on treatment of RSD)

OPINION

()N

TREATMENT OF REFUNDABLE SECURITY DEPOSIT

FOR

DELHI INTERNATIONAL AIRPORT LIMITED

February 14, 2012

By:



KALYPTO RISK TECHNOLOGIES Pvt. Ltd.

(A Subsidiary of Credit Analysis and Research Ltd.)



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DISCLOSURES

The report has been sponsored by the DIAL.



ABOUT US

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ABBREVIATIONS

- AAI Airport Authority of India
- AERA Airport Economic Regulatory Authority
- CP 32 Consultation Paper 32/2011-12
- DA Development Agreement
- DF Development Fee
- DIAL Delhi International Airport Private Limited
- LLD Land Lease Deed
- MoCA- Ministry of Civil Aviation
- OMDA Operations, Management and Development Agreement
- SHA Shareholder's Agreement
- SSA State Support Agreement



CONTENTS

- 1. Introduction
- 2. Executive Summary
- 3. Background
- 4. Overview of the Indian Aviation Industry
- 5. Opinion on treatment of Refundable Security Deposit'
- 6. Key Terms
- 7. List of Sources



INTRODUCTION

Delhi International Airport Private Limited (DIAL) is a joint venture consortium (JVC) of the GMR Group (54 per cent), Airports Authority of India (AAI) (26 per cent), Fraport AG & Eraman Malaysia (10 per cent each). GMR is the lead member of the consortium; Fraport AG is the airport operator, Eraman Malaysia - the retail advisors.

Kalypto Risk Technologies Limited (Kalypto) is a subsidiary of Credit Analysis & Research Limited (CARE). Kalypto is involved in providing risk modelling and measurement solutions primarily to the banking industry and advisory services.

DIAL has approached Kalypto to provide an opinion on the treatment of Refundable Security Deposits (RSD), whether it can be classified as 'quasi equity'.

Scope and Limitations

The scope of the report is as specified below:

1. To provide an opinion on whether RSD against sub-leased land can qualify as 'quasi equity'.

This report is based on a desk-based research and the financial, economic and market data used are based primarily on publically available information and on information provided by DIAL, it's officers to Kalytpo and the accuracy and authenticity of the same has not been verified by Kalypto. Apart from the interaction with DIAL officials and a senior official in the Ministry of Civil Aviation (MoCA), Kalypto has not interacted with any other stake holders and so also the regulator Airport Economic Regulatory Authority of India (AERA).

The opinion provided in the report is specifically in relation to DIAL and cannot be used in any other case as a reference.

This is a one-time assessment, and neither Kalypto, nor its affiliates are responsible for updating this report.

Neither the report nor its contents may be used for any other purpose without prior written consent of Kalypto.



EXECUTIVE SUMMARY

DIAL has approached Kalypto to provide an

To provide an opinion on the treatment on RSD, whether the same can be treated as 'quasi equity'.

Opinion on treatment of RSD

As per the concession, out of total land of 5,000 acres provided for the project on long-term lease, DIAL was allowed to develop 5 per cent of land for commercial exploitation and asset developed on the same would be classified as non-transfer assets.

DLAL has sub-leased about 45 acres of land and received Rs. 14.7 billion of refundable, non-interest bearing RSD which it used towards funding of the project.

Considering various features such as long tenure, no fixed committed outgo and opportunity cost associated with RSD, the amount mobilised through RSD exhibits equity like features and as such in our view qualifies to be treated as quasi equity in the liability structure of DIAL.



BACKGROUND

- AERA was established by the Government of India (GoI) vide its notification dated May 12, 2009.
- AERA is an autonomous body set up by an Act of Parliament. The functions of AERA include;
 fixing, reviewing and approving tariff structure for the aeronautical services and users' fees which
 may be levied by the service providers for airport development and monitoring prescribed
 performance standards relating to quality, continuity and reliability of service.
- Provisions regarding Tariff and Regulation have been made in Chapter XII of Operations, Management and Development Agreement (OMDA) and clause 3.1 read with Schedule 1 of the State Support Agreement (SSA).
- DIAL submitted a proposal for revision of tariffs for aeronautical services at Indira Gandhi
 International (IGI) Airport, New Delhi, for the Authority's consideration and approval on 20th
 June 2011.
- Along with the proposal, considerations/assumptions made for preparing the proposal for determination of tariffs for aeronautical services have been submitted. These include:
 - a. The principles used for the current filing for revision of tariffs for aeronautical services;
 - b. The project cost considered in the current filing and the calculation of Regulatory Asset Base (RAB);
 - c. The means of finance and calculation of Weighted Average Cost of Capital (WACC);
 - d. The forccasts of operation and maintenance expenses and rationale for the same; and
 - e. The forecasts of non-aeronautical revenues and rationale for the same.
- Pursuant to the aforesaid submission, a series of discussions/meetings/presentations have been held (during the period June to November, 2011) on the proposal including discussions in respect of the financial model developed by DLAL for this purpose.
- AERA has issued a consultation paper in this regard (CP- No. 32/2011-12) Determination of Aeronautical Tariff – IGI Airport, New Delhi. The authority has invited written comments on the proposals made latest by February 15, 2012.
- Against this background DIAL has approached Kalypto to provide an opinion on the treatment on RSD, whether the same can be treated as 'quasi equity'.
- The opinion presented in the report is for the first regulatory period. The first regulatory period
 implies the 5-year period from the commencement of the fourth year after the Effective Date



(3rd May 2006) as per the OMDA. The same as per the CP-32/2011-12 has, for operational convenience, been adjusted to the nearest financial year i.e. period from 1st April 2009 to 31st March 2014.



OVERVIEW OF INDIAN AVIATION INDUSTRY

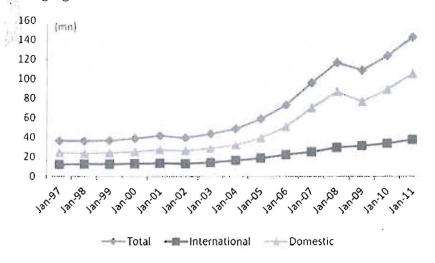
India has been one of the fastest growing economies in the world with an average GDP of 7.7 per cent in the last decade. Infrastructure creation has to be at a much higher rate to sustain a robust GDP growth rate. Strengthening of transportation sector is a key element of national infrastructure. Aviation sector has been one of the prime movers for economic growth and an important segment of employment generation.

Indian aviation sector has transformed itself with the open sky policy of the GoI which has allured many national and international players. Indian aviation sector is one of the fastest growing aviation sectors world-wide. Major drivers for the growth of aviation sector in India have been the entry of low-cost carriers, supporting government policies, higher disposable incomes, increased tourism and increased cargo movement. In order to improve the quality and capacity of the airports government has roped in private players which have resulted in the privatisation of the Hyderabad, Bangalore, Delhi and Mumbai airports.

Passenger Growth

Over the last decade it has been observed that air traffic has grown at 1.6x the rate of GDP growth. The domestic passenger traffic has grown at an impressive 15.7 per cent Compounded Annual Growth Rate (CAGR) for the last five years while international passenger traffic has been growing at CAGR of 11.1 per cent.

Trend in Passenger growth



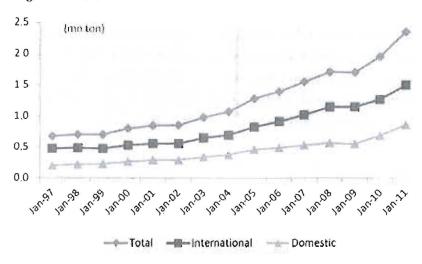
Source: Directorate General of Civil Aviation (DGCA)



Cargo movement growth

Air Cargo Traffic grew at a CAGR of 10.8 per cent in the last five years period of 2005-06 to 2010-11. Though there was a dip in the growth in the year 2008-09, the growth revived and the Air Cargo Traffic is expected to grow at a robust pace over the next few years. This would require creation of additional cargo capacity. As on 31st December, 2009 there were only seven cargo aircraft in India compared to 100 in China. India contributes a little over 1 per cent of the world air cargo traffic.

Trend in Cargo movement



Source: DGCA

Development of non-metropolitan airports

The GoI is also considering modernizing and developing the non-aeronautical (i.e. terminal and city) side of at least 35 non-metropolitan airports through a joint venture route with the private sector. While the AAI will undertake and retain control over all aeronautical (air-side) development works, the city-side development such as hotels, malls and other entertainment centres would be undertaken through private sector participation.

Opportunities - Vision 2020

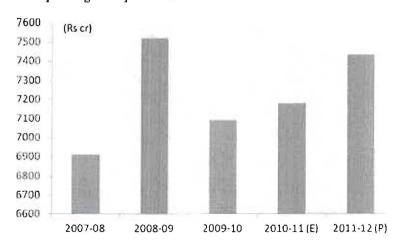
The Vision-2020 document prepared by the Ministry of Civil Aviation (MoCA) is an assessment of the overall outlook of the sector in 2020. As per the Vision-2020, the growth of aviation sector has potential to absorb upto USD 120 billion of investment. Fleet size of commercial airlines sector is expected to be approximately 1,000 aircraft, domestic passenger numbers could reach 150-180 million, air cargo movement is expected to reach the level of 9 million tonnes and the sector is estimated to have the potential to generate 3 million jobs by 2020.



Investment in the Airport Sector

Over the years, the airport infrastructure has failed to keep pace with the air traffic growth in the country. Taking into account the huge growth potential in air traffic in the future, up-gradation/modernization of the existing airport and building new airports has become imperative. In the Eleventh Five Year Plan (2007-2012), GoI had set a target of spending about Rs. 30,968 crore in aviation sector which has been revised upward to Rs. 36,138 crore in the Mid Term Appraisal Plan.

Trend in planned spending in Airport sector



Source: AN

Policy Initiatives

The following policy and regulatory frameworks are being initiated / already initiated in the airport sector to ensure time-bound creation of world-class airports in India.

- 100 per cent Foreign Direct Investment (FDI) is permissible for existing airports; Foreign Investment Promotion Board (FIPB) approval required for FDI beyond 74 per cent.
- 100 per cent FDI under automatic route is permissible for Greenfield airports.
- 49 per cent FDI is permissible in domestic airlines under the automatic route, but not by foreign airline companies.
- 100 per cent equity ownership by Non Resident Indians is permitted.
- 100 per cent tax exemption for airport projects for a period of 10 years.
- 'Open Sky' Policy of the Government and rapid air traffic growth have resulted in the entry of several new privately-owned airlines and increased frequency/flights for international airlines.
- A Model Concession Agreement was developed for standardizing and simplifying the Public Private Participation (PPP) transactions for airports, on the analogy of the highways sector.



- Upgrading of the ATC services at the airports. Issues relating to customs, immigration and security are also being resolved in a manner that enhances the efficiency of airport usage.
- A comprehensive Civil Aviation Policy is in the process of finalization covering different areas of the aviation sector. India has entered into bilateral Air Services Agreement with 104 countries.



OPINION ON TREATMENT OF RSD

DIAL was incorporated as a JVC to operate IGI, Airport and is promoted by the GMR led Consortium owning 74 per cent and AAI owning 26 per cent shareholding in the JVC. DIAL had taken over the operation of the IGI, Airport from AAI in May 2006. DIAL has the concession to exclusively operate IGI, Airport at Delhi for 30 years starting May 2006 onwards, which is extendable by another 30 years. As part of the project, the company had to carry out the expansion and modernization of airport in phases, the timings of which will depend on the traffic growth, the Phase I of the project was to enhance the passenger handling capacity of the airport to 34 million passengers per annum and was targeted for completion by June 2010. It involved up-gradation of airporr's existing infrastructure, construction of a new terminal building and a new runway.

As per the bid, DIAL has ro give out about 46 per cent of revenue to AAI. Along with the airport development, DIAL also received right to develop the land (250 acres) as a hospitality district.

Tariff

As a part of rariff principles defined under SSA, Target Revenue would be determined as per formula defined in SSA. 30 per cent of the non-aeronautical revenues will be used to subsidize the revenues to be recovered from aeronautical activities. However it is to be noted that the above non aeronautical revenue used for subsidizing does not include revenue realization from land (about 250 acres of land was given on lease to DIAL out of which 45 acres is already been sub-leased by DIAL).

Project cost

The estimated cost of Phase I was Rs. 89.75 billion, which was to be funded by equity of Rs. 12.0 billion, Iong-tenure debt of Rs 49.86 billion (including external commercial borrowings (ECB) of USD 350 million), interest-free deposits of Rs. 27.39 billion to be raised against a portion of land available for commercial development and balance through internal accruals. With regards to the lease deposits, following the slowdown in the real estate industry, the targeted lease deposits were revised downward from Rs. 27.39 billion to Rs. 9.12 billion. The balance Rs. 18.27 billion have been funded by a bridge loan, securitized against the receivables of Airport Development Fee (ADF) which was allowed from March 2009 onwards for 36 months period. The cost further escalated to Rs. 12.57 billion and same has been funded with additional equity, security deposit and ADF (the Regulator has increased the renure for collection of ADF upto May 2014). Details of means of finance are given below:



Particulars	Rs. Billion		
Equity	12.0		
Additional Equity	12.5		
Internal Accruais	0.5		
Refundable Security Deposit (RSD)	14.7		
Rupee Term Loan	36.5		
External Commercial Borrowings (ECB)	16,2		
Additional Debt	1.0		
Airport Development Fee (ADF)	35.2		
Total Funds	128.6		

The phase I expansion was completed as per the schedule in June 2010. At present DIAL has filed multiyear tariff proposal for the period 2009-10 to 2013-14 with Regulator AERA. AERA has come out with consultation paper with its comments on various components of tariff proposal and invited stakeholders' comments for the same.

Quasi Equity

As per OMDA, DIAL was provided approximately 5,000 acres of land on long-term lease for the development and expansion of IGI Airport. Out of this 5 per cent of land was allowed to be developed for commercial exploitation and asset developed on the same would be classified as non-transfer assets. DIAL has sub-leased about 45 acres of land to 13 different entities and received Rs. 14.7 billion of refundable, non-interest bearing RSD which it used towards funding of the project.

The issue in question is 'what return should be permitted on these RSD while working out cost of capital?' When assessing the equity weighting to apply to any instrument, the key question is 'how closely does the instrument replicate the key features of equity capital?' such as:

- Capital should be sufficiently permanent so that it is available to maintain cash and absorb losses
 when needed.
- In an event of bankruptcy, debt-holders have priority in recovery of their loans, while equity-holders are relegated to a residual claim on the assets.
- Dividend payments on equity shares are made at company's discretion: there is no fixed requirement to do so that could lead to default and bankruptcy if dividend were cut or eliminated.

The amount raised through RSD is for the tenure of entire concession and does not have any committed fixed out go (non-interest bearing). Further the lenders of DIAL have also considered funding through RSD as part of equity while stipulating their covenant requirements. Also the funds raised through RSD



has opportunity cost involved as same are mobilised by DIAL from sub leasing the land given for monetisation purpose and would have earned some return if invested in any other venture.

In light of these facts, the amount mobilised through RSD exhibits equity like features and as such qualifies for being treated as quasi equity and thus being eligible for close to equity returns.



KEY TERMS

Single Till - Under the single till mechanism the entire benefit from the non-aeronautical segment is utilised in subsidizing the operations from the aeronautical segment.

Dual Till - Under the dual till mechanism both the aeronautical & non-aeronautical revenues are completely different and the entire upsides from the non-aeronautical vertical are captured by the Airport operator.

Hybrid Till - Under the hybrid till, a part of benefits from non-aeronautical segment is utilised in subsidising the operations of aeronautical segment, however some part of upsides from the non-aeronautical segment will belong to the airport operator. The percentage will vary from airport to airport depending on the concession agreement – DIAL & Mumbai International Airport Private Limited fall under this mechanism where 30 per cent of non-aeronautical revenues are utilised in subsidising the aeronautical operations.

Airport Development Fees (ADF) - ADF is a mode of charging fee to every departing passenger for supporting the construction & development of the airport.

User Development Fees (UDF) - UDF is a mode of levying a charge on every departing passenger for supporting the regular daily operations and is approved by the regulator to meet the shortfall from other sources of revenue

Passenger Service Fees - shall mean the fees charged per embarking passenger at the airport.

Aeronautical Assets – shall mean those assets which are necessary or required for performance of aeronautical services at the airport and such other assets as DIAL procures in accordance with the provisions of the Project Agreements for in relation to, provision of any reserved activities and shall specifically include all land, property and structures thereon acquired or leased during the term.

Aeronautical Services - means the provision of the following facilities and services:

- Provision of flight operation assistance and crew support system
- Ensuring the safe secure operation of the airport, excluding national security interest
- The movement and parking of aircraft and control facilities
- General maintenance and upkeep of the airport
- The maintenance facilities and the control of them and hangar of aircraft
- Flight information display screens



- Rescue and fire-fighting services
- · Management and administration of personnel employed at the airport
- The movement of staff and passengers and their inter-change between all modes of transport at the airport
- Operation and maintenance of passenger boarding and disembarking systems including vehicles to perform remote boarding
- Any other services deemed to be necessary for the safe and efficient operation of the airport.

Aeronautical Charges – The charges which will be levied at the airport by the JVC for the provision of aeronautical services along with consequent recovery of the costs relating to Aeronautical Services

Non Aeronautical Assers – shall mean all assets required or necessary for the performance of non-aeronautical services at the airport.

Non - Aeronautical Services - shall mean the following facilities and services

Part I

- Aircraft cleaning services
- Airline lounges
- Cargo handling
- Cargo terminal
- General aviation services (other than those used for commercial air transport services ferrying passengers or cargo or a combination of both)
- Ground handling services
- Hangars
- Heavy maintenance services for aircrafts
- Observation terrace

Part II

- Banks/ATMs
- Bureaux de change
- Business centre
- Conference centre
- Duty-free sales
- Flight catering services
- Freight consolidators
- · General retail shops



- Hotels and motels
- Hotel reservation services
- Line maintenance services
- Locker rentals
- Logistic centres
- Messenger services
- Porter services
- Restaurants/bars
- Special assistance services
- Tourist information services
- Travel agencies
- Vehicle fuelling services
- Vehicle rentals
- Vehicle parking
- Vending machines
- Warehouses
- Welcoming services

Transfer Assets - shall mean the following types of assets

- Aeronautical Assets
- · Non- Aeronautical Assets

Non -Transfer Assets — shall mean all assets required or necessary for the performance of non-aeronautical services as listed in Part II of schedule determining non-aeronautical services hereof as located at the airport site.



LIST OF SOURCES

- Operations, Management and Development Agreement between AAI and DIAL dated, 4th April, 2006.
- State Support Agreement in relation to the Modernisation and Restructuring of the Delhi Airport between The President of India on behalf of GoI and DIAL dated, 26th April 2006.
- Shareholder's Agreement between AAI, DIAL, GMR Infrastructure Ltd., GMR Energy Ltd., GVL Investment Pvt. Ltd., Fraport AG Frankfurt Airport Services Worldwide, Malaysia Airports (Mauritius) Pvt. Ltd., and India Development Fund dated 4th April 2006.
- Lease Deed between AAI and DIAL, dated 25th April, 2006.
- Consultation paper by AERA (CP-No. 32/2011-12) on Determination of Aeronautical Tariff in respect of IGI Airport, New Delhi for the 1st Regulatory Period (01.04.2009 – 31.03.2014) dated, 3rd January, 2012.

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ANNEXURE I

(Opinion of M/s Amarchand Mangaldas)



Ref: 1480 Date: February 13, 2012

To:

Delhi International Airport (P) Limited, New Udaan Bhawan, Opp. Terminal-3, Indira Gandhi International Airport, New Delhi 110 037

Attn:

Mr. Shobhit Gupta

Subject:

Inclusion of cost of DIAL Employees as O&M Expenses in computation of

Hypothetical RAB for determination of Aeronautical Tariff

Dear Sir,

This is in furtherance of your email and our subsequent discussions on the captioned subject matter, wherein you had requested for our advice on the queries mentioned below.

BACKGROUND:

- 1.1. We understand that pursuant to the tariff proposal filed by Delhi International Airport Private Limited ("DIAL"), on June 20, 2011, subsequent consultations thereafter between DIAL and the Airports Economic Regulatory Authority ('AERA") and subsequent submissions made by DIAL to AERA, the AERA has issued Consultation Paper No. 32/2011-12 (the "Consultation Paper") on January 3, 2012, whereunder AERA has made several proposals with respect to the final position that it would adopt for the determination of tariff for the Indira Gandhi International Airport, New Delhi (the "Airport").
- 1.2. As part of its tariff proposal, DIAL had proposed that in calculating the hypothetical regulatory asset base (the "Hypothetical RAB"), AERA should consider the cost of DIAL staff for the year 2008-09 as under:

"In the year 2008-09 there was an overlap of manpower costs of AAI staff as well as DIAL staff. From a valuation point of view the manpower cost of only AAI staff for the relevant period is considered (Operational Support Cost) to result in a fair valuation.

amarchand & mangaldas & suresh a. shroff & co.
advocates & solicitors

amarchand towers; 216, okhla industrial estate, phase - III, new delhi - 110 020 tel. : (91-11) 41590700, 40606060, 41000541, 26920500 fax : (91-11) 26924900, 26922900

email: am.delhi@amarchand.com other offices: mumbai, bangalore, kolkata, hyderabad



The manpower cost of DIAL staff has been excluded as the AAI staff was mandated to support the working of existing terminals for that period while the DIAL staff was getting oriented and trained..."

- 1.3. Further, in terms of the said submission DIAL proposed that the manpower cost of AAI staff at IGI Airport be considered for the computation of Hypothetical RAB, and the corresponding overlapping cost of DIAL staff not be included.
- 1.4. In terms of the said Consultation Paper, the position adopted by AERA may be summarised as under:
 - (a) in terms of the State Support Agreement, Hypothetical RAB is to be computed taking into account the following factors:
 - (i) Revenues at prevailing tariffs in the year;
 - (ii) Operation and Maintenance cost; and
 - (iii) Corporate tax pertaining to Aeronautical Services at the Airport.
 - (b) The State Support Agreement does not make any reference to efficient Operation and Maintenance costs. Instead, it is referring to the prevailing, i.e., actual, cost of operation and maintenance.
 - (c) Accordingly, there is no mandate under the State Support Agreement to exclude the manpower cost of DIAL staff from the operation and maintenance costs while calculating Hypothetical RAB.
- 1.5. Accordingly, the short question that arises for our consideration is whether, AERA should, in determining the Hypothetical RAB include both the cost of AAI staff and DIAL staff who were performing overlapping roles.

2. OBSERVATIONS:

Our observations in respect of the foregoing issue are set out hereinafter:

2.1. In terms of the State Support Agreement dated April 4, 2006 between DIAL and the Government of India, Hypothetical RAB is to be calculated in accordance with the following principle:



"...hypothetical regulatory asset base computed using the then prevailing tariff and the revenues, operations and maintenance cost, corporate tax pertaining to Aeronautical Services at the Airport, during the financing year preceding the date of such computation".

From the foregoing mechanism of computation of Hypothetical RAB, it is clear that the operations and maintenance cost that is to be considered in determining the Hypothetical RAB is only that operations and maintenance cost that *pertains* to Aeronautical Services at the Airport, and not all amounts that are categorizable as operations and maintenance cost. Accordingly, any staff costs that were incurred by DIAL, but which did not pertain to, that is, were not ordinarily necessary for, the provision of an Aeronautical Service should not be accounted for in computing the Hypothetical RAB.

This position is further supported by the fact that while the mechanism for calculating Hypothetical RAB specifically uses the term 'then prevailing' to qualify tariff, it does not use a similar term in relation to the operations and maintenance cost and instead uses the term 'pertaining to the Aeronautical Service'. This being the case, while the application of the tariff is a mechanical application of the then prevailing tariff, the application of operations and maintenance cost, corporate tax and revenues are not a mechanical application, but based on the determination of the extent to which the same pertain to, i.e., are necessary for, Aeronautical Services.

- 2.2. In this backdrop, the following considerations are pertinent:
- 2.2.1. In terms of Articles 6.1.1, 6.1.2 and 6.1.4 of the OMDA, AAI is required to provide, and DIAL is required to avail of operations support from AAI for a period of 3 years from the Effective Date under the OMDA. Further, during this three year period, all General Employees of AAI, were required to continue working at the Airport. On or prior to the end of the said 3 years period, DIAL was required to make an offer to at least 60% of such General Employees to become employees of DIAL, and such General Employees would be entitled to accept or reject the said offer, at the their sole discretion. The relevant provisions are set out below:
 - 6.1.1 For a period of 3 (three) years from the Effective Date (herein referred to as the "Operation Support Period"), AAI shall provide operational support to the JVC through the General Employees in the manner and subject to the terms provided herein (such support is hereinafter referred to as "Operation Support"). The estimated annual Operation Support Cost is Rs [_____], as per the break-up in Schedule 23.



- 6.1.2 (i) General Employees shall be retained at the Airport for the duration of the Operation Support Period by the AAI and shall be dealt with in the manner provided herein. In order to provide Operation Support, AAI shall procure that the General Employees perform such functions and undertake such duties, and in such capacities, as may be required by JVC, subject to compliance with Applicable Law and the existing terms of employment of such employees. For the limited purposes of provision of Operation Support, the AAI shall act for and on behalf of the JVC and shall direct the General Employees to undertake such functions and duties as may be reasonably directed by JVC.
- 6.1.4 At any time during the Operation Support Period but not later than three (3) months prior to the expiry of the Operation Support Period, the JVC shall make offers (on terms that are no less attractive in terms of salary, position, etc, than the current employment terms of such employees) of employment to the General Employees that it wants to employ. Provided however that JVC shall be required to make offers to a minimum of 60% of the General Employees (as reduced for retirements, transfers, death and any fractions to be rounded off to the nearest whole number). Any offers already made and accepted during the Operation Support Period will be counted for the purposes of such minimum number of offers. The General Employees shall have the option of accepting or declining the offers within one month. The General Employees accepting the employment offers of the JVC, upon resigning from AAI, shall cease to be AAI employees from the date of acceptance of the offer or completion of the Operation Support Period, as applicable. The JVC shall be the new employer for these employees on terms and conditions mutually agreed between the JVC and such employees. Provided however that if less than 60% of the General Employees (as reduced for retirements, transfers, resignations and death and any fractions to be rounded off to the nearest whole number) accept the offers of employment made by the JVC, then the JVC shall pay to AAI Retirement Compensation for such number of General Employees as represent the difference between 60% of the General Employees (as reduced for retirements, transfers, death and any fractions to be rounded off to the nearest whole number) and the number of General Employees accepting offers of employment made by JVC, including cumulatively the offers made and accepted during the Operational Support Period.
- 2.2.2. It is therefore clear from the foregoing that the General Employees of AAI were mandatorily required to continue to work at the Airport for a maximum period of 3 years from the Effective Date. However, at the end of 3 years, there was no guarantee as to the number of the AAI General Employees who would become employees of DIAL. Therefore, in the absence of employment of a separate staff, there may have been a possibility that upon the expiry of 3 years, DIAL may not have had adequate staff to run



the Airport, let alone meet the subjective and objective quality standards as prescribed under the OMDA.

- 2.2.3. Therefore, effectively in order for DIAL to ensure continuity in the availability and the operations of the Airport, after the expiry of the 3 year period (that is, after the year 2008-09) it was imperative for DIAL to employ its own staff in addition to the AAI staff. However, these additional DIAL staff could not be said to be necessary for the Airport, since the existing AAI General Employees were already providing all Aeronautical Services at the Airport.
- 2.2.4. Further, since the existing AAI General Employees was the entire set of employees at the Airport at the time of the take over of the Airport by DIAL, it is clear that it was only that extent of staff that was necessary or pertained to the actual provision of Aeronautical Services at the Airport. This being the case, given that the computation of Hypothetical RAB is based on the operations and maintenance costs pertaining to the Aeronautical Services, it would not be appropriate to include the cost of DIAL's staff in calculating the same, since such staff were not necessary to provide the Aeronautical Service, but were only necessary to ensure continued operations.
- 2.3. On account of the foregoing proposition and positions, it would not be appropriate to include the cost of both AAI staff and DIAL staff as part of the operations and maintenance expense in computing Hypothetical RAB, and only those staff, (that is the AAI Staff) should be treated as part of the costs that actually <u>pertained</u> to the provision of Aeronautical Service.

3. QUALIFICATIONS AND ASSUMPTIONS:

- 3.1. Our observations herein are based on and limited to the provisions of applicable Indian law and our interpretation of it as applicable on the date hereof.
- 3.2. The statements rendered herein are referred as of the date hereof and we assume no obligation to update or supplement such statements to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur or become effective.
- 3.3. Our observations herein have been rendered only on the basis of the facts provided and circumstances disclosed to us and our understanding as stated in paragraph 1 and this



paragraph 3. In case of a change in our understanding or the facts and circumstances, our observations would need to be revised accordingly. We have not independently verified the factual information or information made available to us.

- 3.4. No advice or opinion has been expressed on the matters of fact.
- 3.5. Our observations herein are based on our interpretation of the present provisions of laws of India and may need review upon any further change in law, issue of clarification, notification, or any decision of judicial / quasi-judicial authorities.
- 3.6. Any determination, certificate, opinion or the like are purely a matter of interpretation of the applicable Indian laws on the date hereof and will not be binding on any court of law or regulatory authority, which may take a differing view.
- 3.7. So far as the laws of any jurisdiction outside India may be relevant to the present transaction, we have assumed that such laws have been and will be complied with.
- 3.8. Our observations herein are restricted to the specific query identified in paragraph 1 above. Our observations herein do not deal with issues that may be related to but are not identified therein. No opinion should be inferred beyond the matters expressly stated which at all times will be subject to the specific background and qualifications stated herein.
- 3.9. Our observations herein are only for the benefit of the addressee and it should not be circulated or provided to any person, authority or entity, without our prior written consent.

We hope the above clarifies your queries. Should you require any further clarifications or assistance, please do not hesitate to contact us.

Kind regards,

Jatin Aneja

Partner, Amarchand Mangaldas

26924900

10:43:50 14-02-2012

1/6



amarchand mangaldas

Ref: 1481

Date: Fobruary 13, 2012

To:

Delhi International Airport (P) Limited, New Udaan Bhawan, Opp. Terminal-3, Indira Gandhi International Airport, New Delhi 110 037

Aftn:

Mr. Shobbit Gupta

Subject:

Setting of New Quality Standards & Rebate Mechanism for Failure to Meet

Quality Standards

Dear Sir,

This is in furtherance of your email and our subsequent discussions on the captioned subject matter, wherein you had requested for our advice on the queries mentioned below.

BACKGROUND:

- 1.1. We understand that pursuant to the tariff proposal fifed by Delhi International Airport Private Limited ("DIAL"), on June 20, 2011, subsequent consultations thereafter between DIAL and the Airports Economic Regulatory Authority ('AERA") and subsequent submissions made by DIAL to AERA, the AERA has issued Consultation Paper No. 32/2011-12 (the "Consultation Paper") on January 3, 2012, whereunder AERA has made several proposals with respect to the final position that it would adopt for the determination of tariff for the Indira Gandhi International Airport, New Delhi (the "Airport").
- 1.2. As part of its tariff proposal, DIAL had proposed that in view of the OMDA already prescribing fixed objective and subjective service quality standards, as also a mechanism of liquidated damages in the event of a failure by DIAL to meet such service quality standards, the AERA should not prescribe any additional service quality requirements or any additional penalty mechanism in the event of failure to meet the existing or new (as prescribed by AERA) service quality standards.
- 1.3. In terms of the said Consultation Paper, particularly in paragraphs 442-457 has evaluated the said position and concluded in paragraph 456 and 457 as follows:

456. The Authority is conscious that an argument which can be raised against the rebate mechanism could be that since OMDA itself provides for penalty mechanism in

amarchand & mangaldas & suresh a. shroff & co. advocares & solicitors

amarchand towers, 216, okhla industrial estate, phase < 111, new delhi < 110 020 tel. : (91-11) 41590700, 40606060, 41000541, 26920500 fax : (91-11) 26924900, 26922900

email: am.delhi@amarchand.com orher offices: mumbai, bangalore, kolkara, hyderahad



the event of default in respect of quality parameters, a separate rebate mechanism as part of tariff would tantamount to penalizing the default twice. However, it has been the stated position of the Authority that the penalties contemplated in the concession agreements / contractual arrangements are contractual requirements whereas fixation of tariff commensurate with the quality of service is a statutory requirement. Therefore, the system of reducing tariff in case of default in quality of service is a system which implements the mandate of the Section 13(1)(a) of the Act.

457. In view of the above, the Authority proposes to use the rebate mechanism as indicated in Order No.13/2010-11 dated 12.01.2011 and the Guidelines dated 28.02.2011 in the case of DIAL as well.

1.4. Accordingly, the short questions that arise for our consideration are whether, (i) AERA is, in view of the provisions of the Airports Economic Regulatory Authority of India Act, 2008 (the "AERA Act") entitled to prescribe (and not merely monitor) service quality standards; and (ii) whether in view of the provisions of the AERA Act, the AERA is entitled to prescribe penalties (whether by way of penalty or rebate) in respect of a failure to meet such service quality requirements.

2. OBSERVATIONS:

Our observations in respect of the foregoing issue are set out hereinafter:

- 2.1. AERA's right to set service quality requirements
- 2.1.1. We note that the AERA Act, in its preamble sets out the scope and coverage of the AERA Act, as also the scope of the AERA's powers and functions thereunder. The preamble provides:

"An Act to provide for the establishment of an Airports Economic Regulatory Authority to regulate tariff and other charges for the aeronautical services rendered at airports and to monitor performance standards of airports and also to establish Appellate Tribunal to adjudicate disputes and dispose of appeals and for matter connected therewith or incidental thereto."

Further, in terms of Section 13(i)(d) of the AERA Act, the AERA has been vested with the function:

(d) to monitor the set performance standards relating to quality, continuity and reliability of service as may be specified by the Central Government or any authority authorised by it in this behalf;



From a conjoined reading of the aforesaid provisions of the AERA Act, it is clear that the jurisdiction and authority of AERA is limited to monitoring the performance standards relating to quality, continuity and reliability of service as have been specified by the Central Government or any authority authorized by the Central Government in this behalf, including under the Operations, Management and Development Agreement dated April 4, 2006. This position is also supported by the terms of the State Support Agreement between DIAL and the Government of India, which provides, in principle 7 in Schedule 1, that:

"...in undertaking its role AERA will monitor, pre-set performance in respect to service quality performance as defined in the Operations Management Development Agreement (OMDA) and revised from time to time."

- 2.1.2. Accordingly, on a combined reading of the terms of the AERA Act, the OMDA and the State Support Agreement, it is clear that the role and jurisdiction of the AERA is limited to monitoring compliance by DIAL of the service quality standards prescribed under the OMDA, and the prescription of any new services standards would be beyond the jurisdiction of the AERA.
- 2.2. AERA's right to set penalties for failure to meet service quality requirements
- 2.2.1. We note that in terms of Section 13(1)(a) of the AERA Act, the AERA is, in determining tariff in respect of aeronautical services, required to take several considerations into account, including in particular:
 - (ii) the service provided, its quality and other relevant factors;
 - (vi) the concession offered by the Central Government in any agreement or memorandum of understanding or otherwise;
 - (vii) any other factor which may be relevant for the purposes of this Act:

We note that while Section 13(1)(a)(ii) of the AERA Act permits the AERA to consider the services provided, its quality and other relevant factors in determining the tariff, there is no explicit power vested with the AERA to prescribe any penalties under the AERA Act in the event of a failure to meet service quality requirements. While, the AERA has sought to term the mechanism of penalties for failure to meet services quality requirements as a 'rebate' on the tariff, the same is essentially in the nature of a penalty, since there is no co-relation to between the cost of services not provided and the rebate imposed and instead a pre-determined rebate is imposed in all cases.

We would further note that even in the event that Section 13(1)(a)(ii) is interpreted as giving the AERA the power to impose penalties in the event of a failure by DIAL to meet



service quality requirements, this consideration has to be balanced with the considerations in Section13(1)(a)(vi) and (vii). In this regard, it is pertinent to note that the AERA has in the Consultation Paper, and specifically in paragraph 61 thereof already accepted the position that it is, in determining tariff to be guided by the terms of the State Support Agreement and the OMDA. Specifically, paragraph 61 of the said Consultation Paper provides as under:

61. In view of the:

- (i) provisions of Section 13 (1) (a) (vi) and (vit) of the Act; and
- (ii) the fact that with respect to evolving its regulatory philosophy and approach for economic regulation of Airport Operators to give effect to its mandate under the Act, the Authority had undertaken extensive consultations with stakeholders, carefully perused all submissions, views and opinions expressed by stakeholders and had issued its Order No. 13/2010-11 dated 12th January 2011 in the matter;

the Authority proposes to adopt the following approach towards determination of tariffs for aeronautical services provided by DIAL:

- (i) Be guided by provisions of the SSA read with the provisions of OMDA and other agreements as far as these are consistent with provisions of the Act; and
- (ii) Wherever possible, have recourse to principles of tariff determination contained in Order No. 13/2010-11 dated 12th January 2011 and Guidelines embodied in Direction No5/2010-11 issued on 28th February 2011.

Further, in terms of the OMDA, and specifically Articles 9.1.1. and 9.1.2 thereof, there is already a set prescription under the OMDA for damages in case of a failure by DIAL to meet the service quality requirements as set forth therein. In this regard, Articles 9.1.1 and 9.1.2 of the OMDA provide as under:

9.1.1 (c) Default:

At any time after the expiry of two (2) Years after Effective Date, in the event that the Airport has not achieved ISO 9001:2000 certification, the JVC shall produce an action plan within 30 days that sets out how it will address the deficiencies and these initiatives shall be immediately implemented.

Should the JVC fail to produce such an action plan within 30 days or if the Airport (or any part thereof) continues not to achieve ISO 9001:2000 certification, for further 6 months from the date of submission of action plan or



fails to maintain the certification at any time during the Term after having achieved certification, the JVC shall thereafter pay to the AAI 2.5% of the monthly Revenue (prior to default) for every month, that the Airport does not achieve or maintain ISO 9001:2000 certification, as the case may be, as liquidated damages provided however that the total liquidated damages payable hereunder shall not exceed 15% of the monthly Revenue (prior to default).

9.1.2 (c) Default

At any time after the JVC is obligated to achieve and maintain a particular Objective Service Quality Requirement, in the event that the immediately succeeding quarterly report show that the Airport (or any part thereof) is rated below the respective Objective Service Quality Requirement, the JVC will achieve the particular Objective Service Quality Requirement within 30 days of the last submitted quarterly report.

Should the JVC fail to achieve the above, or if the Airport (or any part thereof) continues to perform below the targets mentioned in Schedule 3, the JVC shall pay to the AAI 0.5% of the monthly Revenue (prior to default) for every month, that the standards are below any of the Objective Service Quality Requirements, for each such performance area, as liquidoted damages provided however that the total liquidated damages payable hereunder shall not exceed 1.5% of the monthly Revenue (prior to default).

2.2.2. In view of the AERA being required to take the terms of the State Support Agreement and the OMDA in consideration in determining tariff and in view of the OMDA read with the State Support Agreement already providing for a mechanism for penalties for failure to achieve service quality requirements, we note that for AERA to have taken into consideration the terms of the OMDA and the State Support Agreement, the AERA should not only take into consideration the service quality requirements, but also the penalties for failure to meet service quality requirements as set forth therein. Any penalties prescribed by the AERA for failure to meet the said service quality requirements would effectively tantamount to the AERA not taking into consideration the terms (including penalties) in the OMDA and therefore would not be consistent with the AERA Act.

QUALIFICATIONS AND ASSUMPTIONS:

3.1. Our observations herein are based on and limited to the provisions of applicable Indian law and our interpretation of it as applicable on the date hereof.



- 3.2. The statements rendered herein are referred as of the date hereof and we assume no obligation to update or supplement such statements to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur or become effective.
- 3.3. Our observations have been rendered only on the basis of the facts provided and circumstances disclosed to us and our understanding as stated in paragraph 1 and this paragraph 3. In case of a change in our understanding or the facts and circumstances, our observations would need to be revised accordingly. We have not independently verified the factual information or information made evailable to us.
- 3.4. No advice or opinion has been expressed on the matters of fact.
- 3.5. Our observations herein are based on our interpretation of the present provisions of laws of India and may need review upon any further change in law, issue of clarification, notification, or any decision of judicial / quasi-judicial authorities.
- 3.6. Any determination, certificate, opinion or the like are purely a matter of interpretation of the applicable Indian laws on the date hereof and will not be binding on any court of law or regulatory authority, which may take a differing view.
- 3.7. So far as the laws of any jurisdiction outside india may be relevant to the present transaction, we have assumed that such laws have been and will be compiled with.
- 3.8. Our observations herein are restricted to the specific query identified in paragraph 1 above. Our observations herein do not deal with issues that may be related to but are not identified therein. No opinion should be inferred beyond the matters expressly stated which at all times will be subject to the specific background and qualifications stated herein.
- 3.9. Our observations herein are only for the benefit of the addressee and it should not be circulated or provided to any person, authority or entity, without our prior written consent.

We hope the above clarifles your queries. Should you require any further clariflestions or assistance, please do not heritate to contact us.

Kind regarda

Jatin Anola

Partner, Amarchand Mangaldas

ANNEXURE J

(UBS and BNP Paribas reports)



UBS Investment Research

GMR Infrastructure

Operating profit above estimates

■ Event: Operating profit up 54% y/y; but higher interest cost impacts PAT GMR reported Q2FY12 operating profit of Rs5.7bn (higher than UBS and consensus estimates; UBS-e Rs4.7bn, consensus Rs4.4bn) and Net loss of Rs625m (higher than UBS-e but lower than street expectations). The miss versus our estimates was driven by higher interest costs (+57% y/y) in Q2, mainly led by the Delhi airports segment. Operating performance was above expectations led by

■ Impact: acquires 30% stake in PT Golden Energy Mines

GMR entered into a definitive agreement to acquire 30% stake in PT Golden Energy Mines, Indonesia to purchase coal over next 25 years. Coal off-take from the mines will start (about 1mt initially) from Jan 2012. GMR continues to rely on govt assurances for gas availability for the Rajahmundry project, which is expected to commission by Q4FY12.

Action: ADF approval expected shortly

Other key developments include- 1) The company shared no specific timelines for monetization of next tranche of real estate in Delhi and 2) The company expects 5-6% margin in the EPC business.

■ Valuation: Buy rating

robust traffic growth.

We have a Buy rating and long-term risk-reward is favourable in our view.

Hightights (Rsm)	03/09	03/10	03/11E	03/12E	03/13E
Revenues	40,192	45,665	53,569	66,600	84,896
EBIT (UBS)	6,770	7,521	7,085	7,461	13,349
Net Income (UBS)	2,795	1,800	(278)	(2,453)	(491)
EPS (UBS, Rs)	0.77	0.49	(0.07)	(0.63)	(0.13)
Net DPS (UBS, Rs)	0 00	0.00	0.00	0.00	0.00

Profitability & Valuation	5-yr hist av.	03/10	03/11E	03/12E	03/13E
EBIT margin %		165	13.2	11.2	157
ROIC (EBIT) %		3.8	28	26	42
EV/EBITDA (core) x	u	19.1	10.5	86	5,5
PE (UBS) x		>100	<-100	408	<-100
Net dividend yield %		0.0	0.0	0.0	0.0

Source Company accounts, Thomson Reviers, USS estimates (UBS) valuations are stated before goodeds, exceptionals and other special items. Valuations, birsed on an average share price that year, (E) based on a share price of Rs25.70 on 10 Nov 2011 23 54 SGT.

Sandip Bansal

Analyst sandip.bansal@ubs.com +91-22-6155 6059

Global Equity Research

Indi

Price

Industrial, Diversified

12-month reting Buy Unchanged

12m price target Rs38.00/US\$0.76

Unchanged
ce Rs 25.70 /US\$0.52

RIC: GMRI BO 8BG: GMRI IB

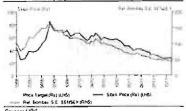
11 November 2011

Trading data (local/US	5)
52-wk range	Rs53.25-25.35/US\$1 20-0.51
Market cep.	Rs100bn/US\$2.01bn
Shares o/s	3,892m (ORD)
Free float	26%
Avg. dally volume ('000	3) 4,671
Avg. daily value (m)	Rs128.1
Balance sheet data 03/	11E
Shareholders' equity	Rs 103bn
P/BV (UB\$)	1 0x
Net Cash (dabt)	(Rs189bn)
Forecast returns	
Forecast price appreci	atlon +47.9%
Forecast dividend yield	1 0 0%
Forecast stock return	+47 9%
Market return assumpt	lon 13.5%
Forecast excess return	+34.4%

EPS (UBS, Rs)

	03/11E		03/10
	UBS	Cons.	Actual
Q1	0.08		0.06
Q2	(0.19)		0 15
Q3E	(0.06)	0.11	0.03
Q4E	0.10	0.10	0 26
03/11E	(0.07)	(0.07)	
03/12E	(0.63)	(0 63)	

Performance (Rs)



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UBS does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Con Call highlights:

- Indonesian coal mines: Financial closure is expected this month. First coal supply of about 1mt to start from next year. Coal will be imported at a discount of about 6-8% to market price based on the quantum of offtake.
- Rajahmundry project: On gas availability, GMR continues to rely on the assurance given by the government and keeping the project ready. The company has already drawn about Rs21bn of debt for the project. Interest cost will continue to be capitalised in case the project gets delayed beyond the expected COD of Q4FY12.
- Barge mounted plant: Cost per unit have increased QoQ due to high fuel costs (US\$4.2/mmbtu), depreciation of INR, and maintenance related issues.
- DIAL land monetization: No concrete timelines shared for the next phase.
- DIAL: Tariff determination is expected soon; could be in Q4FY12.
- Male airport: Profitability is lower since Q2 is the worst quarter in terms of seasonality (Q3 and Q4 being the best quarters). However despite this, the traffic growth has been resilient.
- EPC: The company thinks EBITDA margin of 5-6% can be reasonably expected from this business.
- Receivables: The company has outstanding receivables of about Rs6bn from Tamil Nadu Electricity Board (relating to its two assets, Chennai power plant Rs5bn and barge mounted plant Rs1bn) and Rs2.7bn from National Aviation Company India Ltd (NACIL).
- Others Division: This segment includes GMR Infra's investment arm, GMR aviation (which has 4 aircrafts and helicopters) and various overseas subsidiaries of GMR Infra (including 2 subs in Male). Thus Rs1.9bn of revenues from this segment includes investment income, management fees from the Male airport, treasury income and income from GMR aviation, a 100% subsidiary.

Q2FY12 results

Table 1: Q2FY12 results

Rs m	Q2FY12A	Q2FY11A	% Chng	Q1FY12A	% Chng	H1FY12A	H1FY11A	% Chng
Gross Revenues	20,199	13,583	49%	20,822	-3%	41,020.90	13583 1	202.0%
Less: Rev share	(2,077)	(1,366)	52%	(2,186)	-5%	(4,262.30)	-1366	212.0%
Net revenues	18,123	12,217	48%	18,636	-3%	36,759	24,531	49 8%
Total operating costs	(13,109)	(8,656)	51%	(13,656)	-4%	(26,765)	(17,195)	55.7%
Fuel consumption	(3,190)	(2,992)	7%	(4,769)	-33%	(7,959)	(5,978)	33.1%
Generation and operating expenses	(7,521)	(3,950)	90%	(6,225)	21%	(13,748)	(8,280)	66.0%
Employees	(1,342)	(690)	94%	(1,277)	5%	(2,618)	(1,264)	107.2%
Admin and other expenses	(1,056)	(1,024)	3%	(1,386)	-24%	(2,442)	(1,674)	45.9%
Operating profit	5,014	3,581	41%	4,980	1%	9,993	7,335	36,2%
Other income	700	143	391%	812	-14%	1,511	815	85 3%
EBITDA	5,713	3,703	54%	5,792	-1%	11,505	8,151	41.1%
Financial charges	(3,922)	(2,492)	57%	(3,724)	5%	(7,646)	(4,875)	56.9%
Depreciation	(2,675)	(1,993)	34%	(2,758)	-3%	(5,433)	(3,641)	49.2%
РВТ	(884)	(781)	13%	(691)	28%	(1,575)	(365)	331.6%
Tax	(586)	(197)	197%	(655)	-11%	(1,240)	(295)	320.2%
Current	(363)	(197)	84%	(445)	-18%	(808)	(267)	203.0%
Deferred	(222)	-	#DIVI0!	24	-1030%	(198)	(29)	596.1%
FBT	×	٠	#O(V/0!	(234)	-100%	(234)	~	#DIV#0!
PAT	(1,470)	(978)	50%	(1,346)	9%	(2,815)	(660)	326.5%
Minority Interest	844	260	225%	679	24%	1,523	237	543.6%
PAT after MI	(625)	(718)	-13%	(667)	-6%	(1,292)	(423)	205.1%
Extra-ordinaries	•	1,403	-100%		#DIV/0!	-	1,403	-100.0%
Associeles	J .	26	-100%	¥	#D(V/0!	*	16	-100.0%
Reported PAT	(625)	711	-188%	(667)	-6%	(1,292)	996	-229.8%
Opereting profit margin	27.7%	29.1%	-24%	26 7%	2 4%	27.2%	29.9%	-2.7%
PBT margin	-4.9%	-6 4%	2 7%	-3 7%	-2.7%	-4.3%	-1.5%	-28%
PAT margin	-8 1%	-8 0%	0.8%	-7.2%	-0.8%	-7.7%	-2.7%	-5.0%
Effective lax rate	-66.2%	-25.2%	-69 6%	-94.8%	69.6%	-78 8%	-80 9%	2 1%

Source Company dala

- Capacity charges: The continued rise in interest and depreciation costs is attributed to the capitalization of T-3 at Delhi airport.
- Other income: Other income declined 14% QoQ due to lower interest income.

Valuation

Our SOTP valuation for GMR is as follows (with individual assets being valued on DCF) $\boldsymbol{-}$

Table 2: SOTP valuation

			Value of GMR's stake	GMR's stake	Asset value
	Rs/share	% Contribution	. (Rs bл)	(%)	(Rs bn
Power	14.9	39.5%	57.9		62.8
Kamalanga	38	10.1%	14 8	80.0%	18.5
Chattisgarh	2.4	6.4%	9.4	100.0%	9
Emco	1.7	4.5%	66	100.0%	6.
Vemaglri	1.7	4.4%	6.4	100.0%	6
Rajahmundry	1.2	3.1%	46	100 0%	4.
Indonesia mines	8.0	2.1%	3.1	100.0%	3
Homeland Energy mines	0.5	1.4%	20		2.
Chennal plant	03	0.8%	1.2	51.0%	2
Barge-mounted plant	0.3	0.8%	1.2	100.0%	1.
Cash + PE financing	22	5.8%	8.5	100.0%	8.
Almorts	12.0	31.9%	46.7		101.
Delhi real estate	12 6	33 5%	49.2	54.0%	91.
Hyderabad airport (core)	40	10.7%	15.8	63.0%	25.
Male airport	1.2	3.1%	46	77.0%	6.
Sabiha Gocken	04	1.1%	15	40 0%	3.
Delhi airport (core)	00	0.1%	0.2	54.0%	0
Less: PE funding	(6.3)	-16.7%	(24 5)	100.0%	(24.5
Roads	3.3	8.7%	12.8		16.
-lyderabad-Vijaywada	1.1	2 9%	4.2	74.0%	5.
aruknagar-Jadcherla	0.8	2 2%	3.2	100.0%	3.
Tindivanam-Ulunderpet	0.8	2.1%	31	100.0%	3.
Tambaram-Tindivanam	0.3	0.8%	1.2	61.0%	2.
Pochanpalli	0.3	0.8%	12	100.0%	1.
Hungund Hospet	0.3	0.8%	12	51.0%	2.
Tuni-Anakapalli	02	0 4%	0.6	61 0%	1.
Chennai Outer Ring Road	(0.1)	-0.3%	(0.4)	90.0%	(0.5
Ambala-Chandigarh	(0.4)	-1.0%	(1.5)	100.0%	(1.5
sneht	2.3	6.0%	8.8		9,0
(rishnagirl SEZ	12	3.2%	4.8	95.0%	5.9
EPC .	1.0	2.8%	40	100 0%	4.0
vet cash/equivalents at Holdco	5.2	13.9%	20.3	100.0%	20.
Grand total	38	100%	147		210

Source, USS ostimates

GMR Infrastructure

Income statement (Rsm)	-	03/07	03/08	03/09	03/10	03/11E	% ch	03/12E	% ch	03/13E	% on
Revenues		18,967	22,949	40,192	45,665	53,569	17.3	66,600	24.3	84,896	27 5
Operating expenses (ex depn)	- 3	(11,531)	(16,963)	(29,524)	(32,022)	(38,462)	20 1	(48, 456)	26.0	(56,859)	17.
EBITDA (UBS)		5,437	5,986	10,688	13,843	15,108	10.7	18,144	20.1	28,037	54
Depreciation		(1,346)	(1,785)	(3,898)	(6,122)	(8,021)	310	(10,683)	33.2	(14,688)	37
Operating Income (EBIT, UBS)		4,091	4,201	6,770	7,521	7,085	-5.8	7,481	5.3	13,349	78.
Other Income & associates		183	696	214	1,634	1,189	-27.2	1,000	-15.9	1,000	0
Net Interest		(1,441)	(1,687)	(3,682)	(7,223)	(9,779)	35.4	(12,175)	24.5	(16, 126)	32.
Abnormal items (pre-tex)		0	0	0	0	0		0		0	0.00
Profil before tax	-	2,833	3,211	3,302	1,931	(1,605)		(3,713)	146.8	(1,777)	-52.
Tax		(415)	(584)	(530)	322	(332)		(1,579)	375.8	(877)	-44
Profit after tax	- 1	2,418	2,627	2,772	2,253	(1,836)		(5,292)	188.2	(2,854)	-49,
Abnormal items (post-tax)		0	0	0	0	0		0		0	,
Minorities / pref dividends		(673)	(526)	23	(454)	1,558	_	2,839	822	2,163	-23.
Net Income (local GAAP)		1,744	2,101	2,795	1,800	(278)		(2,453)	7825	(491)	-80.
Net Income (UBS)		1,744	2,101	2,795	1,800	(278)		(2,453)	782.5	(491)	-80.
(16t nicoline (000)	-	1,(44	2,101	2,185	1,000	(210)	- 4	(2,400)	192.3	(451)	-00.
Tax rate (%)		15	18	16	0	0		0	16	0	
Pre-abnormal tax rate (%)	100	15	18	16	0	0		0		0	
The state of the s			74							T/P2	
Per share (Rs)		03/07	03/08	03.09	03/10	03/11E	% ch	03/12E	% ch	03/13E	% c/
EPS (local GAAP)	-	0.56	0.62	077	0.49	(0.07)		(0 63)	7825	(0.13)	-80
EPS (UBS)	1	0 56	0 62	077	0,49	(0.07)		(0.63)	782.5	(0 13)	-80
Net DPS		0.00	0 00	0.00	0 00	0.00		0 00		0.00	
Cesh EPS	•	0 98	1 14	184	2 16	1 99	-8.1	2.11	6.3	3 65	72.
BVPS		9 40	25 20	30 46	28 49	26 58	-6.7	24.15	-91	23.12	-4,
Delegan short /Bomb		5007	00.00	00.00	2040	55976	A7 - 4	ATH AF	W .1	00000	
Balance sheet (Rsm)		03/07	03/08	03/09	03/10	03/11E	% ch	03/12E	% ch	03/13E	% cl
Not tangible fixed assets		48,059	97,925	164,426	229,309	290,047	26.5	320,202	104	359,879	15
Net Intangible fixed assets	•	0	0	0	0	0		0	20.0	0	001
Net working capital (incl. other assets)		(1,444)	(3,800)	879	2.394	911	-620	555	-39.0	5,914	964.6
Other liabilities		0	0	0	0	(21,447)		(21,447)	00	(34,834)	62 4
Operating invested capital		48,615	94,125	165,305	231,704	269,511	18.3	299,310	11.1	340,958	13.5
Investments		2,625	48,998	13,109	46.411	6,604	-85.8	6,604	00	6,604	00
Total capital employed	. *	49,240	143,123	178,414	278,114	276,114	-07	305,914	10.6	347,662	13.
Shereholders' equity	•	30,445	83,425	100,902	104,466	103,463	.10	94.003	-9.7	69,985	-4.
Minority Interests	•	(5,261)	(11,128)	(18,061)	(17,902)	(16,343)	-8.7	(13,504)	-17.4	(11,337)	-18 (
Total equity	*	25,184	72,298	82,841	86,567	87,119	0.6	80,499	-7.6	78,648	-2.,
Net debt / (cash)		24,056	70,825	95,573	191.547	188,995	-13	225,415	19.3	268,914	19.
Other debt-deemed Items	1	0	0	0	0	0		0		0	
Total capital employed	•	49,240	143,123	178,414	276,114	276,114	-0.7	305,914	10.8	347,562	13.6
Cook flow (Dom)		dany	0200	0.200	0280	MAKIE	W	ATHEC	Mr. ada	03/13E	% ch
Cash flow (Rsm) Operating Income (EBIT, UBS)		03/07	03/08	03/09	03/10	03/11E	% ch	03/12E	% ch	13,349	78 GH
Operating income (EBI), UBS) Depreciation	5.5	4,091 1,346	4.201 1.785	8.770 3,898	7.521 6,122	7,085 6,021	31.0	7,461 10,683	5.3 33.2	14,688	37.
Net change in working capital	•	1,346	2,075			1,484	37.0	355	-76.0	(5,358)	37.0
Other (operating)	•	1.320	698	(3,830)	(3,858)		-27.2	1,000	-159	1,000	0.0
	-			214	1,634	1,189			_		
Operating cash flow (pre text/interest)		6,948	8,758	7,252	11,419	17,779	55.7	19,500	97	23,879	21 4 32.5
Net Interest received / (peid)	•	(1.441)	(1,687)	(3,682)	(7,223)	(9,779)	35 4	(12 175)	24.5	(16,126)	
Dividends paid	•	. 0	0	0	0	0		(4.670)	275.0	(077)	
Tex paid	•	(415)	(584)	(530)	322	(332)		(1,579)	375.8	(877)	-44.:
Capital expenditure		(19,579)	(51,650)	(70,400)	(71,006)	(68,759)	-3.2	(40,838)	-40.6	(64,365)	57.
Net (ecquisitions) / disposals	A	0	0	0	0	0		0		0	
Other		10.55	(46.373)	35.888	(33,302)	61,254	94977	0	×.	13,387	
Share lacues		12,474	39,146	0	2,301	14,000	500.4	0	•	0	500
Cash flow (Inc)/dec in net debt	•	(2,081)	(62,390)	(31,471)	(97,488)	14,163	4	(35,091)		(44,302)	26.
FX / non cash items	- 4	1.4	5,622	6.723	1,514	(11,611)	- 4	(1,328)	-88.6	803	-
Batence sheet (inc)/dec in not dobt			(46,768)	(24,749)	(95,974)	2,552	292	(36,420)	+	(43,499)	19.
CoreEBITDA		5,437	5,986	10,668	13,643	15,106	10.7	18.144	20.1	28.037	54.5
Melatanenea canifel avasaditus		/10 C 700	/61 0E01	770 100	(71 000)	100 7501	22	ran poès	10 5	(CA TELL	£2 !
Maintenance cepital expenditure		(19,579)	(51,650)	(70,400)	(71,006)	(68,759)	-3.2	(40,838)	-406	(64,365)	57 6
Maintenance net working capital	•	1,328	2,075	(3,630)	(1,929)	742		178	-76.0	(2,679)	
Operating free cash flow, pre-tex	•	(12,814)	(43,590)	(63,362)	(59,292)	(52,911)	-108	(22,516)	-57.4	(39,007)	73,2

Source Company accounts, UBS estimates (UBS) valuations are stated before goodwill, exceptionals and other appearal living flows. Note For some companies, the data represents an extract of the fine company account.

Global Equity Research

India

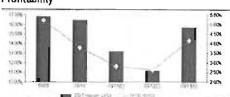
Industrial, Diversified

12-month rating Buy
12m price target Rs38.00

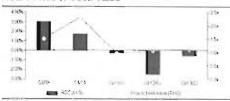
Company profile

GMR is one of India's leading infrastructure developers, with an asset portfolio (attributable) of. (1) 765 acres of real estate near Delhi and Hyderabad airports; (2) about 3,900MW of power capacity (+4,100MW at an early development stage); (3) three airports with ullimate pax handling of 89m; (4) eight road projects (more than 520km); (5) three SEZs of more than 3,400 acres, and (6) stakes in coal mines with mineable reserves of over 150m tons Additionally, GMR holds 50% of Intergen, which has global power assets of 6,600MW (and 2,700MW under development)

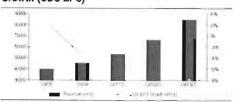
Profitability



ROE v Price to book value



Growth (UBS EPS)



GMR Infrastructure

Valuation (x)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/138
P/E (local GAAP)	-	60.2	NM	NM	NM	Nk
P/E (UBS)		60.2	>100	<-100	-40 8	<.10
PACEPS	:	25.1	30 5	12.9	12 2	71
Net dividend yield (%)	•	0.0	0.0	0.0	0 0	0
P/BV	-	1,5	23	1.0	1.1	1
EV/revenue (core)	*	5.0	5 7	2.9	23	1,5
EV/EBITDA (core)	•	18.9	19 1	10.5	8.6	5 :
EV/EBIT (core)		29.8	NM	22.3	20.9	113
EV/OpFCF (core)		MM	NM	MM	NM	Nλ
EV/op. invested capital		1.6	13	0.6	0.5	0
Enterprise value (Rsm)		03/09	03/10	03/11E	03/12E	03/136
Average merket cap		153,033	241,311	100,035	100,035	100.03
+ minority interests		14,594	17,981	17,122	14,924	12,42
+ average net debt (cash)		47,440	47,440	47,440	47.440	47,44
+ pension obligations and other		0	0	0	0	-
- non-core asset value		(13,109)	(46,411)	(6,604)	(6,604)	(6,604
Core enterprise value		201,959	260,322	157,996	155,796	153,29
Growth (%)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/138
Revenue	-	75 1	13 6	17,3	24 3	27
EBITDA (UBS)		78 2	27 9	107	20,1	54
EBIT (UBS)		61 2	11 1	-5.8	5.3	78
EPS (UBS)		246	-36 0	1.0	ММ	-80
Cash EPS	-	61,3	17.7	-8.1	63	72
Net DPS		-				
8VPS		20 9	-65	-67	-91	-4
Margins (%)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/138
EBITDA / revenue		26 5	29 9	28.2	27 2	33 (
EBIT / revenue		168	16.5	13 2	11.2	15
Net profit (UBS) / revenue		7.0	3.9	MM	NM	NR
Return on capital (%)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/13
EBIT ROIC (UBS)		52	3.8	2.8	26	4 :
ROIC post tex	*	4.4	38	2.8	26	4
Net ROE		30	18	(0.3)	(2.5)	(0.5
Coverage ratios (x)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/139
EBIT / net Interest		19	13	0.8	0.7	0.1
Dividend cover (UBS EPS)	1.0					
Div. payout ratio (%, UBS EPS)						
Net debt / EBITDA		90	NM	нм	NM	9 (
Efficiency ratios (x)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/136
Revenue / op. Invested capital		0.3	0.2	02	02	0.3
Revenue / fixed assets		03	02	0.2	0 2	0.2
Revenue / net working capital		NM	27 9	32.4	90.9	26,2
Investment ratios (x)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/138
OpFCF / EBIT	-	NM	NM	NM	NM	100
Capex / revenue (%)		NM	NM	NM	NM	NN
Capex / depreciation		NM	NM	8.6	3.8	4.4
Capital structure (%)	5Yr Avg	03/09	03/10	03/11E	03/12E	03/138
Not dobt / total equity		94.7	NM	NM	NM	NN
Net debt / (net debt + equity)		48 6	647	64.6	70.6	749
Net debt (core) / EV		23 5	18 2	30.0	30.5	30 9

Source, Company accounts, UBS estimates (UBS) valuations are stated before goodwill, exceptionals and other special items.
Valuations: based on an average share price mail year. (E) ibased on a share price of Rs25.70 cm 10 Nov 2011 23.54 SGT Market capit(f) may include forecast share issues buybacks.

Sandip Bansal

Analyst

sandip bansal@ubs com

+91-22-6155 6059

■ GMR Infrastructure

GMR is one of India's leading infrastructure developers, with an asset portfolio (attributable) of: (1) 765 acres of real estate near Delhi and Hyderabad airports; (2) about 3,900MW of power capacity (+4,100MW at an early development stage); (3) three airports with ultimate pax handling of 89m; (4) eight road projects (more than 520km); (5) three SEZs of more than 3,400 acres; and (6) stakes in coal mines with mineable reserves of over 150m tons. Additionally, GMR holds 50% of Intergen, which has global power assets of 6,600MW (and 2,700MW under development).

■ Statement of Risk

In our view the key risks for GMR with regard to airport projects are: a) execution delays; b) regulatory risks related to revenue; and c) traffic risks. With regard to power projects, we believe the key risks are: a) shortages in fuel supply; and b) collection risks. For road projects: a) traffic; and b) collection are key risks. All of GMR's projects face interest rate-related risk.

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UBS Investment Research: Global Equity Rating Allocations

UBS 12-Month Rating	Rating Category	Coverage ¹	IB Services ²
Buy	Buy	59%	35%
Neutral	Hold/Neutral	35%	33%
Sell	Sell	6%	14%
UBS Short-Term Rating	Rating Category	Coverage	IB Services
Buy	Buy	less than 1%	0%
Sell	Sell	less than 1%	20%

^{1:}Percentage of companies under coverage globally within the 12-month rating category.

Source: UBS. Rating allocations are as of 30 September 2011.

UBS Investment Research: Global Equity Rating Definitions

UBS 12-Month Rating	Definition					
Buy	FSR is > 6% above the MRA					
Neutral	FSR is between -6% and 6% of the MRA.					
Sell	FSR is > 6% below the MRA					
UBS Short-Term Rating	Definition					
Buy	Buy: Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.					
Sell	Sell: Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.					

^{2:}Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

^{3:}Percentage of companies under coverage globally within the Short-Term rating category.

^{4:}Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

GMR Infrastructure 11 November 2011

KEY DEFINITIONS

Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months.

Market Return Assumption (MRA) is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium).

Under Review (UR) Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. Short-Term Ratings reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case.

Equity Price Targets have an investment horizon of 12 months.

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UK and European Investment Fund ratings and definitions are: Buy: Positive on factors such as structure, management, performance record, discount; Neutral: Neutral on factors such as structure, management, performance record, discount; Sell: Negative on factors such as structure, management, performance record, discount.

Core Banding Exceptions (CBE): Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the reting. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.

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UBS Securities India Private Ltd; Sandip Bansal.

Company Disclosures

Company Name	Reuters	Reuters 12-mo rating		Price	Price date	
GMR Infrastructure ⁵	GMRI.BO	Buy	N/A	Rs25.70	09 Nov 2011	

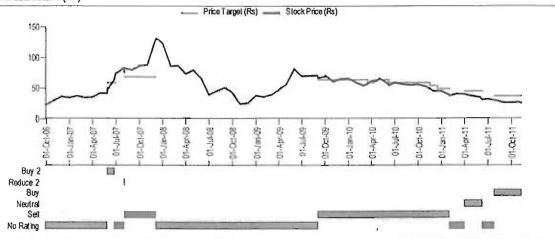
Source: UBS. All prices as of local market close.

Ratings In this table are the most current published ratings prior to this report. They may be more recent than the stock pricing date

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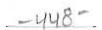
Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report





Source: UBS; as of 09 Nov 2011

Note: On August 4, 2007 UBS revised its rating system. (See 'UBS Investment Research: Global Equity Rating Definitions' table for details). From September 9, 2006 through August 3, 2007 the UBS ratings and their definitions were: Buy 1 = FSR is > 6% above the MRA, higher degree of predictability; Buy 2 = FSR is > 6% above the MRA, lower degree of predictability; Neutral 1 = FSR is between -6% and 6% of the MRA, higher degree of predictability; Neutral 2 = FSR is between -6% and 6% of the MRA, lower degree of predictability; Reduce 1 = FSR is > 6% below the MRA, higher degree of predictability; Reduce 2 = FSR is > 6% below the MRA, lower degree of predictability. The predictability level indicates an analyst's conviction in the FSR. A predictability level of '1' means that the analyst's estimate of FSR is in the middle of a narrower, or smaller, range of possibilities. A predictability level of '2' means that the analyst's estimate of FSR is in the middle of a broader, or larger, range of possibilities. From October 13, 2003 through September 8, 2006 the percentage band criteria used in the rating system was 10%.



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Different assumptions could result in malerially

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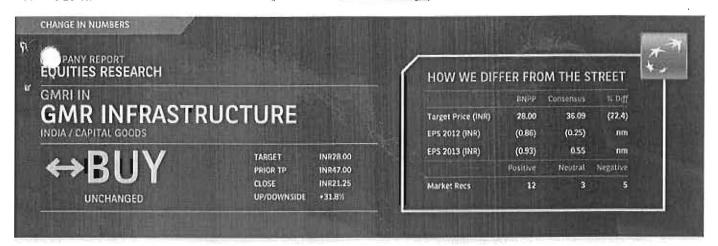
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INDUSTRY OUTLOOK ←→

Latent value

CHANGE

Regulatory uncertainty and slow execution lead to oversetting

After the strong correction in GMR shares due to regulatory uncertainty in the power and airport sectors, and aggressive bidding in the recent highway project, we believe the risk-reward for GMR is favorable at current levels. We think valuations are pricing in a near-write-off of partial investments in existing projects facing uncertainty. Reiterate BUY.



CATALYST

Clarity in the airport sector, a near-term catalyst

After the restoration of airport development fee at Oelhi Airport, we think the next catalyst will be clarity on the revenue model for the airport (4QFY12). For the power segment, signing of long-term supply agreement and commissioning of plants should be viewed as positives. For highways, financial closure of the KUA project should be a positive catalyst.



VALUATION

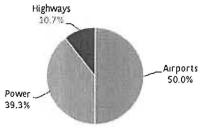
TP of INR28 hased on SOTP valuation of assets

We are taking a very conservative view and revising our assumptions on all assets. Consequently, we are lowering our TP to INR28, from INR47. Downside risks include continued delays in project commissioning, lowerthan-expected tariff hike at DIAL or slowdown in airport traffic and lower-than-expected toll in the highways segment.



KEY CHART

SoTP-based TP of INRZE



Source, BNP Paribas estimates

KEY STOCK DATA

YE Mar (INR m)	2012E	2013E	2014E
Revenue	75,307	105,639	140,739
Rec. net profit	(3,335)	(3,611)	(1,130)
Recurring EPS (INR)	(0.86)	(0.93)	(0.29)
Prior rec. EPS (INR)	(0.41)	1.32	٠
Chg. In EPS est (%)	108.9	(170.1)	N/A
EPS growth (%)	154.5	8.3	(68.7)
Recurring P/E (x)	neg	neg	neg
Dividend yleld (%)	0.0	0.0	0.0
EV/EBITDA (x)	15.4	13.5	10.5
Price/book (x)	1.1	1.1	1.1
Net debt/Equity (%)	212.6	292.1	355.9
ROE (%)	(3.5)	(3.8)	(1.2)



(INA)	- GWH INTERESTORIO	IFF REI	to macrifica	(20)		
Share price	performance	1 Month	3 Month 1	2 Month		
Absolute (%	6)	(18.6)	(21.7)	(\$7.0)		
Relative to	country (%)	(13.8)	(21.6)	(39.2)		
Next result	s		Febru	ary 2012		
Mkt cap (U	(m 02			1,607		
3m avg dal	ly turnover (USC	m)		2.6		
Free float (%)			25		
Major shar	eholder	(GMR Holdings (74%)			
12m high/l	ow (INR)		49.	45/20.05		
3m historic	vol. (%)			41.7		
ADR ticker						
AOR closing	g price (USD)			•		
Issued shar	res (m)			3,892		

Sources: Bloomberg consensus; BNP Paribas estimates



Vishal Sharma, CFA

Shashank Abhisheik

91 22 33704336

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5 DECEMBER 2011

RISK EXPERTS

Key Earnings Drivers & Sensitivity

 An increase of 100bp in our cost of equity assumption to 14.5% results in a INR3 (10.7%) decline in our fair value estimate of INR28; lowering the cost of equity by 100bp to 12.5% results in a INR6 (21.4%) increase in our fair value estimate.

and the	- Control	Dane	
MOLEC	pase	Best	
14.5	13.5	12.5	
25	28	34	
(10.7)	_	21.4	
	25	14.5 13.5 25 28	

GMR Infrastructure and MXIN Index (3M and 6M Realised-Vol)

Aug-66	Aug-07	Aug-08	60-guA	Aug-10	Aug-11
120					
100		1			
80	4	1	1		
60	Can	UN'	VI		Name -
40	to the	100	No.	الر. يالالها	
26				4	- PV
0					
(3)	EUR Infrastructura - IUI, I	ealised - Vol	CHI	hjrustructure - 644 j	loV - de elles
1	45CIInela - 344 Realised -	Vol	MSC	India - GM Braked	· Yol

M:	Killed - 34 Realised - Vol	MSCI	PUTIT - COT BESTELY - AN
Davision (Stand	Dang NGP Facilities		
4 India 9	Sector Correlation	Matri	x at 25 July 2011
India	Autos	Banks	Engineering & Construction

India	Autos	Banks	Engineering & Construction	Metals & Mining	Oil & Gas	IT Services	Telecom	Utilities	Property
Autos	1.00	0.67	0.64	0.66	0.50	0.43	0.36	0.58	0.62
Banks		1.00	0.71	0.70	0.58	0.46	0.36	0.63	0.66
Engineering & Construction			1.00	0.71	0.58	0 46	0.41	0.65	0.68
Metals & Mining				1.00	0.66	0.50	0.40	0.69	0.72
Oil & Gas					1.00	0.40	0.30	0,57	0.57
IT Services						1.00	0,27	0.45	0.38
Telecom							1.00	0.43	0.43
Utilities								1.00	0.63
Property									1.00
- TANK									

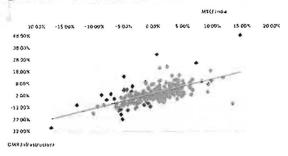
Source: BNP Paribas Sector Strategy

The Risk Experts

- Our starting point for this page is a recognition of the macro factors that can have a significant impact on stock-price performance, sometimes independently of bottom-up factors.
- With our Risk Expert page, we identify the key macro risks that can impact stock performance.
- This analysis enhances the fundamental work laid out in the rest of this report, giving investors yet another resource to use in their decision-making process

Source: BNP Paribas estimates

Regression - GMR Infrastructure to MXIN Index



GMR Infrastructure = 8 + 0.0742 * MXIN Index R Square = 0.415 R Square = 0.416 Regression based on 261 observations of 5 years weekly data. Please refer to Appendix Ufor the explanation of R-square Sources: Bloomberg, BNP Panbas

Long/Short Chart



Sources: Bloomberg: BNP Paribas

What caused the stock price to decline?

We believe the 54% YTD decline in GMR's share price (vs. the Sensex's decline of 19%) is due to the following reasons.

- At the Delhi Airport, delays in finalizing a revenue model. Concerns that single-till will be implemented.
- Decision of AERA to Implement a single-till aero revenue model at the Hyderabad International Airport.
- Lower supply of gas to the operating gas plants, which resulted in lower capacity utilization.
- Uncertainty about coal supply domestically for coal-based projects that are under development.
- Perceived aggressive bid for the Kishangarh-Udaipur Ahmedabad (KUA) mega-highway project.

We address and discuss each of these issues for the Individual assets. We believe the stock correction has been overdone and reiterate our BUY rating on GMR.

EXHIBIT 1: SOTP valuation

Assets	Contribution	Valuation	Assumptions and rationale
	(INR)	Metric	
Urports	14.0		
DIAL	(1.0)	OCF, 13.5% CoE	Assuming CPI-X Implementation from FY13, assuming aero revenue per passenger at levels comparable with GHIAL (implies a 2.5x increase in aero revenue in FY13); we estimate creation of regulatory base due to under-recoveries which should be recovered by FY18; FY12-16E average annual growth: PAX = 10%, ATMs = 10.6%, Cargo = 8.5%
DIAL Real Estate	10.0	DCF, 13.5% CoE	Assuming land monetization to commence in FY14 after the DIAL revenue model is finalized; we estimate the remaining 205 acres will be monetized in parcels of 30-35 acres annually ending in FY19
GHIAL	2.0	DCF. 13.5% CoE	Our valuation has increased based on the strong operating performance (higher traffic growth, ATMs); we have postponed the implementation of the single-till model to FY13; FY12-16E average annual growth: PAX = 12%, ATM = 11.3%; Cargo = 9.5%
SGIA	2,0	OCF. 13.5% CoE	FY12-16E average annual growth PAX = 11.0%, ATM = 9,0%; Cargo = 4.0%
Male	1,0	OCF. 13.5% CoE	Still in Implementation stage, company has indicated that progress is as per plan; there has been some local opposition to imposition of a development fee (stated to commence in January 2012); this fee was part of the concession agreement and is unlikely to be revoked; however, worst case scenario is that the company will not be allowed to collect the fee in which case our valuation declines to (INR1)
Power	11.0		
GEL	(1.0)	OCF, 13.5% CoE	The gas availability scenario is not likely to improve in the foreseeable future, consequently PLF of this plant will be sub-optimal; FY12-16E average annual PLF = 70%
SPCPL -	1.0	DCF, 13.5% CoE	The PPA of this plant expires in 2014; we are not assuming any contribution from this plant beyond the expiry; GPCPL operates on diesel oil which results in very high cost of production, consequently, in a merit order dispatch, the plant is unlikely to operate at a high utilization ratio; FY12-18E average annual PLF = 63%
VPGL (incl expansion)	2.0	DCF. 13.5% CoE	The gas availability scenario is not likely to improve in the foreseeable future; consequently PLF of this plant is significantly below the optimum range; $FY14\cdot18E$ average annual PLF = 76%
Kamalanga	4,0	OCF, 13.5% COE	We estimate that this plant will be able to supply the 863MW power that is tied up under PPAs (out of a total capacity of 1400MW) using imported coal. We have done a detailed scenario analysis of the impact of change in source of coal supply and the option of merchant sales; FY13-17E average annual PLF = 67%
Chhattisgarh	1.0	OCF, 13.5% CoE	No coal supply has been finalized and no PPAs have been signed. However, construction of the project is as per schedule: FY15-19E average annual PLF = 62%
EMCO	3,0	DCF, 13,5% CoE	Of the 600MW of capacity, only 200MW has been tied up in a PPA, FY14-18E average annual PLF = 60%
Island Power	1,0	DCF, 13.5% CoE	Debt for the project was recently field up; additionally, the company sold 30% stake in the project to a strategic investor
Highways	3.0		
GTTEPL	0.2	DCF, 13.5% CoE	Annuity project, traffic growth not meaningful
STAEPL	D,0	DCF, 13,5% CoE	Annuity project, traffic growth not meaningful
GPE P L	0,6	UCF, 13.\$% Coé	Annulty project, traffic growth not meaningful
GACEPL	0.1	OCF, 13.5% CoE	Yoll based, average annual traffic growth of 6,0%
SJEPL	0.8	OCF, 13.5% CoE	Toll based; average annual traffic growth of 6.0%
SUEPL	1,0	DCF, 13.5% CoE	Toll based, average annual traffic growth of 6,0%
Chennal Outer Ring Road	0.8	OCF. 13.5% CoE	Annuity project, traffic growth not meaningful
Hyd · Vijayawada	2 1	DCF, 13.5% CoE	Toll based: average annual traffic growth of 7.0%
Hungund Hospet	0.4	DCF, 13.5% COE	Toll based; average annual traffic growth of 7.0%
Ahmedabad Kishangarh	(2.9)	DCF, 13.5% CoE	We believe that investors will continue to factor in the negatives from this project and hence we now include it in our valuation although a formal financial closure has not been achieved, average annual traffic growth of 7.0%
Total	28		

Source: BNP Paribas estimates

Airports

Delhi Airport (DIAL)

Key investor concerns at DIAL are;

- 1 Timing of implementation of a revenue model; single or double-till.
- 2 Rate of return that will be allowed on the regulated asset base.
- 3 Treatment of real estate and whether a return will be allowed on the deposits that have been collected by monetizing real estate (used to partly fund capex).
- 4 Impact of the temporary stay on collection of an airport development fee (ADF).

Our checks with the Airports Economic Regulatory Authority (AERA) indicate that the request for revenue revision has already been filed by DIAL. The process of determination of revenue is currently underway. In our talks previously, AERA had indicated that, unlike in the Hyderabad Airport (GHIAL), the agreement between the government and DIAL stipulates a shared-till model (using CPI-X method). Hence, there is very low likelihood of implementing the controversial single-till model at DIAL. Implementation of the single-till model would imply that all streams of revenue (aero, non-aero, cargo and others) will be considered for calculating the allowed return on investment. Thus, the upside potential from non-aero and other revenue would be limited for DIAL.

During the 2QFY12 results call, management mentioned that it expects a final revenue model by January 2012. In any case, it is unlikely to be implemented in FY12. While it is difficult to pinpoint the exact time of AERA's decision, we believe a final decision should be made during the first quarter of next calendar year (or 4QFY12). Consequently, we postpone the implementation of the CPI-X aero revenue model to FY13 in our estimates as below.

Once the revenue model is finalized, it will be implemented over batches of five years, called 'control period'. The first control period started in CY10 (the project was completed in August 2010). However, as the revenue model was not finalized, the aero revenue collected was much lower than what should have been collected. Consequently, we believe that in the first control period ending FY15, the total revenue to be collected will include shortfall from the previous two years. If the CPI-X model is implemented FY13, we estimate that aero revenue would have increased 276% from our FY12 estimate. However, as an increase of this magnitude is impractical, we estimate an increase of 150%. Dur estimate is essentially in line with the aero revenue per passenger of INR381 that is currently being collected at the Hyderabad airport (also operated by GMR). Based on our normalized revenue growth assumptions, we believe accumulated loss (revenue shortfall) should be recovered by FY21 (assuming a 20% annual increase in aero revenue for FY14 and FY15, 15% annual growth over FY16-18, and 10% growth In FY19 and FY20).

We have assumed a WACC of 7.1% on the regulated based of INR127b. Our WACC is based on an indicative rate of 18.33% RDE (that was allowed at GHIAL) and 11% (pre-tax) cost of debt (tax-rate of 30%). We are not assuming any return on that portion of capital expenditure which has been/will be financed by real estate deposits and ADF. There is a downside risk to our assumptions if the regulator allows lower ROE.

EXHIBIT 2 Calculation of WACC for DIAL

	Biavuru	Exp.	Weights	Weighted	
Capital structure	Amount	return		return	Comments
	(INR m)	(%)	(%)	(%)	
Equity	2,300	18.33	18	3.4	COE is assumed to be the same as granted in GHIAL
Oebı	5,286	7.70	42	3.2	11% cost of debt and 30% tax rate
Internal accruals	50	18.33	0	0.1	Assuming Internal accruals will be allowed ROE
Real estate deposits	1,472	0,00	12	0.0	Not assuming any return on real estate deposits
Short-term finance	2,714	0.00	22	0.0	Amount to be recovered using AOF, INR14.84b already collected, AERA recently allowed an additional collection of INR19.3b (including 701m yet to be incurred)
Total Gross block	11,802		94	8.7	
Add: Capex to be incurred	701	7.70	6	0.4	Amount to be recovered using AOF as discussed above
Total Capex	12,503		100	7.1	

Sources: BNP Paribas Research

Impact from the stay on collection of ADF has been to the tune of INR270m as additional interest for 2QFY12, according to management. There should be interest cost savings on a sequential basis starting 3QFY12 (prorated for a part of the quarter) as the ADF has been restored beginning 1 December 2011.

DIAL Real Estate: From our discussion with management, we believe GMR is in no hurry to monetize its real estate. Management has indicated that it would like to monetize the land gradually, in phases, so that the company can enjoy the upside from existing developments around the area. Essentially, if the first phase gets at least partially developed by the time the second phase is up for sale, the value realizable for the second phase might be higher than what could have been realized otherwise. Of course, the test is if GMR is able to realize more than what is lost towards the time-value of money. Although this strategy might delay immediate cash flows, we believe, overall, the company would be in a position to realize higher land value (on an absolute basis) as it did in the case of sale of its second tranche of Delhi real estate. In FY10, GMR leased out 29.5 acres and 15.5 acres in two tranches. In its second round of lease, the company realized on average 30% higher value compared to the first tranche.

Additionally, uncertainty about the treatment of real estate revenue in the calculation of return on investment is likely to get cleared when the regulator finalizes a revenue model for the airport.

Accordingly, we are delaying our earlier assumption of 50 acre real estate monetization during FY12. We are now assuming annual monetization of 35 acres beginning FY14. Accordingly, the entire 250 acres is likely to be monetized by FY19 (FY16 assumed previously).

EXHIBIT 3 DIAL - Operational details:

Year-end 31 Mar	2011	2012E	2013E	2014E	2015E
Passengers (m)	29,94	34.43	37.87	41.66	45.83
ATM (*000)	276	317	349	384	422
Cargo (tonnes)	391	399	439	482	531
Net revenue (INR m)	6,659	7.994	12,471	14,989	18,051
EBITDA (INR m)	1,038	2,064	6,146	8,234	10,824
EBITDA margin (%)	15.6	25.8	49.3	54.9	60.0
Interest (INR m)	3,252	6,739	6.158	5,460	\$,693
Depreciation (INR m)	2,684	4,500	4,922	5,334	5,334
Net Profit before minority (INR m)	(2,404)	(4,644)	(2,641)	(1,371)	(109)

Sources: GMR Infrastructure; BNP Paribas estimates

Hyderahad Airport (GHIA:

AERA had earlier passed an order for GHIAL finalizing a revenue model that allowed 18.33% ROE on the equity portion of its regulated asset base (RAB) using single-till mechanism. The regulator also directed to eliminate, from the RAB, any assets that are not related to core airport operations for the purpose of calculating the return. Implications from this order are:

- 1 Implementing Single-till would imply all streams of revenue aero, cargo and non-aero revenue will be considered for the purpose of calculating the ROE.
- 2 Elimination of assets would imply any real estate that is not related to airport's core operations will be eliminated from the RAB at the market value

This methodology is detrimental to GMR by way of limiting upside potential from real estate monetization and non-aero revenue. The company has appealed against this order and the matter is still pending in the court. Pending the court's decision, the order has not been implemented yet. We are assuming an unfavorable outcome for GMR and have built in the provisions of this order beginning FY13 in our estimates (FY12 assumed previously).

EXHIBIT 4: GHIAL - operational details

Year-end 31 Mar	2011	2012E	2013E	2014E	2015E
Passengers (m)	7.63	8.77	9.91	11,09	12.20
ATM ('000)	83	97	107	117	129
Cargo (tonnes)	81	87	95	105	116
Net revenue (INR m)	4,950	6,177	4,080	4,050	4,025
EBITDA (INR m)	2,977	3,997	1,788	1,641	1,493
EBITDA growth (%)	60.1	64,7	43.8	40.5	37.1
Interest (INR m)	1,902	2,179	1,927	1,779	1,468
Depreciation (INR m)	1,188	1,232	1,232	1,232	1,237
Net Profit before minority (INR m)	1,160	491	(1,370)	(1,370)	(1,206)

Sources: GMR Infrastructure: BNP Paribas estimates

Other airports

For Sabiha Gocken Airport (SGIA) and Male Airport, we are adjusting our estimates for latest traffic and volume numbers. For Male airport, we have also included USD25 per departing international passenger starting 1 January 2012 in our revenue estimate.

Recent news reports indicate that the opposition party in the Maldives may file a legal suit that would prevent Male Airport from collecting the ADC of USO25 per departing passenger. This charge was applicable from 1 January 2012. GMR has indicated that this charge was part of the terms and conditions of the concession agreement and, hence, it is unlikely to be quashed. However, in the worst case, if we remove the imposition of the ADC, our FY12E EPS declines by about 7% and Male Airport's contribution to our target price of GMR would fall to (INR1)/share, from INR1 /share.

Power

EXHIBIY 5: Operational plants

Operational plants	Capacity	Fuel		FY13E	
			PLF	Selling price	Cost price
	(MW)		(%)	(INR/unit)	(INR/unit)
GMR Energy (GEL)	235	Natural gas	72	3.58	3,86
Vernagiri (VPGL)	389	Natural gas	73	3.00	2.99
GMR Chennal (GPCPL)	200	Diesel oil	53	10.68	9.70

Sources: GMR Infrastructure; BNP Parlbas estimates

GMR has three operational power plants with an aggregate capacity of 824Mw. Two of the three operational power plants (VPGL and GEL) continue to operate at sub-optimal PLFs due to lower availability of natural gas resulting from lower production at the KG-D6 basin. The power purchase agreement (PPA) for the third plant in Chennai that operates on diesel oil ends in FY14; we assume that the plant is unlikely to renew its PPA without incremental capital expenditure. Consequently, we do not include any contribution from the Chennai plant beyond FY14.

Power assets under development

We include four plants (Kamalanga, Emco, Chhattisgarh, and VPGL expansion) that are under development in our valuation. We are incorporating two major factors into our estimates: 1) shortage of fuel (gas and coal) that implies no firm fuel supply agreements, 2) the lack of power offtake agreements as customers are reluctant to sign PPA with plants that do not have a firm fuel supply agreement. We discuss each of the plants under development in detail.

Kamatenga, Coal and execution are key.

For Kamalanga, 863MW of the total 1400MW capacity has a formal PPA (300MW with the Haryana and Bihar government each and 263MW with the Orissa Government). GMR very recently signed a PPA with the Bihar government for 300MW at INR3.69/unit. Management plans to tie up a total of 75% (1050MW) under PPA and sell the remainder in the merchant market. We assume that the first unit of 350MW should be commissioned by April 2012 followed by one unit each in July, September and December of 2012.

The Kamalanga plant has a tapering coal linkage with Mahanadi Coalfields (a fully owned subsidiary of Coal India) for the first three years of operations. Additionally, the Indonesian mines of the company (Golden

Energy Mines - Sinar Mas group (up to 10m tonnes annual offtake agreement) and Barasentosa (110m tonnes coal reserves) - will also be able to supply imported coal to the plant. We assume 3.0Mt of coal will be imported commencing in FY13. Both the Indonesian mines are already producing coal. About 40% of the total capex of INR64.6b has been incurred as of August 2011. We are assuming USD61 per ton landed cost (at the plant) for calculating our coal costs. This cost implies USD38 per ton of price for coal and the remainder is for freight or taxes. In case GMR is forced to supply at the listed price of the Indonesian Government, there should be more value addition to its stake in the respective mines, albeit, after dividend or repatriation taxes.

In our base case for Kamalanga, we assume: 1) no merchant sale of power, 2) Dip Rampia mine will commence coal supply from FY16, 3) until FY15, GMR will receive 1.2MTPA coal from Coal India (COAL IN) while the remaining requirement will be met by imported coal. If we include merchant sales, Kamalanga would contribute INR10/GMR share. On the other hand, if there is no production from the Rampia mine and the company imports coal only to the extent of honoring its PPAs, then the plant contributes (INR 4)/GMR share. Furthermore, if the plant operates entirely on imported coal and is able to sell the surplus power on a merchant basis, Kamalanga would contribute INR2/share. We believe that the market is factoring in the worst case for this plant (no merchant sales and no coal from the Rampia mine).

EXHIBIT 6: Kamalanga - scenario analysis

	Merchant sales of power	No merchant sales
Olp Rampia supplies coal	INR10/share; FY13 net profit of INR1.8b; PLF = 75% (max supported by Dip Rampia coal supply)	INR4/share; FY13 net profit of INR106m; PLF = 67%
No Coal from Olp Rampià (only imported coal)	INR2/share; FY13 net profit of INR1.8b; PLF = 85%	(INR4)/share; FY13 net profit of INR106m; PLF = 67% (this will decline to 23% at later stages when only one PPA remains active)

Source: 8NP Paribas estimates

EXHIBIT 7: Kainstanga (Coal Fired, 1,400MW)

Year-end 31 Mar	2013€	2014€	2015E	2016E	2017E
PLF (%)	67	67	67	67	67
Cost price/unit (INR)	2,43	2.94	2,96	2 10	2.06
Selling price/unit (INR)	2.45	2.94	2.95	2.53	2.51

Source: BNP Paribas estimates

EXHIBIT 8: Kamalanga - PPA details

Power purchaser	Capacity tied up	Price
	(MW)	(INR/MU)
Haryana Govt	300	2.41
Orissa Govt	263	As per CERC norms
Bihar Govt	300	3.69
Total	863	

Sources: GMR Infrastructure; BNP Paribas Research

Emco Roughly half complete

The first unit of 300MW of the 600MW Emco plant is due to be commissioned by 1QFY13 followed by the second unit in the subsequent quarter. Out of the total capacity, a PPA for 200MW has been signed with MSEDCL. Once again, GMR's management has indicated that about 75% of the power produced is likely to be tied up with a PPA with the balance to be sold as merchant power (spot). The entire coal requirement of the plant has been tied up with South Eastern Coalfields (a fully owned subsidiary of Coal India). However, we believe that the company is unlikely to get its full allocation; consequently, we estimate lower PLFs in the first 5 years of operations ramping up to the target PLF of 80% gradually as coal supplies become available. The company has invested about INR8.0b in the Emco plant (about 40% of total project cost).

EXHIBIT 9 Emco (600WM, Coal fired)

Year-end 31 Mar	2013E	2014E	2015E	2016E	2017E
PLF (%)	0	40	60	60	60
Cost price/unit (INR)	* PH J 194	2.87	2.71	2.72	2.72
Selling price/unit (INR)	the same of the same	2.38	2.43	2.53	2.64

Source: BNP Paribas estimates

Chbattisgarti. Long way to go-

The Chhattisgarh plant still has neither a fuel supply agreement nor a power offtake agreement. However, GMR has already Invested INR68.5b in developing the plant (17% of total project cost). We assume that the development of this plant will continue as per schedule. But, no PPA or fuel supply agreements are key concerns. Consequently, we assume another one-year delay; we now estimate the plant will commence operations in FY15 (FY14 assumed previously).

EXHIBIT 10 Chhattegam (Coat fired, 1,370MW)

Year-end 31 Mar	2013E	2014E	2015E	2016E	2017E
PLF (%)	0	0	50	60	60
Cost price/unit (INR)	7.		3.48	2.99	2.96
Selling price/unit (INR)		saultinide:	2.99	3.11	3.24

Source: BNP Paribas estimates

Vernagin Gas still in limbo, execution on

Vemagiri expansion project (768MW) has been progressing as per plan. However, the gas supply for this plant is a key concern. The plant has not received gas allocation; consequently, there is no power supply agreement either. Approximately INR6.8b (79% of total project cost) has already been spent on the plant. We estimate that the company is likely to complete the plant but we now estimate that power production will commence only in FY14 (FY13 earlier). The plant is likely to be commissioned by end-FY12; consequently, we believe that the operational and interest expenses are likely to commence in FY13 itself.

EXHIBIT 11 Vemagiri expansion (gas-fired, 768MW)

Year-end 31 Mar	2013E	2014E	2015E	2016E	2017E
PLF (%)	0	70	70	80	80
Cost price/unit (INR)	*	3.24	3.32	3.25	3.33
Selling price/unit (INR)	•	3.10	3.16	3.21	3.27

Source: BNP Paribas estimates

EXHIBIT 12: Snapshot of plants under development

Power		Total capital required			Capex Incurred till Aug-11			Remaining capex						GMR's
	Capacity	Cost	Debt	Equity	Total	Debt	Equity	Total	Debt	Equity	Completed	COD	Stake	equity
	(MW)	(INR m)	(INR m)	(INR m)	(INR m)	(INR m)	(INR mi)	(INR m)	(INR m)	(INR m)	(%)		(%)	(INR m)
Kamalanga	1,400	64,600	48,450	16,150	26,030	16,730	9,300	38,570	31,720	6,850	40	1QFY13	78	5,304
Chattisgarh	1,370	82,900	62,175	20,725	14,400	7,160	7,240	68,500	\$5,015	13,485	17	4QFY14	98	13,202
VPGL Phase II	768	32,500	26,000	6,500	25,700	20,400	\$,300	6,800	5,600	1,200	79	4QFY12	98	1,175
Emco Energy	600	34,800	26,100	8,700	14,360	9,290	5,070	20,440	16,810	3,630	41	1QFY13	98	3,554
Total	4,138	214,800	162,725	52,075	60,490	53,580	26,910	134,310	109,145	25,168				23,294

Sources. GMR Infrastructure; BNP Paribas estimates

Highway

We adjust our estimates for GMR's highways business based on the latest available traffic data. Additionally, we have recalibrated our estimates for the commencement of projects under development based on the latest available progress details for these projects. We have also updated the stakes held by GMR in each of the projects with the disclosures in the FY11 annual report.

We also include the Ahmedabad-Jaipur-Kishangarh project in our valuation even though the project is yet to attain financial closure. We believe that GMR's bid for this project is aggressive based on our assessment of management's traffic growth assumptions. We estimate a negative value for this project based on our estimates of traffic growth.

EXHIBIT 13 Under-devolutionent highway projects status

Highways	То	al capital re	quired	Capex Ir	curred till A	ug 2011	R	emaining cap	pex				
	Cost	Debt	Equity	Total	Debt	Equity	Yotal	Debt	Equity	Completed	COD	Stake	GMR's equity
	(INR m)	(INR m)	(INR m)	(INR m)	(INR m)	(INR m)	(INR m)	(INR m)	(INR m)	(%)		(%)	(INR m)
Chennaj ORR	8,668	7,168	1,500	3,209	1,709	1,500	5,459	5,459	*	37	1QFY13	90	
Hyd Vijayawada	21,940	16,900	5,040	10,290	7,350	2,940	11,650	9,550	2,100	47	2QFY13	90	1,890
Hungund Hospet	13,100	10,800	2,300	5,997	3,697	2,300	7,103	7,103	-	46	3QFY13	51	-
Total	43,708	34,868	8,840	19,498	12,756	6,740	24,212	22,112	2,100				1,890

Sources: GMR Infrastructure; BNP Parlbas estimates

EXHIBIT 14. Summary of estimate changes

Year-end 31 Mar	************	2012E			2013E		Comments
	Old	New	Change	Old	New	Change	
	(INR m)	(INR m)	(%)	(INR m)	(INR m)	(%)	
Revenue		A COLUMN	- pro-company	marketing and Aust	T m px Co.		
Airports	31,827	31,858	0	36,155	42,010	16	Postponing the implementation of fixed-rate of return revenue model to FY13 for DIAL and GHIAL; grossing-up revenue to Include fuel revenue at SGIA & Male due to change in company disclosures, incorporating the latest traffic data
Power	23,272	23,148	(1)	56,431	40,462	(28)	Lower PLFs for all plants, postponement of VPGL COD due to gas supply uncertainty; delay in Chartisgarh Implementation, offset by addition of mining and trading revenue
Highways	4,567	4,200	(8)	7,666	6,567	(14)	Adjusting toll estimates for latest available traffic data, including revenu from KUA net of premium
Others	5,575	16,101	189	5,835	16,600	184	Higher revenue due to EPC business; adjusting to current run-rate of revenue
Yotal .	65,241	75,307	15	106,097	105,639	0	
EĐITOA							
Alrports	18,692	8,922	(52)	21,391	11,924	(44)	Higher EBITDA decline due to negative operating leverage at DIAL; Fuel margin has thin margin, higher opex at SGIA and Male
Power	4,337	4,263	(2)	19,327	9,589	(50)	Lower PLFs for all plants, postponement of vPGL COD due to gas supply uncertainty; delay in Chattisgarh implementation; offset by addition of mining and trading revenue
Highways	3,021	3,510	16	5,739	6,250	9	Better operating performance at Pochanpally, Ainbala and Jadcherla highways, offset by premlum at KUA (starting FY13)
Others	874	3,869	343	908	3,687	306	Other non-EPC Income driving higher EBITDA
Total	26,924	20,564	(24)	47,365	31,4\$1	(34)	
Net Profit (after mine	ority)						
Alrports	2,067	(4,214)	(304)	3,911	(2,933)	(175)	Change in DIAL revenue assumptions, higher interest and depreciation a SGIA based on current run-rate.
Power	(2,538)	(195)	92	1,356	(1,258)	(193)	Lower PLFs for all plants, postponement of VPGL COD due to gas supply uncertainty; delay in Charlisgarh implementation; offset by addition of mining and trading revenue
Highways	(1,543)	(276)	82	(597)	(307)	49	Adjusting to eurrent toll estimates, offset by lower depreciation proportionate to toll revenue vs fixed rate earlier.
Others	416	1,350	224	491	823	71	
Total	(1,597)	(3,335)	109	5,151	(3,611)	(170)	

Sources. GMR Infrastructure; BNP Paribas Research



Valuation and TP

Our TP for GMR is based on a SoTP methodology. We are lowering our TP from INR47 to INR28, based on conservative assumptions discussed above and summarized below in the table. Our airport valuation is now INR14/share (INR22 previously). We are delaying the implementation of tariff hike to FY13, as well as the monetization schedule of land parcels in DIAL. Separately, we are adjusting all the airports for latest traffic trends. Our power asset valuation has also declined to INR11/share, from INR22, primarily because we have reduced our PLF expectations due to poor visibility of fuel supply. Our overall highway valuation is flat at INR3/share, although we have incorporated the Kishangarh-Ahmedabad project and adjusted other stretches for latest traffic estimates.

EXHIBIT 15 TP changes

	Contributi	on to TP					
Assets	New	Old	Difference	Assumptions and comments			
	(INR)	(INR)	(INR)				
Airports	14	22	(0.3)				
DIAL	(1.0)	2.0	(3.0)	Delaying implementation of CPI-X to FY13; adjusting for latest traffic numbers			
DIAL Real Estate	10.0	13.0	(3.0)	Oelaying land monetization schedule			
GHIAL	2.0	1.0	1.0	Adjusted for latest traffic numbers			
GHIAL Real Estate	•						
SGIA	2.0	4.0	(2.0)				
Male	1.0	2.0	(1.0)	Adjusted for latest traffic numbers			
Power	11	22	(11.0)				
GEL	(1.0)	1.0	(2.0)	Lowering PLFs due to lower gas availability			
GPCPL	1.0	1.0					
VPGL (incl expansion)	2.0	4.0	(2.0)	Assuming lower PLFs in first 4 years of operation of VPGL expansion			
Kamalanga	4.0	8.0	(4.0)	Assuming lower PLFs in first 4 years of operation due to uncertainty about availability of coa supply			
Chhattisgarh	1.0	3.0	(2.0)	Pushing out commissioning date to FY14 (FY13 earlier) as no PPA has been signed and no cou been allocated			
EMCO	3.0	5,0	(2.0)	Only 200MW has been tied up in a PPA and uncertainty about supply of coal persists			
Island Power	1.0	- /*		New addition			
Highwaya	3	3	0.0	Adjusting for latest traffic numbers			
GTTEPL	0.2	0.3	(0.1)				
GTAEPL	0.0	0.1	(0.1)				
GPEPL	0.6	0,2	0.4				
GACEPL	(0.1)		(0.1)				
GJEPL	0.8	0.6	0.2				
GUEPL	0.0	0.6	D.2				
Chennal Outer Ring Road	0.8	-	0.8	T.			
Hyd-Vljayawada	2.1	1.3	0.8				
Hungund Hospet	0 4	•	0.4				
Ahmedabad Kishangarh	(2.9)		(2.9)	New addition			
Grand total	28	47	(19.0)	ENTER SERVICE			

Source: BNP Paribas estimates

Firmncial statements GMR Infrastructure

awa infrastructure						
Profit and Loss (INR m) Year Ending Mar	2010A	2011A	2012E	2013E	2014E	
Revenue	45,665	57,738	75,307	105,639	148,739	
Cost of sales ex depreciation	(25,766)	(34,074)	(54,742)	(75,159)	(101,074)	
Gross profit ex depreciation	19,899	23,664	20,564	30,479	47,685	
Other operating income	0	0	0	0	0	
Operating costs	(6,256)	(8,109)	0	0	0	
Operating ESITOA	13,643	15,555	20,564	30,479	47,665	
Depreclation	(6,122)	(8,609)	(10,984)	(15,245)	(20,330)	
Goodwill amortisation	0,122)	(6,603)	(10,304)	(13,243)	0	
Operating EBIT	7,521	6, 946	9,581	15,234	27,935	
Net financing costs	(7,223)	(12,301)	(16,491)	(19,485)	(28, 170)	
Associates	0	0	0	0	0	
Recurring non operating income	1,834	3,113	2,204	638	682	
Non recurring items	0	(7,986)	0	0	0	
Profit before tax	1,931	(10,228)	(4,706)	(3,613)	(152)	
Tax	322	(239)	(1,700)	(1,525)	(1,331)	
Profit after tax	2,253	(10,467)	(6,406)	(5,138)	(1,484)	
Minority interests	(454)	(34)	3,072	1,527	353	
Preferred dividends	0	0	0	0	0	
Other items	(216)	1,205	0	0	0	
Reported net profit	1,584	(9,296)	(3,335)	(3,611)	(1,130)	AND THE RESERVE OF THE
Non recurring items & goodwill (net)	0	7,986	0	0	0	Not seen at Othe being a continue pexist by by
Recurring net profit	1,584	(1,310)	(3,335)	(3,611)	(1,130)	conversables betrakers
Per share (INR)			Grad W			Sur thanks
Recurring EPS *	0.41	(0.34)	(0.86)	(0.93)	(0.29)	
Reported EP5	0.41	(2.39)	(0.86)	(0.93)	(0.29)	
DP5	0.00	0.00	0.00	0.00	0.00	
Growth						
Revenue (%)	13,6	26.4	30,4	40.3	40.8	
Operating EBITOA (%)	27.9	14.0	32.2	48.2	56.4	the in the property likely to b
Operating EBIT (%)	11.1	(7.6)	37.9	59.0	79.4	situat at open project
Recurring EPS (%)	(47.0)	(182.7)	154.5	8.3	(68.7)	how-to-postulation
Reported EPS (%)	(47.0)	(687.0)	(64.1)	0.3	(68.7)	
Operating performance						
Gross margin inc depreciation (%)	30.2	26.1	12.7	14.4	18.4	
Operating E8ITDA margin (%)	29.9	26.9	27.3	28.9	32.0	
Operating EBIT margin (%)	16.5	12.0	12.7	14.4	18.4	
Net margin (%)	3 5	(2.3)	(4.4)	(3.4)	(0.8)	
Effective tax rate (%)	(16.7)		-		*	
Dividend payout on recurring profit (%)	0.0	9(4)	•	156		
nterest cover (x)	1.3	0.8	0.7	0.8	1.0	
nventory days	17.6	16.1	14,1	13.0	13.9	
Debtor days	61.0	69.1	73.7	59.7	49.8	
Creditor days	245.7	361.2	347.1	285.0	227.1	
Operating ROIC (%)	3.9	2.6	4.0	5.2	53.5	
Operating ROIC - WACC (%)	(7.1)	(8.4)	(8.9)		_ = = =	
ROIC (%)	4.0	3.3	4,6	5.4	54.6	
101C - WACC (%)	(70)	(7.7)	(8.2)			
DE (%)	2.4	(1.6)	(3.5)	(3.8)	(1.2)	
IDA (%)	3.4	3.0	3.8	4.7	47.7	
Pre exceptional, pre-goodwill and fully diluted	******	40444	20122	E. seen	90000	
evenue By Division (INR m)	2010A	2011A	2012E	2013E	201AE	
drports		16,216	31,858 23,14B	42,010 40,462	54,239 68,131	
COLLINE					AA 1 (1	
Power Roads	•	18,566 3,902	4,200	6,567	9,244	

Sources: GMR Infrastructure; BNP Paribas estimates

Vishal Sharma, CFA

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Cash Flow (INR m) Year Ending Mar	2010A	2011A	2012E	2013E	2014E
Recurring net profit	1,584	(1,310)	(3,335)	(3,611)	(1,130)
Depreciation	6,122	8,609	10,984	15,245	20,330
Associates & minorities	0	0	0	0	0
Other non-cash items	4,618	5,359	16,491	19,485	28,170
Recurring cash flow	12,324	12,658	24,140	31,119	47,370
Change In working capital	197	17,724	(3,690)	11,328	(10,124)
Capex - maintenance	0	0	0	0	0
Capex - new investment	(68,725)	(73,254)	(78,368)	(122,938)	(82,126)
Free cash flow to equity	(56,214)	(42,871)	(57,918)	(80,492)	(44,880)
Net acquisitions & disposals	(1,860)	(965)	0	0	0
Dividends paid	(5)	(87)	0	0	0
Non recurring eash flows	(30,859)	10,134	27,905	0	0
Net cash flow	(88,937)	(33,789)	(30,014)	(80,492)	(44,880)
Equity finance	3,131	35,950	2,555	1,545	391
Debt finance	77,967	14,460	5,964	60,730	59,210
Movement In cash	(7,839)	16,622	(21,495)	(18,217)	14,722
Per share (INR)			2.22	2.25	10.17
Recurring eash flow per share	3.17	3.25	6.20	8.00	12.17
FCF to equity per share	(14.44)	(11.02)	(14.88)	(20.68)	(11.53)
Balance Sheet (INR m) Year Ending Mar	2010A	2011A	2012E	2013E	2014E
Working capital assets	24,581	41,189	45,755	46,798	52,980
Working capita(liabilities	(19,653)	(53,898)	(54,773)	(67,144)	(63,202)
Net working capital	4,929	(12,709)	(9,018)	(20,346)	(10,222)
Tangible fixed assets	229,309	307,098	374,482	492,175	543,971
Operating invested capital	234,238	294,389	365,464	461,829	533,748
Goodwill	0	0	0	0	0
Other intangible assets	0	0	0	0	0
Investments	46,411	29,741	1,837	1,837	1,837
Other assets	810	74	74	74	74
Invested capital	281,459	324,204	367,374	483,740	535,659
Cash & equivalents	(16,826)	(33,732)	(15,429)	(53)	(14,774)
Short Lerm debt	0	0	0	0	0
Long term debt *	208,374	242.296	264,751	344,965	432,315
Net debt	191,547	208,564	249,322	344,913	417,571
Deferred tax	0	(1,514)	(1,514)	(1,514)	(1,514)
Other liabilities	3,339	2,279	2,279	2,279	2,279
Total equity	68,671	94,895	94,752	93,982	92,851
Minority Interests	17,902	19,981	22,536	24,081	24,472
Invested capital includes convertibles and preferred stock which is t	281,459 seing treated as debi	324,204	367,374	463,740	535,659
Per share (INR)					
Book value per share	17.13	19.87	19.83	19.64	19,34
Tangible book value per share	17.13	19.87	19.83	19.64	19.34
Financial strength					
Net debt/equity (%)	221.3	181.6	212.6	292.1	355.9
Net debt/total assets (%)	60.2	50.6	57,0	65.0	68.0
Current ratio (x)	2.1	1,4	1.1	0.7	1.1
CF interest cover (x)	2.7	3.5	2.2	3,2	2.3
Valuation	2010A	2011A	2012E	2013E	2014E
Recurring P/E (x) *	52.2	neg	лед	neg	neg
Recurring P/E @ Larget price (x) *	68.8	neg	neg	лед	neg
Reported P/E (x)	52.2	neg	neg	neg	лед
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0
P/CF (x)	6.7	6.5	3.4	2.7	17
P/FCF (x)	(1.5)	(1.9)	(1.4)	(10)	(1.8)
Price/book (x)	1.2	1,1	2.1	1,1	1,1
	1.2	1.1	1,1	1,1	1.1
Price/tangible hook (x)			5000		
	15.9	16.7	15.4	13.5	10.5
Price/tangible hook (x) EV/E8ITDA (x) ** EV/EBITDA & target price (x) **		16,7 18.1	15.4 16.5	13.5 14.4	10 ₋ 5 11.0

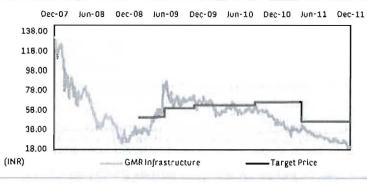
rect dept to equity to include acadest for developmental projects get drawn down

Sources GMR Infrastructure, ONP Paribas estimates

5 DECEMBER 2011 12 **BNP PARIBAS**

His ary of change in investment rating and/or target price

GMR Infrastructure (GMRI IN)



Date	Reco	TP
22-Jan-09	REDUCE	51.00
18-lan-10	HOLD	64.00
4-Apr-11	BUY	47.00

Vishal Sharma started covering this stock from 23-Jan-2009 Price and TP are in local currency

Valuation and risks: Key risks to our SoTP-based target price are continued delays in project commissioning, lower-than-expected tariff hike at DIAL or slowdown in airport traffic and lower-than-expected toll in the highways segment

Sources: Bloomberg; BNP Parlbas

Disclaimers and Disclosures

ANALYST(S) CERTIFICATION

VIshal Sharma, CFA, BNP Paribas Securities India Pvt Ltd, +91 22 33704377, vishal.sharma@asia.bnpparibas.com. Shashank Abhisheik, BNP Paribas Securities India Pvt Ltd, +91 22 33704336, shashank.abhisheik@asia.bnpparibas.com.

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GMR Infrastructure		

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- 3. It received compensation for investment banking services from this company in the last 12 months.
- 4. It beneficially owns 1% or more or the market capitalization of this company.
- It makes a market in securities issued by this company.
- 6. The analyst(s) or an individual who assisted in the preparation of this report (or a member of his/her household) has a financial interest position in securities issued by this company or derivatives thereof.
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All share prices are as at market close on 2 December 2011 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock Ratings

Stock ratings are based on absolute upside or downside, which we define as (target price* - current price) / current price.

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

* In most coses, the target price will equal the analyst's assessment of the current foir value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time harizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefare, our recommendation is an assessment of the mismatch between current market price and our ossessment of current fair value.

Industry Recommendations

Improving (A): The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

Neutral (←→): The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

Deteriorating (Ψ) : The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (0). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations. Index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

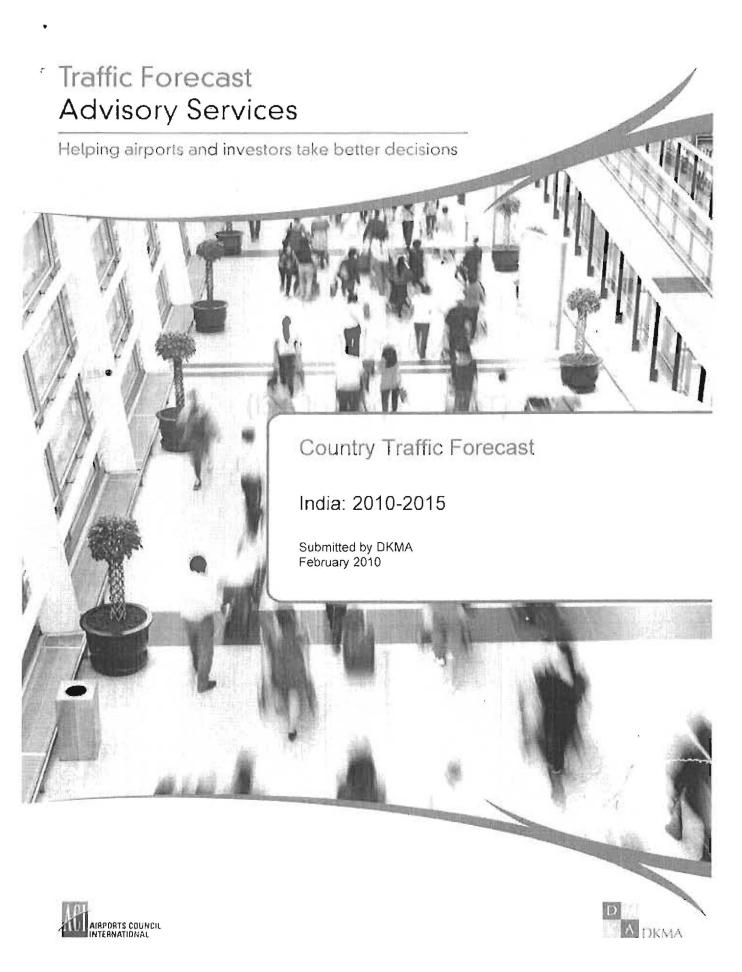
RATING DISTRIBUTION (45 of 2 December 2011)

Total BNP Paribas coverage universe	490	Investment Banking Relationship	(%)
Воу	303	Buy	4.30
Hold	136	Hold	2.20
Reduce	51	Reduce	3.90

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ANNEXURE K (Traffic report of ACI)



-466-

Introduction

ACI requested DKMA to undertake a study to evaluate the current profile of traffic in India and determine its likely future evolution during the next six years.

For the undertaking of this study, DKMA relied on the experience it has gained over the years by undertaking similar studies and its knowledge of travel market trends, airline strategies, and so on and so forth.

The report presents an unconstrained passenger traffic development at a country level covering 2010-2015 and passengers are split by:

- Domestic;
- International; and
- Total.

In terms of data sources DKMA used the OAG, ACI's annual and monthly passenger statistics, the IMF and Global Insight; the last two for economic growth.

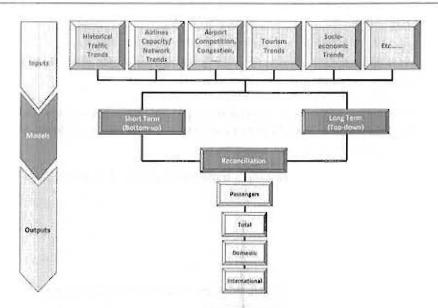
Methodology

To prepare the forecast DKMA combined two forecast methodologies:

- A short term 2010 monthly route area passenger traffic forecast based on planned route development, airline capacity and estimated load factors. Two route areas were defined namely the domestic and international which were subsequently summed up to calculate total passenger traffic. This is a bottom up forecast model.
- A medium term annual passenger traffic forecast based on econometric regressions driven by the Indian economic development to which some adjustments were made if and when necessary. This top-down approach covers the remainder of the forecast i.e. 2011-2015.

Once the bottom up (short term) and top down (medium term) forecasts were completed the last step was to reconcile the forecasts to create one seamless set of figures.

© DKMA 2010



For the short term forecast (2010) as a starting point we used the OAG which shows:

- How many flights are scheduled by month in 2010 and for historical years;
- Which carriers will operate the flights; and
- What are the origin-destination airports.

However, the OAG flight schedule is not 100% accurate and some validation checks/ adjustments were required by cross-checking the OAG with other sources.

Having constructed the monthly trends in departing seats for January 2007 to December 2010 and then comparing these with actual traffic, it was possible to derive an estimated load factors by month and by route area. Given the fact that load factors are derived from the use of two different sources, here again some validation checks were made to ensure that they yielded valid trends.

Still based on the OAG capacity, monthly 2010 load factors were then projected to forecast passengers by route area. The load factor assumptions for the forthcoming months were made taking into account the historical seasonal pattern, the 2010 economic recovery, etc.

The long term forecast (up to 2015), was very much dependent on the economic driven regression. Several regressions were performed by the team such as:

- Regression of the Indian GDP done separately for total, domestic and international passengers;
- · Combinations of regressions with or without dummy variables; and
- Regressions prepared in linear or log form.

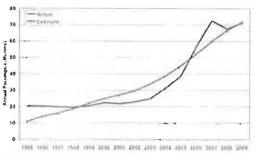
Most of the regressions tested, from a statistical point of view, provided credible results and in the end we selected the following two equations:

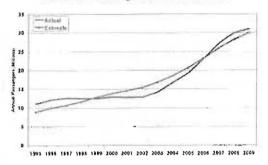
- Dom Indian Pax=α +B(GDP)^t
- Int'l Indian Pax= α +β(GDP)^t

These were selected because they provided the best statistical fit. The R^2 were above 0.91 and all Tstats were well above $\pm 1/2$.



International Passengers: Actual vs. Estimated





Source: DKMA analysis

Forecast Assumptions and Results

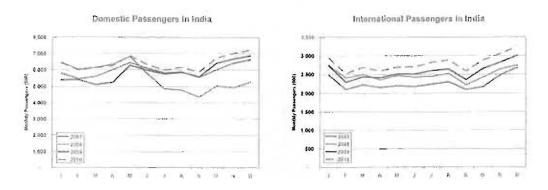
During the next 6 years we expect India to be one of the fastest growing markets in the world leading the air transport industry out of its slump. To prepare the forecast the key assumptions made were the following:

- Economic growth will average 7.8% per annum between 2010 and 2015;
 - . o Disposable income of Indians will continue to the increase;
- Strong carrier competition;
 - o However we could see some carriers exit either via a merger or bankruptcy;
- Air bilateral agreement will slowly become less restrictive but the international market will
 not be deregulated like the domestic market was; and
- The forecast is unconstrained.

After four years of phenomenal growth¹, fuelled by economic development and strong carrier competition, the Indian market took a turn for the worst starting roughly in the middle of 2008 but started to recover during Q4-09. The decline was significant and brought on largely, first by over capacity, second by soaring fuel costs, and subsequently by the global recession in 2009. However by the end 2009 India was one of only a handful markets which was surging ahead benefiting from a meaningful economic recovery and on-going carrier competition. These two elements are expected to form the bedrock for a solid passenger growth in 2010. In 2010 passenger demand should outpace capacity increase leading to increasing passenger load factors.

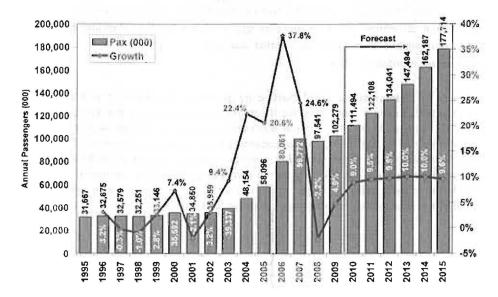
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¹ 2004-2007 was an unprecedented period of change for the Indian air transport industry. The Indian government recognized the importance of a strong air transport industry for the development of tourism, the economy and trade. Reforms included an open sky for the domestic market seeing the entry of several airlines.



By 2015 total passengers in India are expected to exceed 177 millions translating into an average growth rate of 9.6% lead by the domestic market (10.0% domestically vs. 8.8% for the international markets). Domestic markets have recently expanded more quickly than international markets fuelled by economic development, deregulation fuelling carrier competition (including competition from low costs) and the fact that 1st time travellers in India are in all likelihood going to fly domestically before flying internationally; these trends are expected to continue in the medium-term. As for the international market they are increasingly being liberated (ex: open skies with the US) and the trend will continue but full liberalisation will not become a reality during the next few years capping passenger growth compared to a more deregulated environment.

Total Passenger Forecast in India



			Medium	Term Passan	ger Forecast	for India		
		Domestic			International		To	sal
	Pax (000)	Grawith	Share	Pax (000)	Growth	Share	Pag (000)	Growth
1995	20,586		85.0%	11,381		35.0%	31,667	
1996	20,504	-0.4%	6.2 8%	12.171	38%	37.2%	32.675	32%
1997	19,995	-2.5%	61.4%	12.584	3.4%	38 6%	32,579	-0.3%
1990	19,738	-1.3%	E1 2%	12.513	-0.6%	38 8%	32.251	-1.0%
1959	20,621	4.5%	62.7%	12,525	0.1%	37 8%	33,146	2.6%
7000	22,645	9.8%	63.6%	12,947	3.4%	36.4%	35,592	7.4%
2001	22,006	2 8%	63.1%	12,643	0.8%	38.9%	34,850	-21%
2002	23,076	4.9%	64.2%	17,883	0.3%	35.8%	35.959	3.2%
2003	25,084	8.7%	63.8%	14,253	13.6%	36.7%	39.337	9.4%
2604	31,343	25.0%	65.1%	16.H10	17 9%	34.9%	48,154	22.4%
2005	38,790	23.8%	66 8%	19,306	14 8%	33.2%	59,096	20.6%
2006	56,845	46 5%	71.0%	23,215	20.3%	29.0%	80,061	37.8%
7007	72.480	27.5%	72.6%	27,291	17.6%	27.4%	99,772	24.6%
2008	87,546	-6.8%	69.2%	29.995	9.9%	30 8%	87,541	-2.2%
2019	71,228	5.5%	89 6%	31.051	3 556	30.4%	102,279	4.9%
2010	77,785	9.2%	69.8%	33.709	8.6%	30.2%	111,494	9.0%
2011	85,560	10.0%	70.1%	36,548	3 4%	29.9%	122,108	9.5%
2012	94,391	10.2%	70.4%	39.740	8.7%	29 8%	134,041	9.8%
2013	104,155	10.4%	70 8%	43,339	9 1%	29 4%	147,494	10.0%
2014	114,917	10.3%	70.9%	47,269	9.1%	29.1%	162,187	10.0%
7015	126.291	₽ 9%	71.1%	51,423	6.6%	20.9%	177,714	96%
1995-2009		9.3%			7.6%			87%
2003-2009		19.0%			13.9%			17.3%
2009-2015		10.0%			88%			96%

ANNEXURE L

(Extract from Mott McDonalds traffic report)

Appendix D Passenger traffic forecast data

D.1 Passenger Traffic Forecast Base Case

Year	Domestic	International	Total	
2006	10,474,383	5,640,052	16,114,43	
2007	13,616,698	6,768,063	20,384,760	
2008	15,659,202	7,614,071	23,273,273	
2009	17,225,122	8,375,478	25,600,600	
2010	19,292,137	9,380,535	28,672,672	
2011	21,993,036	10,787,615	32,780,65	
2012	24,632,201	12,082,129	36,714,330	
2013	26,602,777	13,048,699	39,651,470	
2014	28,730,999	14,092,595	42,823,594	
2015	31,029,479	15,079,077	46,108,55	
2016	33,356,690	16,134,612	49,491,30	
2017	35,858,441	17,102,689	52,961,130	
2018	38,547,825	18,128,850	56,676,67	
2019	40,860,694	19,035,293	59,895,98	
2020	43,312,336	19,987,057	63,299,39	
2021	45,477,952	20,886,475	66,364,42	
2022	47,751,850	21,826,366	69,578,21	
2023	49,900,683	22,699,421	72,600,10	
2024	52,146,214	23,607,398	75,753,613	
2025	54,492,794	24,551,694	79,044,48	
2026	56,944,969	25,656,520	82,601,48	
2031	66,661,955	30,034,502	96,696,45	
2036	77,279,476	34,818,219	112,097,69	
AAGR 2007 to 2011	16.0%	13.9%	15.39	
AAGR 2012 to 2016	8.7%	8.4%	8.6%	
AAGR 2017 to 2021	6.4%	5.3%	6.0%	
AAGR 2022 to 2026	4.4%	4.0%	4.3%	
AAGR 2027 to 2031	3.4%	3.4%	3.4%	
AAGR 2032 to 2036	3.0%	3.0%	3.0%	
AAGR 2006 to 2026	8.9%	7.9%	8.6%	
AAGR 2006 to 2036	7.0%	6.2%	6.7%	

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4.11.2 Annual ATMs

The annual forecast ATMs for Delhi are shown below:

Table 4.16: Forecasts ATMs

1,000	2006	2010	2012	2016	2021	2026	2031	2036
International	41	64	79	98	116	132	152	174
Domestic	114	193	237	301	392	471	551	639
Other	9	10	11	13	15	17	18	20
Total	163	267	327	411	523	619	721	833

Other movements include other commercial operations, in particular cargo and corporate GA. Light GA and military movements have been excluded as it is understood that revenue source will be insignificant.

4.12 Maximum Take-off weights

Analysis of the growth of future aircraft size (reflecting increasing PAX/ATM) provides the following average MTOW and grossed annual totals:

Table 4.17: Forecast MTOWs

	2006	2010	2012	2016	2021	2026	2031	2006
Average M'	TOW	FEE. OF	90.8	300				
(nt'l	149.0	162.4	171.3	189.1	211.4	233.7	238.2	241.1
Domestic	62.0	71.1	75.7	83.7	89.4	95.1	95.1	95.1
total MTOV	V (million	Tonnes / y	ear)					
Int'l	6.1	10.4	13.5	18.5	24,5	30.7	36.1	42.0
Domestic	7.1	13.7	17.9	25.2	35.1	44.8	52.4	60.8

4.13 Conclusions

4.13.1 **Current Market**

Total passenger traffic in Delhi Airport grew strongly by 27.4% in 2006 over the previous year, giving a total annual passenger figure of 16.2 million, making it the second largest airport in India after Mumbai.

Growth in passenger demand at Delhi Airport has been driven by increased economic activity (GDP), domestic demand, and price stimulation and the meeting of latent demand following a process of liberalisation that has seen new airlines and new services introduced at a rapid pace.

ANNEXURE M

(Details of Maintenance and Future Capex)

S.No	Description	Amount in Crs.	Remarks
lajor Pr	oiects		
1	Expansion of Remote Apron including AGL works	19.12	Improve operational efficiency by providing more argonistands
2	Construction of Link Taxiways from above remote aprons to Taxi P [Including AGL]	15.66	Link taxiway from above aprons to main taxiway
3	Vocational training centre for DIAL	4.68	DIAL is creating a vocational training centre for providing training to various workers to
	Total (A)	39.46	improve skill sets required for smooth operation / maintenace of airport
	1001 (1)	37.40	
Modifica	ation of T1D for enabling Intl. operation	9.5	
1	Civil works (demolition, Civil Structural)	2.45	a produce se succión w termo de productiones de la company
2	IT works	2.64	- Modification Works to enable conversion og 11 D into an inetrnational terminal for lov
3	Finishes works (Design consultancy, Interior and finishes)	2.95	cost carriers. Work involved segreagation required for both domestic and international
4	MEP works	1.26	
	Total (8)	9.30	
	10201 01	1.50	
trategio	: Capex		
1	Up gradation of software of photometric testing unit to suit 10-28 & 09-27 AGL systems	0.07	
,2	Provide UPS back up in one AGL substation for all the AGL systems	0.58	
3	Energy audits & Energy efficient and monitoring equipments	0.03	
4	Conversion of taxiway centre line lights to LED lights on taxiway	0.11	to the second state of the second
5	Provide centralized UPS for T3 in phases	0.41	Various works required for improvement of efficiency / comfort to passengers as well a
6	Implementation of underground utilities mapping and creation of data management system	0.71	Herierov concentation etc of airport. Details against individual projects provided
7	Remote metering of all the HT and LT bulk power consumers in T1, cargo area and integrate with SAP	0.31	4
8	Up-gradation of part of perimeter lighting (with LED lights 1,2Km)of T1 and T2 Areas	0.90	prises
ь .	Total (C)	2.65	
	10101 (0)	2.05	
inishes		1500	
1	SS Railing at T3	0.34	The Control of the Co
2	Gypsum Ceiling at T3	0.03	
3	Signages at T3	0.02	
4	Construction of Security Fence	0.07	
5	Barricading	0.09	
6	Vinyl Flooring Over Tiles (Retail)	0.08	
7	Tensa Barriers for Immigration Counters	0.05	
8	New Glass partition for Tranfer area at T3	0.29	
9	Marble flooring	0.04	
10	Kota Stone	0.40	
11	Consultancy of T3 signages	1,17	
12	Additional Support Staff	0.02	
13	Junction box 450X450, Vertical Cladding and Glass Bridge	0.22	
14	Top quard barrier matting with black wipers	D.16	-
15	Glass patition at Transfer area Mezzanine at T3	0.01	
16	AMC contract of Falcon	0.62	-
17		0.62	
17	ACP and Associated work (Supply of ACP)	0.12	4
18	ACP and Associated work		,
	[Supply and Installation and MS Structure]	0.16	
	Supply of Imperial white stone for Retail	0.10	
19			
20	Supply and Installation of Furniture fabric	0.03	
	Supply and Installation of Furniture fabric General Contractor work Mural-Canyon Area	0.03	

23	Junction Box- 300X300	0.00	1
24	THE CASE AND ASSESSED FOR THE SECOND STATE OF	0.03	
25	Transfer area- Signage Junction Box-Retail Area	0.03	
26		0.16	
27	Carpet Area Junction box	0.05	
	Forecourt flooring of Ceremonial /VVIP Lounge	0.11	and the second s
28	Low Relief cast resin wall hanging		Improvement works to signages, finishing works based on comments from various stakes
29	Store Room for General Contractor in PTB Sub-basement	0.02	
30	Art work	0.40	
31	Fire Safety work	0.03	
32	Stamping desk-Transfer area, Toilet Graphic Image, Empty Tray Desk, Immigration Counters, 3B Clamps for poles, 3M Fasara Film, Supply and fix of Vertical cladding-PIER	0.53	
33	T3 Road side signage	0.50	
34	Traditional Indian Regal procession relief work	0.95	
35	Art Works-Thota Tarani	0.25	
36	Carpet at Seating area	0.10	
37	Signage Improventients work	3.50	
38	Open Grid Ceiling	0.01	
39	Mineral Fibre Celling	.0,04	
40	L-Section On Gypsum Ceiling	0.05	
41	Gypsum Ceiling - Taping, Jointing And Paint	0.07	
42	Guard Rail	0.02	
43	Color Back Glass - Near Entry Portals	0.15	
44	(solators Covers	0.01	
45	Visitors Gate - Mullion Profile + Acp And Steel Skirtling	0.02	
46	Transfer Area - Signages	0.25	
47	Carpet Pasting	0.01	
48	Steel Capping For Raised Access Flooring	0.00	
49	Counters Left Over Punch Points	0.02	
50	Vertical Expansion Joint In Acp	0.17	
51	Nodes Staitcases Repair Works	0.05	
52	Left Over Vitrified Tiles Flooring	0.44	
53	Expansion Joint - Steel Strips	0.50	
54	Ceremonial Lounge - Floor Repairs	0.75	
55	Vvip / Vip Lounges - Fabric Changes For Furnitures	0.10	
56	Miscellaneous - Metallic Stands For Fids Etc	0.55	
	Total (D)	14.35	
	Grand Total = (A) + (B) + (C) + (D)	65.77	.1

Capex for FY12-13

Department/Cost Centre	Items/Activities	Amount In Crs	Remarks
irside-Civil	GPS navigation device with 5 years subscription. (Polar satellite)	0.03	
Nrside-Civil	Infrared/Laser measurement device	0.01	
Arrside-Civil	Rehabilitation of Concrete portion on RWY 09 Beginning	16.00	
Airside-Civil	Rehabilitation of Taxi U	16.00	
Airside-Civil Total		32.04	
AOCC	Wireless Handsets	0.01	
AOCC	Sports items	0.01	
NOCC	Refrigrator	0.00	
AOCC	Crockery & cutlery	0.00	
AOCC	Printers	0.00	
AOCC	Microwave	0.00	
AOCC	Scarmers/Xerox	0.00	
AOCC	Fax	0.00	
AOCC Total	11 00	0.03	
ARFF	Speech and Siren cabling works FS 3 to ATC	0.62	
ARFF	High Mast Lighting Vehicle	0.45	
ARFF	Water Tender		
ARFF	Inflattable tent	0.45	
		0.40	
ARFF	Manindra Scorpio for Ops commander	0.10	
ARFF	Fire fighting training tray	0.08	
NRFF	4.5 Kg capacity CO2 fire extinguisher	0.08	
ARFF	Fire Protective Suits - Building	0.08	
NRFF	VHF Base sets	0.06	
ARFF	ABC Type DCP extinguisher	0.05	
ARFF	Nitrogen regulators for CFT	0.04	
AREF	Furnitures for fire station 1.2.3 &3	0.04	
ARFF	Air conditioners	0.03	
ARFF	Xenon lights for CFT	0.03	
NRFF	Net for fire station 1 & 2 vehicle bay	0.02	
ARFF	Desk Top/Lap Top. Printer/Fax	0.01	
ARFF	Video Camera	0.00	
ARFF	Motorola handsets	0.01	
ARFF	Digital Flow Meter	10.01	
AREF	Smoke Detector Testing Kit	0.00	
ARFF	Refrigerator	0.00	
ARFF	Electric pump	0 00	
ARFF Total		2.56	
Aviation SVC	Emergency Lights	0.06	
Aviation SVC	Wireless VHF Sets	0.04	
Aviation SVC	Software for PDAs for Contract Management	0.04	
Aviation SVC	FIDS at Staff Canteen: Apron Area near IFK Holding point, ITP Agency depot	0.03	
Aviation SVC	Safety Cones with Flasher Lights	0.02	
Aviation SVC	Digital camera	0.00	
Aviation SVC	Lamination Machine	0,00	
Aviation SVC Total		0.19	
OO Office	Software - UFIS Status Manager for CDM	0.37	
200 Office	Software - UFIS Hub Manager for CDM	0 29	
COO Office	Shredders	0,00	
OO Office Total	products	0.66	
Corp Comm	Darkings	0.02	
	Desktops	11341114000000	
Corp Comm	Laptops	0.01	
Corp Comm	Color Printer	0.01	
Corp Comm	Digital Camera	0.01	
Corp Comm	Video Camera with Tripod	10.0	
Corp Comm	Fire Proof Almirah	0.01	
Corp Comm	TV Monitors	0.01	

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Carp Comm	Software - In Design	0.01
Corp Comm Total		0.08
Environment	Machines for noise measurement ,	0.30
Environment	Emission and Noise Software	0.05
Environment	Waste Level Indicator	0.03
Environment Total	10 mg - 7	0.38
ır	Remedy SLA Reporting	0.36
ŀΤ	Software Development Tool Licenses	0.46
ıτ	Airside Management Capex - h/w	0.26
1	Airside Management Capex - s/w	0.02
IT	300 point Cabling Move Add Change Request	0.62
rT	NUB Replacement of Data Centre Firewall	0.57
Ť	VMWARE Desktoo Virtulization	1.90
m	NUB - Replacement of Wifi Infra (End of Life)	0.52
iT .	UTM - Fortinet Firewall replacement (Biz Case)	0.57
n	TI N/W upgrade and integration to T3	1,80
ir	Honeypot solution (Internet Security)	01.0
Ť	WAN Resiliency Improvements	0.41
IT	Re-Engineering Wireless Links for Resiliency	
IT		0.08
<u> </u>	Setup of Test-Lab at DIAL	0.26
n	Staff Pages and FTP solution on Internet IT Disaster Site for AOCC & SOCC	0.06
		0.26
<u> T</u>	DMS - Document Management system	0.08
П	Cameras Inside DC	0.04
<u>T</u>	Additional 10 x KVM for Data Centre	010
	Remote Environmental monitoring of DC	0.10
<u> </u>	SAM Regularization of Licenses	2.58
iT	Mobile Entitlement - Handsets	0.00
<u> </u>	MPAS Coverage Enhancements at T3	6.70
IT	TOPS Printers & Projector for T3	0.06
IT	Hardware Provisioning	1.14
IT	Software Provisioning	3.16
IT	Services Provisioning	0,27
T Total		22:57
Safety	Furniture & Fittings	0.01
Safety	Tools & Equipments	1 0.0
Safety	Audio / Video Conference Equipment	0.00
Safety Total	CONTINUE SECTION SECTI	0.02
Security	Video Cameras	0.00
Security	Motor Cycles	0.02
Security	Porta Cabin	0.05
Security	City Side lighting/illumination	0.25
Security	CCTV for city side	2.00
Security	Cones , bollards, barriers etc	D.05
Security	furniture and other equiments	0.02
Security Total		2.40
SPG	License Fee & Implementation of MIS Software (ClickView)	1.38
SPG Total		1.38
Terminal 1 OPS	Projector	10.0
Terminal I ORS	Lag Tables	0.00
Terminal 1 OPS	Roller Screening Machines	0.00
Terminal 1 OPS Total		0.01
Terminal OPS 3	Chairs	0.20
Terminal OPS 3	Software for PDAs for Terminal OPS	0.12
Terminal OPS 3	Fixed Tensa barriers at immigrations and security screening	0.12
Terminal OPS 3	Unforseen Signage	0,10
Terminal OPS 3	Cupboards for stationary at check-in	0.10
Terminal OPS 3	Furniture & Fittings	0.05
Terminal OPS 3	Additional seating in Arrival Visitors lounge	0.08
Terminal OPS 3	PRM rectifications	0.07
Terminal OPS 3	Upgraede in LP Software	0.05

Works proposed by individual departments for improvement of efficienty of operations, upkeep of service quality standards, passenger convenience etc. All are aero related works.

	Grand Total = (A) + (B) + (C)	97.88	
	Total (C)	20.01	
20	Cabling works for projects for connectivity between T2 / T3	2.05	
	(b) Modification of outgoing feeders from MRSS	0 43	_
	interchange of TTKv power outgoing cable to T3		·
19	(a) Modification of Bus tie breakers - MRSS by introducing additional 2 sets of bus couplars breakers and		
18	Procurement of Runway rubber removal machine	3.13	_
17	Training of Engineers for Manual Intervention in case of failure of Both main & redundant server	0.04	
16	Spare PLC with loaded Software to be procured	0.35	
15	> Procurement of Mobile DG set with Panel, Cable Recis> Repair of trailer> Compressor	10.0	
	> Cabling from Secondary panel to CCR	0 98	
	> Cabling from Secondary source to New panel		
	> Ordering and installation of a Secondary panel		
14	POWER SUPPLY TO AGL:		
Nice -	(one each side), one lift and inclined travellator in the forecourt area, SOOG 1 & 2	0.23	
13	Alternate power source for important Elevators like both Intl & Domestic VIP lifts (one each), Canyan area lifts		TOTAL CONTRACTOR
12	UPS capacity enhancement and alternate power supply to Lounges	0.17	at airport
11	Redundant Power supply for Arrival BHS system	0.28	electrical system to prevent power failures.
	b) Phase-2: Radisson to CISF Naka	0.30	
	a) Phase-1: CISF Naka to T3		
10	Redundant LT power supply for T3 approach road street light feeder pillars		
	b) Phase 2. Supply from Substation	0.27	-
	a) Phase-1: Change over 1 pump with PH		1
, ,	Redundant Power supply to PHE Power panel		
8 9	Segregation of UPS power supply from a common busbar to segregated system in ASB	0.05	
		0.52	
7	Pier CD UPS for lighting		
6	Segregation and provision of power supply to TTC Critical Loads including BHS	0.12	1
5	Segregation and provision of power supply to T1D Critical Loads including BHS	0.12	1
4	Providing a Distribution Panel and copper cabling for Electrical UPS services in T1D	0.12	1
3	Providing alternate power source to T1D from MSB and to T1C from SSB	0.96	
2	Providing alternate Panel for IT UPS services in T1D	0.06	1
1	Alternate source of Power supply from T2 substation to T3 substations.	9.91	
Zero Tolerance		_	
	Total (B)	14.58	
10	Free cooling arrangement in ASB	0.08	
9	LED lighting for T3 Street Light	1.50	
- 8	Redundant power supply for Node Building	0.50	
7	Redundant power supply for sump pumps	0.15	
	at 8RA with 18 W LED		operational costs
6	Replacement of existing lights in PTB toilet 2x26 W CFL with LED tamp fitting 24 W and CDMA 35 W focus lights	1,500	energy conservation so as to reduce overal
5	BMS Connectivity of Lifts & Escalators	0.1.2	
4	Conversion to Balance RET's (Z3, Z4 Z6 & Z7) into RWY entry	5.00	en and an analysis of
3	Improvements to AGL systems	4.50	6
2	Perimeter light LED conversion in T3 Area	1.10	
1	Provision of LED Lights for taxiways	1.05	
atratedic natitives	Peninga of LCO Lobes for Assurance	1.05	
Strategic Institives	-	US.	
S.No	Description	Amount in Rs. Crs.	Remarks
Grand Total	Total (A)	63.30	
Terminal OPS 3 Total		0.99	
Terminal OPS 3	Digital camera	0.00	
Terminal OPS 3	Lighters for smoking rooms	10.0	
Terminal OPS 3	Redress Tables	0.01	
Terminal OPS 3	Audio / Video Conference Equipment	0.01	
Terminal OPS 3	Printers for info desks plus PRM desks	0.01	
Terminal OPS 3	Helpdesk for forecourt area	0.01	
Terminal OPS 3	Granite Top for Redress Tables	0.03	

Capex FY13-14

Capex FY	13-14		
S.No	item	Amount in Rs. Crs.	Remarks
Y	7th Check in Island works related to BHS system / additional	61.35	Required to be installed to take care of capacity enhancement as per master plan to i. ¿et
.,	screening etc	01.55	service quality requirements
2	Construction of pier E	63.70	Required to be installed to take care of capacity enhancement as per master plan to meet service quality requirements
3	Provide ceiling at arrival forecourt	6.00	
4	Additional security check stations	1.60	Required to be installed to take care of capacity enhancement as per master plan to meet
5	Additional immigration counters (Dep)	0.50	Required to be installed to take care of capacity enhancement as per master plan to meet service quality requirements
6	VDGS for apron stands	6.84	To increase reliability
7	Link taxiway from Taxiway T to CE2 including T extension for isolation bay	45.00	Facilitize operational efficient and also enable future link taxiway to Purway 10/28
8	Construction of parallel taxiway to N connecting CW1 & Runway 10	38.00	One taxing between Purpose 10 S. T. Parallel taxing will improve operation efficiency
9	RET works following lowering of Shivmurthy	39.00	Rased on directives once the Shivmurthy is lowered, additional PET will be required to be
10	Replacement of Booster Pump, Dewatering Pump, Submersible Pump	0.10	
11	Re- carpeting / Repair of Roads after monsoon	0.50	1
12	Replaceing of CI/DI Lines	0.05	
13	Replacement of 440 Volts capacitors with 525 Volts	0.05	
14	Installation/Replacement of Mechanical Meters with Electronic energy Meters	0.05	
15	Inclusion of more HT and LT Meters with Energy Management server (EnMS).	0.10	
16	Replacement of All the Street Light Fittings with LED Lamps	0.25	
17	Replacement of Poles and Lights on Steel Gate Road.	0.04	
18	Installation cameras and Screens in the lifts for safety & security of the passengers struck in the lifts.	0.10	
19	Integration of Fire Alarm Systems at T1	0.05	
20	Centralization Of UPS's	0.50	-
21	Redundant Power Supplies to Critical Services	0.10	
22	Redundancies for Substations at PTB	0.50	→
23	Improvement in lighting with energy efficient fixture	0.15	
24	Improvement to control Mointoring and automation for Power system	0.10	
25	Use of Conventional Solar Energy for Street Lighting	0.30	
26	VHT Improvements	0.50	
27	BHS Improvements	0.66	
28	Clarifloculator for Phasphate removal	3.00	
Z9	Ground water recharging arranegments	0.25	
30	Replacement of 11KV HT Panels of STP Substation.	0.32	
31	Replacement of 11KV HT Panels of Centaur Substation.		Maintenance Capex
32	Replacement of 32 KMs of 33KV network in the complete IGIA	4.50	
33	Upgradation of Transformers at ATO Substation	0.44	d
	Tobolisarion of Haristonners at ATO substation	U.44	

34	Alternate redundant water supply for international & domestic	3.00
	piers	3.00
35	Miscellaneous	0.50
36	Installation of new A/C units	0.15
37	Fixture & Furniture	0.03
38	LED lights for taxiways	0.50
39	Up-gradation of part of perimeter lighting (with LED lights) of T3 Areas	1.00
40	Upgradation of taxiway P to Code F from N up to L1	45,00
41	Apron stand mauvering guidance lights	3.92
42	Modification in existing AGL systems for Main Parallel taxiway	2.00
43	Modification in existing lighting system and AGL SCADA modification for runway	5.00
44	Upgradation road for commando area	3.00
45	Landscape to additional areas	1.50
46	Enhancements to Art Work (Internal & External)	3.60
47	Improvement to finishes	6.00
48	Improvement to the flooring in retails	3.00
49	Replacement of carpets with granite in piers	7.15
50	Infrastructure for additional retail areas	4.50
51	Toilets in forecourt	1.50
52	Seating at baggage reclaim area	0.43
		366.63

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ANNEXURE N

(Stream-wise details of non-aeronautical revenue)

Stream-wise Details of Non-Aeronautical Revenues

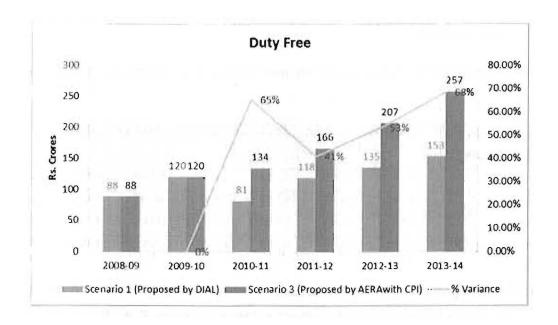
Detailed observation on revenue streams are as under:-

Duty Free

Revenues from the duty free shops for the years FY 2008-09 to FY 2013-14 in different Scenarios are as following:-

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario I	88.11	120.03	81.08	118.10	135.09	152.88	607.18
Scenario 2	88.11	120.03	81.08	120.80	140.42	163.22	625.55
Scenario 3	88.11	120.03	133.92	155.66	180.93	210.30	800.84
Scenario 3 with CPI	88.11	120.03	133.92	166.35	207.14	257.32	884.76

- 1. **Shifting** of **Base**: Authority has unilaterally shifted base to 2009-10 against 2008-09 base adopted in general.
- 2. Hypothetical numbers against actuals: For the financial year 2010-11, against the audited number of Rs. 81.08 Crores the Authority has proposed hypothetical revenue of Rs. 134 Crores. The Authority is requested to appreciate the fact that DIAL will be unable to recover this shortfall on actual numbers and consider revenues as per Scenario 1.
- 3. Changing Business dynamics: We had discussed the reason for drop in duty free revenue for the year 2010-11 compared to 2009-10. New duty free operator started its operation from the Terminal 3 commencement date of July 28th, 2010. Concession given to the old concessionaire was extended for the first quarter of the financial year 2010-11, where it was agreed that revenue share payable will be 15% of gross sales during this interim arrangement. Due credence has not been given by the Authority on this fact and we request that revenues as per Scenario 1 be considered.
- 4. **Unrealistic** Forecast: There is significant difference between expectation of duty free revenue by DIAL and that proposed by the Authority. The following graph clearly depicts yearly variation from the revenue of Scenario 1 and that proposed by the Authority.



For the year 2010-11, there is a difference of more than Rs.50 Crores in Scenario 1 and Scenario 3. This is because Scenario 3 considers hypothetical revenue which is higher than actual audited revenue. This higher hypothetical revenue will never be recouped. The above graph also clearly shows significant variation (Rs.48 crores for year 2011-12, Rs.72 crores for year 2012-13 and Rs.104 crores for 2013-14) between the revenue forecast in Scenario 1 and revenue considered by the Authority for tariff determination. This translates into percentage variation of 41%, 53% and 68%. The revenue proposed by the Authority is very aggressive and highly impractical to achieve. The reasonable numbers to consider are as per Scenario 1.

II. Advertisement

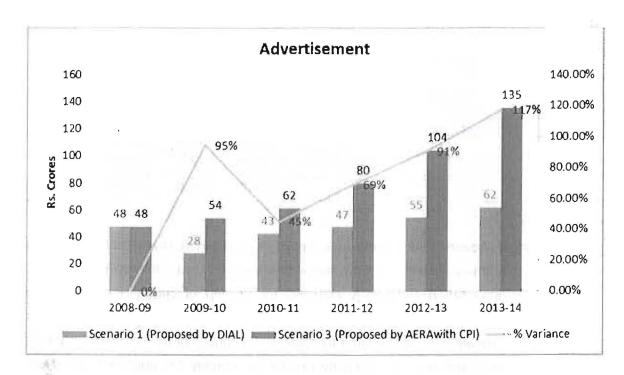
Advertisement revenues for the year FY 2008-09 to FY 2013-14 in different scenarios are as follows:-

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1	47.61	27.99	42.55	47.38	54.64	62.27	234.83
Scenario 2	47.61	27.99	42.55	50.19	60.91	73.97	255.61
Scenario 3	47.61	54.45	61.84	74.99	91.00	110.51	392.79
Scenario 3 with CPI	47.61	54.45	61.84	80.24	104.19	135.39	436.11
	_1						1

1. Hypothetical numbers against actuals: For the financial years 2009-10 and 2010-11 the Authority has proposed revenues significantly higher than the audited revenue as seen in the table above. This variation of Rs. 45 Crores over these two years will not be recouped and using hypothetical numbers for the past years, where audited numbers are available, is unfair on DIAL.

Revenues	2009-10	2010-11		
Scenario 1	27.99 Crs	42.55 Crs		
Authority Target	54.45 Crs	61.84 Crs		

- 2. Changing Business Dynamics: The reason for drop in advertisement revenue has already been submitted to the Authority. Revenue share of advertisement concessionaire has undergone significant change from earlier 70% to currently 55%. This was based on competitive bidding process and needs to be given due credence. Thus the right numbers to consider are as per Scenario 1.
- 3. Unrealistic Forecast: The following graph shows huge variation of more than Rs. 200 Crores in the five years of control period) between revenue in Scenario 1 and that proposed by the Authority for tariff determination.



Analysing the above graph, it is submitted that revenue forecast for Rs. 135 Crores for the FY 2013-14 is greater than double the forecast in Scenario 1 for the same year and also greater than double the actual of 2010-11. Similar unachievable high forecast is considered for 2011-12 and 2012-13. The appropriate revenue numbers to consider are as per Scenario 1.

III. Retail/Duty Paid

Different Scenarios of duty paid revenues are shown in the following table

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1	-	9.55	27.99	39.50	45.89	52,51	175.44
Scenario 2		9.55	27.99	41.84	51.15	62.37	192.9
Scenario 3		9.55	27.99	33.94	41.19	50.02	162.69
Scenario 3 with CPI		9.55	27.99	36.31	47.15	61.27	182.27

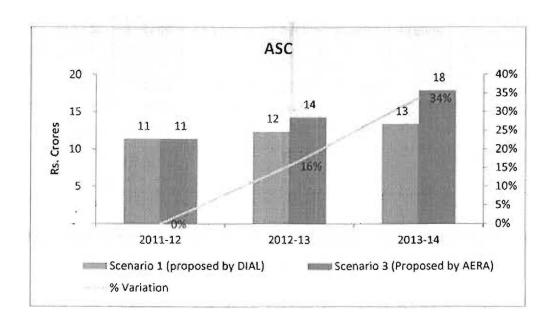
1. Shifting of Base: While projecting revenue from retail in Scenario 3, base is changed from 2009-10 to 2010-11 while forecasting revenues of year 2011-12 onwards during the control period. Forecasting of revenue needs to be carried out on single base hence this methodology is inconsistent and needs to be reconsidered. We request the Authority to consider Scenario 1.

IV. Airport Service Charges (ASC)

Various Scenarios, as per the consultation paper, of airport service charges forecast is shown in the following table

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Merre una	14113	- 443	11.38	12.34	13.37	37.09
		<u>-</u>	11.38	12.34	13.37	37.09
		-	11.38	14.26	17.88	43.52
	2008-09	2008-09 2009-10	2008-09 2009-10 2010-11	11.38 11.38	11.38 12.34 11.38 12.34	11.38 12.34 13.37 11.38 12.34 13.37

- 1. Incorrect Growth drivers: Concessionaires pay airport service charge to DIAL towards using common services (such as air-conditioning etc.) and common infrastructure facility (information technology etc) also for upkeep of common areas. Service charges are paid as per agreement and each year escalated based on CPI index. This revenue stream is no way related to traffic. In Scenario 3 of the consultation paper, this revenue stream is escalated by two factors namely CPI (inflation) and traffic growth. We like to draw the attention of the Authority towards this. It is incorrect to escalate ASC additionally by traffic growth. Thus the appropriate numbers to use are as per Scenario 1.
- 2. Incorrect Higher Forecast: The following graph clearly demonstrates high forecast revenue in Scenario 3 due to traffic growth driver which will never be realised. Correct way to project future ASC is as per Scenario 1. The graph below shows variation between ASC in Scenario 1 and that as per Scenario 3.

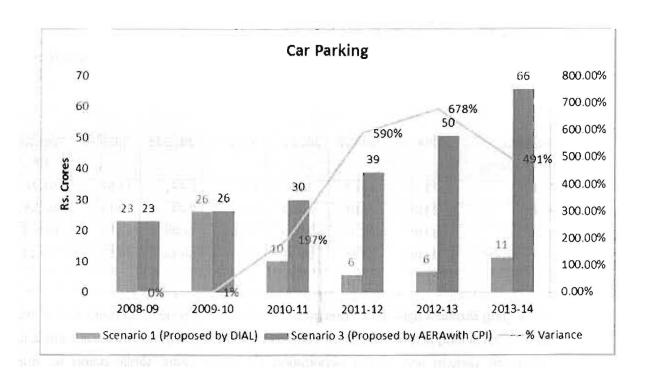


V. Car Parking

Various Scenarios, as per the consultation paper, of car parking revenue forecast is shown in the following table

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1	23.06	26.07	10.09	5.63	6.49	11.09	59.37
Scenario 2	23.06	26.07	10.09	5.96	7.23	13.18	62.53
Scenario 3	23.06	26.37	29.95	36.32	44.08	53.53	190.25
Scenario 3 with CPI	23.06	26.37	29.95	38.86	50.46	65.57	211.21
The second secon	100	and the second				2.5	

- 1. Changing Business dynamics: Forecast of car parking revenue in Scenario 3 is carried out by escalating actual revenue of 2008-09 by traffic growth for historical years and by traffic growth and higher penetration for future years. While doing so, due credence is not given to the fact that current car parking model has undergone fundamental change compared to that during 2008-09. In the pre T3 Scenario, there were only surface car park with lower capex requirement. Hence it was possible to have higher revenue share as well as higher revenue. With concessioning out of MLCP with huge capex investment by the concessionaire, the business dynamics has totally changed with a revenue share of 10% verses a earlier significantly higher revenue share. Thus the appropriate numbers to consider are as given in Scenario 1.
- 2. Hypothetical numbers against Actuals: With the changed business model, using 2008-09 revenue numbers as base leads to erroneous hypothetical numbers in the years 2009-10 and 2010-11. In these two years a total hypothetical revenue of Rs. 20 crores has been considered which will not be recouped by DIAL.
- 3. Unrealistic forecast: The revenue forecast proposed by the Authority from car park while determining non aeronautical forecasts is impossibly high. There is no comparison between revenue in Scenario 1 and that considered by the Authority. The following graph shows variation of more than 500% in last three years. Thus the appropriate numbers to consider are as per Scenario 1.



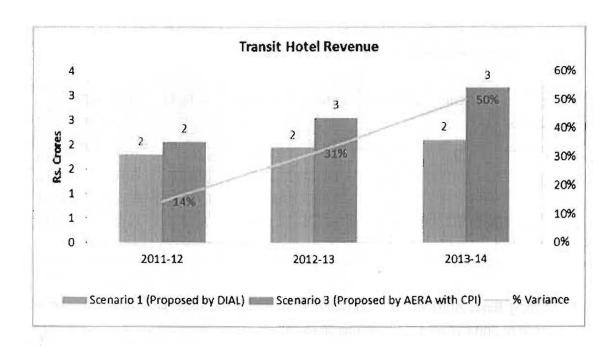
VI. Transit Hotel

Various Scenarios, as per the consultation paper, of transit hotel revenue forecast is shown in the following table:

Scenarios	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for
(fig in Rs. Crores)		1 54	E Finan	de Vi			CP
Scenario 1	*		alianesi.	1.80	1.94	2.10	5.84
Scenario 2	*	-		1.80	1.94	2.10	5.84
Scenario 3	-		-	1.80	2.08	2.41	6.29
Scenario 3 with CPI	-			2.06	2.55	3.15	7.76

1. Incorrect Growth drivers: Transit hotel is a new venture and its operations have started only in the financial year 2011-12. In our traffic submission we projected revenues of this stream based on minimum monthly guarantee (MMG) as agreed with the concessionaire. MMG is the fixed minimum revenue that will be accruing to DIAL. MMG is increased progressive during the operational tenure of the contract. In Scenario 3, MMG is escalated by traffic growth which should not be done as MMG is fixed contracted amount agreed between DIAL and the concessionaire.

MMG for year 2012-13 is higher compared to the previous year so escalation is already factored in. Transit hotel revenue in Scenario 3 is further indexed by CPI. We request the Authority to consider Scenario 1. The following graph depicts variation in revenue forecast in Scenario 1 and revenue considered by the Authority which is incorrect and the appropriate numbers to use are as per Scenario 1.

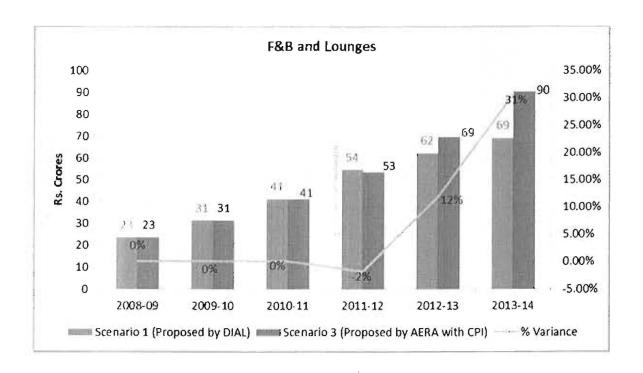


VII. F&B Income and Lounges

Various Scenarios, as per the consultation paper, of food & beverage and lounge revenue forecast is shown in the following table:

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1	23.45	31.19	41.16	54.38	62.02	69.01	257.76
Scenario 2		31.19	41.16	56.71	67.40	79.15	275.61
Scenario 3		31.19	41.16	49.91	60.57	73.55	256.38
Scenario 3 with CPI		31.19	41.16	53.40	69.34	90.10	285.19

- 1. Shifting Base: Authority has considered changing the base year from 2008-09 as stated to 2009-10 and thereafter to 2010-11.
- 2. Unrealistic high forecast: The revenue considered by the Authority in the year 2013-14 is over Rs. 20 Crores higher than that of Scenario 1. The following graph depicted in the graph below. We request the Authority to consider Scenario 1.

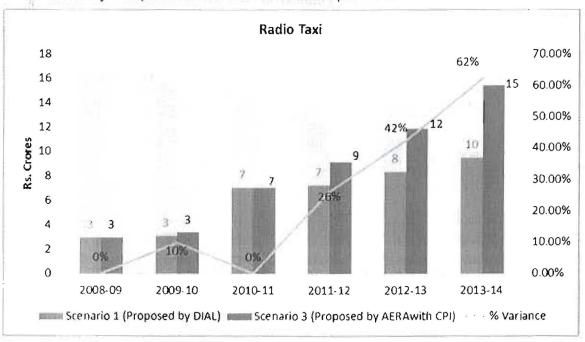


VIII. Radio Taxi

Various scenarios, as per the consultation paper, of forecast of radio taxi revenues are shown below in the table below.

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario I	2.94	3.06	7.04	7.23	8.33	9.50	35.16
Scenario 2		3.06	7.04	7.65	9.29	11.28	38.32
Scenario 3		3.36	7.04	8.54	10.36	12.58	41.88
Scenario 3 with CPI		3.36	7.04	9.13	11.86	15.41	46.80

- Shifting Base: While projecting revenue from radio taxi in Scenario 3, base has been changed twice (for 2009-10 base considered is 2008-09 and for rest of the years base considered is 2010-11) while forecasting revenues during the control period. Forecasting of revenue needs to be carried out on single base hence this methodology is inconsistent and needs to be reconsidered. We request the Authority to consider Scenario 1
- 2. Unrealistic High Forecast: The following graph depicts variation between Scenario 1 and Scenario 3 after indexing by CPI. This shows variation of around 50% in revenues in the last two years of the control period. This forecast is unreasonable high and the Authority is requested to consider revenues as per Scenario 1.

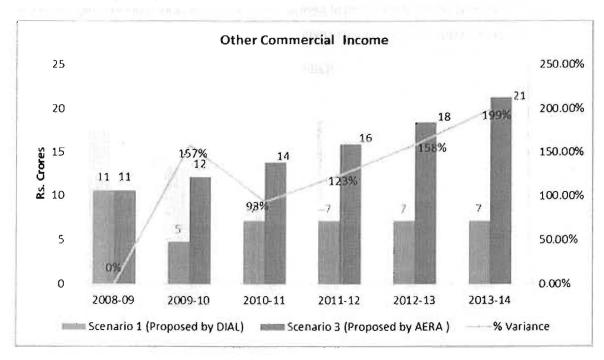


IX. Other Commercial Income

Various Scenarios, as per the consultation paper, of forecasts of other commercial revenues are shown in the following table:

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1	10.62	4.72	7.13	7.13	7.13	7.13	33.24
Scenario 2	10.5	4.72	7.13	7.13	7.13	7.13	33.24
Scenario 3		12.15	13.79	15.93	18.41	21.29	81.57

- 1. Hypothetical numbers against Actuals: The audited Other Commercial Revenue for the year 2009-10 and 2010-11 was Rs 4.72 crores and Rs. 7.13 crores against hypothetical forecast of Rs. 12.15 crores and Rs. 13.79 crores respectively. This hypothetical excess revenue of Rs. 14 crores cannot be recouped by DIAL.
- 2. Unrealistic High Forecast: The forecast numbers are unrealistically high and it is improbable that these will be achieved. The following graph depicts the aggressively high forecast numbers used by the Authority giving a gap of 123%, 158% and 199% between Scenario 3 and Scenario 1 for the years 2011-12, 2012-13 and 2013-14. The Authority is requested to consider revenues as per Scenario 1.

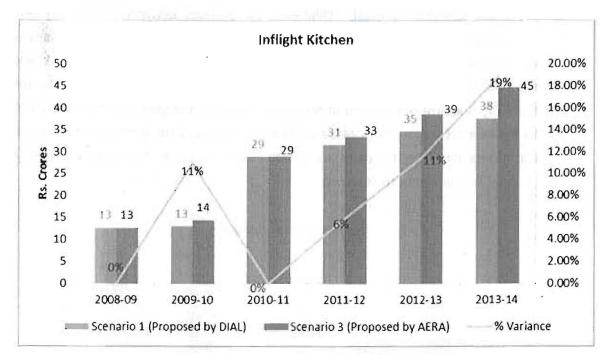


X. Flight Kitchen Royalty

Various Scenarios, as per the consultation paper, of forecast of flight kitchen royalty to DIAL are shown in the following table:

Scenarios	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for
(fig in Rs. Crores)							СР
Scenario 1	12.62	13.00	28.87	31.48	34.57	37.52	145.44
Scenario 2	12.62	13.00	28.87	33.34	38.53	44.57	158.31
Scenario 3	12.62	14.43	28.87	33.34	38.53	44.57	159.74

- Shifting of base: Forecast of flight kitchen royalty in Scenario 3 is arrived by escalating revenue using two different base (2008-09 as base for the year 2009-10 and 2010-11 as base for rest of years of the control period) rather than single base, which is not a correct methodoly to follow.
- 2. Hypothetical numbers against Actuals: Audited revenue of 2009-10 is replaced by higher hypothetical revenue with variation of 11% over which DIAL cannot recoup and the correct number to consider are the actual audited numbers.
- 3. **High Future Forecast:** Variation in future years forecast is shown in the following graph. The variation of Rs. 13 Crores in the forecasted numbers for the three future years is high and needs moderation in line with Scenario 1.

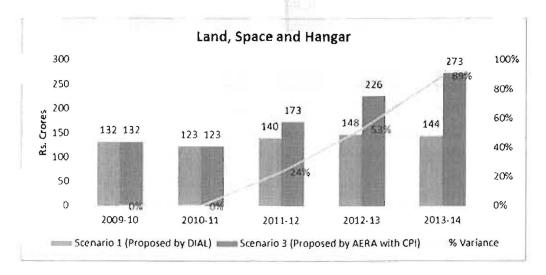


XI. Land, Space and Hangar

Various Scenarios, as per the consultation paper, of forecast of land, space and hangar are shown below in the table below

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario I	56.35	132.14	123.27	139.82	148.15	144.49	687.87
Scenario 2	56.35	132.14	123.27	139.82	148.15	144.49	687.87
Scenario 3	56.35	132.14	123.27	161.47	197.73	223.05	837.66
Scenario 3 with CPI	56.35	132.14	123.27	172.77	226.38	273.25	927.81

- 1. Incorrect Growth driver: Revenue growth drivers used in Scenario 3 for the years 2011-12 onwards are traffic growth and rental escalation. Additionally, revenue obtained in Scenario 3 is indexed by CPI for the future years. The Authority is requested to appreciate the business dynamics. These revenues are not dependent on traffic growth and hence using traffic growth as a driver is incorrect and needs to be rectified. Normally any long term rental agreement has an escalation of rental to factor in inflation. The existing lease agreements with the tenants suitably address the escalation in lease rents. Therefore to use rental escalation as well as inflation is incorrect and revenue as per Scenario 1 should be considered.
- 2. Unrealistic Revenue Forecast: Difference in revenues between Scenario 1 and Scenario 3 with CPI indexation is of around Rs. 240 cores which are very substantial and unrealistic. The following graph depicts variation between Scenario 1 and Scenario 3 after indexing by CPI. For the year 2013-14 revenue considered by the Authority is almost double that of Scenario 1 while for the years 2011-12 and 2012-13 the forecast is more than 24% and 53% respectively of the forecast in Scenario 1. This unrealistic high forecasts are unachievable and the Authority may please consider Scenario 1 for the forecast.

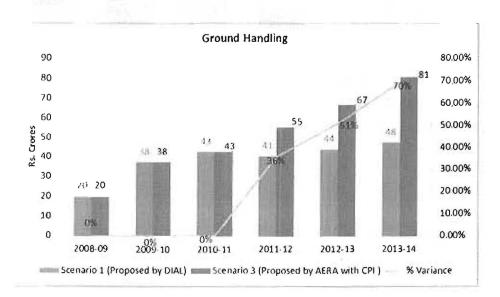


XII. Ground Handling

Various Scenarios, as per the consultation paper, of forecast of ground handling revenue are shown below in the table below

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1	19.97	37.74	42.87	40.78	44.32	47.67	213.38
Scenario 2	19.97	37.74	42.87	40.78	46.05	52.00	219.44
Scenario 3	19.97	37.74	42.87	51.80	58.49	66.05	256.95
Scenario 3 with CPI	19.97	37.74	42.87	55.43	66.97	80.91	283.92

- Business Dynamics: There was recognizing of (one-off) of old dues from NACIL in revenue for the year 2010-11. Methodology adopted for projecting revenue in Scenario 3 is incorrect as it fails to recognize one time settlement of old dues of NACIL. Due to this onetime settlement, revenue of 2010-11 was inflated. Future years' revenues in Scenario 3 are based on inflated revenue of 2010-11 and needs to be corrected.
- 2. Unrealistic Forecast: There is huge gap even while comparing revenues of Scenario 1 with revenues considered by the Authority. Forecasted revenue in Scenario 3 is highly aggressive which is leading to variation in revenue forecast in tune of more than 50% in last two years of the control period. We request the Authority to consider Scenario 1. The following graph depicts variation between Scenario 1 and Scenario 3 after indexing by CPI. The forecasts of Scenario 3 are higher than Scenario 1 by 36%, 51%, and 70% in the years 2011-12, 2012-13 and 2013-14 respectively which are unreasonably high and we request the Authority to consider Scenario 1 forecasts.

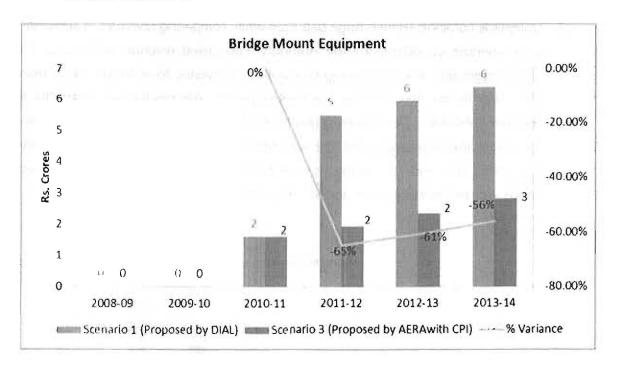


XIII. Bridge Mount Equipment

Various Scenarios, as per the consultation paper, of forecast of bridge mount equipment revenue are shown below in the table below

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario 1			1.60	5.49	5.96	6.41	19.46
Scenario 2	1		1.60	5.49	6.19	6.98	20.26
Scenario 3		-	1,60	1.81	2.04	2.30	7.75
Scenario 3 with CPI	-		1.60	1.93	2.34	2.82	8.69

1. Changing Business Dynamics: Revenue from bridge mount equipment (BME) in Scenario 3 is projected by considering revenue of 2010-11 of Rs. 1.6 crores as base. During this year the business was operational for only part of the year. The incorrect methodology, adopted by the Authority, does not consider business dynamics, and is leading to an unrealistically low forecast in the future years. Our submission is to consider Scenario 1.

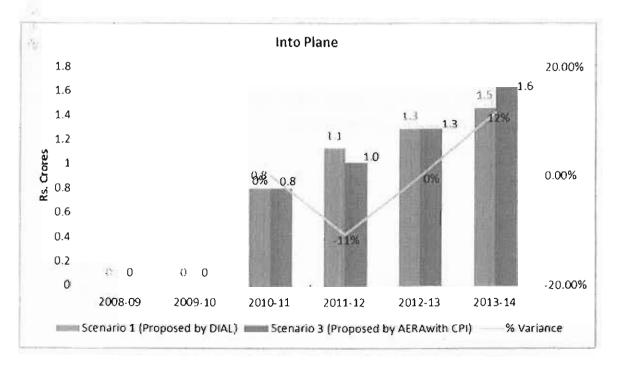


XIV. Into Plane

Various Scenarios, as per the consultation paper, of into plane revenue are shown in the following table:

Scenarios (fig in Rs. Crores)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total for CP
Scenario I		7. 7.1	0.80	1.13	1.29	1.46	4.68
Scenario 2			0.80	1.20	1.42	1.69	5.11
Scenario 3	gray.		0.80	0.95	1.12	1.33	4.20
Scenario 3 with CPI	-		0.80	1.01	1.29	1.63	4.73

- 1. Scenario 3 methodology is incorrect: Similar to BME, the Into Plane (ITP) services are operational for the part of 2010-11 and using this year as base has led to incorrect forecasts.
- 2. Indexing non-aeronautical revenue is akin to double counting: Further for cross-subsidization, Scenario 3 revenue is further indexed by CPI. Indexing of into plane revenue is incorrect because long term agreement of ITP services with the service provider has escalation path for into plane service fees. This fees is be escalated at a rate of 5% or WPI each year whichever is lower. Therefore, indexing any Scenario by CPI is resulting in double inflation esclation which is incorrect. Scenario 1 already factors inflation and needs to be used for the forecast.



XV. Cargo Revenue

Various Scenarios, as per the consultation paper, of cargo are shown in the following table:

2010-11	2011-12	2012-13	2013-14
		3 h a	
138.58	130.37	128.47	130.83
122.31	154.67	172.87	193.48
	138.58	138.58 130.37	1.500

Including cargo screening revenue which has been proposed to be treated as Aeronautical by the Authority.

- 1. Competitive (two cargo players with different revenue share): The revenue share of greenfield operator is lower than that of brownfield operator. Going forward, the cargo throughput will be shared by both operators, due to increased competition and because of lower revenue share of greenfield operator, the revenue of DIAL will be lower even if the revenue of the operator is increasing.
- 2. Higher cargo tonnage growth: Recent traffic trend in cargo handling shows that negative growth has started. Cargo registered negative growth during the last two quarters over the previous years. Contrary to this, the Authority has proposed even higher cargo growth than that submitted by DIAL. The Authority is requested to consider Scenario 1 as aggressive growth rates and ignoring business dynamics of two operators is leading to unreasonable high forecasts.

Request: We request the Authority to consider revenues as per Scenario 1 and the same should not be indexed by CPI for the year 2010-11. Methodologies adopted in Scenario 3 is incorrect due to the facts stated above, hence should not to be considered for cross-subsidization while determining aeronautic tariff.

ANNEXURE O

(Letter to the Authority regarding proportionating of rate card)

DELHI INDIRA GANDHI
DELHI INTERNATIONAL AIRPORT
DEMINISTRA AROCALIANOS (F) ENANGIN - ACC/2129

of c

GMR

Registered office: New Udaan Bhawan, Opp. Terminal 3, IGI Airport, New Delhi 110037, India 1 +91 11 47197000 F +91 11 47197181 W www.newdelhiairport.in

Dated: 30th January 2012

The Chairperson,
Airports Economic Regulatory Authority of India,
AERA Building, Safdarjang Airport,
New Delhi 110003

SUB: Tariff determination of Delhi International Airport Ltd.(DIAL)

Consultation Paper 32/2011-12

Dear Sir,

Kindly refer to the Consultation Paper number 32/2011-12 on "Determination of Aeronautical Tariff in respect of IGI Airport, New Delhi for the 1st Regulatory Period (01.04.2009 – 31.03.2014)" dated 3rd January, 2012.

We are in the process of responding to various Issues deaft in the said consultation paper, through a separate letter. Meanwhile, we are bringing to your kind, immediate attention, the following issue pertaining to the Rate Card.

The Consultation Paper lays down the following as regards to Rate Card:

"438. Thus, SSA contemplates that DIAL would be free to impose charges within the overall price cap subject to conditions stated therein. In view of this, for the present, the rate card proposed by DIAL is placed for stakeholder consultation with the caveat that the charges proposed would be, in-principle, reduced proportionately In line with the final decision of the Authority in respect of price cap and disposal of objections, if any, that may be received from stakeholders on the grounds mentioned in the said Principle 10 of the SSA."

Given that the Airport Economic Regulatory Authority (the Authority) contemplates applying a proportion to the rate card proposed by us based on the final approved increase, we submit as under:

- 1) The Rate Card submitted includes two components:
 - a) First:

the base rates that are currently being charged; and

b) Second:

the component constituting the increase in base rates.

The proposed 'X' factor and 'CPI' is being applied on the base airport charges and any change in these will alter the increase and not base airport charges. Therefore, it will be logical to assume that the proportioning being contemplated is only on the second component of the increase over base rate, as there cannot be any proportioning on base rates.

- 2) We would like to bring to your kind attention that we worked on the financial model on the basis of proportioning the <u>increase in</u> charges furnished to the Authority based on the 'X' factor of 775% and the 334.63% proposed in the consultation paper. In the output, there was a material variation in the calculated target revenue and the target revenue as per consultation paper, at 'X' factor of 334.63%. There may be various reasons for this aberration:
 - a) Our proposal for 775% was based on assumption of date of charging from 01st Feb 2012; whereas the current consultation paper has changed the proposed date of charging to 01st April



Dock 2011/2

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- b) The Authority in its consultation paper has assumed certain revenues as "Non-Aero" in our filling. (In our separate response to the consultation paper, we are articulating the rationale of these to be treated as "Non-Aero.") However, the treatment of these revenues as "Aero" by the Authority will result in the amount of recovery from Landing, Parking and Passenger charges to change and the proportion cannot be exactly maintained between 775% and 334.63%.
- c) The Authority also has increased the recovery from Fuel Throughput charges. The amounts being shown as recovery from this stream is much higher than one proposed by us and this appears to be on account of some error in application of growth rate on the Fuel Throughput charges. This needs to be corrected and will accordingly result in change in 334.63% itself. However, in the interim in its current form, this will affect the ratio to be applied in the Rate Card.
- d) The Authority also has treated cargo as "Aero" for some period. This also affects the recovery amount from the other revenue streams and charging rate on Landing, Parking and Passenger charges. As such the proportion between 775% and 334.63% cannot be exactly maintained.
- e) The traffic forecast submitted by us as part of 775% filing as also the average MTOW has been reviewed by the Authority and has undergone change. This also results in the proportion between the above increases not being able to be applied verbatim in the Rate Card.
- f) The proposed change in traffic growth rates also has an effect on the 'X' factor due to the time element of charging. This effect of time value of money will also mean that above proportion cannot be maintained in toto in the revision of Rate Card.
- g) Apart from above, there are numerous changes done in the model related to RAB, WACC, OPEX, Non-Aero, and Discount etc. All of these will have an effect on the proportion which can be applied to Rate Card.

Further, the proportioning of the Rate Card will become practically feasible only in a one-time increase scenario. This fact has also been highlighted in our presentation to the Authority during the Stakeholders meeting dated 18th January 2012.

Therefore, it is submitted that while the principle of proportioning of Rate Card is appropriate, it may be applied in such manner to ensure achieving the target revenue (based on final approved 'X' factor) as an end result.

Please let us know if you would like any further clarification on the subject.

Yours truly,

For Delhi International Apport Private Limited

(Sidharath Kapur)

Chief Financial Officer -Airports



ANNEXURE P

(Letter from Canara Bank)



Ref No: PCB | CR 55 3773 2011-2012

Dated: January 12, 2012

Mr. Sidharath Kapur (CFO Airports)
Delhi International Airport Pvt Ltd
New Udaan Bhawan, Opp. Terminal 3
New Delhi — 110037

Sub:

AERA Consultation Paper No. 32/2011-12 dated 3rd January 2012 Financing Documents – Compliance with DSCR Requirements

Dear Sir,

We refer to the Consultation Paper, cited above, issued by AERA on the proposed hike in tariff for the Financial Years (FY) 2012-13 & 2013-14. As per the Consultation Poper, AERA is proposing to hike the tariff (Aero Revenue) by 148% (X-Factor) for the FY 2012-13 as a step up increase and thereafter another cumulative hike of 148% for the FY 2013-14.

Based on the step up increase in tariff proposed by AERA with effect from 1st April 2012, its Impact on the business plan will be as under:

Delhi International Airport Pvt Limited (DIAL) will not have adequate profits to meet the financial covenants and the debt servicing regulrements as per the financing documents.

Accordingly, we request you to seek upfront one time increase in tariff which would even out the cash flows in the balance control period and also meet the debt service requirements as per the financing documents.

We hope you will pursue the matter with AERA.

Yaurs Faithfully

Manohar V Jartarkar Deputy General Manager



Office: CANARA BANK: Prime Corporate Branch -1: First Floor. 1, DDA Building: Nehru Place: NEW DELHI