PUBLIC-PRIVATE HANDSHAKE: The Prime Minister, Dr Manmohan Singh, the Chairperson, UPA and National Advisory Council, Sonia Gandhi and the Chief Minister of Delhi, Sheila Dikshit at the dedication ceremony of the Indira Gandhi International Airport's Terminal 3 to the nation, in New Delhi.

RECIPE FOR SUCCESS

MAKING A STRONG CASE FOR THE DUAL TILL APPROACH, SATYAN NAYAR IS CONFIDENT THAT IN TERMS OF ECONOMIC EFFICIENCY, DUAL TILL REGULATION WILL HAVE A MORE POSITIVE IMPACT THAN SINGLE TILL. IN ADDITION, DUAL TILL WOULD MAKE THE AIRPORT BUSINESS ATTRACTIVE FOR PRIVATE INVESTORS WITHOUT IGNORING PASSENGER INTEREST.

Satyan Nayar

The airport business has emerged over the last two decades as a thriving commercial enterprise and transferred from government monopoly with public utility outlook to an industry driven by commercial-oriented private entrepreneur-managed business units. Until recently, most airports were owned and managed by public authorities. Nonetheless, a growing number of airports in Europe, Australia and New Zealand became fully or partially privatised in the last 20 years. Many airports in South Africa, Asia and other regions are under review of being privatised. In India, the liberalisation started in 2006 with setting up of PPP model airports.

Today, five airports are operating on PPP model wherein the majority stakes are with private hands. These five PPP airports are handling 65 per cent of passenger and 85 per cent cargo business of the country. Available forecast suggests that by 2020 the air passenger throughput traffic will be around 300 million. To meet this huge air traffic demand, the country will require approximately 350-375 operational airports across the country. This implies that huge private investment will have to be attracted as the Airports Authority of India (AAI) alone will not be able to raise such huge funds i.e. US $30 billion. Similarly, India is likely to have a total of approximately 4,000 fleet strength of various types of civil aircraft by 2025 requiring an additional investment of approximately $90-billion.

Today, five airports are operating on PPP model wherein the majority stakes are with private hands

Airport privatisation is almost always accompanied by some form of price regulation. In reality there is no fully liberalised airport market in the world and airport policy makers and regulators are basically considering modifications of the regulatory regime in an ongoing way. A fine example is the debate on the Till which is true in the Indian context also.

Airports are considered natural monopolies as far as airside is concerned. This has resulted in setting up of economic regulation of airports. The world over different countries have adopted different forms of regulation (See 'Keeping airports in check').

KEEPING AIRPORTS IN CHECK

Country / Airport	Form of Regulation	Remarks
UK, Austria, France, Ireland, Norway, Spain, Portugal and most airports in Germany	Single Till/ Single Till with price cap regulation (RPI/CPI-x)	Aero-service prices below provision costs which pose a problem, specially at a congested airport
Frankfurt, Copenhagen, Malta and Budapest	Dual Till	Argument that regulation should be confined to the monopolistic bottleneck and incentive for developing the non-aero business should not be stifled
Belgium and Netherlands	Rate of Return	Complex and no incentive to reduce cost
Australia and New Zealand	Price Monitoring and Threat of Regulation	Trigger or "grim strategy" regulation where a light-handed form of regulation is used until the subject firm sets prices or earns profits or reduces quality beyond some point and thus, triggers a long-term commitment to intruding regulation

It is clear then that there is no uniform regulatory approach adopted by all countries. While some countries have adopted Single Till, some are on Hybrid Till and some on Dual Till. It is also interesting to note that few countries have Light Hand Regulation wherein they will only monitor the price and market. Let us examine the concept of Till in the airport economic regulation context.

Concept of Till Issue:

The Till concept is all about how the revenue and the expenditure is treated in the pricing of aeronautical services. There are two distinct forms of income and expenditure at an airport and they are aeronautical and non-aeronautical. The aeronautical set of business is made up of fees received from the airport core activities and the non-aeronautical revenue comes from the activities undertaken on top of the core activities. There are mainly three types of Tills:

1) Single Till: In this case the entire revenue of non-aero services will be taken into account for the purpose of tariff fixation. The non-aero revenue will be deducted from the allowable total revenue and the net revenue will be the eligible revenue which the operator can generate from the airport operations.

2) Dual Till: In this case no part of non-aero revenue will be deducted from the allowable yield. The airport operator will be entitled to retain the entire non-aero revenue.

3) Hybrid Till: In this case a certain percentage of non-aero revenue will be utilised for subsidising the aero revenue. This means a certain percentage of non-aero revenue will be deducted from the allowable revenue.

In the price cap regulation, the allowable revenue of an operator is calculated by multiplying the WACC (Weighted Average Cost of Capital) on the RAB (Regulatory Asset Bases pertains to aeronautical assets only). This will be added with depreciation and Opex cost. The total amount will be the admissible amount which an operator will be entitled to recover from his basket of services. In the case of Single Till, the RAB will be both aero and non-aero assets, whereas in other cases only aero assets will be considered for the calculation of WACC. In some cases, relevant portion of RAB for non-aero services will also be considered as in Hybrid Till. The three Till concepts are explained in the diagram. It explains how the aeronautical yield per passenger will be calculated under different Tills. The basic difference is on the treatment of non-aero revenue (See 'Three Tills'). Professors Tae Hoon Oum, Anming Zhang and Yimin Zhang conducted a study on various forms of economic regulation for airport and the report has been published in the *Journal of Transport Economics and Policy* (Vol. 38, Part 2 [2004]). The study shows that various alternative forms of economic regulation have their efficiency implications for airports. Their analysis appears to support the argument made by several economists that Dual Till regulation would be better than the Single Till regulation in terms of economic efficiency especially for large and busy airports.

The aeronautical set of business is made up of fees received from the airport core activities

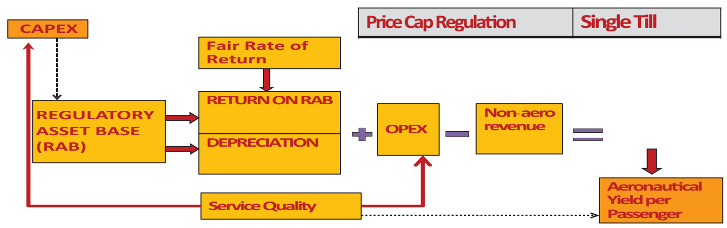
MOVE TOWARDS DUAL TILL

The cross subsidisation under Single Till approach leads to inefficient allocation of resources and does not give the right signal for capacity addition and cannot attract investment into the sector. Realising this, airports across the world are moving towards a Dual Till regulatory regime. The regulatory framework at major airports with private equity (OECD countries) is:

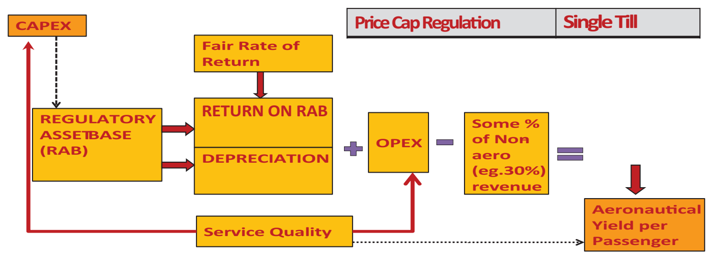
The progressive move towards Dual Till has not been accompanied by higher charges as some have argued. In fact, there is no evidence that Dual Till equals higher charges just as there is no evidence that Single Till leads to lower charges.

THREE TILLS

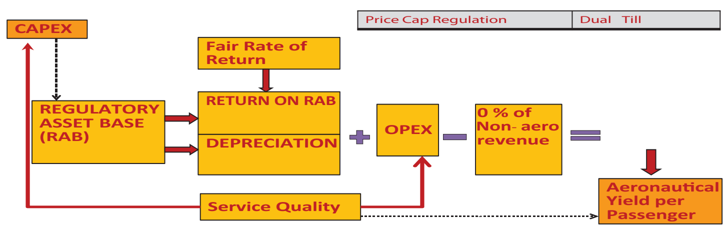
Regulatory Building Block Approach Single till
(RAB both Aero and Non - Aero)



Regulatory Building Block Approach Hybrid Till
(RAB Aero and a portion of Non Aero -In some cases only AERO)



Regulatory Building Block Approach Dual Till
(RAB only AERO)



India, therefore, should not follow a system which other countries have discarded or moving away from.

REGULATION ON ECONOMIC PRINCIPLES

The PPP model has been increasingly adopted as a preferred mode for building and operating modern airports. While allowing private players it is essential to provide adequate incentive to the operator. As long as the airports are government-owned, Single Till could be the best option but when private participation is in a large majority, Dual Till regulation has a more positive impact than Single Till. It is a well-known economic principle that subsidies distort markets and consequently distort investment decisions. Including non-aeronautical revenues in the cost basis for the calculation of airport charges can constitute an unwarranted subsidy to air carriers from the airport operator. Single Till can be contrary to the objectives of cost-relatedness and the "user pays" principle which would require airport charges to cover all of the costs of the services provided to users. Non-aeronautical revenues, thus, can be considered among other sources of funding by the airport operator to finance new investments, to pursue new business opportunities or to remunerate airport stakeholders at the sole discretion of the airport operator.

The airport sector in India needs $30 billion investment in the next 10 years to improve the airport infrastructure and for spreading the air transport service

In a Single Till approach, the regulator would be required to determine the expenses and revenues relating to non-aero activities while fixing the charges. However, in a Dual Till regime, there should be no requirement to use non-aeronautical revenues to reduce airport user charges and it should be left to the airport operator to consider a full or partial use of non-aeronautical revenues to defray aeronautical charges as appropriate or necessary to increase their competitiveness. Overall, the arguments for a Dual Till carries more weight and seem to prove the principle that regulation should not intervene in workable competitive markets and should be restricted to the monopolistic bottleneck. There is no doubt that in terms of overall economic efficiency, Dual Till scores better than Single Till. It is a wellknown economic principle that subsidies, as in the case with the Single Till, distort markets and consequently distort investment decisions. Dual Till leads to better aeronautical investments because it forces management to look more closely at its airport investment policy and operations to ensure it delivers good performance.

India is on the verge of being a superpower. We need to ensure that Indian airports mirror our growth and rise in world status. It is estimated that the airport system in India may be handling over 300 million passengers per annum by 2020. Hence, additional airport capacity is urgently required. Non-aeronautical revenues today are the key factors that makes airports an attractive business for private investors. Non-aeronautical revenues critically depend on the number of passengers and to some extent to the number of carriers and destinations which are important for attracting business to an airport.

The airport sector in India needs $30 billion investment in the next 10 years to improve the airport infrastructure and spreading the air transport service across the country. According to Oxford Economics, good air connectivity is vital for inward direct investment. The scale of current and forecast demand at many airports clearly indicates a need for increasing levels of investment to maintain and enhance capacity at an appropriate service quality. Airport charges and non-aeronautical revenues are major sources of funds for investment. Airports should be permitted to retain and invest these revenues to finance future upgradation and modernization. Any action to restrict this use of revenues, or to require all commercial revenues to be used solely to reduce current user charges, could conflict with this objective and inhibit the much needed investment. There is no incentive for the airport operator to excel in Single Till regime.

TILL OPERATIONS

Form of Regulation	Remarks
Single Till	▸ In case where allowed return is greater than or equal to the actual cost of capital, the airport has an incentive to make excessive investment in capital. ▸ As the regulation is essentially cost based, the airport would not benefit from cost reduction. ▸ As Tretheway (2001) puts it: "It is some thing like having an unlimited expense account: if you could produce a receipt, you would be reimbursed."
Dual Till	As long as concessions are profitable, the airport will invest efficiently and provide airside services with minimum social cost, regardless of whether concessions are regulated or not.
Price Cap	Airports will try to under invest in capacity. Thus, while the price cap regulation alleviates the distortion in airport charges, it introduces the distortion in airport capacity constraints.
Rate of Return	May have undesirable implications for airport behaviour, leading to inefficient capital investment and a general lack of managerial drive to reduce cost and improve efficiency.

VIEWS ON AIRPORT REGULATION

Innumerable papers have been written on pros and cons of Single and Dual Till regulation. There is no conclusion about which regulation is the best and suits all countries. Various views have been expressed by well-known economists/experts on the regulatory regime to be followed while regulating the airports. Views on Single and Dual Till are listed but it is very clear that there is no uniform view on the regulatory approach to be adopted for airport regulation.

ICAO ON ECONOMIC REGULATION

International Civil Aviation Organisation (ICAO) is a specialised agency of the United Nations created to oversee a safe and orderly development of International Civil Aviation throughout the world. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. The views of ICAO on economic regulation on airports are:

- Where an airport is provided for international use the user shall bear the full share cost of providing the airport.
- User charges should be non-discriminatory, cost-related, transparent and should be finalized after due consultation with users.
- The cost to be shared is the full cost of providing the airport and its essential ancillary services, including appropriate amounts for cost of capital and depreciation of assets, as well as the costs of maintenance, operation, management and administration, but allowing for all aero revenues plus contributions from non-aero revenues accruing from the operation of the airport to its operators.
- The revised version of ICAO doc 9082, approved by the Council in October 2011 and to be published shortly as the ninth edition, further clarifies the position of ICAO on the subject of the cost basis for airport charges. The new version leaves no doubt that ICAO stands neutral on the subject of Dual or SingleTill, leaving it to the economic oversight adopted in each state to decide on this matter.

From the above it is evident that:

- ICAO does not propagate Single Till.
- Even if contribution from non aero revenue is to be taken it is only for airport operations not from other activities like hotel, real estate etc.
- ICAO insists cost basis for airport charges.

ICAO is a specialised agency of the United Nations created to oversee a safe and orderly development of International Civil Aviation throughout the world

TILL ON PRICE AND QUALITY

The proponents of Single Till always argue that the Single Till lowers the airport charges and better quality. The arguments presented in favour of Single Till are not true as evident from the examples of airports. The evidence is that Dual Till is better than Single Till in attracting investments. Research has shown that the inefficiency effect of Single Till may result in prices being higher than they would be under a Dual Till regime.

A review of International practice shows

Copenhagen	Dual Till
Aeroports de Paris	Moving towards dual
Brussels	Moving towards dual
Auckland	Light handed
Sydney	Light handed
Melbourne	Light handed
Brisbane	Light handed
Perth	Light handed
Grupo Asur (Mexico)	Dual Till
Grupo Pacifico (Mexico)	Dual Till
OMA (Mexico)	Dual Till
Hamburg	Dual Till
Frankfurt	Dual Till
Rome	Dual Till
Zurich	Light handed
Budapest	Dual Till
Athens	Dual Till
London Heathrow	Single Till
London Gatwick	Single Till

HOW THE EXPERTS SEE IT

Experts	Views on Airport Regulation
Beesley (1999)	Price cap regulation is inappropriate in case of London Heathrow
Tretheway (2001)	ROR regulation tends to be complex, unresponsive and expensive to administer
Kunz and Niemeier	Cost-based RoR regulation used in Germany is inefficient and results in the mis-allocation of resources
Starkie (2001)	Ex-ante regulation for airports might be unnecessary because the airports are unlikely to abuse their monopoly power due to the existence of complementarity between the demand for aviation services and demand for concession services.
Starkie (2001)	Since increased concession activities can cause superior locational rents, increase in traffic volume at an airport would often produce a significant increase in its profitability. Therefore, even an unregulated profit-maximising airport would have a strong incentive to reduce aviation user charges in order to take advantage of the unidirectional demand complementarity from passenger volumes of aircraft movements to concession sales. This means that as long as an airport provides both aviation services and retailing activities, its incentives will be to set airside-user charges lower than if runways were a stand-alone facility, and thus there may be no need to regulate its aviation-user charges.
Tae Hoon Oum, Anming Zhang and Yimin Zhang (2004)	▸ The extent of the under investment is found to be less under the Dual Till price cap than under the single till price cap ▸ Total factor productivity is greater under the dual till price cap than under either the sin gle price cap or Single Till ROR ▸ Analysis supports the argument made by several economists that Dual Till regulation would be better than the Single Till regulation in terms of economic efficiency, especially for large and busy airports.
Australian Productivity Commission Inquiry Report (2002)	▸ The scope for airports with market power to use (or abuse) that power is constrained by commercial pressures and opportunities, particularly the substantial 'non-aeronauti cal' income to be had from promoting air line passenger traffic. ▸ In these circumstances, because of the risks and potential costs of strict price controls relative to more light-handed price regula tion, such controls are judged not to be required even at the four airports with substantial market power.

that majority private owned airports operate under Dual/ Hybrid Till. The evidences from the international airport sector clearly indicate the preference for a Dual Till/Hybrid Till approach in the countries where private sector airports play a prominent role. Except for UK airports, all the key private international airports are under Dual or Hybrid Till.

Airports of similar size, structure and age should show lower charges under Single Till than Dual Till if arguments hold - but the benchmarks indicate this relationship does not hold consistently.

In a study conducted by IATA, London's Heathrow Airport — following Single Till approach — has been found to have high charges and poor service quality. Paris Airport (ADP) currently on a Single Till was more expensive than near neighbour European hub Amsterdam (Dual Till) or Copenhagen and Brussels (Hybrid), Mexico and Cancun (both Dual Till) are the lowest priced regulated airports on the list.

Research shows that Dual Till airports provide better service quality to customers. In a study conducted by Jacobs Consultancy, Dual Till airports have emerged as airports with better service quality. In terms of the overall average scores, Dual Till, Hybrid, and Light Handed and indeterminate airports all have average scores of just over 4 while Single Till airports have scores averaging 3.75.

HYBRID TILL AS A BETTER APPROACH

At Brussels Airport, the movement from Single to Dual Till is taking place. At Aeroports De Paris, recent proposals envisage taking retail activities out of regulation from 2011, with the possibility of transferring the remaining other activities over time. As per the report of Economic Regulation Framework of Aeroports de Paris: Current status and prospects February 1, 2010, the switching over from Single Till to Dual Till by Paris airport has been recommended for these reasons:

1. Greater incentive for the competitiveness
2. Efforts undertaken with regard to retail activities and traffic growth would bring value unlike the Single Till system.
3. Helping to establish a direct and strong incentive for airports.
4. A significant motivational factor for continuing retail activities.
5. Incentive for investment to develop and improve airports.
6. A price signal on fees that has a direct link to infrastructure and service costs and their development promote economically sound and responsible behaviour.

The United States provides a useful comparable environment in which residual cost (Single Till) airports operate alongside compensatory (Dual Till and Hybrids). Currently, only about one-third of agreements at major US airports are on a residual basis, compared to almost 60 per cent in 1983.The Civil Aviation Authority (CAA), the regulator in the UK, has observed in its review reports that the investment requirements of the airports could not be met with the current Single Till

HOW THE EXPERTS SEE IT

Experts	Views on Airport Regulation
Australian Productivity Commission Inquiry Report (2002)	If the government nevertheless were to opt for a stricter form of price regulation, CPI-X price caps are preferred because they can offer incentives for efficient airport operation. 1. Unlike the existing price caps, however, any new price caps should be explicitly based on a 'Dual Till' and factor in anticipated investment. 2. Conventional price caps would be confined to Melbourne, Brisbane and Perth airports. For a capacity-constrained Sydney Airport, arrangements should not be such as to force prices down. 3. Whatever the regulatory framework decided for Sydney Airport, that policy, in particular the pricing and investment provisions should be clearly and publicly articulated to bidders so that the sale price can adequately reflect it.
Australian Productivity Commission Draft Inquiry Report (2011)	Under light-handed regulation, airports have continued to invest to meet the growth in air travel, without the bottlenecks that have beset other infrastructure areas: 1. There has been a marked increase in aeronautical investment since the removal of price-caps, with an additional $9 billion projected over the next decade 2. Aeronautical charges do not indicate misuse of market power and quality outcomes are generally 'satisfactory', although airlines have, on occasion rated two airports as 'poor'
Competition Commission of UK	• In practice there would be no effect on air fares at either congested or uncongested air ports if airport charges were to be higher at the three BAA London airports as a result of a switch to a Dual Till regime. • A move from the single till to the Dual Till would in the longer term mean a substan tial transfer of income to airports from air lines and/or their passengers, potentially under mining regulatory credibility and creating regulatory uncertainty
Aeroports De Paris (ADP)	• ADP moved to a Dual Till regulatory regime from 1st January, 2011. • The move was driven by ADP's objective to remain competitive, concentrating on larger investments and making airport business attractive for the investor.
New Zealand	In May 2003, the Commerce Minister announced that no controls would be imposed at any of the three airports viz. Christchurch, Wellington and Auckland. Commerce Minister mentioned that she had "taken into account a wider range of matters than those the Commerce Commission was asked to consider. I have given particular regard to the negative net public benefits of control and the relatively small net benefits to the airlines, and indirectly passengers".

regime. Further, from the results of some global airport benchmarking studies provides strong evidence against the presumption that Single Till airports maximise overall welfare.

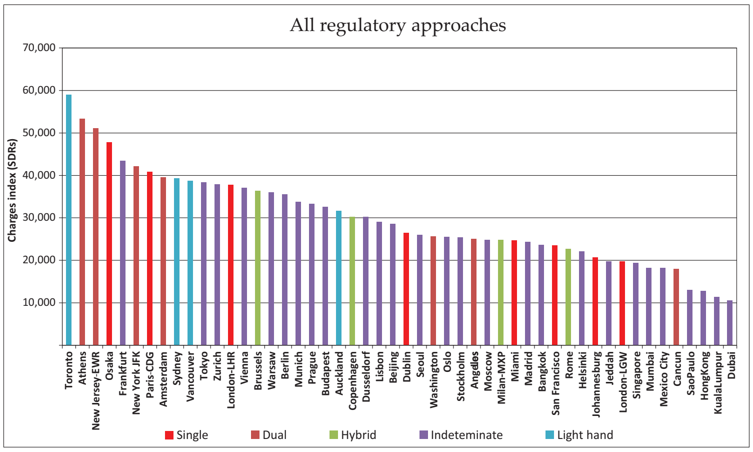
AIRPORT COMPETITION

International experience for the airport sector has clearly shown that the heavier and more rigid the regulation, the lesser are the incentive for the airport operator for further investment. The new reality is that airports compete against each other, and face correspondingly reduced market power in their negotiations with airlines. In fact, for some airports, the balance of power has completely changed over recent years, with airlines and airline alliances often being the dominant party in negotiations. Consequently, airports around the world are increasingly offering aggressive airline discounts and incentive packages. For many airports, the potential for growth is limited to a few airlines, with airports vying to provide the best deals to these. Aeronautical charges have been observed to be less than 4 per cent of the operating cost of airlines world over. These are even more immaterial at the passenger level. Hence, the costs of regulating the prices of Indian airports are not likely to result in significant benefits. In fact, excessive regulatory intervention will stifle airport capacity addition and in the long run this would prove more detrimental to the aviation sector. If there is a competition there need not be any regulation.

Airports are the economic engines for growth and prosperity of any country. Better airports foster evolution in the airline industry and play a crucial role in the choice of the consumer. Subsidised airport charges may keep airlines content, but if those charges are over-stimulating demand and not allowing an adequate infrastructure to be provided, then they are neither efficient nor sustainable, and are damaging social welfare. Airports operate in an increasingly competitive environment and must undertake multi-billion investments in order to provide the much required infrastructure.

According to Professor David Starkie, even an unregulated profit-maximising airport would have a strong incentive to reduce aviation user charges in order to take advantage of the unidirectional demand complimentarity from passenger volumes of aircraft movements to concession sales. In an industry where the balance of market power is increasingly unclear, economic regulators can best serve the common good by regulating only in areas where there is evidence of market inefficiencies resulting from the disproportionate pooling of market power. To do otherwise risks further distortions, and the unnecessary and inherently highly political arbitration as to who gets what rent transfer. Regulating only where necessary is an inherent part of efforts to ensure fair competition and ultimately to maximise economic welfare, and is central to all attempts to create pricing signals equivalent to those which would result

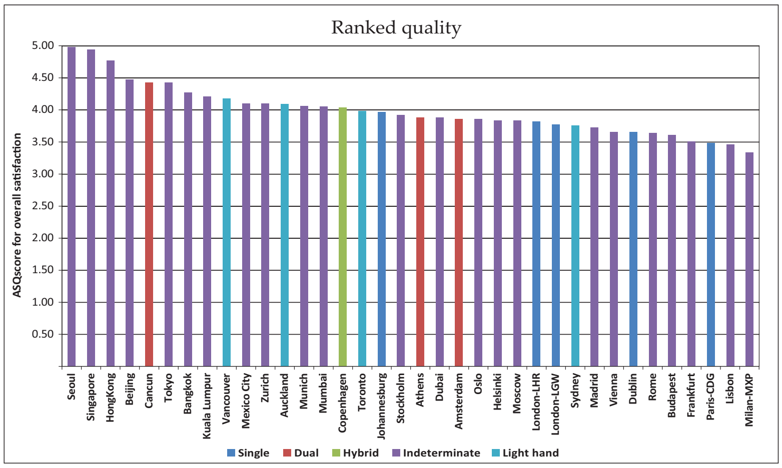
Table 1



Source: Jacobs Consultancy Report on Review of Airport Charges, 2009

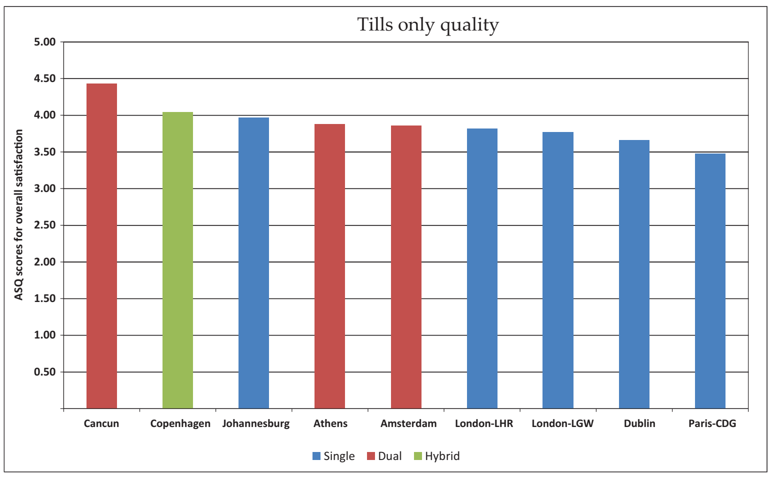
(Note: Toronto, though shown as Light Handed, is 'not for profit' and, therefore, having similar characteristics of a Single Till airport. Mumbai is shown indeterminate as it is still following AAI rates.)

Table 2



Source: Jacobs Consultancy Report on Review of Airport Charges, 2009

Table 3



Source: Jacobs Consultancy Report on Review of Airport Charges, 2009

Table 3 shows the service quality levels of airports specifically under Single or Dual/ Hybrid Till regimes. It can be seen that 3 of the top 4 airports follow Dual/ Hybrid Till while all bottom 4 airports are Single Till airports

in a fully competitive non-regulated environment. This will enhance economic and viable operation of airports. If there is a competition there need not be any regulation and can have Light Hand regulation of price monitoring.

The objective of any regulation should be to bring "competitive prices" and not "minimum prices". World experience shows that there is no best fit regulation. Regulation has to be adaptive to the requirements of each country. India needs substantial investment, that too private, for airport infrastructure. Indian airports are on a growth trajectory and require to align their charges to graduate from obsolete facilities to world-class infrastructure. It is important that Airports in India need to remain incentivised to deliver adequate investment in capacity in the years ahead and this requires authorities to tailor economic regulation to the current competitive state of the industry. Hence, it is essential that returns are attractive enough for private investors. If the regulation mandates that non-aero revenue is fully put in the Till, there will be no motivation to increase Non-Aero revenues as the entire amount goes for subsidisation. It is a well-known economic principle that subsidies, as in the case with Single Till distort markets and consequently distort investment decisions. There is no doubt that in terms of economic efficiency, Dual Till regulation has a more positive impact than Single Till. In the Indian context, there should be Dual Till to make the airport business attractive for private investors without ignoring passenger interest, which is taken care of in Dual Till as excessive user charges at an airport would run counter to the objective of growing passenger and traffic volume. Higher aero revenues from higher user charges can never compensate for loss of passenger and traffic volumes with higher Non-Aero revenues. Hence, the airport operator will have a strong incentive to reduce aviation user charges to attract more passengers.

Given the massive investment requirements and the desire of the government to promote world-class airports and facilities in the country, the right approach to the Till regime would go a long way in setting the right incentives for the airport operators. India needs to incentivise investors willing to participate in the development of airport infrastructure. It has been proven beyond doubt that Dual Till is the most appropriate regulatory approach to ensure that India develops airport infrastructure to meet its future growth. This is the only way we can ensure that the pace of regulation is in tune with the development of the sector and attract the much-sought investment in the sector and takes India to the top three civil aviation markets of the world by 2020. ◘

(The writer is Secretary General, Association of Private Airport Operators, headquatered at Delhi.)