

INTER-AGENCY TASK FORCE
ON FINANCING FOR DEVELOPMENT

Issue Brief Series

Financing for aviation infrastructure

International Civil Aviation Organization (ICAO)

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Financing for aviation infrastructure International Civil Aviation Organization (ICAO)

Air transport has proven to be a catalyst for sustainable development. It impacts tourism and trade. It serves as the main mode of transportation to deliver humanitarian relief and response to crises and public health emergencies. It generates socio-economic benefits which help eradicate poverty by creating jobs and enhancing air connectivity. Furthermore, this sector is forecast to grow from 36 million departures in 2015 to 60 million by 2030. Its global economic impact is estimated at \$2.7 trillion, equivalent to 3.5% of world gross domestic product (GDP). Apart from being a major global source of employment generating 62.7 million jobs globally, the air transport industry invests substantially in vital infrastructure with \$37 billion allocated to aviation infrastructure projects in 2014.

Aviation currently moves over half of the 1.1 billion tourists who travel across international borders each year – a figure which rises to over 80 per cent in various island states. In 2014, 49.2 million tonnes of cargo worth \$6.4 trillion were handled by air. By the year 2030, air cargo traffic is expected to have tripled to an estimated 150 million tonnes. Although only an estimated 0.5% of the volume of global trade is carried by aircraft, it accounts for 35% of the total value of global trade. For Least Developing Countries (LDCs), and especially for landlocked developing countries (LLDCs) and small island developing States (SIDS), aviation represents an essential lifeline to facilitate trade. In fact, the Programmes of Action agreed for these groupings of States in special situations, namely: the Istanbul Programme of Action (IPoA), the Vienna Programme of Action (VPoA) and Small Island Developing States Accelerated Modalities of Action (Samoa Pathway) recognize that the development and maintenance of aviation infrastructure services are essential to achieving sustainable development in LDCs, LLDCs and SIDS, and call for specific actions to attain their objectives.

In order to accommodate this traffic, it is of significant importance that all States develop quality and resilient aviation infrastructure compliant with the international requirements adopted by International Civil Aviation Organization (ICAO). Aerodromes are considered an integral and essential component of the aviation infrastructure in a State. They are drivers for economic development and trade. A poorly designed and overseen aerodrome or an aerodrome which does not meet international requirements adopted by ICAO has been proven to be a safety risk, as well as a barrier for the economic development of a State. Given the dependence by LDCs, LLDCs and SIDS on aviation, a single aviation accident can have a substantial knock on effect for their economies. They therefore require international support and partnerships to ensure that essential aviation infrastructure including aerodromes, navigation aids and fire safety equipment are upgraded to modern international standards and operated effectively to guarantee safety and economic stability.

More generally, air transport is essential for the economic and social welfare of State in special situations. In fact, for most of them, connectivity and trade would be considerably limited in the absence of a sustainable air transport system. Since many of the LDCs and SIDS are located in hardly accessible areas with geographical constraints, aviation is not only beneficial for day to day activities such as trade and tourism but also critical in cases of emergencies and crises.

Whether it is during times of unrest, in the aftermath of natural disasters or extreme shortages of basic necessities the aviation industry's speed and quality of intervention provides crucial relief. Even when facing access challenges, air services experts conduct rescue operations, delivering aid, food and medical supplies as well as qualified personnel. Remote and difficult to access areas are often no longer isolated through the distinct ability of air transport of reaching them. For instance, during the course of the Ebola virus outbreak, the United Nations Humanitarian Air Service (UNHAS) ran by the World Food Programme (WFP) transported 24 987 passengers and delivered 85 751 Kgs of cargo. The Nepal earthquake of 2015 prompted the distribution of 2.7 million Kgs of cargo and the evacuation of thousands of victims over eight months thus fundamentally contributing to the relief and recovery efforts.

Aside from focusing on emergency relief, investments in air transport infrastructure in LDCs LLDCs are primordial since it can help responding quicker and more efficiently to unforeseen situations. Developing civil airports in these areas and ensuring the implementation of SARP's reduce the death toll, casualties and damage extent not only in the wake of a crisis but also in the months and years of recovery following it.

Despite its socio-economic significance and before the adoption of the 2030 Agenda for Sustainable Development, no consideration was given to the fact that air transport is an enabler of sustainable development and that improvements in this sector are intrinsically related and should be embedded within global, regional and national development frameworks. This situation posed challenges for States, especially LDCs, LLDCs and SIDS, in securing resources required for the development and improvement of their air transport systems. It also hampered the establishment of partnerships among members of the UN system and other stakeholders to support air transport development.

The relatively low share of air transport for LDCs, LLDCs and SIDS monitored through the SDG indicator 9.1.2 (Goal 9, Target 9.1) (see chart 1 below), can be attributed to restrictions or barriers posed on air services among States along with the lack of quality, reliable, sustainable and resilient air transport infrastructure, which is also monitored by ICAO Universal Safety Oversight Audit Programme (USOAP) through the indicator "Percentage of effective implementation in the infrastructure development of aerodromes and ground aids" (hereinafter referred as AGA EI) (see graph 1 below). These impediments may be caused by ineffective policies that constraint connectivity and the lack of investments needed to improve or develop the aerodrome infrastructure needed to face the projected increase of air traffic.

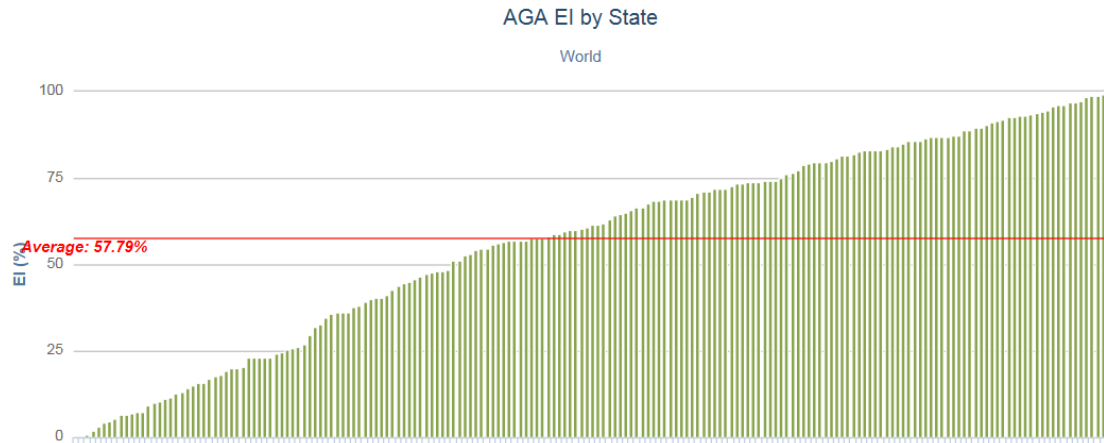
Assisting States to liberalize air transport and to close the infrastructure gap that exist among States, in particular in LDCs, LLDCs and SIDS, is paramount to ICAO so that No Country is Left Behind in achieving their optimal air transport potential that will ultimately contribute towards the realization of the 2030 Agenda for Sustainable Development.

Chart 1: 2014 -Passenger and Freight Volumes for Air Transport (SDG Indicator 9.1.2)

	Total passengers	Share of passenger	Total freight tonnes carried	Share of freight tonnes carried
World	3,303,349,219		50,351,508	
Developing Regions	1,488,317,905	45.05%	26,087,125	51.81%
<i>Northern Africa</i>	27,465,990	0.83%	167,082	0.33%
<i>Sub-Saharan Africa</i>	44,853,931	1.36%	612,980	1.22%
<i>Latin America and the Caribbean</i>	240,229,220	7.27%	1,922,358	3.82%
<i>Eastern Asia</i>	522,639,082	15.82%	12,444,007	24.71%
<i>Southern Asia</i>	114,948,811	3.48%	1,247,289	2.48%
<i>South-Eastern Asia</i>	279,378,708	8.46%	3,584,099	7.12%
<i>Western Asia</i>	244,116,326	7.39%	5,984,751	11.89%
<i>Oceania</i>	4,172,294	0.13%	56,351	0.11%
<i>Caucasus and Central Asia</i>	10,513,543	0.32%	68,208	0.14%
Developed regions	1,815,031,314	54.95%	24,264,383	48.19%
Least Developed countries	26,381,089	0.80%	514,474	1.02%
Landlocked developing countries	97,713,083	2.96%	667,942	1.33%
Small island developing States	54,464,259	1.65%	1,276,418	2.54%

Source: ICAO

Graph 1

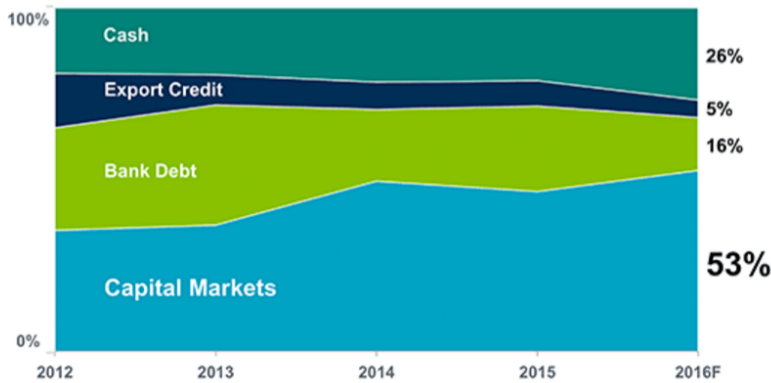


Source: ICAO

It is well understood by the international aviation community that the benefits enabled by air transport can only be materialized if States have a safe, efficient, secure, economically viable and environmentally sound air transport system. The sustainable development of the air transport is dependent on aircraft financing, airport development and infrastructure financing.

Currently most of the activities related to **aircraft financing** for private and State owned air carriers comes from export credit agencies, bank debt and capital markets (see graph 2 below). The role of leasing companies in supporting new commercial airplane deliveries—both through direct purchases and sale leasebacks is significant. Lessors secure most of their financing leverage through the capital market route. Almost all of the aircraft financing of air carriers (State or privately owned) are subject to open market borrowing channels and rates when purchasing or leasing aircraft. With the liberalization of the air transport sector worldwide, and the privatization of many state-owned airlines, the Developmental Banks and Official Development Assistance (ODA) financing have shifted their focus towards capacity building, policy and regulatory support financing activities. The lack of support towards aircraft financing is a significant barrier and cause of infrastructure gap for developing countries with a record of poor aviation infrastructure, poor connectivity and low profitability of their air carriers.

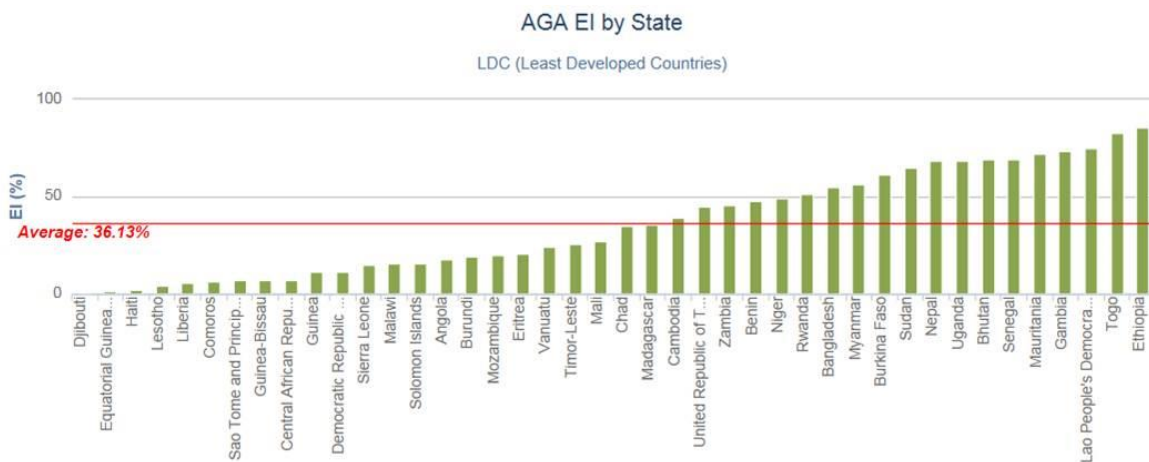
Graph 2



Source: Boeing

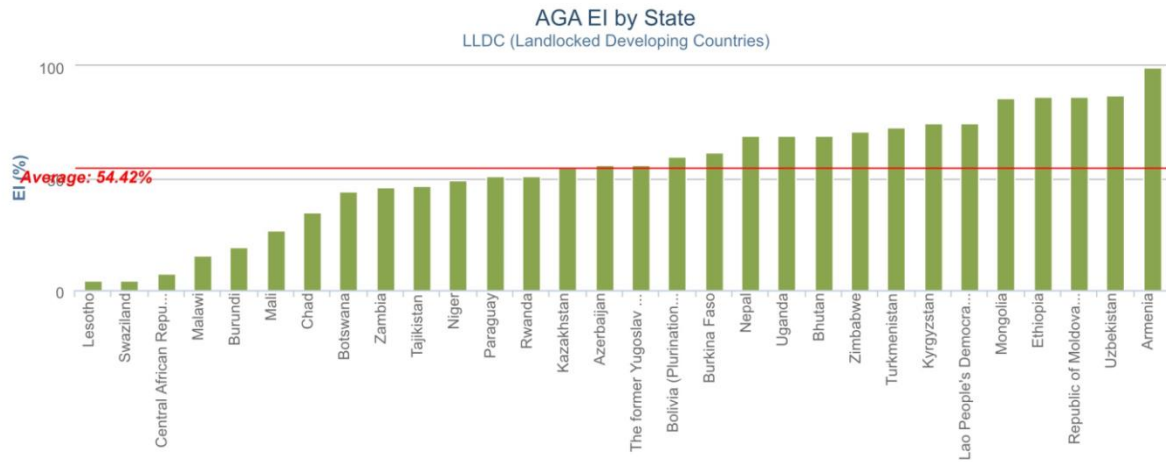
With respect to **airport development** and infrastructure financing, as mentioned above, the AGA EI reveals a low level implementation of aerodrome certification international requirements adopted by ICAO. The negative impact on aerodrome safety is representative of a lack of quality, reliability, sustainability and resilience of aerodrome infrastructure in almost 60% of the States (see Graph 1 above). Furthermore, the gap that exists in aviation infrastructure represented by the difference between the global AGA EI (57.79%) and the AGA EI of the 3 groups should be closed to enable the benefits of aviation, namely: LDCs (36.13% AGA EI) are at **-21.66% AGA EI** points from the global average; LLDCs (54.42% AGA EI) are at **-3.37% AGA EI** points from the global average; and SIDS (39.76% AGA EI) are at **-18.03% AGA EI** points from the global average (see graphs 3, 4 and 5 below).

Graph 3



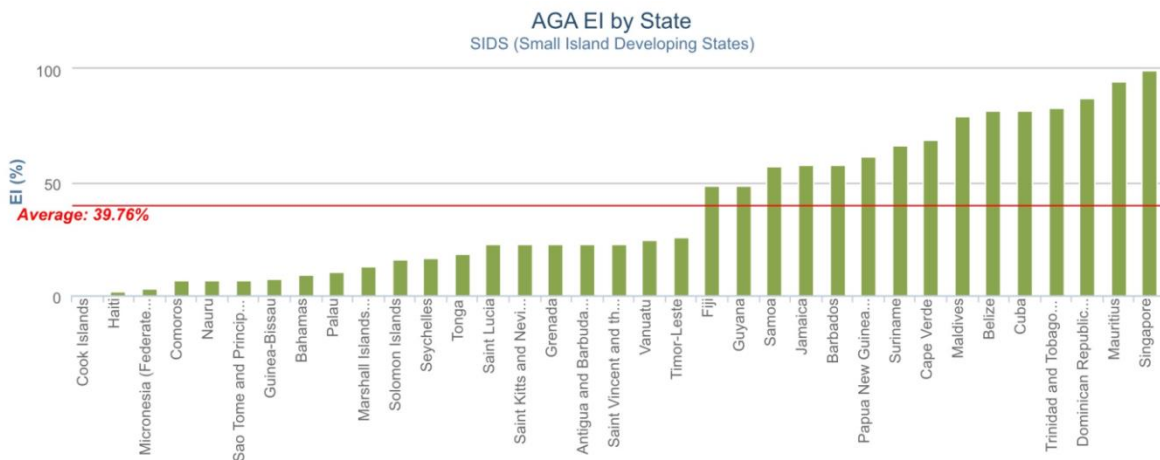
Source: ICAO

Graph 4



Source: ICAO

Graph 5



Source: ICAO

The main reasons for the low performance on the AGA EI are :

- State’s poor aerodrome regulatory framework;
- Lack of a robust aerodrome certification process, including a safety assessment mechanism;
- Inadequate staffing of the aerodrome regulatory authority by qualified and experienced staff from relevant educational backgrounds to ensure an appropriate mix of technical disciplines needed for aerodrome certification activities; and
- Aerodrome infrastructure obsolete or not meeting international standards; and
- Non-adherence of the Aerodrome Operator to the certification process (ex: no comprehensive aerodrome manual developed, compliance checklist not completed, etc.).

All these reasons for poor implementation of the aerodrome certification requirements fall in the range of activities that can be prioritized for applicable financing mechanisms. The financing of airport infrastructure and building the capacity in States to ensure that such infrastructure meets minimal international standards initiatives and improve navigational efficiencies (with resultant economic and environmental benefits) merit significant support from public and private sources. Usually, the sources of financing aviation infrastructure are public financing, Public and Private Partnerships and its variant models, development banks and ODA. Financing is sometimes made available at rates lower than the market rates and or for durations longer than the norm, with an element of grant embedded in the financing and/or with an equity element embedded in the financing.

Notwithstanding the economic benefits of air transport, development banks allocate a small portion of financial flows for the development to this sector. For example, in Fiscal Year 2015 (FY15), the World Bank Group (WBG) Air Transport Portfolio amounted to US\$1.47 billion, an increase of 2% from Fiscal Year 2014 (FY14). **The Air Transport segment makes up around 3% of the WBG's US\$45 billion Transport portfolio.** The WBG's FY15 Transport portfolio consists approximately 19% of the WBG's active portfolio of US\$248 billion (excluding MIGA). The Air Transport portfolio includes around 26 projects or project components through the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA), as well as the International Finance Corporation (IFC)'s portfolio of lending and investment advisories in the aviation sector.

Likewise, aviation has so far received limited attention regarding **Official Development Assistance (ODA)**. The international community has repeatedly pledged to contribute 0.7 per cent of their gross national income (GNI) to support low and middle income countries. Air transport received a mere 4.2 per cent (USD 4,6 billion) of the total ODA provided by all donors for economic infrastructure and services for the past decade (2003-2013) (See chart 2 below). In comparison, road transport was allocated a share of 54,7 per cent which amounts to USD 60.9 billion (See Annex 1 for details on the contribution.)

Chart 2

All Donors*, Total in million \$		
Air Transport	4 665.21	4.19%
Road Transport	60 897.64	54.70%
Rail Transport	25 999.01	23.35%
Water Transport	5 337.62	4.79%
Storage	251.24	0.23%
Transport policy & admin. management	14 093.18	12.66%
Educ./trng in transport & storage	94.76	0.09%
Total ODA to transport sector 2003-2013	111 338.65	100%

*including DAC and non-DAC countries, multilaterals and private donors

Source: data from CRS OECD

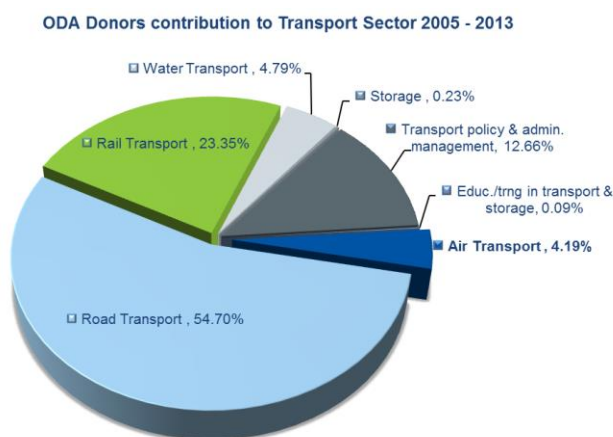
As air traffic is now projected to double by 2030, States and the international community should encourage disbursements and commitments towards aviation as means to foster sustainable economic

development and ultimately to achieve the UN Sustainable Development Goals (SDGs). Thus, sufficient resources should be mobilized on the following areas to assist States in enhancing their air transport systems and also reducing the gap that exist among States. Annex 2 includes details on financing mechanisms and real examples applied to the air transport sector.

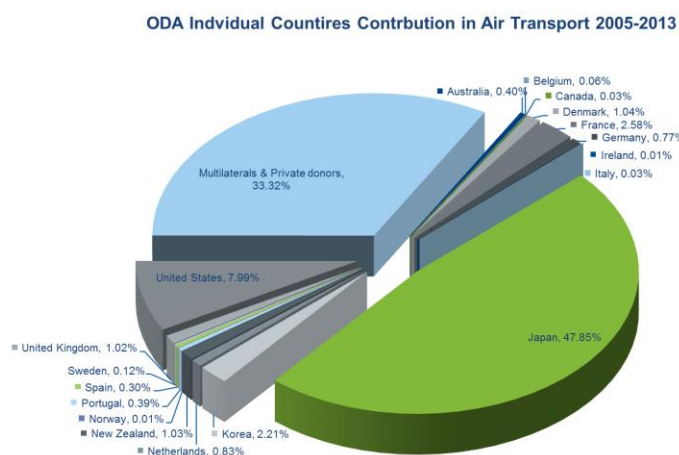
- Domestic actions and international cooperation for infrastructure financing
- Development banks and infrastructure financing
- Private investment in infrastructure
- Public and private blended finance for infrastructure financing

The international community is invited to use the indicators mentioned in this brief to monitor progress towards Goal 9.1. as well as to rationalize an increase in flows destined for the development of aviation infrastructure, in particular national budgets, ODA, financial products and services.

Annex 1 – ODA¹ Donors contribution to Air Transport



Air transport received a mere 4.2 per cent (USD 4,6 billion) of the total ODA provided by all donors for economic infrastructure and services for the past decade (2005-2013). In comparison, road transport was allocated a share of 54,7 per cent which amounts to USD 60.9 billion.



Major ODA country contributions to the air transport sector in the last decade came from Japan (47.9 per cent), followed by the United States (8 per cent), France (2.6 per cent), Republic of Korea (2.2 per cent) and Denmark (1 per cent). Donations from Multilateral and private actors account for 31.1 per cent.

The table below shows the countries’ contribution of ODA to the different transport sectors: Air, Road, Rail and Water². The table furthermore illustrates that the total contributions by countries to road transportation were nearly eight times higher than the funds allocated to the air transport sector.

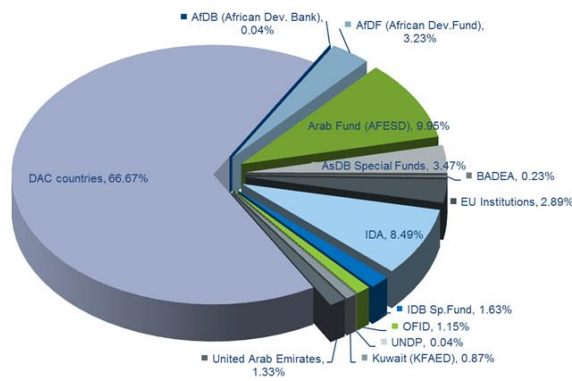
Its largest donor was Japan with 24.1 per cent, followed by the United States with 5.7 per cent. The second largest recipient sector was rail transportation, having received USD 22.7 billion in the last decade.

¹ ODA data is obtained from CRS OECD.

² Storage, Transport policy and administrative management are not considered.

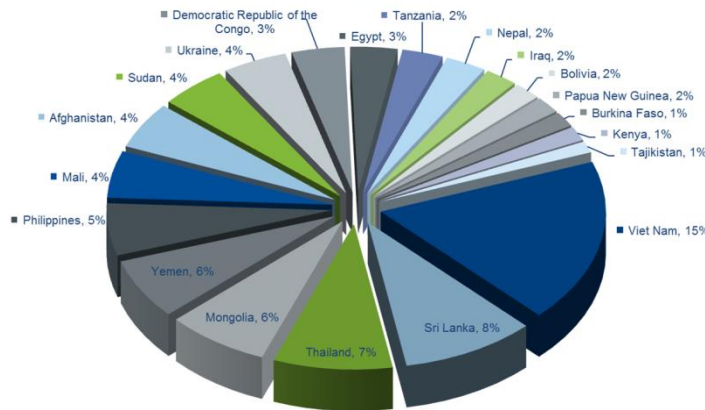
Unit: US Dollar, millions (2005-2013)				
DAC countries	Air	Road	Rail	Water
Australia	18.49	665.60	42.84	80.26
Austria	0.17	44.25	48.85	4.72
Belgium	2.80	242.24	16.37	88.77
Canada	1.19	148.03	2.27	0.62
Czech Republic	0.02	0.07	1.25	0.00
Denmark	48.48	349.91	0.00	45.16
Finland	0.04	23.16	0.11	0.22
France	120.28	931.93	5245.93	263.22
Germany	35.75	422.85	1196.01	161.66
Greece	0.09	76.21	0.00	0.34
Iceland	0.00	0.00	0.00	0.00
Ireland	0.69	11.24	0.00	0.00
Italy	1.25	310.52	9.26	52.30
Japan	2232.53	14690.91	14791.43	2144.32
Korea	103.33	2157.91	203.06	126.28
Luxembourg	0.00	11.33	0.00	0.00
Netherlands	38.58	36.60	15.69	47.37
New Zealand	48.15	27.81	0.00	94.03
Norway	0.31	89.14	1.15	14.46
Poland	0.00	0.00	0.00	0.00
Portugal	18.01	195.86	11.00	1.17
Slovak Republic	0.00	0.01	0.00	0.00
Slovenia	0.00	0.00	0.00	0.00
Spain	14.06	87.46	814.33	53.52
Sweden	5.69	215.63	1.64	3.06
Switzerland	0.00	13.43	1.66	0.00
United Kingdom	47.78	476.80	0.00	17.61
United States	372.88	3476.78	316.41	171.91
Total	3110.60	24705.66	22719.26	3370.99

ODA contributions by multilateral donors and non-DAC countries 2005-2013



On a multilateral scale, the top donors were the Arab Fund (AFESD) with 10 per cent, the International Development Association (IDA) with 8.5 per cent, followed by the Asian Development Bank’s (AsDB) Special Funds with 3.5 per cent and the African Development Fund (AfDF) with 3.2 per cent.

Top 20 Recipients - 2005 -2013 (ODA - All Type of Aid)



On the recipient side, Viet Nam received the major portion of ODA dedicated to air transport with a share of around 15 per cent. Sri Lanka was allocated 8 percent and Thailand 7 per cent.

Nearly one third of ODA disbursed to air transport infrastructure projects was therefore distributed to 3 South/South-East Asian countries.

Annex 2 - Financing mechanisms

DEBT FINANCING

Borrowing money from an outside source with the promise to return the principal, in addition to an agreed-upon level of interest is debt financing. Borrowing from commercial banks has been the most common method of financing for medium to long term financing requirements. Loans lasting eight to fifteen years are used to either provide bridging loan or financing for a six to ten year project. For short-term working capital or bridging finance bank overdrafts, floating lines or in some cases short-term loans could be used. As most of the Air Navigation Service Providers (ANSPs) are government backed the loans are treated as sovereign loans and attract discounts from market rates. Most self-financing stakeholders like airspace users, airports, and ANSPs revert to this form of financing where retained earnings or their own revenues cannot finance large projects. Where clear ownership of the assets can be demonstrated Commercial Institutions would lend against the asset value as collateral. In this area the European Investment Bank (EIB) or Banks backed by State Guarantees could arrange loans at subsidized rates if the cost of borrowing becomes very high or sources of such loans dry out due to market situation.

Development Agencies, Banks and Institutions are other examples of sources for borrowings. Such institutions have provisions to lend with specialized terms, conditions and rates. Financial institutions like European Investment Bank (EIB), European Bank for Reconstruction and Development, Hermes of Germany, EXIM Bank of USA often lend for well-constructed capital projects. The interest rates are comparable to or competitive with commercial banks.

Advantages

Maintain ownership: Being the only obligation to make the agreed-upon payments on time, borrowers can choose to run businesses however they choose without outside interference.

Disadvantages

Repayment: If business fails, there is still an obligation to make payments. If bankruptcy is forced upon, lenders will have claim to repayment before any equity investors.

High rates: Even after calculating the discounted interest rate from the tax deductions there is still the possibility of facing a high interest rate. Interest rates will vary with macroeconomic conditions, individual or corporate history with the banks, business credit rating and credit history.

Cash and collateral: Even when planning to use the loan to invest in an important asset, it is important to make sure that business will be generating sufficient cash flows by the time loan repayment starts. Collaterals are used in case of payments default.

BOND FINANCING

Bonds are commonly referred to as fixed-income securities and are one of the three main asset classes, along with stocks and cash equivalents.

The indebted entity (issuer) issues a bond that states the interest rate (coupon) that will be paid and when the loaned funds (bond principal) are to be returned (maturity date). Interest on bonds is usually paid every six months (semi-annually). The main categories of bonds are corporate bonds, municipal bonds, and U.S. Treasury bonds, notes and bills, which are collectively referred to as simply "Treasuries."

Advantages

Bond financing provides a number of benefits to projects including lower interest rates, longer maturity (which can be very helpful given the duration of most of these projects) and more liquidity.

Disadvantages

"Negative carry": bond financing is drawn all at once, up front, and therefore interest is charged on the entire amount from day one. The borrower will have to bear the "cost of carry", being the interest paid on the bond proceeds, from the date of receipt to the date it is used to invest in capital expenditure.

Certainty: bond financing has less certainty in the underwriting process due to the volatility in the securities market.

Flexibility: bond financing has less flexibility during project implementation (e.g. to approve waivers and amendments), given the diversity of bondholders and the difficulty of getting approval for changes.

Administrative processes: more time and cost, due to more extensive disclosure processes and the rating process.

Limits: Bond financing has seen limited usage for initial project financing, but is commonly used for refinancing, once construction risks have been largely mitigated.

Airports' Use of Bonds

Airports, particularly in the United States, have been instrumental in using bonds. According to ACI, airport capital needs are estimated to exceed \$71.3 billion for 2013 through 2017, or approximately \$14.3 billion per year, according to the 2012 Airport Capital Development Needs Survey conducted by ACI-NA. The Airport Improvement Program (AIP) administered by FAA currently distributes about \$3.35 billion entitlement and discretionary grants to airports, leaving a gap of about \$10.95 billion per year to be funded with local sources.

Airports frequently turn to the capital markets to finance long-term construction projects. Bond proceeds are the largest sources of funds for airport capital needs, accounting for approximately 54% of the total funds historically. Total bond issuance including both new money bonds and refunding between 2006 and 2011 ranged from \$6.3 billion in 2006 to \$12.4 billion in 2010 with an average of \$8.8 billion. The ACI-NA survey shows that large hubs are anticipating financing 58% of their planned projects between 2013-17 through bonds, medium hubs at 23% and small hubs at 22%.

Airports in the Municipal Bond Market

Airport operators are major and regular participants in the municipal bond markets and have utilized numerous types of municipal bonds to finance airport capital projects including:

- general obligation bonds supported by the overall tax base of the issuing entity (the airport sponsor);
- general airport revenue bonds secured by the revenues of the airport and other revenues as defined in the bond indenture;
- bonds either backed solely by PFC revenues or by PFC revenues and airport revenues generated by rentals, fees and charges; and
- special facility bonds backed solely by revenues from a facility constructed with proceeds of those bonds.

Depending on the nature of the projects being financed by the airport, most bonds are considered a special form of municipal bonds called private activity bonds (PABs). Often times, PABs are subject to the Alternative Minimum Tax, thereby raising the return demanded by the investor and the financing costs for the airport.

Airport Municipal Bonds: Lower Costs, Better Service

Airports are carefully managing operating, financing and capital expenses to maintain their good credit rating which helps lower their borrowing costs. Airport operators constantly monitor the financial markets and respond to changes in market conditions accordingly. For example, bond issuance spiked in 2010 driven by low interest rates and the Alternative Minimum Tax holiday. Lower borrowing costs through municipal bonds allow airports to pass the savings to airlines through lower rates and charges, which help sustain existing and attract new air carrier service, ultimately benefiting passengers with more service choices. Air service also helps generate jobs and economic development in the community.

Airports, mostly in the United States, are using a variety of bonds to finance various projects. The description below identifies some of the bonds used by airports (sourced from Airport Cooperative Research Program).

Types of Airport Bonds

Airport sponsors and operators issue various forms of bonds to finance generally large-scale capital projects with long-term debt. This section discusses the following types of bonds:

- General obligation (GO) bonds
- General Airports Revenue Bonds (GARBs)
- Bonds backed by Passenger Facility Charges (PFCs)
- Bonds backed by Customer Facility Charges (CFCs)
- Potential new tax credit bonds (TCBs) for baggage screening infrastructure.

General Obligation (GO) Bonds

GO bonds may be issued to finance airport capital improvements, backed by general tax revenues of the city, county, or state that owns and operates the airport. Specifically, local general tax revenues such as sales, income, or property taxes may be pledged as a source of repayment for GO bonds, although the airport operator may actually pay debt service from airport sources, or, in rarer instances, general local taxes may directly pay debt service on proceeds used to fund airport projects.

Some large airports such as Honolulu International Airport pay debt service on outstanding GO bonds issued on their behalf by their airport sponsor (in this case, by the state of Hawaii); however, the bonds were generally issued decades ago and the outstanding balances are relatively small. GO bonds are currently a key financing tool for many small airports for several important reasons:

Stronger credit with lower interest rates: GO bonds are a stronger credit than GARBs, which are discussed later. GO bonds therefore result in lower interest costs for the airport because the bonds are backed by the full faith and credit of a city, county, or state that (1) has a much larger and diverse tax revenue base than an airport's revenue base, and (2) can typically adjust tax rates often more readily than an airport operator can adjust airport rates and charges. However, in certain States voters must approve tax rate adjustments and/or issuance of bonds, which may make GO debt less attractive than GARBs.

Lower issuance costs: GO bonds do not have the upfront costs of developing a separate indenture/ordinance, getting bond ratings and insurance, and preparing feasibility studies that GARBs have. These upfront GARB costs do not generally vary significantly with the size of the bonds being issued, and so constitute a larger percentage of the GARB for small airports issuing smaller numbers of bonds. This makes GO bonds more attractive the smaller the bond issue is, and because smaller airports typically have smaller capital needs, GO debt is typically more attractive for them.

No coverage requirement: Airport operators are typically required to maintain coverage of 1.25x or 1.35x; that is, the ratio of net revenues after paying operating costs to annual debt service must be at least 125% or 135% to give investors comfort that their debt will be repaid. Because of the strength of GO bond credits, coverage is not required, which can also save airport operators money.

General Airport Revenue Bonds (GARBs)

GARBs are traditionally the most commonly issued bonds for airport infrastructure. Their credit rating is based on revenues generated at the airport from airline rates and charges, parking, rental car operations, terminal concessions, other leases, interest, and any other revenues of the airport. Following the economic downturn in 2000 and the terrorist attacks of 9-11, GARB credit ratings for several airports were downgraded, and 19 of the 31 large-hubs carried negative outlooks (Aviation Infrastructure Innovative Financing 2002). The financial outlook and accompanying credit ratings for airports have subsequently steadily improved as airport operators have taken many steps to manage their financial results, and as traffic levels have returned to pre-9-11 levels.

Other types of bonds reflecting innovations by airport operators and financial markets exist. Even within the category of GARBs various innovations can be seen. The information below describes some of these.

Use of sureties in lieu of funded reserves: Airport operators historically funded required debt service reserves from either available retained earnings (cash) or from bond proceeds. Sureties can be obtained from the financial markets either at the time of, or any time, after bond issuance, to be used in lieu of a funded reserve. Sureties are recognized by the rating agencies, bond insurers, and investors as equivalent security to providing a funded reserve. The airport operator pays a fee at issuance, usually a percentage of the new or outstanding principal, and in the event that it is needed to pay debt service, the surety is drawn on. Use of sureties can reduce the size of a bond issue and therefore annual debt service by eliminating the need to fund a debt service reserve account and/or free cash held in a reserve to be used for any allowable airport purpose (allowable uses may need to be determined by the airport operator's bond counsel, depending on the provisions of its bond indenture or ordinance).

Use of intermediate and subordinate liens: it is increasingly common for airport operators to issue bonds with a lower pledge of airport revenues than its senior debt. Issuing intermediate and subordinate debt can reduce coverage requirements and annual airline rates and charges. The downside is that such liens typically require new bond indentures or ordinances, which can add time and costs to the issuance process.

Interest rate swaps: Airports increasingly enter into "over-the-counter" contracts with investment banks to "swap" or exchange a stream of interest payments for another party's stream. Each swap is a unique contract between the parties and cannot be bought and sold like securities or futures contracts. Interest rate swaps are normally "fixed against floating," where an airport operator exchanges fixed-rate obligations for floating rate obligations, or "floating to fixed," where the reverse happens. The principal amounts are not exchanged, and are referred to as the notional principal (with the exception of basis swaps). Swaps are often used to hedge certain risks, for instance interest rate risk. By swapping interest rates, an airport operator is able to synthetically alter its interest rate exposures and bring them in line with management's appetite for interest rate risk. Forms of interest rate swaps include:

- Forward current refunding (synthetic fixed): fairly common type of swap transacted by operators of airports such as Charlotte/Douglas International, Jacksonville International, Miami-Dade International, Sacramento International, Salt Lake City International, and Wayne County (Detroit)
- Advance refunding (synthetic fixed): Examples include operators of the airports in Atlanta and Manchester, New Hampshire.
- Swaption for refunding: A swaption is a financial instrument granting the owner an option to enter an interest rate swap pursuant to certain agreed upon terms. Examples include the operators of airports serving Philadelphia, Portland (Oregon), Chicago (Midway), and Albany.
- Forward hedge for new money: Examples include the Indianapolis Airport Authority and the Metropolitan Washington Airports Authority.
- Synthetic variable: Have been used by the operators of airports serving Boston, Las Vegas, and Orlando.
- Basis swap: Also known as "floating to floating" swaps, have been used by the operators of airports in Cleveland, Las Vegas, and New Orleans.

Passenger Facility Charge Bonds

Airport operators have increasingly issued bonds that either include a pledge of PFC revenues and/or are to be repaid in part or in full from PFC revenues. Approaches to leveraging PFC revenues include:

Combined flow of funds: these bonds are a form of GARB, where the bonds are secured by an underlying pledge of airport revenues. Under this structure, PFC revenues, or certain PFC revenues, are defined as airport revenues in the bond indenture. Combined airport revenues are then used to pay GARB debt service. This bond structure is used by the airports serving Albuquerque, Guam, and Orlando, among others. One advantage is that it is relatively easy to incorporate into an existing revenue bond indenture, and debt service coverage requirements can be lower relative to standalone PFC bonds (i.e., 1.25x–1.35x instead of 1.5x for stand-alone PFC-backed bonds). However, bonds issued under this approach reduce the airport sponsor’s GARB capacity, and sometimes more importantly, may require airline majority-in-interest approval.

Direct debt service offset: these bonds are another form of GARB secured by airport revenues. PFC revenues are used to pay all or a part of the GARB debt service, but they do not secure the bonds. Debt service may be included in the airline rate base if projected PFC revenues are not realized under this structure. This bond structure is used by the airports serving Albany, Austin, Cleveland, Denver, El Paso, Grand Rapids, and Providence, among others. Among the advantages of these bonds is that they result in higher demonstrated debt service coverage relative to the combined flow of funds structure, as PFC revenues directly offset debt service (the denominator in the coverage calculation). Also, debt service coverage requirements can be lower relative to stand-alone PFC bonds. Some of the disadvantages include that (1) they do not preserve GARB capacity, (2) they are not applicable to airports where the definition of airport “Revenues” includes PFC revenues, or that pledges airport revenues elsewhere, and/or (3) they may require airline majority-in-interest approval.

Back-up pledge of subordinate airport revenues: These bonds are secured by PFC revenues with a back-up pledge of airport revenue that is subordinate to a more senior lien on airport revenue. This bond structure is used by the airports serving Baltimore, Las Vegas, Nashville, and Sacramento, among others. The advantages of these bonds is that (1) it enhances the creditworthiness of the bonds versus stand-alone PFC bonds, (2) it keeps the costs out of the airline rate base, (3) debt service coverage requirements can be lower relative to standalone PFC bonds (i.e., 1.25x–1.35x), (4) it preserves the senior lien GARB capacity, and (5) it maximizes airport management control over airport financing decisions. Its disadvantage is that they are not applicable to airports where the definition of airport “Revenues” includes PFC revenues or that pledges them elsewhere.

Stand-alone PFC bonds: Issuance of bonds backed solely by PFC revenues has evolved since they were first issued in 1994. Stand-alone PFC bonds have been issued by the airports serving Boston, Chicago, Fort Lauderdale, Lee County (Fort Myers, Florida), Little Rock, New Orleans, Palm Springs, Portland (Oregon), Richmond, and Seattle. Advantages of these bonds include that they (1) preserve GARB capacity, (2) keep costs out of the airline rate base, and (3) maximize airport management control over airport financing decisions because they do not require airline majority-in-interest approval. Some of the

disadvantages are that (1) PFC revenues are completely dependent on passenger volumes; (2) the bonds entail development of a new indenture or ordinance; (3) they require FAA termination protection and approval of the bond indenture; (4) they require more rigorous tests and sensitivity analysis; (5) they have higher required debt service coverage levels, typically 1.5x; and (6) they are not applicable to airports where the definition of airport “Revenues” includes PFC revenues, or that pledges them elsewhere.

Convertible lien PFC bonds: Another concept is to issue bonds initially secured solely by PFC revenues that subsequently convert to GARBs. To date, the only airport to issue such bonds is Broward County, which operates Fort Lauderdale–Hollywood International Airport.

Bonds Backed by Customer Facility Charges

Bonds backed by Customer Facility Charges (CFCs) are collected by rental car companies from their customers at certain airports to pay operating expenses and debt service for consolidated rental car facilities. As with PFC revenues, CFC revenues can be structured in many of the same ways as the various forms of PFC bonds and have similar characteristics, advantages, and disadvantages as PFC bonds. Examples include the bonds issued for the consolidated rental car facility at Fort Lauderdale–Hollywood International Airport and at Dallas/Fort Worth International Airport.

Single-Tenant Special Facility Bonds are used to finance unit passenger terminals or portions of terminals, hangar and maintenance facilities, cargo buildings, and ground equipment support facilities for the exclusive use of an airline. The bonds are backed solely by an airline corporate pledge to repay the debt. According to a study by the FAA Office of Policy and Plans; however, this form of financing has come under significant scrutiny as a result of recent airline bankruptcies and defaults (Aviation Infrastructure Innovative Financing 2002). For example, one airline rejected payment of its special facility bond obligations and discontinued use of its maintenance facility at an airport. Another airline closed its maintenance facility that had been funded with special facility bonds.

Multi-Tenant Special Facility Bonds issued to fund multi-tenant terminals, fuel storage and distribution facilities, and consolidated rental car facilities have greater credit strengths than single-tenant special facility bonds because of the more diverse revenue base from multiple tenants and users.

Potential New Tax Credit Bonds for Baggage Screening Infrastructure

In the United States, a recent Baggage Screening Investment Study conducted on behalf of Transportation Security Administration (TSA) resulted in the recommendation that Congress adopt new legislation authorizing the use of a federal tax credit bond program for the capital costs of a baggage handling system and related infrastructure. Tax credit bonds (TCBs) involve the issuance of taxable debt by state and local governments or other non-federal entities for designated capital purposes. Bond holders receive annual tax credits that can be applied against their federal income tax liability instead of cash interest payments. The tax credit itself represents taxable income to the bondholder. Principal is repayable by the issuer from non-federal sources. The bonds are generally structured as “bullet” term bonds, where the principal is repaid in a lump sum at bond maturity. TCBs are generally structured as

bullet term bonds to maximize the value of the tax credit, and the issuer make periodic deposits to a sinking fund to provide for principal retirement at maturity.

Unlike other federal tax credit programs oriented to equity capital (such as tax credits for investments in low-income housing), TCBs do not require the project sponsor to be the “consumer” of the tax credit. Instead, this form of tax subsidy encourages private investment in desired infrastructure through lower-cost debt capital for the issuer.

TCBs provide a substantial subsidy to the issuer, as the interest expense can represent 50% to 80% of the effective cost of long-term borrowing. The extent of the subsidy depends on the term (maturity) of the bonds and the interest (credit) rates. The longer the term and the higher the interest rates the greater the subsidy level.

The TCBs could be on parity with an airport’s traditional revenue bond indebtedness or issued on a subordinate or stand-alone basis. Possible pledged revenue streams include one or more of the following: (1) general airport revenues from airline rents and fees and nonairline sources, as is the case for traditional GARBs; (2) PFC revenues, as is the case for stand-alone PFC-backed bonds and double-barrel bonds backed by PFC revenues and general airport revenues; and (3) general local governmental resources such as sales and property taxes, as is the case for general obligation municipal bonds issued to fund airport projects (more common for small- and non-hub airports than large- and medium-hub airports).

Airport participation in the TCB program would be entirely voluntary. It is anticipated that large- and medium-hub airports, which frequently access the capital markets to raise capital, would be the most likely issuers of TCBs. Although smaller airports would not be excluded, the resource demands on smaller airports for this type of issuance would be relatively high compared with their smaller borrowing needs.

EQUITY FINANCING

Equity financing is the process of raising capital through the sale of shares in an enterprise. Equity financing essentially refers to the sale of an ownership interest to raise funds for business purposes. Equity financing spans a wide range of activities in scale and scope, from a few thousand dollars raised by an entrepreneur from friends and family, to giant initial public offerings (IPOs) running into the billions by household names such as Google and Facebook. While the term is generally associated with financings by public companies listed on an exchange, it includes financings by private companies as well. Equity financing is distinct from debt financing, which refers to funds borrowed by a business. Equity financing involves not just the sale of common equity, but also the sale of other equity or quasi-equity instruments such as preferred stock, convertible preferred stock and equity units that include common shares and warrants.

Advantages

If you do not make a profit, you usually are not required to pay them back. The absence of monthly loan payments can free up significant working capital for the business. While investors or partners will only provide equity if they have faith in the earning power of your business, you don't necessarily need the pristine financial history that is required for a loan.

Disadvantages

The control of the business is influenced by investors. This means that not only will investors be entitled to a share of the company profits, but they also have a say in the running of the business and the direction it is headed. IPOs can be a risky investment, whether for a bond or stock issue. The key risk is that more often than not, there is little historical experience upon which to be able to analyze and price the issue.

Privatization - as a form of equity

ICAO Doc 9980 refers to Privatization as the *transfer of full or majority ownership of facilities and services from the public sector to the private sector*. Doc 9980 further indicates that privatization is the word most commonly used in connection with the changes taking place in ownership and management in the provision of airports and air navigation services. Often, the word privatization is loosely interpreted as any movement away from government ownership and management of facilities and services. This is too liberal an interpretation. Strictly, privatization connotes either full ownership or majority ownership of facilities and services. Therefore, a management contract, a lease or minority participation in the equity of airports and air navigation services should not be described as privatization but rather as private participation or private involvement since the ownership control rests with the government.

Alternative research indicates that the term "privatization" can refer to a broad range of activities that entail varying levels of private involvement. The privatization spectrum can include contracting out, public-private partnerships, vouchers, and franchising, as well as the actual sale—divestiture—of government assets and operations.

Most U.S. airports are operated as independent not-for-profit entities with oversight by a politically appointed authority or as a self-sustaining enterprise of a governmental entity such as a county, city, or state government. As it applies in the United States, privatization can refer to a broad range of activities that entail varying levels of private involvement in the operation of an airport including:

Partial Privatisation

National Governments creating corporatized ANSPs could float a percentage (less than 50% or more with a blocking majority) of the holdings to private corporations, airlines, airports or banks to bring in investments in the form of equity. Equity is described typically in the capital market as the "most expensive" form of financing. Expected interest returns especially from the private capital market equity sector normally expect returns in investment capital of at least 7-10% minimum per annum.

Airport operators have explored many ways of doing business that involve varying degrees of private-sector involvement in the management, capital investment decision making, financing, and pricing of airport facilities and services. Private involvement at airports nationwide includes airline involvement in capital decision making, contracting of services to private companies, master concessionaire agreements, and private terminal development. For example, AMR (American Airlines' parent company) developed, renovated, and financed Terminal 4 at Los Angeles International Airport with special facility bonds issued by AMR and backed by their lease payments.

Full Privatisation

Corporatized ANSPs could be privatized fully through placements or public offerings with strict supervisory controls imposed by the Ministry of Transport or by an independent regulator. The financing requirements under such circumstances will be shifted fully to the private sector. Expectations of interest returns per year might in this case rise to over 10%.

It is important to note that changes in governance or ownership such as those made during privatisation may impact the available sources of funding or financing for an entity. It is understood that there are current arrangements which constrain what airports and ANSPs are able to do in terms of funding and financing of new infrastructure and services.

OTHER VARIATIONS OF OWNERSHIP

Public-Private Partnerships (PPP)

One of the most notable developments over the past 10-20 years has been in the increase in private sector participation for infrastructure. The term "public-private partnership" ("PPP") has been in general use since the 1990s. However, there is no widely agreed, single definition or model of a PPP.

ICAO's definition in Doc 9980 indicates PPP as an ownership and management structure in which the private and the public sectors both participate. PPPs refer to arrangements where the private sector supplies infrastructure assets and services that traditionally have been provided by the government. This technique provides private financing for infrastructure investment without immediately adding to government borrowing and debt, and can be a source of government revenue. PPPs also present business opportunities for the private sector in areas from which it was in many cases previously excluded.

General research shows that the term "PPP" covers a range of different structures where the private sector delivers a public project or service. Concession-based transport and utilities projects have existed in European Union (EU) member countries for many years, particularly in France, Italy and Spain, with revenues derived from payments by end-users, e.g. road tolls. The UK's Private Finance Initiative ("PFI") expanded this concept to a broader range of public infrastructure and combined it with the introduction of services being paid for by the public sector rather than the end-users.

The use of PPPs has now spread to most EU member countries and depending on the country and the politics of the time, the term can cover a spectrum of models. These range from relatively short term

management contracts (with little or no capital expenditure), through concession contracts (which may encompass the design and build of substantial capital assets along with the provision of a range of services and the financing of the entire construction and operation), to joint ventures and partial privatisations where there is a sharing of ownership between the public and private sectors.

The key contrast between PPPs and traditional procurement is that with PPPs the private sector returns are linked to service outcomes and performance of the asset over the contract life. The private sector service provider is responsible not just for asset delivery, but for overall project management and implementation, and successful operation for several years thereafter.

Advantages

PPP procurement is only one of several options for procuring infrastructure. Consideration must be given as to whether a project is suited to a PPP structure, and whether there is strong political support for a PPP solution. The principal reason for using PPPs is that, where the project is suitable, they can deliver better value for money than the alternatives. All arguments for and against PPPs must be considered within the context of that overriding objective. The following are key advantages for using PPP procurement:

- Make projects affordable
- The use of private sector skills is maximized
- Private sector takes life cycle cost risk, which can be passed on to captive users in monopolistic situations
- Risks are allocated to the party best able to manage or absorb each particular risk
- Deliver budgetary certainty
- Force the public sector to focus on outputs and benefits from the start
- The quality of service has to be maintained for the life of the PPP
- The public sector only pays when services are delivered
- Encourage the development of specialist skills, such as life cycle costing
- Allow the injection of private sector capital
- Transactions can be off balance sheet

PPPs are unlikely to fully replace traditional financing and development of infrastructure, but they offer several benefits to governments trying to address infrastructure shortages or improve the efficiency of their organizations. These type of partnerships allow the costs of the investment to be spread over the lifetime of the asset and thus can allow infrastructure projects to be brought forward by years compared with the pay-as-you-go financing typical of many infrastructure projects. PPPs also transfer certain risks to the private sector and provide incentives for assets to be properly maintained. They can lower the cost of infrastructure by reducing both construction costs and overall life-cycle costs and because satisfaction metrics PPPs can be built into the contract, encouraging a strong customer service orientation. Finally, because PPPs are the destination, not the path, they become the organizing theme around which a project is built, enabling the public sector to focus on the outcome based public value they are trying to create.

Disadvantages

It is important to note that PPP may appear more expensive and if the project run into difficulty, risk has tendency to revert on the taxpayer. Overall, PPP contracts balance the short term political imperatives and long term investment priorities. Getting PPP requires adequate resources on both sides of the partnership. Some of the disadvantages of this financing mechanisms are:

- Insufficient private sector expertise exist to warrant the PPP approach
- Insufficient public sector capacity and skills to adopt the PPP approach
- Not always possible to transfer life cycle cost risk
- Do not achieve absolute risk transfer, especially in monopolistic situations where the risk can be transferred to captive users.
- Imply a loss of management control by the public sector
- Procurement can be lengthy and costly
- Private sector has a higher cost of finance
- Long-term relatively inflexible structures

INSTITUTIONAL LENDING OR SUBSIDY BASED FINANCING

Direct Government Financing

Where an ANSP is a government service, as in France or in Spain, the State could directly finance investments from Government budget. However, besides capital projects with public grants, any additional loan based investment not covered by state reimbursement will have the same need of capital cost repayment in future license or service charges like any other financing project.

Funding by Supra-National Bodies

European Commission (EC) has funds like the TEN (Trans European Network) for funding transport networks of Civil Aviation, Railways etc. Under the Sixth Framework Programme, the EC funds are available for supporting research. Some research funds are available within EUROCONTROL budget funded by the member States. For less prosperous areas within the European Union some Regional funding Instruments are available particularly under European Regional Development fund (ERDF).

Leasing

Often assets requiring large financial outlays are leased. This is frequently the case for aircrafts, radars etc. The leasing company takes care of the financing costs but recovers it through annual charges throughout the life of the assets, which include both costs of principal and interest. The ownership remains with the leasing company and the charges are similar to rents. In other cases the assets could be bought at the end of a certain period of time. In some cases, the asset may be bought by the stakeholder but then sold to the leasing company and rented back to ease cash flow. The funding of such leases is similar to commercial loans.

ICAO Doc 9626 contains a description on this topic and indicates the practice of aircraft leasing, i.e. the rental, rather than purchase, of aircraft by an air carrier from another air carrier or a non-airline entity, has been growing steadily in the last two decades. The use of leased aircraft plays a significant role for airlines in the provision of international air services, reflecting in particular the economics and flexibility of leasing over purchasing (such as reducing initial cost burden or debt level, gaining tax benefits, and meeting seasonal demands for additional capacity). In a liberalized regulatory environment, leasing of aircraft facilitates the entry of new carriers into the market.

Information in ICAO Doc 9626 acknowledges that there are various types of aircraft leases. They can be characterized by their purpose. A financial or capital lease is used by air carriers to avoid the otherwise substantial capital outlays/debt required in purchasing aircraft directly from the manufacturer, or to reduce taxation or other costs. For example, an air carrier may sell all or part of its fleet to a bank or other financial institution and then lease the aircraft back. Financial leases are long-term arrangements which give the outward appearance of ownership, e.g. the aircraft bears the air carrier's name/logo and is usually registered in the air carrier's State.

In contrast, an operating lease is designed to meet an air carrier's immediate need for additional aircraft, often on a seasonal or short-term basis. An air carrier with excess or under-utilized aircraft can lease them to other air carriers.

Operating Lease

Operating Lease is a contract that allows for the use of an asset, but does not convey rights of ownership of the asset. An operating lease is not capitalized; it is accounted for as a rental expense in what is known as "off balance sheet financing." For the lessor, the asset being leased is accounted for as an asset and is depreciated as such. Operating leases have tax incentives and do not result in assets or liabilities being recorded on the lessee's balance sheet, which can improve the lessee's financial ratios.

Operating lessors either order aircraft from manufacturers or buy them from airlines and lease them back (this is known as sale/leaseback). The operating lessor leases the aircraft to the airline, which is also called the lessee. Leases can be as short as a couple of months to cope with seasonal demand like summer tourist peaks, ski seasons or the Haj. Airlines can also lease crew and pilots with aircraft, these are known as wet leases.

However, most leases are for three to five years with airlines paying monthly lease rentals. Airlines often use operating leases as they give them more flexibility. They are however quite expensive.

Operating lessors expect to have to place an aircraft several times during its life. The aircraft often starts with a strong carrier and ends up in a developing country or as a cargo aircraft. Like airlines, lessors also need a lot of capital so are regular borrowers.

Among the advantages of cancelable short-term (a period shorter than the economic life of the leased asset) lease written commonly by landlords and equipment manufacturers is that they can expect to take back the leased asset after the lease term and re-lease it to other users. The lessor gives the lessee

the exclusive right to possess and use the leased asset for a specific period and under specified conditions, but retains almost all risks and rewards of the ownership. The full amount of lease payments is charged as an expense on the lessee's income statement but no associated asset or liability (other than the liability of the accrued lease payment or rent) appears on the lessee's balance sheet. For this reason, operating leases are also called off balance-sheet financing. And, since the maintenance of the leased asset is usually the responsibility of the lessor, they are called also maintenance leases or service leases. An operating lease does not meet any of the criteria for a capital lease.

The key disadvantage to such leases is that ownership is retained by the lessor before and after the lease term.

Leverage Lease

A leveraged lease is an agreement where the lessor finances the lease by taking a loan from a lender. The party leasing the asset pays the lessor monthly. The lessor, in turn, remits the payments to the financing company. This allows the lessor to provide a lease and profit from the lease even if the individual leasing the asset does not have the income to obtain the lease outright. In the perfect leveraged lease, all parties benefit from the arrangement.

Sale/Lease Back

An arrangement where the seller of an asset leases back the same asset from the purchaser. In a leaseback arrangement, the specifics of the arrangement are made immediately after the sale of the asset, with the amount of the payments and the time period specified. Essentially, the seller of the asset becomes the lessee and the purchaser becomes the lessor in this arrangement. A leaseback arrangement is useful when companies need to un-tie the cash invested in an asset for other investments, but the asset is still needed in order to operate. Leaseback deals can also provide the seller with additional tax deductions. The lessor benefits in that they will receive stable payments for a specified period of time.

One of the main benefits of the leaseback is that the arrangement can provide an influx of cash that a business may need for a specific purpose. By selling the asset, the funds from that sale can be directed toward the launch of a new product line, building a new facility, or some other project that is anticipated to benefit the business in some manner. Since the terms of the arrangement allow the seller to retain possession of the asset and use it in the course of business, the day to day operation remains the same, even as the cash from the sale makes it possible to pursue the new project.

There are a few additional benefits to the leaseback, in that the sold asset is no longer subject to taxes. This can have a beneficial impact on the tax burden carried by the seller, in that local and federal taxes may be reduced significantly. Those savings only add to the revenue that the company can use in other areas, increasing its chances for success. Along with tax savings, the terms of the leaseback may also help to minimize maintenance costs. Assuming that the new owner takes on the responsibility for upkeep on the asset involved, this means that in the event of a breakdown, the owner not the user must

cover the costs of repair. As with the tax breaks, this arrangement means even more money remains within the lessee's company and can be used for whatever purposes the company owners choose.

While there are a number of benefits to a leaseback, there are also potential drawbacks to consider. The new owner may be unwilling to renew the lease after the initial contract expires, or even entertain the possibility of selling the asset back to the original owner. Even if the lessor is open to the idea of renewing the lease, he or she may choose to increase the amount of the installment payments in the renewed agreement. If the asset used as part of the leaseback is essential to the operation of the lessee's business, then there may be no choice but to agree to the higher payments, a move that reduces the net profits for the operation.

Build, Operate, Transfer/ Build, Own, Operate/ Build, Transfer, Operate Models

Build, Operate Transfer (BOT) and similar variations is a major startup business venture where private organizations undertake development and operation of a facility normally done by the government. The termination of the private sector involvement occurs at the return of the ownership of the facility to the government after a fixed concession period, usually 25 to 40 years

In the BOT approach, a private party or concessionaire retains a concession for a fixed period from a public party, called principal (client), for the development and operation of a public facility. The development consists of the financing, design and construction of the facility, managing and maintaining the facility adequately, and making it sufficiently profitable. The concessionaire secures return of investment by operating the facility and, during the concession period, the concessionaire acts as owner. At the end of the concession period, the concessionaire transfers the ownership of the facility free of liens to the principal at no cost.

AIRPORT/ANSP INFRASTRUCTURE FINANCING SCHEMES

Non-aeronautical revenues

Revenues from non-aeronautical activities have been used in varying degrees in recent years, more so in the airport domain to offset aeronautical costs. To date, ANSPs have been slower to identify opportunities for non-aeronautical revenues. There are some ANSPs that have recovered costs through sales of publications (including aero-nautical publications) while other ANSPs have identified operational training as a source of additional revenue. Generally, airports have been faster to adopt non-aeronautical revenues compared with ANSPs.

The information below summarizes some of the non-aeronautical sources of revenue used by airports:

Airport parking revenues: Parking has long been a revenue source for airport operators and further opportunities exist to enhance parking revenues by offering premium parking services, implementing parking operational enhancements, and collecting off-airport privilege fees.

Rental car revenues: In addition to privilege fees and rentals, a Customer Facility Charge (CFC) is collected at some airports by each rental car concessionaire from its customers and used to pay all or a

portion of the operating and capital costs of a consolidated rental car area or structured facility, and may include the cost of transportation to the terminals. For example, Albuquerque International Sunport imposed a CFC to finance the cost of a new consolidated rental car facility at the airport.

Terminal concessions: Airport shoppers are recognized as a lucrative market, and airport retailing is evolving to meet that market. Concession sales have increased dramatically as airlines discontinue meal service and passengers arrive earlier. Airport operators have been able to maximize revenues through reinventing their terminal concessions programs by recognizing the customer, creating an inviting shopping experience, providing an accommodating dining opportunity, and branding. For example, Memphis International Airport's new concession program balances local favorites with major brands and provides guests with a sense of the city.

Advertising programs: With longer dwell times, airport customers now take the time to read advertisements. Modern airport advertising programs specialize in the sales and maintenance of advertising sites at airports by using technology, sponsorship opportunities, and nontraditional advertising locations.

Commercial development and land use: Airport operators have generated revenue from a variety of revenue-producing leases from nonairline operations including manufacturing, warehousing, freight forwarding, and even farming on available airport land. Commercial development and land use has been done through coordinated planning efforts and mindful of FAA restrictions on land development. For example, Dallas/Fort Worth International Airport is in the process of developing natural gas and oil resources on airport land.

Other Forms of Airport Financing

Commercial Paper: Commercial paper is a money market security that is generally not used to finance long-term investments, but rather to manage cash flow. It is commonly bought by money funds, and is generally regarded as a very safe investment. As a relatively low-risk option, commercial paper interest rates are low. Commercial paper can only be "out" for 270 days, but can be "taken out" with more commercial paper and ultimately is taken out typically with bond proceeds.

Commercial paper is used on a routine basis at some airports, particularly large airports and airports that operate independently as authorities, but is much more difficult at some airports, particularly those that operate as enterprise funds of a city, county, or state that have centralized financial management. Airport operators that routinely use commercial paper to manage cash flow include the operators of airports in Boston, Seattle, and San Francisco.

Bond Anticipation Notes (BANs): BANs are short-term financing mechanisms that provide capital in advance of issuing long-term bonds. Various airports around the country have issued BANs, although commercial paper may be a more cost-effective way of managing cash flow for some airports.

Grant Anticipation Notes (GANs): GANs are short-term financing mechanisms that provide capital in advance of receiving expected grants.

Pooled Credit: Pooled credit is attractive for airport operators that have difficulty accessing the credit markets; however, few airport operators are actually in that situation, as most at a minimum can work with the city, county, or state that is the airport sponsor to issue GO debt. There are several examples of pooled credit for airports.

Capital Leases: Leasing capital equipment or facilities may also facilitate acquisition for airports that do not have adequate funding up front or cannot get the necessary approvals to issue bonds.

AIRLINE/AIRCRAFT OWNER FINANCING SCHEMES

Airlines typically use one, or a combination, of the following techniques to pay for their fleet:

Cash: It is still the cheapest way to finance aircraft but only an option for profitable airlines (like Southwest) or state-owned ones with rich owners. Even then, the cash can usually be used for better purposes.

The other problem with financing all of the fleet with cash, is that during the downturn, when you need to release the cash, financing terms are much worse.

Bank loans: Banks lend money to airlines with the loan guaranteed by the aircraft. The bank can repossess the aircraft if the airline stops paying its loan. Banks need to manage their risk so they often sell part of loans on to other banks. This is known as syndicating a loan. Loans are usually 12 years long. A finance lease is similar to loans, except the bank then buys the aircraft from the airline (another sale/leaseback). The airline then makes monthly lease payments and at the end of the lease it owns the aircraft. Finance leasing is just like hire purchase. Banks typically lend 85% of the aircraft's value with airlines paying 15% in cash. This 15% is known as equity.

Export credit loans: Aircraft manufacturing can be an important economic generator for a State; thus governments support their manufacturers by guaranteeing loans for aircraft exports. Kazakhstan Airlines, for example, may want to buy Boeing aircraft. Few banks, however, would be prepared to lend money to the airline as it does not make large profits and the country is viewed as risky. So the Export-Import Bank of the United States (Ex-Im Bank) may guarantee the loan. A bank will lend the money to Kazakhstan Airlines but if the airline stops paying, Ex-Im Bank will cover the bank's losses. Airbus aircraft are made in France, Germany and the UK so each government covers the proportion made in their country. The French export credit agency is as Coface, the German agency is called Hermes and the UK has the Export Credits Guarantee Department or ECGD. Export Development Canada handles bombardier loans and BNDES guaranteed Embraer exports. Export credit loans cover 85% of the aircraft's value. This type of finance is extremely important during a downturn when many banks stop lending.

Tax leases: Governments may encourage companies to improve efficiency through the modernization of the equipment with tax breaks, usually done depreciation allowances. The problem is airlines rarely make enough profits to benefit from these allowances. So airlines pass these benefits off to companies

or individuals that have large tax bills by selling the aircraft and leasing them back. In France and Spain only banks are eligible to buy aircraft. In Japan and US companies often take stakes.

Manufacturer support: While it is not widely fostered by manufacturers, some manufacturers lease aircraft on finance or operating lease, or guaranteeing the aircraft's value at the end of a lease or loan (this is known as a residual value guarantee). The easiest way to provide a residual value guarantee is to agree a price that the manufacturer will pay for the aircraft at the end of the loan.

ATM System suppliers (often also Aircraft manufacturers) have an interest in the development of modern ATM Systems from both an equipment sales as well as capacity increase point of view. The Financing in this area result in cost of capital over the period and need to be recovered by product sales profit. Where Manufacturers or suppliers are provided with the specification of products, which would have, assured markets and guaranteed procurements they should be interested in the financing of implementation, which would ensure the procurement of such orders. ATM Master Plan would meet many of the requirements that Suppliers are looking for-clear specifications, assured markets (including inter-operability), large procurements. Therefore, they should be willing to finance some of the projects either through discounted pricing or participating in PPI initiatives. Avionics is a good example for such financing.

Enhanced Equipment Trust Certificates (EETCs): These are bonds that airlines issue to pay for aircraft. The airline sets up a special purpose company or SPV (it's only purpose or business is to own the aircraft) that issues bonds to investors. The SPV then uses the cash from these bonds to buy aircraft through a sale/leaseback.

The airline then makes lease payments to the SPV and the SPV passes these on to the investors as bond interest.