

APRC Policy Discussion Paper No.1

**Financing Options for the Third Runway
in Hong Kong**

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1 Financing Plan of Hong Kong Chek Lap Kok Airport

The Governor, Sir David Wilson, announced in his 1989 Policy Address that Hong Kong Government would build a new airport in Chek Lap Kok since Kai Tak Airport was very close to full capacity. However, the Chinese Government worried that the British would spend all the reserves in Hong Kong Government before the Handover in 1997. Hence, two Governments negotiated for the financing of Hong Kong's new airport. Eventually, a Memorandum ("Memorandum of Understanding Concerning the Construction of the New Airport in Hong Kong and Related Questions") was signed in June 1991.

In June 1995, the Airport Committee of the Sino-British Joint Liaison Group agreed on the terms of financial arrangement for Hong Kong Airport Authority (HKAA) and Mass Transit Railway Corporation (MTRC). In Appendix One of this Agreement, Article 2 and 3 stated that the amount of equity injection was HK\$36,648 million and the maximum amount of debt for first phase of the Airport Project¹ before the completion day was HK\$11,600 million.

Indeed, the Legislative Council of Hong Kong had approved 8 commitments to the Provisional Airport Authority (PAA) since early 1990s and the total amount was HK\$36,648 million as of 27 January 1995. As for loans, PAA announced that "it had an underwriting agreement with 11 leading banks for the arrangement of HK\$8.2 billion of syndicated loan facility" in November 1995. (PAA 1995)

As major construction works were finished in 1998, HKAA started to pay dividends to Hong Kong Government since 2004. Hong Kong Government has received 11 payments of dividends and the total amount was up to HK\$29,680 million so far. If we include the repayment of share capital of about HK\$6 billion to the Government in 2004, HKAA had repaid a total of HK\$35,680 million to Hong Kong Government.

¹ First phase development works (Chak Lap Kok Airport) included "design, construction and commission of the works and facilities so as to enable the airport to commence operation for commercial air traffic for both passengers and air cargo." (HKAA annual report 2000-01)

2 Initial Financing Plan for HKIA's Third Runway

Hong Kong International Airport (HKIA) was operational in 1998. The airport has experienced high growth rates in air passenger traffic and aircraft movements during the past 10 years.² When *HKIA Master Plan 2030 (Master Plan)* was published in 2011, HKIA was expecting to attain its full capacity towards 2020. In the Master Plan, HKAA stated that the practical maximum capacity of the two-runway system was an annual movement of 420,000. HKAA predicted that the practical maximum capacity would be reached sometime between 2019 and 2022.

2.1 Estimated Construction Costs and Cash flow for the Third Runway

According to the *Master Plan*, the constructions costs of the Third Runway and other associated facilities would be HK\$86.2 billion in 2010 dollars or HK\$136.2 billion at money-of-the-day prices. This has assumed an increase in the construction cost tender price index of 5% per annum in 2011-2014, 5.5% per annum in 2015-2020 and 3% per annum thereafter.

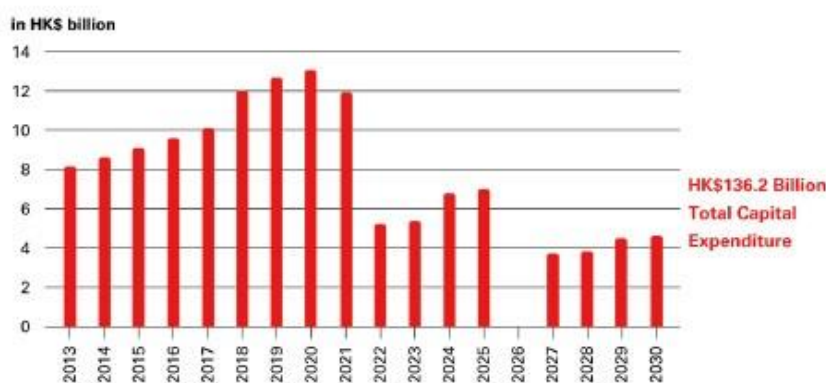
² According to Civil Aviation Department, the passenger traffic of HKIA in 2001 and 2013 was 32,026,944 and 59,273,527 respectively. For movement of aircraft, the values were 196,817 (2001) and 372,080 (2013) respectively. (CAD webpage 2014)

Figure 2.1 Cost Estimates and Annual Capital Expenditure of Third Runway Project

HK\$ Billion (2010 dollars)	Phase 1 (By 2015)	Phase 2 (By 2020)	Phase 3 (By 2025)	Phase 4 (By 2030)	Total (Phase 2-4)
Construction Cost	-	50.2	10.1	6.0	66.3
Design & Project Management	-	5.0	1.0	0.6	6.6
Contingency	-	10.1	2.0	1.2	13.3
Preliminary Total Cost Estimates	9.3*	65.3	13.1	7.8	86.2

Note: *The cost estimate of HK\$9.3 billion is in MOD prices.

Figure 7.11 : Option 2 – Annual Capital Expenditure

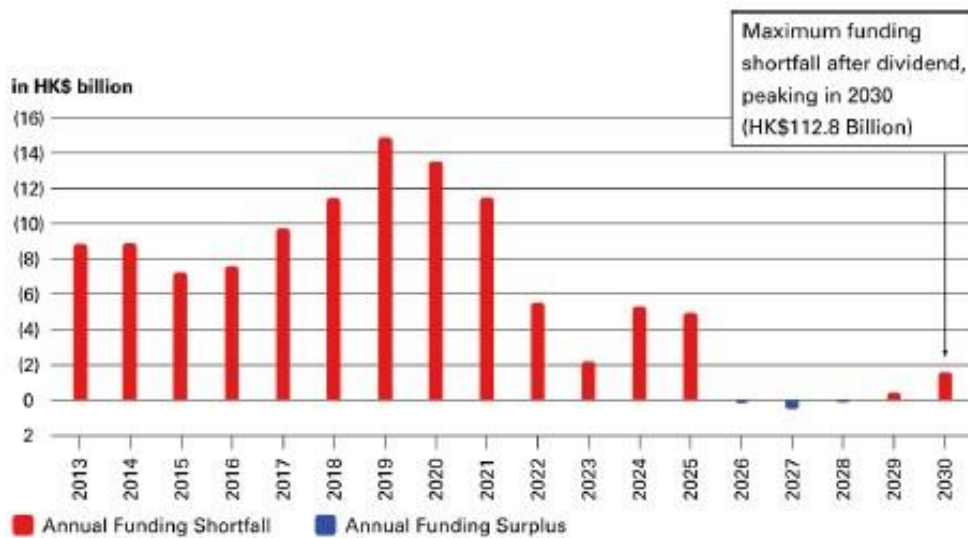


Source: HKAA (2011)

The financial consultant for the *Master Plan* has forecasted the revenue and operating costs for HKAA. The net cash flow generated from the operation represents the profits, plus depreciation charges and changes in working capital less capital expenditure on committed capital projects and dividends to HKAA's shareholders. If HKAA still pays out 80% of profits as dividends from 2013 to 2030, the net cash flow after dividend would amount to HK\$23.4 billion.

There would be a funding shortfall for most of the years between 2013 and 2030 if comparing the cash outflow required for the capital expenditure of the Third Runway.

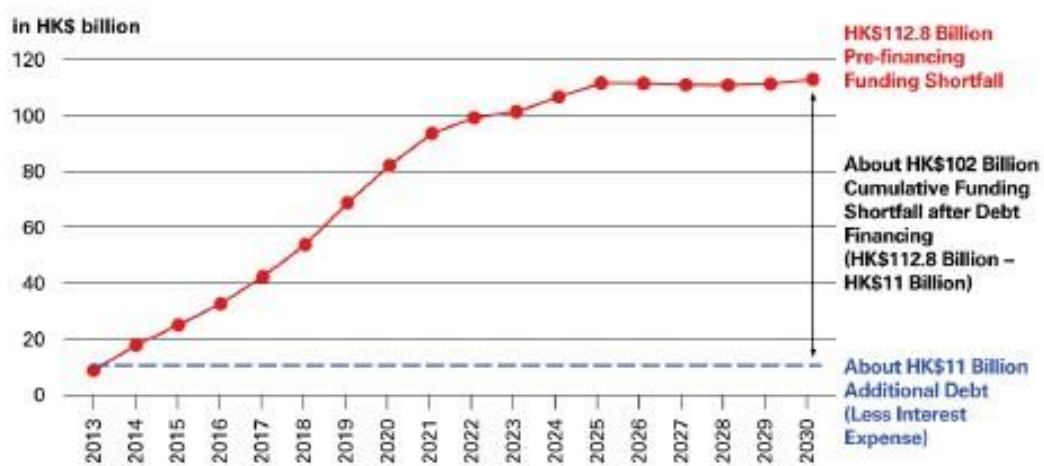
Figure 2.2 Annual Funding Shortfall / Surplus under Third Runway Project from 2013 to 2030



Source: HKAA (2011)

Even if HKAA could finance by debts and there will be a net incremental cash flow from borrowings (approximately HK\$11 billion), the cumulative funding shortfall would be HK\$102 billion from 2013 to 2030.

Figure 2.3 Cumulative Funding Shortfall after Debt Financing of Third Runway Project from 2013 to 2030



Source: HKAA (2011)

2.2 Possible Funding Options

According to the analysis above, HKAA could not finance the construction by internal cash flows and external prudent borrowing capacity. Thus, HKAA proposed other options for the funding.

- (i) User-Pay Principle: HKAA may set up and determine amount of charges and fees to the users of the facilities and services provided.
- (ii) Equity funding from private sector: A partial sale of HKIA could gain private sector equity capital but this will involve many issues such as diluting HKSAR Government's interest in HKIA.
- (iii) Alternative financing instruments: such as debts catering to demands from specific funding sources, hybrid capital and convertible debts, structured debts in the form of perpetual bonds etc.
- (iv) Government's funding support: the government could inject additional equity, a reduction in the rate of dividend payout³, provision of shareholder's loans, guarantees to third party lenders.

³ In the Technical Report of Master Plan, HKAA reveals that "About 80% of profits have been distributed as dividend in past years and the same level of distributions is assumed in the projections." This is an assumption made in the cashflow analysis. (HKAA 2011)

3 Airport Financing and ICAO's Recommendations

As the global air traffic growth is high, the capacity of existing aviation facilities is close to full in some regions. Therefore, governments and authorities announced plans for building extra runways or terminals for public consultations.⁴ However, there are many challenges that the society is going to deal with, such as economic regulation, planning rules and financing difficulties. These expansion plans can be very expensive. For example, the Osaka Kansai International Airport was originally projected to cost 1 trillion yen, or about US\$7.7 billion in mid-1990s. However, the final cost was 40% more than the original estimate. The construction costs could be so high that the authority may be forced to charge higher prices for airport services in order to recover the costs. (Dempsey 2000)

In Worldwide Air Transport Conference 6th Meeting (2013), Airports Council International reminded that, “The nature of investment in airport infrastructure is such that capacity is added in large increments, and this combined with long planning lead in times means that airports are exposed to considerable risk when undertaking capacity expansion projects.” (ICAO 2013d)

As airports are the basic facilities in the aviation industry, ICAO has published a document (*Airport Economics Manual*, *Manual* afterwards) providing guidelines for airport financing. In Chapter 6 of the *Manual*, it states that the authorities should identify “possible sources for financing the project” and “potential airport revenue sources subsequently required to meet debt-servicing obligations for which the airport would be responsible” in the financing plan (of airport infrastructure). (ICAO 2013a) If the project involves the use of debt financing, “economists and financial advisers can work with the airport to determine the ability of the airport to repay loan obligations.” (ICAO 2013a) This ability of repaying debts depends on a large extent on the airport’s revenue-generating capacity. However, if airports cannot recover the total costs and

⁴ ICAO published a medium term forecast of air passenger traffic in 2012. For example, the passenger growth in Middle East is forecasted as 10.2%, 11.2% and 10.8% for 2013, 2014 and 2015 respectively. Hence, Dubai Airport declared to boost its capacity from 60 million to 90 million passengers per year by 2018. (ICAO 2012, Dubai Airport 2014: <http://www.dubaiairport.com/en/media-centre/facts-figures/pages/factsheets-reports-statistics.aspx?id=14>)

generate enough revenues, the government concerned might take the responsibility to repay the debts.

Table 3.1 summarises the common sources of financing for airport facilities mentioned by ICAO in the document. Some other sources could also be considered, including “build, operate and transfer” arrangement and leasing. In *Doc 9082 Policies on Charges for Airports and Air Navigation Services*, ICAO states out a general principle as “It is desirable, where an airport is provided for international use, that the users shall ultimately bear their full and fair share of the cost of providing the airport.” (ICAO 2009)

**Table 3.1 Common Sources of Financing for Airport Facilities Projects
Suggested by ICAO**

Financing	Sources
Government funding	Government (national, more than one foreign government, international governmental institutions), government-owned or sponsored financial institutions (including development or export-promoting agencies)
Retained earnings	Revenues generated by operation of airports
Commercial loans	Autonomous entities secure their own financing by finding these sources in private business sector
Bonds and share capital	
Pre-funding of capital projects through airport charges	Include a surcharge on existing aviation charges or the introduction of a new, but project-specific, aviation charge. Or employ a mixed pre-funding strategy whereby new charges could be levied on different users of the airport.

Source: ICAO (2013a)

Pre-funding refers to “partial or complete financing of an airport or air navigation facility project through charges levied on users prior to completion of the facility concerned.” (ICAO 2009) Pre-funding⁵ of projects could be allowed in specific circumstances, “...where this is the most appropriate means of financing long-term, large-scale investment, provided that strict safeguards are in place.” (Para.32, ICAO 2009)

⁵ Pre-financing (the word used by IATA, which is “pre-funding “ in ICAO) is the user charges of airlines or/and air passengers for the facilities that are not yet in use. (IATA 2014, <https://www.iata.org/policy/Documents/pre-financing.pdf>)

4 The User-Pay Principle--Distinction between Airport Charge and Airport Tax

Among the financing options, they are all familiar with the policy makers and the general public, except the “User-Pay Principle”. This principle has not been explicitly explained and adopted in many of the financing arrangements of infrastructural projects in Hong Kong. As this is likely to be one of the important elements considered in the Third Runway financing, we attempt to provide a detailed exposition on the subject.

According to ICAO (2000): *ICAO’s Policies on Taxation in the Field of International Air Transport (Doc 8632)*, there are many taxes levied on aviation industry such as taxation of fuel, lubricants and other consumable technical supplies, taxation of income and aircraft of international air transport enterprises and taxes related to the sale or use of international air transport. ICAO pointed out that some European States had introduced taxes on air passengers under various names, such as “air passenger duty”, “air transport tax” etc. It is worthy of our attention to distinguish the differences between “(user) charge” and “tax”. In ICAO’s working paper of 2013, “...a charge is a levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation, and a tax is a levy that is designed to raise national or local government revenues, which are generally not applied to civil aviation in their entirety or on a cost-specific basis.” (ICAO 2013c)

If we refer to the supplement of ICAO’s *Policies on Taxation in the Field of International Air Transport*, some developed countries such as Canada, the United States, the United Kingdom have imposed air passenger taxes and charges for different purposes. So even though countries would charge extra payment from air passengers, they may not be classified as “tax” at all. ICAO recommends that taxes and surcharges (under ICAO’s definition) should be distinguished clearly.

For the cases given here: Hong Kong, China, the United States, their taxes and charges levied have been recorded by ICAO. They have to ensure these taxes and surcharges are complied with the principles recommended by ICAO. The sections below will briefly introduce these taxes and charges for Hong Kong, China and the United States for reference.

4.1 Air Passenger Departure Tax and HKIA's "Charging Scheme" in Hong Kong

Hong Kong Government started to impose Air Passenger Departure Tax (APDT) in 1983 in accordance with *Air Passenger Departure Tax Ordinance*. Air passengers aged 12 or above who intend to depart from HK by aircraft at the airport (HK International Airport and Hong Kong—Macau Ferry Terminal) have to pay an APDT before embarking on the aircraft for departure. Currently, air passengers aged 12 or above who intend to depart from HK by aircraft have to pay HK\$120 per head when they buy air tickets from the airlines, travel agents or helicopter companies. (CAD 2014)

The revisions of air passenger departure tax were quite frequent. When this tax was imposed in 1983, the amount charged was \$100 for adults and \$50 for children. It aimed at increasing Government's revenue as there was a potential deficit in fiscal year of 1983-1984. In a Legislative Council meeting on 15 May 1991, passengers aged 12 or below (i.e. children) were exempted to pay the departure tax. In the past, the historical high amount was \$150 per adult passenger in 1991.

In Table 4.1, it shows the number of APDT taxpayers, number of air departure passengers, actual revenue from air passenger departure tax and proportion of taxpayers in air departure passengers from 2001 to 2013. As the number of air departure passengers increased, the number of taxpayers increased as well (except 2003 and 2009). However, the proportion of taxpayers in air departure passengers has been decreasing from 66.8% in 2001 to 61.6% in 2013. As there was an increase of APDT in January 2004, the actual revenue jumped from HK\$705 million in 2003 to HK\$1,277.9 million in 2004. The increase in actual revenue generated from APDT was very substantial and the percentage increase for this period was 275%; while the percentage increase in APDT taxpayers was just about 72%. The total revenue for 2013 was HK\$ 2.2 billion.

The air passenger tax in Hong Kong is a tax on passengers that the receipt is part of the fiscal revenue of the Hong Kong government. According to the Airport Authority Ordinance (Chapter 483), HKAA is authorized to initiate a charging scheme for the construction of airport facilities. The scheme is required to submit to the Chief Executive in Council for approval. Currently, HKAA is charging air carriers for a

terminal building charge at HK\$23 for each departing passenger on the aircraft and who is not a transit passenger. This terminal building charge on passengers, collected through airlines, is a user charge. However, the transparency of the policy is somewhat doubtful.

Table 4.1 Number and Proportion of APDT Taxpayers, Actual Revenue Generated from APDT from 2001 to 2013

Year	# of Taxpayers	# of Air Departure Passengers	Actual Revenue from APDT (HK\$, m)	Proportion of Taxpayers in Air Departure Passengers
2001	10,685,322	15,999,264	585	66.8%
2002	11,009,052	16,679,320	877.7	66.0%
2003	8,847,348	13,333,042	705 ^	66.4%
2004	11,124,937	18,003,491	1,277.9 §	61.8%
2005	11,837,786	19,808,828	1,411.3	59.8%
2006	12,666,982	21,546,922	1,509.8	58.8%
2007	13,700,372	23,126,341	1,634.2	59.2%
2008	13,810,714	23,605,099	1,658.6	58.5%
2009	13,230,399	22,550,536	1,586.1	58.7%
2010	14,955,156	24,988,002	1,786.5	59.9%
2011	15,898,248	26,490,789	1,902.6	60.0%
2012	16,909,115	27,961,568	2,011.5	60.5%
2013	18,341,663	29,787,247	2,195.5	61.6%

Source: Budget (various years): Estimates, Head 28 Civil Aviation Department and CAD webpage (2014). The last column is compiled by APRC.

Note from Budget: ^The decreases in the number of taxpayers and amount of APDT collected in 2003 were due to the impact of the outbreak of SARS on the aviation industry. (Budget 2004-05)

§ The estimated increase in the amount of APDT to be collected in 2004 takes into account the revision of APDT from \$80 to \$120 with effect from 9 January 2004. (Budget 2004-05, the figures here are referring to actual revenue.)

4.2 Civil Aviation Development Fund in China

In March 2012, Ministry of Finance in China issued a notice about Civil Aviation Development Fund (《民航發展基金徵收使用管理暫行辦法》). The *Notice* sets out the objectives, level of charging and conditions about the surcharge on air passengers. According to this *Notice*, it aims at “facilitating the development of aviation industry” and the Civil Aviation Development Fund would replace the management and construction fees of civil aviation airports (民航機場管理建設費) and the construction fund of civil aviation facilities (民航基礎設施建設基金). (PRC Ministry of Finance 2012)

According to the *Notice*, domestic air passengers have to pay RMB 50 per movement, while international air passengers have to pay RMB 90 per movement (including RMB 20 for Tourism Development Fund).⁶ Air carriers also have to pay for Civil Aviation Development Fund according to the maximum take-off weight of aircrafts, flying distances and routes. The following Table 4.2 is extracted from the *Notice* for information of aircraft charges.

Table 4.2 Level of Charging of China Civil Aviation Development Fund for Aircrafts (Unit: RMB per km)

Maximum Take-off Weight Route Category	Category 1	Category 2	Category 3
≤ 50 tons	1.15	0.90	0.75
50 – 100 tons (including)	2.30	1.85	1.45
100 – 200 tons (including)	3.45	2.75	2.20
> 200 tons	4.60	3.65	2.90

Source: PRC Ministry of Finance (2012)

Note:

⁶ According to ICAO Supplement, “Each departing passenger on an international or regional flight pays RMB70 as Civil Aviation Development Fund.” (ICAO 2013b)

Routes in Category 1: Routes from Mainland to HK / Macau / Taiwan, routes within 16 Eastern and Central provinces and direct-controlled municipalities

Routes in Category 2: Routes within 16 Eastern and Central provinces and direct-controlled municipalities; routes within 15 autonomous provinces in West and Northeast and direct-controlled municipalities; domestic segment for international flights, routes flying over airspace of Mainland and flights with beyond rights (串飛) from Mainland to HK / Macau / Taiwan

Routes in Category 3: Routes within 15 autonomous provinces in West and Northeast and direct-controlled municipalities

Air carriers or agents will collect the surcharges from passengers then they will emit the surcharges to the Clearing Centre set up by Civil Aviation Administration of China (CAAC) (which is authorized by Ministry of Finance). The fund collected in Central Government will be spent in the development of aviation facilities (e.g. construction of terminals, aviation safety), subsidizing air cargo, regional airlines and others, etc.

There are two levels of fund usage: central and local. CAAC will prepare a budget for Civil Aviation Development Fund for funding of central level and the budget will be sent to Ministry of Finance. CAAC could spend the fund in accordance the budget once the budget is approved by Ministry of Finance. For local funds, CAAC could transfer the funds to local governments with confirmation of Ministry of Finance. (財政部 2012)

4.3 Aviation Taxes and Charges in the US

There are various taxes and surcharges for air passengers in the United States. Table 4.3 shows the taxes and surcharges that an air passenger has to pay (due to different circumstances) on top of passenger facility charges.

Table 4.3 Examples of Taxes and Surcharges on Air Tickets in US in January 2014 (Excluding Passenger Facility Charges)

Imposed by	Aviation Taxes / Surcharges	Current Tax Rate
Airport and Airway Trust Fund (Federal Aviation Administration)	Domestic passenger ticket tax	7.5% of ticket price
	Domestic flight segment tax	US\$4.00 per passenger per segment during calendar year 2014
	Passenger ticket tax for rural airports	7.5% of ticket price (same as passenger ticket tax) Flight segment fee does not apply.
	International arrival and departure tax	US\$17.50 in calendar year 2014
	Flights between continental U.S. and Alaska or Hawaii	US\$8.70 international facilities tax + applicable domestic tax rate (during calendar year 2014)
	Frequent flyer tax	7.5% of value of miles
Department of Homeland Security and others	September 11 security fee	US\$2.50 per passenger enplanement, imposed on not more than two enplanements per one-way trip.
	Agricultural Quarantine Inspection (AQI) user fees	US\$5.00 per passenger
	Customs user fees	US\$5.50
	Immigration user fees	US\$7.00

Source: FAA, Department of Homeland Security and Airlines for America (2014)

However, these taxes and surcharges may not contribute to the construction costs of airport facilities directly. The following sub-sections are going to introduce passenger facility charges (PFCs) which aims at financing airport development.

The PFC programme authorises the Federal Aviation Administration (FAA) to allow airports to impose fees on passengers to finance airport development projects and

planning. A public agency⁷ which controls a commercial service airport may be granted the authority by the FAA to impose PFCs. Also, the proposed project should be justified in terms of preserving or enhancing capacity, safety or security, reducing noise, or furnishing opportunities for enhanced competition.

PFC revenues can also be used on a pay-as-you-go basis or leveraged to support the issuance of PFC-backed bonds. But the issuance of these bonds would be subject to FAA's approval as the pledge is PFC revenues. On the whole, the PFC programme must be administered uniformly throughout the country with regards to procedures and requirements by FAA. (FAA 2001, FAA 2009) As of 1 May 2014, the FAA has approved 388 locations for collection of PFCs, approved or partially approved 2,110 applications and disapproved 5 applications. The amount of total approved collections⁸ was approximately US\$88.3 billion. (FAA 2014)

The PFC could be imposed at a level of US\$1, US\$2, US\$3, US\$4 and US\$4.50 per enplaned revenue passenger. Many US airports have imposed various levels of PFCs and lengths of durations. As of 1 May 2014, there are 358 airports collecting PFCs in the country. The duration of PFCs in airports varies a lot, ranging from 10 months to 50 years. For most of the time, the airports levied PFCs usually charged at US\$3 and US\$4.50. Table 4.4 is showing the current charges of top 10 US airports (by air traffic in 2013). Most of the airports on the list are charging at US\$4.50 (which is the maximum amount of PFC allowed by the FAA) at their current duration of imposing the PFCs. Revenue of PFC, including any interest earned after such revenue, may be used only to finance the allowable costs of approved projects at any airport the public agency controls. Also, debt financing of airport expansion could be backed by a pledge of this PFC revenue.

⁷ Public agency means "State or any agency of one or more States; a municipality or other political subdivision of a State; an authority created by Federal, State, or local law; a tax-supported organization; an Indian tribe or pueblo that controls a commercial service airport; or for the purposes of [the PFC regulation], a private sponsor of an airport approved to participate in the Pilot Program on Private Ownership of Airports." (FAA 2001)

⁸ It is the maximum value of PFC collection that the FAA approves for public agents to collect. For the value exceeding the value determined by the FAA, public agents have to apply to FAA again for adjustment. "More specifically, when the FAA approves a request to levy the PFC, it designates the total amount an airport may collect, including principal and interest, and what projects those funds may finance." (City and County of Denver 2011)

Table 4.4 Current Level of Passenger Facility Charges in Top 10 United States Airports (April 2014)

Airport Name	PFC Level (US\$)	Duration	Start Date	Estimated Expiry Date	2013 Passenger traffic
Hartsfield-Jackson Atlanta International (ATL)	4.5	15y 4m	1/10/2008	1/2/2024	94,430,785
Chicago O'Hare International (ORD)	4.5	32y 10m	1/2/2006	1/12/2038	66,883,271
Los Angeles International (LAX)	4.5	13y 3m	1/12/2005	1/3/2019	66,702,252
	3	3m	1/3/2019	1/6/2019	
Dallas/Ft Worth International (DFW)	4.5	14y 8m	1/7/2002	1/3/2017	60,436,266
	3	2m	1/3/2017	1/5/2017	
	4.5	17y 4m	1/5/2017	1/9/2034	
Denver International (DEN)	4.5	25y 9m	1/4/2001	1/1/2026	52,556,359
	4.5	3y 1m	1/1/2026	1/2/2029	
John F. Kennedy International (JFK)	4.5	7y 4m	1/7/2011	1/11/2018	50,413,204
San Francisco International (SFO)	4.5	21y 8m	1/10/2001	1/6/2023	44,944,201
Charlotte/Douglas International (CLT)	3	18y 9m	1/11/2004	1/8/2023	43,456,310
McCarran International (LAS)	4.5	45y 1m	1/10/2008	1/11/2053	41,856,787
Miami International (MIA)	4.5	34y 7m	1/3/2003	1/10/2037	40,563,071

Source: FAA PFC Monthly Report (April 2014) and ACI (2014)

Note: "y" means "year", "m" means "month" in the column of "Duration".

5 International Examples of Airport Financing

In the following, we explore the funding arrangement of Chicago O'Hare International Airport and London Heathrow Airport. They proposed a mix of financing sources to expand their existing capacity. As owners of these airports are the local government⁹ and private funding respectively¹⁰, they have taken two different approaches to fund their airport development.

5.1 Chicago O'Hare International Airport

The O'Hare Modernization Programme (OMP) was announced by the City of Chicago (the City afterwards) in 2001. It aimed at expanding the airport capacity by building new runways, relocating some runways and constructing new air traffic-related facilities. The total cost was estimated to be US\$15 billion so it would be challenging for the city to finance this project. As the project was enormous, there were 2 phases of expansion as Phase 1 and Completion Phase respectively. The City had used a mix of sources such as (i) Airport Improvement Program¹¹ granted by FAA, (ii) Passenger Facility Charges (PFC), (iii) General Airport Revenue Bonds (GARBs) and (iv) other revenue bonds that are secured by special sources of airport income. The following sections are going to describe what financing sources the City had used in the expansion plan.

In February 2005, the City had submitted a request for Letter of Intent to FAA for a multi-year commitment of AIP funding for Phase 1 of OMP at Chicago O'Hare International Airport. The City requested for "...US\$300 million in AIP discretionary

⁹ Chicago O'Hare International Airport is publicly owned by the City of Chicago as of 29 May 2014. (FAA 2014)

¹⁰ Heathrow Airport Holdings Limited is in turn owned by FGP Topco Limited, a consortium owned and led by the infrastructure specialist Ferrovial S.A. (25.00%), Qatar Holding LLC (20.00%), Caisse de dépôt et placement du Québec (13.29%), the Government of Singapore Investment Corporation (11.88%), Alinda Capital Partners (11.18%), China Investment Corporation (10.00%) and Universities Superannuation Scheme (USS) (8.65%). (Heathrow webpage 2014)

¹¹ Airport Improvement Programme provides grants to public agencies — and, in some cases, to private owners and entities -- for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS). (FAA 2014)

grants over a 10-year period with the city committing \$55.8 million of its entitlement grants to the implementation of OMP Phase 1.” In the request, it states out the funding sources clearly: Federal grants-in-aid under the AIP, PFCs and GARBs. The estimated costs of OMP Phase 1 Airfield Projects were approximately US\$2.9 billion.¹² (FAA 2005a) The City estimated that approximately 88% of funding for OMP Phase 1 Airfield Projects was from local funds. The remaining 12% would be AIP entitlements and discretionary grants. In November 2005, the FAA issued an analysis of OMP to City of Chicago and confirmed that the City was eligible to receive US\$300 million in AIP discretionary funds and US\$37.2 million in entitlement funds over a 15-year period. (FAA 2005b)

Mayor of City of Chicago submitted another Request for Letter of Intent with detailed information about OMP to the FAA in March 2009 for an additional US\$500 million in AIP discretionary funds. (FAA 2009a) Additionally, the City had submitted several PFC applications to the FAA, for payment of allowable costs of projects approved by the FAA for PFC funding, Some projects were financed or re-financed by the issuance of 2001 / 2008 / 2010 and 2011 PFC bonds and debt service on 2001 / 2008 / 2010 and 2010 PFC bonds. The following Table 5.1 summarises the PFC application made by the City.

¹² Of which the Letter of Intent Projects defined as runway design, construction and decommissioning projects represent approximately US\$ 2.0 billion. (FAA 2005a)

Table 5.1 PFC Applications Made by the City of Chicago for OMP

Date	Application from the City	Decision Made by the FAA
August 2006	To impose and use PFCs to fund US\$510.7 million of runway construction projects included in OMP Phase 1	Approved
September 2008	To impose a PFC and use PFC revenues to fund design for OMP Completion Phase runway projects and a Western Terminal Area planning study	Approved US\$177.5 million for runway design and US\$4.2 million for planning
September 2009	To impose a PFC and use PFC revenues to fund the remaining residential sound insulation programme for OMP	Approved an amount of US\$130.4 million in sound insulation costs
February 2010	To amend the August 2006 PFC impose and authority application for OMP Phase 1 runway construction upwards by approximately US\$66.5 million of capital costs	Approved, the capital projects approved in this amendment were funded through the Series PFC Bonds
July 2010	To impose a PFC and use PFC revenues to fund construction the OMP Completion Phase runway projects	Approved US\$700.4 million of PFC revenues

Source: City of Chicago (2011)

As of March 2011, the City has the authority to impose a funding for O'Hare Airport up to an aggregate total of US\$6.39 billion in PFCs. The FAA estimated that the PFC collection expiration date would be 1 January 2038. (City of Chicago 2011)

5.2 London Heathrow Airport

London Heathrow Airport is the main hub airport in United Kingdom. It has been developing over the past few decades since its opening in 1946. BAA Heathrow (BAA afterwards, same as Heathrow Airport Holdings Limited now) had published its interim master plan in June 2005 for expansion. However, anti-expansion groups opposed the expansion plan strongly on economic and environmental grounds. In 2010, the new Coalition Government announced that it would not support the construction of third runway at Heathrow, BAA could only abandon their plans for a third runway and a sixth terminal at the airport. (Butcher 2014)

In February 2013, UK Airport Commission¹³ invited public proposals for the review of the development of UK airports. Heathrow Airport Holdings Limited (HAHL) has announced new plans and then submitted 4 proposals to UK Airport Commission in 2013: they were North runway, Northwest runway, Southwest runway and extension of existing runways respectively. Though HAHL has not finalized the financial plans in details, the company emphasized that private funding was a crucial part for financing the additional capacity. It also called for a public consultation on the issues of “the existing model for financing airport development” and “the role of public funding or Government guarantees”. (Heathrow 2013)

¹³ 5 experts were appointed by UK Prime Minister in September 2012 as the members of UK Airport Commission in order to examine the “the need for additional UK airport capacity and recommends to government how this can be met in the short, medium and long term.” (Airport Commission 2013)

In May 2014, H AHL submitted a new proposal for airport expansion to Airport Commission. It pointed out that “Of the GBP 15.6 billion estimated total costs, the bulk of the cost GBP 14.7 billion would be privately financed.” In H AHL’s technical submission to Airport Commission (Heathrow 2014), it would ensure there is a feasible business case for own investors since it is a privately-funded airport.

There are a few options suggested by H AHL in the master plan. Firstly, as the current business will generate in the region of GBP 2 billion per year in operating cash flow, it will be the main funding source to support the expansion. Secondly, Heathrow has a good credit rating so it will be feasible to issue bonds and raise loans in the private sector. Thirdly, Heathrow may seek alternative sources such as European Investment Bank. Fourthly, the management will approach to UK Government for financial guarantees which could be made by the HM Treasury for supporting UK infrastructure projects. Fifthly, they would explore viable ways of prefunding to lower the cost longer-term funding.

As the construction costs of the new runway are huge, some pre-funding before the operation of the new facilities is required. According to the technical submission (Heathrow 2014), the construction period of the runway is estimated to be 5 years and the capital investment is approximately GBP 5.5 billion. The capital is expected to be sourced from a combination of debt and equity funding (including retained cash flows from operations). Airport charges could also be increased prior to delivering revenue from the expanded assets (subject to Civil Aviation Authority regulations). Heathrow may choose to increase the airport passenger charges. It states that “...Our outline financial model suggests an illustrative average airport charge of GBP 24 per passenger from Q7¹⁴ onwards, GBP 4 more than today.” Summing up, there are five possible funding options by H AHL to fund the new runway:

- (i) operating cash flows and retained earnings;
- (ii) bonds in 5 currencies and loans;
- (iii) alternative sources such as European Investment Bank and infrastructure funds;

¹⁴ Q7 as seventh quinquennium for CAA regulation. Q6 starts from 1 April 2014 and it lasts for 5 years.

- (iv) UK Government guarantee scheme; and
- (v) viable ways of prefunding, including increasing the airport passenger charges.

6 Financing Options for the HKIA's Third Runway

There could be a package of options for the financing of the HKIA's Third Runway. In the 1991 financing arrangement for the core facilities of the new HKIA, it was HK\$36 billion direct equity injection by the Hong Kong Government and maximum of HK\$11.6 billion debt from borrowing (for first phase development works)¹⁵, based on the agreement between the Chinese and British governments. So this was a financing package of about 75% equity and 25% debt. In fact, the final proportion of debt was even smaller.

In the current situation, HKIA has already suggested 4 sources of financing in the "2030 Master Plan" document (a total cost of HK\$86 billion in 2011 money or HK\$136 billion for the money of today). These four sources are:

- (i) using the net income (after dividend payments to the government) and retained earnings of HKAA;
- (ii) reducing the ratio of dividend payment to the HK Government (80% currently) and using the extra cash for construction, plus other forms of direct government funding;
- (iii) using User-Pay Principle to collect a surcharge from users; and
- (iv) arranging traditional bank loans and issuing bonds.

In this study, we would like to highlight some salient points for the financing consideration of HKIA's Third Runway. We are not arguing the technical details of such financing arrangement. This should be the task of selected investment banks by HKAA as financial advisers for the Project.

¹⁵ Source: <http://www.hongkongairport.com/chi/media/key-dates-events.html> (Year 1995)

6.1 Equity Injection by Government

According to the initial assessment of financial requirement in the technical report of the “2030 Master Plan”, the total shortfall, after committing the net cash flows, would be as large as HK\$102 billion. The internal funding of HKAA itself would be grossly insufficient for the Project and borrowing would not be able to cover the entire shortfall as well. Thus, in order to support the Project, we recommend that a certain proportion of direct equity participation by the government will be necessary. Indeed, the internal resources of HKAA could also be considered as part of Government’s equity participation.

As HKAA currently is repaying about 80% of the profit to the Government as dividend, which was about HK\$5.3 billion for 2014 and rising, a reduction in this payout would generate more internal resources for the HKAA to finance the Third Runway. The reduction in payout ratio and direct government funding would have similar effects on the equity and financing structure for HKAA.

6.2 Financing Options under the User-Pay Principle

The US Passenger Facility Charges (PFC) Programme under FAA allows airports to impose fees on passengers to finance airport development projects. In the case of Chicago O’Hare International Airport, the PFC to be collected up to 1/1/2038 was amounted to US\$6.4 billion, which would be about 43% of the estimated total cost of airport expansion, at US\$15 billion. China’s Civil Aviation Construction Fund would serve the same purpose.

A passenger surcharge similar to PFC in the US is definitely a new source for Hong Kong’s consideration. This can be levied based on the existing framework of passenger departure tax (currently at HK\$120 each for the general revenue purpose). Assuming 20 million passengers would pay this surcharge annually at HK\$100 each, the total revenue would be HK\$2 billion a year. If we adopt a pre-funding principle to passengers starting from 2016, a 20-year programme up to 2035 would easily yield HK\$40 billion at 2013’s money (this is equivalent to about 40% of the total

shortfall of HK\$102 billion of the construction cost), given rising passenger numbers and periodic increment of the surcharge to maintain its real value.

There could be several variations based on this passenger surcharge. They are:

- (i) One variation would be a two-tier structure based on the distance of travel, i.e. in terms of number of sectors.
- (ii) This levy could also be imposed on air cargo. This is rather straight forward and all stakeholders involved should be consulted.
- (iii) This surcharge could also be imposed on airlines based on each flight using HKIA as well (as in the case of China's Civil Aviation Construction Fund).¹⁶ However, a surcharge on airlines may meet with more resistance from the trade. To a great extent, a surcharge on airlines would pass on to final users, passengers and cargo operators, indirectly. Given the fact that international airlines have been under great financial stress in recent years because of global economic slowdown and is much less transparent, it is advisable to formulate the levy on passengers (and probably cargo) directly. Indeed, a surcharge on passengers is a more universal arrangement.

A new legislation would be required for this new levy. Under the ICAO guidelines, it is important to specify the purposes clearly, with a total revenue target as a cap and an expiration date for the levy.¹⁷ As highlighted by ICAO, transparency is the key for the introduction of the surcharge and getting the support of all stakeholders.

Additionally, HKAA can adjust the airport charges, such as terminal building charges, to increase the revenue for the runway construction project. According to Airport Authority Ordinance (Chapter 483), HKAA is authorized to implement such a

¹⁶ There are similar cases in the world. For example, Civil Aviation Development Fund in China (see Section 8) and Nav Canada in Canada.

¹⁷ In ICAO's Appendix 4 of *Airports Economics Manual*, "A dedicated or separate pre-funding account should be established for the project in question. This will result in greater transparency regarding the degree to which project-specific charges are being allocated to airport users and the crediting and debiting of the account in relation to the project implementation schedule. It will also enable management to demonstrate clearly the cessation of charges to users once the need for the pre-funding account is no longer required." (Para. 7)

charging scheme. Though the administrative arrangement is simple as it requires the approval from Chief Executive in Council only, it is not a transparent arrangement. The society and industry could not monitor the implementation of this policy in details. However, given the current political reality in Hong Kong, the bill for a new levy may not survive the procedures of the Legislative Council in time for the funding requirement. Thus, the HKAA Ordinance may be the optimum platform for the introduction of the user-charge scheme for funding the Third Runway.

The passenger departure tax in Hong Kong accounted for about HK\$2 billion of fiscal revenue annually. Given the consideration of a surcharge on passengers to finance the Third Runway, there could be suggestions that the passenger departure tax should be converted partially or totally into the surcharge. If this is the case, the additional cost on passengers would be reduced. But the conversion is equivalent to another form of government funding. We recommend that the merit of a passenger surcharge should be considered seriously and independently from the passenger tax.

6.3 Bank Borrowing and Bond Issuing

Borrowing is obviously a crucial part of the financing package. In the initial construction of HKIA, debt financing was mainly by syndication loans arranged by banks, equivalent to about 20-25% of the total financing package. As a reference, in the recent construction of major infrastructure projects in Hong Kong, borrowing accounted for 58% of the Hong Kong-Macau-Zhuhai Bridge and none for the Hong Kong-Shenzhen Speed Rail. It is likely that 25% to 30% will be the optimum level for a large and long-term infrastructure project, with good cash flows. Given the low interest rate environment and good credit standing of HKIA, a slightly higher debt ratio could be considered.

Recently, there have been suggestions that bonds could also be issued at small denominations for retail investors. This is not advisable. On one hand, this would definitely increase the funding cost unnecessarily. On the other hand, the very low interest environment is not conducive for retail investors anyway. The Government

may decide to enhance the return, similar to the inflation-link bonds to the retail investors. We consider that the airport construction bond is not an appropriate tool for subsidizing retail investors and this would just complicate the airport financing arrangement.

6.4 Recommendations on Financing Options

The following Table 6.1 provides the broad summary of our analysis. We generally recommend an evenly spread of funding from these four different sources. Furthermore, this is also in accordance with their respective cost of funding. We suggest using a larger proportion of cheaper funds, i.e. a surcharge by passengers directly. We also support to use more debt because of the sustained low interest rate environment. In the 1990s, interest rates were much higher. The average prime rate for HK dollar loans between 1991 and 1997 was 8.1%. On the other hand, HKAA's internal funding and government's direct funding are much more expensive, e.g. HKIA's return on capital was more than 10% in recent years.¹⁸

Table 6.1 Recommended Funding Sources for HKIA's Third Runway

Funding Sources	HKAA Internal Funding	Government Direct Funding	Passenger Surcharge	Borrowing	Total
HK\$, b	27-35	27-35	35-45	35-40	135
% share	20-26	20-26	26-33	26-29	100

Our work does not replace the detailed and technical work of financial advisors engaged by HKAA. However, the recommendation of a passenger surcharge is a major policy change that required the Government's direct decision. This may be beyond the terms of reference imposed on the financial advisors.

¹⁸ From financial year 2010/11, HKIA's return on equity was more than 10%: FY 2010/11, 11.1%; FY 2011/12, 14.2%; FY 2012/13, 14.2%. (HKAA annual reports)

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