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**Public Sector Decision Framework for Airport Development:
The Case of Incheon International Airport in South Korea**

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1. Introduction

Airports are attractive assets to a wide range of investors for various reasons. Firstly, the airport industry has strong potential for growth; many airports, especially major airports, face limited competition, both from other airports and from other modes of transportation. Secondly, there are significant, high-entry barriers due to its expensive up-front capital requirements and difficulties in finding the feasible location for airport development. And most importantly, a minimum level of performance of the airport is secured by the state, since it is hardly possible to cease operations of national gateways.

Recently, the private sector's presence has been growing at an accelerated rate in the airport business and its participation demonstrates a global trend that the business model in airport operations is shifting to rely more heavily on revenue derived from commercial operations. Airports in developed countries are run as modern businesses with increased importance given to non-aeronautical activities. Thus, the use of airports has become a lot more diverse; with public utility companies and multi-product firms delivering airside services to airlines as well as landside terminal retail shops and access to passengers, plus additional ancillary services (Gillen 2008). This change in the nature of airport ventures has increasingly drawn the attention of private sector companies, which seek the higher profits associated with airport commercial operations. Although the private sector has historically already involved in airports through the operation of landside concessions, they have been actively expanding their business areas to the operation and provision of aeronautical services as well.

A number of state-owned airports, therefore, have been privatized worldwide. London Heathrow Airport, for example, is fully privatized and its holding company is now owned by FGP Topco Limited, an investor consortium led by Ferrovial S.A., a Spanish multinational company specializing in the design, construction, financing, operation and maintenance of airport facilities. Similarly, the Danish government has divested its shares in the Copenhagen Airport since 1994, and is currently holding 39.2 percent of its share. On the other hand, some international airports, including Singapore Changi Airport, remain publicly owned but cooperate with private operators or service providers through a Public-Private Partnership (PPP) structure. However, it is hard to determine the successes of each decision because evaluation criteria of the airport business are widely different by its ownership structure. While private owner value maximizes the profit more than public ownership, the government has to put the primary function of airports first, that is, provide an efficient means of transportation and serve as a country's entrance gate. There have been controversial debates on how and by whom the public airport should be owned and operated, as well as whether it would be feasible to hand its control to private owners. Thus, the airport ownership structure has become a significant area of interest of both the private and public sectors and Korea's central gateway, Incheon International Airport, is facing a similar debate.

Industry experts see Incheon International Airport (IIA) as a “golden goose”. It is the central airport of South Korea and it is owned and operated by Incheon Airport International Corporation (IIAC), whose shares are 100 percent owned by the Korean Government. In 2013, IIAC generated a net profit of USD 472-million-dollars by handling 41 million passengers and IIAC paid a dividend of USD 124 million to its owner, the government. The airport’s performance has been highly ranked over the past decade by a number of international associations, including the Airports Council International (ACI), a consultative group of 1,700 airports. Both the government and general public of Korea have a strong sense of pride in IIA, as it is exemplary in terms of airport operations and public services.

As the volume of passenger and airport traffic is rapidly reaching the current capacity of IIA, the Korean government and IIAC will execute further expansion phases, and are now looking into the financial feasibility of these expansion projects. In fact, IIA’s third round of expansion was originally planned to start in 2008, but was delayed and begun in 2014. The Korean government announced its plan to sell partial stakes of its IIAC shares to private companies in 2008. Through this partial privatization, the government had expected to enhance IIAC’s operational efficiency, expand its global network and to raise capitals for two upcoming expansion plans. Moreover, the government had also expected monetization of its increasing public debt. Its privatization plan, however, drew negative responses from citizens, many of whom argue that private investors could hamper the airport’s long-term value and put the nature of public service in jeopardy. Thus, the proposal was shelved permanently and private involvement became a sensitive subject to the level that similar plans will not be heard.

Although many studies have been conducted from one, or few, technical perspectives, IIAC need more comprehensive one that takes account of both market and institutional factors along with its physical capacity constraints. As Korea’s main gateway and large-scale public infrastructure, the management of IIA has given special tasks such as to provide stable public services, to deliver fiscal benefits to the national budget and to provide business and employment opportunities to citizens. Ultimately, the key question is how to arrange management efficiency and public provision of the airport service compatible with each other. This question can be broken down into three major concerns; the first regards which setting can bring the private sector in the most efficient manner. The second concern regards the implementation decision, or how to arrange public and private sectors compatible to each other. And the last one is how to legitimize the decision and make it politically acceptable.

Policymaking on public infrastructure management is often complicated because there are too many stakeholders who think differently on what their airport business should be look. It is strongly recommended that policymakers should first conduct an objective analysis on the public company’s performance, second consider all options and then be able to demonstrate possible set of outcomes. What is the most important is that they have to share these grounds of the decision to public so as to minimize the asymmetry of information and principal-agent conflict – in this

process, government's transparency and good governance is the must. Other country's case can be a good reference in simulating the outcomes when the decision is actually implemented in the local setting. By far, available studies on airport assets mostly target countries like the United States, Australia, the United Kingdom, and other European countries, although not many of these countries have airports that are owned and operated by the state. However, the structure of the government entities and state-owned enterprises (SOEs) in Korea is different from other countries. Thus, policymakers should note that those studies might have external validity concerns and thus they might not be able to be seamlessly benchmarked to Korea's situation.

In this regard, the purpose of this study is to investigate and synthesize the core issues surrounding the ownership decision on IAC and thus to suggest a decision framework that can address diverse, often conflicting, interests of different stakeholders. Besides the firm's economic performance, the country's institutional environment and recent country-level development are expected impact on the value of IAC. Hence, the unique value of this study comes from taking both lens of investors and policymakers and making both parties' interests most aligned under the suggested framework. The study also discusses Korea's pending problems with its previous privatization plan for IAC and provides recommendations tailored to Korea's current circumstances. Not only does it review arguments regarding IAC's future but also points out several critical blind spots among them. This study will be a valuable resource to the Korean government, airport owners in Korea (IAC and Korea Airports Corporation, KAC), potential business partners, as well as airport owners and operators worldwide. The main objective is to assist Korean policymakers, and, ultimately, to ensure that quality-enhancing development is undertaken in IIA. The study uses publicly available data at the time of the analysis as well as interviews with internal contacts from related parties.

The paper is structured in the following manner: Chapter 2 analyzes current status of IAC including ownership structure, financial and operational performance and its development plans; Chapter 3 identifies current challenges being faced by IAC and also the conflict among its stakeholders; Chapter 4 discusses the Korean government's previous privatization plan and related issues; Chapter 5 suggests policy making framework and, as a part of its practice, recommends two strategies that government may consider for IIA development and operation; Chapter 6 proposes further issues that we believe should be taken into account but have not been rigorously discussed; and Chapter 7 concludes by addressing future considerations with planning and implementing as the selected strategy.

2. Current Status of Incheon International Airport

IAC began its operations in March 2001. Its construction had begun in 1992, after it had become clear that Seoul's Gimpo International Airport could no longer cope with the rising number of

passengers and the increased freight demand after the Seoul Olympic of 1988. The current facilities have been completed by two initial construction phases, with two more phases scheduled to be executed until 2020. The airport is designed to be an Asian hub airport and is targeting further growth, which should ideally come with (1) increasing operational efficiency, (2) enhancing airline network and (3) expanding its capacity to accommodate fast-growing passengers. It also seeks to strengthen non-aeronautical activities by adding, for instance, a golf course, spa, casino, indoor and outdoor gardens, and a museum to its business.

There are a variety of opinions being voiced concerning the airport's future – of which the most controversial one is whether the Korean government should privatize IAC. Objective assessment on the firm's current status should lead to understand the government's concerns and its willingness to privatize IAC as well as IAC's unwillingness to accept privatization (the following chapter will discuss on-going debates in detail). Hence, this chapter examines IAC's ownership structure, business arrangements, recent historical performance and economic conditions. It then further analyzes IAC's financial management, including its major revenue sources and potential financial risks. Additionally, it also reviews the government's plan for airport expansion.

2.1. Ownership Structure

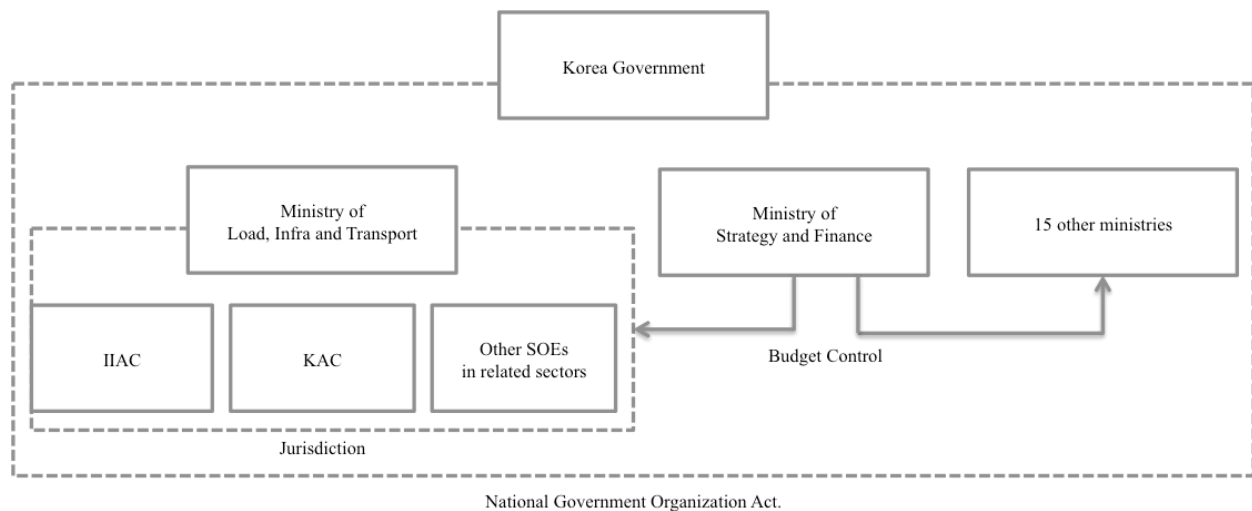
Traditionally, airports have been put in the public infrastructure category that serves public utilities and transportation services. Governments conventionally hold partial or full ownership of airports and operate them as a vehicle for broader policy initiatives such as public provision of transportation infrastructure, national defense and public budgeting. IIA belongs to this category as well; it is designed, built, financed and owned by the IAC, which is itself wholly owned by the Korean government. The IAC was established on February 1st, 1999, under the Incheon International Airport Corporation Law, and it is an independent public authority that develops, promotes and manages airports, seaports and both business and leisure infrastructure to enable IIA to compete successfully in the global marketplace. To unify construction of airport facilities and management, IAC also holds shares of 99 percent of Incheon Airport Energy Co., Ltd¹ and 34 percent of Incheon Airport Fueling Co., Ltd².

¹ Incheon Airport Energy Co., Ltd commercially operates a combined heat power (CHP) plant to provide energy services to IIA and its neighboring areas. The company was founded in 1997 as per the enforcement agreement of private capital inducement project on IIA's CHP plant with the Ministry of Land, Transport and Maritime Affairs. As of 2014, IAC holds 99 percent of its share and Asiana Airlines Inc. holds 1 percent.

² Incheon International Airport Fuel Facilities Co., Ltd owns and operates a fueling facility and distributes fuel at IIA. The company was founded in 1997 as per the enforcement agreement of private capital inducement project on IIA's fuel facilities and operates as a subsidiary of Korea Airport Service Co., Ltd, a subsidiary of Korean Airline Co., Ltd. (Hanjin Group affiliates). 61.5 percent of its share is owned by Korea Airport Services Co., Ltd, 34 percent by IAC and 4.5 percent by GS Caltex.

Two public corporations own all the nation's public airports in Korea - IAC and KAC. While IIA is a standalone, single asset of IAC, the KAC owns, operates and manages all other remaining public airports, that is a total of 14 airports including Gimpo, Gimhae and Jeju airports. The Korean government had initially planned to privatize IAC, which explains in part why IAC was created as an entity separate from KAC. Additionally, both corporations are under the jurisdiction of the Ministry of Land, Infrastructure and Transport (MOLIT) and under budget control of the Ministry of Strategy and Finance (MOSF) as shown in Figure 1. The competitions among 15 domestic airports and their major management decision-makings are strictly controlled by the national government. For such public airport, its minimum level of performance is generally secured by the state but these state policies may place constraints on the operating environment of the organization; protect customers, employees and other stakeholders; and open up new business opportunities.

Figure 1. National Government Organization Act



2.2. Business Operation

Passengers coming through an airport can be divided into two large groups, namely: origin and destination (O&D) passengers and transfer passengers. O&D passengers, as the name suggests, are those who either have the airport as their trip's starting point or as their final destination. Transfer passengers, on the other hand, are those who pass through the airport and embark on a connecting flight to a different destination. Hub airports are those boasting a large number of transfer passengers, that is, those to where airlines route a disproportionate number of flights,

whose passengers will then be connected to other locations. The hub airport, therefore, will consequently be able to offer a large number of direct flights to several locations.

IIA's placement and situation in this aspect are quite singular. First, due to strained relations with North Korea, South Korea has become a de facto "island", in the sense that ground transportation to other countries is nonexistent, making air transportation the utmost preferred way to leave the country over other modes of transportation. Second, while usually an airport has a limited catchment area, within a country or region, in the case of IIA, its catchment area is the whole country of South Korea. IIA has a dominant monopolistic position in Korea, unlike competing airports like Kyoto Kansai and Tokyo Narita in Japan, or Shanghai and Beijing airports in China. While there are other international airports in the country, such as the Gimpo International Airport in Seoul, their supply of international flights is extremely limited when compared to IIA, only serves short route flights to neighboring Asian nations. Also, it is located in Incheon city, 30 miles west of Seoul, and is a convenient one-hour commute to downtown Seoul via either the Incheon International Airport Railroad³ or the Incheon International Airport Expressway⁴. Thus, passengers wanting to leave or arrive in the country will most likely travel through IIA before arriving at their final destination, be it the Seoul area or otherwise.

The number of total passengers, the sum of both O&D and transfer passengers, coming through IIA has shown a stable growth trend since the opening of the airport in 2001 except for occasional crisis periods, such as in 2008 and 2009. IIA currently operates as a main hub for national airlines (Korean Air and Asiana Airlines), their subsidiaries (Jeju Air, Jin Air, Estar Jet) and Polar Air Cargo. During the period from 2009 to 2014, the average annual growth of the airports' passenger, cargo and aircraft movement were 10 percent, two percent and eight percent respectively⁵. ACI's 2013 World Airport Traffic and Ranking announced that IIA is the world's fourth largest air cargo hub. In 2014, the passenger traffic record, 45.5 million, has already exceeded its current capacity, 44 million.

³ The Incheon International Airport Railroad is a public commuter rail between Seoul and Incheon and Gimpo airports. It initially planned to be built and operated by the Incheon International Airport Railroad Company, the private consortium whose main shareholders were Hyundai (27 percent), POSCO (11.9 percent), Daelim (10 percent), Dongbu (10 percent) and the Korean National Railroad (9.9 percent). However due to hardship with financing, the Korea Railroad Corporation, the national railroad operator of South Korea, has become its majority shareholder (88.8 percent).

⁴ The Incheon International Airport Expressway is Korea's first operational private infrastructure asset under the Private Participation in Infrastructure (PPI) Act. The concessionaire is New Airport Hiway Co., Ltd., whose major shareholders are the Korean Teachers' Credit Union (45.7 percent), Macquarie Korea Infrastructure Fund (24.1 percent) and Kyobo Life Insurance Co. Ltd. (15 percent).

⁵ Source: 2014 Airport Traffic Report by Incheon International Airport

The air traffic figures on the report are estimated based on ACI standards and the manual from MOLIT; the aircraft movement is sum of airliners and freighter traffics. The number of passenger includes numbers of paying and non-paying passengers and transfer passengers. Cargo traffic includes both O&D and transfer cargoes as well as mails (excluding baggage).

However, in 2014, out of a total of 45.5-million passengers, only seven million were transfer passengers. The proportion of transfer passenger is relatively lower than the average of other primary hub airports such as Frankfurt Airport and Schiphol Airport whose transfer rates are 40 percent and 42 percent respectively. The total number of transfer passengers coming through IIA has increased by more than 10 percent from its opening in 2001 to 2013. However, in 2014, there was a decrease of 6 percent in the number of transfer passengers in IIA from 2013 year-on-year, decreasing the share of transfer passengers from 18.5 percent of total passengers in 2013 to 15.9 percent in 2014. This sudden decrease in the number of transfer passengers, the first since 2001, can be explained by several factors. First, there has been an increase in the number of direct routes to other hub airports in China and Japan, taking business away from IIA. Second, there was an increase in the number of O&D passengers, especially from China and Southeastern Asia with direct flights to Incheon. (Chinese passengers to IIA increased by 53 percent from 2012 to 2013 and by a further 42 percent from 2013 to 2014). This phenomenon led to two major airlines focusing on O&D sales, which are more profitable for the airline, since IIA's business performance highly depends on them.

As a part of non-aeronautical business, IIAC reported a 14.6 percent increase in duty-free sales in 2012 to USD 1.7 billion (the world's highest), outstripping passenger growth by 11 percent. There are seven main licenses for operating duty free shops in IIA awarded to private companies, and are currently held by Lotte Duty Free, Shilla Duty Free and Korea Tourism Organization (KTO). The government deliberately keeps four additional licenses exclusive to small and medium enterprises (SMEs), with no company being awarded more than one license and all contracts being valid for a total of five consecutive years, and it should comprise 30 percent of duty free rents. Some criticize this licensing quota mechanism that SMEs are not specialized in cross-boarder shoppers and the arbitrary intervention does not lead to sound competition.

2.3. Financial Performance

IIAC has an overall healthy balance sheet, strong operating and net profit margins, and high growth potentials in passenger and cargo volume, especially with Phase 3 of expansion in the pipeline. In 2013, IIAC generated revenues of USD 1.6-billion dollars and net profit of USD 472-million dollars, which translates to a 28 percent net profit margin. As of 2013, IIAC is valued as USD 7.8-billion dollars of assets, equity of USD 5.5-billion dollars, and low financial liability of USD \$ 2.3-billion dollars. IIAC has significantly lowered its debt-to-equity ratio down to 18 percent from 166 percent in year 2001.

IIAC's major source of income is sales of goods and rendering of services. Revenues from services rendered accounts approximately 90 percent of total revenues, which includes revenues from aeronautical activities, such as flight income and passenger income, as well as revenues from non-aeronautical activities, such as commercial income, and rent and utilities income. Non-

aeronautical activities are the most significant contributor to top-line growth. In particular, commercial facilities charges bring almost 50 percent of IIAC's total revenues. Aeronautical services are also important to IIAC because commercial facilities revenues are dependent on annual passenger volume. Thus, IIAC also focuses on broadening its customer base.

However, one of potential risk factors resides in high dependency on chaebols, who own retailers and national airlines. IIAC has strategic partnerships with large retailers owned by chaebols such as Lotte Co., Ltd. and Hotel Shilla, one of Samsung Group's subsidiaries, whose hotels and duty-free retail outlets contribute to in excess of 10 percent to IIAC's revenues. Lotte Capital Ltd. and Samsung Life Insurance, which are also subsidiaries of Lotte and Samsung respectively, are the two financial institutions that provide short-term borrowings to IIAC. Moreover, Korean Air Lines Co. Ltd. and Asiana Airlines Inc. are also owned by Hanjin Group and Kumho Asiana Group respectively. These dominant partnership may hinder fair competition and cause operational inefficiency. Other risk factors include its lower fee revenues compared to other international airports, lack of liquidity due to recent expansion construction started in 2014, and potential increased financial burdens for completing upcoming expansion projects. Additionally, it is important to note and highlight the fact that the latest available IIAC financial data is from 2013, but there have been substantial investments in 2014 with the start of the third phase of its expansion plan.

2.4. Expansion Plan

The first phase of construction, which took eight years to complete, from 1992 to 2001, was followed by the second phase, in 2002, which was then completed in 2008 (Table 1). The government originally planned to complete IIA's construction in three phases, incrementally increasing airport capacity as the demand grew. However, the plan was changed to four phases after the airport was opened. Table 1 details IIA's planned expansion phases. The third phase is currently underway with scheduled completion by 2017. It is expected to handle an additional 18-million passengers, as well as a new baggage handling system with 42 kilometers of conveyer belts, and transportation infrastructure including railways, rail stations, bus stops and parking lots. The estimated necessary funding amount of phase 3 is USD 4.9 billion as of 2014.

The government expects to complete IIA's final expansion by 2020, providing capacity for an additional 38-million passengers and 5.6 million additional tons of cargo per year. This would result in an aggregate annual capacity of 100 million annual passengers and 11.4-million tons of cargo, and enable IIA to meet expanding air traffic demand. However, the government and IIAC diverge on the financing strategy for this plan and the need for large-scale organizational restructuring to handle the increasing capacity.

Table 1. Incheon International Airport Expansion Plan in Four Phases⁶

	Phase 1	Phase 2	Aggregate (as of 2014)	Phase 3	Phase 4	Aggregate (exp. 2020)
Construction Period	1992-2001	2002-2008		2014-2017	2018-2020**	
Project Cost	USD 6.2 B	USD 4.2. B	USD 10.4 B	USD 4.9 B*	USD 5.0 B*	USD 20.3 B*
Airport Capacity (per year)						
Flights	410,000	-	410,000	-	230,000**	740,000
Passenger	30 M	14 M	44 M	18 M	38 M**	100 M
Cargo	4.5 M tons	-	4.5 M tons	1.3 M tons	5.6 M tons**	11.4 M tons

3. Challenges to IIAC

There are four major challenges that have already been identified and publicly discussed. Three of them are directly related to the management and operation of the airport; that are (1) to enhance operational efficiency of the current facilities, (2) to successfully complete two expansion projects on planned timelines, (3) to gain competitiveness as an Asian hub. And the last and the most controversial one is principal-agent conflict; there have been intensive debates among diverse stakeholders such as the national government (even within that, there are MOSF and MOLIT), IIAC, KAC, taxpayers and investors. Some are due to conflict of different interests and the others are from lack of information; in most cases, the former is about the use of newly generated revenue from privatization while the latter needs to illuminate the understanding and possible outcomes from different privatization options. This chapter firstly provides a comprehensive analysis on current challenges and countermeasures drafted by IIAC, then it brings an up-close discussion on what makes the decision making more complicated within the current dynamics of stakeholders.

3.1. Operational Efficiency Enhancement

The number one concern of IIAC is to increase operation efficiency. Although the airport has been named the “best airport worldwide” by ACI over the last ten years, both the government

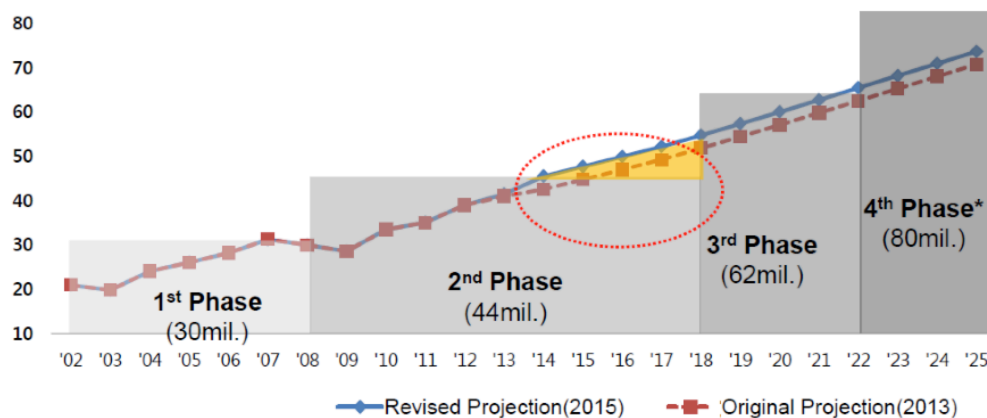
⁶ Source: IIAC website (<http://www.airport.kr>)

* estimated

** master plan for phase 4 is currently under-going

and IIAC speculate that there is space for further improvement of efficiency in operations. For example, due to rapid increase of demand for aviation and airport services, IIA's passenger capacity has already reached its limit in 2014 (see Figure 2). Saturation of facilities such as parking lots, check-in counters and passenger apron areas and congestion become challenge to IIAC. Some improvements to upgrade airport facilities are currently undergoing, but there is still a great need to further increase operational efficiency of existing facilities until the next phases of construction are completed.

Figure 2. Projection of the Total Number Passengers and Expansion Plan



Source: IIAC's Internal Report

As an intermediate measure, IIAC aims to enhance its operational efficiency of the existing facilities, which include to optimize slot usage during peak and off-peak times and to promote SMART airport operations by using information and communications technology (ICT). According to IIAC's traffic analysis report, the airport traffic is reaching its full capacity only between 8am and 9pm. IIAC plans to disperse the concentrated passengers over off-peak times, by extending operation hours of transportation and retail stores, adding more 24 hour departure units, and providing airlines incentives or price differentiation for coming in non-peak times. Also, IIAC aims to promote automate the check-in process using methods such as online check-in, self-check-in counters, and automated baggage systems.

However, the question still remains of whether IIAC can execute the planned transition for optimal cost and time allotment. Operational transition may require huge budget for training and education and a longer process of trial and error. Alternatively, IIAC could permit private airport operators to take some of landside operation by using high operational know-hows. The cooperation with private operators can vary from simple outsourcing and/or contracting out to the private sector. The critical issue here though is which structure brings optimal operating performance, while not losing government control over the airport business. For example, structure transferring operation on a non-aeronautical business with restrictions on the fees charged to airlines and passengers. This is not uncommon as private airport operators typically

make the bulk of their revenue from non-aeronautical sources. Privatized airports often split their revenue to about 40 percent aviation and 60 percent non-aeronautical business. But the most critical question is if the airport is able to control the traffic concentration.

3.2. Financing IIA Expansion

This brings us to IAC's second challenge, which is the expansion of the physical domain of the airport and its financing. As mentioned in Section 2.4, IAC is undergoing the third of its four scheduled construction phases, featuring the second Passenger Terminal of the airport and a total of 45 buildings, which is due to be completed in 2017, having cost a total of USD 4.9-billion dollars. More efficient inter-modal transportation services will also be offered, including bus, railway and short-term parking. The financing of airport expansion plans, particularly the fourth phase of construction, which is currently due to be completed in 2020, is an especially difficult hurdle to overcome, due to the divergence of opinions among different stakeholders (particularly between the government and IAC).

Although its current balance sheet remains relatively sound, an additional investment of around USD 9.9-billion dollars could be a significant burden to IAC, as it would represent about 127 percent of the corporation's total asset value as of 2013. Based on a simple calculation, IAC may have to get debt financing from external sources. As of 2013, IAC's retained earnings are USD 1,905-million dollars, which increased by 23 percent (USD 350-million dollars) compared to 2012. If we simply assume that the retained earning would increase by the same rate 7 years from now, the estimated retained earning by 2020 will be USD 7.8-billion dollars, which is falls short when it comes to paying off USD 9.9-billion dollars. Then, the question will be: is it feasible to finance two upcoming expansion projects?

According to the internal source in IAC, the Korean government is not looking into paying additional capital for IAC's third expansion since it assumes that IAC has enough capability to self-finance the project. Korea Investors Service Rating (2014) reports that IAC may have short-term liquidity constraints but it should be able to sustain its stable financial status referring to its sound cash flow records and corporate's financing capability. However, IAC is currently exposed to a liquidity risk; as of 2013, USD 2.07-billion dollars in liabilities are tied to the contractual maturities of financial liabilities including interest payments, and its current ratio has decreased from 0.54 to 0.32 from the previous year due to a 328 percent increase in payables (USD 464-million dollars) in this period. Korea Investors Service Rating points that IAC may have problems meeting short-term debt and contractual obligations with its current cash flows. To compare with other international airports, Changi Airport Group's 2013 current ratio is 5.97, Beijing Capital International Airport Co., Ltd. reports 0.59 and Narita International Airport Corporation reports 0.46.

Such financial prospects are one of the critical reasons why the government chose to legitimize its plan to raise funds by selling partial stakes to the market. It was to involve private investors' capital in order to finance two expansion projects and to infuse liquidity in the short term. Airport financing is a relatively latecomer in joining the trend of increased private sector participation in infrastructure (Gillen 2008), and there is still a large amount of available, untapped potential for cooperation between the public and private sectors. The next chapter will discuss what other financing options the government may consider in order to increase presence of private sectors in airport operations and ownership.

3.3. Hub Airport Competitiveness

The third challenge, which encompasses the two challenges above, as well as IIAC's global business competitiveness, is how IIAC may achieve its original business plan as an Asian hub. It is important because its competitiveness as a hub impact valuation of IIAC. The government's decision with regards to its ownership and management may differ considerably depend on asset valuation.

The hub and spokes model currently in place in the global airport network greatly benefits airlines, by making their operations more efficient and consequently allowing them to keep air ticket prices lower than they would be had there only been non-hub airports. Passengers are, therefore, also benefited by hub airports, especially those passengers who are located close to a hub airport, and will benefit both from lower ticket prices and from having access to a higher number of direct flights. Moreover, countries, cities and regions where a hub airport is situated will also benefit from the existence of said airport. The economic benefits from a hub airport come on various levels. For example, the domestic or municipal economy benefits from the increase of direct flights to the airport, which makes it easier for foreigners to visit and invest in the city or country where it's located. Additionally, the economy may benefit from an increase in airport revenues due to spending (for instance, in duty free shops) by a higher number of passengers coming through it.

For this reason, IIAC takes its low transfer rate, 15 percent as of 2014, and high dependency on domestic airlines seriously. The number of transfer passengers is largely related to its revenue, and also it is a direct indicator of IIA's competitiveness as a global hub. Accordingly, IIAC's strategy to reach its goal of boasting 10 million total transfer passengers in 2017 involves four distinct steps. The first step is route expansion, that is, to gain traffic rights on more long distance routes, secure partnerships with major airlines. The second step is to increase low cost carrier (LCC) connectivity, by developing a connection model between LCC's and full service carriers. The third step is to provide incentives to the airlines and travel agencies that provide transfer

service at Incheon. Finally, the fourth step is to conduct joint marketing with airlines and travel agencies, by developing tour packages transferring through Incheon Airport, etc.

One thing to note in setting the hub airport strategy is that airlines generally choose their main hub airports where they can optimally lower operating and maintenance (O&M) costs. Thus, hub airports require a great deal of coordination as well as infrastructure investment that are essential to provide fleet maintenance and operation spaces, peak traffic mitigation, proper cargo operations and efficient baggage and passenger distribution and thereby save their O&M costs. In fact, IIAC has spent USD 20.7-billion dollars to provide convenient and efficient services to passengers and airlines; \$13.5 billion for airport construction costs and \$7.3 billion for assess transportations such as the Incheon International Airport Railroad, the Incheon International Airport Expressway and the Incheon Bridge. Moreover, the government has regulated the fee like landing and terminal charges lower than other competitors regardless of airport's performance and economic conditions. However, there are intense public debates whether this investment is truly worthwhile, how much more investment would be additionally required for its success and whether these investments will have decent returns. Some assert that the competitiveness of IIAC is from its low fee scheme. However, its cost and benefit should be rigorously analyzed so that IIAC can facilitate reasonable pricing for its users.

3.4. Conflicts Among Stakeholders

The last challenge that must be overcome, and another key matter of contention between the government and IIAC is whether the government's earnings, dividend payments and/or revenue from share sale, from IIAC will be reinvested for the development of IIAC and airport industry. There has been an ongoing debate on the use of IIAC's dividend payment to the government – in 2014, more than 60 percent of it was used to government's railway and highway projects. According to the original version of the Act on Special Accounts for Traffic Facilities in Korea, dividend payment of IIAC had to be reported and managed under the airport account. However, the amendment made on 2008 enabled the balance in the airport account can be transferred to accounts for railways and roads. This is where the acute conflict between the MOSF and IIAC comes from; MOSF argues that it is for the efficient public budgeting but IIAC wishes to have more investment be allocated to its own development. For instance, IIAC considered share issuance or partitioning existing airport operations and selling a portion of those operations to external investors, so that revenue from stock sales could be used for facility expansion projects.

Despite that two public airport owner are both under the jurisdiction of the MOLIT, the controlled competition between KAC and IIAC causes a disagreement on nation's air traffic control system. As KAC is willing to increase its service to international routes so as to secure the stable and diversified revenue stream, KAC asserts that the competition should be integrated

among all the 15 domestic airports. IIAC, on the other hand, insists on concentrating international traffics toward IIA for efficiency matters; regional airports, especially those 11 airports except Gimpo, Gimhae and Jeju, inefficiently operated and recorded net loss of 59 million in year 2014.

4. Considered Decision

As a resolution for the above listed challenges, the Korean government decided to involve the private sector into IIAC's management and financing. There are many ways to do so, and the government, MOSF in particular, chose partial privatization. In 2009, the government rolled back the amendment of IIAC Law that enables selling governmental stakes, but the plan drew negative responses from citizens, many of whom speculate that private investors could hamper the airport's long-term value and put the nature of public service in jeopardy. After being turned down, the government has lost its credibility in privatizing state-owned companies and public criticism became stubborn to the degree that it opposes the government's privatization plans at any level. It is necessary to look at how the government's initial attempt was implemented and why the decision failed to be politically acceptable. In this regard, this chapter reviews the political disputes and identifies significant concerns regarding IIAC's past privation attempts.

4.1. Previous Privatization Plan for IIAC

In 2008, the former president Lee Myung-Bak's administration embarked on a grand privatization drive as a part of the *National Enterprise Advancement Plan* and announced a plan to sell stakes 27 SOEs, including the IIAC. The rationale was largely based on two premises; one was that privatization could relieve the government from the burden of financing public infrastructure and utilities, and the other is that privatization could improve their performance as private sector companies are often more efficient than the public sector. The amendment of the IIAC Law that was submitted to the National Assembly in 2009 proposed to sell 49 percent of the government's share of the airport, including 15 percent of its share in the airport operation company, to private companies. The essential part was that the government would maintain 51 percent ownership, while foreign ownership would be capped at less than 30 percent.

Soon after the announcement of IIAC's partial privatization plan in 2008, there was strong opposition against handing the nation's main gateway over to private owners. There were strong public concerns that (1) national wealth would be drained once the airport was sold to foreign capital; (2) inexperienced government' decision could result in an undervalued sale; (3) airport fees might increase; and (4) special favors potentially be granted to corrupted interest groups.

However, the government did not adequately address these concerns, although the public needed to understand why the stake sale was considered necessary in order to accept it. Coincidentally, a speculation that the Australian financial group Macquarie was seeking to purchase shares of IIAC was leaked. There was a strong nationalist feeling toward ownership of the airport, and the majority of the public did not feel comfortable with what was viewed as "handing IIA over to foreign owners". Opposition parties and civil groups argued that a private operator would inevitably increase fees to boost profits, thus hindering citizens' access to what, in their view, should be a "public service".

Those who proposed the amendment, argued that the airport privatization is a universal market phenomenon and that it aims to secure investment capital, to increase operation efficiency and to diversify funding sources. 35 out of the 50 largest airports in the world have either sold or are planning to sell a stake or management rights; for instance, airports in Australia, the UK, Latin America and China. Their expected outcomes from selling part of IIAC's governmental stakes were: (1) private partners would attract more airlines coming in and thus increase transfer rates; (2) efficient management by private partners would save operation cost and thus improve the revenue; (3) their advanced airport operation know-how would be acquired and improve the airport business in Korea; and (4) the revenue from the sale of the government's share could be re-invested to financing pending expansion projects.

Although one of the motivations for partially privatizing IIAC involved the receipt of capital that could be reinvested, it is not clear that this capital would be reinvested in IIA itself at all, or would instead be directed toward other SOEs or perhaps towards servicing the government's debt obligations. Consequently, IIAC has opposed the government's privatization plan, which had been backed by MOSF. The reason for IIAC's unwillingness to support privatization is that IIAC would lose both partial control of the airport and a portion of its total revenue as well, with no guaranteed return of reinvestment of the revenue from privatization. In fact, in IIAC's view, present and future expansion plans do not necessarily have to involve the partial privatization of the company. The reason behind this rationale is that, currently, IIAC believes that it would be entirely able to attain the financing necessary for its expansion plans through a combination of its own retained earnings and corporate debt with relatively low interest rate; that is, there would be no need to sell a share of the company to the private sector with the goal of raising funds for expansion plans. However, a key point regarding the conflict of interests to keep in mind is that the cheaper financing that IIAC could hope to obtain to move ahead with expansion projects would come from organizations such as Korea Development Bank (KDB) and the Korean Exim Bank (Kexim), both under MOSF's budget control, which has previously supported the government's privatization proposal.

The plan was halted due to strong nationwide opposition; a national poll in 2010 showed that 56 percent of citizens opposed IIAC privatization.

4.2. Lesson Learned

Choosing the privatization strategy is complicated to determine because the consequence entails a broad spectrum. For instance, in case of 49 percent partial privatization, the government may experience a sharp decrease in its national income because it misses 49 percent of dividends being paid by IIAC directly to the government's account. On the other hand, if, through privatization, IIA becomes more efficient, there is potential for increase in IIAC's revenues and profits, thus also potentially increasing dividend payments to the government in the future. Hence, it is imperative to conduct a comprehensive analysis that integrates perspectives from business performance and financial conditions to corporate governance and political dynamics.

The reason why we stress the process is because these efforts come down to legitimize the government policy decision. Political scientists have identified and simplified the policymaking process in five phases; identifying problem, formulating proposal, legitimizing policy, implementing and evaluating it. Although this approach has been criticized for being too simplistic, it is rare to see criticism saying any one of them is irrelevant. Back to IIAC's case, we believe the legitimizing phase was insufficiently explicated. The on-going contentious debates on how and by whom IIA should be managed and operated, for the best outcomes and which option is in the public's best interest furnishes proof that the government privatization plan have not met a comprehensive agreement from all levels.

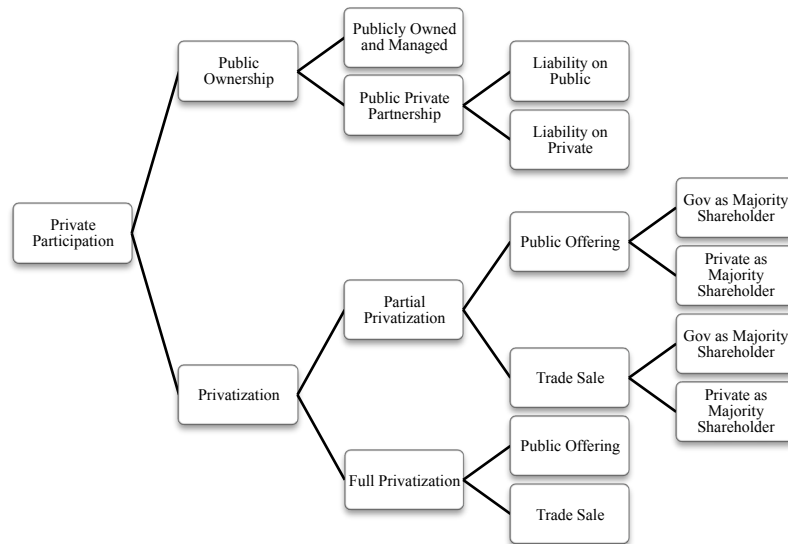
5. Decision Framework and Its Practice

There are debates on why the past partial privatization plan failed – whether the decision itself was incorrect or its implementation was inappropriate. What if we start the process all over again, would be the same structure with different approach or a completely new one? This chapter discusses two alternatives based on the analysis from previous chapters, and then it gives conceptual description of each alternative and explains why it is considered to be more aligned with concerns about IIAC. One alternative is to go rather passive on private participation through public private partnership (PPP), and the other is partial privatization through share floatation, which is same as the government's original plan but with carefully-designed implementation measures. This chapter can be a good practice for policymakers on public decision-making framework, yet it is important to note that it can only be successful when the government is able to keep an appropriate level of control over the public airport with transparent governance and draw future partners' commitments.

We assume that stakeholders have come to a consensus on key issues and available options, and key stakeholders are IIAC, the government, general public and potential investors. The main goal of the new policy is to optimize IIAC's operational efficiency and the value of investment while

addressing the public’s concerns. In response, policymakers may consider different ownership and operation structures of IIAC with various degrees of private sector involvement. Here, they can formulate policy options based on three major factors: (1) through which position will private sector be involved in the IIAC operation and management; (2) how will each option deliver profits to the government, such as one-time upfront payment from asset sales or dividend payment over the life of the asset, and what is its present value; (3) how can the government hold its control over the airport business once the new decision is implemented - regulations on airport service fee can be one option.

Figure 3: Decision tree



Considerable options include (1) maintaining the 100 percent public ownership (this option includes PPP), (2) selling part of its shares and (3) shifting to a privatized holding company structure. They are visualized in a decision tree as shown in Figure 3⁷. Once the government has decided to seek private sector involvement in IIAC, the first decision to be made is whether this involvement should come from concession (PPP) or from share transfer (partial or full privatization). If the PPP option is chosen, its precise risk and liability structure must be elaborated because in PPP it is critical how to divide them. On the other hand, if privatization is chosen, the government must decide whether this privatization is to be undertaken through share

⁷ The decision tree in Figure 3 specifies more on privatization options because the figure only covers the point of divestment not the entire lifecycle. Here 100 percent government ownership means that the government owns 100 percent of its asset; cases include 100 percent conventional public ownership, outsourcing contracts (hiring service providers) and O&M contracts (hiring operators). Under 100 percent public ownership, the government takes most charge of design, build, finance, maintain and operate (DBFMO) and hire concessionaire to take a partial process. With PPP, the government still holds 100 percent asset ownership but it is off-balance sheet during the long-term concession period through special purpose vehicle structure. During the concession or lease period, the government takes none to partial charge of DBFMO while the private partner takes full to partial of it. Depend on how it is divided, it can be build–operate–transfer (BOT), build-transfer-operate (BTO) and so on.

floatation or through trade sale, and how much of the asset is to be sold. That is, the government may choose to give up to 100 percent of the asset (full privatization), or keep a percentage of the asset ownership (partial privatization).

Many airports worldwide experience different set of outcomes even when they take similar schemes. It demonstrates that simply benchmarking an accredited option to one airport or country cannot guarantee success in other places. For instance, while airport owners usually are private airport operators and local/municipal governments in Europe and the United State respectively, the majority of airports in Asia are owned by central governments. Different types of owners may have unique concerns and objectives in terms of airport development.

5.1. Public Private Partnership

Firstly, the government may choose a gradual transition in partnering with the private sectors in different degrees and parts through a PPP. It is the least intrusive form of private involvement and the government can maintain its current 100 percent ownership while increasing operational efficiency. The PPP structure in the public service industry has become increasingly common worldwide. It involves the cooperation and collaboration between the public and private sectors in the design, development, construction, operation and/or financing in an infrastructure asset or in the provision of services, and thereby optimizes the lifecycle of investment. The World Bank has defined a PPP as “a long-term contract between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility” (PPP Reference Guide 2012).

Although the terms PPP and privatization are sometime used interchangeably by public agents or by the media, they have very different implications. Privatization contracts do involve the transfer of total or partial ownership from the public to the private sector and the delivery of what are traditionally considered “public goods” or “public services” by the private sector, while the public sector retains only a regulatory role. There are several reasons why PPPs and privatization may be chosen over traditional public procurement. One of the largest problems facing governments is the low quality and reliability of infrastructure assets services that are considered “public goods”, such as roads, public transportation, water delivery, waste management, etc. Many countries have budget constraints and are not spending as much as would be needed to maintain a high quality of service in these areas. Furthermore, poor planning and coordination, corruption, and inefficient project selection can also hinder the efficacy of public procurement. More often than one might expect, limited resources are spent on unsuitable projects that have high costs and low efficiency of service.

Governments often turn to PPPs (1) when they believe they have insufficient funds to allocate to starting a project or to improving an asset or (2) when they believe the private operators have a

higher capability to run the business so that they can save on the cost for the same performance improvement. PPPs, for example, can help governments overcome some of these challenges by injecting additional sources of funding and financing opportunities for infrastructure assets. There is, in general, a belief that the private sector is always more efficient than the public sector, and, very often, the expected performance of privatized assets is higher than that of public assets. The private sector can also bring value drivers to infrastructure by helping to improve, for example, service delivery and maintenance as well as assist with the introduction of innovations. One of the reasons for this higher performance is the fact that the performance of PPPs is specified in terms of outputs rather than inputs, which fosters innovation. Engaging in a PPP also helps the government to diversify portions of risk away from themselves (e.g. construction risk, technology risk, operation risk) and instead towards the private sector.

However, there are many types of PPP and each is unique, that is, there is no sure, “cookie cutter” type of approach to designing a PPP, but rather a range of possible agreements. Thus, the private sector may be as minimally involved in a PPP structure as the government would wish. Moreover, although the private sector may be involved in building, operating, maintaining, financing, etc., the asset is still owned by the government under a PPP structure. The scope of private participation is limited and private sector companies may have less commitment and motivation in developing the airport in long-term perspective.

Key Considerations in Implementing a PPP

Many governments and policymakers presume that a PPP is always a safe bet, but they should note that it also has a few limitations, particularly with risk allocation. Although, theoretically, risk should be distributed among the public and the private sector, the asset itself is still owned by the government and so governments may end up accepting greater fiscal risk or offering more financial guarantees under PPP structures than they had expected to. Projects can have unclear or unforeseen costs, and when PPP projects are under financial distress, governments may have to step up financially to avoid service disruption. Governments may provide repayment of debt provided by commercial sources in case of default by the private party, for example. Thus, PPPs often need to be complemented by other measures in order to improve financial performance and discourage the possibility of political or personal gains from interference with project selection.

Moreover, choosing the right partner is important in PPP implementation, especially because the government does not have profound experience or specialized skills in airport operation as much as private operators, even though it should lead the relationship. Thus, the success of PPP depends on how the government can grasp private parties’ interests and stimulate the achievement of mutual interests out of the partnership. In this regard, IAC may consider collaborating with international airport operators and/or the domestic airlines that seek business expansion into airport operation. It is a global trend that international airport owners expand their

businesses toward airport development and operation. For example, Changi Airport International acted as a consultant in the upgrading and development of Brunei International Airport in 2010. IIAC can also bring more domestic ties into the airport business by cooperating with national airlines. Korean Air, for example, considered entering the airport operation line of business, starting with its main hub, IIA⁸.

5.2. Partial Privatization through Share Floatation

Secondly, the government considers IIAC's partial privatization through public offering, where the government holds the majority (51 percent or above) shares. Two key points in this option are partial privatization and share floatation. Firstly, through partial privatization, the government can promote the public interest because it maintains a majority voting power and therefore the controlling interest. Secondly, utilizing share floatation, as opposed to trade sale, can keep one or a few private owners from dominating the business.

Unlike PPP, privatization does entail transfer of ownership to the private sector along with its economic risks and management. Whether the whole or partial amount of the airport ownership is transferred, determines full or partial privatization respectively. With full privatization, the government divests itself of public enterprises or services and transfers their ownership and responsibilities (including related risks) into the private owner's hands. With partial privatization, on the contrary, the government bequeaths some of its functions and assets to the private owner while retaining some amount of control, ownership or oversight.

There are two common reasons that the government considers sharing its ownership. The first is to finance its expansion projects and thereby support its further growth. Recent governments lack capacities to finance high quality airport development because of their limited fiscal resources and a multitude of competing claims on the available resources. The second is to improve the quality of the airport and its services by running the airport with the market-oriented private sector. Private owners are believed to provide airports with innovative management practices, cross-utilization of labor, investment capital and revenue-driven development planning (Hakim 1996). Some private owners may also prefer this option as they are unwilling to accept all of the existing liabilities and only accept a portion of them. Gillen (2008) demonstrated evidence showing that minimal de facto difference exists between the two partially private models because (1) the private sector can bring entrepreneurial and commercial orientation to airport strategy whether or not they have the majority of ownership in the airport and (2) through regulation and

⁸ However, policymakers should also consider that IIAC's high dependency on chaebol companies, especially two major national airlines, may counteract with the advantage from having additional concessions with national airlines.

oversight, the government can also place significant influence and constraint, whether or not they have majority ownership⁹.

The partial share sale can be done publically or individually, that is, through a public offering (or share floatation) and trade sale respectively. With share floatation, share capitals of the airport company are issued and publicly traded to individual and institutional subscribers through the stock market. After the Initial Public Offering (IPO), the first sale of stock to the general public, shares trade freely in the open market and money passes between investors. A group of public investors who purchase the tradable shares will be the new owner of the privatized airport company.

The advantage of the share floatation is that the government can tap into a wide range of investors and the raised capital goes directly to the government. A company selling common shares is never required to repay the capital to its public investors because it is the investors' risk to price and trade their shares. Once it is publicly listed, the company has flexible access to the capital market when it needs to raise funds for business purposes; it can be faster than raising corporate debts or bonds and large amounts of capital can be raised without rigorous financing terms. Moreover, the government can set some specific limitation on selling its shares such as limiting share occupancy so that it does not compete with dominant private owners, especially chaebol or foreign companies that could come in through trade sale.

On the other hand, having many and unspecified owners may serve as a disadvantage to the company's management and development. Firstly, it may exhibit agency dilemma; managing shareholders may require higher costs and time so the corporate management should be given some level of power control. But this may engender problems like asymmetric information, conflict of interest or moral hazard. Thus the publicly traded company is obliged to disclose its financial and management information to the public, but this can be used in an undesirable method by direct competitors. Often, public dissemination of information disturbs the management board in embarking long-term planning.

Key Considerations in Implementing Partial Privatization through Share Floatation

⁹ In extreme cases, a degree of government control can be maintained by issuing a golden share to the government so that public interests can be protected (Anne 2012). The golden share is a nominal share that can outvote all other shareholders. The UK government's golden share in the British Airport Authority (BAA), for example, gives ministers the final say in any major business decisions and restricts investors to take more than 15 percent of the company's share. However, it was ruled illegal in the European Court of Justice in 2003 as it entails restrictions on the movement of capital between the European Union's member states. Some concern that such decision may unsecure government's corporate control, especially when it is related to security purpose and also the airport company may become vulnerable to a hostile takeover bid. However, others argue that such case is less likely because the government and its political consideration is still important to airport management when the government does not hold its golden share.

IIAC should be able to manage different and often conflicting interests of public and private sectors. The public sector and the private sector have, by definition, very different incentives — social welfare vs. profit maximization — and it can be quite difficult to align these incentives. This problem can create pushback from the population, especially when the government seeks to privatize a service that is traditionally a “public good”. For instance, private owners may be more concerned about increasing a company’s profit and value in short-term and give excessive attention to non-aeronautical business such as retail and catering while putting the lower priority on aeronautical side, which however is more critical for the long-term value of the company. As explained, a strong link between management and the government can remain even when the government reduces its shares because its political decision-making and regulatory control plays a direct role in intervening private commercial interest. Consequently, the Korean government should create the political climate of local regulations and jurisdiction, which are acceptable not only for private entrepreneurship but also for public provision.

Another key issue is to determine the dividend payment that is acceptable to the private sectors while also maximizing the government’s own utility function. Under 100 percent public ownership, the government, MOSF more specifically, arbitrarily sets the dividend pay-out ratio and the historical ratio has been extremely high compare to other private airports worldwide. The top priority of the government stays in national level whereas private owners have a specific focus, the sound growth of IIAC. It is where an agent conflict between the national government and the current/potential owners of IIAC come from. The owners of IIAC asserts that the sufficient amount of capital from share sales should be reinvested into IIAC development as per the original purpose of privatization. As an alternative, they may consider a share issuance option; it makes a direct transfer of ownership by issuing new shares in the company in exchange for paid-in capital contributions from the private investors. With this option, the newly raised capital from the private owners can be destined for capital improvement of the airport business.

Lastly, IIAC should promote competitive pricing for the air traffic business that can suggest a stable, strong projection of future revenue. The government, who strongly believes that lower fee is a critical driver for competitiveness, strictly manages IIAC’s pricing scheme, but this may negatively impact on valuation of IIAC when it considers share sale.

6. Further Discussions

Besides deciding and executing a privatization scheme, the government needs to confirm what the most desirable outcome is from the perspective of an airport business and whether current plans are the optimal to achieve the purpose. In this regard, this chapter poses fundamental questions about the necessity of private participation and expansion plans, and other considerable

issues that used to be overlooked in past discussions. It is important to note that the purpose of this discussion is not to tell right from wrong but to suggest future direction of discussion.

6.1. Private Participation, the Optimal Decision?

Policymakers often expect that the quality of an airport and its services will be improved if market-oriented, commercially-minded private owners run the asset. Historical records provide evidence to this argument that some privatized airports, like the Copenhagen Airport and the Amsterdam Schiphol Airport, have actually achieved great expansion in both complementary retail business and non-complementary business on and off the airport. Oum (2008) conducts a statistical analysis of 109 airports worldwide with a variety of ownership forms and found that airports with private ownership and/or that have been corporatized are more efficient than those with traditional government ownership or port authority ownership. However, it is not always applicable that privatization improves airport's performance. There are debates whether actual improvement can be evidenced after shifting to privatization and how then recent failures of privatization in other international airport cases can be explained.

In most cases, the cause of such failures is the conflict of interests among private owners and the government; they fail to structure the organization in a way that aligns each party's risks and incentives. Private owners may feel constrained with excessive government control over airport development and unwarranted political interference in airport operations. To government, on the other hand, altering the nature of the airport business may be against the government's wishes for the use of the asset. The government should take a determined and consistent position in this point – especially the balance between aeronautical and non-aeronautical activities in its core management.

Once the government attains a consensus on its business strategy, the next step should be to develop and implement appropriate regulation on the airport business. The government controls airport's revenue through either single till or dual till regulation schemes. Under single till structure, all of its aeronautical and non-aeronautical activities are taken into revenue control so profits from non-aeronautical activities are deducted from the revenue requirement for aeronautical services before determining the level of aeronautical charges. On the other hand, with dual till structure, the two activities are viewed separately and only the aeronautical activities are regulated. Dual till schemes recognize the elasticity of demand as a function of two activities' qualities is different. Thus, private owners can invest in and profit freely from the unregulated revenues, which fall under the non-aeronautical commercial businesses of airports.

Taxpayers speculate that the government may lose control over public airport operation and pricing for passengers may hike when the private owners come into play. This speculation leads to a huge public opposition toward privatization. In practice, no government has ever fully dissociated from an airport's aeronautical operation. But it is also true that the privatized airports

worldwide have revealed price increases at varying degrees. While private owners have higher incentives from raising prices thus the firm's revenue, the government wishes to stabilize the price. When interests of private owners and the government conflict, overwhelmed private owners sometimes request a compensation package for the potential loss due to government's reluctance to increase price. Such a compensation package may impose additional expenses to the government if the contract is unfavorably made to it.

6.2. Institutional Decision Making

The dominance of chaebol companies in South Korea over virtually all businesses in the country are often heavily criticized. The government often goes to various lengths to deny favoritism to chaebols, prevent monopolistic behavior and makes efforts to be more inclusive of all businesses, although these practices do not necessarily always bring more efficiency. IIAC has a compulsory obligation to offer 30 percent of duty free rents to domestic SMEs, although these enterprises' ability to operate duty free shops is not be as efficiently as chaebols. However which of state intervention and market mechanism would enable the allocation of resources cost-effective and independently sustainable is still in debate.

The functioning of market mechanism is also closely linked the IIAC's labor union that concerns job security. All non-outsourced employees of IIAC are government employees, and hold fairly secure positions, and they speculate that private owner would undertake an organizational reform and lay off current employees. On the other hand, the demand for labor would increase than it is today if the new private owner successfully expand the scope of IIAC business. The government should consider the best practice to ultimately protect domestic employees.

6.3. Time Value of Money: Dividend Payment Tomorrow or Share Sale Today?

IIAC has high dividend payout ratio and the dividend payment is distributed by MOSF and reinvested in 15 national airports and/or other transportation sectors. If the government were to decide to fully privatize IIAC, it would cease to receive perpetual dividends from the company, but would, instead, receive a large one-time upfront payment, that could be reinvested in other SOEs or in the payment of national debt, etc. Also, the royalties paid by the private operator to the government, which ranges around 10 percent-15 percent of profits (royalties are usually not paid when profits are negative). However, it is important for the government to conduct a thorough assessment to compare the appropriately discounted NPV of future dividend payments from holding public shares of IIA versus the value of receiving this upfront payment today and relinquishing perpetual dividend payments. Under partial privatization, on the other hand, the government charges private owners for the right to operate and manage the airport while it continue to receive its dividend payment proportionate to its share.

A comprehensive valuation of the airport, Capital Asset Pricing Model (CAPM) for example, must be conducted in this case. This asset pricing is critical in implementing privatization because if the price is too high, the government may fail to attract highly-qualified private owners, but, if the price is too low, the government may lose potential income that it could otherwise have been accruing.

6.4. Optimal Size of IIA

Lastly, the Korean government should reconsider the optimal capacity of IIA based on reasonable traffic forecast. The current expansion plan is based on assumption that the total number of passengers is to be doubled up soon after 2020, the completion of phase 4. Despite the increasing trend of passengers and flights coming through IIA, however, it is hardly likely to continue to grow at the similar rate. Also, the growing competition with other hub airports in Asia and IIA's location being adjacent to North Korea may limit its long-term growth. Airports in the Northeast Asia, such as Tokyo Narita International Airports, Ky Shanghai Pudong International Airport and Hong Kong International Airport, are also expanding and competing for a larger market share, especially for the status of most important regional hub. This adds up to the question about the necessity and timing of the fourth phase expansion, which is scheduled to start right after the completion of Phase 3. There is a sufficient demand to meet the additional capacity from Phase 3, but it is still unclear that the capacity of 100 million passengers is necessary. In this regard, the expansion plan should be carefully reviewed and revised, if needed, upon reliable traffic projection. Also, it is important to keep track of competitors' development plans and strategize its own expansion plan.

7. Conclusion

There are a variety of schemes that bring private sectors in the airport business; contracting-out, lease, partial/full ownership transfer can be some examples. Policymakers ought to choose the option that is considered to maximize the benefit from the public airport asset. However, there is no clear consensus on what "the benefit" is. Rather public debates on IIA's future have been hovering only around how to finance two upcoming expansion projects while other core issues are being overlooked. This, this study identifies the core issues and challenges regarding IIA, and demonstrates decision-making practice with two most plausible options, PPP and partial share sale.

For IIA's development, it is urgent that Korean policymakers set the clear strategy and competitive position for its airport business, and reach to a comprehensive agreement among key

stakeholders on their decision. These processes will completely change the value of the asset to future investors and current stakeholders. Some of practices in this study may be similar to ones of private infrastructure businesses, but it is imperative for public infrastructure that the decision should also be politically acceptable. This study identifies that the public's resistance is mostly from radical change of public airport's operation and influx of foreign capital. To address the latter concern, policymakers can consider enticing public pension fund such as National Pension Service in Korea instead of foreign investors. For the former concern, phased recapitalization can be considered such as trying PPP in the limited scope and moving onto partial privatization.

Lastly, the study attempts to expand the boundary of public discussion presenting fundamental questions to policymakers, which include the necessity of the massive expansion of IIA and state interventions. To highlight, the current expansion plan was initially announced in 1992 and policymakers still take it as the blueprint for IIAC's development. Is 100 million passenger capacity an optimal size in terms of current IIAC and global circumstances? Have policymakers discussed how to regulate the price or IIAC's revenue when it become privatized? Again, this paper does not aim to provide "one way the other" type of solution, rather its purpose is to propose the directions for public discussions and future studies regarding airport development.

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