



Private Participation in Airport Activity in Egypt
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Abstract

This paper analyzes Egypt's experience in introducing private participation in airport activity, highlighting its strengths and weaknesses in light of international experiences. The study reviews airport privatization trends in developed and developing countries, the main methods of financing, and the changing role of the state in this activity. More importantly, the paper reviews the main regulatory principles necessary to safeguard this industry against potential anti-competitive behavior and economic inefficiencies in supplying the service. The paper concludes that Egypt's move to rely on private investment in airports is consistent with international trends. However, delays in establishing the right institutional and regulatory environment for this activity may compromise effective private participation in airports. Thus, the study recommends that more attention be given to establishing comprehensive economic regulation as a pre-requisite for a strong private role in the provision of airport services in Egypt.

ملخص

تقيم هذه الورقة تجربة مصر في تشجيع القطاع الخاص على المساهمة في نشاط المطارات، وذلك من خلال تحليل نقاط القوة والضعف التي تتسم بها هذه التجربة في ضوء الخبرات الدولية. وتستعرض الورقة تجارب كل من الدول المتقدمة والنامية في مجال خصخصة المطارات وكذلك الطرق المختلفة التي اتبعتها هذه الدول لتمويل الاستثمار في هذا القطاع. كما تساهم الورقة في توضيح الدور الجديد الذي تلعبه المؤسسات الحكومية في تنظيم ومراقبة هذا النشاط، وتحديد القواعد التنظيمية اللازمة لحماية هذه الصناعة من الممارسات الاحتكارية والتي قد تؤدي إلى انخفاض مستوى وكفاءة الخدمات التي تقدمها المطارات. وقد توصلت الدراسة إلى أنه على الرغم من أن تجربة مصر في مجال خصخصة المطارات تتماشى والاتجاه العالمي، إلا أن عدم إقبال القطاع الخاص على المساهمة في هذا النشاط، قد يرجع إلى تأخر إرساء القواعد التنظيمية المناسبة وغياب الإطار المؤسسي الملائم، الأمر الذي يؤدي إلى عدم بلوغ الأهداف المرجوة من هذه التجربة حتى الآن. ومن ثم فإن الدراسة توصي بضرورة وضع منظومة متكاملة من القواعد التنظيمية كشرط لضمان دور أكثر فعالية للقطاع الخاص في تطوير وتنمية قطاع المطارات في مصر.

I. Introduction

The 1990s saw a dramatic strengthening in the role of private operators and investors in transport infrastructure worldwide. This growing private sector participation has often reflected changing ideologies about the role of the state and dissatisfaction with publicly provided services. In addition, mounting empirical research suggests that private ownership and management of these services produce superior resource allocation.

These trends, combined with the predominantly public supply of infrastructure services in many countries, as well as governments acting as both owners and regulators in these activities, underscore the need to address the issue of introducing private participation in these activities as a complex process of privatization-cum-regulation. According to Estache and de Rus (2000) “getting the private sector involved may be the easy part of transforming this sector. Having governments effectively take on their new role as regulators may be the toughest challenge”.¹

Airports pose no exception in either their need for financing or their need for effective regulation. This means that the pressure to introduce private participation in airport activity cannot be addressed without considerations of economic efficiency. Therefore, the critical question is, how airport services can be financed, subject to a constraint of economic efficiency? Or conversely, how economic efficiency can be maximized subject to limitations on finance?

The objective of this study is to analyze Egypt’s experience of introducing private participation in airport activity and to highlight the strengths and weaknesses of this experience in light of worldwide trends and other countries’ experiences. The idea is to provide a means by which the government can balance its interest in attracting private investors in airport activity and ensure that economic efficiency (and welfare) is not compromised. The paper is organized as follows: Section II summarizes privatization trends worldwide and highlights the main features of Egypt’s airport privatization developments. Section III analyzes investment needs and financing alternatives in the context of constrained capacity and patterns to rationalize the role of the state in ownership and finance of airport activities. Section IV reviews the main regulatory principles to safeguard airport activity against anticompetitive and economically inefficient outcomes, and surveys regulatory

options already implemented in different countries. Section V concludes and gives policy recommendations for Egypt.

II. Trends in Private Participation in Airport Activity

Traditionally, airports have been owned and operated by governments because airport infrastructure was commonly believed to be a public utility. Changes in the ownership and management of airports commenced in the late sixties. This trend intensified in the late eighties and early nineties, when airports were no longer considered to exhibit features of the traditional public-utility model. Since then, several governments have looked at airports as business opportunities that should be discovered and some of them cautiously started the process of privatizing commercial-service airports.

Characteristics of Worldwide Trends

Developed countries started the trend towards private sector participation in airport activity. The United Kingdom implemented its first airport privatization in 1987. Currently, the British airport network is predominantly private, where one company, the British Airport Authority (BAA), owns and manages most major airports in the UK. Also, recently the UK has tendered an offer for the privatization of its air traffic control system (ATC). Other countries such as Australia have chosen to allow extensive private sector participation in airport activity through long-term leasing contracts. Currently 22 airports are under 50-year private leases, with the option of extension to another 49 years (Betancor and Rendeiro, 2000). For airports in Europe, countries have relied more on partial divestitures and/or private management combinations. Vienna, Zurich, and Copenhagen airports all come under this category.

Latin America was the first to follow region developed countries in the introduction of the private sector into airport activity and led the way for the developing world. Patterns of private sector participation in developing countries in the past decade can be analyzed using data from the Private Participation in Infrastructure dataset (PPI), accumulated by the World Bank over the period 1990-99. According to this dataset, the accumulated value of investment in projects with private participation in infrastructure in developing countries reached close to 5.5 billion US dollars (Table 1). The bulk of this participation targeted telecommunications

¹ Estache and de Rus (2000) p. ix.

(43 percent), electricity (28 percent), and roads (10 percent). Other sectors followed, with airports trailing at only 1.6 percent of total accumulated investment.

Table1. Total Private Sector Investment in Infrastructure Projects (1990-99)

| <i>Infrastructure</i> | <i>Total Investment \$billion 1990-99</i> | <i>percent of total</i> |
|-----------------------|---|-------------------------|
| Telecom | 234 | 42.7 |
| Electricity | 155 | 28.3 |
| Roads | 55 | 10.0 |
| Water | 33 | 6.0 |
| Natural Gas | 27 | 4.9 |
| Rail | 23 | 4.2 |
| Ports | 12 | 2.2 |
| Airports | 9 | 1.6 |
| Total | 548 | 100 |

Source: World Bank (1999).

As for type or mode of private participation in infrastructure, it varies from one sector to the other (Table 2). (For a glossary of the modes of privatization and their characterizing features, refer to Appendix 1.) In airports, operation and management contracts with major investment account for the bulk of private sector participation (78 percent of total investment value and 25 out of the recorded 51 projects). In electricity, the bulk of private participation comes in the form of Greenfield projects (54 percent of investment value) and divestiture (42 percent). Operation and management contracts with major investment are also the dominant type of investment in ports (58 percent), rail (66 percent), roads (79 percent) and water (74 percent) projects. Both telecommunication infrastructure and natural gas depend primarily on divestiture (60 percent and 55 percent respectively), followed by Greenfield projects (37 percent and 42 percent, respectively).

Table 2: Modes of Private Participation in Infrastructure, 1990-99

| Infrastructure Activity/Mode of Participation | | # Projects | Investment (US\$ million) | Investment (Percent) |
|---|-----------------------------|------------|-------------------------------|--------------------------|
| Airports | Divestiture | 10 | 1,275 | 15 |
| | Greenfield | 11 | 581 | 7 |
| | OM | 5 | 0 | 0 |
| | OM with capital expenditure | 25 | 6,741 | 78 |
| | Total | 51 | 8,597 | 100 |
| Electricity | Divestiture | 275 | 64,851 | 42 |
| | Greenfield | 343 | 83,098 | 54 |
| | OM | 10 | 0 | 0 |
| | OM with capital expenditure | 21 | 7,033 | 5 |
| | Total | 649 | 154,982 | 100 |
| Natural Gas | Divestiture | 58 | 14,926 | 55 |
| | Greenfield | 37 | 11,467 | 42 |
| | OM | 0 | 0 | 0 |
| | OM with capital expenditure | 2 | 600 | 2 |
| | Total | 97 | 26,993 | 100 |
| Ports | Divestiture | 8 | 113 | 1 |
| | Greenfield | 41 | 5,147 | 41 |
| | OM | 22 | 0 | 0 |
| | OM with capital expenditure | 56 | 7,165 | 58 |
| | Total | 127 | 12,425 | 100 |
| Rail | Divestiture | 6 | 675 | 3 |
| | Greenfield | 7 | 7,142 | 31 |
| | OM | 5 | 0 | 0 |
| | OM with capital expenditure | 40 | 15,307 | 66 |
| | Total | 58 | 23,124 | 100 |
| Road | Divestiture | 9 | 2,147 | 4 |
| | Greenfield | 34 | 9,301 | 17 |
| | OM | 6 | 0 | 0 |
| | OM with capital expenditure | 230 | 43,413 | 79 |
| | Total | 279 | 54,861 | 100 |
| Telecom | Divestiture | 163 | 140,426 | 60 |
| | Greenfield | 378 | 86,207 | 37 |
| | OM | 2 | 12 | 0 |
| | OM with capital expenditure | 8 | 7,383 | 3 |
| | Total | 551 | 234,028 | 100 |
| Water | Divestiture | 12 | 4,014 | 12 |
| | Greenfield | 39 | 4,630 | 14 |
| | OM | 22 | 24 | 0 |
| | OM with capital expenditure | 79 | 24,477 | 74 |
| | Total | 152 | 33,145 | 100 |

Source: World Bank (1999).

Also, certain regions appear to be leading in introducing private sector participation in infrastructure in general. Most of the private sector participation in infrastructure projects is concentrated in Latin America and the Caribbean, and East Asia and the Pacific. Latin

America is dominant in all sectors except in ports where East Asia and the Pacific dominate (Table 3). As for the Middle East and North Africa region, private participation in electricity projects dominate followed by natural gas projects. The share of airport projects is the lowest.

Table 3. Regional Distribution of Private Participation in Selected Infrastructure Sectors

| | East Asia & Pacific | Europe & Central Asia | Latin America & Caribbean | MENA | South Asia | Sub-Saharan Africa |
|--------------------------|---------------------|-----------------------|---------------------------|---------------|---------------|--------------------|
| Airport ¹ | 1,243 | 1,154 | 2,450 | 198 | 138 | 263 |
| Port ¹ | 5,411 | 23 | 2,498 | 377 | 943 | 32 |
| Electricity ² | 49,741 | 10,436 | 45,311 | 6,721 | 16,799 | 2,040 |
| Natural Gas ² | 3,131 | 3,087 | 9,274 | 3,271 | 75 | 40 |
| Total | 59,526 | 14,700 | 59,533 | 10,567 | 17,955 | 2,375 |

Notes: ¹Data covers the period 1990-98, and its in 1998 US\$ million

²Data covers the period 1990-97, and its in 1997 US\$ million

Source: World Bank (1999).

Despite privatization trends and the growing interest in a stronger role for the private sector in this industry, government ownership of airports still dominates the sector. From the results of a survey of 303 airports in 82 countries, conducted in 1999, 97 airports out of 119 (82 percent of surveyed airports) currently in operation are under some kind of government ownership (government, civil aviation, ministry, or municipal government). The influence of privatization and increased private participation, in general, appears greater when analyzing the industry's planned investment (Table 4). For instance, we find that while certain forms of private sector participation ranked the lowest in terms of their frequency of adoption in existing airports, concessions, management contracts and private ownership represent the major modes of financing for new investments. Of the 32 countries indicating new investment in airports, sixteen rely on concessions and eleven rely on investment by privately owned and managed entities. This compares to only 15 countries relying on government ownership and 4 relying on civil aviation authorities to implement new investment in airports.

Therefore, worldwide trends suggest a strong move toward private participation in airport activity. Meanwhile in Egypt, a program is already underway to accomplish a similar goal. The following section surveys the main features of recent developments in the introduction of the private sector into Egyptian airports.

Table 4. Worldwide Modes of Airports Ownership (number of countries)

| Region | Govt. owned entity | Civil Aviation Directorate | Ministry or other Govt. Dept | Regional or Municipal Govt. | Concession or leasing | Private | Other |
|--|--------------------|----------------------------|------------------------------|-----------------------------|-----------------------|-----------|----------|
| Asia/Pacific | | | | | | | |
| <i>Current</i> | 10 | 5 | 3 | 2 | 1 | 3 | 2 |
| <i>Planned</i> | 3 | 2 | 1 | 0 | 2 | 3 | 3 |
| Middle East | | | | | | | |
| <i>Current</i> | 2 | 5 | 1 | 0 | 0 | 0 | 0 |
| <i>Planned</i> | 3 | 0 | 1 | 0 | 0 | 0 | 0 |
| Africa | | | | | | | |
| <i>Current</i> | 13 | 5 | 3 | 0 | 2 | 1 | 2 |
| <i>Planned</i> | 3 | 0 | 0 | 0 | 2 | 1 | 0 |
| Europe | | | | | | | |
| <i>Current</i> | 19 | 5 | 8 | 7 | 3 | 3 | 2 |
| <i>Planned</i> | 5 | 1 | 5 | 3 | 9 | 6 | 2 |
| North America | | | | | | | |
| <i>Current</i> | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| <i>Planned</i> | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Caribbean Central & South America | | | | | | | |
| <i>Current</i> | 3 | 2 | 2 | 1 | 2 | 0 | 0 |
| <i>Planned</i> | 1 | 1 | 0 | 0 | 3 | 1 | 0 |
| Total | | | | | | | |
| <i>Current</i> | 47 | 22 | 17 | 11 | 9 | 7 | 6 |
| <i>Planned</i> | 15 | 4 | 7 | 4 | 16 | 11 | 5 |

Source: ICAO (2000g).

Privatization Developments in Egypt

The privatization environment of infrastructure in Egypt is determined by a number of parameters. The first set of parameters determining this environment derive from laws exempting selected utility sectors from the previously passed Law 126/1947 amended by Law 61/1958, which reserve ownership of utilities to the public sector. Law 3/1997 for airports, and Law 100/1996 for electricity generation, allow private participation in these activities, without allowing full private ownership rights. The decision to maintain this reservation on private ownership of utilities resulted in a reliance on concessionary arrangements when allowing the private sector involvement in these activities.

The structural adjustment program, ERSAP, which emphasized the reduction of the role of the state in economic activity in general and introduced privatization of public enterprises under Law 203, represents the second parameter. Further steps in privatization included

passing laws that allow privatization of public enterprises in key sectors such as banking (Law 155/1998) and insurance (Law 156/1998).

While these indicators represent elements for the encouragement of private participation in economic activity in general, Law 3/1997 and The Ministry of Transportation's Investment and Private Participation Plan are the main determinants of the privatization environment for airport activity in Egypt. The main elements of each of these parameters are discussed in the following sections.

Law 3 of the Year 1997: The Airport BOT Law

Law 3 was issued in 1997 to allow private investors to build and operate commercial airports. It regulates the establishment, operation, and management of airports without restrictions imposed on the activity by provisions of Public Utility Laws 129/1947 and Law 61/1958. Law 3/1997 allows private participation in airports through concessions that last for periods that shall not exceed 99 years. It stipulates that many of the details of the operation, including charges and fees for services, entry, licenses, use, occupation, exploitation and water and electricity consumption value, will be determined by the concession contract. In addition, the Law allows foreign investors to participate in the establishment, operation, and management of airports.

As an activity that is pursued and encouraged by the government, airport activity was included under the Investment Incentive Law (Law 8/1997), thus qualifying for tax exemptions and holidays. In addition, the government allowed for the right of arbitration to be agreed upon in concession contracts of public utilities, and the Egyptian Arbitration Law was amended accordingly. For other legal matters governing the establishment of airport companies representing partners, the governing law is the Private Company Law 159/1981.

The Ministry of Transportation Plan for Airport Development

In addition to the legal environment established by various laws, and to respond to constraints on government financing of investment in airports, the Ministry of Transportation and the Egyptian Civil Aviation Authority (ECAA) have adopted a plan that 'aims at establishing new airports in new locations where demand for airport services is rising as well as developing existing airports'. The Ministry proposes to rely on the private sector to achieve its airport network expansion plan primarily through BOT contracts.

According to the Ministry's plan, total investment required to develop and modernize existing airports and to build new ones, amounts to LE 150 billion over the next 20 years.

(For a detailed plan of the required investment see Appendix 2). This comprehensive national plan seeks to expand the number of airports and develop existing ones to reach a total of 30 airports serving tourism, agriculture, industry and overall development needs without the addition of new burdens to the State Budget.²

According to the plan, the main pillars of this strategy are³:

1. *Establishing and commissioning new airports:* Airports currently closed such as Assiut, Port Said, Taba and Tor, and new airports in East Awanat, Dakhla and Kharga, Marsa Alam, Ras Sidr, and Alamein.
2. *Development of existing airports:* This is done through expanding and developing existing airports to accommodate a larger number of aircrafts and by enhancing passenger clearance areas. Also, the building of new air control systems and automation of flight information and the general development of communication systems. Airports in this category include Aswan, Luxor, Hurghada and Sharm El Sheikh.
3. *Enhancing the role of the private sector in airport activity through BOT arrangements:* Contracts were concluded with investors to build airports in various areas of Egypt such as the airports of Marsa Alam, Alamein, Al Farafra, Ras Sidr and Sohag.⁴

These private participation trends, both worldwide and in Egypt, have developed in response to a number of factors that influence the industry as a whole. These include rapid expansion of the world economy, developments in air transport technology and airline liberalization, which reduced fares in many developed countries. As a result, domestic and international air traffic increased from some 9 million passengers in 1945 to over 1.5 billion passengers in 1999.⁵ In addition, air traffic forecasts indicate that these trends are expected to continue in the next 10 to 15 years, when domestic traffic is expected to grow at an average annual rate of 3.5 percent, international traffic at 5.2 percent, and overall growth (domestic

² Some reports in the press have suggested the targeted number of airports is 41. There are, however, no official sources from the Ministry of Transportation or the ECAA to support these claims.

³ There are some overlaps of these goals, particularly in terms of enhancing private sector participation through BOT's (goal 3) and the other two goals. However, these are the exact goals indicated in the plan.

⁴ The BOT contract for Ras Sidr is pending as a consequence of investment delays. Marsa-Alam airport is already established and will be inaugurated soon.

⁵ ICAO (2000g).

plus international) at 4.5 percent.⁶ Similar projections for Egypt indicate that the average annual growth rate of number of passengers will be 4 percent during the period 2000-2001 and 5 percent during the period 2002-2004.⁷ To meet current and projected needs, countries contemplate large investments in this area, as well as choose among various alternatives of financing investment in airport development. The following section discusses investment needs and financing options to bridge the gap between expected growth and current resources in the airport industry.

III. Investment Needs and Financing Alternatives

Despite these private participation trends, capacity constraints persist in many airports worldwide. This means that further investment in airport activity will be required over the coming years to fill the gap between demand and the current supply of airport services. This section highlights recent congestion patterns, surveys various means to address them through short-term allocative mechanisms, and presents alternative sources for financing large airport investments.

Capacity Constraints and the Need for Increased Capacity

One formal mechanism for assessing demand pressures on airport capacity is based on the concept of *airport slots*. An airport slot is the time that an aircraft is expected to need to land and depart from an airport. When demand by air carriers for slots at a particular airport exceeds the available supply, the airport can be considered as capacity constrained.

Consequently, the airport needs to work on optimizing the allocation of airport slots in such a way as to absorb excess demand.⁸ Airports where it is impossible to resolve excess demand through direct (voluntary) negotiations with airlines are classified as *fully-coordinated*.

Alternatively, schedule facilitated airports are airports where demand is approaching capacity and where voluntary cooperation in adjusting schedules can resolve shortage of slots during

⁶ ICAO forecasts for the period 1998-2010. These traffic forecasts have been developed by the ICAO with the implicit assumption that sufficient system infrastructure and capacity will be available to handle the demand.

⁷ Ministry of Transportaion (2000).

⁸ This situation may occur only at certain periods of the day or on certain days of the week, or in certain seasons (such as summer), or in the most severe cases, during all the hours that the airport is open. Thus, the severity of a capacity constraint can vary widely among airports calling for different measures to deal with different situations. These variations in the extent of the constraint on the supply of airport slots also preclude a precise quantitative definition of a capacity-constrained or congested airport, for example, in terms of aircraft movements or passenger or cargo throughput per hour, as well as making simplistic comparisons among airports on such a basis.

some parts of the day. Full coordination and/or facilitation are done under the umbrella of the International Air Transport Association (IATA).

An estimate of the growing extent of the problem of capacity-constrained airports can be made by analyzing changes in the number of airports that are *fully coordinated* or *schedule facilitated* under the IATA system. Over the past decade, the number of airports fully coordinated under the IATA system grew from 100 airports in 1990 to 118 airports in 1999. On the other hand, the number of airports where IATA helps with partial schedule coordination (*schedule facilitation services*) to address part-time congestion grew by 60 percent over the same period (50 in 1990 to 80 in 1999).⁹ In addition to IATA slot allocation mechanisms, Europe and the United States, where airport capacity constraints are developing into a chronic problem, have set up respective slot allocation mechanisms for some or all of their congested airports. As a result, 63 of Europe's airports were fully coordinated under European slot rules and 11 were coordinated in 1999.

In contrast to these administrative-cum-negotiation based systems of slot allocation, an increasing number of airports are employing monetary mechanisms to influence demand for airport slots. The weaker form of these mechanisms are *peak period* pricing in landing charges, while the stronger form is through the sale or lease of slots. Thirty-eight of the 118 fully coordinated airports in the IATA scheduling system levy peak period charges as an additional mechanism for optimizing allocation of airport slots.¹⁰

But peak period pricing has proved to be of limited effectiveness, and a stronger version of monetary valuation of slots permits airlines to purchase, sell or lease airport slots.¹¹ By attributing a market value to slots, airlines could therefore respond quickly to changes in demand for air services, exiting those markets that have become unprofitable and entering more profitable ones. Voluntary buying, selling and leasing of slots between airlines would result in the cost being viewed as a business expense, which ultimately factors in their ability to competitively price their services.¹²

⁹ A thorough capacity analysis, however, would indicate that a lesser level of coordination could probably resolve a particular capacity problem, for example, as fully coordinated in the summer season.

¹⁰ ICAO (2000f).

¹¹ This is because of the small impact on the overall operating costs of airlines (landing and associated airport charges overall currently represent about 4 percent of worldwide airline operating expenses) and because of the impracticality of operating many of the flights concerned at other times.

¹² Other indicators of the need for new investment are subjective indicators assessing users' satisfaction with service, or objective indicators of aspects of performance such as delays, queue length, time, and baggage lost, etc.

Relying on scheduling mechanisms is, nonetheless, perceived as a short-term solution to capacity limitations. Countries have attempted to address the underlying problems by relying on expanding the supply of airport services that is, building new airports or expanding existing ones and improving air traffic control capabilities with new technology and procedures. But, expanding physical capacity at airports requires large investments and consequently methods of finance for these investments have to be developed. The following section surveys recent developments in the area of airport financing and evaluates financing options.

Financing Airport Investment

Various estimates, including information collected from the International Civil Aviation Organization (ICAO) member countries, predict that airport and air navigation service investment requirements between now and the year 2010 will exceed US \$300 billion. This rough estimate gives an order of magnitude indicative of the challenges in the area of finance that airport and air navigation services managing bodies will be facing in the years to come.¹³ The question that remains to be answered is how governments plan to finance these investments?

There are a number of factors that suggest that future financing of airport activity is going to rely less on governments and more on a diversified list of private finance and ownership alternatives. First, the shift in governments' ideological positions toward ownership and management of infrastructure has made them more willing to transfer airport operations (and in some cases ownership) to financially autonomous bodies, and possibly to the private sector. Second, government-owned and managed airports exhibit public ownership indicators of poor performance, failure to capitalize on opportunities of raising non-aeronautical revenues, and the resulting inability to meet various investment and capital needs. As a result, government department airports have the highest level of dependence on aeronautical sources of revenues, reaching over 70 percent compared to around 40 percent for privatized airports (Kapur, 1995). Third, growth in air traffic per capita has created the potential for making an increasing number of airports and air navigation services financially viable (smaller airports are less likely to be financially viable).

¹³ ICAO (2000d).

These developments paved the way for the willingness of governments to accept the private sector in financing airports, as well as raise private parties' interest in the activity because of its growing commercial potential. Even airports, which are still in the public domain, are increasingly being separated from government finances and are facing pressure to independently secure their financing needs. Already, a variety of sources are used to finance airport and air navigation services, as summarized in Table 5.

Table 5. Primary Sources of Financing Airports and Navigation Services

| | Self financing | National Govt. | Regional / Municipal Govt. | Foreign Govt. loans or aid | Dev. banks or funds | Commercial loans | | | Share capital | Other |
|--|----------------|----------------|----------------------------|----------------------------|---------------------|------------------|-----------|-----------|---------------|-----------|
| | | | | | | Domestic | Foreign | Band | | |
| Asia & Pacific (13 countries) | | | | | | | | | | |
| Applied | 19 | 9 | 5 | 9 | 2 | 11 | 4 | 4 | 6 | 0 |
| Planned | 16 | 4 | 2 | 8 | 6 | 7 | 3 | 1 | 7 | 0 |
| Middle East (8 countries) | | | | | | | | | | |
| Applied | 2 | 8 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Planned | 2 | 2 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 3 |
| Africa (19 countries) | | | | | | | | | | |
| Applied | 57 | 51 | 0 | 26 | 21 | 4 | 23 | 0 | 2 | 2 |
| Planned | 33 | 20 | 0 | 14 | 20 | 13 | 22 | 8 | 10 | 1 |
| Europe (27 countries) | | | | | | | | | | |
| Applied | 120 | 29 | 13 | 1 | 50 | 73 | 45 | 6 | 13 | 2 |
| Planned | 81 | 17 | 7 | 6 | 41 | 50 | 45 | 5 | 10 | 0 |
| North America (2 countries) | | | | | | | | | | |
| Applied | 24 | 6 | 3 | 0 | 0 | 24 | 0 | 24 | 3 | 6 |
| Planned | 6 | 6 | 3 | 0 | 0 | 6 | 0 | 6 | 3 | 6 |
| Caribbean / Central / South America (7 countries) | | | | | | | | | | |
| Applied | 11 | 13 | 5 | 3 | 3 | 0 | 0 | 0 | 0 | 2 |
| Planned | 9 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 8 | 3 |
| Total (76 countries) | | | | | | | | | | |
| Applied | 233 | 116 | 26 | 39 | 77 | 112 | 73 | 34 | 24 | 12 |
| Planned | 147 | 52 | 12 | 29 | 69 | 78 | 71 | 21 | 40 | 13 |

Source: ICAO (2000d).

Self-financing (e.g. from retained earnings) appears to have replaced government financing as the most frequently quoted source, and this is expected to remain the same in the future. Also, share capital has almost the same frequency as national government financing in

planned investment. Furthermore, commercial loans as a chosen means of financing represent a significant source of financing for planned airport investment, which entails a level of financial discipline that may not be there with foreign government or development bank loans.

When compared to results of another survey that ICAO conducted in 1991, commercial loans have shown a remarkable increase, again reflecting the growth in autonomous bodies that are expected to secure their own financing. An interesting new trend is the growing importance of bonds and share capital, which again is clearly linked to the new organizational structures¹⁴.

Capacity Constraints and the Need for Financing in Egypt

Various sources of information indicate that Egypt, not unlike many developed and developing countries, faces increasing capacity constraints in its major airports. First, airfreight volumes doubled between 1990 and 1998, while the number of passengers increased by around 50 percent for the same period (IATA). Without major new investment in Egyptian airports, this growth trend resulted in many Egyptian airports reaching maximum capacity in the past few years.¹⁵ For instance, Cairo Airport's capacity is 7.7 million passengers per year, while already Cairo Airport received close to 10 million passengers in the year 2000 (Youssef, 2001b). Aswan airport reached its maximum in 1997 at 6 planes per hour and Sharm El-Sheikh Airport is saturated with 8 landing areas. In addition, projected traffic flows are expected to reach 12 airplanes per hour, up from 5 airplanes per hour by the end of year 2000 and 91 airplanes by the year 2007. Traffic growth at the Hurghada International Airport reached its peak in 1997 with 12 airplanes per hour, this number will increase to 136 by the year 2007 and it requires 31 landing areas by 2001. Similarly, the capacity of Luxor International Airport reached its maximum in 1997 with 7 airplanes per hour. Its current capacity is 20 airplanes per hour and this will increase to 30 by the year 2007. Finally, maximum capacity at the Alexandria International Airport was realized in 1997 with 5 airplanes per hour. It will reach 9 by the end of this year and 21 by 2007 (Ministry of Transportation, 2001).

¹⁴ ICAO (2000d).

¹⁵ Existing airports in Egypt fall under two categories; the first category comprises major airports in the mainland (Nile Valley and Delta). These have not received significant investment since the 1960s. The second group covers a number of airports in Sinai, which were returned to Egyptian sovereignty in the early 1980s. Airports in this group have not received any recent major investment additions either.

The second category of information indicating future pressures on Egyptian airports stems from ICAO forecasts for the region, both in terms of domestic or international traffic. Forecasts for the period 1997-2020 show that domestic passenger traffic within the region is expected to increase from 12 billion passenger/km in 1997 to 30 billion in 2020; an average annual growth of 4.1 percent. Similar patterns appear in international and intra Middle Eastern routes.

Financing Egypt's Airport Activity: Past, Present and Future

Egypt's airport sector comprises 18 airports¹⁶ serving almost 12 million passengers per year, 8 million in international traffic and 4 million in domestic. The bulk of this activity goes to Cairo Airport (an average of 58 percent of Egypt's total number of passengers during the period 1996-98), Aswan (6 percent), Luxor (11 percent), Sharm El-Sheikh (8 percent), and Hurghada (12 percent). The total number of passengers increased by 106 percent from 1995 to 1999. As for Cairo Airport, the total number of passengers increased by 16.7 percent during the period 1998-99, and the total cargo increased by 6.4 percent during the same period (Ministry of Transportation, 2000 and Cairo Airport Authority, 1999).

Institutionally, ECAA is responsible for all Egyptian airports, except Cairo International Airport, which has been an independent authority since 1971 run by a Board of Directors under the supervision of the Ministry of Transportation. ECAA finances are part of the government budget. Therefore, ECAA is dependent on the government for covering its current costs, as well as future investment expenditures. Revenues earned from the activity are repatriated to the Ministry of Finance as part of the general government sources of revenue. In contrast to ECAA, Cairo Airport must cover its own expenses, independently meet its finance needs, and repatriate surplus to the government as ownership returns after allowing for its investment needs. Under this setup and during the period 1994/95-1998/99, Cairo Airport generated a surplus of LE 314 million, with an average annual surplus of LE 63 million. LE 100 million was paid in taxes to the Tax Administration while the remaining LE 214 million were transferred to the National Treasury (Cairo Airport Authority, 1999).

The financial statements of Cairo Airport and ECAA reflect the independence of Cairo Airport relative to Egypt's other airports (Table 6.) While ECAA was able to cover 87 percent

¹⁶ In addition to 2 airports under the control of the Egyptian Air Force and 2 airports used for oil transportation that can also be used for civil aviation purposes, as well as 2 airports used for exports' transportation. Five new airports are under construction in light of the new ECAA investment plan (ECAA, 2001).

of its current expenditures from its own resources, depending on the government for providing only 13 percent, Cairo Airport depended in full on its own resources to finance its current operations. As for their investment needs, ECAA depended more on government resources, since the subsidies it received and the loans that were mainly provided by the National Investment Bank (NIB) accounted for 92 percent of total investment revenues. By contrast, Cairo Airport provided almost 95 percent of its own resources to finance capital expenditures.

Table 6. ECAA and Cairo Airport Uses of Funds and Revenues as part of the Government Budget

| | 97/98 | 98/99 | | 97/98 | 98/99 |
|----------------------------------|------------|------------|----------------------------|------------|------------|
| ECAA Budget | | | | | |
| Wages | 31 | 37 | Current revenues | 76 | 90 |
| Current expenditures & transfers | 47 | 66 | Subsidized deficit | 2 | 13 |
| Total current use of funds | 78 | 103 | Total current revenues | 78 | 103 |
| Investment | 90 | 90 | Different capital revenues | | 10 |
| | | | Loans & credit | | 80 |
| Capital transfers | 32 | 37 | Subsidies | 32 | 37 |
| Total capital use of funds | 122 | 127 | Total capital revenues | 122 | 127 |
| Total Expenditures | 200 | 230 | Total Revenues | 200 | 230 |
| Cairo Airport Budget | | | | | |
| Wages | 25 | 29 | Current revenues | | 148 |
| Current expenditures & transfers | 141 | 147 | Banks | | 1 |
| Current surplus | 62 | 62 | Current transfers | | 89 |
| Total current use of funds | 228 | 238 | Total current revenues | 228 | 238 |
| Investment | 17 | 21 | Different capital revenues | | 19 |
| | | | Loans & credit | | 2 |
| Capital transfers | 16 | 17 | Self finance | 16 | 17 |
| Total capital use of funds | 33 | 38 | Total capital revenues | 33 | 38 |
| Total Expenditures | 261 | 276 | Total Revenues | 261 | 276 |

Source: Ministry of Finance (1998).

Recent institutional and macroeconomic developments indicate that the present structure of ECAA financing is not expected to continue in the future. On the institutional level, change is intended to come from ECAA's conversion into an economic authority, the separation of its regulatory and managerial functions, and the establishment of the holding company that will be responsible for managing Egyptian ECAA airports. The conversion of ECAA to an economic authority should entail improvements in management through more independence and transparency and through the establishment of a new structure that separates managerial and regulatory roles.¹⁷ On the macro-economic front, current pressures on government to

¹⁷ Currently, this is not necessarily the case because many economic authorities continue to depend on government support (only 3 of the 63 economic authorities are profitable), and all economic authorities have access to soft loans from the NIB.

rationalize expenditure and control fiscal deficit are likely to further reduce government funds allocated to financing investment in both types of authorities.¹⁸

The unavailability of government budget financing of ECAA's new investment is evident in both the Ministry of Transportation's Plan and in the current Five-Year-Plan (Ministry of Planning, 2000). Renewal of existing airports and establishment of new ones require a total of LE 75 million of which only 20 percent are expected to be self financed by ECAA resources, while the remaining 80 percent will be covered by bank loans (Table 7). Other ECAA investment needs to cover training institute and aviation control system account for L.E 145 million. ECAA expects to cover only 25 percent of this amount and rely on loans for the remaining 75 percent.

Table 7. ECAA Investment needs and sources of finance according to the 4th year of the 5-year plan (LE million)

| Airport/Entity | Investment needs | Sources of finance | |
|--|------------------|--------------------|--------------|
| | | Self finance | Loans |
| Airport Investment | 2.8 | | 2.8 |
| El Nozha (Renewal) | | | |
| Luxor | 16 | | 15.9 |
| Aswan | 12 | | 12.1 |
| Taba | 2 | | 2.0 |
| Abou Simbel | 3.8 | | 3.8 |
| Port Said | 0.1 | | 0.1 |
| El-Wadi Al-Gaddid | 5.5 | | 5.5 |
| Assuit | 1.6 | | 1.6 |
| Marsa Matrouh | 1.0 | | 1.0 |
| Sharm El-Sheikh | 3.4 | | 3.4 |
| West Alexandria | 0.7 | | 0.7 |
| Hurghada | 21.0 | 15.0 | 6.0 |
| El Arish | 1.1 | | 1.1 |
| El Tour | 1.2 | | 1.2 |
| Saint Catherine | 1.5 | | 1.5 |
| Imbaba | 0.05 | | 0.05 |
| El Dakhla | 1.5 | | 1.5 |
| Total Airports | 75.0 | 15.0 | 60.0 |
| Other ECAA Investment Needs | | | |
| ECAA | 110 | 26.5 | 83.6 |
| Aviation sports and training and Aviation Control System | 35 | 10.0 | 25.1 |
| Total ECAA plus other activities | 145.0 | 36.5 | 108.7 |
| Grand Total | 220.2 | 51.5 | 168.7 |

Source: Ministry of Planning (2000).

¹⁸ Comparing ECAA with other economic authorities such as the General Authority for Railways indicates that they are also depending on government subsidies to cover their current, as well as, investment activities.

An important indicator of the ability of airports to be financially viable is the share of aeronautical revenues to total revenues. Worldwide, on average, non-aeronautical services represent 34 percent of total income per airport (Betancor, and Rendeiro, 2000). This percentage rises to an average of 56 percent for North American airports, while Africa and Central and South America show the lowest regional averages (21-22 per cent). For Cairo Airport this argument is not clear, since while aeronautical revenues account for 35 percent and non-aeronautical revenues for 29 percent, there is a big share of revenues that are classified as others.

Table 8. Cairo Airport: Distribution of aeronautical and non-aeronautical revenues (percent)

| | 1996/97 | 1997/98 | 1998/99 |
|------------------|---------|---------|---------|
| Aeronautical | 34 | 33 | 35 |
| Non-Aeronautical | 29 | 29 | 29 |
| Other | 36 | 37 | 36 |

Source: Cairo Airport Authority, (1999).

In that context, international experiences suggest a few important lessons. First, the ability of airports to be financially viable depends on the volume of traffic supported by the airports. According to Doganis (1992), when an airport reaches the 10 million-passenger threshold, commercial revenues represent between 50-60 percent of total income. US airports are an exception, with 70-80 percent of income typically coming from commercial revenues. (This is perhaps because US airports tend to lease out terminals, hangers and other facilities to commercial airlines). Second, the type, and not just the size, of ownership and revenue generation affect the airport's ability to generate commercial revenues. For a sample of airports with different ownership patterns, government-owned airports generate an average of 30 percent of revenues from commercial activities, while with corporatized and private airports, this ratio rises to 50 percent and 57 percent respectively (Betancor and Rendeiro, 2000). Both these points support the superior performance of Cairo Airport relative to ECAA airports. Third, and due to the limited attractiveness of smaller airports, many Latin American countries have privatized networks of smaller airports rather than stand-alone ones.¹⁹

¹⁹ This is an option that should be considered for smaller airports in Egypt. In Argentina, over 30 airports were awarded to a single investor under one concession agreement. The concession period was 30 years with a possible 10-year extension. Under this agreement the concessionaire is free to determine non-aeronautical fees, while aeronautical fees are regulated. An independent regulatory authority was created to monitor compliance with regulated fees as well as meet investment obligations.

IV. Regulation of Airport Activity

Depending on the private sector for financing necessitates that we assume the profit maximization motive. Given the undisputed market power in some of the airport activities, the issue of introducing the regulatory environment that guarantees economic efficiency and guards against abuse of market power becomes of critical importance. This entails a consensus that the responsibility of the regulator cannot be left to the operating private firms (even to autonomous public entities) to assume.²⁰ As a result, economic regulation of the sector as a whole has to be treated as a necessary pre-condition for efficient operation of the sector under private investment. This section discusses many of the issues relevant for providing a clear and transparent regulatory environment for private airports, surveys airport regulations implemented in different countries, and finally, highlights recent regulatory developments in airport activity in Egypt.

Theoretical Foundation for Economic Regulation of Airports

Even though worldwide trends in airport privatization rely heavily on BOT arrangements, BOT, being only a means of changing ownership and management from public to private hands (privatization), is not sufficient for guaranteeing efficient economic performance of airport activity. Furthermore, as a rule, if public monopolies are to be turned into private monopolies, whether through divestiture, BOT, or Greenfield projects, then consumers' interests have to be protected. Also, rules ensuring (or simulating) competition in the provision of airport services have to be explicitly defined to determine the parameters of the business environment for private investors entering this sector. These goals are typically achieved through economic regulation of various operational aspects of airport activity.²¹

The underlying principles behind the need for economic regulation of airports stem from the fact that airports (or at least some of the services they provide) are perceived as natural monopolies; implying that competition among different providers is not present in order to put pressure on prices and prevent the abuse of consumers. In this environment, the provider uses lack of competition to charge higher prices. This behavior creates a gap between what it

²⁰ There are multiple functions that airports under government ownership performed up until the early seventies: management, investment decisions, regulation, and operation of airports.

²¹ Ensuring competition in the bidding process for BOT or anchor investors ensures that government revenues from the transaction are maximized through competition among different bidders to acquire an asset with an attractive expected cash flow. Competition in the bidding process is not, however, a substitute for economic regulation of the privatized entity.

costs the economy to produce the service (marginal cost) and the monopoly price charged by the profit-maximizing private provider. These conditions result in an artificially low level of provision of airport services that has a negative impact on consumer surplus and all industries that rely on airport services to produce their respective outputs. The most important ways of regulating this environment are through policies that control prices and fares by tying them to factors exogenous to the industry and/or operator, or through mechanisms that determine a ceiling on returns or profits in the potentially monopolistic activity.²²

Empirical research also supports the importance of developing a comprehensive regulatory and institutional framework for any privatization process. In this context, Nellis (2001) argues that while privatization inarguably improves firm performance, in some institutionally weak transition economies, ownership change has so far not delivered on its promise. Tandon (1995) using a 1994 survey of privatization experiences concludes that "...privatization has not led to efficiency improvement ...where the degree of competition has remained unchanged before and after privatization" and that privatization "resulted in efficiency improvement...[when it has] been contemporaneous with deregulation or other types of competition-enhancing measures. Similarly, in East Asia, dissatisfaction with the transparency of privatization has recently generated skepticism about its ability to produce the hoped-for results in countries with weak regulatory and institutional settings. Even in Latin America, country experiences suggest that privatization without the strong role of an independent regulator, and without a comprehensive perspective on reforming the whole sector can produce disappointing results.²³ In some extreme cases in Eastern Europe and Russia, many economists have concluded that privatization "should have been preceded (not accompanied) by institution building and that the proper way forward is to strengthen the structures of the state" (Nellis, 2000).

²² Externalities, quality of service, safety consideration and the environment are all aspects of airport activity that have to be monitored, regulated, and accounted for when economically regulating airport industry. These areas, however, are beyond the discussion of this paper.

²³ An area where a lot of attention has focused recently is on whether privatization had a negative impact on the poor, in terms of higher tariffs for similar service. As a result, many Latin American countries, whether prior to privatization, or as a reaction to unsuccessful experiences, have introduced pro-poor targeted policies in their fare structure for newly-established utility companies, that complement other social programs implemented by the government. While this discussion is more relevant to utilities that have social aspects to them such as water, telecommunication comprehensive coverage, roads, electricity, etc., it has general political repercussions on the popularity of the process of privatization in general. For a more comprehensive discussion of utility privatization and policies addressing the poor's needs, refer to Estache, Gomez-Lobo and Leipziger (2000). See also Chisari, Estache and Romero (1997).

So given that theoretical and empirical evidence emphasizes the importance of the regulatory role before, during, and after airport privatization, and given the fact that even with BOT arrangements the regulatory role is critical in ensuring economically efficient performance, what are the possible means for the regulatory agency to use in controlling potential monopoly power in airports?²⁴

Regulation Options for Airport Industry

This section discusses areas of regulation focusing mostly on pricing and rate of return regulations.²⁵ These options have to be evaluated. The most suitable option may differ from one country to another depending on the initial conditions in the industry itself, commercial viability of the activity, and on how the sector institutionally relates to other legal and regulatory components of the economic environment of the country as a whole.²⁶ The main point is to ensure sufficient competition, protection of consumers, and the resulting efficient allocation of resources.

Unbundling of Airport Activity

An essential question to be kept in mind is: Do all airport services exhibit natural monopoly characteristics? Or, due to the multi-product nature of airports, do we have to distinguish between activities in which the exertion of monopoly power is very likely and those in which competition is feasible and desirable? The ideal analysis should focus on each of these activities separately and analyze their potential for facing competition. Whether that competition is competition in operation or competition for the right to serve the market.²⁷ Then each individual service provided by airports should be broken down and the regulatory environment defined to address any market weakness in each activity separately. But because it is very costly and sometimes not feasible, countries with a history of airport privatization, especially developed countries, have devised elaborate systems for regulating

²⁴ For a different position on the relationship between sector reform and BOT privatization, see Galal (2001).

²⁵ Because, typically airport entry, choice of location, and distribution of traffic with neighboring airports are factors that are beyond the control of any single airport operator, issues of predatory pricing, collusive behavior, etc. are not relevant to the regulatory principles of airports.

²⁶ Laffont (1998) discusses how regulatory principles translate into practical issues and choices. Laffont (2001) extends this exercise to the context of a developing country environment.

²⁷ The literature on how to design a BOT contractual arrangement and guarantee competitive bidding at this stage is extensive. In this context refer, for example to Estache and Martimort (1999), UNIDO (1996) on how to design a concession contract, Ellis (1995), Ellis (1996), Menockoff and Zegrass (1999), Estache and Rodriguez (1996), Crampes and Estache (1997).

airport activity that rely on some level of unbundling of airport activities. The level of 'unbundling' varies from one country to another.

Table 9: Classification of airport activities

| Operational | Handling | Commercial |
|---|--|--|
| 1. Air traffic control | 1. Aircraft cleaning | 1. Duty free shops |
| 2. Meteorological services | 2. Provision of power and fuel | 2. Other retailing shopping |
| 3. Telecommunication | 3. Luggage and freight loading and unloading | 3. Restaurants and bars |
| 4. Police and security | 4. Processing of passengers, baggage and freight | 4. Leisure services |
| 5. Fire, ambulance and first aid services | | 5. Hotel accommodation |
| 6. Runway, apron and taxiway maintenance | | 6. Banks |
| | | 7. Car rental and parking |
| | | 8. Conference and communication services |
| Aeronautical or airside services | | Non aeronautical or landside services |

Source: Betancor and Rendeiro (1999), p.2.

Typically, countries have lumped activities into two groups: operational services and non-operational services, with a third group (handling) that lies between these two categories. The non-operational include such activities as duty free shops, retail shopping, restaurants, hotels, and bank services. There is agreement that for non-operational services, there is room for introducing competitive forces, at least in the form of competition for the market. Hence, if subcontracting takes place, any concern about the exploitation of monopoly power should be mainly with regards to operational activities. This is why most regulatory provisions affecting airport charges concentrate on the operational side of activities. Most cases of airport price regulation, principally aim to control operational charges.

As a result, there is consensus in economic literature on airport regulation that for non-operational services, introducing competition is feasible and desirable. Furthermore, competition for the market can be introduced for an additional subset of aeronautical services related to aircraft movement, such as the provision of runways, aprons, and taxiways. In these services, regulation could take the form of competition to serve the market (concessions or leasing), as well as fare controls for operational services (Betancor and Rendeiro, 2000).

Price Cap Regulations

Under this pricing system, airport charges are capped on an annual basis according to a percentage X less than inflation (typically the consumer price index). The X factor is adjusted every specified number of years, taking into account, *inter alia*, major investment projects.

The United Kingdom has one of the most well developed systems of regulating airport activity. The Civil Aviation Authority controls the aeronautical charges by applying a Retail Price Index (RPI) minus X formula. The X factor is adjusted every five years, when the Civil Aviation Authority (the regulatory body of the sector) is also required to refer the rates for review by the Monopolies and Mergers Commission.²⁸

In other European countries similar formulae with more parameters, including growth in traffic, have been adopted. Thus, Vienna Airport, for example, takes a tariff basket approach in which inflation and traffic are the guiding parameters. In Portugal, the tariff basket includes airport costs, traffic growth, commercial income and inflation. In South Africa, aeronautical charges may increase at the same rate as inflation for the first two years after private participation, followed by three years at RPI minus X. Guidelines have been provided to the Regulating Committee regarding the valuation of X. In Colombia, a system of indexing has been provided, which takes into account a number of parameters. In Canada, by contrast, no defined mechanism has been established and the issue is left to the airport operators and the airlines to settle through consultation.²⁹ Finally, countries such as Switzerland, Tanzania and Iran rely on competition from several companies to provide particular airport services as their mechanism of allowing the market to provide the necessary regulation. In Australia, a similar pricing mechanism is applied, where the ACCC was established to reduce aeronautical charges in real terms over a period of five years by capping it with RPI minus X³⁰ (ACCC, 1997).

Rate of Return and Cost Recovery Regulations

The characterizing feature of rate of return regulation is that it fixes the maximum rate of return to be earned on investment in a particular project. Under this system, if costs are accurate, it is basically a way of price fixing. Despite the prevalence of these cost-based pricing regulations, it is widely recognized that these systems are subject to two main

²⁸ For Manchester airport, it is the average yield per passenger, which is capped.

²⁹ ICAO (2000c). As regards economic regulation of air navigation services, the only private corporation, NavCanada, is a nonprofit organization and overseen by the airlines customers by means of membership on the Board. In other countries, the government retains control over air navigation services charges and other issues.

³⁰ Unlike regulatory practices in many countries, Australia decided against the use of industry-specific regulators in favor of a single entity responsible for regulation and ensuring competition in different economic sectors: the Australian Competition and Consumer Commission (ACCC).

reservations.³¹ Firstly, regulators have insufficient information on the scope of the firm for making cost efficiencies, in order to make the right investments efficiently. Secondly, because the firm knows this is the case, the firm has incentives to influence the system. The firm could endeavor to artificially inflate its recorded and projected costs in order to get a looser price cap.

The most commonly used form of rate-of-return regulation, with some restrictions on pricing of aeronautical services, is the single till accounting principle. Under this rule, all revenues and costs from all revenue-generating activities of the airport are pooled to determine the charges that 'recover' these costs. The revenues derived from non-aeronautical activities at airports, which in some instances account for more than half of total airport revenues, are thus used to compensate for airport losses. They add to airports ability to finance capital costs, not accurately accounted for under accounting principles and generally increase the financial viability of the activity as a whole.

This rule, argue some critics, keeps the cost of operational services artificially low compared to the actual cost of providing the service. The usual arguments of cross subsidization across activities and how they produce allocative distortions apply. Yet, others argue that there are rents derived from these commercial activities that would not have materialized in the absence of the main activity of the airport (aeronautical). Therefore, there is no harm in distributing these rents across all activities under the umbrella of the airport as a whole. Proponents of the first position have proposed what is known in the industry as the dual till approach to pricing of airport activity. Under this principle, only costs and revenues directly linked to aeronautical services are used to determine price caps.

The dual till approach only focuses on core aeronautical revenues and expenses when setting price caps on these services. The factor favoring either of these positions, is whether commercial services on the airport premises enjoy a monopolistic position that requires protection from excessive pricing. And, if this position exists, does the government or its

³¹ The move towards self-financing has magnified an accounting problem that was not under focus when these entities were under government or semi-government ownership and management: Depreciation and/or amortization costs, which are still not reported in several instances, combined with strict rules on 'cost recovery' pricing regulation, become more serious than just a record of which airports are profitable and which airports are not, when they represent parameters used in determining the rate of return to be allowed under this form of regulation. In that context, Betancor and Rendeiro (2000) argue that for a private firm, the actual pricing structure upon which regulatory devices are applied must be consistent with additional capacity investment so that corresponding costs are also covered.

regulatory arm have an obligation to protect users of commercial services from monopoly power?

An argument in favor of single till, however, emphasizes that the single till is only used to utilize the premium prices and charges of commercial services to subsidize the necessary aeronautical activity,³² and consequently to allow these prices to be reduced to further enhance airports' ability to benefit consumers and to conduct its primary service (aeronautical). The other argument that favors single till approaches is that the premium location for commercial services, which allows them to exercise market power, is derived from the proximity to the main activity, hence the position that is 'fair' to let aeronautical services gain from monopoly position in non- aeronautical activities.

Benchmarking of Airport Charges

Benchmarking the performance of regulated firms against appropriate comparators is at least a supplementary, and potentially an alternative approach to overcoming comparison of charges. In its strongest form, benchmarking could be the main basis on which the price cap is set. Since the firm's future price cap and revenues would no longer be driven by its own costs and capital expenditure plans, the firm would have the desired full commercial incentives to make cost efficiencies and to invest appropriately. Setting the price cap purely on the basis of benchmarking would be challenging given the practical problems of finding good comparable entities and data. But using benchmarking to set prices is not an all-or-nothing approach, it can be one of several pillars for setting the price cap (Civil Aviation Authority, 2000b).

This argument brings us to the related question of how to define airport outputs in a way that sensibly reflects quality differences. The more the defined outputs include the quality dimension, the more likely benchmarking will be able to indicate the additional costs and benefits of outputs. Typically quality measures relate to delay data, runway capacity, the reliability of ATC, customer service attributes and airport amenities for passengers (such as the number of restaurants, cleanliness, availability of restrooms and other services, ease of access by surface transport, passengers processing time). Other indicators and benchmarking measures focus on operational efficiency of airports. These include total cost, number of

³² Some countries had to rely on privatizing a network of airports managed together for smaller airports. This cross subsidization can compromise allocative efficiency and curtail any possibility of BOT of individual airports. Yet, there is a strong correlation between the expected size of airport and its ability to finance its activities.

employees, operational revenue, aeronautical revenues as a percentage of total costs, aeronautical revenue per passenger, commercial revenue per passenger, commercial revenue as a percentage of total revenue, staff costs per passenger, staff costs as a percentage of turnover, operating profit, return on capital employed, operating profit per passenger, equity ratio, liquidity ratio, assets per employee, capital expenditures per passenger, capital expenditures as a percentage of turnover, and others.

Worldwide Patterns of Airport Regulation

Before introducing private participation in airport activities many governments have focused on establishing the necessary regulatory environment to govern activities of the newly introduced profit-maximizing private investor. Also, because of the pattern of relying on concessionaires and BOT agreements, governments find it essential that interested concessionaires can clearly identify the regulatory framework: what falls under legislation, what needs to be addressed in the articles of the concession, and the body responsible for solving any potential disputes. This enhances the potential investor's ability to assess the project's cash flow, his/her obligations, and expected returns.

In addition to national aviation authorities or antitrust agencies responsible for defining the parameters of the regulatory environment, the ICAO strictly regulates various aspects of airport activity. The following two sections discuss the scope of regulation for the ICAO and the spheres of complementary regulatory agencies, which many countries have seen necessary to ensure the efficient performance of privatized airports.

The International Civil Aviation Organization

According to the ICAO, countries are the entities responsible for compliance with safety, environmental and other regulations. So even if they are left to autonomous entities, the ultimate responsibility of their supervision lies in the hands of the state. Independent regulatory agencies are the entities responsible for this supervisory role. The minimum set of functions is air traffic navigation, environment, safety, public order and so forth.

Other principles of providing airport and air control and navigation services that remain under the responsibility of the state, even after privatization, are non-discrimination against non-national carriers in entry and exit, and in fees charged. In addition to ICAO guidelines,

there are usually other international treaties and agreements signed by a state, which refer to some aspect of the provision of airports or air navigation services.³³

ICAO's financial 'regulatory' guidelines are relatively vague, encouraging airports to pursue 'development of revenue' as long as it does not interfere "with the exception of concessions that are directly associated with the operation of air transport services, such as fuel, in-flight catering and ground handling" and "having regard for the need for moderation in prices to the public, the requirements of passengers, and the need for terminal efficiency." Another principle that ICAO recommends and tries to oversee is the principle of 'cost recovery'.

More rigorous principles, especially covering anti-competitive practices in supplying airport services, rate of return regulations, pricing of individual services, etc, are being increasingly picked up by national regulatory agencies, especially in developed countries. A study conducted by the ICAO echoes concerns about monopoly positions, transparency in cost reporting, ensuring safety and quality of service. Also, allowing for a reasonable rate of return on capital to allow for financing of large investments is another major area where regulators must play a major role.³⁴

National Regulatory Agencies

Regulatory codes have emerged with independent overseeing bodies to ensure that the interests of users, the airport and/or air navigation service providers, as well as, the national economy are promoted, or at least protected, and that international obligations are met. In almost all the countries where private participation or privatization in the provision of airport services has taken place, regulatory authorities have been established to ensure that monopoly power is not abused, especially in the case of aeronautical charges.³⁵

In a questionnaire distributed to different countries in 1999, airports were asked about the type of regulation they face, who determines it and what the driving forces are underlying these regulations. Of the 76 countries responding to the questions about airport and air navigation charges, the airport/air navigation service provider with government approval determines airport charges in 43 countries and air navigation service charges in 41 countries. The government directly determines airport charges in 21 countries, and air navigation service

³³ ICAO (2000c).

³⁴ ICAO (2000e).

³⁵ ICAO (2000c).

charges in 20 countries. The provider independently determines airport charges in 12 countries and air navigation service charges in 11 countries (Table 10).

Arrangements for ground handling were less uniform and varied across countries. As regards regulatory provisions for ground handling arrangements at airports, 21 countries indicated that they are already in effect and 13 countries reported that they are planning their introduction. Some countries in Europe referred to the applicability of European Union Directives for ground handling arrangements at their airports. A more broadly applicable observation is that it appears that an increasing number of countries are opening ground handling to competition.³⁶

Table 10. Entity Determining Charges on Air Traffic

| Region | Provider Independently | Government Approval | Government |
|---|------------------------|---------------------|------------|
| Asia and Pacific (11 States) | | | |
| Airport Charges | 1 | 8 | 2 |
| ANS Charges | 2 | 6 | 2 |
| Middle East (8 States) | | | |
| Airport Charges | | 5 | 3 |
| ANS Charges | | 5 | 3 |
| Africa (18 States) | | | |
| Airport Charges | 2 | 10 | 5 |
| ANS Charges | 2 | 10 | 3 |
| Europe (30 States) | | | |
| Airport Charges | 7 | 18 | 5 |
| ANS Charges | 6 | 19 | 5 |
| North America (2 States) | | | |
| Airport Charges | 2 | | |
| ANS Charges | 1 | | |
| Caribbean/Central/South America (7 States) | | | |
| Airport Charges | | 2 | 6 |
| ANS Charges | | 1 | 6 |
| Total (76 States) | | | |
| Airport Charges | 12 | 43 | 21 |
| ANS Charges | 11 | 41 | 20 |

Source: ICAO (2000e).

In the majority of countries, the government determines or at least has to approve airport and air navigation charges.³⁷ Authorities in the majority of countries indicated some underlying principles of cost recovery, especially in the air navigation service charges, but less so for the airport charges. This highlights a trend towards relying on autonomous bodies and privatization in airports more than the provision of air navigation services.³⁸

³⁶ Ibid.

³⁷ ICAO (2000e).

³⁸ Ibid.

An important aspect of regulatory supervision of airport activity appeared in the existence of some form of provision against abuse of monopoly to which airport and air navigation services were subject. When asked about these provisions, only 43 countries of the 76 responded by specifying the binding regulation. While not necessarily indicating that the remaining 33 do not have such a rule, the probability is that these countries, which did not respond, did not have a clear and transparent anti-monopoly provision governing their behavior. Of the 43 responding countries, 20 confirmed that they already had specific regulatory provisions regarding abuse of monopoly, while 11 are planning their introduction. Concerning air navigation services, 18 countries affirmed the existence of regulatory provisions regarding abuse of monopoly and three countries reported that they are planning to introduce such provisions.

Despite the noted marked improvements in the finances of service providers, a very large number (a majority of airports listed as being open to international civil aviation) have not been profitable. Also, the majority of air navigation service providers still do not recover total costs. However, there is a growing trend toward recovering costs and making profits. For 77 airports, where data on cost and revenue were reported, the number of airports that made profits increased from 53 in 1989 to 65 in 1998 (Table 11). Therefore, the interaction between airport finances, potential privatization and the regulatory mechanism controlling different aspects of their costs and revenues, is of significant importance. This is particularly true when private sector participation is introduced to replace private ownership and management of previously publicly run airports because most of the effort of the airport to turn its finances around, stems from its ability to utilize charges for non-aeronautical services.

Table 11. Total Airport Income in Relation to Total Expenses

| Year | Number of Airports with Income < Reported Expenses | | | | Number of Airports with Income > Reported Expenses | | | | |
|------|--|--------|---------|---------|--|-----------|-----------|-----------|---------|
| | Sub-total | 0-49 % | 50-74 % | 75-99 % | Sub-total | 100-124 % | 125-149 % | 150-174 % | 175 % - |
| 1989 | 24 | 4 | 6 | 14 | 53 | 25 | 7 | 3 | 18 |
| 1998 | 12 | 3 | 2 | 7 | 65 | 15 | 13 | 19 | 18 |

Source: ICAO (2000b).

Regulatory Environment of Egypt's Airport Activity: Past, Present and Future

The current regulatory environment of airport activity is determined by the following entities/frameworks: The international regulatory role of the ICAO and others, and the agreements to which Egypt is a party, whether international or regional, are not expected to change as a part of the trend toward increasing private participation and airport BOT in the

following stage. In addition the main source of domestic regulation under the current system is the Egyptian Civil Aviation Authority, and some economic authority regulations for Cairo Airport. They are acknowledged in various Egyptian laws such as Law 28/1981, and the executive regulations issued in Ministerial Decree 1/1989. Law 119/1983, which was later amended by Ministerial Decree 254/2000, provides price regulations.

The Role of ECAA

The ECAA is the main entity responsible for regulating and managing Egyptian airports. It was established in 1971³⁹ and in 1994 and 1999 presidential decrees were issued to confirm the affiliation of ECAA to the Ministry Transportation. Law 28/1981 or the Civil Aviation Law governs the operation of ECAA. This Law includes articles related to all the activities undertaken by ECAA, such as general provisions for controlling and regulating aviation, airports and airlines safety, airplane noises, aviation classes, issuing aviation permits and licenses, agreements between aviation companies and air transportation operations.

Previously a service authority, the ECAA is currently being transformed into an economic authority as per the Prime Ministerial Decree number 1048 issued in May 2000.⁴⁰ The decree also states that the evaluation of assets and properties will be accomplished in order to change the ECAA to a holding company under Law 203/1991.

Under the prospective system, the ECAA's management and regulatory roles will be separated, with the management role delegated to two holding companies: one for airports and the other for air navigation. A committee has been formed from the Ministries of Finance and Transportation in order to evaluate each activity on its own to ensure the independence of the sector administratively, financially and economically (Al Ahram, January 30, 2001).

Despite the change in the structure of ECAA the Authority (or one of its entities) will continue to assume its previous roles. The ECAA continues to run airports that are not privatized, except for Cairo International Airport. It will also continue to be responsible for setting, controlling, and revising civil aviation fees and charges according to Law 119/1983

³⁹ Presidential Decree no. 2931.

⁴⁰ The authority is managing and operating 12 international airport as well as 7 domestic ones. The list includes Luxor International Airport, Aswan Airport, Alexandria International Airport, Borg-El-Arab International Airport, Hurghada International Airport, Saint-Catherine International Airport, Sharm-El-Sheikh International Airport, El-Tor International Airport, Taba International Airport, Port-Saïd International Airport, Imbaba Airport, Rass Benass, Abou Simbel Airport, Assyut International Airport, El-Arish International Airport, El-Wady El-Gaddid Airport, El-Dakhla Airport, Shark El-Eaiwnat Airport, and Marsa-Matrouh Airport. Cairo International airport is an independent authority that has not been affiliated to ECAA since 1971.

and its amendments. This law sets fees related to plane landing, waiting and parking, as well as on other services, issuance plane of registration licenses, pilots and crewmember licenses, the Civil Aviation Institute fees, private airport licenses, and non-aeronautical fees. The ECAA will also remain responsible for air traffic management, air safety and civil aviation security. It issues all aviation permits and it controls and supervises air transport agreements established with other countries.

In the context of airport privatization and as stipulated by Law 3/1997, the ECAA keeps the authority for ATC in airports under BOT arrangements. The law maintains that the ECAA supervises “the operations insuring the safety of aviation and those assuming this process, as well as the investigation in its related violations, and the reciprocal treatment with regard to opening any office for the foreign air transport corporations.” In addition, the law gives ECAA the authority to negotiate with concessionaires, fees and charges as stipulated by the Civil Aviation law determining these fees. It will also be responsible for monitoring compliance by any terms agreed upon in the concession agreement.

Judging from the tenders of several airports, it appears that the ECAA will also be represented by no less than 25 percent on the Board of Directors of the Egyptian corporation that will be established for the fulfillment of the BOT concession contract and the management of privatized airports. The Law enforces the proper maintenance of the airport and affiliated buildings and equipment during the concession period, as well as the transfer to the state at the end of the contract.

While the transformation of the structure of ECAA is still underway, we can emphasize two areas that the new entities have to establish. These include organizational and financial structure of the newly-established entities and the guidelines for setting up the institutional and regulatory body’s behavior toward concessionaires and management of privatized airports. The first appears to be undergoing while the second is not yet apparent in the ongoing developments. Specifically, there appears to be some ambiguity regarding the issue of the role of an economic regulator for privately operated airports. This is where we can recommend some precautionary points to be taken into account. The following issues have to be explicitly addressed:

1. Independence of the Regulator from the Holding Company or The Ministry of Transportation

The delay in many privatization plans in some countries stems from the interest in setting up a clear regulatory environment before allowing private investors into this area of economic

activity. This appears to need work in the case of Egypt. The current transitional status of the ECAA is confusing to investors. A better strategy would be to focus on establishing the rules and regulations governing economic regulation principles to be utilized by the ECAA. Again, and similar to many areas, the rules to be used by a regulatory agency are of critical importance for any major investment in any sector, especially for a sector with the long-term structure exhibited in airport investment. This could be a major reason for the lack of sufficient interest in airport privatization at this stage.

An additional complication that arose and that continues to increase uncertainty in the process of BOT bidding and evaluation in Egypt is of a legal nature. According to Law 3/1997, the Prime Minister grants a concession in the airport industry. Two Presidential Decrees (71 & 72 of the year 2001), which set the structure of the ECAA in 2001, create the Airports Company, which owns and manages Egyptian airports (except for Cairo Airport) into a corporation. This implies, from a legal point of view the creation of an entity, which owns assets and has the freedom to enter into contracts with other parties to dispose of these assets and maintains the authority to enter into BOT agreements. This legal dilemma has added one more obstacle to decision makers and investors contemplating BOT agreements in Egypt.

2. Explicit Pricing Mechanism to Be Applied

Concerning pricing of air transportation, aeronautical and non-aeronautical services we found gaps in the information on how the pricing is set in the BOT contracts that are signed or negotiated. For example, the Shark El-Owainat terms of reference do not include any conditions related to fees or charges. According to the Sharm-El-Sheikh terms of reference, all aeronautical and non-aeronautical fees are provided so that investors prepare the feasibility studies for the airport based on these numbers. In the tender offered for Sharm El-Sheikh airport, the government provided projected traffic flows, and agreed to a revenue sharing formula with investors. As for a clear framework to determine pricing of services, no explicit price regulation of non-aeronautical services, rate of return, single till, price caps or other forms of economic regulation were referred to, and the contract only stipulated that ECAA determines prices for aeronautical services.

3. National Competition Laws and their Relevance to Airport Activity

Competition law is another necessary requirement that can enhance the transparency of the process. Countries have different positions on the amount and type of competition to

guarantee pricing of non-aeronautical services. but a clear position, whatever that may be, on pricing of non-aeronautical services is needed. In addition to the regulator of the utility in question, in the UK, three additional oversight levels apply. They include the Competition Commission (which replaced the Monopoly and Mergers Commission in 1999), parliamentary select committees and the court system. These levels of oversight provide the necessary checks and balances on the role of the regulator of the industry in question and guarantee consistency in the crosscutting aspects of regulation.⁴¹ Alternatively, countries like Australia have resorted to their anti-trust authorities (the ACCC) for determining airport regulations. Similar systems apply in Ecuador, Mexico, New Zealand, and Russia. The majority of countries, however, rely on civil aviation departments to regulate the industry. This is where the degree of independence between the operator and the regulator becomes questionable, even though in some cases the independence is guaranteed, such as in the UK's case discussed above. Thus the line drawn between regulatory and anti-trust authorities' jurisdiction varies from one country to the other, with the extreme case relying solely on anti-trust agencies. This, however, is the exception rather than the norm, and many countries have the two levels simultaneously.

4. The BOT Bidding Process

In Egypt, it appears that a lot of attention has been paid to the bidding process and the transparency of tenders, etc. This is an important area that has caused countries major problems with their program credibility and further progress beyond one or two projects that were perceived as improperly handled. Despite Egypt's attention to the tendering process, and because of limited interest in airports offered as BOT contracts, as well as negotiations, government's unwillingness to break a contract, and the costly process of finding another investor, some of the cases have resulted in the government not exercising its right to penalize the investor or to break the contract. This environment, while understandable, is creating negative publicity to the whole BOT experience, which could cost the government dearly in terms of public support to private sector participation in infrastructure.

⁴¹ World Bank (1999).

V. Conclusion and Policy Recommendations

Egypt's move to rely on private investment in airports is consistent with trends in many developing and developed countries. However, because airport industry is susceptible to abuse of market power, many countries have emphasized the importance of establishing the right institutional and regulatory environment as a pre-requisite for effective private participation.

Empirical evidence suggests that BOT is the method widely chosen to introduce the private sector into this activity. But whatever the method selected for privatization, countries that have failed to establish comprehensive sector reforms have not ensured the efficient operation of the airport industry. They have also produced an environment that lacks the transparency and predictability needed to encourage private investors. Country experiences suggest that an independent regulatory body, clear pricing rules, and competition policies are some of the main features that a sound regulatory framework for airport industry needs to address.

In Egypt, the government has made the ideological decision to depend on the private sector in new investments in airports. In this context, the government seems to concentrate on two areas: attracting investment through individual BOT agreements, as well as establishing the internal financial structure that enhances the independence of the Egyptian Civil Aviation Authority from government finances. The study recommends, however, that more attention be given to establishing comprehensive economic regulation of the sector.

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Appendix 1

Different Modes of Private Participation in Airports

A variety of alternative privatization techniques can be used to increase the efficiency and quality of airports. According to the PPI data initiative by the World Bank and existing projects with private sector participation in infrastructure in developing countries, the projects fall under the following four categories:⁴²

- **Operation and Management Contracts:** Where a private entity takes over the management of a state-owned enterprise for a given period. This category includes management contracts and leases.
- **Operations and Management Contracts with Major Capital Expenditure:** Where a private entity takes over the management of a state-owned enterprise for a given period, during which it also assumes significant investment risk. This category includes concession-type contracts such as build-transfer-operate, build-lease-operate, and build-rehabilitate-operate-transfer contracts as applied to existing facilities.
- **Greenfield Projects:** Where a private entity or a public-private joint venture builds and operates a new facility. This category includes build-own-transfer and build-own-operate contracts, as well as merchant power plants.
- **Divestiture:** Where a private consortium buys an equity stake in a state-owned enterprise. The private stake may or may not imply private management of the company.

⁴² World Bank (1999).

Appendix 2

ECAA Plan: Financial Needs and Current Situation

| Airport Name | Financial needs | Implementation | Remarks |
|---------------------|--|---|--|
| Abu Simbel | LE 65 million | The project is expected to be implemented in 3 stages ending in 2003. | This airport will be run under contract management and operation system. The construction of the Airport encouraged the development of a touristic area nearby. Four new international hotels will be established in the area as a first stage of a comprehensive development plan, which covers a total of 2 million meters and involves investments of LE 500 million. |
| Al Alamein | LE 54-200 million | Expected to start working in December 2001. | It will be implemented in three stages by ABB ⁴³ (German). |
| Aswan | Immediate plan: LE 40 million Following phase: LE 600 million | Expected to start working in June 2000. The second stage will be implemented during 2000/01-2005. | This airport will be run under contract management and operation system. |
| Assiut | First phase: LE 88 million Second phase: LE 20 million | Expected to start working in June 2001. | First phase will be implemented during 2001-2003, the second phase will be implemented during 2003-2005. |
| Borg El Arab | First phase: LE 260 million Second phase: LE 150 million | | First phase will be implemented during 2000-2001, the second during 2003-2005. |
| Al Dabaa | | | |

⁴³ Afea Brown Boveri ABB.

| | | | |
|-----------------|--|--|--|
| Al Farafra | LE 400 million | Expected to start working in January 2002. | The BOOT concession contract includes a development concept of the airport project with surrounding hotels and tourism. |
| Hurghada | LE 900 million of which the pressing needs reached LE 45 million | Expected to start working in June 2001. | The contract was granted to Artoc Suisse for airport services and aviation transport. |
| Al Nozha | LE 35 million | | |
| Luxor | LE 700 million | Expected to start working in June 2001. | In 1997, the capacity reached its maximum with 7 airplanes per hour. Its current capacity is 20 airplanes per hour and will increase to 30 by the year 2007. ECAA plan includes increasing the capacity of the Luxor airport to 4000 passengers an hour. The new developments are expected to finish by June 2001. |
| Marsa Alam | LE 80-150 million | Expected to be working in October 2001. | A 40-years concession contract was granted in 1998 to the Paris Airport Authority. |
| Ras Sidr | | | The project will be implemented by an Egyptian Norwegian Consortium. |
| Safaga | | | The airport design and construction will be offered to major private sector companies under BOT system. The objective behind establishing this new airport is to distribute some of the passenger traffic and avoid concentration in the Hurghada area. |
| Sharm El-Sheikh | LE 550 million | To be implemented by 2005. | |
| Sohag | | Expected to start working in June 2001 | |
| Al Sukhna | | | Nine offers were received from international companies for the construction of the Sukhna Airport under the BOT system. A committee has been formed to study the technical and financial aspects of these offers to select the most suitable offer. |

| | | | |
|--|------------------|--|--|
| Saint Catherine, El Arish, El Wady El Gidid, Marsa Matrouh, Shark El-Ouainat, El Dakhla and El Kharga, El Goura, Imbaba, Port-Said | LE 1 billion | | |
| Siwa and Rass Benass | LE 20 million | Will be implemented by the Ministry of Tourism during 2000-2001. | |
| Al Wahat Al Baharia | LE 400 million | | Will be implemented under the BOT system by ABB. |
| Airport control and safety projects | LE 4,213 million | | |