Investments in Container Terminals: Public Private Partnerships in Egypt

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ملخص البحث:

أدت الرغبة في خلق أسواق أكثر تنافسية لنظم النقل إلى تدخل القطاع الخاص في استثمارات البنية التحتية. مع أنه لاتزال هناك عناصر محددة تجعل عادة الاستثمار في البنية التحتية للنقل غير جاذبة للقطاع الخاص، وتوضح هذه الورقة البحثية عامة خصائص الاستثمارات في البنية التحتية، بهدف توضيح أسباب تردد مستثمري القطاع الخاص.كما يتم مناقشة نوع محدد من استثمارات البنية التحتية ألا وهى محطات الحاويات كحالة مثيرة وهامة.

يتم عادة تمويل محطات الحاويات بمصر بتدخل كبير من الحكومة، وعليه يوضح الباحث من خلال دراسة مقارنة بين الاستثمارات في محطات الحاويات والاستثمارات الأخرى في البنية التحتية بأن سوق المحطات له عدد من المميزات (مثل المنافسة الغير كاملة)، والتي تؤدى إلى خطورة أقل بالنسبة لطرف القطاع الخاص، وبسبب تلك الخصائص فلقد ظهرت مشاركة كل من القطاع الخاص والعام وتبدو أنها جاذبة للطرفين في هذا المجال، كما إن هناك إمكانية على المدى الطويل تواجد حالة وجود سوق محطة منافسة كلية بدون تدخل من الحكومة وهو أمر أكثر وضوحا وواقعية في أسواق البنية التحتية الأخرى.

ومع كل، فأنه من الضروري الاعتراف وأدراك حتمية وجود سياسة مصرية عامة لتفادى تشويه المنافسة بين الموانى بسبب أنظمة الدعم المالي المختلفة.

Abstract:

The desire to create a more competitive, market based transport system has led to the involvement of the private sector in infrastructure investments. However, there are still distinct aspects that often make investment in transport infrastructure unattractive to private parties[1]. This paper elucidates the characteristics of investments in infrastructure in general, with the aim to clarify the hesitation of private investors. One specific category of infrastructure investments, viz. container terminals, is discussed here as an interesting case.

Egypt container terminals are mostly financed with a strong involvement of government. From a comparative study between investments in container terminals and other investments in infrastructure, the researcher argue that the terminal market has several features (such as imperfect competition), which lead to a lower risk for private parties. Because of these characteristics, public-private partnerships occur rather often and seem to be attractive. A situation of a fully competitive terminal market without government intervention is in the long-run possible and clearly more realistic than in other infrastructure markets.

It should be realized however, that a common Egyptian policy is required to avoid distortion of competition among ports due to different subsidy regimes.

1- INTRODUCTION:

[1] International Journal of Maritime Economics (2002) 4, 1-20. DOI: 10.1057/palgrave/ijme/9100029.

Transportation lies at the heart of the spatial-economic evolution of our economies. A well-functioning transport network is an important condition for the competitive position of regions and cities. Today, the most prosperous locations are found where transport nodes coincide with skilled labor markets and a high quality environment. This has encouraged some countries to take a more pro-active approach towards transport planning, with investment proceeding rather than following demand. Seen from this perspective, infrastructure plays a fundamental role in the development of regions, and investments in infrastructure are for many (local) governments a critical element of their policy. In a Egypt context, investments in transport infrastructure are usually regarded as a major incentive for economic development, especially when one looks at the Trans Egyptian Network (TEN) plans.

In Egypt, the approach to transport infrastructure has been based on detailed government intervention, ostensibly to protect and promote the public interest. In the case of infrastructure, direct provision has been the norm (including financing). However, in recent years profound changes in economic and spatial policy have brought about a re-orientation so that the dominant role of the public sector is increasingly questioned. Especially in port financing, experience and research strongly suggest that privatization has been effective for enhancing efficiencies and lowering costs, provided there is a competitive environment (Kent and Ashar, 2001)[1].
The trend towards market principles and liberalist views sketched by Fukuyama (1992)[2], and mirrored amongst others in devolution principles such as deregulation, decentralization and privatization, has far reaching implications for public sector involvement in physical planning including infrastructure planning. These policy changes have profound implications for financing European infrastructure (Henry, 1993)[3]. This trend is reinforced by developments such as public budget deficits in many countries and the need for more competition in the provision of (semi) public goods, in order to enhance efficiency.

These developments have often led to the desire to create a more competitive, market based transport sector in which the government does not need to finance all investments in infrastructure. So far, private financing of transport infrastructure has been most significant in many developing countries (World Bank, 1996)[4]. The present paper pays particular attention to the problems and possibilities in private financing. After outlining some of the characteristics and risks of private investment in infrastructure, the focus will be on a particular kind of infrastructure; namely container terminals at (sea-) ports. The aim of the present paper is to elucidate on this theme and to identify particular issues that demonstrate why terminals are likely to be attractive for private investors, consequently Egypt's ports can be benefited from such direction in enhancing its efficency.This will be based on a desk comparative study.

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[1] Kent, PE and Ashar, A. 2001: Port competition regulation: a tool for competitive behavior. International Journal for Maritime Economics, Vol. III, No. 1.

[2] Fukuyama, F. 1992: The end of history of the last man. Free Press, New York.

[3] Henry, C. 1993: Public Service and Competition in the Community Approach to Communications Networks.

[4] World Bank. 1996: Sustainable Transport; Priorities for Policy Reform. Washington D.C.

2- THE NATURE OF INVESTMENTS IN INFRASTRUCTURE:

Infrastructure is a broad concept; several definitions and descriptions have been used in the literature. Recently, a study on the meaning and content of this term has been carried out by Nijkamp et al. (2000)[1]. According to this study, infrastructure includes those real estate provisions which increase efficiency in the use of factors of production and meet the following requirements: Infrastructure is directly productive, is characterized by stock features (capital Good) and it has the character of a (semi-) public good (in this respect non-excludability and non-rivalry in consumption are often cited as characteristics of a public good). According to the Nijkamp et al. study, three categories of infrastructure can be distinguished. Physical network infrastructure includes elements such as transport infrastructure and public utilities, water management and industrial sites. Immaterial knowledge infrastructure and environmental infrastructure are the two other categories.

Traditional welfare theory argues that social welfare can be maximized through market transactions based on free exchange in perfectly competitive markets. In this ideal economy, government intervention would negatively affect the Pareto-optimal outcome. However, following the above-mentioned description, the market for infrastructure is far from being considered as perfectly competitive. Market imperfections exist in the form of, for instance, externalities (like break water in ports), which make governmental intervention necessary in this sector.
The aim of the government is then to remedy this sub-optimal allocation and in this way to move towards the theoretically pure situation of perfect competition.

In recent years however, it has become understood that, mainly due to government failures, financing of all types of infrastructure by governments is not an appropriate solution, and certainly not in a situation of high public sector deficits. These failures of government agencies lead often to problematic cost estimates and in several cases to inefficient spending of public money. On the other hand, it is overly optimistic to think that these failures will completely disappear with private financing of infrastructure investments. However, from a financial point of view, private involvement is attractive, for attention is focused on economic and commercial value.

3-Options for private finance in transport:

Private financing of construction is usually associated with continuing public sector responsibility for strategic network and location planning. In the case of toll roads and urban mass transit infrastructure, private firms are normally given a concession to manage and operate the facility for a certain period, with ownership of the asset returning at some point in time to the public sector. There are several ways in which the private sector can contribute to the development of the transport system (ITS, 1999)[2]. For example, the private sector can be involved directly in financing new

[1]Nijkamp, P, Ubbels, B and Koetse, M. 2000: Infrastructuur als portfolio; een duurzaamheidsvisie op infrastructuur, Delft University Press, Delft.

[2] ITS (Institute for Transport Studies) and partners. 1999: Project Fatima. project funded by the European Commission, Brussels.

investment, as is the case in many rail projects, with the operator of the infrastructure repaying the loan. This introduces the issue of the impact of private sector objectives, emphasizing the financial return on investment in the specific measures covered. Another possibility is that the private sector can be involved in the operation (and possibly also in the financing) of the infrastructure, deriving its revenue from the user. This leads to the imposition of user charges through fares and parking or road use charges. These are usually determined in order to maximize revenue, and this can significantly affect the outcome of the overall strategy.

The private sector usually seeks commercial profit either through return on investment, or as value captured through improvements in the transport system.
Despite the higher costs of capital raised from commercial sources and the need to cover risks and achieve profitability, it has often been argued that the overall cost to society could be lower with private financing, than if the government were to provide the facilities through tax proceeds. The following objectives of private financing can be identified (ITS, 1999)1:

. Minimization of the impact of additional taxation, debt burden or financial guarantees;
. Introduction of the benefits of private sector management and control techniques in the construction and operational phases of projects (possibly leading to lower costs);
. Promotion of private entrepreneurial initiative and innovation in infrastructure-true projects; and
. Increase in the financial resources that might be available for the projects.

In container terminal investments, especially the second and fourth objectives for involvement of private container terminal operators apply. Private finance can be said to be only purely private, if (ITS, 1999)1:

. The private party runs all risks;
. The investment is paid directly by its users; and
. The operation is based upon user charges.

In practice, transport infrastructure rarely fulfils these requirements. Almost all Egyptian transport infrastructure has been financed and operated by governments or by public bodies linked to the government.

4- Characteristics of investments in infrastructure

Investments in infrastructure have some special features. Broadly speaking one can identify seven characteristics of investments in infrastructure (ECMT, 1990)[1].
Firstly, the expectation of the economic life of infrastructure is very long. This may range from 20 years to more than a century. The pay-back period of infrastructure investments is also long; usually around 15 to 30 years. The pay-back period for normal capital goods is generally much shorter, the average being eight to nine years.

[1]ECMT (European Conference of Ministers of Transport). 1990: Private and Public Investment in Transport, Paris.

Secondly, during the construction time, a large amount of capital is required. Often high loans have to be acquired, which makes interest costs relatively high. The costs are also influenced by the project financier; the government is usually able to attract loans which are cheaper (i.e. lower interest rates) than the private sector.

Another feature of infrastructure investments is that the waiting period prior to actual infrastructure construction can be very long. This has to do with the many legal decision-making procedures, resistance by society and interest groups, and other time consuming formalities. These formalities often lead to project changes that can have a major influence on project costs. During this planning process, different unforeseen events may thus happen which are of critical influence on the whole project and may even lead to planning disasters (see Hall, 1990)[1].

A fourth characteristic is the irreversibility of the investment once the project has started. If construction is discontinued, this would lead to a significant capital loss, because it is not possible to use the investment in another way. From the investor's point of view, the irreversibility of investment is a fundamental obstacle which increases the threshold of the minimum rate of return required.

The next feature of infrastructure investment is the long construction period. This period may take two to seven years depending on the scale of the project. During this period there are no revenues, but there are of course already interest and other costs.

Another characteristic is the uniqueness of each infrastructure project. Each infrastructure project is different from another. This fact is likely to have an influence on cost estimates due to lack of experience, low learning possibilities and lack of comparability.

A final characteristic in many cases is the relatively low level of operational (variable) costs, especially on longer distance infrastructure. There are some overhead, maintenance and labor costs, but compared to the construction costs of infrastructure or the exploitation costs of other investments, these costs are relatively low. In such cases (high fixed costs and low variable costs), setting prices according to marginal costs (which is economically optimal) does not allow a satisfactory return on investment and this, in general, makes infrastructure investments unattractive to the private investor.

Figure 1 exemplifies this case (for simplicity, average variable and marginal costs are considered constant, which is a plausible assumption as long as capacity is sufficient). At traffic level q, optimum price for the investor should be p1 (this corresponds to the point where marginal revenue is equal to marginal cost). Total revenue is given by the area 0qAp1 and total cost by 0qBp2. A loss of p1p2BA is incurred at this level of

[1] Hall, P. 1990: Great Planning Disasters Revisited. Department of Geography, University College, London.

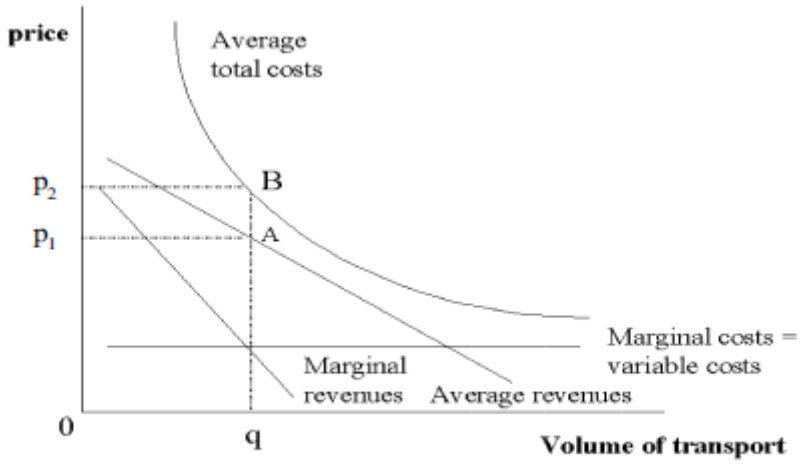

Figure 1: Market situation for an investor in infrastructure
Source: Nijkamp and Rienstra (1995)

traffic and, as a matter of fact, there is no price at which the project is profitable (average total cost curve always above demand line). It is now possible to operate the infrastructure project at a profit, only if external funds are available (government or other interested parties). Such funds would help lowering the investor's ATC curve below A, thus enabling him to realize a profit.

The above characteristics show that high financial capital outlays are required at the outset of a project and, apparently, the many risks involved are equally significant.

5- Risks in infrastructure investments:

The major issue in involving private finance for transport infrastructure investments concerns the sharing of risk. As noted above, in such investments, the flow of revenues often begins many years after the initial investment; this increases uncertainty (and thus risk) compared to alternative investment options. Investments in infrastructure can entail a multitude of risks. The following categories can be distinguished (Nijkamp and Rienstra, 1995)[1]:

. Political risks: for example, changes in transport policy or regulations by the government;
. Financial risks: fluctuations in interest rates and exchange rates; wrong expectations about inflation;
. Construction risks: delays; unexpected and unpredictable costs;
. Operational risks: damage by accidents and vandalism; and
. Commercial risks: wrong cost estimates or wrong estimates of traffic volume.

All these risks make it difficult to draw up a reliable cost and demand estimation; each risk has its own distinct influence on these variables. A policy shift, for instance,

[1]Nijkamp, P and Rienstra, SA. 1995: Private sector involvement in financing and operating transport infrastructure. Annals of Regional Science, 29, 221-235.

may lead to the construction of a road tunnel to protect a natural area, whereas at the outset of the project the road was planned to cross the area. This leads, of course, to higher costs that could have never been estimated at the start of the project. A clear example of a commercial risk is that of the OÈ Resund Bridge between Sweden and Denmark where traffic was highly overestimated leading to disappointing toll revenues.

In conclusion, the risks of infrastructure investments are comparatively high and, thus, private sector interest commensurately low. Clearly, the public sector has a role to play here by making investments more attractive. This could be done, for instance, by means of joint-risk arrangements (guaranteeing a public subsidy if the use of infrastructure is below expectations), or by guaranteeing a minimum profit ratio.

Interestingly, however, some types of infrastructure, such as telecommunications and seaports, seem to be more appealing to the private sector. Seaports are discussed in more detail in what follows.

6- CONTAINER TERMINAL INVESTMENT: EGYPT CASE :

6-1 Port investment in general:

Containerization has led to the construction of increasingly larger vessels, while market structure in liner shipping has resulted in the formation of alliances of container carriers. These developments have forced port authorities and container terminal operators to increase their scale too. The location of an individual port is nowadays becoming less important compared to its ability to offer services and hinterland connections that fit into the alliance networks (see also van Klink, 1995)[1]. Networking - rather than location - seems the key to future growth of ports. Furthermore, volumes per alliance are enormous and this will probably result in more dedicated container terminals or, in the medium-term, maybe even in dedicated container networks.

Despite the wide variety of approaches to financing port facilities and services, however, there is a discernible current trend towards greater private sector participation in port activities, particularly those of a predominantly commercial nature such as cargo handling (EC, 1997)[2]. Ports are rapidly becoming a normal industry through the injection of private money that ensures greater competition, higher productivity and probably lower costs. Ports are becoming landlords and lease container facilities to private companies (e.g. Damitta port in Egypt). So far, the benefits of private involvement in ports are strictly limited to container terminals. Until very recently, political interference and the structure of port management had not changed to meet the new circumstances. Egypt policy aims at transparency in financing and charging (fair and efficient) of port users without distorting

[1]van Klink, HA. 1995: Towards the borderless mainport Rotterdam. Rotterdam.
Luberoff, D and Walder, J. March 2000: U.S. ports and the funding of intermodal facilities: an overview of key issues, Kennedy School of Management. Harvard University.

[2]European Commission (EC). 1997: Green Paper on Sea Ports and Maritime Infrastructure. Brussels.

competition, but such policies are bound to have a limited impact as the Commission cannot control public financing of infrastructure.

It appears that private involvement in financing container terminals in ports is high compared to other investments in transport infrastructure such as roads and railways. A possible explanation for the `demand' of private investments by the government is that container terminal operations are too complex for cities and regions; another explanation of private involvement may be found in the increasing efficiency of privately run terminals. A third reason may have to do with the increasing scale of container terminals and, finally, a part of the picture may be provided by the fact that operating container terminals is no longer considered as a core business of governments. Reasons for governments to be still involved in container terminal development are to be found in the creation of employment and also the fact that ensuring sufficient provision of infrastructure is sometimes still considered as government core business. However, the main reason may be port competition. Almost all container terminals in Egypt are subsidized which means that a new terminal will almost certainly have to be subsidized too, if it is to compete with existing terminals.

6-2 Container terminal infrastructure investments:

Container terminals form a central part of the transport infrastructure for freight Transport. A terminal is a place where containers are transferred among transport modes and is thus located at modal transfer points such as ports (see also Wiegmans et al., 1999)[1]. In the terminal market, there are two important groups Striving for quality: owners and operators:

1. Terminal owners not providing services themselves (investors). Basically, there are three forms of terminal ownership: private, public, or a public/ private partnership. It is especially the latter form of ownership that can further complicate daily operations, due to actors often having conflicting interests; and
2. Terminal operators who provide the terminal service assortment. Terminal operations can be carried out by a wide variety of economic agents such as an independent terminal operator, Railway Company, Seaport Company, shipping line, multimodal transport company/forwarder, the road haulage industry, and/or even a city. Also, a consortium of more than one economic agent may be formed to run a terminal.

Table 1 distinguishes various alternatives of marine container terminal development. A container terminal can basically be developed in three ways: a new container terminal can be developed on a Greenfield site, an existing container terminal can be extended, and an industrial site can be redeveloped into a container terminal. Four main categories of terminal investments can be envisaged (see Table 1):

1. Infrastructure investments consist of investments in rail, road, barge and sea facilities to the terminal (terminal external);

[1]BW Wiegmans (1999), et al.Investments in Container Terminals, International Journal of Maritime Economics.

Table 1: Container terminal development and investment categories

	New CT	Extension of CT	Redevelopment
Infrastructure	X	X	x
Terminal superstructure	X	X	X
Suprastructure	X	X	X
IT structure	X	X	x

X=high importance in financial terms, x=average importance in financial terms.
Source: Wiegmans *et al.* (1999)

2. Terminal superstructure investments consist of specific investments (eg quays and crane rails) in terminal infrastructure (terminal internal);
3. Investments in the terminal superstructure are investments on the terminal site that are not specific for a container terminal (eg terminal buildings, pavements, lighting, etc.); and
4. IT structure investments are all information technology investments needed for the container terminal.

Especially the information technology is seen as the battleground of this decade among not just carriers, but also forwarders, logistics based integrators, pure technology companies, and maybe terminal operators (Peters, 2001)[1].

6-3 Investments in container terminals: characteristics and risks

According to Farrell (1999)[2] there are several reasons why ports have been more successful than other modes of transport in attracting private capital. This holds true especially for investments in container terminals. This is applied totally on Egypt as our main case, where the private investments appear in damitta and west port said.

Recently in most Egypt's ports, substantial public resources have gone into port Infrastructure development, allowing service providers to make healthy profits suppose to be at prices that are perceived as reasonable by their customers. The assignment of infrastructure to terminal operators in large blocks - which is quite unlike the `open access' stevedoring arrangements found in some other parts of the world - has restricted competition from new entrants and protected monopoly profits (an opposite position is faced by the railways). Overall, in most container ports, there is only one container terminal operator, which suggests the existence of regional monopolies.

The second reason for private sector interest in container terminals is the labour productivity gains in recent years, and the steady fall in unit costs due to economies of scale, which have not always been passed on to container terminal (port) users through lower tariffs (not applied to Egypt case). Private operators taking over the management of a public facility have usually been able to improve on past profit levels through the introduction of more flexible labour practices. The limited supply

[1]Peters, HJF. 2001: Developments in global sea trade and container shipping markets. International Journal for Maritime Economics, Vol. III, No. 1.

[2]Farrell, S. 1999: Financing European Transport Infrastructure. Macmillan Press, London.

of terminals suitable for leasing and the high costs of building new infrastructure allow these profit levels to be maintained.

Furthermore, most container terminals involve relatively low risks after government intervention. The amounts of private investment required are still relatively small in comparison with other transport modes. Most of the assets are mobile, with well-developed second hand markets. Private investment in container terminals is therefore not such a leap in the dark as it is in other transport modes.

The main issues in involving private finance for transport infrastructure investments in Egypt -through long leasing contracts and operational involvement - concern risk sharing, higher efficiency, and infrastructure competition. The degree of risk sharing depends on the lease contract, but some general statements on the various risk components can be made.
In general, the government `controls' the political risk of all characteristics of the investment in a container terminal. The terminal operator is `safeguarded' from this risk by the government. The financial risks are shared between the government and the private terminal operator through lease agreements. The governmental body mainly carries the construction risks of the container terminal. The private terminal operator runs both the operational risk and the commercial risk. Besides reducing the risks mentioned above for private container terminal operators, there are beneficial aspects for both parties that might explain the higher level of occurrence of public-private cooperation in ports:

- With the construction of a new container terminal a city expects to receive more seaport tariffs and an increase in employment. These (financial) benefits are extra benefits above the amount resulting from the lease of the terminal facilities;
- In general, a container terminal has to compete with container terminals in other harbours for trans-shipment volume (inter-port competition). This leads to a convergence of interest between the private container terminal operators and their respective port authorities, united by their efforts to compete against other container ports. In the case of road and rail investment, such an identification of public (regional) interest and private interest is less probable.

7- THE RELATION BETWEEN RISKS, PROFITS, AND PUBLIC PRIVATE PARTNERSHIPS

Egyptian container terminals are normally operated on a common-user basis, and have different characteristics. They have been transferred to the private sector as leasehold concessions rather than privately built installations.
Their main customers are shipping lines rather than tramps, making them more responsive to quality of service than to price. Since container lines have a greater choice of ports than bulk shippers and are more mobile, one often observes fierce inter-port competition.
Lately, we have seen the development of the first dedicated container terminals in Egypt (e.g. in al-sokana port). Due to the increasing scale of container carriers and the continuing development of liner shipping alliances, volume seems sufficient to justify dedicated terminals providing just the services as they are needed (see also Benacchio

et al., 2000)[1]. The problem remains though that public ports bear the risks of new investment, and these risks are often underestimated by public port officials. As a result, ports may fail to choose the best investment or the best development strategy (Luberoff and Walder,2000)[2]. This can be countered through true project-based financing (shifts risk from public to private parties and improves decision making on investments in intermodal facilities).

Figure 2 presents a short-term investment situation where, under certain assumptions, it is profitable for a private company to invest in a terminal on the basis of a public-private partnership. As a consequence, investment costs are reduced (for the private party) through suitable lease contracts. This results in a lower average total cost curve, which is now below the average revenue curve.
Marginal costs are not considered constant anymore. Price will be set at p1 and the

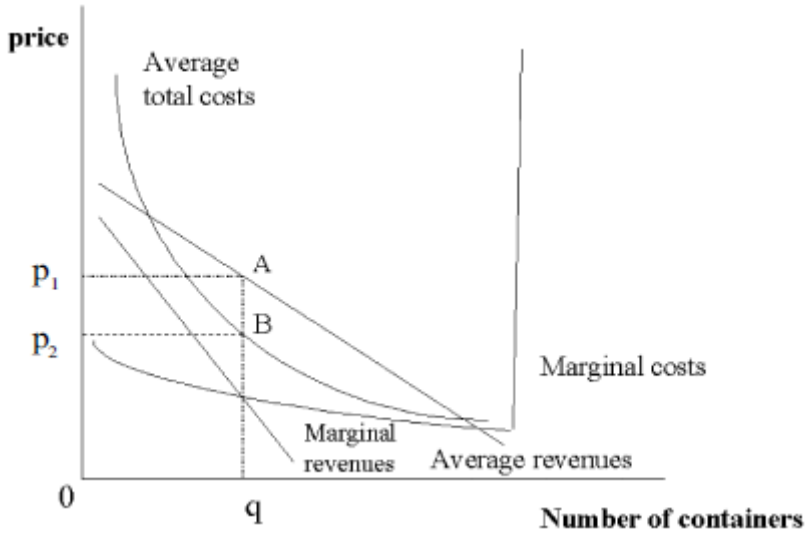

Figure 2: Market situation for an investor in terminals
Source: Nijkamp and Rienstra (1995), adapted

Terminal operator will make a profit of p1p2BA (assuming, for the sake of simplicity, that no price discrimination takes place). In practice, however, prices are subject to competitive pressures by container carriers and will thus be, in general, lower than p1 (the demand function is not changed).

Some remarks are in order concerning this analysis. The marginal cost curve becomes almost vertical when terminal capacity is not sufficient anymore to handle all containers. More containers can be handled only when capacity is expanded and all other measures to increase terminal productivity have been taken (eg longer port and terminal operating hours, more cranes, higher employment, etc.). Furthermore, pricing will be affected by strategies of other competing ports. However, as mentioned above,

[1]Benacchio, M, Cariou, P and Haralambides HE. 2000: Dedicated container terminals: costs and benefits from a port perspective. Special Interest Group on Maritime Transport and Ports, World onference on Transport Research, International workshop, Genoa, 8 - 10 June.

[2]Luberoff, D and Walder, J. March 2000: U.S. ports and the funding of intermodal facilities: an overview of key issues, Kennedy School of Management. Harvard University.

there has been a convergence of interest between the private operators and their port authorities, united in their effort to compete against other ports (Farrell, 1999)[1]. The economies of scale available to established operators put them in a strong competitive position.

From the above it becomes clear that although terminal operations can be profitable business for private investors, the role of port authorities in this should not be underestimated. Differences in financial performance are not simply a question of some operators in Egypt being more efficient than others, but are strongly influenced by government policy towards container terminal investment funding.

7-1 Practice needed in terminal investments in Egypt

In order to analyse Public Private Partnerships in practice. This overview gives some insight into the level of financial involvement of governmental bodies regarding container terminal investments.

It seems that more public involvement leads to improved financial performance of the operator. In this context, it is important that a terminal is supposed to be efficient if it produces maximum output (container traffic in TEU) for given inputs (Notteboom et al., 2000)[2]. This means that next to the investment picture also the operational performance is important.

Partnerships where the government contributes considerable amounts to their financing. Governmental involvement is rather high and several initiatives suggest that this is growing. Authorities want to be involved, because they believe that economic benefits are connected to this activity (terminal operation and investment).

8- CONCLUSION

The institutional arrangements of financing ports and maritime infrastructure in Egypt vary considerably, reflecting the considerable differences in their ownership and organizational structures. The management of ports often depends on public authorities and is subject to different degrees of regulation. Port infrastructure has long been regarded as a pure public good regulated and financed by the government. But it appears that there is a distinct trend recently towards greater private participation in port activities. Financing of particular port facilities (particularly those with a predominantly commercial nature) is increasingly becoming the responsibility of the private sector, while the government (or public port authority) tends to restrict itself more and more to its landlord role.

However, fully privatized port activities are rarely identified, as it is still not attractive to private investors to invest in terminal infrastructure without government

[1] Farrell, S. 1999: Financing European Transport Infrastructure. Macmillan Press, London.

[2] Notteboom, T, Coeck, C and van den Broeck, J. 2000: Measuring and explaining the relative efficiency of container terminals by means of Bayesian stochastic frontier models. International Journal for Maritime Economics, Vol. II, No. 2.

involvement. This is mainly due to some specific risks caused by several characteristics (public good) of transport infrastructure.

In analyzing investment projects of container terminals in Egypt in particular, we found that in all projects both the government and private parties play a role. In general, container terminals are an example of a successful cooperation between government and business.

So, it seems beneficiary for both parties to be involved in financing port infrastructure. Possible explanations for the involvement of governments include the creation of regional or national employment and the fact that infrastructure is still considered as being government core business. However, the main reason appears to be competition with other ports. Most ports are still receiving large amounts of public funding, making it very difficult for other ports to be competitive without governmental support. Nevertheless, it is important to note that ports have been more successful than other modes of transport in attracting private capital. Reasons for this include the distinction between infrastructure and services (making operation of terminals profitable), labour productivity gains in recent years and the steady fall in unit costs, the relatively low risks due to the willingness of governments to bear political, financial and construction risks and the light regulatory framework. It can be concluded from that the high private involvement in port infrastructure investment is mainly due to support by public bodies making risks acceptable.

Although it is generally questionable whether infrastructure can be entirely subject to market forces, for particular facilities there is certainly a clear scope, and ports offer a good example; they are rapidly becoming a normal market-based industry through the injection of private money that ensures greater competition, higher productivity and probably lower costs. Container terminals in particular represent more and more normal business. The chance for normal profits seems to be higher in investments in container terminals than in conventional investments in infrastructure. A fully competitive market for terminals is in the long-run not unrealistic. An obstacle to this trend is posed by the main reason of governmental involvement: As long as some governments subsidize port activities, there is a case of unfair competition; then, it is difficult for others to follow a different policy of reducing subsidies. In order to deal with this effectively, it is possible that coordination on a Egypt level may be
Necessary. As current Egypt policy is aimed at fair competition without distorting market regulation, it is likely to expect that the Egypt will discourage financial involvement of (local) public authorities in the port sector. This means that, despite the risks, existing terminal subsidies will be reduced and new container terminals will be built to the maximum extent possible without tax payer's money.

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