

# PRIVATIZATION OF WATER TRANSPORTATION SYSTEMS

Arthur L. Smith  
Management Analysis, Incorporated

## **Abstract**

Managers of water transportation systems are increasingly considering privatization, restructuring, and other management reforms to improve the cost-effectiveness of service provision. The 1990s have seen a significant increase in the number of privatization transactions, particularly in ports, but for other infrastructure items as well. Practice demonstrates that effective privatized service provision will generally outperform service by a monopolistic government provider, but that care must be taken to establish an environment conducive to meaningful competition. This requires: establishment of appropriate legal and regulatory frameworks; development of explicit objectives, economic or political; and preparation of a privatization plan tailored to meet those objectives. Given the presence of existing infrastructure, water transportation system privatization most frequently takes the form of concession contracts, operation and maintenance contracts, or wraparound additions, with some greenfield development (e.g., Build-Transfer-Operate). Nonetheless, significant scope for innovative or expanded privatization still exists.

## **Introduction**

Privatization of water transportation systems, to include ports, navigation locks, inland waterways, and related infrastructure, is increasingly utilized to improve system performance. Private sector participation can provide needed capital investment, management expertise, and workforce flexibility. In developing or transitioning economies, it can also be an integral part of the conversion to a market-based, demand-driven system. However, privatization is not a universal panacea for productivity and cost-effectiveness concerns. To be successful, it must be appropriately planned and executed. The following discussion explores recent experience in privatization of ports and other water transportation systems.

## **Port Privatization**

Ports are a particularly interesting subject for a student of privatization. The concept of public interest as an integral facet of port management dates to Roman law. Port operation

in much of Europe and North America has gone through a cycle of: public (Crown) management; the establishment of private ports, a rapidly-growing phenomenon in the 17<sup>th</sup> Century, particularly in England, France, and the United States; the establishment of modern port authorities, beginning in 1860, in response to the perceived failures and excesses of private operators; and a new wave of privatization, beginning in the late 1980s and accelerating in the 1990s [1]. This unique history makes port operation an intriguing mini-laboratory for privatization and economic planners.

However, assessing the impact of privatization on a specific port's performance, or of port privatization on a given nation's economic performance, is not an easy task. First, while studies of privatization tend to focus on productivity and economic-related indicators of performance, it should be borne in mind that goals specifically or directly related to port performance may not be among a Government's primary objectives.

Objectives directly related to port performance may include increasing efficiency (e.g., tons per worker per year, or containers per vessel per day), minimizing delays in port (e.g., average stay for full containers, average vessel waiting time), and cost-effectiveness (e.g., cost for container imports per ton, port import and export tariff per ton). To achieve these objectives, there may be various sub-objectives, such as securing foreign and/or domestic private funds for investment in facilities and equipment, obtaining private sector managerial expertise, reducing the size of the workforce, or eliminating restrictive labor practices.

Other, broader economic objectives may be part of the privatization planning process. These include generation of revenues by selling assets (and subsequently collecting tax revenues on them), reduction of government debt through debt-equity transfers, strengthening domestic capital markets by creating and selling shares, decentralizing ownership of assets, reducing public spending, and increasing competition.

Finally, objectives may not be overtly economic in nature; they may be political or philosophical. Governments may wish to satisfy foreign lenders, such as the World Bank, that they provide an appropriate investment environment. When the Government of Malta announced, in May 1999, that it was considering privatization of Malta Freeport, Malta's bid to become a member of the European Union was expressly cited. Not all objectives are

necessarily noble; Governments may also wish to use the privatization process to reward political allies or weaken the position of foes, such as powerful labor unions.

Conflicting objectives may negatively impact the Government's ability to achieve its goals, and may limit improvements in port performance. For example, selling or concessioning a port in whole, with few post-sale conditions, to a single party may maximize sale revenue, but the resulting monopoly might have limited incentive to make investments and improve productivity. Breaking that same port into competitively-bid concession contracts for each terminal might achieve lower sales revenue, but produce increased competition and thus greater long-term cost control and economic benefit. Similarly, the Russian practice of port privatization via vouchers disperses ownership of assets and encourages capital market development, but generates little revenue for needed infrastructure improvement. Restrictions on level or type of foreign investment may also limit the benefit of privatization; in an extreme example, the United Kingdom halted its attempt to privatize the Port of Dover after receiving a politically untenable expression of interest from the Chamber of Commerce of Calais. In addition, the full set of objectives may not be made explicit to outside observers, which complicates the analytical effort.

A second challenge is the difficulty in assessing the impact on privatization of external influences, not directly associated with the privatization. For example, the Associated British ports (pre-privatization, the British Transport Docks Board) reduced employment from 9,085 positions at the time of privatization in 1983 to 2,253 positions by 1995, an apparent vast improvement in productivity [2]. However, the abolition of the National Dock Labour Scheme in 1989 contributed to more efficient use of personnel across all UK ports, and certainly contributed to this improvement.

A discussion is also necessary of what "privatization" means in the context of ports. There are very few fully privatized, i.e., privately-owned, privately-operated, major ports in the world today (and, indeed, there are almost as few fully public ones). This discussion will focus on ports owned by public entities, and explore the privatization options.

Public ports may be considered to fall into two management models. The first is the service port, or operating port. Under this model, the port authority, or other governing

agency, owns the land and port facilities, and performs all commercial services and regulatory functions. The second model is the landlord port. Under this model, the port authority owns the land and basic infrastructure (breakwaters, berthing facilities, etc.) and provides regulatory oversight, but all other facilities and services are provided by the private sector. In practice, of course, there are few pure service or landlord ports; most ports fall somewhere in the infinite number of gradations between the two. These with significant elements of both public and private responsibility are often termed mixed ports.

Until recently most ports clustered at the service port end of the spectrum, and introduction of significant private participation was relatively rare (e.g., Kingston Port, Jamaica in 1967). Driven in part by the increasing rate and magnitude of investment required for a port to remain competitive, and changing philosophies of governance in parts of the world, solicitation of private participation is increasingly commonplace today. This involvement may range from minor contracts for private operation and maintenance of state-owned equipment, to wholesale provision of major services, such as terminal operations, to major concession contracts with capital investment elements. The World Bank identifies that from 1990 through 1998, there were 112 major port projects with private participation in developing countries, totaling more than \$9 billion in investment commitments, primarily in Latin America and Asia, with Brazil, China, and Argentina each having 12 or more major projects [3]. Significant additional experience has accumulated in the developed nations.

From this experience, a key finding has been that privatization, by itself, does not guarantee performance improvement or significant economic benefit; competition is required. A privately-operated monopoly, without competition, will require strict regulation or contractual incentives to optimize efficiency, make capital investments, or minimize prices.

In addition, there are certain legal and political prerequisites for success. The privatization must have a clear, unambiguous legal basis, and property rights must be legally enforceable in the national court system. Political stability, a stable currency, and a controlled rate of inflation are required if there is a need to attract foreign investment.

Exemplifying both the success of this approach, and several lessons learned, is the port privatization program of Argentina. Its largest port, the Port of Buenos Aires, was among the first to be privatized. It should be noted, however, that the Government eliminated many of its restrictive labor regulations governing work at ports and on vessels in 1990-1993 before its privatization program had fully taken effect. Consequently, the number of stevedoring jobs at the Port of Buenos Aires fell from 3,300 in June 1992 to 1,300 by December 1993, before the first privatization at the Port occurred [4]. While these work force reductions and work rule reforms helped to create an environment conducive to private sector participation, and to make the privatization successful, they were not a consequence of privatization. Total employment at the Port fell from 8,000 in 1990 to 2,500 in 1994.

The existing Port of Buenos Aires facilities were divided into two entities. Dock Sud, specializing in bulk liquids, was transferred to the province of Buenos Aires. The remaining federal facility, Puerto Nuevo, was divided into six terminals, which would be concessioned to the private sector and then compete against one another. In November 1992, eight consortia submitted bids for capital investment and operation of the six terminals. Awards were made in late 1994 to the high bidders, who would pay a combined \$32.5 million per year to the Government, and have exclusive loading and unloading rights at their terminal (to maximize competition, the tender specified that no bidder would be awarded more than one terminal, although they could bid on any number). The resulting contracts varied from 18 to 25 years in duration, and specified the bid tariffs and Government-mandated maximum cargo charges.

The outcome of this combined program of labor deregulation and privatization is striking. Over the first few years of this program: total cargo increased from four million to six million tons, productivity increased from 800 to 3,000 tons per worker per year, combined import/export tariffs decreased by more than 40 percent, and delays in port were significantly reduced. Total annual savings were estimated by the Argentine government to be \$156 million per year [5].

The Argentine approach of multiple concessions at a single port has since been used with success by other nations, such as Brazil, beginning in 1997, and has been applied

in subsequent Argentine privatizations. However, the Port of Buenos Aires experience was not issue-free. Bidders were allowed to make their own assumptions about cargo volume increases over the contract term. The associated revenue increases were then used by the bidders as a basis for their proposed fixed annual payments to the Government. Overoptimistic volume assumptions by the winning bidders led to bankruptcy of the Terminal 6 operator in late 1995. A lengthy court case ensued when employees not paid by the bankrupt contractor sought redress from the Government. The lack of an independent port regulator heightened the uncertainty during this period.

Other successful privatization models are available. Colombia achieved similar productivity gains by awarding separate concession contracts for port operation at the ports of Santa Marta, Barranquilla, and Cartagena, situated along a 150-mile stretch of the Atlantic Coast. Competition was created between ports, as well as by multiple stevedore contracts at each port. From 1993-1996 performance improvements included: tons per vessel per day increased from 500 to 2,500 for bulk cargo, and 750 to 1,700 tons per vessel for general cargo, while vessel waiting time was reduced from 10 days to virtually nonexistent [6]. Regulatory uncertainties and debate over contract terms were issues during the implementation phase, and limited initial investor interest. However, as in the Argentine example, effective competition, coupled with labor reforms, were keys to the project's success.

### **Privatization of Other Water Transportation Systems**

Although public attention has remained focused on port privatization, which tends toward large, highly-visible transactions, privatization is also influencing the restructuring of other water transportation systems. Ferry services were an early target of privatization advocates in many countries, a trend which continues today. The Canadian government began in the mid-1990s an ambitious program of privatization of ferry services, generally through the award of multi-year contracts for operation of specific routes. In a typical transaction, Transport Canada transferred operation of ferry services in the Bay of Fundy to a single private operator on 1 April 1997. Two contracts were competitively bid, one each for the

Saint John, New Brunswick-Digby, Nova Scotia and Yarmouth, Nova Scotia-Bay Harbor, Maine (U.S.) routes. Both contracts were won by the same firm for a minimum five-year term, with extension options. The Government offered subsidies to the successful bidder for the initial three years (as well as use of existing government vessels), but subsidization ceased in the fourth year of operation, fulfilling the government's goal of reduced federal expenditure on transportation.

Transport Canada has recently been involved in other non-port transactions, beyond ferry concession contracts. The St. Lawrence Seaway is a major inland waterway, spanning 3,700 kilometers and two countries, the United States and Canada. On 1 October 1998, the Canadian government, which owns the majority of the Seaway assets, including more than 25 navigation locks, restructured and commercialized its holdings. Operation of all navigation-related assets was transferred to the St. Lawrence Seaway Management Corporation (SLSMC), a not-for-profit corporation whose Board members include shipping, cargo (grain, iron ore, and steel), and provincial and federal government interests. The stated goals of the transfer include system safety, reliability, and cost effectiveness; SLSMC's financial goals included limiting increases to the Seaway tolls, the SLSMC's source of revenues, to two percent per annum in 1998 through 2000 [7]. This goal has been met. Competition is purely external; the St. Lawrence Seaway competes with Atlantic ports, as well as Pacific and Mississippi River routes, and with a well-developed rail system. This highly competitive environment is expected to exert cost-controlling pressures.

In contrast, the smaller U.S. portion of the St. Lawrence Seaway remains owned and operated by a managing entity under the U.S. Department of Transportation. Originally a self-sustaining, toll-based entity, the U.S. portion has diverged from the general trend toward direct user payment for services received. The Water Resources Development Act of 1986 created the Harbor Maintenance Tax, which funds the Harbor Maintenance Trust Fund to pay for infrastructure maintenance. While this approach has been praised by many economists as an efficient mechanism for collection of user fees, it is also an indirect mechanism, not directly associated with the use of a specific waterway feature. To avoid, in effect, double-billing users, the U.S. Treasury began rebating its

portion of Seaway tolls, and in 1994 ceased the billing and collection altogether. On 31 March 1998, the U.S. Supreme Court ruled the export portion of the Harbor Maintenance Tax unconstitutional, but existing funds in the Trust were expected to last several years, allowing time to develop an alternate approach to funding and avoiding a Seaway maintenance crisis [8].

Operation of Federally-owned navigation features on Inland waterways in the United States is performed almost exclusively by Federal employees, with some contract maintenance support. The Corps of Engineers operates the majority of this system; of their more than 400 navigation locks nationwide, over 98 percent are operated by Government staff. Although the U.S. Government has a long-established program of competitive tendering, the Corps has determined, as a matter of agency policy, that high-volume waterways are “critical” to the nation and thus excluded from competitive tendering. Aside from the basic question as to the merit of this position, the threshold used to determine high-volume waterways is so low (3.5 million tons of cargo per year, or less than 1/15<sup>th</sup> the volume of the St. Lawrence Seaway) that little exploration of the economic benefits of privatization is possible. Only one privatization study is now underway, a competitive tendering of the operation and minor maintenance of five locks along a 370 kilometer stretch of the Red River in Louisiana. Due to differing Corps policies over the years, a vessel transiting the Red River from Shreveport to the Mississippi passes through two Government-operated locks, then through two contractor-operated locks, then a Government-operated lock. Due to concerns over accountability, coordination, and operational consistency, the Corps waived the critical waterway designation and initiated the competitive tendering study. The result, scheduled to be announced in the summer of 2000, will be to convert the operations of all five Red River locks to either Government or contract performance, based on cost-effectiveness.

Perhaps the most innovative inland waterway privatization of recent years is the channel dredging and maintenance concession contract for the Rio Parana, awarded by the Argentine government in 1995. Argentina faced a seemingly intractable problem: this 790 kilometer long channel is vital for exports, and key to the development of the nation’s interior; but insufficient depth and lack of channel markings made navigation hazardous.

On 21 February 1995, Argentina awarded an 18-year concession, converting the channel into a toll waterway. The contractor was required to: deepen the channel from 24 to 28 feet within six months; further deepen it to 32 feet within 30 months; maintain the channel for the duration of the contract; and establish and maintain current navigation markings. A sophisticated toll system was established based on Net Registered Tonnage, the vessel's maximum carrying capacity, and the actual channel depth, with all tolls going to the contractor. In addition, to minimize the contractor's risk and investment, the contractor received Government subsidies of approximately \$40 million per year and use of existing Government equipment. This unique arrangement appears to be successful (the second stage of the channel dredging was completed a year ahead of schedule, accelerating the economic benefits of the project) but has yet to be emulated elsewhere.

## **Conclusion**

Privatization, implemented in a competitive environment, can yield productivity improvements and economic impacts not obtainable through other management reforms. Although the level of privatization of water transportation systems has increased throughout the last decade, and particularly in the late 1990s, there is significant potential for further application. As shown by the channel dredging concession for the Rio Parana, it is still possible to develop new and innovative approaches to old infrastructure problems. In addition, major areas of water transportation systems, such as ports in much of Africa or inland waterways in the United States remain virtually unexplored and offer great potential for future improvement.

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