The expansion of grain ports in Argentina

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Abstract

The competitivity of a port is based not only on providing services at a lower cost but also on getting an operative rate which allows vessels to optimize their laytime, preventing idle demurrages in piers and waiting areas (roads).

This characteristic has been observed in recent years in the ports included in the Hidrovía (Waterway) of Río Paraná which, as a result of dredging operations and of investments for the remodeling of facilities in Rosario and San Lorenzo, have given rise to an important improvement in all port operations.

The possibility of having a higher depth for navigation both along the Mitre Channel and Martín García Channel has allowed the load of each vessel to be increased by an amount that fluctuates between 8000 and 15000 tons, depending on the characteristics of the different vessels. This, together with the technological developments that took place in grain elevators, has led to a noticeable decrease in freight costs of about US$5 per ton.

The application of modern technologies, together with the expansion of storage capacity in grain terminals, has spared vessels unnecessary demurrages that have a daily cost of about US$5000.

At the beginning of the 90's, the operative infrastructure for the export of grain commodities and their by-products in Argentine ports consisted of a total grain storage capacity in elevators of 2.01 million tons and a loading rate of 30000 tons per hour. At present, the total grain storage capacity in elevators amounts to 6.02 million tons and the loading rate is 55000 tons per hour. These figures show the expansion of the operative capacity in Argentine port terminals, which has been achieved by the joint effort of both the private and the public sectors.

Keywords: cost of ports.

1 Introduction

The competitivity of a port is based not only in providing services at a lower cost but also in getting an operative rate which allows vessels to optimize their laytime, preventing idle demurrages in piers and waiting areas (roads).

This paper is a study of the evolution of the infrastructure and of the port costs of cereal ports in Argentina since the 90s.

Investments in port infrastructure and in dredging of waterways have enabled the use of larger vessels with clear economic benefits, both in the value of freights and in the speed in the flow of merchandise. This has made our ports highly competitive.

The following tables show the main variables entailed in the costs of a grain vessel in Argentine ports, the storage capacity, the pace of loading onto vessels and depth in the various ports.

2 Operative evolution

At the beginning of the 90's, the operative infrastructure for the export of grain commodities and their by-products in Argentine ports consisted of a total grain storage capacity in elevators of 2.01 million tons and a loading rate of 30000 tons per hour. At present, the total grain storage capacity in elevators amounts to 6.02 million tons and the loading rate is 55000 tons per hour. These figures show the expansion of the operative capacity in Argentine port terminals, which has been achieved by the joint effort of both the private and the public sectors.

Tables 1 and 2 describe the evolution of each port with regard to storage in silos and the load into vessels per hour.

Apart from the draft in the ports, the importance of dredging in the main navigation channels in the ports of Río Paraná (Up-River) should be taken into account, as the final draft of the vessel upon departure from the port is determined based on the Mitre Channel and Martín García Channel.

The possibility of having a higher depth for navigation both along Mitre Channel and Martín García Channel has allowed the load of each vessel to be increased by an amount that fluctuates between 8000 and 15000 tons, depending on the characteristics of the different vessels. This, together with the technological developments that took place in grain elevators, has led to a noticeable decrease in freight costs of about US$ 5 per ton.

3 Port costs

Tables 3 and 4 show some of the main costs that vessel owners have to face. We will see the evolution of tariffs comparing the year 1990 before the sanction of the Port Law, which gave State port terminals in concession to the private sector and the current ones.

Table 1: Year 1990 (Tns.).

PORTS	STORAGE SÓLID	STORAGE LIQUID	CARGA SÓLID	CARGA LIQUID	BERTHS PIE
B.BLANCA	200000	28000	1600	450	37/45
NECOCHEA	120000	11000	2400	400	34/36
MAR DEL PLATA	25000	-	800	-	25
BUENOS AIRES	147000	15400	1500	700	31
C.DEL URUGUAY	50000	-	800	-	21
DIAMANTE	20000	-	800	-	20/24
BARRANQUERAS	100000	-	800	-	10
STA. FE	50000	3500	1000	400	18/23
ROSARIO	506500	58000	8620	250	28/35
SAN LORENZO	76000	24000	3000	1650	31/38
SAN MARTÍN	320000	89000	6000	3100	30/37
RAMALLO	18000	-	300	-	17
SAN PEDRO	85000	-	700	-	30
SAN NICOLAS	67000	-	1000	-	34
V.CONSTITUCIÓN	225000	-	700	-	22/28
TOTALS	**2009500**	**228900**	**30020**	**6950**	

Ports up-river have a maximum permitted draft of 28 pie for the Mitre Channel – year 1990.

Table 2: Year 2004 (Tns.).

PORTS	STORAGE SÓLID	STORAGE LIQUID	CARGA SÓLID	CARGA LIQUID	BERTHS PIE
BAHÍA BLANCA	541000	72000	7100	2550	38/50
NECOCHEA	317000	68000	3500	800	39
MAR DEL PLATA	25000		900		27
BUENOS AIRES	188000		3200		30/35
DOCK SUD	20000		400		30
C. DEL URUGUAY	51000		1000		21
DIAMANTE	90000		2000		22/30
BARRANQUERAS	100000		1000		12
SANTA FE	65000	4000	1200	400	22/24
ROSARIO	1520070	102000	12200	1900	28/40
SAN LORENZO	505000	66000	4700	1950	40/45
SAN MARTÍN	2020000	202500	11450	4000	17/42
RAMALLO	18000		800		20
SAN PEDRO	204000		1200		30
SAN NICOLAS	100000		3200		40
V. CONSTITUCIÓN	261000	26200	800		36
TOTAL	**6025070**	**540700**	**55050**	**11600**	

Ports up - river have a maximum permitted draft of 32 pie for the Mitre Channel – year 2004.

Table 3.

YEAR 1990	ROSARIO	SAN LORENZO	BUENOS AIRES	NECOCHEA	BAHÍA BLANCA
HOLDS INSP.	0	0	0	0	0
ENTRANCE/LIGHTS	800	800	1350	820	1350
PERMANENCE (1)	1530	1530	1800	1530	1800
PILOTS IN/OUT	1470	1470	2250	1470	3450
RIVER PILOTAGE	13457	13795	3900	0	0
TOWAJES IN/OUT	0	0	11400	14636	14208
MOORING/UNMOO.	1720	1720	1800	1900	660
WATCHMEN SERV. (1)	330	330	350	350	350
CHIEF CLERK (1)	55	55	60	55	55
IMMIGRATION	950	950	450	220	220
CUSTOMS HOUSE.	700	700	450	450	450
COURIER	170	170	170	170	170
TOLL DUES	0	0	0	0	0
USE OF NAVIG.	0	0	0	0	0
AGENCY FEE	4100	4100	4100	4100	4100
OTHERS (1)	570	570	610	605	605
TOTAL	**25852**	**26190**	**28690**	**26306**	**27418**

In US dollars.
For vessels with a DWT of 40000 tons.

Although nominal values of costs grew considerably between 1990 (table 3) and 2004 (table 4), with the possibility of using big vessels due to dredging and the operating capacity of terminals, in certain cases it was not necessary to use a second port to complete the loading.

This possibility of not using a second port and the shorter time for the loading has enabled a reduction in the stay time—around 5 days per port. It is worth remembering that in the late 80s, the stay time in port areas in normal conditions used to be around 8 days; currently, it is between 2 and 3 days, approximately. Therefore, variable costs (1), which are based on daily expenses, entail important savings per port.

4 Conclusion

It is worth establishing that although the daily cost for the owner has increased, as already pointed out, the overall cost of grain exports in Argentina has fallen (see table 5) due to the reduction of the stay time, the omission of a second loading port and the reduction of exporter expenses in storage, loading, and use of wharf. Thus, the final value of Argentine products is more competitive for foreign importers, whether in C&F or FOB transactions.

Table 4.

YEAR 2004	ROSARIO	SAN LORENZO	BUENOS AIRES	NECOCHEA	BAHÍA BLANCA
HOLDS INSP.	1100	1100	0	0	0
ENTRANCE/LIGHTS	442	442	3800	925	0
PERMANENCE (1)	1748	1748	1267	3192	1662
PILOTS IN/OUT	1850	1850	3234	2100	5300
RIVER PILOTAGE	25243	25545	9800	0	0
TOWAJES IN/OUT	0	0	12500	16100	16300
MOORING/UNMOO.	690	690	1000	2300	1050
WATCHMEN SERV. (1)	150	150	150	150	150
CHIEF CLERK (1)	150	150	150	150	150
IMMIGRATION	170	170	100	50	50
CUSTOMS HOUSE.	100	100	100	100	100
COURIER	50	50	50	50	50
TOLL DUES	22600	22600	14900	0	0
USE OF NAVIG.	0	0	0	6800	9600
AGENCI FEE	4500	4500	4500	4700	5000
OTHERS (1)	1800	1800	1700	2150	2100
TOTAL PUERTO	**60593**	**60895**	**53251**	**38767**	**41512**

In US dollars.
For vessels with a DWT of 40000 tons.

Table 5.

CONCEPTO	PORT ROSARIO		PORT BAHIA BLANCA	
OWNERS	**YEAR 1990**	**YEAR 2004**	**YEAR 1990**	**YEAR 2004**
SHIPS COST	25852	60593	27418	41512
OVERTIME	19880	7694	22480	8124
SUB TOTAL	**45732**	**68287**	**49898**	**49636**
SHIPPERS				
DEMURAGE (LAY TIME)	24000	0	24000	0
STORAGE (MT-DAY)	36000	9000	36000	9000
PORT COST	108000	91500	123000	114000
BERTHS COST	21600	9000	21600	12600
STOW	9000	4300	12000	6500
SUB TOTAL	**198600**	**113800**	**216600**	**142100**
TOTAL	**244332**	**182087**	**266498**	**191736**

In dollars.

Freight values were not considered in the table, given that maritime freight deserves a detailed analysis, due to its complexity, according to the destination in specific circumstances. However, on the basis of these fast calculations, there is a differential in favor, between US$ 3 and US$ 5 per ton, due to the use of big vessels.

Lastly, the most important benefit for the owner is the higher return of the unit, given the greater volume transported and he shorter total time used, thus increasing productivity.

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