Radiography of Cargo transportation in Argentina

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1- Automotive Cargo Transportation in Argentina

An interesting analysis carried out in 2015 by the Argentine Institute of Transport, who published the paper entitled "General Guidelines for the Strategic Federal Transport Plan" (PFETRA by its name in Spanish), indicated that the automotive transport of cargoes in the Argentine Republic involved in the year 2014 about 409 million equivalent tons moved through the national and provincial road network.

Table No 1: Automotive Cargo Transport in Argentina. Year 2014

GROUP	TONNES	EQUIVALENT TONNES*
Meats	6.718.401	40.310.406
Grains	137.256.437	137.256.437
Industrialized	45.992.568	49.156.936
Mining	119.707.022	119.707.022
Regionals	16.113.398	19.614.617
Semi-finished	17.661.261	17.661.261
Fuels	25.165.190	25.165.190
TOTAL	**368.614.276**	**408.871.868**

** The equivalent tons correspond to the weight / volume conversion, contemplating cases in which the volume on board the truck, and not the weight, determines the maximum transportable.*

Source: "Lineamientos Generales para el Plan Federal Estratégico de Transporte" (PFETRA)

The grain and mining sector were the main responsible for the loads. The first of them moved about 137 Mt, while the mining had about 119.7 Mt.

2- Railway Cargo Transportation in Argentina

According to the information published by the National Commission for the Regulation of Transport (CNRT), the tonnage transported by rail in 2017 reached 18.8 million tons. In 2016 it had been 19 million, decreasing by 1.5% compared to the same period of the previous year, the fall in tons-kilometer was 2% year-on-year. In 2017, 62% of the total cargo transported by rail was agro-industrial products, which shows the significance of the agricultural and agroindustrial sector in the movement of loads of the Argentine railway system.

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Table No 2: Cargo Transport by Train in Argentina. Year 2017. -Tons transported per tipe of product-

Tipe of Product	Tonnes	Tipe participation
Fertilizers	52.754	0,3%
Oils	691.939	3,7%
Fuels	180.427	1,0%
Containers	66.355	0,4%
Grains	7.333.365	39,0%
Woods	25.488	0,1%
Manufactures	632.724	3,4%
Track material	246.831	1,3%
Minerals and construction materials	5.213.065	27,7%
Other food products	143.722	0,8%
Other agricultural products	9.568	0,1%
Agricultural by-products	3.418.222	18,2%
Chemicals and petrochemicals	444.696	2,4%
General loads	350.311	1,9%
Nationan Total	**18.809.467**	**100,0%**

Source: CNRT. Argentine Ministry of Transportation

3- Air Cargo Transportation in Argentina

In 2016, the National System's 55 airports moved 10,744 tons (tn) of domestic cargo, 193,342 tons of international cargo and 8,720 tons of cargo by mail. This implies a general total of 212,806 tons. It should be recognized that all merchandise shipped in cabotage flights and those destined for export, arrive at the departure airport by truck, which implies a duplication in the calculation of these figures. However, what we have tried to do in this case is to show the volume of the cargo through the air. This information is shown in table N ° 3.

Table No 3: Cargo Transport by Air in Argentina. Year 2016 (in tons)

Item	Domestic	International	Mail	TOTAL
Total 55 Airports SNA	**10.744**	**193.342**	**8.720**	**212.806**

Source: ORSNA

The most important airport in 2016 in terms of domestic cargo was the Neuquen Airport with 1,248 tons, followed by the Salta International Airport with 1,223 tons. In terms of international charges, in 2016 the most relevant airport in our country was Ezeiza with 184,925 tons. In second place, the Tucumán International Airport was located with 4,938 tons, followed by the Jorge Newbery Airport with 1,735 tons. In the fourth place, the one of Córdoba was located with 1,262 tons. In that year there were a total of 9 airports in the country that registered operations regarding international cargo. Rosario's airport was in the fifth place with 291 tons.

Regarding mail air cargo, Ezeiza was the most important airport with 8,565 tons, followed by the Resistencia International Airport with 59 tons.

The aforementioned PFETRA report indicates that in our country air mode has a very low participation in the total transport of merchandise. The causes that have led to this low participation of the transport of air cargo in Argentina have been:

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There is a structural and dominant bias in the general transport of loads oriented towards the automotive mode (trucks).

There is a low demand for products to be transported by air in the domestic market.

There has been a moderate and incipient development of the cargo transportation as a business unit in "Aerolineas Argentinas", the country's main air operator.

The air mode in Argentina has great possibilities of growing in the medium and long term.

4- Fluvial cargoes transportation through the Paraná-Paraguay Waterway from the Port of Santa Fe to Puerto Cáceres (Brazil)

Fluvial transportation of cargoes through the Paraná-Paraguay Waterway from the Port of Santa Fe to Puerto Cáceres (Brazil) amounted to 21.5 Mt in 2015. It is the latest available data, which is based on a report from the "Concesionario Hidrovía S.A.". On previous weekly news notes we reported the strong growth shown by the loads transported through the Paraná-Paraguay Waterway. In six years, the loads increased by 40% and the number of trips by 30%. In 2010 the total loads amounted to 15.3 million tons, while five years later (in 2015) they had reached 21.5 million tons. The transport of soy, derivatives and grains from Paraguay (mainly) and Bolivia led and promoted this growth.

Table No 4: River transport through the Paraná- Paraguay Waterway from Santa Fe to Puerto Cáceres (Brazil). Year 2015. (In tons)

PRODUCT	2014	2015
Soybeans and by-products	7.757.154	7.721.289
Other grains	2.756.674	4.214.646
Iron	6.625.000	4.126.000
Liquid loads	3.456.864	4.064.111
Various loads	1.306.260	1.460.559
Total	**21.901.952**	**21.586.605**

Source: Hidrovía SA / Argentine Ports and Waterways Undersecretary

The two most important items in terms of cargo are soybeans and derivatives, and iron. Regarding iron, no significant changes were observed between 2010 and 2015. In 2010, 3.8 million tons were transported, while in 2015 the loads were 4.2 million tons.

If there is a remarkable growth in the transport of soybeans, derivatives and grains in this section, which is mainly due to the strong growth of soybean production in Paraguay and the great growth of the oilseed industry in that country.

5- Movement of containers in the Argentine Ports

The movement of containers in 2016 by all the Argentine ports was 1,694,244 TEU. The terminals located in the Port of Buenos Aires capitalized 80% of container movement (1,352,100 TEU). In second place was the port node of Zárate with

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124,100 TEU (7% of the total). Ushuaia was in third place with 61,147 TEU (4% of the total) and in fourth place Puerto Rosario Terminal with 57,179 containers (3% of the total).

Table No 5: Container movements in Argentine ports (TEU). Year 2016

Ports	TEU	TEU	%
Buenos Aires Total		1.352.100	80%
Buenos Aires TRP 1,2 y 3	555.800		
Buenos Aires Terminal 4	113.100		
Buenos Aires Bactssa	193.200		
Buenos Aires Exolgan	489.900		
Zárate		124.100	7%
Ushuaia		61.147	4%
Rosario		57.179	3%
Bahia Blanca		32.450	2%
Madryn		27.762	2%
San Antonio Este		22.500	1%
Puerto Deseado		10.000	1%
Mar del Plata		7.006	0%
NATIONAL TOTAL		**1.694.244**	100%

6- Exports of Grains, Meals and Oils from all Argentine port nodes

Table No 6. Argentine grains, meals and oils exports in 2017, by port node.

Item	Gran Rosario	Bahía Blanca	Quequén	Zarate	Ramallo	Villa Constitución San Nicolas-Diamante	Argentine Total
Grains exported by port node	31.438.869	8.188.086	5.415.483	2.404.834	313.986	456.293	**48.217.551**
Meals/pellets exported by port node	31.494.195	781.288	343.338		607.367		**33.226.188**
Oils exported by port node	5.736.082	197.534	265.419		14.300		**6.213.335**
Total exported by port node	**68.669.146**	**9.166.908**	**6.024.240**	**2.404.834**	**935.653**	**456.293**	**87.657.074**

Source: @BCRmercados con based on MINAGRI, CNRT, Consorcio Gestión Puerto Bahía Blanca and Puerto Quequén.

In 2017, Argentina shipped approximately 87.6 Mt of grains, meals and oils abroad. This statistic does not compute biodiesel exports. The main port node was the Gran Rosario with 68.7 Mt, which represents about 78% of the total national exports. This last figure includes merchandise of Paraguayan and Bolivian origin that arrives in barges to this node by the Paraná River and that is shipped abroad from the Gran Rosario: 4.5 million tons (Mt).

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In second place, the Bahía Blanca port node was located with 9.1 Mt. The third place belonged to the Quequén Port Node with 6 Mt. Then, the port node of Zarate was located with 2.4 Mt. Finally we have port nodes of Ramallo, Villa Constitución, San Nicolás and Diamante, which added reach 456 thousand tons.

7- Towards an approximation of the total load transported in a year in Argentina: 450 million tons

In table N ° 7 we have intended to approach an annual tentative figure for cargo transport in Argentina measured in tn / year. According to our estimate this could be 450 million tons. For this we have added the charges by truck, rail, air and those that went down or up the Parana-Paraguay waterway from the Port of Santa Fe to Puerto Cáceres (Brazil).

Table No 7: Argentina. Estimation of the Cargo Transportation in a year. -In tons-

Item	Tons / year	Item participation
AUTOMOTIVE CARGO TRANSPORTATION	408.871.868	91,0%
RIVER TRANSPORT THROUGH PARANA- PARAGUAY WATERWAY FROM SANTA FE PORT TO CACERES PORT (BRAZIL)	21.586.605	4,8%
TRAIN CARGO TRANSPORTATION	18.809.467	4,2%
AIR CARGO TRANSPORTATION	212.806	0,05%
NATIONAL TOTAL	**449.480.746**	**100,0%**

Note: Different years are computed // Containers are not counted, exports of biodiesel, exports of grains, flours and oils are not counted.

Source: Rosario board of trade based on data from several sources

We must mention certain warnings that must be taken into account when considering these estimates. The first one is that figures are shown that correspond to different years, depending on the availability of updated data for the group analyzed in each case.

In addition, we have not considered export shipments of grains, meals, oils and biodiesel from all the Argentine port nodes in order not to duplicate the estimates. Think of the case of a truck or wagon that brings grains to the Gran Rosario and from there it is sent abroad. If we count the dispatch abroad we would be duplicating the registration.

Neither have we considered the movement of containers, since to arrive or leave the port they must do it by truck, train or in a naval artifact, whose figures would already be contained in the other statistics. The same would happen in the import of products, since they are removed from the port by truck or wagon and would have already been accounted for in those movements.

There are other points to consider that have not been quantified here: cabotage sea shipping, pipeline transport and minor cargoes that we have not computed in this report.

To sum up, from an estimate of 450 million tons moved in a year, 91% would be moved by truck, 4.2% by rail, 4.8% by the Paraná-Paraguay Waterway (Puerto de Santa Fe / Puerto Cáceres) and 0.05% by air (computing international, cabotage and mail).

Finally, we reiterate that the figures shown are only intended to paint a rough picture of the cargo system in Argentina, while recognizing that the relevant measure of cargo transport is the tonne-kilometer, which measurement would require much more information.

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