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# THE ECONOMIC COSTS ASSOCIATED WITH LANDLOCKED STATUS

Two Latin American republics, Bolivia and Paraguay, lack sovereign access to ocean ports. Their landlocked status effectively forces them to export and import products through borders with neighbouring countries; for this purpose, they frequently use land transport modes which are intrinsically more costly than ocean transport.

However, being distant from ocean ports is an attribute not only of landlocked countries; but also of states or provinces, such as Mato Grosso, in Brazil, or Tucumán, in Argentina, which belong to countries with direct access to the sea. If perfect political and economic integration were to be achieved in the region, the distances and topographic accidents between points such as La Paz, Bolivia, and Arica, Chile, or Asunción, Paraguay and Paranaguá, Brazil, would remain unchanged. What would disappear would be the delays at border crossings and their related costs.

For the two landlocked countries, border expenses, although significant, are a relatively small fraction of the cost of the land segments of international transport. More important for these countries, are the dependency of infrastructure services and the institutional framework of the transit countries for the transport of their external trade.

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The **landlocked status** of some countries **is an issue discussed within the United Nations**. In the Americas, there are only two countries without a sea coast: the South American republics of Bolivia and Paraguay. Their situation and that of their transit countries (Argentina, Brazil, Chile, Peru and Uruguay) were discussed at the Regional Meeting of Landlocked and Transit Countries held in Asunción on 12 and 13 March 2003, which was a preparatory forum for the International Ministerial Conference of Landlocked and Transit Developing Countries and Donor Countries and International Financial and Development Institutions on Transit Transport Cooperation, scheduled to be held in August 2003 in Almaty, the capital of Kazakhstan.

**The cost advantages of ocean transport**. Lack of a sea coast means that a country has no sovereign access to ports for its exports and imports so that goods usually reach, or are transported from, the port by land modes. Typically the ratio of transport costs for ocean, rail and road transport is 1:5:7, although it depends largely on factors, such as the volume to be transported and the quality of the infrastructure. Ocean transport is the cheapest for physical reasons (less friction between the vehicle and the surface, and the fact that there is no need to travel uphill) and because of economies of scale.

**The higher costs of imports into Bolivia and Paraguay**. Unless air or river transport is involved, the external trade of landlocked countries must include a land segment, sometimes long, which tends to increase the cost of transport and insurance and pushes up the price of imports. See Table 1 relating to chemicals, which are relatively homogeneous products, suggesting that differences between the two countries in terms of the (CIF-FOB)/CIF cost relationship are not due to the nature of the product.

Table 1

INDICATORS OF THE TRANSPORT AND INSURANCE

COMPONENT IN IMPORTS OF CHEMICALS

| Country | (CIF cost-FOB cost)/CIF cost (as a percentage) |
|---|---|
| Products imported from the Asia-Pacific region | |
| Bolivia | 14.21 |
| Paraguay | 11.37 |
| Other countries | 7.25 |
| Products imported from the European Union | |
| Bolivia | 9.42 |
| Paraguay | 7.16 |
| Other countries | 4.65 |

Source: International Transport Database, Transport Unit, ECLAC.

It is clear that this ratio is much higher in the case of Bolivia and Paraguay. A hasty conclusion would be that these higher rates are due to their landlocked condition. However a deeper analysis will prove that this is not necessarily so.

**The effect of border costs**. Under current conditions, it is costly to transport loads over long distances by train and even more so by truck and this erodes the income of exporters and drives up the prices to be paid by consumers for imported goods. Landlocked countries are, however, not the only ones affected by long overland trips. The Bolivian department of Santa Cruz de la Sierra is approximately 2,250 km by road from the maritime port of Buenos Aires, but the same distance separates points such as Sapezal in the Brazilian state of Mato Grosso and the Brazilian port of Paranaguá. Thus, in terms of transport costs, and all other things being equal, as regards the mode of transport available, the state of roads and the competitiveness of the road transport sector, a soya bean producer in Mato Grosso would have to face the same high costs for transport as his counterpart in Santa Cruz.

The Bolivian producer must, however, overcome an obstacle not faced by the Mato Grosso producer, that is the border crossing. Few border crossings in South America are noted for the efficiency of their operations, as explained by Georgina Cipoletta and Ricardo Sánchez in FAL Bulletin no. 199 dated March 2003 and entitled: **Border crossings in Mercosur countries: obstacles and their cost**. For example, most of the trucks that arrive laden at the Argentine/Brazilian border at Paso en los Libres/Uruguaiana take between 30 and 36 hours to cross. In terms of costs, crossing this frontier is equivalent to adding approximately 330 km to the trip. If there were a border with a delay of this length between a landlocked country and a port, agricultural, mining or industrial firms in this country would receive some US$ 8.25 less per tonne for their products than other neighbours located a short distance away in the transit country.

Moreover, the crossings that are least problematic include several that deal with transfers between the ocean ports and Bolivia and Paraguay. For example, a truck leaving early in the morning from the Chilean port of Arica can arrive in La Paz in the same day, after covering 500 km, from sea level up to 4,670 metres through the Andes and then travelling down to 3,600 metres. Haulage companies charge US$ 950 to transport a container from Arica to La Paz, of which less than US$ 80 would be related to the border crossing itself. This surcharge, although significant, is nothing more than half of the cost attributable to the steepness of the terrain in the region, which pushes up the operating costs of the trucks. A thorough-going economic and political integration could cancel out border crossing costs, but could not level out the road between La Paz and the Pacific Ocean.

Thus, a distinction must be made between landlocked status and distance from a maritime port. Notwithstanding the border crossing and the topography, the cost of transporting containerized products between Arica and La Paz is approximately US$ 68 per tonne, including the return of the empty container, which is less than the corresponding cost between a Brazilian Atlantic port and the Brazilian state of Mato Grosso. That is, although it is the seat of government of a landlocked country, in terms of transport costs of imports, La Paz is in a more advantageous situation than certain parts of Mato Grosso or other states, departments or provinces that are far from the sea although they belong to countries with a maritime coast.

**Palliative measures for landlocked countries in South America**. There may be palliative measures for landlocked countries. Some will be achieved through negotiation with other countries and others will be the outcome of natural features. The first include the treaties, agreements and other pacts signed by both Bolivia and Paraguay with the transit countries whereby they receive benefits that help to counter the economic handicap of being landlocked through trade facilitation, the granting of bonded warehouses, the construction of infrastructure works, etc.. See for example, annex 3 of document ***Estudio preliminar del transporte de los productos de comercio exterior de los países sin litoral de Sudamérica*.** Many of these are multilateral agreements concluded within the framework of subregional groupings, such as the Andean Community (of which Bolivia is a member) and Mercosur (of which Paraguay is a full member and Bolivia an associate member).

Another factor that reduces the economic costs of being landlocked is the river transport option, which is especially attractive for producers of bulk products, in particular soya and soya-based products, from the east of Bolivia and a large part of Paraguay. In addition, the north of Bolivia could potentially make use of the Mamoré and other rivers to dispatch and import products through the Amazon river. Soya producers from the Santa Cruz area may opt to send their crops by road to the port of Buenos Aires, for which the current freight rate is approximately US$ 90 per ton. Use of the bimodal alternative, however, by rail to Puerto Suárez and then via the Paraguay/Paraná/ Rio de la Plata waterway, could cut the cost of transport by approximately half. The costs of transport by waterway could be reduced even further through additional investments in operations such as dredging.

**Factors that increase costs incurred by landlocked countries in South America**. Other factors add to the disadvantages of being a landlocked country and at times the solution depends in part on these countries themselves. For example, the quality of the infrastructure used by vehicles transporting goods to and from landlocked countries is often better in the transit countries than in the landlocked countries themselves. The rail system that transports Paraguayan soya to the port of Buenos Aires is one example. The tracks in Argentina are not perfect but are adequate for the traffic of low-speed freight trains, which in this country are drawn by diesel engines belonging to a relatively innovative and efficient franchise company. On the other hand, Paraguay has only four kilometres of tracks since the line was flooded by an artificial lake created behind the Yacyretá Dam and was never relocated. In fact, the Paraguayan rail system, which is dedicated only to international cargo, consists of a shunting yard operated by wood-burning engines that are almost a hundred years old. In addition, in Bolivia, there is still no highway at the principal border point with Brazil in Quijarro/Corumbá and both in Bolivia and in Paraguay, the quality of the domestic road network reflects the lack of proper maintenance over a long period.

The run-down condition of considerable segments of the transport networks of the landlocked countries is not necessarily due to neglect by the countries in question for two reasons. First, the volumes of traffic in these countries are generally lower than those in the transit countries and optimum planning rules out the construction of infrastructure works not justified by these volumes. Moreover, the landlocked countries, partly because of their lack of a maritime coast, tend to have less dynamic economies than their neighbours and greater difficulties in obtaining financial resources for investment in infrastructure works. This implies a greater capital cost, which naturally results in a reduction in the number of investment works that are justifiable.

**The cost of being landlocked**. The economic disadvantage of being landlocked lies above all in the component of the transport costs relating to crossing a land border, which are charged to the landlocked country rather than to its trading partner. In the cases of Bolivia and Paraguay, these costs amount to a maximum of US$ 5 per ton, most of which would be charged to the landlocked