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## INFRASTRUCTURE, TRANSPORT AND INTEGRATION: THE LINK WITH PRODUCTIVE DEVELOPMENT AND REGIONAL COMPETITIVENESS

A vision of the role played by infrastructure, transport and related services in the development of competitiveness and productivity is fundamental for proposing public policies linked to productive development.

In particular, the supply costs and the quality of public utility and transport services are extremely relevant to countries' productivity, GDP growth and competitiveness, and also for the development and economic integration of Latin America.

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A significant set of relationships summarizes the interaction between infrastructure and the growth of GDP. They include the following:

- The accessibility offered by infrastructure enables the national or subnational territory to be adapted to economic activities. Infrastructure is purposefully designed and built with the aim of creating or uniting regions within a single national territory. Roads, railways, ports, communications, energy, drinking water and irrigation facilitate national social integration and improvements in well-being.
- Infrastructure is linked to economic and political integration at the supranational level, where it acts as a crucial agent. It is conceivable that the absence of infrastructure may even hamper or prevent integration and trade, and an inappropriate or unsatisfactory infrastructure may cause a drop in a country's competitiveness.
- Infrastructure imposes an economic order on a territory. Indeed, it becomes a determining factor in how the territory is organized and its economic development by supporting increases in productivity and the country's competitiveness.

Transport services that use infrastructure have an impact on company costs, given that the

availability and quality of the infrastructure enable logistic chains to be more efficient. In addition, the reduction in unit transport and communication costs, and the resulting increase in international connectivity, have facilitated the development of new forms of production that replace the Fordist model with the more flexible Toyotist production method that involves the “just-in-time” concept for both intermediate and final products.

This new way of creating wealth is characterized by new complementarities in the production process based on the factor productivity which, along with the available infrastructure, determines the location of production plants.

### **Infrastructure is a prerequisite, but alone is insufficient for guaranteeing development.**

Development also depends on other crucial factors such as the quality of institutions, the careful design and application of economic policies, openness to trade, planning of sustainable development, economic regulation, security for private investment, access to financing, development of human capital and appropriate criteria for evaluating projects and assigning scarce resources.

### **OBSTACLES TO INCREASED COMPETITIVENESS OF LATIN AMERICAN EXPORTS**

Given that the region mainly exports products that are of low value in comparison to weight, and which importing countries can often acquire elsewhere, the efficiency of transport systems plays an extremely critical role. For example, although the farm price of soybean grown in the centre of the United States is 30% higher than soybean harvested in Mato Grosso, Brazil, the higher costs of inland freight within Brazil and ocean freight to Europe mean that the North American product is only 2% more expensive upon arrival at Rotterdam. The land transport costs of bulk products in Latin America are often high due to the lack of waterways and railways, which could offer lower freightage than trucks.

Contrary to what might be expected, the region's road network is extensive in some aspects. Countries such as Bolivia, Brazil and Nicaragua have more than 100 km of roads per 1,000 vehicles, whereas Germany, United Kingdom and Italy have less than 20 km. However, there are enormous differences in the quality of road networks between Latin America and Europe. In Bolivia, Brazil and Nicaragua, only 10% of roads are paved (1990 figures), whereas the figure does not go below 99% in European countries. Transport costs on unpaved roads are at least 40% higher, a situation that is aggravated by the frequently enormous distances between production areas and ports in the region.

Given that the low rates of vehicle ownership result in low potential volumes of traffic, it is not always possible to justify higher investment in Latin American road networks because insufficient transit means inadequate returns on investment in trucks. Capital costs are also high in most countries in the region. All of the above means that, without sacrifices, i.e. investing scarce capital in projects that yield extremely low returns in the short term, Latin America will not have the quantity and quality of road networks it needs to develop in the medium term.

### **TRANSPORT POLICIES TO PROMOTE PRODUCTIVE DEVELOPMENT**

**Ports: extending reforms to connect ports with transport and logistics infrastructure.** The following recommendations apply to port reforms in the region, both for countries where reform

processes are already under way and for those where reforms are pending: (i) stepping up efforts to incorporate private capital in port management, involving the workforce in the process; (ii) adapting public structures to be proactive in planning, control and the development of new roles for the reformed ports, with substantially improved public management and cost reductions; (iii) modernizing and adapting customs rules and practices to countries' needs in terms of systemic competitiveness; (iv) dealing with the problems of economies of scale in smaller countries by promoting regional integration and cooperation; (v) supporting and strengthening anti-trust procedures, not only in terms of terminals but all parts of the logistics chain, especially those preceding the port stage and; (vi) reviewing practices and mechanisms for evaluating projects and for valuing assets crucial to port reforms in the interests of clearer, optimal service charges.

**Striking a balance between rail and road transport.** Road network and railway concessions have not corrected all the imbalances in terms of competition between trucking and railways and project evaluation and, in some ways, they have aggravated the problems. As a result of taxes on fuel and toll gates, the charge for heavy truck transit is still lower than the costs it generates as a result of externalities. Although technologically, it is increasingly feasible to charge the right amount, it is more difficult institutionally if the infrastructure is already a concession, since the basic conditions of signed contracts would have to be changed. Nevertheless, those countries in the region that have made little headway in road concessioning have the opportunity to take account of the experience of pioneering countries with a view to enhancing policies.

During the time when railways were State-run (at least in principle), railway projects were assessed using the same criteria as for truck projects. With the advent of railway concessions, the situation became more confused, and there are probably railway projects that are socially but not commercially viable, or whose optimum quality varies according to the evaluation criterion adopted (social or private). Since they are now assessed using private criteria, some socially profitable projects tend to get left aside, possibly even some of binational importance. This bias could be corrected by the adoption of efficient instruments that would provide incentives for socially viable railway projects while minimizing transfer of taxpayers' money.

**Road sector: autonomy and strengthening of monitoring bodies.** Countries should take account of the lessons learned during other reform processes in the interests of the autonomy and strengthening of control bodies with a view to avoiding functioning distortions such as agency capture. It is vital to review project evaluation methods and demand-projection and analysis mechanisms, since concessions depend on those projections and in order to discourage opportunistic behaviour either from the concessioner or transporters. The financing structure of a road concession programme is another element to consider, particularly how States distribute risks and explicit or implicit guarantees to avoid overstimulating investment. When a public contribution is necessary, it should be based on a social assessment of the project and the lower net present value of those contributions. Price setting should stimulate fair competition between modes, encouraging explicit subsidies when arising from project evaluation and avoiding partial externalization of costs between categories of vehicles. It is also advisable for governments to plan financing for possible liabilities from completed tenders. Lastly, price review mechanisms must be agreed in advance to avoid major changes in the general conditions of concession and increased transaction costs.

In many Latin American countries, 1992-2002 was a boom time for transport infrastructure concessions. Generally speaking, concession policies were implemented to raise the quality and quantity of infrastructure without dipping into public coffers. In these countries, such as Argentina, Chile and Mexico, it is no longer possible to concession much more of the road infrastructure without

subsidies, hence the policy's main *raison d'être* is no more. Either such policies have to change or, if they remain the same, a new justification will have to be found for their existence. Motorway concessions are no panacea, and States should carefully identify suitable occasions for implementing them. An entity such as the State that controls many thousands of miles of road is in a better position to manage risks than a concession that administers a few hundred kilometres, plus the fact that the State is one of the main sources of risk for concessions. In principle, even collecting tolls to compensate for invested capital may be a source of economic inefficiency, which should be compared with the cost of the missed social opportunities of State management.

**Effective road maintenance.** The losses that can result from a road network in poor condition mean it is necessary to make innovative efforts to improve the effectiveness of road maintenance.

The first step is determining the acceptable level of deterioration for each road. It is in the public interest to minimize the present value of the sum of transport costs borne by the company (vehicle operation plus road maintenance and changes of standards). Maintaining roads in better condition involves higher costs, which may be justified by operational savings resulting from a higher number of users and vice versa.

The condition in which each stretch of road is maintained should take into account the availability of financing. In leaner times, maintenance standards would have to be less stringent (with the possible exception of the most important routes) and achievable with the resources available. Such a system would make it possible to evaluate the potential impact that a variation in the level of resources would have on road conditions, thereby making budget discussions more transparent. The possible condition of each road should be the subject of official policy fixed by the relevant authorities.

Road agencies should ensure that concessions or other parties responsible for maintenance always respect established conditions by adopting the relevant administrative and contractual measures. In this context, maintenance contracts by level of service are useful because payment is based on compliance with the agreed road condition, rather than on the volume of works carried out in each period.

**Role of transport in an economically competitive and environmentally sustainable city.** The crucial part of determining urban transport policies is choosing the most appropriate combination of promoting a city that is economically competitive in the short term and one that is environmental and socially sustainable in the long term.

All citizens and their families have the right to enjoy the benefits of human progress, including aspiring to have their own means of transport, i.e. a car. Policies designed to restrict car ownership infringe upon that right, and would make the city a less attractive place to live and reduce its competitiveness in the long run. In any event, merely owning a car does not compromise sustainability. What does compromise sustainability is if using a car creates negative externalities such as congestion or pollution, or if the authorities attempt to accommodate cars by building road infrastructure with its own negative externalities such as being an eyesore, ruining the harmony of neighbourhoods and destroying green spaces. This would not only make the city less sustainable in the long term, but also a less pleasant place to live and therefore less competitive.

To prevent this, transport authorities (preferably one per city) should impose some restrictions on the use of cars. Any such restrictions should, however, be applied in a carefully

planned way because they involve preventing citizens from doing something they wish to (using a car) and run the risk of reducing competitiveness in the short term by reducing the city's attraction as a place to live, work and invest.

The solution involves each city adopting its own package of “carrot and stick” measures that necessarily include ones to restrict the use of cars in the areas or time periods where they would cause most social disturbance, but also other incentive measures such as the provision of alternative and appealing means of travelling, i.e. public transport that is socially acceptable to all social classes, even those with the highest incomes.

**Policies for appropriate functioning of markets.** Transport markets and services in Latin America still present shortcomings. Reforms in the provision of infrastructure and services have not been far-reaching and have rarely focused on general market problems but rather on those associated with concessions. Yet even the concessions show some of the imperfections of the transport market, some of which are mentioned above.

Outside the area of concession services, there are also rules that need to be reviewed, as they have not been updated for many years. Of particular concern are restrictions and obstacles to free contracting, organization problems of logistic chains including those at some border crossings, and the way that, in practice, customs rules and procedures tend to hamper the development of trade. Such problems are a significant impediment to the successful reform of privatized activities, as they can prevent efficiency gains from being passed on to the rest of the economy.

The basic objective that justifies having regulations is the design of market characteristics to act as competitive market forces when the latter are absent or weak, but without discouraging or overstimulating investment in a way that affects future efficiency. These considerations alone should guide the regulatory reform that is required in the region.

The operation of many transport markets in Latin America is currently conditioned by a set of restrictions on the free contracting of freight, as is the case for national and regional coastal transportation. Similarly, international transit is still occasionally restricted by reserve capacity limitations, which have tended to disappear more successfully from the overland freight sector than from others such as airfreight, hence the need to review such rules. The simple economic solution of total liberalization might be advisable at the regional level, although it would not be that workable in an international trade context that is significantly distorted by subsidies and preferential rates that are applied by more developed countries in particular. The facilitation of trade, increased

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