

## Infrastructure, integration and equity: The social impact of the health and public transportation infrastructure.

This bulletin, prepared by Gustavo Ferro and Emilio Lentini, sums up the most important points made in a longer document on the subject, to be published soon by the ECLAC Natural Resources and Infrastructure Division. For more information, please contact [trans@cepal.org](mailto:trans@cepal.org)

### 1. THE ROLE OF INFRASTRUCTURE IN GROWTH AND ITS DISTRIBUTIVE CONNECTIONS

Academicians and practitioners generally agree that there is a positive correlation between more and better infrastructure and economic growth. From the broader perspective of development, attempts have been made in the literature to identify the different theoretical connections and the empirical patterns that link infrastructure to productivity, on the one hand, and those that link it to social inclusion and equity, on the other hand.

Infrastructure contributes to development in different ways. The capital involved is not homogeneous, nor is its effect on the distributive aspects. Water and sanitation have a particularly strong association with the health of the general population and with infant mortality, early childhood health, learning abilities and the acquisition of labour skills. With respect to transportation, the reduction of costs and travel times has a direct economic impact on economic activities of production and domestic and international distribution. That infrastructure also has a social and distributive role to play by reducing the number of fatal accidents and serious injuries in the sectors that are naturally most susceptible to them, namely, the poor.

Under the broad umbrella of infrastructure, we can include a number of facilities that make possible the provision of certain services. Some of these facilities require very significant fixed capital investments; some of them are residential, while others are not necessarily. What they all have in common is the existence of networks (transportation, wiring, pipelines) and a strong convergence of physical capital and/or technology, as well as the need for major investments in periodic maintenance.

## **2. PUBLIC POLICIES FOR PROMOTING ACCESS TO INFRASTRUCTURE FOR THE POOR**

The services that can be provided with infrastructure capital are varied, and there are a number of reasons why public involvement is advisable, whether for service provision (coverage and availability), for regulation of services, or for ensuring competition: some sectors involve public property (a grid, for example), while in others there are natural monopolies at some link in the chain of production or distribution. In nearly all of them there are major externalities, and finally, there are informational asymmetries in many sectors that require contracts with stipulations concerning contingencies, the regulation of conduct, the settlement of disputes and the promotion of competition.

In view of the concern about the relationship between infrastructure capital and distributive equity, the objective of the document soon to be published by the Division of Natural Resources and Infrastructure (DRNI) is to systematize, describe, analyse and comment on public policies and practices in the countries of the region, with an emphasis on lessons learned. The questions that guided the authors in their research were these: Which public policies have worked and which have not? Which ones have been partially successful, and why? What has been learned? And what are the challenges for the future? Special attention is given in the document to the macroeconomic and institutional conditions that are necessary for the socially equitable provision of infrastructure services, given that the severe international financial crisis points to a slowdown in the region's growth and possible consequences for access to and consumption of infrastructure services by its inhabitants. The sectors studied were water and sanitation and urban public transportation. The former has unique externalities related to health, and the latter allows people access to economic, educational, social and cultural opportunities.

The introduction to the document to be published discusses the role of infrastructure in growth and its links to distributive issues. The following section analyses policies designed to promote poor people's access to the water and sanitation and urban public transportation infrastructures. Next is a review of policies aimed at promoting the consumption of water and sanitation services and urban public transportation by the poor.

### 3. MACROECONOMIC AND EQUITY CONSIDERATIONS

The document devotes a special chapter to analysing macroeconomic considerations and the role of public policies in maintaining levels of equity in access to and consumption of infrastructure during times of major economic crisis.

Infrastructure has a “crowding-in” effect on productivity. Infrastructure facilities and related services enhance productivity in the economy, and although there is no consensus on the quantification of this contribution, an impressive review of the empirical literature reveals broad agreement that there is a positive correlation.

That infrastructure contributes to equity is more an intuitive conclusion and conjectural hypothesis than a documented fact. However, when the properties of infrastructure services are explored, very often different market failures are found (public resources devoted to creating networks and disseminating information; health, environmental and public safety externalities; informational asymmetries and the presence of natural monopolies – all of which require public regulatory intervention).

There is also widespread agreement that some resources are meritorious, that is, normatively considered to be public priorities that warrant efforts to ensure service provision and a certain paternalism in promoting their consumption throughout society.

### 4. INFRASTRUCTURE SUBSIDIES

Direct subsidies could put funds in the hands of the poor. The poor could also be given funds for buying certain goods, or the goods themselves in the case of in-kind transfers. The latter is an alternative method of combating poverty. The normative literature on public finances indicates that cash transfers to the poor without a specified purpose are better than in-kind transfers to deal with specific shortages or meet specific needs. In practice, the latter type of transfer seems to predominate throughout the world, and it includes subsidies for public service access (that is, to the infrastructure itself) and for consumption (that is, of services). With regard to access, urban public transportation is treated a little differently than water and sanitation. In the first case, the use of part of the infrastructure overlaps with other uses (such as that of private vehicles or freight transportation), although subsidies for purchasing or financing rolling stock and inputs (such as fuel at preferential prices) may be included. In the case of water and sanitation, the infrastructure is much more specific and is entirely sunken (in both economic and literal terms). In either case, a great deal of money is needed because of the capital-intensive nature of these industries. In the infrastructure sector, a tremendous shortage of connections must be overcome in the region before it is

possible to think of subsidizing consumption. This is more true of sewerage than of water, and few countries have been able to resolve this problem successfully. One important consideration is the fact that subsidies ultimately come from the same pool of scarce resources, so higher subsidies for access mean lower ones for consumption, and vice versa. In every case, we are not necessarily talking about the same groups of payers and receivers of subsidies, since different social and generational groups contribute or receive the subsidy, depending on how it is organized.

Consumption subsidies can be divided into the categories of supply or demand, direct or cross, universal or targeted, in-kind or monetary. Supply subsidies are aimed at covering the operating costs of service providers so that services can be maintained and made available, but this does not necessarily mean they are available to the poor, since those receiving subsidies may be only a fraction or a connected subgroup of the covered population, which includes rich and poor alike.

Meanwhile, residents not reached by the service are left out, and it is highly likely that these are predominantly poor people. In other words, universal supply subsidies are very probably regressive as well, at least with respect to the universe that has access to the network. The supply subsidy is attractive to service providers, and it has advantages in terms of costs and administration. It is not necessarily efficient, given that excessive provider costs may be covered. To improve efficiency, compensation must be sought, which encourages providers to behave strategically and is costly in terms of resources, information and administrative capacities.

As for demand subsidies, once again there are universal and targeted ones, direct and cross-subsidies. A particularly common example of the latter are flat rates for trips of varying lengths or un-metered water consumption. Cross-subsidies are also enormously attractive politically: they cover a broad spectrum of beneficiaries and those who contribute to the subsidy do not receive the entire amount of their contribution. In addition, no tax resources are required. The advantage they have in quantity may detract from quality. Their political attractiveness contrasts with their limited economic efficiency. They are not transparent and they do not necessarily preserve horizontal and vertical dimensions of quality. Moreover, they have a tendency to drain funds from service providers, given that the rates on which the subsidy structure was established do not necessarily cover costs.

Direct subsidies are relatively attractive when their implementation is contemplated. They are transparent, they seem to get to the heart of the matter, and they are regarded as being better at targeting. The latter point is not trivial: resources for subsidies are scarce, even for cross-subsidies that are paid by other users (who always have an incentive to cease being contributors), and all the more so for direct subsidies that must come from the region's always meagre public budgets and must compete with a host of other, equally urgent needs. Targeting therefore has an efficiency property: more can be gotten with less. Furthermore, direct subsidies can enhance the equity of distribution. Minimizing errors of inclusion and exclusion in cross-subsidies requires an improvement in the quality of the proxies among the drivers of the subsidy and the poverty or whatever condition the subsidy is designed to combat. In the case of direct subsidies, targeting is intended to filter the candidates properly.

There are different forms of targeting. Some are excellent, although the quality of the service may be inferior. An example is the public standpipe, where there is little error of inclusion but coverage is not at the individual household level. It is barely enough to prevent the worst health scourges (and it saves money for poor people who do not have to patronize alternative providers), but it does not assure residents of a minimum level of comfort, dignity and recognition as full-fledged citizens. Most targeting mechanisms are weak or expensive.

Targeting can be geographic, categorical or administrative. Directing subsidies towards certain geographic areas is appropriate when geography is a good indication of poverty. Marginal, outlying neighbourhoods have access to flat-rate transportation services at frequent intervals in reasonably equipped vehicles, and the impact on the well-being of the poor is significant. The same can be said of marginal neighbourhoods that have indoor plumbing with special, geographically-based water rates. Often geography is not a good proxy, however, and an additional criterion must be employed. Discrimination by category does not appear to function as well, but it does help people with special physical needs, poor students (if they can be differentiated from rich ones) and poor elderly individuals (with the same differentiation). A certain degree of self-selection may occur in subsidy design. This adds to efficiency because it saves resources, in contrast to a supply subsidy, for example, that would be implemented on the assumption that it will be used when in fact there is no interest in it. It also contributes to equity by building civic involvement, encouraging active participation on the part of the beneficiaries.

Direct, targeted subsidies based on administrative considerations are well received by economists. Evidence shows that they get good results. They have two drawbacks, however: their implementation requires a large amount of resources and administrative capacity. Even in the best experiences documented, there have been significant errors of inclusion and exclusion (on the order of 35-40%). If enrolling families in a developing country costs US\$ 8-10 in each case, would it not be better to distribute the resources randomly? In the worst of cases, the subsidy would be proportional. The above is an exaggeration intended merely to urge public policy planners to use common sense. The efficient response is to spread out those costs among many social programmes.

That is also the fairest approach, because all subsidies will go to combating poverty rather than being targeted exclusively at specific meritorious services. Several narrowly-focused programmes aimed at the same beneficiaries will improve their impoverished conditions.

## 5. CONCLUSIONS AND LESSONS LEARNED

A wide variety of experiences in the region were reviewed for the study. Each country analysed has sought, within the limits of its institutions and possibilities, the means to subsidize access and consumption for the poor. Some lessons can be derived from all of the experiences.

The first one is philosophical: it seems reasonable to avoid dogmatism on this subject. The forms of subsidy that are most attractive for their qualities of efficiency and equity are the most expensive ones to process and require the most administrative capacity, features that are not always present in the countries of the region.

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