Transport and Economic Performance: Linkages and Implications for Sector Policy

The World Bank's approach to sector and structural adjustment operations have tended to largely ignore the crucial role of transport in improving a country's economic performance and the well-being of its population. It is necessary, in order to design appropriate policy interventions, to understand the way in which transport interacts with the economy.

The Sub-Saharan Africa Transport Policy Program (SSATP) is trying to assist governments in Sub-Saharan Africa to improve their transport policies and programs and enhance the effectiveness and efficiency of the transport sector. It helps SSA governments to define much-needed policy reform and assists in their implementation. This study, Transport and Economic Performance: A Study of Developing Countries, reviews the existing literature on the linkages between transport and economic performance in developing countries in general and identifies some areas where the Bank's policy interventions need rethinking.

Transport helps an economy in two basic ways. First, it gives consumers access to places where they can engage in income-generating activities, consume other goods and services (including education and health care), or engage in leisure and social activities. Second, transport enters the economy as an intermediate input into production, either directly or as a complement to other factors (for instance, securing inputs or getting output to market). In the case of rural agricultural production, improving transport may lower input prices and hence production costs, improve access to credit, facilitate technological diffusion, increase the area of land under cultivation, or increase the availability of "incentive" goods. One study on Nigeria (Balwinder Singh, "An Analysis of Market Infrastructural Problems in the Green Revolution Period in Nigeria," Economic Affairs, Vol. 31, No. 4, 1986) reported the substantial costs to farmers due to inadequate transportation facilities connecting rural areas to market towns. On a national level, improved transport may increase trade and competition from imports, which in turn may lead to improved production efficiency, putting downward pressure
on consumer prices and reducing seasonal fluctuations in price. In urban areas, the price and quality of transportation and other types of infrastructure significantly affect firms' decisions about where to locate and ultimately affect firms' output. In Kinshasa, Zaire, for example, which has expanded fourfold physically since independence, a deteriorating infrastructure forces people living in districts developed after 1960 to walk long distances to reach a bus or their workplace. This affects the productivity of workers and the wages they are likely to demand. (A. M. Hamer, Urban Sub-Saharan Africa in Macroeconomic Perspective: Selected Issues and Options, Urban Development Division, World Bank, 1986.) Transportation costs are a significant part of total costs, affecting the survival of small firms and the entry of new firms into an industry or market. National output can increase if inputs shift to more productive uses. By attracting inputs from other regions, transport can help shift a region's production outward.

**Shortcomings in Project Appraisals**

Many of the ways in which transport affects an economy are excluded from project appraisal as currently practiced. For example, the severe fiscal constraints developing country governments face make it imperative to identify the fiscal impact of projects and policies, which are considerable yet are usually omitted from project appraisal. Identifying the fiscal impact would require examining the incidence of costs and benefits and determining a shadow price for public funds.

To take another example, transport improvements can benefit some groups at the expense of others. Policies that affect the cost, quality, or availability of freight or passenger transport not only benefit the immediate users of those services but have secondary impacts as well. A given improvement in transport may change land use and land value, displace the urban poor, allow more women to participate in the labor market, and lower production costs for landowners, manufacturers, and transportation firms -- not to mention having an impact on the environment, which is also neglected in project appraisals.

Project appraisal is traditionally concerned with evaluating the overall size of costs and benefits rather than their distribution. This study does not propose abandoning project appraisal, but suggests that it be supplemented with a less quantitative, more qualitative, identification and consideration of all relevant costs and benefits and their distribution among affected parties. It is important to identify the full impact of a project or policy reform on different groups, even if that impact cannot be quantified.

Restricting cost/benefit analyses to quantifiable costs and benefits makes it easier to compare and rank projects, using the economic rate of return. Without quantifiable costs and benefits, one must instead make a more subjective judgment. But there are advantages to a more qualitative appraisal. For complex projects, it provides a valuable tool for summarizing relevant information. For simpler schemes, it serves as a valuable checklist. It is useful for debate, allowing consideration of the full range of impacts for each option, and the reactions of all groups affected. It helps identify how different groups are affected and reveals to analysts and decisionmakers the pattern of winners and losers created by the project. It allows decisionmakers to reach rational judgments about schemes, taking into account the full range of costs and benefits. Such methods, known as multicriteria analysis, are used to evaluate nearly all major transport projects in Europe. In a simplified format, it can be used in the preliminary appraisal stages to screen and prioritize projects.

**Testing A New Framework for Assessment**
How does such an approach work in practice? The main European countries use frameworks (matrices, tableaux, planning balance sheets, and the like) to appraise road and transport investments and to predict project results. In trunk road projects in the U.K., the Department of Transport used this approach to ensure that assessment was not dominated by factors susceptible to valuation in money terms. This appraisal method brings together large amounts of disparate information in a rational, comprehensive, but not necessarily quantified manner and allows interested members of the general public to be informed of the issues and to form and express their own views. This helps decisionmakers arrive at a rational decision that is not necessarily based on "the numbers" alone.

Transport has a wide range of impacts on the economy and on different groups, most of which are relevant to decisions but not necessarily quantifiable. The study consequently recommends that such "frameworks" should be more widely adopted in the appraisal of transport projects. First they should be tried experimentally, so that everyone involved comes to understand the process and to see if it is feasible (especially in a country with weak administrative and institutional capabilities).

Experience in the U.K. suggests that the following elements are essential to such a framework for assessment:

- All factors reasonably thought to be relevant must be considered. That includes all travel benefits, the environmental effects (on buildings and open spaces and on the people using them), the consequences for planning and land use, and the effects on trade, property, enterprise development, productive activity, and the labor market. Expertise is required to prevent double counting of costs and benefits and to account correctly for such transfers as taxes, subsidies, tolls, and revenues.

- Where impacts can be quantified naturally, they should be, but the quantification of impacts is not an end in itself. Where quantification is inappropriate, a verbal description is sufficient.

- Judgment is at the heart of the process. The final choice of an option should come after all options and their effects have been compared. The U.K. report on trunk road assessment recommends comparing two options at a time until the best is found.

- Such an assessment should require only inexpensive administrative, financial, and human resources. The techniques should be well understood by the transport authorities and should be made understandable to the general public. Given the inherently judgmental nature of decisionmaking, the process should be open, transparent, and beyond the control of any single group.

**Transport and Structural Adjustment**

Transport plays such an important role in the economy that it must play an important role in structural adjustment as well. After all, one basic objective of structural adjustment is to eliminate balance of payments deficits by:

- Reducing domestic demand to bring consumption and investment into line with production and income.

- Changing the relative price of tradables and nontradables to provide incentives to increase the
production of tradables and decrease the production of nontradables.

- Shifting the frontier of production possibilities outward through improved resource allocation and more efficient use of resources or by increasing the amount of inputs.

Infrastructure is an intermediate good in the production of tradables and nontradables as well as a final good that is typically nontradable. And as an input of production, it certainly helps expand the frontier of production possibilities.

Reductions in public expenditures due to economic recession often lead to delays of infrastructure investments and maintenance in the expectation that when economic growth resumes, investment and main finance can be increased. Economic recession has become so widespread and prolonged in Africa that infrastructure investment has been considerably postponed and maintenance often allowed to lapse for long periods. Postponing infrastructure investment and maintenance is beginning to reduce the stock of infrastructure capital in many countries, with disastrous consequences for growth.

Both sectoral and structural adjustment programs have ignored transport's crucial role in the economy. There is substantial evidence that in poorer countries -- with inadequate capital and infrastructure and imperfect markets -- the supply of agriculture is less responsive to prices than to such nonprice factors as public goods and services.

An effective transport system can improve trade, urban and rural production, urban-rural links, regional development, and the functioning of markets. Effective transport improves personal welfare (reducing time spent traveling and allowing flexibility in the choice of a job, school, or residence). It is essential to efforts to alleviate poverty (for getting people to work, for example, or to public facilities, and for allowing family-based microenterprises to flourish). While the full operationalization of the conclusions articulated earlier would require much more research and analysis, experimenting with them on the ground would seem to be the best test and grounds for refinement and adaptation. However, for developing countries in general and Sub-Saharan Africa in particular, evidence about the linkages between transport infrastructure and economic growth constitute sufficient ground for reassessing some of the public expenditure choices being made.