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What Can Developing Countries Learn from Soviet Transport?

Highlights of

SOVIET TRANSPORT EXPERIENCE:
ITS LESSONS FOR OTHER COUNTRIES

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What Can Developing Countries Learn from Soviet Transport?

WHAT CAN the developing countries learn from Soviet transport experience—the policies to imitate and the policies to avoid? A number of implications emerge from a comprehensive new study, *Soviet Transport Experience: Its Lessons for Other Countries*, by Holland Hunter—another volume from the Brookings Transport Research Program, financed by the Agency for International Development. The author compares regional changes in industrial output and capital, and contrasts growth trends in Soviet freight traffic and output with traffic-output relationships in the United States. Some of his major findings are summarized below.

The experience of the Soviet Union is especially interesting to developing countries faced with the need to make decisions on competitive transport systems, resource allocation, and regional growth, for it illustrates some of the consequences of two major policy choices. One choice was the attempt to hold down transport investment by focusing on the best use of existing facilities rather than building extensive new facilities intended to stimulate new industrial development. The other was the decision to concentrate on transport by rail and water at the expense of the roads. Both of these efforts were pursued within a planning framework that tried at various times to spread economic growth to outlying regions of the Soviet Union in order to achieve more uniform national development.

Must Transport Come First?

Countries that have a basic transport network can learn from Soviet experience one lesson of fundamental importance: new transport investment is a concomitant of economic development, not a precondition for it. Such countries need not accept the orthodox view that additional large-scale transport facilities must be laid down before agriculture and industry can begin to grow. Transport capacity can be expanded as the demand for it grows. Soviet experience demonstrates that existing transport networks can be made to serve an industrial development program without having transport itself become the largest single claimant for capital plant and equipment.

The Soviet regime inherited an economy that was already well launched in the industrialization process. Modernization had proceeded rapidly for more than half a century before the revolutions of 1917. Extensive railroad building had been a major feature of this growth. In the stock of capital plant and equipment inherited by the Bolsheviks, the transport sector's fixed assets were substantially larger than those of the industrial sector, and were exceeded only by those in agriculture. Many countries today, like India and several Latin American economies, are similarly endowed with a substantial transport plant, together with capacities in agriculture and industry. For them, the question is one of timing and proportions. Even to the extent that a particular transport link is a prerequisite for a specific mining, manufacturing, or agriculture project, Soviet practice exemplifies the rule that a transport investment need not precede the "directly productive activity" very much in time, and need not outweigh it heavily in financial dimensions.

The Railroad Potential

Another lesson of Soviet experience is that modern railroads still have tremendous potential for carrying mass freight traffic. The prestige of railroads in most Western countries has fallen seriously in recent decades because of dissatisfaction with the passenger service they offer in comparison with that of automobiles and aircraft. The American public may believe that railroads are obsolete. Nothing could be further from the truth. Soviet railroads have shown conclusively what modern railroads can do under favorable conditions.

The government-operated railroads of the U.S.S.R. are technologically alert, maintain high morale among their personnel, and have a remarkable record of cost reduction since 1950. Soviet railroad passenger service, while not as impressive as the freight service, has handled most of the intercity passenger travel in adequate fashion for many years. The lesson for less developed countries with existing railroad systems is clearly that the railroads' potential for contributing to economic development is substantial, particularly if the railroads are not dominated by politically motivated policies. A delegation sent to the U.S.S.R. to examine Soviet railroad operating methods might return with fresh ideas for rejuvenating a rundown railway system at home.

Importance of Intensive Utilization

The railroad potential that has been realized in Soviet experience is closely associated with intensive utilization of plant and equipment. By contrast, except for occasional periods and selected portions of the network, American railroads have not generally been forced to use equipment intensively in the Soviet manner. There is thus some reason to imagine that American advisors on transport development have not generally visualized intensive use of railroads as a feasible alternative, and that by employing undemanding standards for equipment use they have tended to overstate the need for added transport capacity.

Soviet railroad men have developed numerous ways of greatly intensifying the use of their plant and equipment. Utilization factors have been raised far above conventional Western levels. Through making more continuous use of locomotives, freight cars, and line capacity, the annual volume of freight traffic carried by the system has been additionally expanded.

Intensive utilization, technological progress, and increased inputs have acted jointly to increase Soviet railroad traffic. The technological progress embodied in Soviet railroad capital, consciously employed to further the continuous use of railroad equipment, has permitted the Soviet economy to economize in making additions to the railroad capital stock. The intent has been to raise capital productivity. By contrast, the technological progress embodied in American railroad capital, heavily directed toward reducing operating costs, has enabled the American economy to obtain railroad freight services with a far smaller outlay on railroad labor than would otherwise have been necessary.

The primary focus of American railroad management has been on raising labor productivity. In each case the broad policies pursued are understandable and appear economically rational.

But intrasectoral rationality is not enough. From an overall point of view, rational resource management requires attention not only to the cost minimizing efforts of each sector individually, but to their joint interaction. The more continuous use of railroad capital plant and equipment that has played such a large role in explaining Soviet railroad successes has one serious economic drawback; it raises costs for freight shippers and receivers. Freight arrivals and departures at night, over weekends, and on holidays require the railroads' clients (unless they themselves happen to be on a continuous, three-shift basis) to bear extra expenses. Similarly, the handling of large consignments, arriving and departing intermittently, raises storage costs for a railroad client. In all these respects, the relatively low level of utilization that characterizes American railroad plant and equipment may be seen as a direct measure of the reluctance to impose such expenses on American shippers and receivers. The point should not, however, be overstated; the American railroad record over the past four decades shows many periods when slack utilization has gone far beyond what could be justified on this basis.

In sum, while motion per se may be pointless, continuity in the use of equipment is the key to effectiveness if traffic needs to be moved. State policy has forced Soviet railroads to make extremely intensive use of motive power, rolling stock, and line capacity. The railroads have long sought to organize traffic flows so that loaded trains will be in motion night and day, in both directions, throughout each week over all seasons of the year. Their ideal is never, of course, completely achieved. The productive operations of shippers and receivers cannot and should not be fully bent to the railroads' purposes. But wherever traffic is growing and resources are scarce, continuous use of transport capacity remains a powerful principle for reasonable application.

The Impact of National Purposes

The implications of Soviet experience for other countries depend not only on the degree of similarity in their transport conditions but also on the extent to which Soviet basic policies are felt to form an appropriate model. A less developed country, for example, whose national purposes are less focused on heavy industry and national defense than were those

of the U.S.S.R. after 1928 is not likely to imitate Soviet transport policies. If light industry and consumer goods production rank high among national priorities, widespread highway building and use of motor vehicles for prompt door-to-door service is likely to spring up far more rapidly than it has in the Soviet Union. Small-scale producers, receiving and shipping small consignments, generate the kind of traffic that trucks can handle more expeditiously than railroads.

Where modernization of agriculture has high priority, rural road building must receive far greater attention than it has in the U.S.S.R. Farm-to-market connections require an adequate highway system, even if a railroad network handles large interregional traffic in agricultural output. The lesson of Soviet inattention to rural roads is precisely that the development of Soviet agriculture has been hampered.

In less developed countries with dense populations, if development programs are sensitive to popular demands, passenger transportation will lay greater claims on transport capacity than it has in the Soviet Union. Even with its relatively low population density and modest rate of population growth, the U.S.S.R. has had to devote substantial resources to expansion of passenger transport capacity; in many developing countries, strong demands for passenger service will compel relatively greater attention.

THE LIMITED ROLE OF HIGHWAYS AND TRUCKS. The Soviet reliance on rail transport has worked against the large-scale development of highways and automobile transport. In carrying coal or iron ore for long distances, trucks can only under rare circumstances compete with railroads. For quick, door-to-door deliveries of high-valued consumer goods, over relatively short distances, the advantage is reversed, but demands of this kind have not been a major feature of Soviet economic development. The Soviet Union established its own truck and passenger automobile production facilities during the first Five Year Plan. Nevertheless, it should be clear at the outset that the road-versus-rail issue which bedevils so much Western discussion of transport problems was decisively settled in the Soviet Union by the very nature of the development drive decided on at the close of the 1920's.

Trucks, in the Soviet economy, have been confined almost entirely to providing short-haul mobility for industrial, agricultural, construction, and commercial activity. The tonnage of truck shipments is very large, but the average length of a trip is only seven or eight miles. In fact, the

"road or rail" problem assumes a very unusual form in the Soviet Union. The authorities have been concerned for many years to shift short-haul traffic, especially around major industrial centers, *from* railroads *to* trucks. The volume of short-haul rail traffic is still, however, very large. The railroads, hard pressed to handle an ever-growing volume of long-distance heavy industrial traffic, have never expressed any objection to the transfer of commodity shipments from railroads to trucks. The chief limitation on the growth of Soviet truck traffic has been inadequate growth in the number of trucks and their carrying capacity.

DIFFICULTIES OF INDUSTRIAL RELOCATION. The gains that have been achieved in previously backward portions of Soviet territory have been very large indeed as a result of the policy of bringing outlying regions of the country closer to parity with established centers. At the same time, equally massive increments of investment and output have occurred in old, settled regions. As a result, the net shift in the share of national economic activity attributable to peripheral parts of the country has been more modest than early Soviet plans intended. It has also taken far longer to bring about these net shifts than the planners anticipated.

Two lessons for other countries are implied by this aspect of Soviet economic experience. The first is that decisive shifts in the regional structure of economic activity are likely to require decades rather than years. Powerful forces attract capital and labor to established centers, which are likely to grow even if national policy seeks to prevent it.

A related lesson is that hopes of reducing the relative demands for freight transport service, through fostering regional self-sufficiency and holding down the growth of interregional freight traffic, are not likely to be realized if the economy's basic resources are widely separated from each other. No other country in the world faces the resource dispersion problem on quite the Soviet scale, but perhaps the implication for development planners everywhere is that it will be hard to prevent development that links together the previously separate regions of an economy from giving rise to more than proportionate increases in heavy freight traffic.

ENLARGED TRANSPORT OPTIONS. Soviet transport experience has mainly been shaped by policy decisions reached in the late 1920's when transport technology offered far fewer alternatives than are available today. Criticism of Soviet policy with the benefit of hindsight is unfair, since decisions reflecting impeccable evaluation of existing alternatives can

nevertheless be gradually outmoded as a result of technological progress. The lesson for later decision makers in other places is surely that the full range of current transport technological options should be carefully examined, and not that earlier experience should be mechanically imitated. Transport planners in developing countries today should note a number of such potential departures from previous Soviet experience.

Modern technology has developed in the direction of facilitating joint use of several transport modes, improving the flexibility, diversity, and capacity for decentralization of a growing economy. The key to joint shipments is the universal container, a remarkably flexible transport instrument.

Where intensive use of transport capacity led Soviet authorities in the past to concentrate heavily on the railroads, less developed countries today can make use of modern containers for joint shipments relying on several modes if they are available under favorable conditions. A skeletal rail system can be jointly used with highway, water, and perhaps air carriers to obtain lower costs and greater flexibility than could have been attained under earlier technological conditions.

The drift of modern technology suggests still another lesson that is obliquely related to Soviet experience. Over the last century, a number of major technological trends have acted to reduce the tons of raw material input that must be shipped per unit (in value terms) of final output. Fuel consumption has grown more efficient. Construction materials are stronger and lighter. Products of field and forest are more fully consumed. The lesson for other countries is that a judicious combination of modern technological methods for fuel and primary input processing, combined with Soviet railroad operating methods, holds the prospect of substantial savings in resources that might otherwise be channeled into expansion of transport capital plant and equipment.

Lessons for Highly Developed Economies

Although the lessons of Soviet transport experience apply mainly to the problems of less developed countries, the record has a number of interesting implications for highly developed economies. They too, should be conscious of the close connection between national purposes and an appropriate set of transport policies.

In a consumer-oriented economy, producing a widely diversified range of final goods and services, with a geographically decentralized

pattern of industrial location, the Soviet approach to transport economizing would prove to be a substantial handicap. Where shipments on a relatively small scale must be moved promptly among a large number of decentralized shipping and receiving points, the distinctive features of Soviet railroading cease to be advantageous. The high degree of track occupancy and relatively continuous use of rolling stock that keep Soviet rail costs low would be far harder to achieve. The costs would probably outweigh the benefits.

Frugality in providing transport services limits the options open to shippers, receivers, and travelers. The carriers themselves are able to concentrate freight traffic on main routes, schedule traffic movements in ways that promote their internal efficiency, and confine themselves to the forms of service that permit high degrees of equipment utilization. This Soviet approach clearly lays costs on transport users, however, and in an economy where these costs are important, the Soviet approach is not likely to have great appeal.

Soviet transport authorities are justly proud of their achievements. They are also convinced that state ownership of all the major transport modes gives the U.S.S.R. an inherent advantage in achieving intermodal cooperation within a unified transport system. But comparison of Soviet transport experience in intermodal cooperation with developments in the United States and Europe suggests that technology, not "state ownership," is proving to be the key to progress in this sphere. Containerization of freight shipments is now stimulating a rapid expansion of joint shipments involving two or more modes. Though containers have been used in the U.S.S.R. since the middle 1930's on a small scale, recent developments in North America and Western Europe have gone far beyond Soviet attainments.

Similarly, difficulties in keeping track of joint shipments, allocating traffic revenues, coordinating schedules, and otherwise arranging for prompt and flexible service reflect "departmental barriers" in the Soviet Union, fully comparable to the difficulties caused by rivalry in a market economy. Here, too, technological progress in information processing, telecommunications, and so on has contributed effectively to cooperation in the West, to a greater extent than in the U.S.S.R. Current plans suggest that the Soviet Union will rapidly catch up in the use of these devices, but it is hard to see that state ownership by itself makes any additional contribution.