TRANSPORT AND ECONOMIC DEVELOPMENT*

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The main difference between a subsistence and a market economy, most of us would agree, lies in the degree of specialization and division of labour. The conditions necessary for increased specialization range from improved techniques of production to training, mechanization and more widespread use of money and credit. Perhaps the most important element of all, however, is transportation—transportation of fertilizer, improved seeds, implements and consumer goods to the farmer; shipment of his products to the village, town and city where people congregate to transact business and to work in shops and factories; transport of exports and imports, by means of which the nation is integrated into the world economy; and movement of people and ideas. It is only through greater mobility of goods and people and through access to wider markets and sources of supply that productivity and standards of living can be increased above subsistence levels.

Attempts have been made to measure statistically the relation of transportation to economic development. In one study, a group of countries with average per capita incomes of less than 100 dollars (in Pakistan it is about 60 dollars) was compared with another group with per capita incomes of over 200 dollars. Differences in the demand for selected goods and services were found to vary widely. Consumption of food as measured by per capita caloric intake was only 40 per cent higher on the average in the more developed countries than in the underdeveloped group. Cloth consumption, on the other hand, was four times as high, investment in industry per worker 10 times, and per capita consumption of energy 20 times. At the top of the list stood transportation: ton-miles of freight carried per capita was 25 times higher in the wealthier than in the poorer group of countries.

The role of transport lies not only in accommodating the needs of directly productive sectors such as agriculture and industry, but also in initiating and accelerating growth. It is no coincidence that the periods of intensive railway construction in Great Britain, the United States, pre-Soviet Russia, Italy and other countries were also their periods of most rapid economic development. The role of transportation in expanding the market and increasing the mobility of goods and people is only a part of the explanation. Transport development also requires very heavy investment which exercises an important multiplier effect on investment and income in other sectors of the economy. Investment in transportation often accounts for 20 per cent or more of total gross fixed capital formation in developing economies.

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The great importance and high cost of transport development also poses a serious problem for countries like Pakistan. The increase in production will be slowed down if transport bottlenecks are allowed to crop up. And yet it is no exaggeration to say that if we were to try to satisfy all of the rehabilitation, replacement and expansion needs of the nation’s transport system during the Second Plan, it would be necessary to devote perhaps one-half of total planned investment to this sector. This is obviously out of the question. The only alternative is to postpone satisfaction of some needs, reduce the pressure on transport by such measures as provision of more adequate storage to smooth out peak demand, and concentrate investment on the highest priority projects. The rest of this paper will deal with some of the problems of determining relative priorities and assuring coordinated transport development.

Comparison of Different Modes of Transport

Non-mechanized transport plays an important role in countries like Pakistan. More passengers and freight probably travel in bullock carts, country boats, horse-drawn vehicles and on bicycles than in all other kinds of vehicles put together. However, I shall limit my attention to railways, inland water transport, road transport, and to a lesser extent, airlines.

Several factors influence planners in fixing priorities for transport development. First is the relative cheapness of different transport facilities. If a comparison is made of the equipment cost per ton of carrying capacity, it will be found that I.W.T. is cheapest, followed by railway, motor vehicles and airplanes, in that order. It is, of course, also necessary to take into account the durability of a piece of equipment. Airplanes and motor vehicles wear out much more quickly than I.W.T. and railway equipment. To the charge for depreciation of equipment must also be added fuel, labour, maintenance and other operating expenses. Up to this point the order of relative cheapness of the modes of transport, indicated above probably still hold true. But other very important costs have still to be reckoned with: namely, the cost of railway track, bridges and terminals; of dredging waterways and providing navigational aids and docks; of building highways and airports. These figures are more difficult to determine, because it is not possible to say exactly what part of the cost of dredging waterways is for navigation and what part is for flood control and other purposes, or what share of the cost of road construction is chargeable to buses and trucks and not to other vehicles.

The second factor is the time element. Capital tied up in equipment or other facilities for a long period of time should be charged interest equivalent to that which could be earned if it had been invested in something else. This makes large, long-lived investments less attractive than they appear to be at first sight. Another aspect of the time element is speed of service. Some types of traffic transport delays involve costly waste, and goods tied up in transit form just as much a part of cost as inventories maintained by producers and distributors. The longer distances per day travelled by airplanes and motor vehicles also offset to a considerable extent their larger equipment cost per ton-mile of carrying capacity.

The third factor is the indivisibility of transport equipment. The minimum economic unit in the case of road and air transport is a single truck, bus or airplane, whereas it is a tug plus one or two barges in the case of I.W.T. and a whole train in the case of railways. The ability to move relatively small loads quickly imparts a great deal of flexibility to road and air transport. The small volume of traffic on many routes often makes the introduction of rail or steamer services uneconomical.
It is impossible to determine whether one form of transport is absolutely cheaper than another without finding out first what is the nature and density of the traffic to be carried, where and over what distance it is to be carried, and what new investment has to be made to create it. Each form of transport has its advantages and disadvantages, and over a broad area, different services are complementary rather than competitive. Nevertheless, experience has shown that no country can afford the over-lapping of services and excess capacity, the monopolistic exploitation of users and the wasteful competition that result from the unregulated and uncoordinated development of transportation. This is particularly true of a country such as Pakistan, which must husband its scarce domestic and foreign exchange resources with great care.

Coordination of Transport Development

There are a number of possible approaches to the problem of assuring coordinated transport development. There is, however, no single best way; each method must rely on the professional competence and good judgement of those responsible for making the final decisions.

These approaches can perhaps be classified into five types:

1. Voluntary coordination through advisory boards on which both operators and users are represented. The Transport Coordination Board in East Pakistan is an example of this approach.

2. Consolidation of similar types of carriers. The best example is the consolidation of many smaller railway lines into larger, more viable enterprises that has been carried out in many countries.

3. Ownership or control of one type of carrier by another. One example of this approach is the integration of rail and road transport on certain routes in a number of countries. An example in East Pakistan is the barge flotilla which is operated by the East Bengal Railways.

4. Government statutory regulations. Through the granting of licences, certificates of public necessity and convenience, or other kinds of permits, transport development is extensively controlled by Government agencies in all countries where transport is not entirely owned and operated by the state.

5. Nationalisation. Government ownership and operation is more frequent in the case of railways and airlines, less so in the case of road transport.

Each of these approaches, separately as well as in different combinations, has been tried out at various times and places. Experience has shown that no method or combination of methods has been entirely successful. There are perhaps two main reasons. First, the already established, well-entrenched and larger transport systems and enterprises tend to gain control of the coordination and regulatory machinery to the detriment of newcomers and smaller scale operators. Second, the conflicting objectives of regulation and control have seldom been reconciled in public policy. I refer to such conflicts as protection of users against excessively high tariffs vs. adequate incentives for transport development; healthy competition among operators vs. safeguards against over-lapping and wasteful duplication of services; encouragement of flexibility of service and innovations vs. enforcement of standards and protection of large fixed investments from rapid obsolescence.
The best example of the difficulties which beset planners and policy makers is provided by the attempts to coordinate railway and road transport development. Until the First World War, railways had no important competitors besides inland water transport in isolated cases. In the 1920’s the ascendancy of the motor vehicle began, and by the 1930’s there was hardly a developed country where complaints were not heard from railways about the unfair competition of road transport. Road transport was accused of scooping off the most lucrative traffic and leaving only the heavy bulk, low tariff commodities to the railways; trucking firms adjusted their tariffs to enhance their competitive advantage, whereas the flexibility or railway rates was limited by law; bus and truck operators were conglomerating on routes with the most traffic and leaving the less remunerative routes to the railways, which could therefore no longer offset losses on the latter with profits from the former; and Government was accused of providing a hidden subsidy to road transport by building free highways.

The attempts of Government to remedy this situation took many forms in different countries. In Germany, road goods vehicles were forbidden from charging less than first class railway tariffs, and in 1935 all operators were obliged to join the Motor Vehicle Operating Association, whose decisions, made in consultation with the state railway management, were binding on all members. In France, rate control was combined with the statutory regulation of competition, routes being rationed between road and rail services and superfluous lines closed down. In the United States, the Interstate Commerce Commission was set up along with numerous individual state control agencies. But perhaps the experience of Great Britain, many of whose regulations have been copied in the sub-continent, is the most illuminating.

The Road Traffic Act of 1930 introduced the district licensing system for passenger transport, and the Road and Rail Act of 1933 extended licensing to the carriage of freight. The railways exercised freely their right to object to the grant of licences, and the increase in the number of road transport vehicles was slowed down appreciably. The British railway companies, moreover, acquired important shareholdings in all the larger road passenger transport undertakings. A Transport Advisory Council was also set up with the purpose, among other things, of building up a system of road rates which would stabilize competition between the two forms of transport. But the railways suddenly changed their mind and decided that complete stabilization of competition was not to their liking. Before the issue could be resolved the Second World War had begun and further action was postponed.

At the end of the war, the Labour Government came to power with the conviction that transport should be thoroughly integrated under state ownership and control. The Transport Act of 1947 thus provided for the nationalisation of the railways (together with their ancillary activities such as docks, steamships and hotels), the London Passenger Transport Board, the canal network, and long distance road haulage. The most difficult task was the acquisition of some 4,000 separate road haulage firms with 40,000 vehicles and their integration into a coordinated transport network. One complication was that coordination of long-distance haulage was not possible without taking account of short-distance transport. Competition from private carriers and labour union resistance to suggestions for contraction of redundant services caused further difficulties. And because the Road Haulage Executive was under pressure to cover its full cost, the Executive wished to concentrate upon the most profitable of its activities, namely long-distance truck haulage. The Government was thus faced with the paradox that under common ownership road transport began to develop services which were
even better qualified to compete with the railways than those provided under separate private ownership. The experiment came to an inconclusive end under the Conservative Government with the passage of the Transport Act of 1953, which provided for decentralisation of the state railways and return of most road transport to private ownership.

Coordination Problems in East Pakistan

The results of efforts to coordinate transport development and operation in the advanced countries do not provide much encouragement to underdeveloped countries. However, developing countries are faced not so much with the problem of what to do with redundant capacity as with the task of allocating scarce development resources among the different transport programmes so as to obtain maximum benefits. East Pakistan provides many interesting examples of allocation and coordination problems. Because the Province is interlaced with innumerable rivers both large and small, I.W.T. carries about three quarters of the total traffic. These rivers, generally flowing in a southerly direction, form difficult barriers blocking highways and railways; the Brahmaputra River, for example, still remains unbridged. The construction of embankments to raise roads and track above the flood-water level interferes with necessary drainage unless passages are provided for the flow of water, or unless embankments run parallel to waterways, in which ease they duplicate I.W.T. services.

After partition, construction was begun on a province-wide system of trunk highways in East Pakistan. In the North and in the Chittagong area, where there is higher ground, the obstacles were not so great. But in the South the attempt to link the eastern and western parts of the Province has run into serious difficulties. The Dacca-Aricha road is an excellent example. This road is being built virtually on bridges and culverts—300 of them over a stretch of 50 miles. Fifteen miles of the road through lower-lying areas has had to be abandoned and an alternate route constructed. The engineering problems of water erosion of embankments and the undermining of bridge supports have still to be solved. When completed, the highway will have cost over 5 crores of rupees, or 1 million rupees per mile. This is the same route which was rejected by the East Bengal Railway because the 3.5 crore rupees investment was estimated to yield only 3.5 per cent on invested capital, which was below the 5 per cent minimum required yield. Similar problems confront the construction of the Dacca-Daudkhandi road to the east; three major bridges costing crores of rupees will be required.

To an economist this whole enterprise appears to be a distressing misallocation of resources. What economic benefits will these roads provide when completed? Not much from the point of view of local traffic. On the Aricha side only one crop of rice is harvested in April at which time there is plenty of water to transport it in country boats. The new cattle and dairy farm is not far from Dacca and does not require a link all the way to Aricha. For East-West through traffic I.W.T. services are available the year round, and for West-East traffic out of Dacca there is also a railway line. Even the claim that road transport would provide much faster services is not very convincing, because of the numerous ferry connections which will have to be used.

Lack of coordination of transport development is evidenced by the railways' refusal to open up the route even though it would have cost less. Perhaps the P.W.D. Building and Roads Department does not estimate rates of return on prospective investment, but if it does, it is apparently not the same rate of return required by the railway. If investment criteria of different transport agencies are not uniform,
misallocation of resources is virtually inevitable. Further evidence of a lack of proper coordination is the high opportunity cost of construction of these roads. The same amount of money would be better spent on feeder roads connecting rural areas with railheads and I.W.T. ports in regions where there are no alternative means of transport. In the northern sugar growing area, for example, some refineries have been unable to work efficiently because of inadequate secondary roads for transport of sugarcane to the mills, so that heavy investment in machinery and equipment has been partly wasted.

Another example of the need for coordinated transport development in East Pakistan is the imbalance of incoming and outgoing traffic in the ports of Chittagong and Chalna. Because imports are so much larger than exports at Chittagong, it is estimated that 150 railway wagons a day return empty to the port. In Chalna the reverse situation prevails—exports are much heavier than imports, so that many I.W.T. craft are obliged to return empty up country. It has been suggested that more exports be encouraged to leave through Chittagong in order to provide better balance, and, in fact, the E.B.R. is charging substantially lower rates on jute from Narayanganj to this port than does I.W.T. on shipments to Chalna. But preference for shipping jute through Chalna persists because of certain inherent advantages. Jute bales can be loaded on ships directly overside from I.W.T. craft with a minimum of handling, whereas shipment by rail involves multiple handling which loosens up the bales, increases their volume, and thus raises overseas shipping costs. Furthermore, jute is generally sold in 250 bale lots, which can easily be accommodated on the average-sized barge. But five railway wagons are required, with the result that consignments frequently get broken up in transit. I.W.T. firms also enjoy certain competitive advantages because of their smaller size and flexibility.

One solution would be to build the proposed inland water canal from Chandpur to Chittagong which would be navigable by I.W.T. craft during the wet season. This canal, however, would be quite expensive and would parallel both the railway line and the new highway. For a much smaller investment in the reconditioning of the Roosevelt jetty area in Khulna, Chalna port could be equipped to handle general imports (at present only bulk imports can be handled). This would not only be a much cheaper method of improving the balance of traffic to and from the ports but would also be a way to supply the hinterland on the west side of the Brahmaputra with imports through nearby Khulna, without hauling them all the way from Chittagong as is presently done. One cannot give a categorical answer to this problem without detailed investigation, but it is a good example of the need for carefully coordinated transport development.

I have preferred to deal mainly with general problems rather than to get deeply involved in specific controversial questions. The forthcoming transport survey of East Pakistan will undoubtedly throw a great deal of light on many of these questions; we would be well advised to wait for the results before taking sides.