

Railway Regulatory Reform Pre-Requisites in a Free-Functioning Transport Market: the Position of Spoornet

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Abstract:

Defining the economic role of rail transport in the national transport system of South Africa should be one of the basic ingredients of an economically rational transport policy and the effective functioning of Spoornet. In the interest of national economy and in its own commercial interest, Spoornet should specialise in those fields where it can provide services tailored to the needs of customers at prices which are competitive and defensible in terms of economic principles. Consequently, the equipment and infrastructure needed for the implementation of such a policy should be adapted to operational demands in view of the competition from other modes of transport. The institutional and regulatory framework governing Spoornet's operations should create an environment conducive to the management of its operations as a fully remunerative business by: fostering a competitive transport market, providing socio-economic rail services under special agreements, defining clear and adequate performance indicators for Spoornet and defining management objectives and granting real management autonomy. Based on the above mentioned aspects a governance structure is outlined under which Spoornet can operate within a climate of free and effective competition.

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Introduction

The effectiveness of the role played by transport in the economy of any country is to a large extent influenced by the operating environment created by transport policy and the strategies utilised in implementing the policy. The previous formulation of transport policy in South Africa took place in 1986. Since then there have been many profound and far-reaching changes in the country. Consequently, early in 1995 the Department of Transport embarked on a project to review and reconsider transport policy and formulate new policy where it has become necessary to adjust to a changed environment. This process culminated in the publication of a new White Paper on National Transport Policy (South Africa, 1996).

The transport policy review process which culminated in the White Paper formulated broad policy, and but did not address tactical and operational aspects relating to the restructuring of state-owned enterprises. Spoornet, the national rail transport carrier of South Africa, is such an enterprise. Although the existing policy of economic deregulation of land freight transport within South Africa is reaffirmed (South Africa, 1996:27), the new White Paper foresees that "a close, interactive and formal working relationship will be established between the Department of Transport, the Department of Public Enterprises and Transnet [of which Spoornet is a division] to promote coordinated planning, management and operations with regard to land freight transport" (South Africa, 1996:29).

Defining the economic role of rail transport in the national transport system of South Africa should be one of the basic ingredients of an economically rational transport policy and the effective functioning of Spoornet. In the interest of national economy and in its own commercial interest, Spoornet must only specialise in those fields where it can provide services tailored to the needs of customers at competitive prices. The question is therefore: what changes in the institutional and regulatory structures are necessary for Spoornet to remain viable?

Spoornet and national transport policy

To pursue the maximisation of welfare in South Africa, the principle objective of national transport policy should be to achieve effective competition among the various carriers and modes of transport. Competition is the medium for attaining the principal objectives that a transport system is meant to embrace. First, it will best promote economic growth in both the domestic and foreign trade sectors of the country's economy. Second, it will provide the discipline needed to develop and enforce the kinds of rational investment policies that will provide effective transport services in the most efficient manner.

To achieve these objectives, it is essential to pursue two critical policies: economic deregulation and intermodal equity. The economically rational distribution of traffic among modes of transport within a free transport market implies that the various carriers of all modes of transport should provide full cost coverage for all the economic resources that they require, for example the provision and maintenance of the infrastructure they use. To that end, it would be necessary for Government to implement strategies in line with its policy on charging for the use of road infrastructure, so as to ensure the recovery of maintenance and renewal costs caused by heavy road vehicles, and also institute measures to recover the external costs that they impose on the community.

The reform of transport policy in developed and developing countries in other parts of the world suggests that free operation of the transport market guarantees a more efficient and economically rational traffic allocation among modes of transport and provides rail transport with the best opportunities of traffic development. Therefore, in this free operation of the transport market, Spoornet, under custodianship of its Board of Directors who act as delegates of the Minister of Public Enterprises, should be the sole entity to define the kind of transport services it offers to customers or to freely negotiate special agreements with its major customers.

The best prospects for a sound development of railway activity will be offered within the framework of a free-functioning transport market, in which, among other things:

- * Spoor-net is in active competition with the carriers of the other transport modes, the customers being totally free to choose the mode of transport and carrier they prefer;
- * The various carriers within all modes of transport provide total coverage of the cost of provision and upkeep of infrastructure they use, and the external cost or negative externalities that they impose on the community;
- * Spoor-net freely determines the form of services it offers to its customers with regard to commercial services of goods and passengers, and freely fixes, according to the market situation and its actual cost and cost structure, defensible tariffs for services or freely negotiates specific agreements with major customers;
- * The provision of possible services by Spoor-net, particularly as regards passenger transport, demanded by Government - under public or social service obligation - is carried out within the framework of specific agreements between Government and Spoor-net, with effective payment by Government that assures the profitability of traffic.

The institutional framework governing Spoor-net's operations should create an environment conducive to the management of its operations as a fully competitive business by:

- * fostering a competitive transport market;
- * providing socio-economic rail services under concessionary agreements; and
- * Spoor-net's Board of Directors defining management objectives and granting real management autonomy, and Spoor-net defining clear and adequate performance indicators for itself.

Fostering a competitive transport market

Rail transport is a commercial activity which means that Spoornet should be managed along business lines, and in active competition with other transport modes. In a competitive transport market customers have total freedom to choose the transport modes and the operators. This means that there can be no mandatory allocation of traffic. Spoornet freely determines the configuration of its commercial services in reference to its own commercial interest. It also freely sets tariffs and fares, or, as is appropriate, freely negotiates special contracts with major customers. Under these terms: (1) all transport operators must bear the resource cost of all inputs that they use and consume, as well as paying for all external costs that they impose on the community and (2) the "public service" concept should be strictly confined to those activities undertaken at Government's request and performed under special concessionary agreements (Huff, Barber and Thompson, 1990:3).

The aim of Spoornet (as a commercial enterprise) to recover its full costs demands that users collectively pay the average total cost of service. The upper tariff limit is determined by the value of the service - i.e. what the traffic is willing to bear. The lower limit of the tariffs is equivalent to the short-run marginal cost - in practice the direct cost or the cost that will be avoided if the service is not rendered.

The user-pays principle, which is associated with economic rationalism, and the aim of Spoornet to recover its full costs, demand that the user pays the average total cost of the service. That principle ignores the pursuit of economic efficiency, which cannot be divorced from marginal-cost pricing. To deal with that problem the Ramsey pricing principle has been evolved. This latter principle takes into account the marginal cost of providing a service as well as the extent to which the demand for the service will respond to changes in its price - that is, the price elasticity of demand (Ramsey, 1927).

Each rate thus covers the direct costs incurred in rendering the service and contributes to a greater or lesser extent to the indirect costs. The outcome is to maximise the traffic and the consumer surplus. Obviously differential or Ramsey pricing will yield enough revenue to

cover full costs if the demand is sufficiently price-inelastic for some services to enable their contribution to the indirect costs to compensate for the amounts below average costs yielded by the services for which the demand is price-elastic (Baumol and Bradford, 1970:283).

Strict application of short-run marginal-cost pricing will lead to financial losses in certain corridors even though there may be improved efficiencies. This is clearly unacceptable if Spoornet is to be commercially viable. Therefore, one needs to find ways of recouping total costs without distorting too much the allocative efficiency of marginal-cost pricing. Ramsey pricing suggests that where short-run marginal-cost pricing is unable to generate revenues to cover some required revenue target, then it is economically most efficient to raise the extra revenue required from different users in inverse relation to their price elasticity of demand for rail services, in effect by charging on the basis of willingness to pay. Such a policy will have the least impact on the pattern of demand and output which would have prevailed under pure marginal-cost pricing. In this way the allocative efficiency is least distorted.

In so far as Spoornet is the sole rail operator in the country, it has the rail monopoly. However, there are modal substitutes for Spoornet's product. Therefore, from a competitive intermodal viewpoint, Spoornet is not a monopoly. The market dominance that Spoornet has on its coal and iron ore export lines is the result of long-haul economies and economies of density.

Monopolies might be harmful or beneficial to the public interest.

- a) A beneficial monopoly is one that succeeds in achieving economies of scale, scope, density and long-haul in an industry where the minimum efficiency scale is at a level of production that would mean having to achieve a large share of the total market supply.
- b) A monopoly against the public interest would be one in which cost efficiencies are not achieved, or are negligible.

In so far as Spoornet has monopolistic power(s), it falls under (a) above - its monopolistic powers are natural. Operating in an economically deregulated environment, Spoornet has to be both cost efficient and service effective to achieve any natural monopolistic advantages.

The existence of natural monopolies on the coal and iron ore export lines should not distort the pricing policies applicable to other lines. The maximum annual amount that can be charged on the export lines depends on the exporters' willingness to pay. This is in turn dependent on the profitability of iron ore and coal sellers' exports and on the demand levels within importing countries. Spoornet must not only recoup all its costs of outlay within the various mines' lifetimes, but also maximise its profits during these periods. The onus is on the exporters - and not on Spoornet - to determine the price elasticity and sensitivity of their overseas demand. The influence of this will of course be subject to negotiation between Spoornet and the exporters. A possibility for tariff fixing would be to determine Spoornet's total cost to supply the entire service and link the return to the profit margin that the iron ore and coal exporters themselves manage to realise within a year, thereby creating mutually beneficial situations on the coal and iron ore export lines. Realising above-normal surpluses on the coal and iron ore lines gives Spoornet justified economic right (power) and commercial freedom (without acting against the public interest) to lower tariffs for certain traffic on other lines, on the condition that it still recovers the short-run marginal cost of all traffic on "unremunerative" lines. By doing so Spoornet might be in a position to regain economies of scale on other lines, therefore dynamically achieving lower unit costs and better price competency on these lines.

Provision of social rail services under concessionary agreements

Rail services which are likely to be commercially unprofitable in the long run should be abandoned, unless Spoornet is explicitly requested by Government (central or local) to provide such services under a social service agreement. Moreover, a special agreement ought to be signed between Government and Spoornet for each social service. Such concessions should define the configuration of the service to be provided, tariffs or fares and compensation which covers Spoornet's opportunity cost for each individual and ringfenced service.

Management objectives and autonomy

Defining appropriate performance indicators for itself coupled with actual monitoring of operations in the pursuit of profit is a prerequisite for Spoornet to be competitive. Physical efficiency indicators - for example the volume of freight carried and distance covered, locomotive availability and utilization, wagon turnaround times and staff productivity - constitute valuable measures of management effectiveness in attaining technical efficiency. Benchmarking, for example, has the potential to point out where the greatest cost efficiencies may be achieved.

Increased efficiency will lower unit cost levels and also marginal cost. In turn this would enable Spoornet to lower its floor (i.e. lower limit) rate levels, thereby most likely increasing its turn-over and also maximising surpluses earned on any price-capped traffic. In combination the increased turn-over and greater profit margins per unit should increase Spoornet's net revenue. However, benchmarking should not be construed to mean only measuring efficiency against world's best rail practice somewhere else, but also measuring total service effectiveness (i.e. meeting clients' expectations) against that of Spoornet's road competitors in its own market arena. However, efficiency and effectiveness are not always indicators of overall performance of a rail transport entity. Therefore, physical indicators of technical efficiency and of service effectiveness should be supplemented by financial profitability measures. Profit is the most powerful indicator of performance of an enterprise placed in a competitive environment.

Providing clear management objectives, strengthening incentives (such as profit-sharing schemes), and holding management accountable to the Board of Directors for the objectives and by granting real management autonomy to Spoornet should prevent government interference in day-to-day management. Real management autonomy was in effect institutionalised with the formation of Transnet Limited as a company in 1989, with Spoornet as the company's rail transport division, with the objective of securing management autonomy, nurturing accountability and stimulating business-oriented conduct, subject to scrutiny and verification in an external auditing process as prescribed by the Companies Act.

Management and control of infrastructure

The reform process of railways around the world follows two mainstream trends. One can be called the vertical disintegration trend and the other the commercialisation trend. The first trend is characterised by infrastructure services and train operations being separated (Behafy, 1995:20). Infrastructure is then assigned to a new enterprise or authority. This entity in turn makes the infrastructure available to operators on commercial conditions. A characteristic of the second trend is that rail transport operation is deregulated and commercialised in its entirety when it comes to prices and supply, but the entity is allowed to continue without being split (Railway Gazette International, 1994:85). The latter condition is the status quo in South Africa.

A major objective of vertical disintegration in the rail transport industry appears to be to encourage market contestability through open access on the railway network, rather than to achieve equitable competition between rail and road transport. There are those who argue that by separating infrastructure from operations, one is fundamentally misunderstanding the nature of competition in rail freight transport. Competition is of paramount importance, but it is not so much a question of rail versus rail, but of rail and the other modes.

It can be argued that the primary source of strong economies of scale in rail transport lies in its infrastructure; the natural monopoly argument is mitigated because of the split of infrastructure and operation. Where the ownership of rail infrastructure is vested in the hands of an independent authority, the operation of rail freight services could therefore be seen as being a contestable activity. There are, however, certain costs that may be absolutely fixed and unchanging no matter how many units are sold. To the extent that this is true, average cost per unit declines in inverse proportion to the number of units sold. Even where the investment in capacity is not totally predetermined and fixed, technological economies of scale may still make monopoly the most efficient form of organisation. Obviously, then, the phenomenon of natural monopoly is in some way related to the wastes that would arise if, in the presence of competition, certain facilities would have to be duplicated.

Considering that Spoornet's quest is for total sourcing, integration between train and track is imperative. In the light of this, branch and main lines must be seen as an integrated system and not in isolation. For this reason uneconomic branch lines cannot simply be abandoned, given their important role of feeding the main lines.

Furthermore, there may be a conflict of interest between the infrastructure authority and the operators in terms of the quality of service provided. This may be the result of potential differences in priorities. Spoornet currently has full control over the quality of the infrastructure and hence the quality of service provided to its customers.

Changing the status quo could jeopardise Spoornet's development and successful implementation of a centrally coordinated national train operating schedule, a predictable service programme and the delivery of a high-quality total sourcing service. The adaptation of rail terminals to make them more user-friendly and compatible with intermodal transfer requirements will also then be out of Spoornet's control.

The above discussion on the structural split of infrastructure and operations highlights the need for Spoornet to retain the commercialisation model for the foreseeable future. Under this model, in the presence of active intermodal competition and no prospect of receiving any government subsidy, infrastructure and operations are merely treated as separate accounting units, enabling the operating company to identify infrastructure costs and still gain the purported efficiencies achievable with infrastructure divorce.

A governance structure for Spoornet

From the foregoing it is evident that, comprehensively viewed, the regulation of land transport cannot be vested within the discretion of a single regulating body.

Whereas Spoornet's commercial conduct and business operations are guided by the Board of Directors of Transnet Limited (subject to scrutiny and verification in an external auditing process prescribed by the Companies Act), its fulfilment of contractual obligations with respect to social services will naturally be monitored and controlled by the government body which commissions the company to conduct such concessionary services.

Technical and safety regulatory aspects with a view to protecting the public interest and the interest of users of public roads are believed to be most effectively regulated by the Department of Transport through traffic legislation, with enforcement duties delegated to provincial and local government traffic authorities.

Custodianship of effective competition, for example guarding against harmful and restrictive business practices, should ideally fall within the ambit of the duties of the Competitions Board within the Department of Trade and Industry, in consultation with the Department of Transport should such malpractices jeopardise the performance of the transport system.

Where market forces do not provide for the automatic recovery of road-user costs, external costs, and the costs of damage to road infrastructure, the appropriate road-user cost responsibility should be determined by the Department of Transport in consultation with the Department of Finance and the different provincial administrations. Full recovery of user-cost responsibility should take place with no cross-subsidisation between private (mostly light) vehicle users and commercial (mostly heavy) vehicle users.

All other matters not covered here should be left to market forces as such. Within a climate of free and effective competition, it is believed that market forces will be conducive to self-regulation to support an efficient, effective and balanced land transport system.

Conclusions

The best prospects for a sound development of railway activity in South Africa will be offered within the framework of a free-functioning transport market in which:

- customers are free to choose the mode of transport and carrier they prefer;
- all transport operators provide cost coverage for their social costs;
- Spoornet freely determines the form of services it offers and freely fixes tariffs which are competitive and defensible in terms of economic principles; and
- Spoornet abandons all services which are likely to be commercially unprofitable in the long run, unless it is requested to provide such services under social service agreements according to which Spoornet is remunerated in full.

An environment conducive to the management of Spoornet's operations as a fully competitive and profit-oriented business requires (1) the definition of clear and adequate performance

indicators and the monitoring of operations aimed at measuring financial profitability, and (2) the provision of clear management objectives and incentives for which management can be held accountable to its Board of Directors.

As long as Spoornet is to remain a public enterprise it should retain ownership of the infrastructure it uses. Changing the status quo could jeopardise Spoornet's development and successful implementation of a centrally coordinated national train operating schedule, a predictable service programme and the delivery of a high-quality total sourcing service. The adaptation of rail terminals to make them more user-friendly and compatible with intermodal transfer requirements will also then be out of Spoornet's control.

Within a climate of free and effective competition, market forces will (within the parameters spelt out in this paper) be conducive to self-regulation to support an efficient, effective and balanced land transport system.

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