

Railways in Sri Lanka: What is the Track to the Future?

Increasing attention is being focused on Sri Lanka Railways (SLR) – occasionally in appreciation of the value of its services, but more often in criticism. Many groups, including employees, passengers, government institutions, the media, and international agencies, have made proposals for change to improve performance. That, so many people and organisations feel the need to make such proposals confirms that SLR does not satisfy expectations. But it also confirms that they believe railways in Sri Lanka can have a positive future.

This article touches on the need to reform SLR to reverse a downward spiral of deteriorating service, declining market share, and increasing losses. It considers actions taken in other countries, in similar circumstances, to revitalize their railways, including private sector participation in railway functions and outright privatization. Finally, it draws conclusions from these examples about what actions might be appropriate to ensure a positive future for railways in Sri Lanka.

Need for Reform

Does SLR need reform? Or does it just need more resources? A thoughtful answer would be "yes" to the first question and "perhaps not" to the second. Organisational reform is essential to ensure that all resources – human and capital – are used efficiently and effectively. However, while SLR clearly needs investment to improve its services and its efficiency in activities where rail has the greatest advantage, and thus to achieve its

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economic potential, some (or all) might come from redeploying and refocusing existing resources.

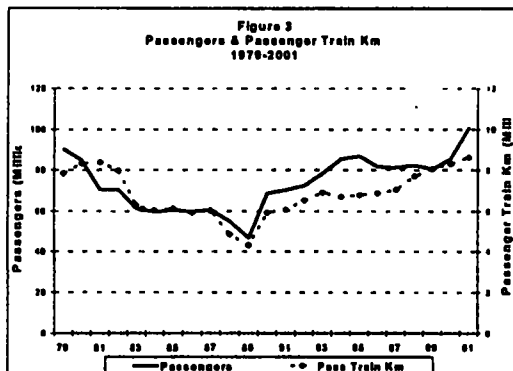
Figure 1 shows annual numbers of rail passengers and tonnes of goods carried from 1979 to 2001. Rail passenger traffic declined during the 1980s and recovered to 1979 levels only in 2001. Goods tonnes, however, are still down. This was not

from lack of demand. During the same period, total passenger traffic is estimated to have increased by 140% and total goods traffic by over 400%, reducing rail market share to 6% and 2%, respectively¹.

Figure 2 shows that substantial resources (both recurrent and capital) have been provided for railway operation and investment during the past decade.

Figure 3 shows that these resources were used, in part, to operate or support additional passenger trains, contributing to improvement in passenger traffic. For example, the main up-turns in passenger traffic during the past decade are correlated with purchase of 20 suburban power sets in 1991 and an additional 15 suburban power sets in 2000.

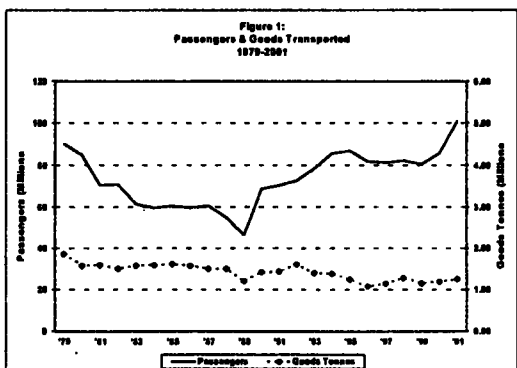
At the same time, however, resources used for goods services declined, as shown in Figure 4, contributing to the decline in tonnes seen in Figure 1.



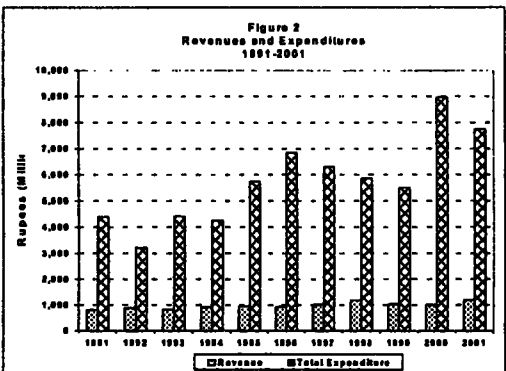
Source: Sri Lanka Railways

Figure 5 shows that quality of passenger service has improved in recent years – at least in on-time performance. It also shows, however, that even with these improvements fewer than 50% of passenger trains arrive on time.

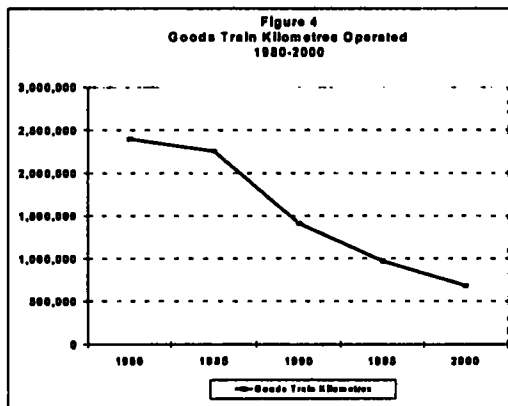
Figure 6 compares numbers of staff per track kilometre and per million traffic units (passenger kilometres plus goods tonne kilometres) for Sri Lanka and for neighbouring countries. It shows that staffing levels are relatively high in Sri



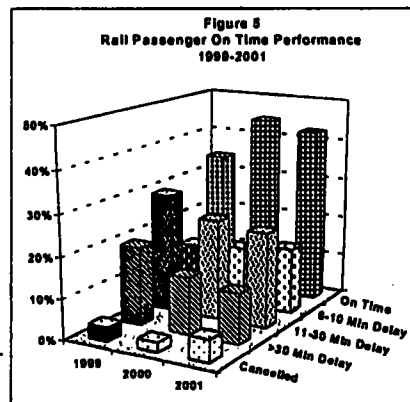
Source: Sri Lanka Railways



Source: Sri Lanka Railways



Source: Sri Lanka Railways



Source: Sri Lanka Railways

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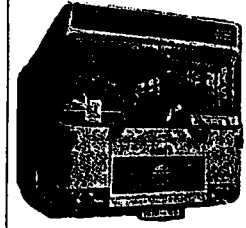
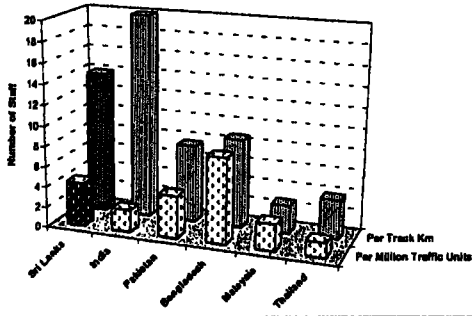


Figure 6
Railway Staffing Levels
Various Asian Railways



Source: Sri Lanka Railways & The World Bank Group (www.worldbank.org/transport/rail/rdb.htm)

Lanka. India has more railway staff per kilometre of track, but also has much higher density of traffic. Bangladesh has fewer staff per kilometre, but more per traffic unit, which reflects relatively lower traffic density than Sri Lanka.

Figure 7 shows that SLR has very high labour expenditure relative to revenue. This is due to a combination of high staffing levels and government policy that has kept passenger fares unchanged since 1996, even as labour costs have increased.

Figure 8, which compares average availability of diesel locomotives², also shows scope for SLR to improve to match its neighbours. Utilisation might also be increased; in 2000, it was below 200 kilometres per day.

Finally, Figure 9, which compares productivity of track (traffic density) for the same Asian countries, shows that Sri Lanka is second only to India in passenger-kilometres plus tonne-kilometres per kilometre of track.

Coming back to the questions at the beginning of this section, the information above suggests that there is scope to reform SLR. True, SLR faces constraints: it must provide unprofitable services; it cannot set tariffs and fares to

rehabilitate track and signals. Combined with improved utilisation of existing assets, passenger

compensate for costs; it must provide and maintain its own infrastructure unlike road-based modes; etc. But some problems appear to be self-inflicted: investments that yield only marginal improvements in performance; underutilised assets; unproductive staff. If reform can increase labour productivity even to the levels of railways in neighbouring countries – for example, through improved work practices, staff retraining, and voluntary retirement schemes – recurrent expenditures would decline by more than Rupees 1 billion per year. This would be enough to buy 4-5 additional power sets per year or to gradually

in income statements, but that should not stop SLR from thinking commercially about efficiency and effectiveness to

maximise such benefits. Further-more, given the current state of public finances, financial considerations cannot be ignored. If rail services with net socio-economic benefits can be provided at financial profit, great. If such services, however, cannot be provided at financial profit (e.g., commuter services at socially acceptable fares) then losses must be identified and levels of service matched to the government's ability to re-imburse. Unprofitable services that do not provide net socio-economic benefits should be discontinued.

So, what should be the role for railways in Sri Lanka? A starting point is to consider what passengers and goods shippers want. A 2001 survey of rail, bus, and office van passengers³ identified several common overriding prerequisites that would have to be met before they would consider using or increasing use of rail. In order of priority these were: operate more train frequencies, operate faster schedules and increase reliability; provide better access to/from stations, improve safety, and increase cleanliness at stations and on trains. Long-distance rail passengers have similar needs, with the addition of better on-train facilities. A 2001 survey of goods shippers⁴ identified their primary service requirements as: supply wagons when requested; deliver shipments within one or two days according to a reliable schedule; ensure wagons are in good condition; and reduce loss or damage of contents.

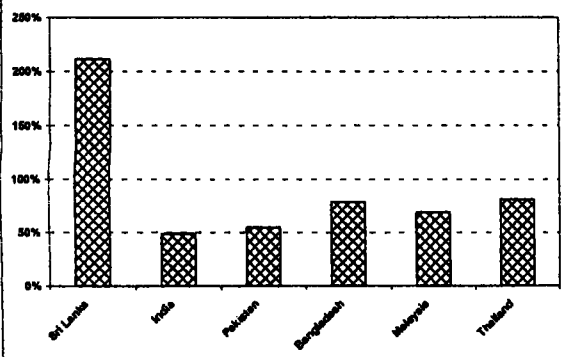
Another point in defining the role of railways is to consider how they can generate social and economic benefits, as follows:

and goods market share and revenues could increase significantly.

Role for Railways in Sri Lanka

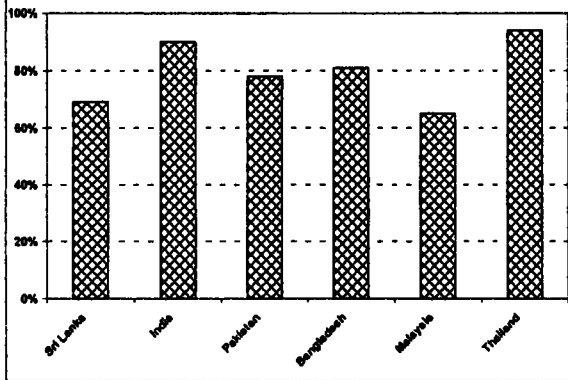
Some people argue that since SLR provides a social service, it should not be judged on criteria such as financial profit and loss. They add that a more commercial orientation, therefore, is not appropriate. True, some railway services generate social and economic benefits that are not counted

Figure 7
Ratio of Labour Expenditures to Revenue
Various Asian Railways



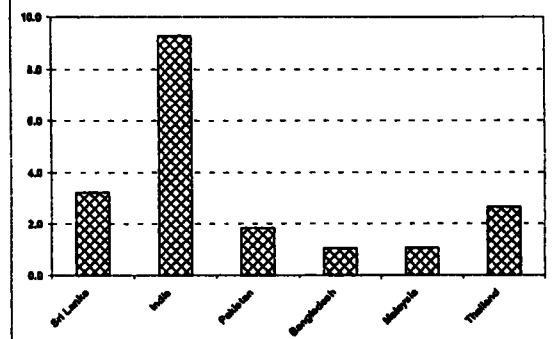
Source: Sri Lanka Railways & The World Bank Group (www.worldbank.org/transport/rail/rdb.htm)

Figure 8
Motive Power Availability
Various Asian Railways

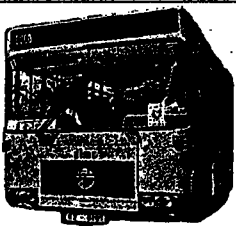


Source: Sri Lanka Railways & The World Bank Group (www.worldbank.org/transport/rail/rdb.htm)

Figure 9
Traffic Density on Track
Various Asian Railways



Source: Sri Lanka Railways & The World Bank Group (www.worldbank.org/transport/rail/rdb.htm)



- By reducing travel time. Rail bypasses congested roads, especially in urban areas, and so can save time for other socially and economically valuable activities.

- By reducing resources used for travel. High volume rail can be more efficient per passenger/tonne-kilometre than other modes (e.g., lower fuel consumption, etc.), so shifting traffic from road to rail saves economic costs, including costs of emissions.

- By reducing road congestion. Shifting traffic from road to rail can save travel time and reduce vehicle operating costs for the remaining road users, as well as reduce vehicle emissions.

- By reducing accidents. Rail is the safest mode of travel – even safer than walking. Shifting traffic from road to rail can save costs related to property damage, provision of health care and emergency services, policing, lost productivity due to injury or death, and so on.

- By supporting social and economic integration and development. Rail can provide improved access and mobility between regions as well as between rural and urban areas, which is important for people who cannot afford to use private vehicles.

Based on the foregoing, the role of railways in Sri Lanka can be defined as follows:

a) To provide safe, reliable, and efficient **Colombo Suburban Services** with more train frequencies, faster and more reliable schedules, and better (quicker) access to/from stations (e.g., convenient walking access, connecting bus services at station entrances, drop-off/collection areas for people using private modes, secure parking for bicycles, motorcycles, and other vehicles). Socio-economic benefits include: travel time savings; savings in vehicle operating costs and in emissions from reduced road travel; reduced road congestion; and reduced wear of roads.

Experience from other countries suggests that commuter rail services are unlikely to be financially profitable (although in dense networks they might cover operating costs). Fares are generally kept affordable for social reasons and to encourage shift of demand from road. Costs are relatively high given the need for extra resources to meet peak demand. A study done in 1996⁵, however, showed that while the inner Colombo suburban services are not financially profitable, they provide net socio-economic benefits primarily due to reduction of congestion on parallel roads.

b) To provide safe, reliable, and efficient high-volume long-distance **Fast Passenger Services** with faster and more reliable schedules, better access to/from stations, and improved station and on-train facilities. Socio-economic benefits include: travel time savings; savings in vehicle operating costs and emissions from reduced road travel; reduction in accidents; and increased social and economic integration. Road congestion might reduce in urban areas at peak times.

Analysis done in 1995 for the Dheerasinghe Committee Report on Public Transport Fares showed that long distance trains do not cover even their avoidable costs. Improved cost recovery would require: (i) adjusting routes and schedules to match demand; (ii) operating trains express to reduce journey times and stimulate demand between major centres; (iii) charging higher fares justified by faster journey times and improved service (e.g., comfortable seating, improved on-train facilities, cleanliness, air-conditioning); (iv) increasing average capacity and revenue per train; (v) increasing utilisation of rolling stock; and (vi) improving efficiency and effectiveness of operations and maintenance. Improving financial cost recovery of fast passenger services is critical, as socio-economic benefits are lower than for suburban services, due to less effect on reducing road congestion.

In many countries, passenger rail (and especially high-speed passenger rail) is considered a "superior" mode of travel, even above cars. In Sri Lanka, rail is considered an "inferior" mode of travel, even below buses. This perception must be changed if long-distance services are to have a future and not just provide a temporary stop-gap until everyone can afford private transport.

c) To provide efficient high-volume long-distance **Goods Services** with adequate supply of well-maintained wagons, reliable scheduled delivery, and minimal loss/damage. Socio-economic benefits include: savings in vehicle operating costs and emissions from reduced road travel; reduction in accidents; and reduced wear of roads. Road congestion might reduce in urban areas at peak times.

Goods service is not financially profitable in total, but with tariff increases in September 2001 (the first in over 10 years) some traffic now covers avoidable costs. Experience in other countries suggests that goods service can be profitable for longer-distance and higher-volume shipments, especially if efficiency and rolling utilization can be improved. However, rail freight is unlikely to fully recover infrastructure costs as long as lorries may use publicly provided roads without paying charges that reflect their use and their effect on traffic congestion.

d) To provide safe, reliable, and efficient **Local Passenger Services** with basic facilities for areas without adequate road access. Socio-economic benefits include: travel time savings (especially if walking or non-motorised transport is the only

alternative to rail); as well as social and economic development (e.g., access to education and health facilities, markets, government offices, religious and cultural centres, etc.).

Net benefits, if they exist, would arise only if adequate access and mobility cannot be provided by other public transport modes. Local passenger services are always likely to remain financially unprofitable. As road networks develop, however, the number of such services that SLR is expected to provide should reduce.

Actions Taken in Other Countries to Reform Railways

Starting in the 1980s, and accelerating in the 1990s, many countries have taken significant, even radical, steps to reform their railways. These actions recognised the importance of having well-run and efficient railways to support social and economic development, as well as to provide mobility to people who cannot afford private transport modes. Often financial pressures, and frustration over poor service, were the impetus to start reform. A common element of most reform was a progression from lesser to greater commercial orientation and from lesser to greater private sector participation in railway management and ownership, as illustrated as below.

Reasons for inviting private sector participation included getting private sector expertise for management and getting private sector funds for investment. Often tracks were in poor condition, motive power availability was low, and passenger and goods volumes were declining. Many governments, under budgetary pressure to reduce expenditure, decided that they could no longer afford to spend scarce public resources subsidising railway operations and investment – especially when services did not improve. It was thought that private sector profit motives would provide stronger motivation to conserve resources (resulting in improved efficiency of operations and of investment) and to improve service to increase revenue and margins. It was also recognised that the private sector could be induced to provide socially beneficial but unprofitable services with the correct incentives.

The simplest private sector involvement is through outsourcing. This is becoming increasingly common in Sri Lanka: for example, many public institutions now outsource cleaning services. Similar opportunities exist for railways: to outsource non-core activities such as carriage and station cleaning, station and building maintenance, rehabilitation of rolling stock, etc. Advantages can include better quality work and cost savings.

Leasing is an example of more extensive public private partnership, whereby suppliers provide and maintain rolling stock and railways pay for

its use. Advantages include substituting periodic lease payments for initial capital outlay and avoiding maintenance problems (e.g., procurement of spares, management of staff). By withholding payment for non-availability and penalising for breakdowns, contracts can ensure good performance. Leasing is common in North America and in the UK. Indian Railways has also leased locomotives and even offered to lease locomotives to SLR several years ago.

Build-operate-transfer (BOT) transactions are common in other types of infrastructure projects, but can also apply to railways. An innovative example is Bangladesh Railways, which introduced a modern passenger ticketing system on a BOT basis. The supplier designed and installed an appropriate system, and now maintains it, in return for regular payments. This closely aligned the interests of the private supplier with those of the railway, as the system must work well for many years to protect the supplier's earnings.

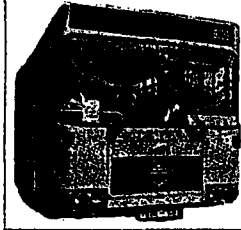
A more significant and longer-term form of public private partnership is the railways franchise or concession. Independent operators (usually private investors) take over management and operation of rail services (often exclusively) for a specified period. Sometimes they also acquire moveable assets, but never fixed assets such as infrastructure and land. They might pay fees to operate and invest in profitable services such as freight (positive concessions), or might require subsidies to operate and invest in unprofitable services such as commuter (negative concessions). Passenger concessions, especially, often include conditions regarding fares, service frequencies, and service quality.

One approach, practised initially in Sweden and the UK, but also followed in Chile and the European Union, among others, is to separate ownership and responsibility for railway infrastructure from that for train operations. Under this separation approach, independent train operators provide passenger or goods services over all or part of a network for 5-30 years. Rolling stock might be included in the concessions or leased. Infrastructure,

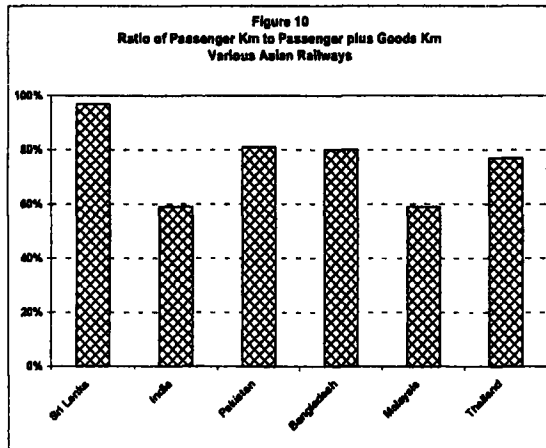
however, is kept under public ownership and management⁸.

A second approach is the integral concession or franchise. Many have been formed during the past decade, including in Latin America (9 passenger, 24 freight) and Africa (4 freight). Under this approach, concessions are awarded to serve the dominant traffic and include responsibility to manage and maintain the related track infrastructure for 20-50 years⁷. An advantage of this approach is that it facilitates closer integration between operations and infrastructure, as the dominant traffic

Central – were privatised between 1993 and 1997. Chile also privatised its northern meter-gauge railway in 1997.



Experience with public private partnerships in railways, while mixed, is somewhat positive overall. For example, despite well-publicised service complaints and problems in the UK, traffic volumes increased – passenger by 30% and freight by 50% – and large private investments, especially in rolling stock, will support future service improvements. In South America, the financial positions of most railways reversed after concessions were awarded, with government subsidies reduced (for passenger) or eliminated (for freight). This was largely due to cost savings from the voluntary retirement of 50-80% of staff (e.g., over 60,000 in Argentina) supported by widely accepted redundancy programmes. Freight and passenger traffic, however, also increased in most cases, reflecting service improvement⁸.



Source: Sri Lanka Railways & The World Bank Group (www.worldbank.org/transport/rail/rdb.htm)

has a vested interest to ensure that track is kept at an appropriate standard. Such concessions generally include moveable assets and a lease on fixed assets (with ownership reverting to the government at the end of the concession). If important minor traffic exists on the network, the concession can be mandated to give access according to specified formulae. For example, Argentina freight concessions allow long-distance passenger trains to operate on payment of an access fee.

The most extreme step from public to private is outright privatisation. New Zealand's railway department, for example, was made into a government corporation and restructured during the 1980s, then privatised in the 1990s. Japan Rail was subdivided into six separate passenger companies and one national freight company with rights to use the passenger tracks. Three of the passenger railways – JR East, JR West, and JR

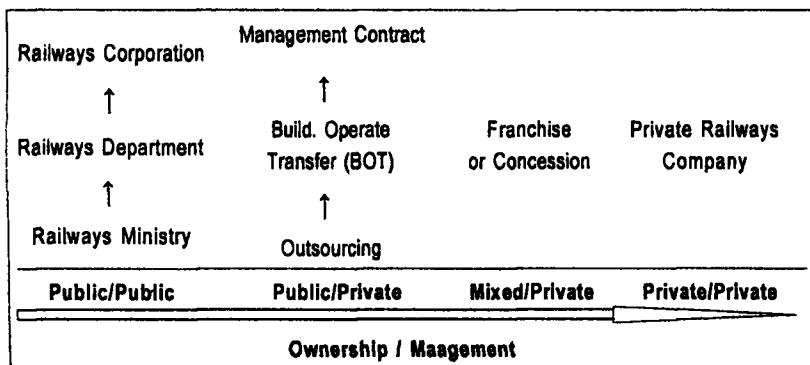
Lessons for Sri Lanka

Many of the reasons that impelled governments of other countries to invite private sector participation in providing rail services also exist in Sri Lanka: declining market share (despite a recent uptum in number of passengers); increasing annual losses; deferred investment; dissatisfaction with railway performance; the need to increase economic benefits and reduce funding at a time when resources are particularly scarce; etc.

It appears that SLR, in its current form, cannot meet the aforementioned challenges nor respond to the ongoing change demanded by the commercial environment in which it operates. Its departmental regulations and procedures stifle flexibility and innovation. Its departmental structure insulates it from the commercial signals that generally motivate change, such as financial losses, because Treasury meets all funding requirements regardless of performance. It has no internal incentive to develop rail business, as all revenues flow directly back into the consolidated fund.

Would formation of a railways corporation be the answer for Sri Lanka, perhaps with outsourcing and other minor public private partnerships? A corporation would, in theory, have more incentive and flexibility to improve operational and financial performance. It would have to formalise reimbursement mechanisms for unprofitable services (i.e., public service obligation contracts), which would force review

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of what services deserve to be funded. Overall, quality of service might improve, traffic volumes increase, and losses reduce. On the other hand, experience suggests that government corporations are not necessarily more commercially-oriented, efficient, or effective than government departments. Nor is it clear that this option would bring in new management skills or investment, or significantly reduce public funding requirements.

Many countries have implemented railways concessions, with separated or with integrated infrastructure, to allow the private sector to provide railways services. Would one of these approaches be appropriate for Sri Lanka?

Retaining management of infrastructure in public hands and giving concessions only to operate trains appears less preferable. If doubts exist about the capabilities of a railways department or corporation, then such doubts would also have to apply to a railways infrastructure department or corporation. On the other hand, concessions that integrate management of track infrastructure with train operation appear more suitable, as operators can improve and maintain the infrastructure to meet their requirements. Infra-structure assets would revert to the state at the end of a concession, so concerns about the sale of public assets would be less than for outright privatisation.

Some countries (e.g., Argentina, Chile) have separated concessions by line of business. As shown in Figure 10, passenger traffic is very dominant in Sri Lanka, which suggests that it would be the natural candidate for a dominant integrated concession. Service characteristics vary for suburban and long-distance passenger,

but dividing them into separate concessions would complicate management (e.g., both use the suburban track network and share many stations) and would reduce operational efficiency (e.g., locomotives work both services to increase utilisation). Local passenger services, however, operate somewhat independently and, if economically justified, might be considered as individual concessions. Similarly, because goods service has very different rolling stock, service, and marketing requirements from passenger, freight might also be included in a separate concession. Both could use the track of the dominant passenger concession by paying an access fee.

Some countries have divided their rail networks into geographically separate concessions. For example, in Argentina and Brazil, certain sections of the network were dominated by freight and others (suburban rail lines) dominated by passenger, with little overlap. Bolivia's two concessions were not physically connected. In Chile, one concession was broad gauge and another was metre gauge. In contrast, separation of passenger concessions in the UK has made travel from one part of the network to another more difficult (e.g., trains are not coordinated, through tickets are not available or are more expensive, etc.). Geographic separation would cause similar problems in Sri Lanka, as about 10% of passenger trips, and most goods shipments, are from one line to another and as many trains run over multiple lines to provide better service and to gain operational efficiencies.

What might be the financial implication of concessions in Sri Lanka? A freight concession could attract positive bids, returning money to the government. A reversal of the current downward trend would also support economic development. On the other hand, given low passenger fares and low density lines, passenger concessions would likely be negative. Funding requirements,

however, could be much less if concessions achieve the productivity savings of other countries and make key investments to improve efficiency and service.

This article proposes that SLR should be reformed to improve service and, at the same time, to reduce demands on the public purse. It shows that many other countries, faced with similar requirements, have chosen to invite the private sector to participate in providing rail services. Many options are available – from simple outsourcing to outright privatization. All have been tried somewhere; careful study can reveal which are the most suitable for Sri Lanka. All options affect staffing, so caring programmes must be developed to support reductions (e.g., early retirement, voluntary redundancy, staff retraining, etc.). Only with reform, however, can railways in Sri Lanka make the important social and economic contribution required to support development of the country in the future.

(Footnotes)

1. Dr D.S. Jayaweera, Deputy Director (Planning), Ministry of Transport, Highways, and Civil Aviation.
2. All data for other countries are from the Railway Database maintained by The World Bank Group and are for the most recent year available (1995-2000 depending on country).
3. U.E. Storm, *Analysis of Public Passenger Transport in Colombo Suburban Area*, Asian Development Bank TA 3410-SRI: Public Private Partnerships for SLR, May 2001.
4. U.E. Storm, *Analysis and Recommendations for Revitalization of Rail Freight Transport in Sri Lanka*, Asian Development Bank TA 3410-SRI: Public Private Partnerships for SLR, May 2001.
5. Weerasooriya and Storm, *Operation of Non-Economic Routes by Rail*, July 1996.
6. The UK initially privatised its rail infrastructure, but recently had to re-acquire it when the infrastructure company could not afford investments to meet rising demand and new safety standards.
7. The longer period reflects the need to invest in longer-life track assets.
8. The World Bank website at <http://www.worldbank.org/html/tpd/transport/rail/denning.htm> has data on concessions in many countries. ●