

Public Transport in the Developing World – Quo Vadis?

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1 Introduction

To attempt to summarize where public transport in the developing world appears to be going at present is a tall order. The world is too large and complex to give any really global answer. Nevertheless, this paper attempt three things. First, although it is outrageous to generalize even by continent, it attempts to summarize recent trends by region. Second, it attempts to collate that experience on a global basis in a number of critical issue areas. Finally it tries to elicit some lessons on how best to assist developing countries to sustain their public transport systems

2 What has happened?

2.1 Africa

There is much in common in the story of passenger transport in many most post-colonial African countries. With the exception of South Africa all are dependent on road based modes. In most cases the traditional bus companies were nationalized in the process of decolonialization. This usually involved direct political control of fares. Initially they continued to operate without subsidy, but increasingly fell into deficit which was met by government on an open-ended basis. Eventually governments ceased to be able to meet the deficits and the companies became unable to maintain vehicles with a consequential decline, first in quality and eventually in quantity of service. Eventually most of the public companies failed and were disbanded. In Sub-Saharan Africa outside South Africa, only three of the traditional public sector operators remain (SOTRAC in Dakar, SOTRA in Abidjan and ZUPCO in Harare) and all are slated for privatization² Where the traditional operations remained in the private sector, as in Kenya and Malawi, the pressure of competition from the informal sector in a fare controlled situation eventually undermined their viability. Even Stagecoach finally packed up their bags in Kenya. Only in South Africa, where high levels of subsidy was granted to selected private sector operators in order to support the high transport requirements of apartheid, have strong conventional bus companies survived, mostly in the private sector but also including municipally owned companies in Durban and Pretoria.

In North Africa, more traditional systems have survived, with public sector operation of buses in major cities such as Algiers and Tunis. In Cairo, the sole megacity in the region, the Cairo Transport Authority plans bus and minibus services throughout the Cairo region, and through its wholly owned subsidiary Greater Cairo Bus Company operates 1900 buses and 750 minibuses. In addition there are two publicly owned metro lines and a small light rail system. Between them these systems carry over 75% of public transport passengers. The remainder are carried by about 65,000 private sector minibuses (less than 17 seats), only 8,000 of which have route licenses, and only 60% of the drivers of which have licenses to drive their vehicles. The basic fare is

¹ The views expressed in this paper are those of the author and should not be attributed to the World Bank or its affiliated organizations. I am indebted to numerous colleagues including Jit Bajpai, Patrick Bultynck, Tilly Chang, Ed Dotson, Juan Gaviria, Roger Gorham, Harald Hansen, Gerhard Menckhoff, Richard Podolske, Jorge Rebelo and Lou Thompson for their contribution of information.

² Bultynck P: *The Urban Transport Strategic development Plan 1998-2002*. SSATP Working Paper 35. Africa Region. The World Bank. September, 1998.

frozen at a level which implies that a working poor family might spend between 15% and 20% of its income on travel. But the regime is not sustainable. Service frequency is low and waiting times long. Minibus fares are already three times the basic fare, and GCBC is being forced to increase the proportion of premium services (air-conditioned, express, etc) on which the basic fare constraint does not apply. The rapid increase in the microbus market highlights the poor quality of the public services.³

As conventional public transport service has failed in Africa the informal sector began to fill the gap with smaller vehicles – often shared taxis, vans or freight vehicle conversions. In self defense against the uncertainty of fragmented competition self regulating operators associations tended to develop. In many countries these associations developed crude operating practices (often tour de role despatching of fully loaded vehicles) and policing systems.⁴ As South African experience shows, elimination of the less acceptable aspects of this form of self regulation (particularly violence) can be a very difficult task.⁵

2.2 Latin America and the Caribbean

Urban public transport in Latin America and the Caribbean is also predominantly road based. Bus transport is almost exclusively supplied by a relatively fragmented private sector. The pattern of decline of the public sector was similar in many countries – for example, publicly owned companies in Argentina, Venezuela, Peru and Chile all failed between 1960 and 1990 through a combination of fare control, high costs of operation and budgetary incapacity. Even in the Caribbean the story of the Jamaica Omnibus has an eerie similarity, and the Barbados Transport Board may not survive much longer.

The initial process of decline, and to some extent the government response to it, has been to encourage fragmented competition. “Illegal” informal sector operators such as the curiously named “robots” in Jamaica, were tolerated as a necessary evil as the public sector declined, and legalized after its demise. In Argentina and in Jamaica the informal sector was actually augmented by the transfer of vehicles to employees as part of a redundancy payoff. In Peru and in Chile formal liberalization of entry attracted the entry of many small vehicles and small operators with a consequential adverse environmental and congestion impact in certain parts of the capital cities.

The responses to this fragmentation have typically been the reintroduction of some degree of regulation, whilst retaining private ownership and some form of competition. In Buenos Aires this took the form of monopoly franchising of associations of “collectivos” on individual routes within a network overlapping to such an extent as to maintain competitive pressure. Moreover, fares remained under control, albeit on a rather negotiated basis, and a quite effective system of quality control emerged. In many Brazilian cities fare control is reconciled with the franchising of services on a route or area basis to private operators through the adoption of the “Caixa Unico” a device to secure some inter-operator transfers of revenue between remunerative and unremunerative routes. In Santiago, Chile, the benefits of the return to a competitively tendered franchising system for routes into the central city is well documented. Not all of the problems have been overcome. The introduction of a franchising system in Jamaica (introduced on the recommendation of a World Bank study) has failed because of the defective design of the system. And Lima, Peru has yet to sort itself out.

³ *Cairo Urban Transport Note*. Mimeo. World Bank. June, 1999.

⁴ Pradeilles, J.C., G. Garcia-Oriol and I.Tall. *L'organisation corporative des taxis collectifs aBbamako et Lome*. In “Mobilite et transports dans les Villes en Developpement” CODATU. L'Harmattan Paris 1991.

⁵ McCall

One of the best advertised aspect of the Latin American approach has been the emphasis given to planning – even more transport planners make their pilgrimages to Curitiba than they do to see Yonge Street in Toronto. A similar separated road based trunk system has been adopted in Quito, Ecuador. But the full scale of the Curitiba planning approach cannot easily be retrofitted to many cities. Nevertheless, one aspect of the Curitiba approach, the segregated busway is still being pursued, with new busways being introduced in Sao Paulo, and planned in cities like Bogota and Lima. Attempts are now being made in Brazil to develop these on a BOT basis, but so far with little success.⁶ Whether maximum peak direction peak hour flows of over 20,000 passengers can be sustained is now beginning to be challenged, however.

In addition to their bus systems the major cities such as Sao Paulo, Caracas, Rio de Janeiro, Santiago and Buenos Aires have both metros and suburban rail services. Even some second tier cities with populations between 1 and 4 million have rail based systems. In Brazil, there are nine major cities with large suburban rail systems. The notable development here has been the privatization of urban rail passenger services. The myth that urban rail services cannot be effectively provided by the private sector because they are inherently loss-making has been well and truly exploded. First the Buenos Aires suburban rail and Metro concessions demonstrated that, albeit with negative concessions in which the state funded the refurbishment of the system, subsidy could be reduced drastically, fares maintained and both service quality and patronage increased through franchising. Subsequently both the Metro and the suburban rail systems in Rio de Janeiro have been concessioned for a positive price, and it is likely that the same pattern will be followed in the other former CBTU rail systems.⁷

2.3 Eastern Europe and Central Asia

Eastern Europe and Central Asia was until ten years ago the stronghold of the parastatal monopoly transport supplier. In the FSU the state monopoly operators were all highly subsidized. Not only were fares low, but also a very large proportion of passengers were legally exempt. When economic liberalization took away the basis for this subsidy the shock was extreme and sudden. Central governments often washed their hands of the matter by transferring fleets and responsibility for public transport to the municipalities, unaccompanied by any intergovernmental transfer of funds. But many of the traditional legal exemptions and fare controls remained. As in Africa, without adequate cash flow, the fleets deteriorated. That process was often accentuated by the inability of newly independent countries to obtain spare parts from suppliers in other parts of the FSU (mostly Russia and Latvian minibuses) or the COMECON block more widely (Hungarian Ikarus buses and Skoda trolley buses).

Although in many cases the operating units have been converted into some form of joint stock company, the extent to which this really gives them any real commercial freedom is very variable. For example, in Turkmenistan and Uzbekistan the JSCs have yet to show any real signs of commercial independence, although in neighboring Kazakhstan and Kyrgyzstan some of the privatized companies are beginning to operate in a more commercial manner. As in Africa, as the state sector declined an informal private sector developed, usually with small vehicles, typically in the less remunerative markets, and often on an illegal basis at fares well above the controlled rates. Only very recently have countries begun to recognize that the old days are not about to

⁶ Rebelo, J and P. Benevenuto. *Lessons from Sao Paulo's Metropolitan Busways Concessions Program*. Policy research Working Paper 1859. The World Bank. Latin America and the Caribbean Region Finance, Private Sector and Infrastructure Department. December, 1997

⁷ Rebelo, J. *Rail and Subway Concessions in Rio de Janeiro*. World Bank Group Finance, Private Sector and Infrastructure Network.Viewpoint, Note No 183. April, 1999. Also in *Public Policy for the Private Sector*. Finance, Private Sector and Infrastructure Network, The World Bank. June, 1999.

come back, and to confront the problem by searching for ways of legitimizing and mobilizing the private sector. Sub-contracting and franchising systems are beginning to be developed.⁸

A further distinguishing characteristic of the FSU countries is the role of fixed track systems. It was an objective in the USSR that every city with a population of more than one million should have a metro (interpreted as an underground railway), and even smaller cities had either tram or trolley bus systems as the core of the network. The fact that these systems were often sponsored by a different ministry than the urban bus system has created problems of co-ordination and prioritization of expenditures. The role that trams and trolley buses should play in the further development of these systems is a matter of some controversy, given the fact that in the medium sized cities in Russia at least, there is a strong negative correlation between the financial viability of the systems and the existence of a fixed track system.⁹

2.4 South Asia

In South Asia low incomes and high population densities might be expected to support a viable transit service. In practice, that has not been the case, with failures of public policy having serious adverse effects in most countries. Most commonly, the failure has initially taken the form of unrealistic fare regulation of conventional public sector bus services, and subsequently been compounded by inappropriate regulation of the emerging private sector. Controlled low fares have strained the capability of the enterprises to maintain services. This has attracted uncontrolled informal sector supplementation of service, including cycle rickshaws, often at premium prices. Once established, these informal service providers pose a social as well as a transport conundrum.

In India, urban bus services were traditionally supplied by municipal enterprises, of varying efficiency. The attempt in Delhi to open up the market to private sector supplementation by licensing private operators to run on DTC routes increased supply substantially but, because private operators were not incorporated into a disciplined operating regime gave rise to much concern about unsafe operating practices (the “killer buses”). In Pakistan the traditional public sector has declined even further than in India, and efforts are now being made to attract private suppliers. For example, in Lahore, after an abortive attempt to attract foreign capital an attempt is being made to mobilize local capital through the award of a monopoly area franchise to a local consortium.

In Bangladesh the combination of public supply and fare control has also ruined traditional bus service. The public sector supplier, BTB, has found urban operations commercially unviable, and has leased its vehicles instead to the private sector, which has often found it more profitable to operate them in the inter-city rather than the urban market. Meanwhile private sector minibuses and cycle rickshaws have taken an increasing proportion of the market. Though the authorities have in a sense bowed to the inevitable and licensed some premium services, this has been done on an ad hoc basis without any effective regime or policy for the core demands.

This tension between the desire to encourage private supply and the desire to maintain public transport as a low price social service has come almost full circle in Sri Lanka. The early stages were similar to that in other countries of the region, with the public company failing to supply the required amounts at controlled fares (partly at least because of its own internal inefficiency). Supplementation came first from private minibuses, mostly Japanese vehicles supported by cheap credit, which further accentuated the failure of the public company. Eventually this was would

⁸ Gwilliam, K.M., *Private Participation in Public Transport in the FSU* Thredbo VI forthcoming.

⁹ Podolske, R. *Public Transport Development in Eastern Europe* Proceedings of the First International Conference on Public Transport. American Society of Civil Engineers. forthcoming

up through the process of “peoplization” the transfer of ownership of buses to the former employees. But, in the absence of any structured subsidy mechanism, neither the private sector nor the “peoplized” sector could satisfy the service aspirations, with the result that, in the last two years regional transport companies have been created through which a new round of subsidy support is being channeled. Only very recently has the regulatory agency begun to move to competitive tendering of subsidized services as a means of reconciling subsidy with operating efficiency. But the system does not appear to have been carefully enough prepared, and the question of what to do with loss-making quasi public enterprises has recurred. High densities might also be expected to favor fixed track systems. However, only in Bombay does rail play a really important role, and even there until the recent creation of a metropolitan transport agency, the lack of integration with the rest of the urban transport system has limited its development. Metros are not significant; that in Calcutta carrying very low volumes. In any case, the combination of low incomes and high capital costs makes it likely that only systems which develop existing rights of way have any commercial prospect. Nevertheless, an LRT system is under development in Bangalore and the Sri Lankan government is also exploring LRT possibilities.

2.5 East Asia

Urban transport in the newly industrialized countries in East Asia is dominated by the problems of the primate cities. The main ones – Seoul, Bangkok, Manila, Jakarta, Kuala Lumpur– all have historically been dominated by road transport. Most have already engaged in programs of urban expressway construction. But all still have heavy congestion and poor environmental conditions. All pin their hopes for relief on the development of an urban rail transport system.

The urban rail systems in these cities vary greatly both in their state of development, their commercial and economic viability, and their distribution between private and public sector. With the exception of the Korean cities, suburban railways are usually poorly operated by the national rail company and make little contribution to the urban transport network. For metros and LRTs, where cheap inter-governmental funding has been available construction has tended to be undertaken in the public sector (Pusan, Manila LRT2, the proposed Jakarta MRT), although even then the operations may be separately concessioned to the private sector (Bangkok Blue Line). Where that is not the case, there has been a much greater reliance on private sector funding under BOT schemes (Manila LRT3, Bangkok BTS, KL STAR and PUTRA), usually with considerable government contribution or risk underwriting.

The bus arrangements are very variable. In some of the more regulated economies such as Korean, Malaysia and Singapore bus services are privately provided, but by companies which, to varying degrees are closely regulated by, and often directly or indirectly controlled by government. In Bangkok, where the publicly owned BMTA has a statutory monopoly right, it has converted that power into an ability to sub contract service to the private sector (to its own advantage). In major cities in Indonesia, bus supply is fairly strictly regulated through a traditional licensing system, though both public and private sector suppliers are involved.

In China, scheduled bus transport in the pre-Economic Reform Era was usually provided by a single state-owned monopoly operator. Fare structures were simple and levels low. Supply was planned and implemented on the basis of norms including bus to population ratios to determine vehicle requirements and staff to bus ratios to determine staff requirements. Ridership was steady or growing slowly; with fairly stable levels of cost-recovery and operating subsidies. During the ‘80s these patterns were disturbed by a combination of urbanization and jobs/housing dispersal and motorization associated with economic development. In local policy environments tending to emphasize road investment, traffic management, transit/land use planning and multi-modal

regulation were all weak. Increased traffic congestion caused very low bus speeds (8-10 km/hr). The traditional public companies, operating under high staffing targets and other social obligations, as well as general fare regulation and limitation of subsidy payment, found life increasingly difficult.¹⁰

The responses to this situation varied greatly. At the company level, some tried to deal with excess labor by moving to one man operation and diversifying into tertiary activities. In Urumqi the company devised a number of ways of reducing costs including leasing out vehicles, contracting out mini-bus services as a labor/wage reform measure, commercializing maintenance, introducing incentives/penalties in performance contracting with sub-unit operating companies, and introducing competition within the PTC (minibus vs minibus, minibus vs regular and between regular bus sub-units). At the municipality level many large cities such as Tianjin and Shanghai have corporatized their operations and split them into a number of smaller, quasi independent companies. Premium services have been encouraged, often through joint ventures with foreign companies. In some cities enterprises are allowed to compete with each other on the road, while in others franchising arrangements have been introduced either using negotiated deals (Anshan and Fushun) or attempting to introduce competitive tendering (Shanghai and Guangzhou). In Shanghai, where the decision was made to phase out subsidies by 1998, fares were reformed, including abolishing the monthly pass, which reduced ridership by 50%.

The informal sector plays an important role in many of these countries, though in several cases government has striven to eliminate it or reduce its importance. Perhaps the most notable feature of East Asia is the importance of the two-wheeler vehicle, whether motorized (over 50% of the vehicles in Bangkok are motor cycles, which perform public as well as private transport service) or not (as in China, where well over 50% of trips are taken by bicycle in most large cities).

3 What are the critical issues?

3.1 Organization.

One of the most significant trends, particularly in Latin America and the FSU has been the decentralization of responsibility for urban public transport from central to state or municipal governments, and the municipalization of ownership of operating agencies. In both cases decentralization has been motivated largely by the desire to get subsidized public transport off the central budget, and in the hope that more local management would improve system efficiency.

The financial arrangements for the change have been dealt with very differently. In Brazil, where bus transport had always been a local responsibility, the devolution of responsibility for urban railways from CBTU to state agencies has been associated with a reasonable financial settlement That has been achieved by the concessioning of the rail operations to the private sector (for which decentralization to the state level was a constitutional necessity) and by the funding of system rehabilitation as a kind of dowry to the new marriage settlement. Attempts have simultaneously been made to create transport regional transport co-ordinating committee as part of the reform to try to overcome problems of jurisdictional fragmentation. In the FSU, in contrast, the reform has not usually been accompanied by inter-governmental transfers of sufficient size to maintain the traditional arrangements, although some lip service has been paid to direct compensation for centrally sanctioned concessions in some countries. But at least it has given the municipalities the incentive – and a degree of freedom of action limited primarily by the legal rights of

¹⁰ Chang, D.Tilly and Zong Yan *Public Transport Reform and Development in China* Proceedings of the First International Conference on Public Transport. American Society of Civil Engineers. forthcoming

concessionary fare passengers – to seek novel solutions to the problem. A more systematic mobilization of private sector supply potential has been a common consequence of this.

Institutional problems also exist in many other countries. Jurisdictional conflicts have bedevilled attempts to develop public transport in multi-municipality city regions like Manila and Caracas, while the fragmentation of responsibility has long been seen to lie at the heart of Bangkok's problems. In many Latin American countries, such as Argentina, Peru and Chile, the Mayor of the capital city is often the second most important political figure in the country, and jurisdictional issues are incidentally the battleground for a wider political conflict.

3.2 *Multi-modal transport planning and finance*

In most developing countries functional responsibilities within the transport sector are also fragmented, with little attempt to rationalize transport planning and management at the metropolitan level. Bangkok is probably the most extreme case of this, with 27 different agencies having some form of transport responsibility. The establishment of a further agency within the Prime Ministers Office to co-ordinate the plans of the other agencies has had relatively little impact because it does not have any effective budgetary control or influence.

The lack of an institutional focus for comprehensive urban transport planning has a number of adverse effects. At the very simplest level there have been quite severe physical conflicts between systems in Bangkok in such matters as providing for traffic to pass from one tollway operator to another or designing grade separations when systems cross. Ad hoc approval of private promoters schemes has also imposed significant contingent liabilities on governments for interchange and distribution facilities in cities like Manila and Kuala Lumpur. In Kuala Lumpur, for example, the construction of an expressway paralleling the route of the STAR light rail line will further diminish the potential of an already unsuccessful development.

The interaction between private and public transport is the most critical point for policy co-ordination. Only in rare cases such as Singapore and Curitiba, has there been any attempt to jointly plan public and private transport facilities. In particular, since the introduction of the area licensing scheme in Singapore there has been no further systematic attempt to use road pricing restraint, or to link the financing of public transport with private traffic restraint. That may be about to change. Draft legislation is under consideration in Chile to facilitate urban road pricing, and in Kuala Lumpur there is a possibility that a cordon pricing scheme may be introduced as the basis on which the presently disastrous financial situation of the public transport sector can be addressed. The financial instrument for these schemes could be the development of a concept of an Urban Transport Fund, parallel to that of the Road Funds that are now being established in many developing countries.

Even within the public transport sector there are some difficult issues concerning financial co-ordination. Comprehensive multi-modal ticketing and revenue sharing systems are rare, being confined to Singapore and a number of the FSU countries. On a more limited basis metro systems have their own bus feeder services in Kuala Lumpur, Caracas and Santiago. As the role of the private sector increases the more difficult the maintenance of multi-modal ticketing systems might appear to be. Technology can help; for example, the urban rail concessionaires in Buenos Aires are required to ensure that any smart card systems which they introduce are mutually compatible. But some serious commercial problems arise concerning the basis on which revenues are distributed between independent operators. The system which most nearly addresses this is the "Caixa Unico", which is the Brazilian means of equalizing the returns to companies with different mixes of good and bad services (equivalent to a gross cost route

franchising system). In one city, Salvador, it is now proposed to include the urban rail system in the pool.

Some countries have tried to address these co-ordination issues. In the major Brazilian cities there appears to have been a sort of planning pendulum with conurbation agencies (the EBTUs) created in the late seventies and working reasonably well for ten years or so before being eliminated in the late eighties, only recently to be replaced by a new generation of Regional Transport Co-ordinating Committees. The issue raised by that experience is the extent to which it is realistic to seek the establishment of multi jurisdictional, multi-modal transport planning and regulation agencies at the conurbation level in the absence of more comprehensive reform of local government organization.

3.3 Fare control, fare exemptions and social obligations.

Unrealistic fare control is at the heart of the failure of public companies, and even of private sector franchising arrangements as widely spread as Kingston, Jamaica and Kuala Lumpur. The central problem is one of over specified regulation. Put very simply, the combination of farebox and subsidy must generate enough revenue to finance the quantity and quality of service provided. There are only three degrees of freedom; attempting simultaneously to determine all four elements – fare levels, subsidy levels, frequency and vehicle quality – will almost certainly lead to one of the objectives being missed. Usually the effect of such overspecification is that with a shortage of revenue first provision for vehicle replacement, and then maintenance is cut. Initially this leads to a loss of service quality, and ultimately to a loss of quantity as vehicles become unroadworthy.

The unwillingness to consider fare increases stems from some sort of feeling that there is a maximum fare that is affordable, and that fare control is necessary to maintain that. That view has been encouraged by Alan Armstrong Wright's famous proposition that journey to work transport costing more than 15% of disposable income is unacceptable. But the effects of that prescription may be to contribute to the financial failure of the public companies' basic services. That has happened in Bangkok where the public sector operator BMTA maintains the fiction of a low basic fare, but attempts to cover its costs by progressively replacing the basic services with premium, air conditioned services for which a fare of about four times the basic fare is charged. It has also happened throughout Central Asia. For example, in Samarkand in Uzbekistan the fare on private sector minibuses was double the regulated public sector fare, and 50% of trips are now made on private vehicles. The affordable service is not maintained through unrealistic fare controls.

Such product differentiation is not inherently bad if it means that potential passengers have a choice between a superior, more expensive service and a poorer, cheaper one. The addition of air-conditioned services in Dacca, Bangladesh provides a new alternative without detracting from the basic service (which in that case is admittedly very poor). The problem arises where the basic fare services disappear altogether on some routes, and the choice is between expensive buses, walking, or not making the trip at all. This is the case in Bangkok, and in some parts of Central Asia. The clear message is that, where product differentiation is being used to reconcile commercial viability with the maintenance of a low basic fare it needs to be done in a systematic way, as in Seoul, Korea.

Even the concept of affordability is dubious. Where housing is effectively free, and power is also supplied at very low prices, as is the case in much of the FSU, 15% of disposable income may not be poverty causing. That thought is supported by the evidence of our social survey work in

several of the central Asian republics which showed that people were far more concerned about the availability and quality of public transport than its price.

Fare exemption is another thorny issue. Many cities of the FSU were unable to collect fares from more than about 30% of their passengers because of concessions awarded by central government under the old regime. Decentralization of responsibility for urban transport has often not been accompanied by a transfer of the power to determine concessions policy to the municipal level. In a number of World Bank projects finance has been made contingent upon increased cost recovery, with action to review concessions strategy a high priority. Unfortunately even when central government agrees formally to offer direct compensation for centrally sanctioned concessions the payments are in practice either not made at all, or made with such delay, or in forms such as payment in kind, as to significantly damage the public transport sector.

Other social obligations are also a matter of concern. Access for the handicapped is not well provided for in the BTS rail system in Bangkok (where there are nearly 100 steps from road level to platform level at some stations), and there is a campaign to get the government to ensure that lifts are provided. Similar public resistance has been encountered in the Buenos Aires urban rail systems where among the earliest actions of the concessionaires were reduction of access to facilitate better fare collection.

3.4 Vehicle specification

There is a curious anomaly in the matter of vehicle size. Given information about corridor volumes, maximum acceptable waiting times, factor costs – particularly those of labor, fuel and vehicles – and service and fare elasticities, it is conceptually possible to calculate an optimal vehicle size. Consultants and governments do it every day. But what is emerging through market processes, both in the transition economies and in newly liberalized countries like Peru, is a smaller vehicle than the pundits calculate and the governments wish. Who is right? How do we reconcile the anomaly?

A number of explanations can be offered. Congestion externalities enter into the calculations of governments, but not of operators, and may well explain the government preference for larger vehicles in congested cities such as Lima. Availability of finance often limits the informal sector to small vehicles which can be bought with family savings. This is often compounded by regulations which give greater freedom of entry and fares to vehicles below specified size (usually in the range of 12 to 16 seats). For example, throughout the FSU private sector entrants with small vehicles have been allowed higher fares than the incumbent large vehicle operators.

Related to the issue of vehicle size is that of vehicle quality. In systems as widely different as that of the FSU, Jamaica, Kuala Lumpur and Mauritius, governments complain that the quality of vehicles generated through market processes is unacceptable. Perhaps the World Bank is contributing to this by its approval of high environmental specifications, with low floor and Euro 2 engines, (now under review)¹¹ and its unwillingness to finance second hand vehicle purchases. But this is often accompanied by a complete lack of realism on what quality is financially sustainable given the combination of fares control and absence of direct subsidy mechanisms. One of the strongest reasons for introducing competitively tendered franchising regimes is that it will make the trade-off between vehicle quality, service frequency, fare and subsidy more explicit.

¹¹ Barrett, I and T. Powell *Analysis of Bus Types for Urban Transport Services in Central Asia and Russia*. mimeo. World Bank. February, 1999.

3.5 *The role of fixed track systems*

The role of fixed track systems is a perennial problem in the developing world. Ambitious programs of new development exist in cities like Kuala Lumpur, Bangkok and Jakarta. Even Sri Lanka and Mauritius are looking to LRT investments for a solution to main city access congestion problems. In Latin America new investments have been planned or implemented in Medellin, Lima, Santiago, Salvador, Fortaleza and Bogota, and major programs of rehabilitation of existing railways have been developed in Buenos Aires and most of the larger Brazilian cities.

The World Bank has for many years been skeptical about urban rail systems. While they are seen as an essential element in maintaining system performance and securing some degree of environmental relief in the very large primate cities, they have tended to fall far short of expectations in terms of their effect on either system performance or environmental impact, for reasons very well articulated in the work of Allport et al.¹² For many years the view was taken that peak hour peak direction flows of up to 20,000 passengers per hour could be effectively, and much more cheaply accommodated by bus priority or busway systems. And the fiscal burden of maintaining unremunerative urban rail systems has been very damaging to the capability to finance other urban services.

That position has now been softened somewhat. The World Bank Group has been supporting urban rail rehabilitation, and even some new construction in Latin America and even has an equity interest in the BTS system in Bangkok. The quasi-official position is that rail systems need to be looked at more holistically as part of an urban development strategy, implicitly viewing the opportunity costs of the investment in rail resources as the extra costs of the provision of other public utility services (water, sewerage, etc) in the less dense development that can be sustained without urban rail facilities.¹³ But there still remains a problem about the affordability of such systems, either to passengers or to the municipal budgets. It is clear that only very dense corridors, with relatively high fares, can new urban rail constructions be commercially viable.

One trend which is clear is that to private participation in rail service supply. The freight sector in Latin America has already been almost completely concessioned to the private sector and a number of smaller African railways have also been concessioned as vertically integrated companies. In the larger countries, such as Argentina and Brazil, these coincided largely with the five or six original private companies that had existed before privatization.¹⁴ Largely because of the influence of the European Union on would-be accession countries, the European model for private participation in railways concentrates on the vertical separation of infrastructure from operations, together with the establishment of access rights for private operators on the (normally state owned) infrastructure.¹⁵ The same model is also being used in Zimbabwe.

The envelope for public private participation in rail transport has now been extended by the concessioning of both metro and suburban rail systems in Argentina and Brazil. In Argentina this has been achieved through negative concessions in which the government has specified a required program of rehabilitation, service levels and maximum tariffs, and has granted the concession to the bidder offering the lowest net present cost of the sum of capital and current subsidy payments over the concession period. Nevertheless, the fiscal burden of the system has been virtually

¹² Fouracre P.R., R.J.Allport and J.M.Thompson. *The performance of rail mass transit in developing countries*. TRL Research Report 278. TRL. Crowthorne. 1990

¹³ S.Mitric. *Approaching Metros as Development Projects* TWUTD Discussion Paper TWU 28. World Bank, 1998.

¹⁴ Thompson, L.S. and K-J Budin. *Global Trend to Railway Concessioning Delivering Positive Results* Public Policy for the Private Sector. Finance, Private Sector and Infrastructure Network, The World Bank. December, 1997.

¹⁵ Thompson, L.S. *The Benefits of Separating Rail Infrastructure from Operations* Public Policy for the Private Sector. Finance, Private Sector and Infrastructure Network, The World Bank. December, 1997.

erased while quality of service and patronage has increased substantially. The challenge in this arrangement has been the need for early renegotiation of concession contracts as traffic growth required revision of the original investment patterns. This renegotiation has also involved the extension of duration of the concessions.¹⁶ In Brazil, the concessions of both metro and suburban railways in Rio have been positive concessions based on the major programs of rehabilitation of equipment prior to transfer.¹⁷ The World Bank contribution in both cases has been to support the rehabilitation investment and indirectly labor severance. In Brazil and Argentina the Bank has also supported the creation of institutions of transport co-ordination at the conurbation level as a means of overcoming distortions arising from the traditional division of functions in urban public transport between federal, state and municipal governments.

A point that must be made about these experiences, however, is that they mostly concern the transfer to the private sector for rehabilitation and operation of existing systems.¹⁸ Even then it may not be easy. Attempts to concession the Medellin metro yielded no bidders. Experience with new constructions has been even more tortured. The two light rail systems in Kuala Lumpur have failed by a long way to meet traffic expectations and have needed government rescue. The BTS elevated system in Bangkok is purely private (although its viability remains to be demonstrated), but the second, underground, line has required the civil works to be taken entirely on government account, with only the electrical and mechanical investments concessioned along with system operation.

3.6 Competition and regulation

The global shift to more private supply of public transport within competitive systems continues. In some countries of the FSU this may be the consequence of continuing fiscal incapability to maintain the traditional regimes rather than any great conversion to the virtues of the market. Even in Bangkok, it is the financial collapse of BMTA that has driven a progressive transfer of service supply to the private sector. But, for whatever reason, it is happening.

There are exceptions, of course. Over the last decade competition in Kuala Lumpur has been progressively diminished, first as government chose to drive out the old minibuses (ostensibly on environmental grounds though the desire to reduce Chinese economic power may have played a large part) and more recently as supply has been concentrated in the hands of government favored companies). Political preference may also be driving the consolidation of bus supply in Dubai. Reconsolidation is also occurring in Sri Lanka on the basis of preference for larger company operations in subsidized parts of the network. In all of these cases the public justification is the achievement of better integrated public transport supply.

That highlights the fact that many governments still need to be convinced that stability and reliability in public transport service can be achieved in a competitive regime. For that reason, which may not be entirely good, competitively tendered franchising systems, accompanied by the development of associations of independent, informal sector operators into legal associations offer an attractive form of private sector participation for many formerly socialist regimes. Strategically, the demonstration that quality of service can be improved and fares reduced through competitive tendering of some routes operated by smaller vehicles may be an important element in convincing governments of the merits of competition. It is a process that is already occurring

¹⁶ Barbero, J.A. *Cambios en la movilidad urbana: los que han ocurrido y los que viendran.*

¹⁷ Rebelo. J *op.cit.*

¹⁸ Tynan, N. *Private Participation in the Rail Sector, Recent Trends Public Policy for the Private Sector.* Finance, Private Sector and Infrastructure Network, The World Bank. June, 1999.

under donor pressure in countries like Uzbekistan and Kyrgyz S.R., but from internal pressures in many Russian cities.

That also highlights the need for much better design of franchising systems. The early steps towards franchising in the FSU have not been entirely successful, with too great an emphasis put on the maintenance of traditional operating procedures and on bringing the private sector into line with those procedures, at the expense of genuine competition. That has particularly found expression in franchising arrangements using very complex, qualitative criteria adjudicated by panels of apparatchiks, typically including the police and the tax authorities whose interests are not primarily in finding an economic mode of urban bus operation at all. Being able to demonstrate the advantage of having simpler, quantitative criteria would be an important contribution to this developing field of competition.

But it is not only in the FSU that competition has not been efficiently developed. Area franchising systems have failed to deliver the required results in Kuala Lumpur and in Jamaica – in both cases because of fundamental defects in system design.¹⁹

3.7 Ownership and investment

The traditional view that only publicly owned companies can, or will, provide social services dies hard. It is to some extent perpetuated by the fact that the private sector has tended to replace the public sector precisely in circumstances where government has been no longer willing or able to give financial support to social services but has been unwilling to grasp the nettle of permitting fare increases. Lower quality, possibly higher fare, but financially sustainable service, is provided by the private sector. This has been the story of many of the Latin American privatizations. Even where the public sector is patently not delivering the basic service it is subsidized to provide (as in Bangkok where BMTA concentrates on higher fare air-conditioned services and sub-franchises non air-conditioned services to the private sector at a profit) the false proposition continues to be propounded.

An insidious vicious circle is often in play. For example, in Uzbekistan the private sector organizations have shown little willingness to invest in large vehicles, which is taken as evidence that only the public sector can provide the conventional core services. The reason for that, of course, is that without a secure regulatory system or any security of tenure in the market, the private operator could not, and would not wish to borrow to purchase a large vehicle or even incur the risk involved in taking a large vehicle on lease. The public operators then argue that only they can offer adequate collateral (which may simply be underwriting by government) so that any foreign lending for vehicles should automatically go to them. There is a critical need to find ways of avoiding the scenario in which lending by IFIs, or by bilateral agencies motivated by the desire to promote their manufacturing companies, merely props up a defunct system.

There are numerous reasons why the private sector, and particularly the informal sector, is viewed with suspicion. Often they have developed only quasi-legally, and still carry some stigma. When they are outside the regulatory regime they may also be unreliable. In particular they tend to be much more favorably treated for taxation than the formal sector. For example, in Kyrgyz S.R. the corporate public sector operator pays nearly 25% of turnover in taxation compared with 2-3% for the informal operator. Franchising is partly attractive in the central Asian countries as a means of bringing the informal sector into the tax net. Addressing the public transport supply problem through private sector involvement is certain to meet resistance unless these sorts of fiscal distortions can be eliminated.

¹⁹ Gwilliam, K.M.. *Getting the Prices Wrong- A Tale of Two Islands* Infrastructure Note World Bank.

4 What are the priorities for policy reform?

Let me conclude by identifying what I consider to be the main needs for policy reform, and suggesting what the professional communities in the developed countries can do to help.

First, is the problem of *political organization*. A critical failure of most developing country cities is the absence of adequate mechanisms for achieving spatial co-ordination. This is often associated with the traditional rights of independent municipalities, and often political conflict between central, state and municipal governments, all of which have some responsibility. This is not a very tractable problem, but I believe that it is our obligation to be able to show the potential of co-ordinating institutions.

Second is the problem of *integrated transport planning*. The need to find institutional structures within which a more holistic view can be taken in urban transport planning is critical. Partly that is a matter of ensuring that investment planning takes place within an explicit strategic framework. Structure plans, even if only indicative, help. Partly, however, it requires the imposition of a firmer strategic framework over system management, including traffic management, parking policies, public transport regulation and procurement. Finding a politically acceptable arrangement to achieve these ends is a real challenge.

Third, there is a continuing need to develop *appropriate pricing and charging devices and financing instruments*. That includes the encouragement of road pricing or surrogates such as fuel and vehicle taxation or traffic restraint instruments. It also includes the development of means of handling inter-operator transfer of revenues in predominantly privately supplied sectors. Comprehensive gross cost franchising does this, of course, but its practicability, and particularly the feasibility of introducing secure revenue systems, still needs proving where there are multiple small operators.

Fourth, is a the matter of *industrial structure*. Many governments – not only in the FSU – still do not understand, or fully accept, that it is not necessary, and indeed may be positively harmful, to rely on a parastatal supplier as the instrument for the achievement of social objectives in the transport sector. Whilst the traditional economists answer that redistributive objectives should be pursued through fiscal rather than industrial policy may be conceptually sound, it is possible that we might have more impact if we concentrated instead on demonstrating that competitive regimes are quite consistent with the achievement of social as well as economic objectives. Offering blueprints for effective operator association design as a means of mobilizing the informal sector even within franchising arrangements is also important.

Fifth, is the issue of *competitive system design*. The danger is that transitional governments suffering from fiscal incapability accept competition only by default, and in its most controlled form of tendered franchising. Within that form they may continue to define route requirements in terms of vehicle size, or set other traditional process oriented conditions or criteria (such as the capability to satisfy traditional, controlled economy, procedures for medical and safety inspections) as “sleeping barriers to entry”, which can be activated to give preference to traditional operators as soon as they can be provided with adequate capacity to take up their share again. While every country will have to tailor its solutions to its own very specific characteristics, I believe that we have the obligation to develop “portable demonstration kits” of effective public transport regulatory systems.

Sixth, there is the perceived problem of *affordability*. It has been argued earlier that one of the main reasons for the disastrous declines in public transport has been a failure to recognize some inescapable economic facts about the necessary balance between the costs and revenues of service provision. The separation of the power to determine fares or grant fare concessions from the responsibility to manage service provision is an almost unmitigated disaster in this context. But equally, I do not believe that we pay enough attention to examining and demonstrating the range of ways in which a sustainable balance can be achieved.

Finally there is a problem of *strategic choice*, particularly in urban areas. To declare an approach to urban rail projects as strategic investments requiring a more strategic evaluation is to state the problem, not the solution. There can still be bad rail investments and it is incumbent upon us to give some rather better guidance than we have in the past as to how we discriminate between good and bad in that wider context. Newman and Kenworthy may not always be wrong, but they are equally certainly not always right. I do not believe that we have an adequate appraisal instrument to encompass the long term structural effects of alternative structures, and hence to identify the real opportunity costs of the strategic decisions.

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Urban transport economics and planning
Economic evaluation

***Areas of
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Urban mass rapid transit appraisal
National transport policy structures

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