

7 PUBLIC ROAD PASSENGER TRANSPORT

Public road passenger transport is a key element of a strategy to contain congestion and environmental air pollution, as well as being essential to the poor. When it is appropriately regulated, competition best guarantees efficient supply, and through franchises and concessions can mobilize low-cost operations to provide the best quality of service and price for any budget capability. Without adequate regulation, however, competition can have some very damaging effects. The informal sector can also contribute effectively to satisfy demand in competitive markets.

As cities increase in size to the point at which walking can no longer satisfy the major trip requirements of the citizens, public transport—together with bicycling—becomes the major mode of transport for the poor. Buses are the main mechanized mode, carrying 6.5 trillion (6.5×10^{12}) passenger kilometers per year in 3 million vehicles, of which over 2 million vehicles operate in cities. In addition there are over 2 million paratransit vehicles operating in these cities.¹

Public transport should not be viewed as only for the poor, however, as the importance of public transport to all income groups in many rich European cities demonstrates. Improving efficiency in public transport must be concerned not only with keeping costs down but also with providing a flexible framework within which the less poor, as well as the poor, can use public transport with confidence and comfort. If adequate public transport is not available, then the rich will use private automobiles while the relatively poor will shift first to bicycles, then to motorcycles (Vietnam and Indonesia), then to taxis (China and Indonesia), and ultimately to inexpensive cars as their incomes increase. The failure of conventional public transport may also

generate a burgeoning small-vehicle paratransit sector that can contribute to maintaining accessibility, but that may have adverse consequences for congestion, air quality (pollution), and urban structure.

THE URBAN BUS SECTOR

In many developing countries of Africa, Asia, and Latin America, bus services were at one time provided by regulated monopolies. In colonial regimes these monopolies were often owned and managed by expatriates as subsidiaries of major suppliers in the colonizing country. In the postcolonial period, they were taken over into national ownership but continued to operate as protected monopolies. In the socialist economies, nationally owned public sector monopolies were also the rule. In both situations—former colony and former socialist economy—the traditional monopolies have now mostly collapsed.² In some Latin American countries, they have been replaced by smaller, privately owned companies operating under permissions granted by the municipal authorities.³ In Africa they have largely been replaced by a fragmented small-vehicle paratransit sector,

while in Eastern Europe and central Asia, a similar process of decline is at various stages of completion.⁴ Only in China—where operations remain in public ownership but are adopting increasingly commercial approaches to business—and in a few major cities in India and Eastern Europe do traditional public operators still dominate.

Although the details of history vary from country to country, the processes of public transport decline have much in common. In many cases governments have attempted to use the public transport industry as an instrument of social policy by simultaneously constraining fare levels and structures, and by guaranteeing favorable wages and working conditions to employees. As deficits mount, and in the absence of a secure fiscal basis for subsidy, first maintenance, then service reliability, and finally operating capacity disappear.⁵ In the process of decline, public subsidy tends to be progressively captured by favored, but not necessarily very poor, groups (for example, unionized labor or middle-class students).⁶ Overregulation also tends to discourage market responsiveness.

The decline is not solely a result of cash starvation. Public sector operations generally lack proper incentives for, or are constrained politically against, acting efficiently. This can be demonstrated by comparisons between public

and private operators in the same country, as exemplified for Delhi, India, in table 7.1.⁷ The significance of staffing ratios in these comparisons is a delicate issue. Clearly, if the opportunity cost of labor is very low because of high unemployment or low productivity throughout the economy, it may be quite economic to operate with high staff-to-output ratios. Indeed that is the basis on which small vehicles that are operated informally are so competitive in many low-income economies. But the institutionalized protection of labor in a public sector bus industry imposes the costs of maintaining the income of what is often a relatively privileged group (unionized labor) on a relatively poor group (public transport passengers), as well as entrenching a long-term disincentive to productivity improvement. Maintaining an artificially high labor complement in public sector bus operations is thus likely to be a very poorly targeted form of poverty reduction strategy. It is for this reason that competition is preferred.

COMPETITION TO MAKE PUBLIC SECTOR OPERATIONS MORE EFFICIENT

Competitive pressures can be introduced in various forms, both within the traditional monopoly and between firms either “for the market” or “in the market.” Given the inherent defects of the traditional uncontested monopoly and the demonstrated potential of competition to gen-

Measure	DTC	Private
Peak-period fleet utilization	83%	93%
Kilometers per bus per day	216	246
Passengers per bus per day	751	1,584
Staff per bus	9.6	4.6

Note: DTC = Delhi Transport Corporation.
Source: Authors.

erate cost reductions and service quality improvements, the critical issue is how to establish the best ways of organizing competition in order to secure the city's strategic objectives for its transport system.

Many public sector transport operators are engaged in competitive procurement of equipment and a range of support services (cleaning, catering, professional services, construction, maintenance, engineering, and so on) to reduce costs, improve product quality, even out internal workloads, and eliminate the need for peak capacity. It is good management practice to conduct regular assessments in order to compare the cost of undertaking functions in-house with that of subcontracting to outsiders. The combination of some freedom to subcontract with performance agreements between the operating agency and its political master is one way of attempting to improve performance. Competition in performance can also take place between units performing similar functions within an organization or by benchmarking on bus operators in other cities or countries. However, such arrangements tend to offer only weak incentives to management, poor leverage over factor suppliers (particularly labor), and to be poorly enforced.⁸

COMPETITION FOR THE MARKET

Firms can compete for the market in several ways.

- **Gross cost service contracting** involves the procurement by a public authority from an operator of specified services at a price determined through competitive tendering. Contracts are usually for three to five years. The operator passes all on-bus revenues to the procuring authority and does not take any revenue risk. This system requires a secure means of ensuring that the procuring authority actually gets any fares that are paid on the vehicle, and careful monitoring to ensure that suppliers actually do provide the service for which they have been contracted.
- **Net cost service contracting** is similar to gross cost contracting, except that the oper-

ator keeps the revenue and hence incurs both the revenue and supply-cost risks. This increases the incentive to the supplier to provide the service contracted for (otherwise he loses his fare revenue)⁹ and obviates the need for complex fare collection and security arrangements. However, it makes modal coordination more difficult and often involves higher net cost for the authorities, since the supplier is incurring an extra revenue risk, against which he is averse, and for which he will require remuneration.

- **Management contracting** involves operator responsibility for the management of a system's operation, possibly including service specification, within agreed-on parameters. The customer authority usually owns operational assets, although the operator may be responsible for their procurement and maintenance as well as negotiating labor wages and conditions. Intermodal coordination is relatively easy to achieve with this device. As long as the payment arrangements are well structured, there is also a high incentive to provide high-quality service to attract customers. The weakness is that the competitive pressure may be fairly weak, trade union power relatively strong, and costs relatively high.
- **Franchising** involves the grant of an exclusive right to provide a service that meets a number of general quantity, quality, and price standards established by the authority, usually because of a competition. The franchise may be for a self-contained area, such as a town or sector of a larger city, but it is also possible to have route franchises—especially with fixed track systems. They differ from service contracts in allowing the contractor a greater degree of freedom to develop the system. The franchisee may have to be paid by the authority to provide service and fare combinations that are not commercially viable.
- **Concessions** involve the granting of an exclusive right to provide a service without payment by the authority, although the authority

may attach conditions, such as maximum fares or minimum service requirements. In all other respects the concessionaire is acting on his own behalf and not as an agent of the authority. Contracts are usually for rather longer periods, often 10 years or more, to allow the contractor to benefit from his development of the market.

The relationship between these various forms is shown in figure 7.1. There is a rapidly developing body of experience with these competitive forms resulting largely from the wave of regulatory reforms in Western Europe. Competitive tendering of service rights has also begun to extend into the developing and transitional economies.¹⁰

COMPETITION IN THE MARKET

The most direct form of competition is that of a totally *open market*, in which there are no restrictions on transport operators except those imposed by general law on business practices, vehicle construction and use, vehicle emissions, and highway and traffic matters. Even where there is no quantitative limitation on competition, the open market is usually associated with some form of *quality licensing*, which specifies minimum conditions for entry, including vehicle specifications, environmental performance, and maintenance standards. In some cases the qualitative conditions may also cover the type of service to be operated (including stopping places), fares, and trading practices.

A more restricted form of competition in the market may occur where, although there may be several operators providing services in competition with each other, the total number of vehicles allowed to operate is limited by the authority. This is a very common form of regulation for taxi markets. Particularly where fares are also controlled, this usually results in licenses acquiring value as a “business asset.”

Competition in the market gives suppliers the greatest degree of freedom to respond to consumer demand and gives to the consumer the

most direct instrument—his willingness to pay—to influence what is supplied. But market competition is not responsive to several important types of “market failure.” First, if there is insufficient demand to meet the costs of supply, then there will be no service, irrespective of the importance which society attaches to the provision of some basic minimum service level. Second, the market is not responsive to various external effects, such as congestion and environmental impact, unless they are directly charged for. Third, because of information asymmetry and the difficulties associated with “shopping around,” the process of competition may result in a combination of price and quality of service supplied, which is not what the majority of consumers would prefer. Fourth, it will not be in the interest of the individual bus operators to adapt their services and fares to promote modal integration.

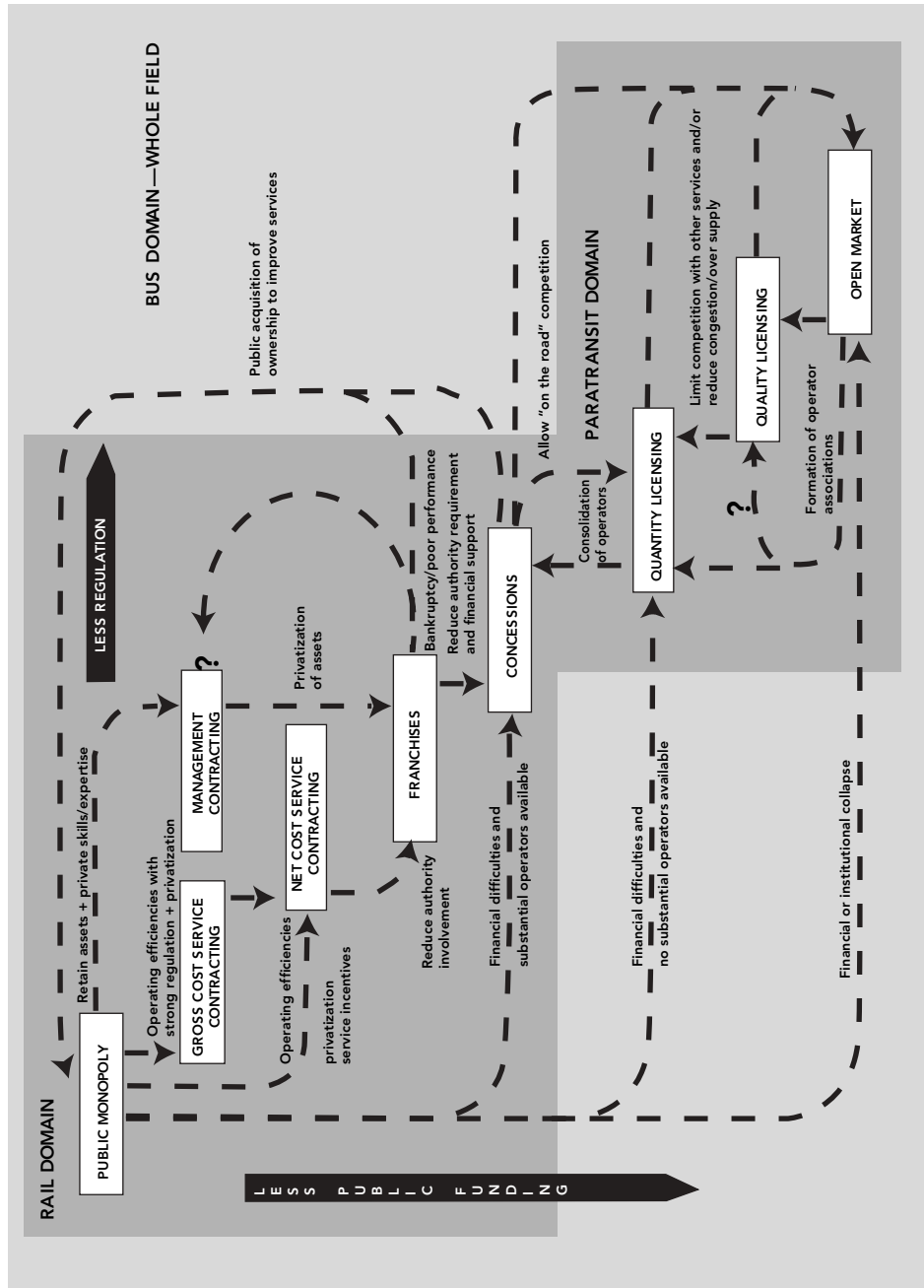
These drawbacks are not merely theoretical. Deregulation of public transport in Santiago, Chile, in 1988 resulted in massive overprovision of capacity, increased urban congestion, and environmental degradation, as old and unsuitable vehicles were introduced into service, and large increases in fares occurred as operators responded to declining load factors. A number of aspects of anticompetitive or antisocial on-the-road behavior have also occurred in deregulated or inadequately supervised markets, including:

- “Hanging back,” to maximize patronage either on the road or at terminals (Accra)
- “Blocking,” to obstruct rival operators’ services (Santiago during deregulation)
- “Racing,” to beat rivals’ vehicles in picking up passengers (Nairobi and Bogotá)
- “Turning back,” when lightly loaded, to pick up passengers waiting to travel in the opposite direction (Pusan, Republic of Korea).¹¹

CHOOSING AN APPROPRIATE SYSTEM FOR MANAGING COMPETITION

Where well-managed competitive regimes have replaced public sector monopolies in cities in

FIGURE 7.1 URBAN PUBLIC TRANSPORT COMPETITION: REGIMES AND TRANSITIONS



Source: Halcrow Fox 2000b.

industrialized countries—such as London (United Kingdom), Stockholm (Sweden), and Copenhagen (Denmark)—costs per unit of output have fallen between 20 and 40 percent,¹² and service levels have been maintained (figure 7.2).

The policy message is clear. Well-managed competition can be of great benefit to the poor, but badly regulated competition can have some very damaging consequences. Because of this, it is crucial to choose a competitive regime appropriate to the objectives of the procuring authority, the nature of the system being managed (particularly its size and number of modes), the potential strength of competition in the supply market, and the administrative capability of the procuring authority (“getting the right framework”). It is also crucial to make sure that the generic system is well adapted to the local circumstances and that it is well managed and regulated (“getting the framework right”).

GETTING THE RIGHT FRAMEWORK

The objectives of the authority are the first concern. Both the achievement of multimodal coordination and the implementation of distributionally motivated subsidy structures are easier to achieve with a small number of suppliers (concessioning or area franchising rather than route contracting), and when the supplier is not dependent on direct fare revenue (gross rather than net cost contracts). On the other hand, costs are likely to be lowest where competitive pressures are strongest (with shorter contract-based route systems).

The larger the system and the greater the number of modes involved, the more complex will be the coordination problems. If the authority itself does not have the administrative skills to perform this function, then it may best obtain that service through a system concession with an experienced specialist company. Many French cities have either management contracts or system franchises for this reason.¹³

It is also clear that it is easier to operate a competitive system when there are already several

suppliers to the local market of appropriate size and competence. This situation is, however, susceptible to change. If there is only one incumbent public sector monopolist, it can be split into several smaller competing units, as in London. If the operators are too numerous and too fragmented, they can be combined into a smaller number of groups, as with the “empresas” in Bogotá, Colombia, or the operators’ associations more recently developed in the cities of Uzbekistan.

GETTING THE FRAMEWORK RIGHT

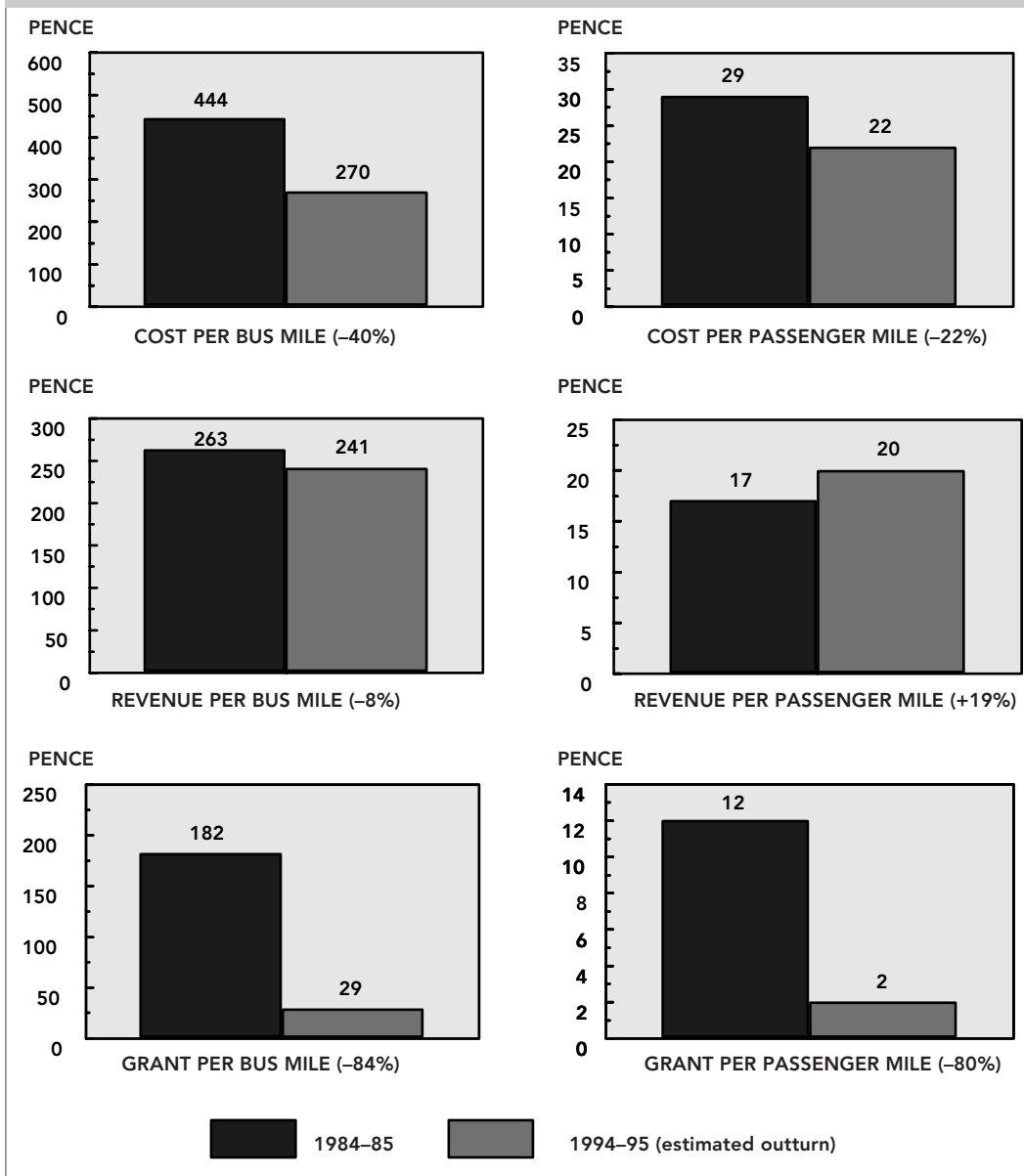
Whichever system is chosen, effective competition between private sector suppliers can only be achieved if the public sector itself is appropriately structured and capable. This imposes a number of critical institutional requirements:

- Political supervision of public transport that is separated from professional management
- Service planning that is separated from service provision, and adequately staffed and skilled
- Acquisition of new procurement skills, in the case of franchising or contracting
- Operations privatized, or at the very least commercialized
- Public company operation units restructured in a form conducive to competition, or subject to strong external competition.

This program of reforms may take time and require progressive refinement, especially where it involves concepts and procedures that are novel to the country (box 7.1).

Contracts must be of clearly defined duration. For route service contracts where the procuring authority is defining fare and service levels, the contracts can be of relatively short duration (three to five years). Particularly where there is a regular stream of contracts coming up for bid, it is not necessary for the contract length to reflect bus life, since vehicles can be switched between contracts either through secondhand markets or through leasing arrangements. Extension of con-

FIGURE 7.2 EFFECTS OF COMPETITION ON BUS TRANSPORT IN LONDON



Source: Transport for London (TfL) figures at 1994 prices.

tracts saves tendering costs but can blunt competition and, where it is allowed to become the norm, can be the basis on which an ostensibly competitive system becomes captured by a cartel of existing operators.¹⁴

Contracts must also define the rights and duties of the parties in as complete and consistent a way as possible. If fares are controlled, contracts should define the process for their adjustment to account for general cost inflation, as well as

BOX 7.1 INTRODUCING COMPETITIVELY TENDERED FRANCHISES IN UZBEKISTAN

Urban public transport services were traditionally supplied in Uzbekistan by state-owned enterprises that enjoyed areawide, sometimes citywide, monopolies. Beginning in late 1997, however, as part of the transformation of this former socialist economy into one that functions on market principles, the Uzbek government implemented radical changes in the organization and regulation of urban public bus transport services. Through a gradual and carefully planned process, which included experiments in a few cities, a study tour to London, and progressive scaling up to all secondary cities, responsibility has been given to the city administrations to organize all bus services on the basis of exclusive route franchises. These franchises are allocated through a competitive tendering process open freely to private companies and associations of small owner-operators as well as the state-owned enterprises. Tendering is under the responsibility of a special commission in each city, chaired by a deputy mayor, and operating under precise rules set by a transport regulatory agency in the central government. Bidders' discounts—if any—from the passenger fare ceiling, proposed service frequency, and bus fleet characteristics are the main selection criteria. Franchise duration, initially set at six months, renewable once for another six months, is progressively being extended (and is now at one year).

These reforms, completed in two years, have resulted in impressive changes. Numerous private operators have entered the public transport market, many new jobs have been created in the emerging bus service sector, and a healthy competition has developed (particularly for the rapidly growing minibuses services). Private operators now supply more than 50 percent of all urban transport services. A bus route franchising system is also now being implemented in Tashkent.

Source: J-C. Crochet, from World Bank project files.

define the compensation for any discretionary fare adjustments introduced by the procuring authority. If this is not properly provided for, franchising systems are doomed to failure, as occurred in Jamaica.¹⁵

It is possible, in principle, for competition to operate between privately and publicly owned operators, but that type of operation can only work effectively if the public sector operators are strictly commercialized, subject to a bankruptcy constraint on their commercial behavior, free from specific public service requirements not imposed on private competitors, and not eligible to be "bailed out" directly or indirectly by central or local government. Such operation will probably require some legal change in the operators' status, and will probably only be secure if there is also an independent auditing arrangement to ensure that the operators do not bid below costs

to obtain business. These were the conditions under which public and private sectors competed in London for the interim period before the public sector operations were privatized.

A phased reform is possible as long as there is a sufficiently clear program and timetable to give private competitors the confidence that the reform will be consummated, and to give the public sector operators an incentive to adjust in preparation for competition and privatization, rather than to dig in politically to prevent it. In the case of the reform in London just mentioned, there was a timetable both for the extension of competitive tendering through the whole network and for the reorganization and privatization of the public sector operators. There will inevitably be a tendency to argue that subsidies should be phased out slowly in order to avoid any adverse impact on fares. In practice, most of the benefits

are likely to arise in the initial round of tenders, so it is advisable that contracts be let from the outset on conditions that are likely to be financially sustainable in the long run.

PARATRANSIT

One of the most notable features of the public transport sector in the developing and transitional economies in recent years has been the explosive growth of publicly available passenger transport services outside the traditional public transport regulatory system, often referred to as paratransit.¹⁶

A number of characteristics are typical of paratransit services, although not necessarily applicable in all cases. These include:

- Services are usually unscheduled and often, though not always, on demand-responsive routes, filling gaps in formal transit provision.¹⁷
- The vehicles operated are typically small, including motorcycles,¹⁸ partly because of the greater ease of financing and flexibility of operation of the small vehicles, and partly because controls over small vehicles are lax even in situations where entry to the large-vehicle market is strictly controlled. In some cities, such as Damascus, Syrian Arab Republic, small vehicles dominate the market.
- The vehicles used are often old, having been retired from other countries or other uses domestically, so that the capital investment necessary to enter the business may be small.
- The vehicles used are also often very simple, including, in many countries, NMT vehicles. Some of these vehicles, such as the motorized rickshaws of East and South Asia and the jeepneys of Manila, are very specialized, but in many cases they are simply adaptations for passenger carriage of whatever vehicle is inexpensively available (including converted trucks in Africa and motorcycle taxis in Bangkok).

Paratransit services are usually provided by informal operators with the following characteristics:

- They are “noncorporate,” usually operating as single-person enterprises, although frequently with a vehicle owner who is not the operator. Often the driver pays a daily fee to the owner, incurs operating and maintenance costs, and keeps all revenue in excess of the fee. This gives a high incentive to work long hours and to obtain paying passengers by all available means, including touting, poaching, racing, and so on.
- They are often outside the tax system or benefit from favorable treatment of the noncorporate sector.¹⁹ They may also have an advantage in competition with public sector operators, with costs inflated by minimum wage regulations, strict working hour requirements, neglect, and corruption.

Paratransit performs many roles. In Africa it is the dominant mode of public transport of the poor. In the former Soviet Union, it supplements a declining formal sector. In East and South Asia, and to some extent in Latin America, it complements the formal sector, providing differentiated services in identified market niches. In other parts of Latin America, it increasingly competes head-on with the traditional suppliers. Paratransit provides a range of services including:

- Feeder services linking inaccessible housing areas to the main transport routes (the four-wheel drives in the barrios of Caracas or the cycle rickshaws of Dhaka)
- Local distribution in inaccessible areas that are not served, or are underserved, by conventional public transport (Lima)
- Trunk services complementing, or competing by quality differentiation with, the formal sector on major routes (the minibuses of many central Asian countries or the “peruas” [passenger vans] of São Paulo and many other Brazilian cities)
- Direct longer-distance services on routes where the formal sector supply is slower or infrequent (the “truchos” [trunk routes] of Buenos Aires)
- Duplication of franchised services.

There are many different combinations of informal transport structure, organization, service, and vehicle type. Table 7.2 classifies the examples mentioned above.²⁰

The problems of informality

The informal sector is often viewed as a nuisance by national and municipal transport authorities, particularly when those authorities are responsible for the provision of conventional bus services. Despite this view, the sector has some important merits that have led the international institutions, including the World Bank, to view it more favorably, not least as a source of employment for the poor. In many countries it represents a very significant entry point to urban employment. For example, pedicab drivers in many Asian countries have some of the longest hours of work (typically 70 per week), lowest levels of education, and lowest incomes of all categories of workers, and include a disproportionately large share of recent rural-to-urban migrants. In many Asian

cities, it is estimated that over 15 percent of the population is dependent directly or indirectly on informal sector transport for their livelihood. In Dhaka, the proportion has been estimated at over 25 percent.²¹

The services that the informal transport sector provides are also valuable. Particularly in South Asia, informal transport performs a feeder function for relatively well-off people. In other cases, particularly in lower-income countries in Africa, it is often the mode of transport “of the poor” as well as “by the poor.” In some cities it may do both—for example, in Manila 45 percent of trips are carried by the “down-market” jeepneys but another 12 percent by the “up-market” FX minivans. It is usually very market responsive, providing access to poor areas, direct routing, speed, and flexibility of service. If there is a demand for these characteristics that is not being met by the formal sector, the informal sector will invariably meet it if permitted (and often even if not per-

TABLE 7.2 A CLASSIFICATION OF INFORMAL (NONCORPORATE) URBAN TRANSPORT OPERATIONS

Vehicle type	Service features		Passenger capacity	Service niche	Market regime	Examples
	Routes	Schedules				
Large bus	Fixed	Fixed	25–60	Line-haul	Franchised	Buenos Aires; Rostov, Russian Federation
Minibus	Fixed	Fixed/semifixed	12–24	Line-haul	Franchised	São Paulo; Bangkok; Harare, Zimbabwe; Johannesburg, South Africa
Jeepney	Fixed	Semifixed	12–24	Line-haul	Franchised	Manila
Microbus and pick-up truck	Fixed	Semifixed	4–11	Feeder	Licensed	Caracas
Shared taxi	Variable	Variable	3–6	Short trips	Licensed	Casablanca, Morocco; Lima; Maracaibo, Rep. Bol. de Venezuela
Three-wheeler	Variable	Variable	2–4	Short trips, feeder	Unregulated	Phnom Penh, Cambodia; Delhi; Bangkok; Jakarta
Motorcycle	Variable	Variable	1–4	Feeder, some longer distances	Unregulated	Bangkok; Cotonou, Benin; Lomé, Togo; Douala, Cameroon
Pedicab and horse-drawn cart	Variable	Variable	1–6	Short trips, feeder	Unregulated	Dhaka; Vientiane, Lao People’s Dem. Rep.; Mumbai

Notes: “Franchised” means holding official permission specifying task, area of operations, and so on. “Licensed” means holding unspecified permission to operate the vehicle.

Source: Based on Cervero 2001.

mitted!). This high degree of market responsiveness means that there may be little need for government support or economic regulation. It is inherently fragmented and hence highly competitive, although that has disadvantages as well as advantages, and typically results in the emergence of either formal regulation or informal self-regulation through operators' associations.

Despite these advantages, informal transport has a very poor image and reputation. It is often a very low earnings sector, with crews exploited by vehicle owners. It has an association with poverty, viewed as symbolically inappropriate by government, which tries to reduce its role as much as possible. There appear to be three main aspects of informal transport systems that contribute to this negative image:

- Dangerous on-the-road behavior and association with crime and violence
- Urban congestion and adverse environmental impacts resulting from use of small, old, and ill-adapted vehicles
- Undermining of basic network of existing services.

These defects are frequently exploited by vested interests. Police and other public officials may take advantage of the quasi-legal nature of the sector to supplement their incomes.²² Traditional operators also exploit the limitations of the informal sector as reason for protecting the formal sector. The policy quandary is how to distinguish between real problems and the special pleading of vested interests.

Controlling operating practices

Paratransit is often criticized because the operator will only provide service where he considers it worthwhile to do so. But in many circumstances that will not matter. In particular, where the driver is leasing the vehicle on a daily basis, he may only be able to make a surplus over the rent by starting early or finishing late, or both, and plying his trade wherever there are passengers to be found. His standard of "remunerativeness," or prof-

itability, is thus very low, and his service coverage prolific. As experience has proved over many years in Buenos Aires, and more recently in the secondary cities of Uzbekistan, the organization of informal operators into route associations can ensure disciplined service.

Where there is a desire to provide even more services than the informal sector can provide commercially, it is argued that a monopolist public supplier is required. That is, of course, a fallacious argument. Directly subsidized services can be efficiently obtained through competitive tendering of franchises. Even cross-subsidy can be organized within a competitively tendered franchising system—as in London and several other large cities in Europe—either by packaging profitable and nonprofitable services together in tendered lots or by using fees from "positive" concessions to finance "negative" ones.

The most common concern about a fragmented informal sector is that the competitive pressure to earn a living will result in excess capacity, low load factors, and antisocial and often dangerous operating practices, such as lack of attention to passenger safety, racing, turning short, blocking intersections while touting for traffic, and so on. Certainly there is evidence of such behavior in a number of cities, including Kingston, Jamaica, and Harare.

Exponents of free markets have frequently argued that, in the long term, operators will see that it is not in their own interest to continue such undesirable practices. Typically this results in the formation of associations that limit entry and organize more disciplined service. Such associations are the norm in most of Sub-Saharan Africa and are common wherever the informal sector is unregulated.

There are several problems with such self-regulation. First, because it is outside public control, the association acts in the interests of its members and suppliers, and not in the interests of its customers. During the initial period of complete

deregulation in Santiago, Chile, the action of the operators' cartels led to a rapid increase in fares.²³ Second, because self-regulation is not based on any legal rights of exclusion, it is often enforced by violent means, as occurred in the taxi (minibus) sector in South Africa. Third, the need to ensure fair allocation of revenues between members often results in suboptimal operating practices. In particular, ensuring that all vehicles are dispatched from the terminal with full loads equalizes incomes at the expense of passengers (forcing them to walk long distances to terminals to access the service) and utilization of vehicles (forcing delays as they queue for their turn to depart). Only the more secure and long-standing associations are able to adopt more efficient practices—and that extra security may involve more monopoly power.

Congestion and environmental impacts

The pressure of competition may also lead to an excess supply of vehicles (in the sense that more vehicles are in service than are necessary to provide uncrowded service at high frequency) and the use of small and often inexpensive older vehicles. Small vehicles are usually much simpler and lighter in construction than are conventional buses. Because of this, both capital and operating costs per vehicle seat vary relatively little with respect to vehicle size. If labor costs are also low, there is no incentive to use large vehicles, which the informal sector would find difficult to finance in any case. Because the effects of congestion and environmental impact are external to the individual operator, the main incentive is to operate inexpensive, and hence often older, vehicles. The result is that totally unregulated entry in low-income countries is likely to result in a higher level of congestion and environmental impact than is socially desirable.

Two economic distortions have contributed to the explosion of informal services in small vehicles. First, there is often an excess supply of labor in urban areas that coexists with minimum public sector wage rates and inefficient operation for the formal operators. Second, in the absence of any pricing system for the use of scarce road space or adequate proxy priority given to large

vehicles, the informal sector small vehicle is able to provide a faster, and sometimes less expensive, service than is the formal operator.

Undermining of basic network of services

A subtler problem has been emerging in recent years. In many cities in Latin America (such as Buenos Aires, São Paulo, and Fortaleza) and in some cities in East Asia (such as Bangkok), informal operators are beginning to operate services in direct competition with traditional large-vehicle services, whether operated by public or private enterprises. The basis for informal operators' ability to compete in this way has often been that, by operating smaller vehicles and a denser network of services, they are able to offer a quicker, more convenient door-to-door service than can the traditional operator. In some cases (as typical in Brazil), this service is provided at fares (and sometimes on routes) identical with those of the traditional operator.²⁴ In other cases the service may be operated at a premium fare. In either case, the effect may be to reduce the demand for the services of the traditional operator and thus either increase the breakeven fare or reduce the breakeven frequency. Both responses would be to the disadvantage of those passengers captive to the traditional services.

Probably the most serious impact is that on the development of integrated multimodal service and fare structures. In a number of Brazilian cities, where metros or suburban railways have been rehabilitated and bus networks restructured in the context of an integrated fare system, passengers are being lost to informal operators who provide direct service at competitive fares. The critical question is what, if anything, public authorities should do to respond to or control this market-oriented response.

THE FUTURE OF PARATRANSIT AND THE INFORMAL SECTOR

Given the importance of paratransit both as an income generator and, often, as a service provider to the poor, attempting to eliminate it by admin-

istrative action could generate significant unrest. Following action to control the sector in São Paulo in 1999, roads were blocked and 24 formal sector large vehicles were destroyed in a period of three months. Repression is thus not a likely solution to the perceived problems. Rather, governments should examine why the informal sector exists, and then try to identify a regulatory and administrative framework within which the potential of the sector can be mobilized and developed.

Many of the defects attributed to the sector can be attributed to its insecurity. Predatory behavior on the road is necessary to make a living in a context of very low opportunity costs and, hence, in the context of proliferation of capacity. Inadequate capitalization, and the consequent small size and poor quality of the vehicles used in many cases, may in turn be attributed to the absence of a sufficiently secure expectation of the future revenue to justify commitment of capital to large assets that lack versatility.

A number of different approaches have been adopted to overcome this lack of a secure field of operation. Several countries allow free access in certain specialized markets (local feeder buses in Seoul, air-conditioned services in Dhaka, commuter charter bus services in Delhi), but these tend to be limited niche markets, and often require a higher class of vehicle to attract patronage. In São Paulo, a provision for the formal sector operators to accommodate 15,000 "peruas" (passenger vans) to supplement their own services has failed to defuse an explosive situation that has involved the suppression of three times as many existing (albeit illegal) operations.

A rather different approach to the problem of the core supply of informal transport services is the creation of "curb rights," permitting registered informal sector operators to pick up and set down passengers in specific areas, but not otherwise constraining their activities. The aim is to give a supervising authority some leverage (withdrawal of registration) to discourage antisocial on-road behavior, while leaving freedom to the operators to

respond flexibly to demand. It is very similar to the licensing arrangement found in rank-based taxi markets in many industrialized countries, but it is usually supplemented with some control on fares or capacity and also often overlaid with regulation or self-regulation to determine access priority. It has not been applied on any substantial scale to buses or minibuses, and would probably be very difficult to enforce in developing countries.

The more common solution in the bus sector has been found in the form of medium-term route franchise contracts. The immediate impediment to the inclusion of the informal sector in such a system is often the desire of the municipal authorities to guarantee regular, scheduled service on routes requiring a large number of vehicles. This impediment can be overcome by combining franchising (preferably competitively tendered) with freedom of establishment for (and indeed some encouragement to) operators' associations. That solution was the basis on which the urban bus sector in Buenos Aires operated very effectively until it began to be undermined by a new influx of illegal shared-taxi operations. It is also the basis on which competitively tendered franchising is being introduced in countries of the former Soviet Union, such as Uzbekistan and the Kyrgyz Republic. Some 2,700 informal sector vans have recently been legalized and regulated to give alternative services as cooperatives in Rio de Janeiro.

The main problem in pursuing that regulatory path is to determine how best to prevent collusion and the emergence of a grand cartel able to exploit monopoly power. In Argentina this was achieved, despite the absence of competitive tendering, by ensuring that route franchises granted to specific associations overlapped, so that there was a degree of competition on the road. In Uzbekistan it has been done by official encouragement for the creation of multiple associations.

Competitively tendered franchising arrangements also make it possible to address the issues of congestion (which can be addressed by limiting the amount of capacity franchised to operate in par-

ticularly congested streets) and environment (which can be addressed by putting qualitative standards or criteria in the selection process). Both problems have been very satisfactorily addressed in Santiago Chile, although road and rail passenger transport remain as competing alternatives, often serving different income groups, rather than as part of an integrated network in the absence of any institutionally systematic provision for improving modal coordination.

Some additional encouragement may also be needed. Restricted access to credit limits the ability of many operators to buy their own vehicles, forcing them into a dependence on an absentee owner. Even with the introduction of franchising, there will be a period, until the system is well established, in which it will be difficult for operators to secure funding for vehicles against a franchise contract. Assistance with vehicle finance may be a necessary component of reform. The ultimate objective should not be to maintain a highly fragmented bus industry for its own sake, but rather to encourage more informed and disciplined entrepreneurial structures on which competition can be based. In fact, most of the operators' associations in Buenos Aires developed naturally from pools of privately owned vehicles to shareholding companies. Some of the recently formed operators' associations in Uzbekistan are already beginning to undertake functions, such as joint purchasing, which are steps to corporate form.

In summary, there are two conflicting considerations concerning the role of the informal sector. On the one hand, the services provided by the informal sector may better respond to consumer demand than those of the formal sector, and employment in informal transport may be one of the few areas of gainful economic activity open to new rural-to-urban migrants. On the other hand, informal transport brings with it adverse effects on congestion, environment, and basic public transport network viability.

The balance of these considerations may be in favor of paratransit in smaller cities, where excessive

supply is not a problem, but against it in larger, congested, and polluted cities. The critical question then becomes at what point does the growth of paratransit need to be controlled and redirected either to niche markets or more formal arrangements. In that progression, some policy measures should be specifically directed to attenuating congestion or environmental impacts directly where they occur. Limiting access to particular locations and enforcing environmental and safety regulations are the appropriate policy instruments—universal prohibitions of the informal sector are not. Even in larger cities, the appropriate policy response would seem to be one that permits informal operators to compete for franchises in sectors of the market where their flexibility is particularly advantageous but where their small vehicle size is acceptable. Authorities thus need to plan for the use, development, and migration of paratransit in a more positive way than has hitherto been common.

CONCLUSIONS: TOWARD A STRATEGY FOR PUBLIC TRANSPORT

Public transport is critical to the welfare of the urban poor and a crucial element in any poverty-oriented city development strategy. Yet it is failing to provide the necessary service and is actually in decline in many developing countries just at the time when many much richer, industrialized countries have begun to recognize its importance. That decline has some technical roots but is mostly a consequence of the inappropriateness, for the tasks expected of it, of the institutional and financial arrangements under which it typically operates.

The main elements of a strategy for urban public road passenger transport are suggested as follows:

On planning and integration

- Public transport provision should be treated as a key component of a city development strategy or structure plan.

- Public transport must be given a high priority in the design and use of scarce road space.

On competition

- Planning of public transport service should be separated from provision of public transport service.
- Competition should be recognized as the best way to secure good value for money in public transport.
- In complex cities the best form of competition for the market may be through tendered franchises or concessions.
- The competitive regime should be designed and regulated to maintain healthy competition and avoid excessive oligopolistic tendencies.
- City administrations should be restructured to facilitate competitive procurement of services (see chapter 11).

On paratransit and the informal sector

- The role of paratransit in satisfying dispersed trip patterns and in flexibly addressing the demands of the poor should be recognized.
- Anticompetitive or antisocial behavior within the sector should be controlled through the establishment and enforcement of quality standards.
- Cities should strive to find ways to mobilize the initiative potential of the informal sector through legalizing associations and through structuring franchising arrangements in order to give the small private sector the opportunity to participate in competitive processes.
- Cities must ensure that informal operators meet the same environmental, safety, and insurance requirements as formal operators, and that they meet their proper tax obligations.
- Cities should plan for a dynamic regime that will allow for a transition to a more formal role for the informal sector when appropriate.

On pricing

- General fare controls should be determined as part of a comprehensive city transport financing plan, and their effect on the

expected quality and quantity of service carefully considered.

- Fare reductions or exemptions should be financed on the budget of the relevant line agency responsible for the categories of person affected (health, social sector, education, interior, and so on).

NOTES

1. Halcrow Fox 2000b.
2. Gwilliam 2001.
3. Aragão, Brasileiro, and Marar 1998.
4. For further detail, see Gwilliam 2000b.
5. Effective public sector operations still continue in some developed cities, such as Vienna (Austria), Stuttgart (Germany), and Zurich (Switzerland), even if relatively costly. The relevant ingredients for this outcome are efficient economies, high priority for public transport, and wealthy communities paying more attention to quality than to cost. Such conditions are rarely found in developing countries.
6. For an example of this, see Teurnier and Mandon-Adolehoume 1994.
7. Similarly, in São Paulo the now-defunct state operator had an average of 8.6 employees per bus compared to only 5.5 for private sector operators. Even after allowing for public sector employment associated with activities such as planning and coordination of the public transport system, labor productivity was still 28 percent below that of private sector operators.
8. World Bank 1995.
9. There may still be some service elements (the earliest bus, for example) that cost more to run than the revenue they earn, and for which there is an incentive not to supply, unless the supply is regulated.
10. See, for example, Gwilliam, Kumar, and Meakin 2000.
11. This is not in itself a bad practice as long as passengers are not seriously delayed or forced to pay twice. In the case of fragmented competition, these protections are rarely observed.
12. For a more detailed discussion of alternative forms of competition and some advice on their design, see Halcrow Fox 2000b.

13. Management contracting and system franchising are most common in France (Systra 2000).
14. See Aragão, Brasileiro, and Marar 1998 for a discussion of how this has happened in many Brazilian cities.
15. Gwilliam 1996.
16. This does not necessarily mean that they are operating illegally, as in many countries entry to the sector is effectively free, with operators subject only to the general rules of the road and law of the land. Nor does it necessarily mean that they are operating completely independently, since many informal sector operators are members of associations of operators.
17. Cervero 1998.
18. The motorcycle taxi is the most rapidly expanding segment of the market. It is estimated that there are 125,000 "moto-dubs" in Phnom Penh and 100,000 "rub-jangs" in Bangkok.
19. For example, in some of the Central Asian republics of the former Soviet Union, taxation on the informal sector amounts to less than 3 percent of revenue, compared with nearly 25 percent for the corporate sector.
20. For a fuller description and classification of types of informal transport, see Cervero 2001.
21. Gallagher 1992.
22. For example, the motorcycle taxi business in Bangkok involves buying off officialdom at several levels of the hierarchy (see Cervero 2001). Sometimes, as in Cairo, police become involved in ownership of the vehicles.
23. Dourthe and others 1998.
24. Associação Nacional de Transportes Públicos 1999.