

# 3 URBAN TRANSPORT AND POVERTY REDUCTION

Poor people's inability to access jobs and services is an important element of the social exclusion that defines urban poverty. Urban transport policy can attenuate this poverty, both by contributing to economic growth and by introducing a conscious poverty reduction focus to infrastructure investment, to public transport service planning, and to fare-subsidy and financing strategies. There is a rich agenda of urban transport policies that are both pro-growth and pro-poor, yet which are consistent with the fiscal capabilities of even the poorest countries.

## URBAN POVERTY AND SOCIAL EXCLUSION

Poor households derive their standard of living from a variety of activities, not all of which are marketed or assigned a monetary value. That standard of living, and its security, depends not only on current income but also on the stock of assets, including the social and human capital, as well as the money and physical assets, at the disposal of the household. Poverty is thus a multidimensional concept involving the lack of the social and cultural, as well as economic, means necessary to procure a minimum level of nutrition, to participate in the everyday life of society, and to ensure economic and social reproduction.<sup>1</sup> In this general notion of poverty as "exclusion," accessibility is important, not only for its role in facilitating regular and stable income-earning employment but also for its role as part of the social capital that maintains the social relations forming the safety net of poor people in many societies.

Deteriorating urban transport conditions have a particularly severe impact on poor people.<sup>2</sup> Growing reliance on private vehicles has resulted in a substantial fall in the share of, and in some cases an absolute decline in the number of, trips made by urban public transport in many cities. Consequently there has been a decline in urban

public transport service levels. Sprawling land-consuming urban structures are making the journey to work excessively long and costly, particularly for some of the very poor. Surveys of commuters in Mexico City have shown that 20 percent of workers spend more than three hours traveling to and from work each day, and that 10 percent spend more than five hours.<sup>3</sup> Poor people also suffer disproportionately from deterioration of the environment, safety, and security because they are locationally and vocationally most exposed, and less able to afford preventative or remedial action.

## TRANSPORT PATTERNS OF THE URBAN POOR

Poor people make fewer trips per capita than do the nonpoor. The difference in total number of trips per day per person is not usually extreme, falling in the range of 20 to 30 percent, though some earlier studies have suggested much greater disparities.<sup>4</sup> Consistent with the difference between trip rates of the poor and the nonpoor, average trip rates have also tended to increase over time as income increases.<sup>5</sup> In contrast, the composition of the trip making of the poor and the nonpoor differs very substantially. The nonpoor typically make two or three times as many motorized trips per capita as do poor people, even when total trip

rates are fairly similar. In most poor countries, private motorized vehicle trips are restricted to the wealthiest 20 percent of the population, with the motorcycle extending this down to those with average incomes in middle-income countries.<sup>6</sup> As might be expected, poor people's journey purposes are more restricted, with journeys to work, education, and shopping dominating.

The burden of transport on household budgets often cannot be determined precisely. Incomes may be difficult to establish, especially where there is some payment in kind or where there are incentives not to disclose the total income. Household expenditure is therefore probably a better base than is income, although it is believed that household consumption surveys tend to understate transport expenditures, while transport surveys tend to overstate them.<sup>7</sup> Subject to those caveats, it has been estimated that transport accounts for between 8 and 16 percent of household expenditures in a range of developing countries in Africa.<sup>8</sup> Estimates for major cities in some other countries also fall in this range, with 15 percent for an industrialized country such as France.

In the context of poverty assessment, the proportion of income spent on transport by different income groups is of more interest. Typically there are two steps in transport expenditures corresponding to the progression from nonmotorized to motorized public transport, and from public transport to motorized private transport, respectively. Where those steps take place in any country depends on income level and distribution, as well as on the quality, availability, and cost of public transport. Studies in Ouagadougou (Burkina Faso) and Dakar show that the highest quintile spends 20 times as much on transport as the lowest quintile, but this only amounts to double the proportion of income (Godard and Olvera 2000). In virtually all countries, richer groups spend a higher proportion of their incomes on transport than do most of those with lower incomes.

However, the proportion of income spent on transport varies greatly for the very poorest groups.

Some of the very poor may be forced to accept precarious living conditions in order to be able to access work. For example, a survey of pavement dwellers in Madras, India, showed that 59 percent walked to work at no cost.<sup>9</sup> In other circumstances, however, the burden of transport expenditure on poor people may be very high. A study of low-income households in Temeke, Tanzania, 8 kilometers from the center of Dar es Salaam estimated that households spent between 10 and 30 percent of their incomes on transport, with an average of 25 percent (Howe and Bryceson 2000). The upper limit was very income constrained, while many low-income earners in the formal sector claimed that they could only afford public transport in the period immediately after being paid. Later, after their pay was exhausted, they walked.

Given the high cost of transport, the time taken by the poor who are working to travel to work varies greatly. The Madras pavement dwellers, walking less than one-half an hour to work, are a polar case of the tradeoff between transport cost and residential quality. More generally, land-price differentials reflect local environmental quality, and are likely to do so more as the middle classes grow and environmental expectations rise. Even in the largest cities, there may be areas of barely habitable or accessible land, such as those of the "favelas" (squatter developments) in Brazilian cities, which are relatively close to areas of potential employment but which are unserved by formal transport providers.

The other polar case in the tradeoff concerns those who live remotely in order to inhabit affordable space, and who thus incur both high travel costs and long travel times. As a result of apartheid policies, the average distance of the black townships from the central business districts (CBDs) of the seven largest South African cities is 28 kilometers.<sup>10</sup> Some poor people in Latin American cities—such as Lima (Peru) and Rio de Janeiro—are also driven out to inexpensive dwelling space in remote locations, some 30 or 40 kilometers out of the employment center (the average commuting time per day for the

poorest group in Rio de Janeiro exceeds three hours). Such peripheral locations typically involve exclusion from a whole range of urban facilities, a deprivation only partly overcome by family or neighborhood solidarity.<sup>11</sup>

The transport patterns of poor people thus exhibit a complex tradeoff among residential location, travel distance, and travel mode, in an attempt to minimize the social exclusion associated with low earning potential. Differences in land prices in developing countries generally reflect variations in accessibility to the CBD or other centers of employment. Since good transport contributes to accessibility, it tends to drive up land rents and drive out poorer residents, who can only afford to live closer in as pavement dwellers or in slums which are often inaccessible to motorized transport and are very difficult to inhabit.

The role of transport in this complex concept of exclusion may be characterized as follows. The “income poor” make fewer trips, and more of their trips are undertaken on foot. For most purposes they are restricted to whatever services (usually poor services) that can be accessed within walking distance, making them “accessibility poor.” The journey to work may be relatively long. Even if it is not, it will use slow modes and may be very time-consuming, so they are also “time poor.” For poor people, and particularly for women, children, and the elderly, trip making is often deterred because of their vulnerability as pedestrians, both to traffic accidents and to personal violence, making them “safety poor.” Finally, there is evidence that long walking distances and times also creates tiredness and boredom that reduces their productivity by adding an “energy-poverty” dimension to their deprivation. In assessing transport provisions for poor people, it is therefore necessary to look at the total package that defines “exclusion,” and not simply to look at the proportion of income, or even of time, spent on transport.

Where public transport is not available, access to a private mode of mechanized transport may

play a critical role in the extent of exclusion. In the United Kingdom, experiments with inexpensive car loans for rural workers who can only access jobs by private transport are improving the lot of some relatively poor people. The equivalent in poorer countries may be the development of mechanisms for inexpensive finance of private bicycles—together with public investment in infrastructure for the safe movement of those bicycles. This is discussed further in chapter 9.

In addition to household characteristics, there are also some specific personal characteristics that accentuate deprivation. In most countries, over 10 percent of the population has some form of physical disability imposing serious disadvantage both in terms of mobility and safety (Merilainen and Helaakoski 2001). For the physically impaired, as well as for the elderly, public transport accessibility is often very poor and pedestrian facilities are often nonexistent or are blocked by parked cars. Increasing attention is now being paid to these groups in industrialized countries, and guides to good design practice are available.<sup>12</sup> While some aids to mobility are expensive, and raise issues of expenditure priorities in circumstances where affordability of basic transport itself is an issue, many are not. Provision of pavement ramps to make road crossing easier for wheelchairs, tactile strips on station platforms to assist the blind, large brightly colored signage to help the partially sighted, and well-designed grab bars and handles to assist the less mobile are all matters of a more inclusive focus in design rather than of expense.<sup>13</sup> Good practice can be found in developing as well as in industrialized countries.<sup>14</sup>

Gender-related disadvantage is also endemic. Many activities typically undertaken by women (childcare, household management, informal sector employment, and so on) require them to make more frequent and shorter trips than are required of men. They make more trips at off-peak hours and more trips that are off the main routes, and engage in more complicated multileg trips, all of which tend to make their movements relatively expensive for public transport to provide,

and hence more highly priced or more poorly supplied.<sup>15</sup> Women are very vulnerable to these cost characteristics because they frequently have less capacity to pay than do male household members, who, in many cultures, also control any bicycles or other vehicles available to the household. Cultural factors may constrain women's abilities to use public transport or bicycles. In many countries there is also a problem of the "social safety or security" of public transport for women, especially after dark.<sup>16</sup> This may force them to depend on more expensive alternatives. Peripheral location may be particularly damaging to women's employment potential.<sup>17</sup> To confirm this, a heavy agenda of necessary gender-related research is required. This includes a need for more activity-based, as opposed to trip-based, research; better estimates of the economic value of women's time; and direct evaluation of the impacts of some gender-related projects.

Reforms aimed at improving economic efficiency may sometimes have the immediate effect of reducing employment of the poor or the relatively poor. Constraints on the development or behavior of the informal transport sector, discussed in chapter 7, may take away the only source of livelihood for some of the very poor. Rail reform has also often been associated with substantial severance of redundant staff, as has occurred in Buenos Aires. In World Bank projects this adverse side effect is mitigated by the imposition of resettlement provisions based on a policy of no detriment. But there is a wider issue. Not all impacts are so directly apparent. Identification of distributional effects of infrastructure works and of reform policies, and the fuller involvement of project-affected persons in decisions, is thus a *sine qua non* for the avoidance of incidental damage to the interests of poor people.

Some general conclusions may be derived immediately from the analysis of the travel patterns of poor people.

- a. "Exclusion" is multidimensional, so low travel costs may be achieved through the accept-

ance of other heavy transport quantity, time, or quality penalties, or through the acceptance of very bad housing conditions.

- b. The transport capability of a household is critically dependent on its stock of private vehicles (bicycles, motorbikes, cars, and so on), as well as on its income and locational characteristics.
- c. The structure of provision of formal public transport services tends to reflect and accentuate the distribution of poverty rather than to compensate for it.
- d. Some specific categories of people—defined in terms of age, gender, or infirmity—may suffer particular disadvantage in transport terms.

## PRO-POOR ECONOMIC GROWTH AND POVERTY REDUCTION

At the individual level, the urban poor are very conscious that access to employment is critical to their fight against poverty, and that the availability of good transport infrastructure and services is a basis on which this access can be achieved. "The lack of basic road, transportation, and water infrastructure is seen as a defining characteristic of poverty,"<sup>18</sup> but the relationship between urban transport infrastructure and poverty reduction is complex. The "income poor" may in fact have chosen to live in poorly served peripheral locations precisely because they are the places where their overall welfare (in terms of availability of shelter, access to activities, and so on) is best served. High transport cost is then a *symptom* of their poverty rather than its fundamental cause. Hence transport policies that improve the general economic viability of the city are very important to poor people. For example, the lot of poor people in Cairo, Egypt, has been improved more through relocation of their residences in order to improve their access to transport links, which are not primarily designed for poverty alleviation, than through poverty-targeted transport investments.<sup>19</sup>

This finding has a parallel at the macroeconomic level. World Bank research indicates that income of the poorest quintile of the population varies in direct proportion to national income (Dollar and Kraay 2001). Moreover, there is no evidence of a lag between increases of overall incomes and the incomes of poor people to suggest that benefits accrue to poor people only in a prolonged process of “trickle down.”<sup>20</sup> That being so, urban transport interventions that are particularly effective in generating growth may also be particularly effective in raising the incomes of poor people. Moreover, aggregate-level analysis of poverty and growth indicates that much previous public social sector expenditure has been poorly targeted, having little demonstrable effect on either growth or distribution, while, in contrast, policies to improve market functioning has yielded proportionate benefits to poor people. Policies that most benefit the poor appear to be those associated with reducing government expenditures and stabilizing inflation.

While these general analyses do not refer specifically to urban transport, they highlight some critical questions about poverty-oriented urban transport interventions. Many governments view urban public transport policy as an instrument of their social policy. It is thus important both to establish how effectively urban transport infrastructure, service planning, and investment targets the needs of poor people, and to establish the indirect effect of urban transport pricing and financing policies on the poor through those policies’ impact on government expenditures and macroeconomic stabilization.

## **FOCUSING INFRASTRUCTURE POLICIES**

The selection and design of infrastructure investments, whether in facilities for motorized or non-motorized road traffic or for rail traffic, must consider their impacts on the poor.

### **ROAD INVESTMENTS**

Most urban transport is road based. The availability of an adequate road infrastructure is there-

fore a prerequisite for efficient urban movement. Some of the most intransigent urban transport problems arise where the space devoted to movement is both inadequate and poorly structured; an example of this is Bangkok. Rapidly expanding towns need adequate road capacity, which may involve investment in limited-access primary roads as a structuring element. Some of the developing-country cities that appear to have the best public transport facilities are also notable for well-designed and managed road infrastructure; an example of this is Curitiba.

But, there is a fine balance to be struck. Unless road space is already very abundant, there is a danger that more roads will simply encourage people to make extra trips to an extent that nullifies the intended reduction of congestion, increases auto dependence, and contributes to urban sprawl. In the absence of a strategic vision of the desired transport system, which addresses the management of available space as well as the planning of additions to it, and particularly in the absence of efficient congestion pricing, piecemeal adjustment to emerging bottlenecks will almost certainly benefit the wealthy at the expense of the poor (see chapter 6).

This finding has some consequences for the economic appraisal of urban road projects. As we argued in chapter 2, allowance should be made for the effects of generated traffic in limiting the extent to which congestion can be reduced and time and operating cost savings achieved. This has long been accepted in the context of more sophisticated, model-based appraisals in industrialized countries, but it tends to be forgotten in simpler, more abbreviated appraisals. The problems associated with differences in the ways the rich and poor value time can also be handled by assigning a common value to all nonworking time for evaluation purposes.

Some more difficult issues remain unresolved. Because conventional transport planning is driven by the willingness to pay (either demonstrated, in the case of commercial services, or synthesized

from behavioral studies, in the case of public infrastructure), relatively low value tends to be assigned to investments that cater to more dispersed and off-peak transport needs. These needs often include those of the very poor, and of women. Moreover, much of the travel of poor people is on foot and typically receives low priority in conventional transport planning, which is often oriented to vehicle movement rather than to person movement. If conventional evaluation cannot recognize such categories of movement, it should not be relied upon. Even participatory planning methods may fail to accommodate this if they underrepresent both women and the very poor.

To some extent investments in road infrastructure can be focused to specifically benefit poor people. Several such types of investment have been commonly favored in Bank projects (see table 3.1).

- a. Road investment and rehabilitation expenditures can be concentrated on major public transportation routes so that public transport can benefit, as is the case in the current Kyrgyz Urban Transport Project.
- b. Investments can be made in the provision or segregation of routes for nonmotorized transport (NMT), including walking, to make NMT quicker and safer; this has been the case in recent projects in Lima, Accra (Ghana), and others.

- c. Road and sidewalk design can be more sensitive to the needs of disabled persons.
- d. Road expenditures more generally may be directed specifically to improve access to poor areas, or informally settled areas (for example, the “pueblos juvenes” of Lima).
- e. Particularly in informally settled areas (such as in the Hanna Nassif project in Dar es Salaam),<sup>21</sup> the use of employment-intensive methods may be an important source of income for the very poor and may also create a local sense of ownership conducive to good maintenance.

### NONMOTORIZED TRANSPORT

The most obvious policy mismatch is that between the significance of NMT (walking and cycling) to poor people and the attention given to these modes, both in infrastructure design and in management. In the poorer countries more than one-half of all trips are undertaken on foot, yet are typically treated as a peripheral issue rather than as a core element. Cycling offers a relatively inexpensive means of improving the accessibility of poor people, but is often vulnerable both to accidents and crime; planning and providing for cycling is often poor. Because this is such an important issue, we devote a separate chapter (chapter 9) to NMT.

<b>Specific intervention</b>	<b>Nature of impact</b>	<b>Cost and fiscal impacts</b>	<b>Implementation ease</b>	<b>Bank examples</b>
Maintaining public transport routes	Faster and less-expensive public transport	Moderate	Easy	Kyrgyz
Paving poor areas	Access for public transport	Moderate	Easy	Lima
Bicycle and pedestrian tracks	Safer trips; encouraging NMT	Moderate	Moderate	Lima, Accra
Separation of NMT on existing roads	Safety; speed for all modes	Low	Difficult	Dhaka; Guangzhou, China

Source: Authors.

## RAIL INVESTMENTS

The poverty impact of investment in mass rapid transit (MRT) has been very controversial. It may improve quality of the transport that poor people receive and give them a wider choice of household location, employment, and lifestyle. It can increase their incomes indirectly through its effect on the efficiency of the urban system. But it may concurrently increase the fares that they must pay. Prescriptions to subsidize MRT to offset the effect of higher fares may actually militate against the interests of poor people unless it is clear that the subsidies are well targeted to them, do not precipitate declines in service quality (which are more harmful than higher fares would be), do not leak away through inefficient operation, and do not impose a burden on city finances by preempting other socially desirable expenditures.

The most basic consideration is what modes of public transport poor people actually use. In some cities in East Asia, buses are the transport of poor people and rail transport the mode of the relatively affluent. The same is not true in many Latin American cities, where the average income of rail users is much below the average income, and very similar to that of bus users (table 3.2). The pattern disclosed is one of great variety, defying simple norms and emphasizing the importance of relating policies sensibly to objectives on a case-by-case basis.

Metros may incidentally serve low-income areas, as in Cairo, but have rarely been designed specifically for that purpose. Even where they are designed to serve low-income areas, the operations of the land market mechanism may result in the benefits passing on to others. Insofar as a metro reduces travel time to central areas of the city, it will tend to increase city-center land values and hence land rents at the newly advantaged locations. Poor people only capture those benefits if they own the land themselves, and hence acquire the windfall capital gain, or are protected against charges for the increased value of the land in property rents. That can be done if public housing programs and mass transit developments are undertaken jointly by a development authority with a specific responsibility for the welfare of poor people, as has been done systematically in Singapore and more sporadically in a number of other cities, such as Fortaleza, Brazil.

The link between efficiency and equity is sometimes very subtle. For example, restructuring of bus services to feed into higher-capacity trunk links (either rail or bus) is commonly advocated as a central part of integrated urban transport developments, as in Singapore and Curitiba. However, this restructuring will tend to increase the number of multileg trips involving separate payment, which, given the typical flat or very shallowly tapered fare structure, can increase total

**TABLE 3.2 INCOME OF USERS OF RAIL SYSTEMS IN BRAZIL**

Rail system	City/region average income (MMS)	Users' average income (MMS)	Percentage of users below city average income
Recife suburban rail (1997)	4.1	2.7	55.7
São Paulo Metro (1997)	13.6	13.8	57.4
São Paulo train (1997)	13.6	8.8	80.4
Rio de Janeiro suburban rail (1996)	10.0	3.2	85.5
Belo Horizonte (1995)	8.1	4.6	55.6

Note: MMS = monthly minimum salary.

Source: World Bank, project files.

fare costs, particularly for those (often poor people) living in locations most remote from the MRT line.

That impact may be reduced by the introduction of multimodal through-ticketing systems, which have been shown to yield high benefits to users in a number of countries (table 3.3). These multimodal systems may be difficult to establish where there are a number of independently operated modes. Certainly it will tend to be easier to achieve when the bus industry is relatively highly concentrated (as in many Brazilian cities). Even where it is achieved, however, adverse distribution effects on the very poor may occur if the effect of incorporating a high cost–high fare metro in a revenue pool is to raise fares, even for those who do not benefit from the new investment. The lesson is that wherever integration is introduced, it is necessary to analyze and design fare structures and cross-modal revenue support very carefully.<sup>22</sup>

Poor people may lose their jobs because of a reform; both severance compensation and retraining finance is necessary to counteract this consequence. The poor may also suffer involuntary displacement in the process of urban rail (or road) infrastructure development, especially where they occupy land illegally, or where they do not hold title (that is, squatters). The expansion

of capacity of the suburban rail system in Mumbai is estimated to involve the resettlement of 60,000 persons. In that case full consultation with local slumdweller’s associations at the project preparation stage, as well as adequate financing for their resettlement, has been essential for avoiding harm to some of the very poor people.

## PUBLIC TRANSPORT SERVICE PLANNING FOR THE URBAN POOR

Even in some of the most highly motorized cities in Latin America, the average income of those who use cars is more than double the income of those who do not use cars (table 3.4). For the very poor, transport service is synonymous either with NMT (mostly walking) or public transport, often very inexpensively provided by the informal sector. Hence a poverty-oriented urban transport strategy needs to concentrate on the movement of people rather than of vehicles.

That does not mean that municipal authorities should be disinterested in the phenomenon of road congestion, which affects the movement of freight as well as people and which reduces the efficiency of the city. Congestion also tends to disadvantage those in crowded public transport vehicles even more than those in private cars. But

<b>Specific intervention</b>	<b>Nature of impact</b>	<b>Cost/fiscal impacts</b>	<b>Implementation ease</b>	<b>Bank examples</b>
Concessioneering	Improved service to users: fare effects uncertain	Cost saving	Moderate	Rio de Janeiro, Buenos Aires
Severance payments	Protects (poorer) workers	Small	Moderate	Buenos Aires
Resettlement arrangements	Protects disturbed residents from consequences of development	Small/medium	Difficult	Mumbai
Converting suburban railways	Improves speed and frequency	Moderate	Moderate	Fortaleza, Brazil

Source: Authors.



**TABLE 3.4 AVERAGE INCOME OF USERS BY TRANSPORT MODE**

City	Average income car users	Average income noncar users	Average income car users/ noncar users	Percentage of all motorized trips done by car
Bogotá <sup>a</sup>	462.4	196.8	2.3	19.2%
Buenos Aires <sup>b</sup>	607.2	299.1	2.0	40.0%
Lima <sup>c</sup>	1,157.0	312.0	3.7	20.0%

a. Monthly income in dollars of 1995 for 1995 (Exchange rate is \$1 = 1,000 pesos). Figure assumes 160 hours worked per month. Source: JICA-Chodai 1996.

b. Monthly income in dollars of 1994. Figure is for 1997. Source: Centro de Estudios del Transporte del Area Metropolitana 1999.

c. Monthly income in dollars of 1999 for 1999 (Peruvian currency seems overvalued). Source: APOYO 1999. Source: Authors.

it should be recognized that, even in relatively poor cities, scarce but freely provided urban road space is increasingly appropriated by private cars carrying a small proportion of total “person-movements” made by the wealthy. This inequity implies that priority should be given in the use of scarce road space to facilitating the movement of NMT and the more space-efficient public transport modes, rather than to private cars.

### THE GENERAL SAFETY NET APPROACH

From the conventional public transport supply side, the challenge of meeting the transport needs of poor people can be approached in two quite different ways. In most socialist economies, public transport was traditionally viewed as a basic social service. Even in some mixed economies, such as France and francophone Africa, concentration on the concept of exclusion of identifiable spatial groups has led to an emphasis on mobility as a “merit good,” a minimum supply of which is viewed as a social imperative. This approach leads to a “network completeness and integrity” approach to transport supply, with extensive fare reductions or exemptions for disadvantaged groups. It depends on broad political acceptance of high levels of subsidy of public transport operations, as well as on state contributions, particularly to finance capital. The employment of a single private operator, either under a management contract or under some form of system concession, tends to gener-

ate a continued willingness to supply unprofitable locations, both on the part of the operators, who do not wish to abandon any part of their monopoly domain, and on the part of the public authorities, who wish to sustain urban integration. But this is probably not the least expensive or most efficient way of providing a basic network of services, as we will show in chapter 7.

Maintaining the basic social network is not always easy. Even in France, as car ownership increased and public transport patronage declined, there have been pressures to reduce the fiscal burden through tariff increases. In most francophone developing countries, the attempt to maintain the social obligations in the absence of a fiscal basis for support resulted, initially, in the retreat of the traditional supply agencies to be suppliers only of those with fare concessions (who may not be the very poor, but who may fall into categories such as middle-class scholars) and ultimately in the bankruptcy and disappearance of the traditional supply.<sup>23</sup>

The safety net approach thus needs a secure financial basis that is often lacking, given general budget weaknesses of many developing-country cities. There are, however, two possibilities, discussed in more detail later, that may avoid the need for any charge on the general budget. The first possibility is that, within a system of competitively tendered

franchises, the profits from the more profitable routes may be used to support unprofitable services (chapter 7). The second possibility is that road pricing may be used as a revenue source for a multimodal urban transport fund (chapter 10).

### **THE TARGETED SUBSIDY APPROACH**

The alternative approach is to treat transport supply more as a commercial business and to target subsidies explicitly at disadvantaged groups on a personal basis. In the United Kingdom, where supply of bus services is entirely by the private sector in competitive markets, scholars and pensioners often benefit from fare reductions or exemptions directly funded by the relevant line agencies; this funding hence appears as commercial revenues to the operators. Transfer of responsibility for “social” subsidies from the accounts of the transport operators to those of the relevant line agencies is also being widely advocated as a means of addressing the decline of public transport service in many countries of the former Soviet Union.

The obvious advantage of this approach is that the fiscal burden on the community is lower. It also has the merit of giving clear signals and incentives to the operators to adjust their services and fares in such a way as to maintain their equipment in operation. The disadvantage is that there is no clear institutional channel through which the more strategic and structural considerations concerning the role of public transport in urban development strategy, and the response to the various externalities that impinge on urban public transport, can be addressed.

### **COMPETITION, PRIVATIZATION, AND POOR PEOPLE**

Introduction of competitive tendering of franchises in major cities in Western Europe reduced costs per vehicle kilometer by up to 40 percent in real terms, and allowed higher service frequencies to be maintained within constrained budgets than under traditional monopoly supply mechanisms. These advantages, which were first exploited in Organisation for Economic Co-operation and

Development (OECD) countries, are now being seen to be effective in developing economies (urban rail services in Buenos Aires, Argentina) and transitional economies (bus services in secondary cities in Uzbekistan).

There are, nevertheless, some concerns about competitive private sector supply. These include the loss of internal cross-subsidy, the abandonment of socially desirable services, and the increase in fares associated with commercialization. As discussed in more detail in chapter 6, all of these perceived problems can be overcome by good design and administration of the competitive regime. The capability to combine some central service coordination with competitive supply varies from country to country according to administrative capability and integrity, so that there is no single pattern that fits all economies. The lesson is that attention to the potential for competitive process can be a powerful contributor to improvement of the services on which poor people depend. Some examples are provided in table 3.5.

### **FARE POLICIES, SUBSIDIES, AND BUDGET CONSTRAINTS**

Controlling public transport fares, ostensibly to help the poor, may adversely affect service quality unless supported by subsidy. This raises questions both about the concept of an affordable fare and about the financing and targeting of subsidies.

### **THE CONCEPT OF THE AFFORDABLE FARE**

The price and quality of service provided is obviously important in assessing the impact of urban transport on poor people. The concept of “affordability” of public transport is popular and seductive, and governments frequently control public transport fares because fares above some threshold level would be unacceptably burdensome to poor people. Although it was not originally intended as a pricing policy prescription, the “Armstrong-Wright maxim” (that situations in

**TABLE 3.5 A POVERTY-FOCUSED AGENDA: PUBLIC TRANSPORT SERVICE PLANNING**

Specific intervention	Nature of impact	Possible cost/fiscal impact	Implementation ease	Bank examples
Introduce competition in public transport	Cost-reduction service growth	Cost saving	Moderate	Uzbekistan and Kazakhstan
Public transport interchange	Faster, safer trips	Medium	Moderate	Pusan, Republic of Korea; Manila
Bus priorities	Faster, less expensive trips	Low	Politically difficult	Bangkok
Develop informal sector	Lower-cost service	None	Moderate	Uzbekistan, secondary cities

Source: Authors.

which more than 10 percent of households spend more than 15 percent of household incomes on work journeys can be regarded as discriminatory) has often been interpreted as a reasonable rule for determining the level of a politically administered price.<sup>24</sup>

Caution should be advised over this maxim. First, the impact of any particular level of transport costs on the aggregate welfare level of the household does not depend only on household income and the price of transport. If shelter and heating are provided very inexpensively through tax-financed public subsidies, then the proportion of disposable income for transport might be correspondingly higher. More important, though, price is not the only thing that matters. There is evidence from social surveys of public transport users in Uzbekistan, the Kyrgyz Republic, and various Brazilian cities that even relatively poor people may be willing to pay more for the better service offered by the informal sector, with their small vehicles, compared with the inexpensive but slow and unreliable service offered by the public sector, with their traditional buses. Similarly, where metro fares are higher than those of buses, poor people may choose to use the metro because of the better quality of service that it provides; this is the case, for instance, in Cairo.<sup>25</sup>

The most serious problem, however, is that many governments control general fare levels without

making any accompanying fiscal provision for subsidies. The rationale for this, often explicitly stated, is that it will force operators to cross-subsidize unprofitable services from profitable services, leading to cross-subsidy of poor people by the rich. In practice, in many countries there is no such basis for cross-subsidy (the rich do not use public transport and there are no profitable services from which to squeeze cross-subsidy finance). In these circumstances the main effect is to reduce the quality, and eventually the quantity, of public transport service.

Sometimes the adverse effect of the failure of the traditional formal sector is attenuated by the development of informal sector services, usually provided with smaller and less expensive vehicles, frequently at fares above the controlled formal sector fares. Insofar as this informal sector service involves the provision of a quality of service that could be improved by the traditional larger vehicle if allowed to operate at the fare adopted by the informal sector, it represents a distortion with unintentionally adverse effects on poor people. The lesson is that tinkering with the symptoms of poverty may actually make things worse for the poor. The policy prescription arising from this is that the likely supply outcomes of different levels of fare intervention and subsidy should always be estimated. Fares should be set at levels consistent with the outcome preferred by poor people as shown by surveys, and

not on the basis of some “normative” concept of what an affordable fare might be.

### **FINANCING TARGETED SUBSIDIES**

Many countries have extensive lists of categories of passengers qualifying for free or reduced-fare travel. Rarely is there any specific mechanism for remunerating suppliers for these fare exemptions or reductions. This has two effects. First, it means that some passengers are paying more, or receiving poorer service, than would otherwise be the case in attempts to secure cross-subsidy. Because the rich often do not use public transport, this means, at best, subsidy of the poor by the poor. Second, it creates a vested interest of benefiting nontransport agencies (health, education, police, and so on) in maintaining a subsidy for their particular user group, that they might not favor if it had to be financed from their own budgets. The lesson is that, in the interests of poor people, any public transport fare reductions or exemptions should be carefully considered in the light of other uses that might be made of the resources involved. That consideration is probably best ensured by putting the responsibility for finance of fare exemptions or reductions directly on the benefiting line agencies, with the obligations on the transport operators contingent on the receipt of the appropriate compensation.

Even where a fiscal basis for corrective action to reduce poverty exists, the question arises as to whether intervention in the transport sector is the most appropriate use of such funds. The answer to that question turns partly on the relative efficiency with which funding can be targeted in different sectors, and partly on the political feasibility of taking poverty-reducing actions in various sectors. The relationship between the average income of the users of specific modes and the overall average incomes is usually known, or can be established, and the distribution of general fare subsidies can thus be assessed. There are two main impediments to the use of general subsidy, however. First, there may be wide variations of income among users of a specific mode, so that targeting is very imprecise.

Second, there is substantial evidence that a large proportion of subsidy to public transport through deficit financing of public sector monopoly operators “leaks” away, either through inefficiency of operations or through the capture of the subsidy by organized labor in the supply industry. While there remain some problems in achieving adequate targeting, it is clear that public transport users include the poorest, and usually exclude the richest, groups, so that in the absence of any means of transfer through taxation structures, it may be a reasonably good discriminator in many developing countries. As further discussed in chapter 6, competition is the best protection against leakage of the benefit to suppliers or their employees.

### **CONCLUSIONS: A STRATEGY FOR POVERTY-FOCUSED URBAN TRANSPORT**

Inadequate and congested urban transport is damaging to the city economy and harms both rich and poor. But the simplistic solution of increasing road capacity in an attempt to speed up the movement of vehicles, accompanied by public provision of fare-controlled public transport, is likely to be inequitable (because it leads to a progressive decline of public transport services) and ineffective (because it will tend to generate more congesting car traffic). Rather, there is need for a more poverty-focused policy (see table 3.6) reflecting the following general conclusions concerning the impacts of urban transport policies:

- Costs should be properly charged for all vehicle movements, both to secure efficient use of infrastructure, and to generate a secure financial basis for urban transport provision.
- The importance of walking and other NMT activities, and the special needs of the mobility-impaired should be recognized both in infrastructure design and in traffic management.

**TABLE 3.6 POVERTY-FOCUSED URBAN TRANSPORT INTERVENTIONS: FINANCE STRATEGIES**

Specific intervention	Nature of impact	Cost/fiscal impact	Implementation ease	Bank examples
Subsidy finance reform	Line agencies to finance exemptions; better focus of support	Uncertain	Moderate	Russian Federation
Public transport fare integration	Enables use of faster modes	Low	Moderate	São Paulo and Fortaleza, Brazil
Congestion pricing	Direct impact small. Provides basis for public transport improvement	Generates revenue	Difficult	Kuala Lumpur, Bangkok

Source: Authors.

- Ill-judged policies on general public transport fare controls in the absence of secure subsidy mechanisms can actually harm poor people.
- Constraints on the informal transport sector often harm poor people. The message here is that policies for the informal transport sector need to be framed with their impacts on poor people carefully taken into account.
- Absence of competition in public transport is likely to both increase costs and reduce supply to poor people. A preference for stable, disciplined supply should not be interpreted as a case for uncontested monopoly.
- Efforts to secure multimodal integration need to be carefully managed to ensure that these efforts do not increase the number of times poor people must pay per trip, and that fares on the services on which they are particularly dependent do not increase.
- Attention needs to be given to financing of support mechanisms, avoiding deficit financing of monopolist suppliers, and, wherever possible, targeting very specific groups.
- Because of the effect of transport infrastructure investment and transport pricing policies on land values, it is important that ostensibly poverty-oriented urban transport interventions be integrated in a broader strategy incorporating housing, health, education, and other social service policies.

Based on these principles, there is a rich agenda of urban transport policies that are both pro-growth and pro-poor, yet that are consistent with the fiscal capabilities of even the relatively poorest countries.

## NOTES

1. World Bank 2000c.
2. In this volume, poor countries are defined as those falling below the threshold that qualifies for International Development Association borrowing terms, currently an average annual gross national product per capita of \$885. Much of the distributional analysis referring to the conditions of poor people uses data on the bottom quintile of income per capita within a country (and hence are not strictly comparable across countries). Little transport-related data are linked to the commonly quoted absolute poverty standard of \$1 per day per capita.
3. Schwela and Zali 1999.
4. An early study in Salvador, Brazil, showed that the lowest income groups on average made one trip per person per day, compared with three trips per day for the highest income groups, with a constant distance per trip of 6 kilometers across all income groups. See Thompson 1993.
5. The recently observed exceptions to this in some of the major cities of Latin America may reflect the increasing insecurity of travel, which is now affecting the nonpoor as well as the poor.

6. A curious exception to this, which is worth further investigation, is the city of Ouagadougou, where public transport is almost nonexistent and 57 percent of households falling in the bottom income quintile possessed a motorized two-wheeler.
7. Godard and Diaz Olvera 2000.
8. Godard and Diaz Olvera 2000.
9. Madras Metropolitan Development Authority 1990.
10. De St. Laurent 1998.
11. Cusset 1998.
12. European Conference of Ministers of Transport 1999b.
13. Merilainen and Helaakoski 2001.
14. Wright 2001.
15. Diaz Olvera, Plat, and Pochet 1998.
16. Gomez 2000.
17. In a study of squatter resettlement in Delhi in the late 1970s, it was found that male employment among the colony decreased by 5 percent, but female employment decreased by 27 percent after resettlement (Moser and Peake 1987).
18. Narayan 2000a.
19. CATRAM 2000.
20. Dollar and Kraay 2001.
21. Howe and Bryceson 2000.
22. Recent MRT development packages in some Brazilian cities have been subject to detailed analysis of the effects of changes in bus service structures and integrated ticketing arrangement on the money, and generalized costs of transit for zones with populations at different income levels.
23. Teurnier and Mandon-Adolehoume 1994.
24. Armstrong-Wright 1986.
25. See White 1999.