CAN BRAZIL GET ITS CITIES MOVING?



Traffic jams are strangling Brazil's large cities and causing billions of dollars in losses, requiring substantive changes in urban planning.

Solange Monteiro, *Rio de Janeiro*

TRAFFIC CHOKES UP OVER 200 KILOMETERS (124 miles) of major thoroughfares in rush hours in São Paulo city. It is a nightmare that every resident of a major Brazilian city must deal with to get to work: wasted time, exposure to pollution, and deterioration in the quality of life. The lack of urban planning and investment in public transport, combined with a policy of encouraging use of the automobile, is not unique, but São Paulo city leads other major Brazilian cities in immobility, wasting residents' potential as well as their time.

Traffic jams also cause financial and productivity losses, which aggravates social inequality in large cities. A study by Marcos Cintra, vice president, Getulio Vargas Foundation (FGV), found that the opportunity cost of time lost by people in traffic jams and the financial cost of additional spending on fuel, goods transport, and pollution controls reached US$20 billion in São Paulo city in 2012.

In Rio de Janeiro city, traffic congestion now obstructs over 130 km (81 miles) and in 2012 represented a loss of US$14 billion, according to a survey by the Federation of Industries of the State of

Rio de Janeiro (Firjan). Another study, this one by the Institute of Economics of the Federal University of Rio de Janeiro (UFRJ), calculated that the time residents waste in traffic already represents a loss of 5% of the region's GDP. "If we valorize this time conservatively at 50% of average hourly earnings, the losses total US$3 billion," says Carlos Eduardo Frickmann Young, the economist who coordinated the UFRJ survey. This is the same amount the municipality has estimated would cover the construction of 150 km of BRT (bus rapid transit) and 30 km of LRT (light rail transit) projects for the Municipal Olympic Company to improve transport in Rio by 2016.

The UFRJ study also demonstrated that the wasted time is more harmful to those whose incomes are lower. "We recorded greater losses where the human development index (HDI)[1] is lower, and among people who most need time to study and acquire skills," Young says. "If someone looks for work downtown in search of better pay, the person loses time to study; if someone accepts employment where she lives, she is not able to increase her income," he explains.

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Street demonstrations last June, triggered by the rising price of bus fares and the low quality of public transport, illustrated the population's dissatisfaction and have prompted governments to invest more on transportation. For specialists, however, consistent change for the better in urban mobility will depend on the resumption of long-term urban planning and society's willingness to deny the culture of automobile hegemony, taxing the use of cars to subsidize public transport.

Photo: Cidadeolimpica.com



Rio de Janeiro: Alvorada Terminal Bus Station receives passengers from both TransOeste and TransCarioca BRTs.

THE SHAPE OF CITIES

Urban planners are unanimous in pointing out that the problem is not simply slow buses or the absence of metro rail but the disorderly expansion of cities. The density of São Paulo city, for example, at 100 inhabitants per square km (260 inhabitants per square mile) is half that of cities like New York or Tokyo,

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whose planning allowed for more people without the same drawbacks. In São Paulo, about two million people move every day from the east zone to work in the center, where there is a concentration of 153 jobs per city resident. "Without bringing economic development to the east zone and encouraging more people to live downtown, investing in transportation will be futile," says architect and urban planner Carlos Leite.

To improve this situation, recently São Paulo Mayor Fernando Haddad sent to the City Council a proposed revision of the city master plan that includes exemption from property tax in the east zone to attract service companies, especially call centers, information technology, hotels, and education.

In Rio de Janeiro, in addition to four BRT lines and the LRT and expansion of metro rail, consolidation of the city master plan to cover the entire metropolitan region is also being studied, with financial support from the World Bank. Consisting of 19 municipalities that account for 70% of the state population, the metropolitan area is highly dependent on Rio city, which has 75% of the jobs. However, a number of major projects should stimulate economic activity in the east zone, notably the Petrochemical Complex of Rio de Janeiro (Comperj), now under construction in Itaboraí, and in the municipality of Itaguai a major base to support deep sea oil operations offshore. The increase in oil production activity could promote decentralization of labor opportunities, with creation of about 800,000 jobs outside Rio city in 15 years, according to state government estimates.

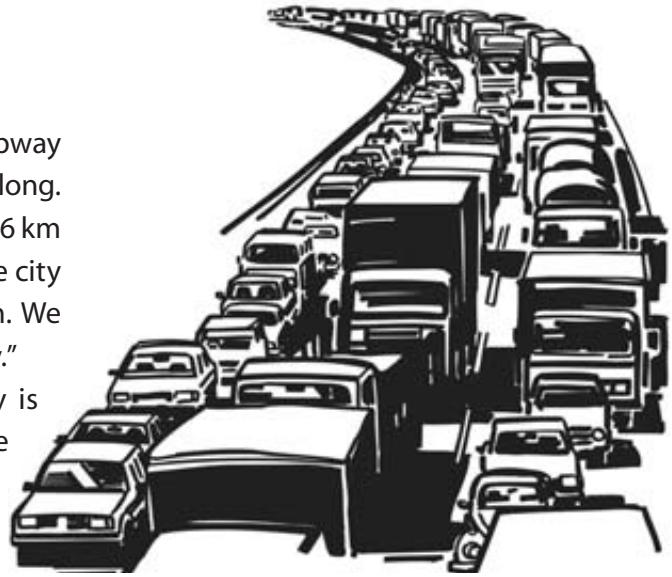
IT'S NOT ABOUT HIGHER BUS FARES

Together with the lack of urban planning, the option for individual transport worsens mobility in large cities. "This feature is part of the evolution of Brazilian society," explains Samuel Pessôa, head of the Center for Economic Development of the Brazilian



Photo: Tânia Rêgo/ABrFoto: Tânia Rêgo/ABr.

The poor quality of public transport in major cities such as Rio de Janeiro drew protests recently.



Institute of Economics (IBRE). "The subway in São Paulo is 45 years old and is 74 km long. This means it has expanded at about 1.6 km a year . . . at that rate, it would take the city 200 years to expand metro to 400 km. We no longer have the time or the money."

Today, Pessôa points out, society is tired of endless traffic jams, and the political balance has changed since the street demonstrations last June, which were triggered by a rise in bus fares despite the bad quality of public transport. As a result, the government has pledged an additional US$23 billion in investments in urban mobility. "It is clear that the decision is not a technical issue—society's demands have changed the situation," agrees Otávio Cunha, CEO of the National Association of Urban Transport (NTU). "Clearly you do not solve an issue of this magnitude overnight. We transport 40 million passengers daily in cities that have grown in a disorderly way," he says. "But we are already seeing positive responses.

Ironically, the reality shock is pushing municipal governments to revert to a system that was actually created in Brazil 40 years ago: the BRT. The system of dedicated lanes for large buses launched in 1970 in Curitiba city has now spread worldwide, but until now it had not been welcomed in most of Brazil. The system has high capacity—40,000 passengers an hour in each direction—thanks to buses operating for a significant part of their journey within a fully dedicated right of way, which avoids tying up other traffic. "Currently, 54 BRT projects are being carried out in 19 cities in Brazil," Cunha says.

Of the 2,908km (1,807 miles) of urban roads funded since 2007 by the federal government, 567km (352 miles) are BRTs. "In São Paulo city, which has many narrow streets, putting in place the BRT requires costly land expropriation, which delays the work and becomes an additional difficulty as the city already has considerable debt," says Ciro Biderman, chief of staff, SPTrans. The goal of São Paulo is to have in place by 2016 the same extent of BRTs as Rio, 150km. In Rio, expectations for BRTs are

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also high. "Between 2003 and 2011, the fleet of city vehicles grew 34%, and traffic increased by more than 51%," says engineer Fernando Mac Dowell, former director of Metro Rio.

LOW FARES AND EFFICIENCY

Faster BRTs and dedicated bus lanes can reduce operating costs by 20%, according to NTU's Cunha. "This reduction occurs when commercial vehicle speeds increase by 50%. In São Paulo, buses that used to operate at 14km an hour have already increased to 20km on some lines, and BRTs can now reach up to 35km," he says. Improving the system by reducing operating costs and achieving affordability, however, will depend, according to experts, on whether society is willing to change the cultural precedence of individual transport, which has rendered public transport more expensive in the last decade.

The cost disparity between individual and collective transport is a result not only of the tax subsidy and ample credit for purchasing cars. A survey by the Institute of Applied Economic Research (IPEA) found that between January 2000 and December 2012 the price of gasoline rose 122%, slightly below the National Index of Consumer Prices of period (125%), but bus fares increased 192%. "The bus suffered greatly from higher operating costs and fewer passengers," says economist Carlos Henrique Ribeiro de Carvalho, co-author of the IPEA study.

Operating costs of buses rose mainly because diesel prices shot up. "15 years ago diesel represented 8% of the fare; today it is about 25%," Carvalho says. To make matters worse, demand for bus transportation in the same period dropped by about 25% because services deteriorated due to a lack of investment —which further stimulated the switch to



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São Paulo city has adopted a rotation system where private vehicles can circulate only on certain days of the week to alleviate traffic jams.

individual transport. "This increase in cars, in turn, affected traffic, so that it took more buses to ensure the same frequency of services, creating even more pressure on costs," says Carvalho.

WHO PAYS THE BILL?

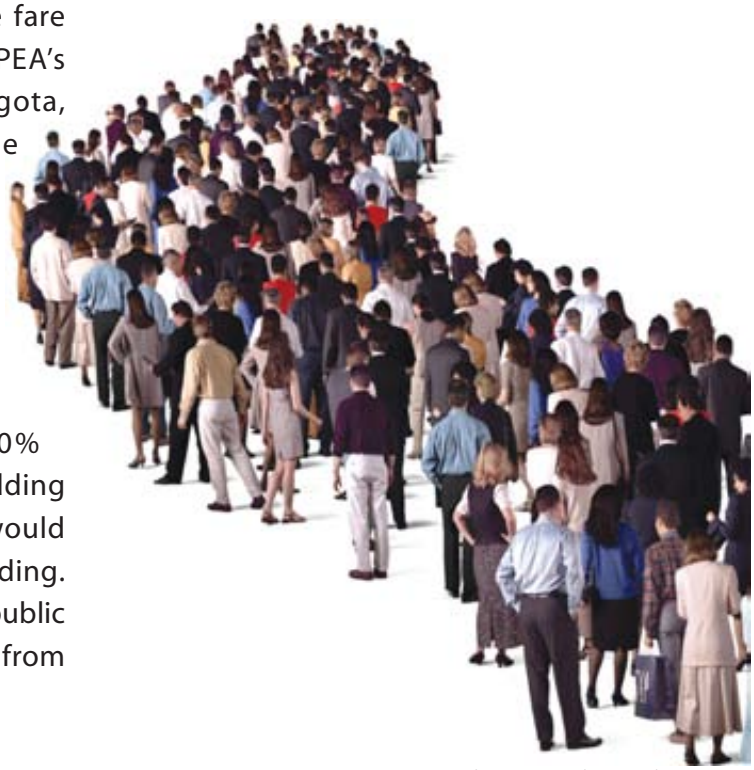
In this context, the person most affected is the user of public transport. The transport share of household income averages 3.4%, but it reaches 13.6% for the poorest households in the nine largest metropolitan areas, according to a 2009 survey. There have been some efforts to reduce operating costs: a cut in payroll taxes since January represents a cost reduction of about 4%, and a cut in social contributions last June reduced costs by 3.65%. Experts argue, however, that the low tariffs should also be based on a model of subsidy to public transport that covers all of society, including car users. Subsidizing public transport is common in European countries, where about 50% of the fare is paid for by exclusive funding. IPEA's Carvalho cites the example of Bogota, which taxes gasoline to finance the Trans Milenio BRT, and notes that "In Asian countries like Singapore, you pay a high fee for licensing cars, the revenue from which goes to finance public transport."

NTU's Cunha estimates that subsidizing urban bus rides by 50% would cost about US$23 billion, adding "It's a significant amount, which would require a permanent source of funding. Today only São Paulo city subsidizes public transport, with about 20% coming from the municipal budget." IPEA's Carvalho notes that this harms the poorest twice: first because taxation is indirect and ends up hitting the low-income population harder, and second, taking money from the budget compromises other social spending, such as on education and health, adding "That is why it is important to discuss new sources of funding for urban transport."

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One alternative revenue source is property taxes on the use of urban space,



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as for parking, and even urban tolls, which although controversial are charged in some countries. "We also cannot rule out the productive sector, which already pays for some public transportation vouchers for low-income employees," Cunha says. Advocates of subsidies for public transport want to restore the Contribution for Intervention in the Economic Domain (CIDE) in gasoline. The history of this tax sheds light on the policy that has benefited individual transport for the last decade: When it was created in 2001, the CIDE tax on gasoline was R$0.50 and in 2002 it went up to R$0.86. Starting in 2004 it declined until it was eliminated in June 2012 to avoid passing on higher prices to consumers.

The return of a CIDE tax would be a win-win strategy: there would be no budgetary impact, and it would not be inflationary. "It would raise the price of gasoline, but lower the cost of diesel, which has a positive impact on bus fares and consequently on inflation," Carvalho says. He thinks a rate of R$0.22 would be sufficient to eliminate the fuel cost impact on bus fares. "By subsidizing diesel for public transport, which is equivalent to less than 2% of total consumption in the country, we could reduce bus fares by 20% in Brazil," he says.

An FGV Projects study, coordinated by economist Samuel Pessôa, corroborates the effects IPEA has identified. Pessôa says that a tax of R$0.10 per liter of gasoline would make it possible to reduce bus fares by 14% and the consumer price index by 0.22%. A study last year by the National Agency of Public Transport (ANTP) pointed out that in 2011 there were 12.5 billion bus rides in cities with over 60,000 inhabitants and sales of 35.5 billion gallons of gasoline. Using these numbers, Pessôa estimates that charging R$0.10 per liter would allow for a subsidy of about R$0.28 per ride.

An area that should be dealt with before subsidizing public transport, Cunha believes, is how urban transport is organized: "The system needs to be rationalized so that when you create the subsidy it does not underwrite existing inefficiencies. . . . We have a unique opportunity to change urban mobility in Brazil, and we should not waste it."

1 The HDI is a composite statistic of life expectancy, education, and income indices used to rank countries into four tiers of human development.