

# URBAN TRANSPORT IN SOUTH AMERICA: TRENDS IN COMPETITION AND COMPETITION POLICY

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## INTRODUCTION

Competition and competition policy have been a major issue in Economics. Within the theoretical framework of Economics of Regulation, the Government assumes contradictory positions, as its role is both to foster domestic industrial potentials and to guarantee a real competitive environment. The first directive may lead that the Government prefers to protect the domestic industry from competition, especially from abroad, whereas the second directive should lead to the elimination of economic barriers to business.

This contradiction is firmly present in the public transport industry, which is used to be firmly regulated in the context of monopolized networks designed by the authorities. Of course, it must not be overseen that the regulated service networks are submitted to competition by substitute services. In casu of public transport, the private car but also up to a certain extent the non-motorized transport modes (bike, pedestrian) challenge the monopoly in the public transport industry. Within the industry itself competition may rise between different transportation technologies (rail, road, water) and between the operators in a specific service mode (bus), when the network policy still permits some choice for the traveller, or if the service is basically deregulated.

The proper regulation of urban public transport requires that the fundamental characteristics of its market are considered. One principal and especially contradictory aspect is that its user consumes at the same time a journey, a line service and a line network. As a journey consumer, he is mainly interested in an immediate service between his origin and his destination. This main consumer interest is best delivered by private transport, hence its popularity. But as a captive user of public transport, he will expect a regular and direct service between the origin and destination, especially between his home and workplace (or school or university, in the case of students). At the same time, for his other activity needs (shopping, health care, leisure, etc.) he expects a dense service network.

To supply the huge amount of different users with spatially differentiated and complex needs is a big challenge both to operators and to the authorities, which conflict at their turn in their role: the operator is basically interested in the fare box return, hence he prefers to operated lines with a consolidated market, whereas the authorities are in charge to ensure an overall and permanent accessibility, which impedes that all necessary lines and operation periods

produce positive end results in terms of profit. On the top of all that, the users expect and the authorities are made responsible for ensuring that the fare prices are accessible to all users, especially to the users with a low income.

The duty of the authorities is even more complex, as it is challenged by the infrastructure investment demands of the individual transport, which normally has a strong constituency, as it is the transportation modes preferred by the elites and the middle-class. This pressure and also the fact that the politicians and higher officials in power more than often belong to these social groups may lead to a situation that priority in the transportation policies is not given to public transport policy, disregarding of its huge social and environmental role and of its importance for maintaining congestion under control.

It may be said that the first challenge for the public administration of public transport is simply to put public transport into the main policy agenda. Without this primary step, all the efforts taken by the officials in charge for ensuring good and economic networks, a proper market and quality policy and other important measures will be frustrated. In the consequence, public transport will be regarded as a service mainly for the captive and socially distressed users, and it will enjoy little investment or none at all. Abandoned by the key decision makers, the officials will be pressured by the politically stronger operators, which will seek to capture regulation.

More than frequently, public transport is put into the agenda in cases of heavy congestion, which endangers the freedom of circulation of the automobile (here, public transport policy arises as a traffic problem), or if heavy investments are foreseen in politically visible public works (ribbon-cutting motivation).

In this context, competition policy for the public transport industry arises as a subordinated point. When public transport is not in the agenda, the Government tends to avoid any conflict in an industry which has not any priority and will not make serious effort to assure its competitiveness. When it is in fact in the agenda, the competition approach will depend on the strategy adopted for its regulation: even so it may be openly anti-competitive, if the strategy aims to reinforce industrial potentials, to adopt more sophisticated technology or simply to limit the number of operators to a controllable amount. Often, the officials trend to avoid the transaction costs of tendering procedures and to come into friendly terms with “their” operators (trust-building approach). If the competitive approach is chosen, straightforward deregulation or the organization of competitive tendering procedures are the common procedures.

When the authorities remain indifferent to public transport, the regulation may be captured by the operators in countries where a robust entrepreneurial organization is in place. In other, where the industry is dispersed into a huge amount of small operators, an actual deregulation may occur, even if the formal legal system does not foresee it.

There are several special events which challenge substantially the regulatory policy and its underlying competition strategy: privatization of governmental assets (bus or rail companies) may be introduced to foster competitiveness and efficiency. Elsewhere, when public transport is not on the agenda, privatization may be placed in order to shake off its operation from the duties of the government. This kind of privatization strategy does not foster competitiveness, as a not popular asset is given away at the most favourable conditions (low offer, low investment duties for the operator, market protection, etc.) for the overtaking party. More recently, technological upgrading at least of the most important corridors has led to an open industry concentration strategy (case of Bogotá). Also, when tendering procedures are

enforced by the Courts, the procedures may be organized in a manner where real competition does not take place but formally complies with the Law.

This general framework is the background of this contribution, which analyses the trends of the competition in urban transport in South America. This subcontinent is known to show clearly two models, one of dispersed artisan production, more present in Hispanic America, the other of a robust and concentrated capitalist sector (Brazil). Recently, significant changes have been put in place: Hispanic American countries are introducing modern corridors which require a more concentrated industry, whereas in Brazil, illegal artisan operators are challenging the incumbents and the overprotective regulation. In the next section, the principal trends are presented and illustrated by fact material with respect to the different countries.

### **Competition and competition policy in South American public transport**

Road transport is overwhelming dominant in Latin American cities. Car ownership is rising overall, while the public transport is dominated by bus. Public policies have given high priority to private transportation, producing increasingly congestion and diseconomies. This trend began in the fifties and sixties, when former dense tram networks were closed to give place to bus, and enormous sums were invested in the road system (Figueroa 2005).

Since then, public transport policies have arisen in South America when traffic conditions became worse, deteriorating the overall productivity of the urban economy, or when it gave opportunity for major public works (new metro line), or still when social unrest, in general linked to the fare prices (bus services) or to unacceptably low service quality (rail services), required urgent public action. During the oil crisis, the energy problem led also to some investment, mainly by central government.

Where there has been an active public transport policy, the competition strategies have given priority to concentration and market protection. When public transport is not considered as a priority, the passive position of the Government leads to regulatory capture by major operators and their unions (Brazilian case) or to actual deregulation (Hispanic America). Major changes occur in the sequence of worsening of congestion, where the introduction of new technologies may take place, which imply also in rebuilding the market. Other changes are introduced when privatization of public rail operators are organized.

### **The main trends in Hispano-America**

As advanced before, there are fundamental differences between hispano-american countries and Brazil. In this last country, the introduction of automobile manufactures has led to the rise of a strong bus manufacturing industry. In the sequence, the local governments have preferred to force the concentration of operators, requiring to the operators the acquisition of major bus fleets.

As a contrast, in Hispano-america, this policy has not been in place, even if some countries had, at least temporally, domestic automobile manufacturing industries (Argentina, Mexico, Chile and, albeit in a smaller scale, Venezuela). The public transport market has remained dispersed, and a huge amount of operators have practiced open on-the-street competition.

But it can not be said that the situation is homogeneous, and changes are also under way with respect to the public regulation as to the industry structure. Even if not intensely observed by the specialists of the industrialized countries, there is in intense interchange of experiences

between the countries, giving rise to consultancy contracts for the firms of the countries which may deliver best practices (Brazil, more recently Columbia and Chile). Within this context of change, regulatory issues have been given priority.

Where the artisan production is still dominant, the single operators organize themselves in co-operatives, which manage the lines. In Peru and Columbia, some formal enterprises are also present as intermediary between the (subcontracted) single vehicle owners and the authorities.

As mentioned before, traffic congestion have led to some reactions by the authorities, which have tried to put in place concentration strategies, mostly requiring the acquisition of bigger vehicles and the organization of the operators into enterprises. In several countries this attempt has provoked resistance by the operators and has been blocked, as it could lead to a severe social commotion. Even the introduction of a modern metro system, which has been rather an exception on the grounds of the high costs, has not led automatically to a market change. In Caracas, the metro enterprise has so far not been able to subcontract a major operator for feeder services, and these are still now executed by single operators. A major system rationalization project for the La Paz municipality (Bolivia) has not been put in place. In Columbia, where as Medellin has already a metro system, the capital city Bogotá has not introduced one.

In general, it may be concluded that attempts by the governments to give rise to mature enterprises by means of credit or other subsidies especially to the low-income operators (Venezuela) have not had success.

In these artisan and dispersed systems, the internal competition may be considered fierce, whereby the artisan operators have adopted the strategy to augment the fleet, letting them be operated by family members. Thus, no entry barriers are in force, since the families compete between themselves by multiplying freely the fleet. Major companies, especially from other countries, have not any incentive to enter into these markets, as the fare prices and the resulting profit rates are extremely low.

In this situation, the service is not organized into an integrated network. The expansion of the services follow the new market requirements, and an excess of supply may be observed. In Lima, the excess of supply has led to the rotation of the operators, which are obliged to stop in alternate days. In La Paz, the surplus is so low that minibus operation has turned too costly, and common passenger cars are increasingly present in the market.

Pressured by the worsening congestion and pollution conditions, some capital city administrations (Bogotá, Santiago, Lima and Quito) have set up either a whole network concept or at least a subsystem of major corridors to be modernized. In this context, the experience of Bogotá, as formerly that of Curitiba, has served as the benchmark and export model. This model implies in a broader institutional, organizational and managerial change, where also new control technology is introduced. A centralized and integrative fare system and major vehicles are introduced in a step-by-step process, with the aim that in the future it may embrace most of the urban area.

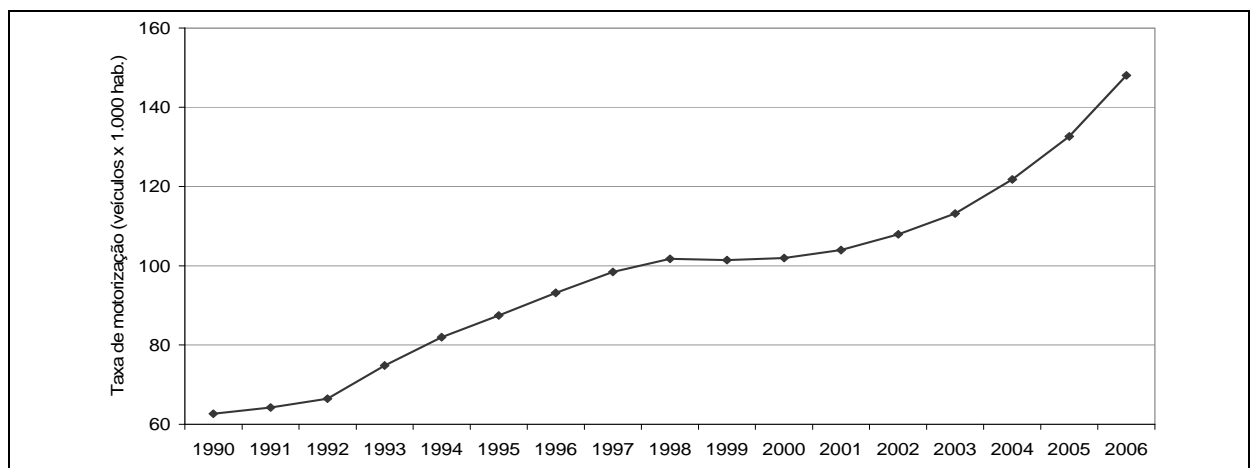
But the generalization of this upgraded systems has its limits, as the public funds get scarce (even when fostered by an additional fuel tax). The resistance of the operators which remain outside grows also stronger as the organizational transition is not well managed, and the minor stakeholders are either submitted to a lower income or get ousted from the system.

The institutional transition gives rise to legal complications, too, and economic losses have to be compensated by governmental indemnities which grow year to year. And there is also a need to manage the interfaces between the modern subsystem and the traditional one. The reaction to the changes by the traditional industry varies from open rioting resistance to the refusal to do under contract by the modern system. Some remaining operators may also decide by themselves to upgrade to modern enterprises.

With respect to competition, a competitive tension comes to day between major modern operators, cooperatives and intermediary subcontracting enterprises. This competition occurs moreover on the legal and institutional battlefield, and less directly on the street. The government itself tries to hinder on-the street competition, especially on the modern axes, where he prefer to put the new, modern companies under protection.

### Case Studies In Hispano-America

Treating more specifically the Colombian case, while in the seventies, eighties and nineties the respective motorization rates were at 20, 40 and 65 vehicles for 1000 inhabitants, in 1996 a rate of already 150 was attained (JICA 1996). It was during the nineties that Bogotá perceived a rapid deterioration of the traffic and transport conditions. With respect to public transport, in 1995 more than 21 thousand vehicles belonging to 64 companies ran on the streets of Bogotá, operating 639 routes. Beyond these, 39 thousand taxis and 500 thousand private cars disputed the scarce road space. The 5,8 million inhabitants made 14,9 million daily trips, where the bus system had a share of 77,5% of the trips (Bustamante 2007). The resulting congestion problems were worsened by poor road maintenance, traffic management and sewage: in heavily rainy days, when the heavy rain, a big part of the road space was under water.



Source: Bustamante (2007)

**Figure 1: The evolution of the motorization rate in Bogotá 1990-2006 (vehicles per 1000 inhabitants)**

With respect to the industry structure, it was (and is still, in the residual system outside the TransMilenio project) organized in a chain of intermediaries. The Local Government gave to the companies route permissions. These companies did not operate the permitted services directly but sold (leased) their right to operate the permitted routes to vehicle owners, who in their turn subcontracted driver and rewarded them on the basis of an agreed percentage of the fare box revenue. The drivers were then forced to chase the passengers on the street, offering

a fierce competition and endangering the traffic conditions. On their turn, the companies pressed the Government to open up new route permissions in order to broaden their route leasing market, so that new vehicle owners could be attracted. The result of this was an oversupply of transport services, reducing the net profit of the owners (Bustamante 2007).

As a reaction to this situation, new ways have been searched for during the nineties. An initial contracted study by JICA stressed the development of several transportation axes, without establishing clear directives for a public transport policy. The construction of an underground system was then considered as the definitive solution and put forward by President Samper, who was ready to dedicate special financial help to the capital, provided that the metro solution was adopted.

In 1998, Peñalosa was elected as Mayor and tried immediately to raise the fuel tax. But his preference for the transit policy was a modern bus corridor, as it would be much more cost effective and be within the limits of the municipal resources. For political reasons, the new President Pestrana insisted on the metro solution, and Peñalosa accepted this condition to get the resources from the central government.

But with part of these resources the Mayor invested in studies for a modern bus corridor option and began a hard struggle with the National Parliament, in order to get the authorization to invest the resources dedicated for the metro solution in the corridor solution. As Peñalosa's mandate was already midterm, he decided to use directly the municipal resources for the first stage of the project, whereas the national resources would be used in the second stage.

Peñalosa's corridor concept was a Curitiba-like corridor, differing radically from already current proposals to build a corridor for the current minibuses operators. For its design, international consultancy was contracted, but hard political struggles for the choice of the most appropriate routes had to be fought, as councilors tied to the minibuses operators and associations tried to reserve the main avenues for the traditional transport service, shifting the new system to relatively inaccessible axes.

Beyond this, the concept included broad urban renewal measures in favour of the urban poor, as a whole network of bikeways and walkways was integrated into the corridor concept. Social equipment as parks, culture and sport centres were also on the programme.

The construction of the transit system and the connected social equipment has also suffered different interruptions due to the expropriation and transference of public infrastructure and equipment, which provoked hidden political resistance from incumbent officials and politicians. By hiring competent and energetic project managers the Mayor assured the final victory over these hindrances. The construction work was executed by a public corporation, the Institute for Urban Development. In 1998, the bus models were presented to the public, which provoked some negative reactions from the minibuses operators, owners and route leasing companies.

Evidently, the TransMilenio concept would imply in a major organizational change, as larger buses should be acquired. Initial ideas to concede the whole system to a sole operator were soon dropped, as the resistance of the army of small operators and of the respective associations and unions would be impeditive.

A piece-meal convincement procedure was put into operation, and several companies and associations began to reorganize themselves into major operators. Nevertheless, rebellions,

strikes and street blockades were the order of the day, as the deadline for the inauguration of the system neared. The conflicts worsened and some extreme-right paramilitary groups menaced to assassinate the leaders of the rebellious groups, which would imply in a political disaster for the project.

More concretely, the TransMilenio should be operated in its first phase by 4 contracted concessionaires. Most of the traditional operators preferred to stay outside, and only three contracts could be assigned. In a new tender run, the fourth contracted was won by a new firm set up by major Colombian freight companies. But even from the three other companies, only one was owned in its majority by bus companies. Thus most of the traditional companies lost the first opportunity to participate in the new system, and the new companies surged as a new main actor in the public transportation industry of Bogotá, with contrary interests to the traditional sector. It is also worth of note that only the companies have accepted to participate in the new system, and the vehicle owners, albeit invited to, refused the change.

Of course, the introduction of TransMilenio implied the elimination of a large lot of routes and the scrapping off of the correspondent vehicles. The participating concessionaires had to comply with a program of fleet suppression, receiving a corresponding indemnity. It was programmed to retire 5000 vehicles, but actually only 1550 vehicles got out of operation, and the remaining were transferred to the subsistent traditional sector, turning it additionally competitive and overcrowd.

Once in operation, the overwhelming success led to the fact that the municipality celebrated, in 2003, an extended agreement with the National Parliament, which assured a generous funding line in order to build up a 388 km long network of similar bus corridors until 2016. Peñalosa's successor and direct collaborator Mockus assumed in 2003, assuring the continuity of the TransMilenio project. His main challenge was to harmonize the rest of the industry which remained outside with the new network. In the year 2003, a reorganization project for the traditional public transport system was put in practice. The idea was to turn the permission holding companies directly responsible for the operation, its planning and controlling, and for the assumption of the involved risks. On their turn, the vehicle owners would rent their vehicle to the companies. On the same time, a radical fleet reduction was imposed.

The 2003 Decree caused immediately negative reactions both by the companies and owners and was hold by the Courts. The owners refused the new dependent role in regard of the companies, and the companies were not technically prepared to assume the responsibilities foreseen by the Decree, as they have gotten habituated to sell their permission rights without taking any responsibility for the commercial success (the regulation until then in force obliged them to own at least 3% of the operating fleet, which was easy to comply with). The Administration tried to mitigate the modernization risks by introducing a new Service Quality Factor component in the fare price calculation, enabling the companies to invest in their modernization (training, acquisition of service and fare box revenue control equipment and other measures). Finally, a Supreme Court ruling of this year turned the 2003 Decree effective, opening up to the present Garzón Administration (2004-2008) the gates for the implementation of the new TransMilenio phase and the reform of the remaining traditional sector.

Notwithstanding the resistance remains fierce. To begin with, the owners refuse to sell the fleet to be scrapped at the price offered by the companies, and these do not accept the price required by the owners. The owners are by the way the group that has suffered most the consequences of the change, firstly because of the reduction in patronage, and secondly

because of the fiercer competition by the transferred fleet which has not been retired from the TransMilenio area.

Today, the industry itself is politically divided. On the one extreme, the block which was built up by the TransMilenio project fears the modernization of the traditional sector, seeing it as a new competitive threat for the future, when the new contract areas of TransMilenio are progressively put to bid and disputed by the modernized traditional sector. The traditional sector itself is split in to a group that reacts positively to the reforms and accepts to comply with the new rules, albeit the organizational challenges and inherent difficulties. The other sector tries still to resist.

Still in 2006 (that is, after the reorganization project), Bogotá counted 66 companies, which detained 517 route permissions. Half of them may be classified as small companies (an average of three route permissions per company, operated by an average of 200 vehicles), which in its total occupy 2700 vehicles (13% of the total fleet). On the other extreme, 12 major companies own an average of 18 routes and operate with a total 9734 vehicles, representing 50% of the total fleet. Between the two groups, 35% of the companies have under their control an average of 200 to 500 vehicles, totaling 7320 vehicles (37% of the total fleet; see Table 1)

**Table 1: Industry concentration in the traditional bus sector of Bogotá**

Group	Fleet	Companies	%	Vehicles	%	Average Fleet	Average no. of routes
A	1 - 100	19	28,7 %	1.102	5,5 %	87	3,0
	101 - 200	12	18,1 %	1.606	8,1 %		
B	201 - 300	12	18,1 %	2.926	14,8 %	318	8,5
	301 - 500	11	16,6 %	4.394	22,2 %		
C	501 - 700	6	9,0 %	3.671	18,5 %	811	18,3
	701 - 1000	4	6,0 %	3.513	17,7 %		
	1001 - 1400	2	3,0 %	2.550	12,9 %		
Totals:		66	100,0%	19.762	100,0 %		

(Source: Bustamante 2007)

With respect to the vehicle owners, this supply chain segment is dominated by small investors: 76% of them own one single vehicle, and other 15,5% own two vehicles.. The total fleet counts ca. 20 thousand vehicles, but 15,550 belong to natural persons, and the rest to companies. By law, the route leasing companies are obliged to own at least 3% of the vehicles, and in the rule they stick to this minimum.

Coming now to the Chilean case, also here the deterioration of the public transport system and the explosive growth of private transport changed the growth dynamics of the cities and their morphology. It is worth to point out that Chile has pursued an active deregulation policy, influenced by the liberal ideologies of the eighties. While worsening radically the traffic conditions, this strategy was not at all able to stop the enormous rise of private transport, whose participation rate grew from 18,5% in 1991 to 42% in 2001 (Malbrán and Schwarz 2006; see also Geschwender 2005).

The deregulation policy itself implicated into a loss of control over the public transport system, as the attributions were split into several authorities, and any public planning was



consequently impaired. Moreover, the deregulation did not lead to effective competition, as in result of the absence of a strong authority, the operators and their organizations took actual power over the network planning and were also able to impose high fare prices (Thomson 2001). This capture did not lead to any concentration, as 30% of the fleet were directly driven by their owners, and other 66% of the fleet were split into a huge amount of operators possessing no more than 4 vehicles. The social conditions in the system were poor, as the drivers were rewarded on the revenues on the top of a very low basic wage and subject to strong revenue fluctuations. This led to the typical dodgy behaviour on the streets, where the drivers were forced to chase after the passengers (ibid.).

As a response to the chaos, regulation was step-by-step reintroduced, initially by tendering procedures for the routes crossing the city of Santiago, then by subcontracting the single drivers. This first step reduced the number of routes to 387, but even then the average size of the companies resulted very small, and operational integration with the metro was still not on the order of the day (Gschwender 2005).

A further step was the design of a completely new bus system, composed in three complementary networks (metro, main bus routes and feeder/local bus routes), to be run by a modern fleet which should include low floor and articulated buses. This system implied for the Government high investments of over 200 million Euros for the construction of segregated busways, of a set of 37 transfer terminals, for further improvements at 5,000 bus stops and for general surface and geometrical improvements along 63 km of streets and thoroughfares. Other modernizing features were a centrally controlled ticketing system, managed by especially a subcontracted information manager and a finance administrator (two separated contracts).

The industry structure was also to be reformed, and a stark concentration of the former quasi-artisan industry was proposed: The whole system should be subdivided into 15 bid areas (5 areas for the main bus route system, and 10 areas for the local/feeder subsystem), which implied that the companies should own each an average of 500 vehicles in the main route system and 200 vehicles in the feeder/local system (ibid.).

Beyond this immense organizational challenge the economic challenges, too, were high, as the fare prices should be set by bids and should not be subsidized; even regular adjustments were not foreseen, although new operational costs would be incurred (e.g. the acquisition of the new ticketing automats, the revenue loss subsequently to the introduction of transfer rights for the passengers). It was expected that a better match between the demand and the supply and a reduction of the operational costs per km would ensure a compensating rise in patronage. At most some minimum revenue guarantees and initial adaptive readjustments as well the adjustment of the contract period were admitted for the case that the foreseen demand levels are not attained (ibid.).

The initial problems of this system and the severe political consequences have gone through the press around the globe, and a special key paper by an insider is foreseen in the Thredbo 10 Program. The press lists as main critical factors for the debacle:

- the radical redesign of the whole network has introduced mandatory transfers for an immense number of passengers habituated to direct routes between their origin and destination; although no additional fare shall be paid, the transfer implies in significant time loss and inconvenience for the passengers;
- the new network implies longer access distances and longer waiting times at the stops;

- the necessary fleet was underdimensioned for the real needs, leading to higher waiting times and overcrowding of the vehicles;
- the fleet was not delivered on time by the Brazilian manufactures;
- some suspicions on hidden sabotages by the operators who dislike the new regulation were also reported. In fact, the introduction of the integrated fare system without adjusting the new fare to the fact that the overall patronage has been deflated has produced rising deficits mostly to the main corridors (and less to the feeder lines).

It shall not be forgotten that the older regime, albeit its negative impacts on congestion and pollution and even on service quality, at least assured easy access to the stops, direct services and high frequencies to the users, to which they got habituated to. Thus the cultural change of the users should be one of the most important preoccupations for the whole project management; as reported by the press, the opportunities for participation in the design of the new network were poor.

Further point: the Santiago case is not the first one where a radically redesigned network imposed by technocrats has provoked troubles for the mass of the users, which in the rule have lower income. Shocks similar to the Transantiago case have been observed in Brazilian cities (e.g. Belo Horizonte, Florianópolis) Especially if the affected population is not sufficiently involved, consulted or even informed of the changes, transition risks may be high!

In Argentina, the co-operatives have transformed themselves along decades into formal capitalist enterprises, whereby this process has been supported by Government, which has pursued an active competitive strategy. (Gutiérrez 2000) It is worth of remarking that the new regulatory regimen introduced by the Decree no. 656/94 has been called as deregulation strategy, although it aimed actively to concentrate the industry and introduced actually franchise contracts. Main features of this reform were (ibid.):

- least requirements with respect to fleet and financial capacity;
- the permissions were given to the current operators without any tendering procedure;
- permission period was given for 10 years;
- the operating companies were permitted to fusion together, but permissions were given also to single persons and cooperatives;
- the permissions were transferable
- the existing route network remained untouched.

It is worth of a note that the interurban coach transport was also deregulated, but here the industry has concentrated: whereas the number of companies has been reduced at 18% (basis year: 1982) between 1982 and 1997, for the same period the total fleet has been augmented at 18% (Gutierrez 1998), and the number of routes increased 10% (Gutierrez 2000).

But the same author recognizes that:

- the total public transport patronage has reduced in favour of the private car and pedestrians;
- on the other hand, the rail services have their receipt reduced;
- the regulatory reform was not a result of an explicit policy in favour of public transport but produced by a not really transparent agreement;
- current routes were redistributed between the incumbents, the market remaining closed for newcomers;

- the incentives for re-organization of the operators aimed to resolve conflicts, permitting the medium-size operators to survive and, on the other hand, the major operators to capture the markets abandoned by the broken firms, whose permissions were bought;
- the Authority did not deliver any network planning;
- in general their regulatory empowerment became weaker;
- a managerial modernization of the operators could be observed; in order to foster scale and network economies, each operator tried to augment its network, but also to dominate zones;
- no opportunity was given to the users to participate;
- today, the presence of huge enterprises is a characteristic mark of the industry: the largest company operates 1300 vehicles (13% of the total fleet), followed by the second, which operates nearly 500 vehicles (Gutierrez 2006).

In Peru, an active deregulation policy introduced in 1990 opened up the transport industry radically, substituting a regulated system run by an important state company (ENATRU), but challenged by a lot of artisan competitors. The new policy during the nineties led to privatization and deregulation, which was additionally facilitated by lifting of import ban and by the massive layoff of public sector drivers.

The results of this may be seen as well in other Latin American cities: the dispersion of the industry (1,25 vehicles per owner), plus an increasing number of taxi and moto-taxi (190,000 and 45,000 respectively!) offering line services informally and the high congestion and pollution levels in the city. This all was followed by an increase of the number of private cars, from 270,000 in the eighties to about one million in 2002. At the same time, the number of public transport vehicles has increased from 10,500 units to over 60,000 units with an average age of 16 years - many exceeding 25 years –making Lima's public transport fleet the oldest in Latin America accordingly to World Bank reports. On the other side, the participation of public transport in the urban transport market fell 10%; about one third of total daily trips is now made on foot, primarily by the poor.

At the brighter side, access distance and waiting times reduced substantially, and more than 80% of the passengers reached their final destination without transferring; also, peripheral slums became also accessible by line transport.

But these positive results for the poor population are counterbalanced by the fact that US\$500 million are lost every year in man-hours and operational costs due to congestion and inefficiencies of the urban transport system, accordingly to World Bank studies. Beyond this, average travel times are high because of congestion, forcing the poor urban worker too spend of the between 1.5 to three hours a day in the buses. In addition, the quality of the services provided is low as vehicles are in general poorly maintained and drivers poorly trained. Woman and disabled are the principal victims of this, as personal safety and access conditions to buses are poor. Where the small operators and their associations succeed to collude, the fare prices are not competitive but high, worsening the economic situation of the poor urban commuters who are concentrated on the periphery of Lima metropolitan area.

The congestion and environmental costs of this system led to the kind of reform that is turning into a new standard WB-receipt after a decade of preaching and fostering deregulation: the re-strengthening of the institutional framework, which in the Lima case is split into a huge number of authorities: The Municipal Directorate for Urban Transport (DMTU), the Metropolitan Investment Fund (INVERMET), the Municipal Enterprise for the Management

of Lima highways tolls (EMAPE), the Metropolitan Planning Institute (IMP), as well the Autonomous Authority for the Electric Mass Transport System (AATE).

In substitution to the deregulation policy a new regulatory framework comes to the foreground, foreseeing prioritization measures for public transport as the introduction of feeder-trunk route system and tariff structure, the introduction of new bus technologies, the re-introduction of public transport regulation including the imposition of professional standards, technical and environmental admission criteria for public transport vehicles and inspections and the containment of informal transport services.

The crown of the reform will be again the construction of 28.6 km of segregated high-capacity busways, built along existing road corridors in order to spare expensive land acquisition. Beyond this, the program foresees the construction of terminals and general restoration of feeder roads in a length of 50 km (incl. the construction of bikeways). While the physical infrastructure has been financed by the municipality on the grounds of World Bank loans (approved in 2003), private concessionaires should finance the buses and bus maintenance equipment. Once again, the fare collection system should be concessioned and operated privately, on the grounds of an integrated fare collection system for the busway and feeder services. Displaced bus operators should be compensated by a Credit Guarantee Fund (The World Bank 2007: Lima Urban Transport Project; <http://web.worldbank.org>)

Today, the implementation of the project is in charge of a new Authority, the Instituto Metropolitano Protransporte de Lima – Protransporte. Beyond the construction of the foreseen high-capacity busways (however, the definitive network differs from that initially approved), a rail line is also considered<sup>1</sup>, as well the construction of new terminals for intercity services. Together with the Municipal Agency for Urban Transport (GTU – Gerencia de Transporte Urbano), the Urban Rail Authority (Autoridad Autónoma del Trén Eléctrico – AATE), the Metropolitan Planning Institute (Instituto Metropolitano de Planificación – IMP) and the Toll Road Company (Empresa Administradora de Peajes de Lima – EMAPE) it forms the Metropolitan Committee for Transport (Comité de Transporte Metropolitano de Lima – TRANSMET), which tries to ensure a co-ordination in the overall transport system in the Peruvian capital city.

Equador's efforts to modernize its public transport system has produced since the nineties the introduction of three trolley corridors, which are operated by a public corporation. A feeder system composed of larger buses (ECOVIAS) is under concept and shall be run by private enterprises. Another public corporation, the Empresa Metropolitana de Servicios y Administración del Transporte – EMSAT acts as planning and regulatory agency.

The situation of La Paz, Bolivia, has been largely described by Aragao and Witter (2005). The huge amount of single minibuses and operators and even passenger car operators dominates the scene.

Things in Venezuela remain unchanged: the Metro system owned by a public corporation runs alone, supported by some feeder lines, isolated from the dispersed minibuses system. The Fontur (Urban Transportation Fund) acts basically as a financing agency for vehicle acquisition. As learnt from personal interviews with local officials, ideas about corridor systems similar to those being introduced in the above mentioned South America capital cities

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<sup>1</sup> This rail line had been planned and actually constructed by the national Government in the late 1980s, but subsequently closed because of insufficient patronage. In 2001 the rail line was transferred to the Municipal Government, whose plan was to implement a multimodal system composed of the rail line and high-grade feeder bus services. This plan revealed to be not economically feasible and was discarded. After the Lima Transport Project has been agreed, the rail project has resumed.

are being discussed, and also regular meetings between the metro operator, the State rail operator (Instituto Autónomo de Ferrocarriles del Estado – IAFE) and FONTUR are organized. A Mobility Study for the Metropolitan Region of Caracas is under way, but the difficulty is that Caracas as a urban concentration is not ruled by a centralized Administration but is split in different borough governments.

Further North, another country which is worth to be analyzed separately is Costa Rica, where a formal capitalist transport industry has been developed, although the size of the operators is not as big as in Brazil (Contreras-Montoya 2000). In San Jose, public transport is strongly regulated, as the Authority determines routes and fare prices and controls the operation, which is executed by 47 permission holding public corporations with 1038 bus vehicles, along 130 routes. No public operator exists since 1980. Other 15 firms operate minibuses services.

### **The Brazilian case**

The bus industry has a common root with the industries of the neighbour countries: during the fifties, a huge amount of artisanal minibuses operators challenged the incumbent private or public operators and succeeded to impose themselves as the main public transport operators in the cities. But differently to the other countries, the Brazilian authorities reacted soon in a way to impose a concentration policy, obliging the newcomers to run with a fleet of big buses. The setup of a new domestic manufacturing industry may have facilitated that change, which enabled the authorities to regain control over the operation and also to produce efficiency gains.

Over the decades, the operator groups which got increasingly concentrated grew in influence in politics, funding elections and they were also able to influence the public transport policies and the respective regulation. It may be worth to research the role they had in impeding that the two major cities São Paulo and Rio set up a major metro network, which is in place in Mexico City.

During the first oil crisis, the Federal Government set up a strong urban public transport policy, which financed the two metro systems, but also modernized the bus systems and their management (the TRANSCOL program packages included in the rule corridor investments, set up of standards for the buses, diffused planning, management and fare price calculation methodologies, introduced mandatory fare price subsidies to be paid by the employers, etc.) This all gave additional support to the operators and their organization, which end of the eighties founded their national syndicate NTU (Associação Nacional de Empresas de Transporte Urbanos). Organized now on national level, the major operating groups were able to interfere even stronger into the policies and regulation, blocking competitive pressures and policies, especially tendering procedures. The concentration got now a national dimension, and different groups began to acquire or to set up companies in several cities and even abroad (e.g. in Africa).

In the municipalities and metropolitan regions where a strong authority could be organized and maintained over the years, the service network and quality developed, but the increasingly collaborative relation with the operators hindered to put in place really competitive tendering procedures, albeit they were legally mandatory (tendering procedures, where and when they were organized, were provoked by Court decisions, but the procedures were not able to alter substantially the industry structure). Moreover, the regulation became increasingly protective, transferring cost risks to the fare price, and even the enforcing of rules in regard of fleet and operation became weary.

In the cities which were not able to put in practice a minimal empowerment for the authorities (e.g. Rio de Janeiro), the operation was basically decided by the main operators and the respective syndicate. All this process led to a loss of efficiency of the system, although the major enterprises were able to modernize their management, but the subsequent efficiency gain did not favour the user.

São Paulo and Belo Horizonte are key examples for the few cases, where active state prosecutors succeeded to force the authorities to organize tendering procedure. In the São Paulo case, the tendering procedure went along a major reform in network and even in technology, whereby new modern corridors were introduced. In this city, the Municipal Government, which organizes the municipal bus network, and the State Government, who controls the rail service and the metropolitan bus network, never have established a common transit policy, even in periods where both of public bodies were ruled by politicians of the same party.

The tendering procedure organized by the municipality selected the operators by the minimum reward. The municipal territory has been subdivided in operation basins, and for each basin a maximal fare price has been calculated on the basis of the present value of the respective costs during the contract life divided by the foreseen patronage (Vaz 2004). Actually, the operators organized themselves that only one competed effectively for each of the areas put to bid. And even this non competitive tendering procedure has only succeeded after long negotiations with the operators, who boycotted the first round of bids.

But the major novelty in the São Paulo procedure was the admittance of autonomous operators, who were expected to be organized in cooperatives; for each operation area these were selected by the “best technique”, which meant the largest number of operators. So the cooperative who succeeded in gather the largest number of member for an area won the respective permission. It is worth of remark that the selection was not by the largest number of vehicles: that experience had been made in the 1992 tendering procedure for minibus services, and as result the cooperatives then committed themselves to acquire large fleet, which did not occur afterwards. In the 2003 tendering procedure, the experience of the operators gathered in the cooperatives in each local was the actual selection criterion. Although each operator should not own more than one vehicle, the operator was not expected to drive the vehicle. The tendering procedure adopted for the autonomous operators can not be considered as competitive, either. For each operation area, only one cooperative offered a bid.

As a result of the general nationwide institutional deadlock, fare prices began to rise above the inflation rate, forcing the captive users to reduce their mobility or to opt for non-motorized transport. The patronage began to fall substantially also in a subsequent rise of motorization, which benefited now the lower middle-class. And a third reaction came in the form of the rise of the informal sector.

At the beginning, the informal service, also called “alternative transport”, was welcomed by the user and even by some authority which had them as an important ally against the bus oligopoly. If the alternative transport could not be legally accepted, at least the authorities closed their eyes, albeit the big pressure of the bus firms to repress it.

But again, the consequences for the free flow of the automobile forced some reaction by the authorities, pressured by the public opinion of the press which reflected the interests of the middle class and the commerce. The “alternatives” themselves may also be blamed for this reaction, as they increasingly dominated the central streets and endangered the other vehicles in their aggressive hunt for passengers. Their passengers, too, were increasingly forced to

accept dangerous and uncomfortable trip conditions (overcrowded minibuses, hazardous driving, etc.) It is worth of note that the bus operators, albeit financially and politically strong, could never gain popularity nor support by these opinion leaders!

Subsequently, some local authorities began to repress the “alternativos” by different means. In principle, a “legalization” process was put in place, whereby the operators had to undergo a tendering procedure, which reduced substantially the number of admitted operators. Also, in some cities, these operators were obliged to acquire bigger minibuses. Moreover, the admitted lines were outside the city, thus restricted to areas with a thin market. This was prone to produce a starving process of the alternative in different phases: the immediate barrier of the tendering procedures and its admission requirements let the majority outside the system. In a subsequent phase, the surviving admitted operators began to retire, either forced by the not favourable market conditions, or simply by the lack of managerial competence. In several cases, the obtained permissions were sold to the bus operators.

A classic “push-out” legalization process was put in practice in Recife in the year 2003. Before the procedure, 1210 vehicles operated 35 lines and competed with the official bus system in the core areas of the city. In 2003, the Municipal Law no. 16856 created the Complementary Passenger Transport System, which admitted vehicles between 12 and 20 seats. The foreseen routes for the system should feed the bus lines and also run tangential routes. In the whole, 26 lines have been established, and 252 vehicles were admitted.

As anticipated, this regulation actually impaired the formerly artisan operators to succeed, and presently only 84 vehicles continue to operate along 11 lines, each serving a mean value of 250 passengers per day, mainly in the northern outskirts of the city (Ferreira, Brasileiro and Orrico Filho 2005).

In Goiânia, the capital city of the Goiás State, the alternativos were formerly well organized in a unique syndicate, which centralized the network planning and established service standards. They succeed in challenge the official bus network and then to impose their legalization. However, the resulting process did not recognize any power to the syndicate to organize the service in a modern entrepreneurial manner. Moreover, the permission were given individually to each operator which was organized in smaller cooperatives, but these were not able to sustain the former service quality. The resulting 740 cooperatives were expected to operate single lines and lost the overall information on the network and the market. The cooperatives had no modern management and were soon to indebted, and most of the operators was forced to change the business. Only 67% of the line cooperatives succeeded to modernize their management, to control effectively their operation and to deliver a satisfactory quality (Ribeiro, Orrico Filho, Barboza and Santos 2005).

In other cities, the legalized “alternativos” were forced to go under contract to bus operators, executing for them feeder services and being rewarded by the run kilometer (Ribeirão Preto model).

It shall be stress that all initiative to repress the “alternativos” has been undertaken without any effort to ask the users for their opinion. Albeit uncomfortable and dangerous, this kind of service remains very popular especially within the poorest population, as it serves thin markets and supplies a strong service frequency. The waiting times on the bus stops, where any information on the service is absent, has been always the major torture for the bus users!

But the wave of the “alternativos” is still far from be over. The number of cities were the authority are weak or actually absent is overwhelming, and the bus operators are not able any

more to monopolize the power. The “alternativos”, too, are increasingly aware of their popularity and influence, and may also gain support from municipal councillors. Their market presence is also increasing in the regional and inter-city transport. On the dark side, as they remain outside the legal framework, they may be increasingly controlled by the organized crime.

## **CONCLUDING REMARKS: PERSPECTIVES FOR CHANGE**

The present contribution aims to point out the present trends of the urban public transport in South America, mainly in the principal metropolitan areas. Two different scenarios have been stated, one for Hispanic America, where the disperse artisan minibuses service has been dominant, and the other for Brazil, where a concentrated industry operating bigger buses is the main feature. Even where they exist, rail services may play an important, but still secondary role in South America. However, this is a scene which has local variants and, recently, is also subject to changes.

The dispersed and overly deregulated industry in Hispanic America has produced a large, unplanned network of almost door-to-door and frequent services between the most diverse parts of the metropolitan areas, even of the peripheral suburbs, but has implied in heavy congestion and pollution. These consequences affect all social classes and the urban economy in its whole, but it may be said that public transport is only then put into the government agenda when it affects the mobility of the user of individual transport.

The measures taken opt in the rule for the introduction of new systems based on rail or, what is more frequent nowadays, on articulated trunk and feeder networks operated by larger buses owned by a more concentrated industry. The Bogotá model, captained by modern bus corridors with a central operational and an integrated tariff system, the operation of which is delegated to major companies, has served as a new paradigm, which is being copied by other metropolitan areas. It has been also adopted as the favourite strategy by the main multilateral agencies as the World Bank and the Inter-American Development Bank, which in former times have openly supported deregulation for the public transport industry in developing countries.

The major challenge resides, however, in the ability of the Administration to force the huge dispersed industry and their politically strong stakeholders to accept the new industry structure, whereby a radical cut in the size of the fleet is always a central aim of the reform. In an industry dominated by owners of single vehicles this is considered as an existential threat for an important social group and provokes in the rule a fierce resistance, even if indemnities are foreseen by special funds.

As it is almost impossible for the new systems to cover all the metropolitan area in the same leap, even if bus corridors are cheaper to build than rail systems, the public transport system will be for a long time split in two separate systems which will have an inimical relationship. The modern system and its stakeholders trend to advance over the territory of the traditional system, and this reacts in different ways: it may try to modernize itself independently from any support of the authorities (Gómez s.d., Celis s.d.) or to gather political support from opponent parties and governments which succeed to the reformers.

Santiago, which has already succeeded in a prior reform to concentrate the formerly dispersed and deregulated industry, has tried to introduce in one single leap a totally new network composed of corridors, of articulated feeder lines and integrated to the already existing metro



system with its five lines. This implies an enormous organizational challenge and may lead to disaster when the whole project management is faulty. The proper preparation and intense participation of the population is also a central success factor, especially when an immense network of direct links is substituted over night by an economically more efficient network, but which forces the users to accept vehicle transfers on their route.

The situation in Brazil is quite different. For historical reasons, the industry has succeeded to concentrate along the decades but also to capture the authorities and their regulation. Even if this system has not provoked the congestion costs which are common in the metropolitan areas of the neighbour countries, it has produced market and production inefficiencies which reflect in fare price rises and in rigid networks with dominantly radial lines. Worst of all, the oligarchy has succeeded to resist to any reform which could threaten its dominancy, especially to tendering procedures, even if these are foreseen by the legislation. On the other side, the authorities, both national and local, have not put public transport into their agenda priorities, as it have been more concerned with the mobility conditions for the individual transport.

This deadlock situation has provoked a general deterioration of the services and the augmentation of the fare prices; in the sequence, the poorest users have been deprived of mobility, losing employment chances and leisure opportunities and being forced to undertake long walks for their workplaces. The rise of informal transport has gained support of these social groups, albeit their operation conditions are similar to their Hispanic American colectivos. As long they do not provoke heavy congestions and deteriorate the traffic conditions for the individual transport, they are tolerated by the authorities, despite of the protests of the established operators. But when commerce and the middle class (and the their interests reflecting press) begin to be annoyed by the congestion and reckless driving of the informal operators, the authorities react by “legalizing” the system in a way that leads actually to its death, as the number of authorized fleet is radically reduced to few hundreds, and commercially non-feasible services and more expensive vehicle models are imposed. At the end, the incumbent bus operators give the death kiss by buying the route permissions of the insolvent “legalized” minibuss operators.

As reforms attempts have been blocked and the competitive threat of the alternatives is being progressively damped, which alternatives remain to regain efficiency and quality in the Brazilian public transport industry? Trust building in the context of integrated trunk-feeder networks and fare systems has been the favourite approach by the local authorities. Even if State prosecutors succeed to impose the legally prescribed tendering procedures, these are not actually competitive, as an unwritten but clearly perceived pact between the operators of the different cities reduces actual competition between them.

But the trust building approach has its limits: the operational and fare box data remain in control of the operators, the contract conditions shift the main economic risks to the user, leading to successive fare price rises above the inflation rate; important innovations as disabled-friendly vehicles (low-floor buses or elevator-equipped vehicles) are introduced too scarcely; and information for the user remain inexistent. In the result, public transport remains a domain for captive user and is not able to deliver an alternative for individual transport, even in heavily congested cities.

Next alternatives to be thought about are:

- The expansion and modernization of rail services and their introduction in cities where they still do not exist: the international rail industry is already courting

Brazilian local governments, as this country may be in near future one of the few developing economies which are in condition to invest in these systems. Of course, the rail services will be for a foreseeable time hardly able to assume a central role in urban mobility as it does in the metropolitan areas of Europe and Japan, but they may occupy central market portions, putting the bus system into the defensive. Overall in the World, the construction of these systems is a popular aim of politicians, as it gives to their administration more visibility than the amelioration of current bus systems (“Metro is sexy, buses are not”). So public transport may finally enter into the policy agenda and new, financially and politically stakeholders may neutralize the force of the incumbent bus operators, enabling the general amelioration of public transport.

- To open up the Brazilian public transport to international competition: By its size, Brazilian bus industry is already mature to support its impact. Globalization of the Brazilian transit market could benefit directly the Brazilian industry as it will be obliged to adopt international quality and efficiency standards, opening on its turn the international market to Brazilian operators. In the sequence, Brazilian bus manufacturing industries will use both the foreign competitors and the Brazilian companies operating abroad as an opportunity to turn their products more known in the international market. This manufacturing industry, which already exports and has plants over the World, is already in the condition to supply the market with high-quality products, which are scarcely seen in Brazil because of the short sight of the internal operators’ oligarchy. On its turn, the targeted opening of selected industrial and service markets as land passenger transport may deliver an opportunity for the country to overcome deadlocks in the major trade liberalization talks, as it is claimed by the IC that Brazil and other leading emerging economies shall open up their industry and service markets in change for broader access of their exports into the IC markets.

## REFERENCES

- Aragão J, R Witter (2005): Adaptive approaches for the improvement of public transport in Latin American Cities. In Macário R. J. Viegas, D. Hensher (2005): Competition and Ownership in Land Passenger Transport. Selected Paper from the 9th International Conference (Thredbo 9), Lisbon, September 2005. Elsevier.
- Bustamante, R. F. G (2007): Transporte público coletivo em Bogotá, do sistema tradicional ao Transmilenio: um mercado em transição. Tese de Mestrado COPPE/UFRJ, Rio de Janeiro
- Celis F C (s.d): De los empresarios del Transporte Coletivo para una nueva Cidade. Bogota: Alianza Tránsfer
- Contreras-Montoya C. A. (2000): Análise integrada da produção, custo, eficiência e produtividade na indústria de transporte urbano por ônibus. D.SC. Thesis COPPE/UFRJ, Rio de Janeiro. Brazil.
- Ferreira T., Brasileiro A., Orrico Filho R.D. (2005): Regulation of alternative transport in Brazil: an assessment of bus/minibus integration in Recife. mimeo. Paper present at Thredbo9, Lisbon, Portugal
- Figuerola O (2005): Transporte urbano y globalización. Políticas y efectos en América Latina. Revista EURE, XXXI, 94, 41-53, Santiago de Chile.
- Gómez J (s.d.): Transmilenio. La Joya de Bogotá. Bogotá: Transmilenio S.A.

- Gschwender, A. (2005): Improving the Urban Public Transport in Developing Countries: The Design of a New Integrated System in Santiago de Chile. Thredbo 9 September 2005, Lisbon, Portugal
- Gutiérrez, A. (2000): La producción del transporte público en la metrópolis de Buenos Aires. Cambios recientes y tendencias futuras. In: EURE (Santiago) 26, 77 Santiago, Chile
- Gutiérrez, A. (1998): Efectos socioterritoriales del proceso de reestructuración del sistema de transporte de la región metropolitana de Buenos Aires, mimeo, Informe final beca de iniciación para graduados, Biblioteca de Geografía, Universidad de Buenos Aires- Facultad de Filosofía y Letras, Buenos Aires
- Gutiérrez, A. (2006): Paradojas entre objetivos y resultados de políticas públicas. Análisis comparado del auto transporte de Buenos Aires, In GEOUSP - Espaço e Tempo, 19, São Paulo, Brazil
- JICA. Chodai Co. Ltd., e Yachiyo Engineering Ltd. (1996): Estudio del Plan Maestro del Transporte Urbano de Santa Fé de Bogotá en la República de Colombia. Informe Final, Informe Principal. IDU, Bogotá.
- Malbrán H.R., Schwarz D. (2006): Sustainable transport for people: Our Vision in Chile .Secretaría Interministerial de Planificación de Transporte Sectra-Chile.
- Ribeiro, R., R.D.Orrico Filho, K.F. Barboza, & E.M. Santos (2005): The inner organisation of artisanal public transport operators in Goiânia, Brazil. miméo. Paper present at Threbo9, Lisbon.
- The World Bank (2007): Lima Urban Transport Project. Web site: <http://web.worldbank.org>
- Tomson I. (2001): El desarrollo institucional del transporte en América Latina durante los últimos veinticinco años del siglo veinte. CEPAL, Serie recursos naturales. 17, 34. Santiago, Chile.
- Vaz J. C. (2004): Relações Institucionais e Organização dos Serviços Públicos de Transporte Urbano: O caso de São Paulo. IPEA, Brasília, Working Paper 31U57/U