

REPORT OF EXPERT COMMITTEE ON THE MATTER OF AUTO-RICKSHAWS FARE REVISION

INTRODUCTION

The Government constituted a Group of Experts (GoE) to consider various issues relating to the determination of tariffs (fares) for auto-rickshaws (henceforth, autos) in the NCT of Delhi. The Group had its first meeting on 17.12.2002 and, in accordance with Commissioner (Transport)'s letter No.PS/CT/T/A2002/618 dated 16.12.2002, the Terms of Reference (TOR) were finalized as under:-

- a) Determine the principles on which tariffs/fares have to be fixed;
- b) Arrive at a formula for determining tariffs based on the principles identified above.
- c) Index-link the formula viz. another the tariffs to an index or indices so that fare revision can be carried out in a simple and transparent manner;
- d) Take into account conditions prevailing in other metropolitan cities i.e. tariffs, input costs, and other relevant conditions.

WORKING OF THE GROUP

2. The Group was appointed on 16 December 2002 and recommendations were required to be made by 24 December 2002. Given the time frame, it would have been impossible to undertake or commission field surveys or gather primary data. The Group, therefore, decided to use all available sources of secondary data in addition to information furnished by Government and non-Government agencies including individuals. During its deliberations, the Group received from the Government, as well as on its own, representations and suggestions from various quarters including the auto unions, drivers, NGOs, the general public and experts in the field of transport. An illustrative list of the representations received is attached as Annexure-I.

3. The Group began its work on 17.12.2002 and met officials of the Transport Department to obtain information on general background, the genesis of the current problem, the policy on permits, and past practice on tariff fixation. On 19.12.2002, a special meeting was convened with representatives of auto operators. This included persons who were owner-operators, lease operators, drives, as well as leaders of unions representing the interests of auto-operators. A detailed personal hearing was held and written representations were received from the invitees. To fully understand maintenance requirements of a CNG auto, the Group met with Area Manager, Bajaj Auto Limited, on 20.12.2002 to independently assess maintenance norms and costing. The Group met on 20.12.2002, 22.12.2002 and 23.12.2002 to finalize its findings.

GENERAL OBSERVATIONS:

4. At the outset, the GOE noted that:
- (i) Tariffs (fares) must primarily reflect direct costs incurred in delivering transport services, while providing auto operators with a fair rate of return i.e. reasonable monthly earnings.
 - (ii) Tariffs must take into account the market structure and the institutional setting in which the autos operate viz. freedom of entry and exit from the market, the regulatory setting, and the interplay of different economic agents.
 - (iii) Tariffs must also take into account the size and the nature of demand for transport services, as this would critically impact on revenue earnings and determine economic viability.

BACKGROUND

5. It is important to understand how the supply-side of the market for auto services has evolved in recent years. The Government's policy has been to issue permits to owner-operators. The intention was that the person issued the permit to provide auto services would be the owner of the auto as well as the operator (driver) viz. only an owner operator could get a permit to ply on the road. The

policy did not take into account the possibility of an owner separate from an operator. Auto transport services can be provided in two other ways. First, an owner could obtain a permit to operate and separately engage a driver on a daily /monthly wage to ply the vehicle. A second option is that an owner could obtain a permit to operate, but would rent out the vehicle to a driver who would actually be the operator. Both options would technically amount to an infringement of the conditions on which the permit was issued. The infringement, in turn, could invite cancellation of the permit. Even though neither of these two options were envisaged in terms of Government policy, the ground reality is that both emerged and became the dominant mode for provision of auto services in the city.

6. Till a few years ago, all autos used Motor Spirit/Petrol (MS) as fuel. Even though policy did not envisage the separation of owner and operator, in the MS regime there were three categories of auto service suppliers.

- (a) Autos run by owner-operators.
- (b) Small fleet owners who owned autos, possessed permits, but engaged auto drivers to operate the autos; (some owners also drove their vehicles).
- (c) Financiers / fleet-owners who owned autos, possessed permits to ply, and leased out the autos on a monthly/daily rental to persons who operated the autos.

The emergence of the third category of service provider – (c) above – was a direct outcome of the larger institutional setting. Delhi has a huge inflow of migrants, persons in search of employment coming from other States such as UP and Bihar. Transport Department officials confirmed that a number of the auto operators were from States outside Delhi. In addition, there are many other persons also seeking employment in the service sector. They do not have the economic wherewithal to become owners; they therefore seek to earn a living by renting from owners/financiers.

7. On 28 July 1998, the Supreme Court passed the following orders:
- Plying of all commercial vehicles including taxis, which are 15 years old, shall be restricted by 2 October 1998.

- Replacement of all pre 1990 autos and taxis with new vehicles on clean fuels by 31 March 2000.
- Financial incentives for the replacement of all post 1990 autos and taxis with new vehicles on clean fuels by 31 March 2001.

8. Thus, from 1998, all vehicles over 15 years of age were prohibited from plying on Delhi's roads. Later, as directed by the Supreme Court, the change in fuel-use policy came into force, namely, a switchover from MS to CNG as the fuel for public road transport. Consequent to this decision, autos, motor car taxis, and buses were obliged to switch to the CNG mode. The transition to CNG for autos was effected in the following manner: persons holding permits to operate autos using MS were allowed to obtain a new permit in lieu of the old one subject to the condition that they switched to CNG i.e. purchase and operate only CNG autos. This was called the replacement scheme viz. new permits replaced old ones. If the permit holder did not exercise the option, the old permit would simply lapse. The manner in which the transition to CNG took place had an important impact on the structure of auto service suppliers. First, some owner-operators exercised the option to switch to CNG, procured a loan, purchased a CNG vehicle, and continued operation. Second, some other owner-operators decided not to invest any capital in switching over; instead, they sold their permits on the grey market. Others who sold their permits included those who may have wanted to switchover but could not for want of access to the credit market. For the large part, these permits were cornered by a handful of financiers/ fleet-owners. Third, some owner-operators exercised the option to switchover, obtained a loan in the informal credit market at exorbitant interest rates, started plying autos on CNG, were unable to service the debt, and their vehicles were repossessed by the persons who advanced the loan. They then started renting the vehicle from the financiers and plying the auto, in effect an owner became a lessee. Fourth, fleet-owners, who were running autos either by engaging drivers or leasing out vehicles, in blatant violation of permit conditions, decided en masse to switchover to CNG. Most of them were able to augment the size of their fleets by acquiring permits sold on the grey market.

9. Instances have also been reported of some owner-operators from the MS regime who were doubly-hit. Persons plying 15 year old vehicles had to replace these with new autos. They therefore purchased a new MS vehicle. Barely two years later, they were obliged to switchover to CNG i.e. the relatively new vehicle had to be abandoned and a new CNG purchased or the vehicle had to be retrofitted for CNG. This double-whammy pauperized many operators. The result was that hitherto owner-operators also joined the ranks of those leasing vehicles from fleet-owners.

10. Before proceeding further, it is useful to step back and reflect on the cost of the switchover. Roughly speaking, the change to CNG mode entailed a capital expenditure of about Rs.450 crores on autos i.e. 45000 new autos at Rs.1 lakh each. Resources of this magnitude were just not forthcoming from Government-run financial institutions. Equally, the formal credit markets, such as commercial banks, are generally reluctant to advance loans to this segment because of lack of collateral and credit risks involved. This capital market failure resulted in an opportunity for the informal credit market. It was only to be expected that the financier working in the informal market would quickly enter and seize this opportunity. Thus, not only was the switchover an expensive exercise from both an individual and a macro perspective, the inability of individuals to access the formal credit market effectively determined the pattern of ownership and mode of supply of transport services that subsequently emerged.

11. The outcome of this transition has been a shakeout in the auto service supplier market. Only a small percentage of autos plying in the city are now owner-operated. The bulk of the city's autos are owned by fleet – owners and financiers. Persons operating this large fleet are semi-skilled drivers in search of employment and income with little economic power. The financier/fleet-owner has, in effect, become a rentier, and wields considerable monopoly power vis-à-vis those seeking to rent the vehicles. The operator pays a fixed daily/monthly rental to the owner of the vehicle and runs the auto. The operator bears only the fuel costs (and minor repairs) and keeps revenues earned from plying the vehicle i.e. revenues in excess of the daily rental are the earnings of the operator. This

institutional arrangement has advantages of flexibility from the auto-owners perspective since there is a large floating population of prospective auto-drivers. Also, since migrants have a strong rural nexus, they often return to their hometown for the harvest season (or for any other purpose) for at least part of the year. Since they are not full-time operators, the owner can draw on the large pool of semi-skilled labour seeking employment for operating the auto.

12. To sum up, the auto service suppliers have come to be dominated by fleet-owners (and financiers) who are essentially rentiers. Auto operators are drawn from a large pool of persons seeking employment (including many migrants from other States). Since the pool of employment-seekers is larger than the stock of autos, the fleet-owners (and financiers) exercise considerable economic power over prospective auto operators. Some owner-operators continue to function; and a few of them have even become lessees because of the hardships faced in the transition to CNG. This is the phenomenon of pauperization referred to in paras 8 to 11 supra. There is also an intermediate situation between the owner-operator and pure lease-operator. In this case the owner is in a situation of debt bondage to the financier and pays a fixed interest/rent but bears all expenses relating to running the auto.

13. One other striking feature about the market needs to be carefully noted. The Supreme Court stipulated a ceiling of 83,000 autos for the city. Of this, about 45,000 are currently plying: these are the vehicles that the Supreme Court permitted on a replacement basis viz. permit-holders under the old regime who switched over to CNG. The Supreme Court, however, placed an embargo on registration of any other CNG autos: that is other than those under the replacement scheme. In effect, new entry into the market is closed. Thus, competition in the form of prospective new entrants, either through new owner-operators or fleet-owners, is completely ruled out. The absence of potential competition strengthens the economic power and bargaining position of the fleet-owners and the financiers.

14. The vehicle population of the city has been growing at over 7% per annum. The share of para-transit, the bulk of which is provided by autos, has declined considerably in recent years. This has implications for the modal share of public transport such as buses and the metro. Access to para-transit modes is important for users of public transport, since this facilitates door to door service that would otherwise be available only with personal vehicles. A higher share of public transport is, in turn, critical to reduce reliance on personal vehicles and thereby congestion and emissions. There are, therefore, good grounds to believe that it is necessary to increase the total number of autos on the road, to preserve both the penetration of para-transport as well as not to impose further strains on the public transport modal split.

HOW TARIFFS WERE FIXED IN THE PAST:

15. Until relatively recently, determination of tariffs for autos was not based on any clearly specified criteria or settled and announced principles. Tariff determination in the past did attempt to take fuel costs into account. However, it would not be unfair to aver that in essence tariff formation was adhoc. In May 2002, the Transport Department undertook an exercise that sought to determine auto tariffs on a normative basis. The exercise decomposed costs into the following fuel costs, maintenance cost, compensation for the driver, depreciation, interest and general expenditure. This exercise attempted to set norms for maintenance, fuel-use, and capital servicing costs (interest and depreciation) etc. to arrive at an estimate of the normative cost of delivering transport services. The costs were estimated on the basis of accepted levels of fuel-efficiency, engine oil change, servicing, replacement of tyres/tubes, general repair costs, insurance charges, taxes, fees, etc. The exercise also costed the monthly earnings of the driver i.e. the total costs imputed an opportunity cost to the work of the driver and anchored this to the level of the minimum wage, Rs.3100 a month. Some assumptions were made regarding distance covered and trips undertaken in a day. The tariff was then determined as Rs.5/- for the first Km (meter down) and Rs.2.50 for each subsequent Km.

THE APPROACH TO TARIFF DETERMINATION:

16. The GoE decided to use the normative costing as its starting point. Some mistake had crept into the May, 2002 exercise e.g. the distinction between fixed and variable costs, how to capitalize costs etc. Examples of some of these oversights are: (a) The cost of an electronic meter ought to be capitalized, rather than charged as a recurring annual cost; (b) Permit fees have to be costed at Rs.100 per annum, not at Rs.500 which is the 5-year charge; (c) For owner-operators, costs incurred on purchasing the vehicle should be capitalized viz. a monthly amortization should be determined; (d) Actual insurance charges prevailing in the market were nearly 5% higher than those costed in the normative estimates.

17. The second aspect noted by the GoE was that the Transport Department's normative cost exercise was premised on the assumption of an owner operated auto (or, at best, an owner hiring a driver on a fixed compensation to operate the vehicle). The costing exercise did not take into account the rentier system that has come to dominate the supply of auto services in the city. As a first step, the GoE decided to rework the normative costing for an owner-operator, since this was the condition on which a permit was issued to an operator. Subsequently, adjustments could be made for the rentier system to calculate the economics of a lease operator.

18. The basic cost components were identified as:
- a) Capitalised charged i.e. the monthly installment to be paid to service loan taken to procure the vehicle and the electronic meter;
 - b) The running cost i.e. the fuel cost;
 - c) Cost of maintenance and repair;
 - d) Annual charges e.g. insurance, taxes, fees; etc.

CAPITALISED COSTS:

19. Costs incurred on acquiring a vehicle and fitting a meter are one-time, up-front costs. The normative cost per annum on account of this capital expenditure ought to be the annual amortization over the economic life of the asset. This is easily computed applying a suitable rate of discount to the capital cost over the economic life of the vehicle and the meter. However, there are some inherent difficulties in adopting this approach.

20. First, the economic life of the vehicle may be 10-15 years. However, a loan taken from the formal/ informal credit market may have to be repaid in a shorter time period. The servicing of the loan entails an actual monthly cash outflow that would be much higher than the imputed monthly amortization derived using the economic life of the vehicle. If tariffs were based on normative costs derived from the economic life of the asset, they would be too low. Equally, it would be unfair to use a short duration loan as the basis of determining normative costs. Why? For example, if the loan is repaid say over 5 years, and normative capitalized costs are fixed on this basis, then there is a large cushion in the normative cost if the life the vehicle is 10 years or more. In effect, the asset would have been fully paid for in 5 years, and if tariffs were based on this normative cost, operators would have a huge margin in the tariff for the remaining years of economic life of the asset i.e. the tariffs so derived would be too high. Loans are typically repaid over a 5-7 years period e.g. DFC's loan maturity is 5 years. Taking the entirety of circumstances into account, the GoE decided to fix normative capitalize costs using a 7-years period for determining amortization.

21. The second major issue is about the rate of discount to be used. Interest rates charged by commercial banks over the last two years have been in the range of 12-15%. Rates of interest in the informal credit market are significantly higher. Representatives of the auto-operators mentioned rates of 24%. DFC has financed 4000 CNG autos, it charges an interest rate of 13%. Since DFC has financed owner-operators, in consonance with Government policy and permit

conditions, to begin with it was decided to use 13% as the rate of discount. The group also decided to conduct a sensitivity analysis over the range of 13% - 24% and then reach a final conclusion.

FUEL COSTS:

22. Total running costs depend on the price of CNG, fuel-efficiency, and total distance traveled. Fuel efficiency has been assumed as 35 kms/kg. This is widely accepted as a fair estimate of fuel economy. The capacity of a CNG auto cylinder is 3 kg. and most auto drivers report that one filling enables them to ply the vehicle for 100 kms. This is corroboration in support of the assumption. On average, an owner-operator runs an auto in the range of 120-150 kms/day. Most operators ply the vehicle for over 10 hours a day. Given average speeds possible in the city, and factoring in idling time, 120-150 km. of distance traversed in a day is plausible. A study by TERI titled "Environmental Aspects of Energy Use in Large Indian Metropolises" lends credence to the assumption. The study reported an average daily vehicle utilization of 120 Km. for autos.

MAINTENANCE COSTS:

23. Normative maintenance cost (including repairs) have been estimated on the basis of the maintenance manual published by the manufacturer, Bajaj Auto Ltd. This includes regular change of oil, replacement of tyres/tubes, costs of other consumables, replacement of machinery parts, and labour costs of individual maintenance tasks. A detailed worksheet showing this computation is attached as Annexure-2. Maintenance norms specified by manufacturers are likely to be higher than those observed by operators in practice. Similarly, labour charges specified in the manual for maintenance and repairs at the manufacturer's workshop are likely to be higher than those prevailing at a roadside mechanic's shop. Using these maintenance standards provides a floor for normative costs at about Rs.1100 per month. Taking into account that there may be other maintenance needs, minor repairs, unanticipated replacement of parts, unforeseen repairs etc., it was decided to provide a cushion about the floor

estimate. On this basis, the Group settled on a normative maintenance cost of Rs.1500 per month (this provides a 30% mark-up over the floor).

ANNUAL CHARGES:

24. Annual charges include insurance, road tax, permit fees, and costs incurred for quarterly pollution checks. Information on these charges was obtained from the Transport Department. Such annual charges amount to Rs.3005 per annum. Hence, the normative monthly cost on this account is a little more than Rs.250. Details may be seen at Annexure-3.

ESTIMATING EARNINGS OF AN OWNER-OPERATOR:

25. On the basis of the normative costs determined above, simulations were carried out to estimate monthly earnings of an owner-operator. The earnings were estimated for three separate distances traversed in a day: (a) 137.5 kms (25 trips x 5.5 km); (b) 125 kms (25 trips x 5 km); (c) 110 kms (22 trips x 5 km). The simulations also varied the interest rate between 13% (as charged by DFC) and 24% (as averred by auto operators). Table – 1 reports the results.

26. While Table-1 reports monthly earnings on the basis of normative capitalized cost (13% over a 7-year period), it was deemed useful to estimate the monthly earnings that would accrue to an operator who had taken a DFC loan. DFC has financed about 4000 CNG autos i.e. roughly 10% of the existing fleet. These autos are primarily owner-operated. The terms of the DFC loan are interest rates of 13% and a repayment period of 5 years. Using these terms to determine monthly amortization charges, the monthly earnings of a DFC financed CNG auto were computed and Table-2 reports the results.

Table – 1

MONTHLY EARNINGS OF AN OWNER-OPERATOR (In Rs.)

Rate of interest (in %)	DISTANCE - COVERED		
	137.5 KM (25 TRIPS x 5.5 KM)	125 KM (25 TRIPS x 5 KM)	110 KM (22 TRIPS x 5 KM)
13	4512	3911	3603
14	4455	3854	2946
15	4397	3797	2888
16	4339	3738	2829
17	4279	3678	2770
18	4219	3618	2709
19	4158	3557	2648
20	4096	3495	2586
21	4033	3432	2523
22	3969	3368	2460
23	3904	3304	2395
24	3839	3239	2330

Table – 2

**MONTHLY EARNINGS OF A DFC FINANCED
OWNER – OPERATOR (In Rs.)**

DISTANCE COVERED	137.5 Km	125 Km	110
EARNINGS	4025	3455	2546

27. A second set of simulations estimated comparative earnings of auto operators in two other metros, Chennai and Mumbai. Annexure-4 provides details of prevailing tariffs and other charges in the metros. To estimate earnings in Chennai, three city-specific aspects had to be factored into the calculation. First, autos operate on petrol, not CNG. Fuel costs are therefore much higher. Second, the capital cost of a petrol auto is Rs.60,000 not Rs.1 lakh as for a CNG

auto. Third, maintenance and repair charges for a petrol auto are cheaper, it was assumed that maintenance costs are 20% lower. On these assumptions, monthly earnings for an auto operator in Chennai plying the same distance as his counterpart in Delhi was estimated. Table -3 below reports the results.

Table – 3
MONTHLY EARNINGS OF OPERATORS
IN DIFFERENT METROS (In Rs.)

DISTANCE COVERED	137.5 Km	125 Km	110 KM
CHENNAI	2687	2208	1633
DELHI	4512	3911	3003

28. Another simulation across these two cities was undertaken. This assumed that while the Chennai operator accessed capital at 13%, the Delhi operator could only access capital at 24%. On these assumptions, monthly earnings were estimated for operators in the two cities and Table-4 reports the results.

Table – 4
MONTHLY EARNINGS OF OPERATORS
IN DIFFERENT METROS (In Rs.)

DISTANCE COVERED	137.5 KM	125 KM	110 KM	Rate of Interest
CHENNAI	2687	2208	1633	13%
DELHI	3839	3239	2330	24%

29. Simulations to estimate earnings of auto operators in Mumbai yielded the results reported in Table – 5.

Table – 5
MONTHLY EARNINGS OF OWNER-OPERATORS
IN DIFFERENT METROS (In Rs.)

DISTANCE COVERED	137.5 KM	125 KM	110 KM
CHENNAI	6857	5969	4903
DELHI	4572	3911	3003

30. It is useful to summarize the bindings so far.
- a) Using the normative costs determined above and applying currently prevailing tariffs, monthly earnings of an owner-operator vary between Rs.2300-4500 a month depending on the rate of interest charged on the loan and the distance traveled. If the daily distance traveled is anchored at 125 km, monthly earnings range from Rs.3500 (20% rate of interest) to Rs.3900 (13% rate of interest).
 - b) Even though Chennai's tariff are higher, a like to like comparison shows that monthly earnings of a Chennai owner-operator would be between 50 – 60% of his Delhi counterpart i.e. at currently prevailing tariffs, monthly earnings of a Delhi owner-operator are much higher. Even if one were to assume that the Chennai Operator obtains credit at a far cheaper rate than his counter-part in Delhi, the monthly earnings of the owner-operator in Delhi are still significantly higher.
 - c) Monthly earnings of a Mumbai owner-operator are indeed higher than his Delhi counterpart. This is mainly because of higher tariffs. Even though Mumbai's tariff on the marginal Km is 100% higher than Delhi's, earnings in Mumbai are only 50-60% higher.

ESTIMATING EARNINGS OF A LEASE OPERATOR:

31. The dominant mode of supply of transport services is by persons who lease autos from a fleet-owner/financier. Simulations were undertaken to compute earnings for an operator renting an auto. Leasing charges vary between Rs.175 per day (for a retrofitted CNG auto) and Rs.250 per day (for a new CNG auto). In the rental market, the fleet-owner is responsible for all costs other than fuel (and minor repairs). Thus, the rental charge is supposed to cover the capitalized costs, the maintenance costs, and all annual charges. It has also been reported that many rented vehicles are run on a two-shift basis i.e. two persons share the cost of the rental and ply the vehicle for longer hours and larger distances Table-6 reports the results of these simulations.

Table – 6

MONTHLY EARNINGS OF A LEASE OPERATOR (In Rs.)

Daily rentals (in Rs.)	DISTANCE - COVERED		
	137.5 km	125 km	187.5 km (25 trips x 7.5 km) (Two shifts)
175	3798	3197	
200	3173	2572	5576 (2788 Per Person)
225	2548	1948	4951 (2476 Per Person)
250	1923	1322	4326 (2163 Per Person)

32. A lease operator incurs a fixed daily rental cost. Obviously, it is in the lease operator's interest to maximize the distance covered. Hence, it seems plausible to assume that a single person renting a vehicle would run it for at least 137.5 kms per day. On this basis, the table above suggests the following conclusions:

- a) Monthly earnings of a single-person lease operator range from Rs.1900 to Rs.3800 per month.
- b) For persons renting on a two-shift basis, monthly earnings are in the range of Rs.2200 to Rs.2800 per person.

SOME OTHER ONCLUSIONS:

33. The results of the simulations reported in Table 1 – 6 above provide the basis for explaining the observed phenomenon of over-charging. Monthly earnings of operators – be they owner-operators or lease operators – at prevailing tariffs are relatively low. This explains, but does not justify, the reluctance to charge fares on the basis of a meter. This outcome is not merely a result of tariffs being set in a particular manner. Rather, it is predominantly an outcome determined by institutional factors, the monopolistic structure of the market, the reliance on informal credit markets, and the resultant dominance of fleet-owners and renters.

34. The second crucial aspect to note is that there are different returns for the three distinct types of operators. Owner-operators with DFC loans are at the top of the totem pole with the highest monthly earnings. They are able to access capital from the format credit market. Next come those owner-operators who have taken loans from other sources at much higher rates than DFC. They access capital at interest rates of 20% or more per annum. At the bottom of the totem pole are the persons who lease vehicles from fleet-owners. The monthly earnings of these lease-operators is the smallest. The huge profit margin reaped by the fleet-owners is a direct consequence of their economic power vis-à-vis the lease operators. The extent of this margin can be gleaned from the following. With a rental of Rs.250 per day, the effective rate of return to the fleet-owner/financier is about 48% per annum, and the payback period is less than 14 months.

TARIFFS AND MONTHLY EARNINGS:

35. The simulations reported above clearly show that at prevailing tariffs monthly earnings can be very low, in some instances even below the minimum wage of Rs.3100. This prompts the conclusion that, prima-facie, tariffs need to be raised. How do tariffs affect monthly earnings? To assess the impact of tariffs on monthly earnings, two separate sets of simulations were carried out. In the first exercise, the meter down charge was pegged at Rs.7 and the tariff for the marginal km was increased in 50 paise slabs. In the second exercise, the marginal km rate was pegged at Rs.3 and the meter down rate was increased in Rs.1 slabs. The results are reported below:

Table – 7

MONTHLY EARNINGS OF DIFFERENT OPERATIONS (in Rs.)

	TARIFFS			
	7/3	7/3.5	7/4	7/4.5
DFC financed owner-operator	6710	8120	9525	10930
Informal credit market financed owner-operator. (i) 24% - 7 years	6495	7900	9310	10710
	6085	7500	8900	10300
Lease Operator (Daily rental Rs.200 – 250)	4580-5830	6000-7200	7390-8640	8800-10050

Table – 8

MONTHLY EARNINGS OF DIFFERENT OPERATORS (In Rs.)

	TARIFFS		
	7/3	8/3	9/3
DFC financed owner-operator	6710	7340	7960
Informal credit market financed owner-operator. (i) 24% - 7 years	6495	7120	7745
	6085	6710	7375
Lease operator (Daily rental Rs.200-250)	4580-5830	5200-6450	5830-7080

36. While the results reported above for owner-operators are basically robust, this is not necessarily so for a lease operator. Irrespective of whether an owner-

operator has taken a loan from the formal (DFC) or informal credit market, the contractual obligation is fixed and immutable. However, for a lease operator this not the case, conditions of a lease contract can be changed. The implicit assumption made in Table-7 and 8 is that the terms of the lease would not change i.e. the rental would remain at currently prevailing levels. If the hike in tariff also occasions an increase in the daily rental, then the monthly earnings of a lease operator would be far less than reported in the tables above.

37. While it is clear that tariffs have to be increased, the inescapable conclusion of the above analysis is that **merely increasing tariffs will not solve the underlying problem**. If financiers/fleet owners continue to exercise market power vis-à-vis the economically weaker lease-operators who run their vehicles, a tariff increase would merely be a temporary palliative. The demand for a tariff revision will recur a few months down the road because once rentals increase, earnings of lease operators will drop, and they will again resort to over-charging or would not comply with using meters. This is a larger problem that needs to be addressed.

38. It needs to be appreciated that the institutional setting, the working of the informal credit market, and labour market conditions, cannot be changed radically or in a short space of time. This will need reforms over a number of years. However, there are promising possibilities for action. It is well understood that competition erodes super-normal profits and whittles the economic power of the incumbent monopolist. Freer entry into the market will generate such competitive pressure, provided it is new owner-operators who enter the market. Merely opening entry will not solve the problem as permits may once again be cornered by the few powerful financiers. Hence, in parallel, mechanisms and procedures have to be devised to tackle the capital market failure i.e. the problem of access to loans in the formal credit market. Another possibility worth examining is the entry of corporate entities which could be given permits to operate autos in larger numbers e.g. 200 or more. This could lead to the formation of auto companies where operators would be drivers earning an industrial wage rather than lessees. Where permits/licenses to operate are given

to such corporate bodies in bulk, it is also easier to enforce compliance with rules and tariffs.

TOWARDS A FORMULA FOR TARIFFS WITH INDEXATION

39. One of the main terms of reference for this Group was to determine principles of tariff fixation, arrive at a formula, and suggest possible indexation. The normative cost approach that has been adopted meets these requirements. It is grounded on principles, yields tariffs based on a formula, and is readily amenable to indexation. This can be illustrated in the following manner. For example, in the base year under reference, the main monthly cost components are capitalized costs (Ko), fuel costs (Fo), maintenance costs (Mo) and annual charges (Ao). Suppose that tariffs in the base year are set at the level of To. Then, monthly revenues of an operator Ro are a function of To and the distance traveled (D – assumed to be fixed on a normative basis). The implicit monthly earnings (Eo) of an operator then are,

$$E_o = R_o - K_o - F_o - M_o - A_o,$$

and the equation for the tariff determination is,

$$R_o = K_o + F_o + M_o + A_o + E_o.$$

40. How would tariffs in the next period, T1, be determined? Since the normative capitalized costs are computed on the basis of a loan at a fixed interest rate, there is no change in these capitalized costs in the next time period. No indexation is necessary for these costs. That is, K1 and Ko are the same. It would be advisable to revise the cost of the vehicle / the meter once every 5 years to take into account inflationary factors. Similarly, if there is a major shift in market interest rates, then a review of capitalized costs will be necessary. In normal course, this also ought to be reviewed once in 5 years. Similarly, the fuel cost in the next period F1 will change only if the price of CNG changes or sales tax rates changes. If neither happens, no indexation is necessary for the fuel cost i.e. F1 and Fo are the same. The same logic implies to the annual charges i.e.

A1 and A0. The two components where indexation can be applied are the maintenance costs and the implicit monthly earnings. Maintenance costs in the next time period, M1, can be indexed to costs in the base period by applying a general price inflation index such as the WP1. If wholesale prices went up by 5%, then maintenance costs in the next time period can be set 5% higher than in the base period. The implicit monthly earnings E0 can similarly be inflated using the CPI for industrial workers or the WPI index for inflation in Delhi. Now, T1 can be easily determined using the equation below:

$$R1 = K1 + F1 + M1 + A1 + E1.$$

where, M1 and E1 are the revised, indexed costs. In short, T1 has to be calibrated to equate R1 to the sum of all costs including E1. That is, the tariff level is set so as to cover costs and generate the indexed implicit monthly earnings. A diskette containing the normative cost model spreadsheet used for running the simulations reported in tables from 1 to 8 is enclosed with this report. Tariff fixation using the equation above is easily done using the computer spreadsheet. That is, the equation can be solved for determining tariff structures.

41. This approach has two great advantages, namely, transparency and simplicity. As a general rule, tariffs should only be revised on an annual basis. Government may wish to select a date, say 1st June of a year, when revised tariffs will come into force. The reason for suggesting 1st June is simply that by then data on inflation for the preceding fiscal year would be readily available. The only exception to this general rule should be when fuel prices or sales tax rates on fuel are changed. In such exceptional circumstances, it may be necessary to have an interim review of tariffs mid-year.

42. One last comment on tariff fixation is in order. In some circumstances, it may transpire that even after indexing costs, the resultant increases in tariffs is of a very small order, say 1 – 2%. Applying such small or fractional increases may result in tariffs that are not workable e.g. a 1.2% increase in a Rs.3 tariff will yield a hike of 3.6 paise. Rounding off may partly solve the problem. However, in many regimes the solution devised is that the tariff increase will only be given provided it is above a bare minimum, say, 5%. That is, if cost indexation results in a tariff

increase less than the minimum specified, the tariffs would not be revised. Government may wish to consider adopting such a mechanism.

TARIFF REVIEW PROCESS:

43. The principles of tariff determination described above essentially amend the base year costs for inflation. Nevertheless, there would be a need for a periodic review of the base year costs also. Also, changes in patterns of demand for para-transit, technological charges, and changes in any assumptions embedded in the normative costing, have to be taken into account. For this purpose, it is recommended that the Government should periodically set up an independent committee to review base year levels and suggest corrections if necessary. The periodicity of this review could be determined by the Government. If, at a later date, an independent regulator is envisaged for the public transport sector in Delhi, this activity could be carried out by the regulator. A second recommendation is that Government may wish to consider appointing a Committee to look into normative or any other approaches for determination of tariffs of other modes of public transport.

OTHER TARIFF RELATED MATTERS:

44. While discussing tariff fixation, the Group also considered issues relating to night charges, waiting charges and luggage charges. Currently, night charges are set at a 20% premium over the fare. Night charges in Mumbai and Chennai are reported to be 25%. The Group did not see any reason why night charges could not be hiked to the level in other metros. Waiting charges are currently nil. Taking into account the opportunity cost of time for an auto operator, it was felt that waiting charges of Rs.15 – 20 per hour or part thereof (subject to a minimum of a 15-minute stay) were justifiable. Third, the luggage charge rates currently in force are weight-based, difficult to enforce, and not easily understood. It would be

simpler to introduce a per piece charge. The intention is that passengers with bulky luggage should pay on a per piece basis. One possible way is to stipulate that except for shopping bags, or a small attaché case, etc., all other luggage would attract a charge of Rs.5 per piece.

MISCELLANEOUS ISSUES:

45. Some other matters related in general to auto transport services in the city arose during the course of the deliberations. The views and suggestions on some of the main miscellaneous items are as below:-

i) Grievance Management

A helpline has been started to assist consumers in dealing with recalcitrant auto drivers and to enable the authorities to monitor behaviour of auto operators. A system needs to be put in place that enables auto operators/drivers to communicate legitimate difficulties they may encounter either in regard to passengers, or more importantly, in relation to regulatory requirements of official agencies. Such a Grievance Cell could be monitored by a Committee including both official and non-official representatives, and would attempt to both mediate and help enforce compliance to the rule of law by all concerned parties.

ii) Auto stands

At present, there are a handful of designated stands for autos. However, mostly autos are parked along the road and there are inadequate designated parking spaces. As a key component in the transport system of Delhi, efficient functioning of autos calls for demarcation of spaces especially in crowded areas (markets) and at major points of use near hospitals, railway stations, metro stations, airports and near bus stands. This will also enable closer monitoring and compliance with regulations.

iii) Meters

The auto meter is a critical technological input to a successful fare structure. Tariff determination on clear criteria and principles would be set at naught if fares have to be negotiated for each journey. This is why meters matter. Insisting on appropriate safeguards for the quality of a meter is absolutely essential. What is really needed is a simple device that measures distance, because once distance-based tariffs are announced the passenger can easily compute the fare due provided the meter accurately reports distance traveled. There have been some complaints about the malfunctioning of electronic meters. While installation of meters is essential and must be insisted on, it would also be necessary to devote some attention to reported problems in the functioning of meters and to upgrade standards and quality of meters. In addition, a legible display of other information, the fare-structure, ought to be mandatory. The Group noted that an initiative has been taken to develop fare charts which indicate point-to-point distances. This is a laudable effort; Government may wish to consider that, apart from meters, such fare charts should routinely be displayed in autos. Even if the distances are only indicative, at least it would prevent instances of gross over-charging.

SD/-

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GOVT. OF NCT OF DELHI
CHAIRPERSON

Annexure-I**List of representations received from Auto-unions/NGOs/Public/Press-cutting regarding Auto Strike/Increase in Auto Fare.**

1. Shri Sanjay Kaul, President, People's Action letter dated 13.12.2002 regarding results of opinion survey conducted by them on the issue of auto rate hike.
2. Shri Premjeet Singh Thekedar, President, All Delhi Taxi Union letter dated 18.12.2002 regarding appeal against auto-strike.
3. OSD to CM letter No.CM/PGC/2874 dated 16.12.2002 along with letter of Shri Munna Lal Pal, President, Bhartiya Tipahiya Chalak Sangh letter dated 3.12.2002 regarding memorandum.
4. Shri Sanjay Kaul, President, People's Action letter dated 17.12.2002 regarding issue auto rate hike and impact on taxis.
5. Shri Anand Kumar Swarankar, President, Pragatisheel Auto Rickshaw Driver Union letter dated 19.12.2002 regarding support of action taken by the government against auto-mafia.
6. Shri Amrish Roy, Consumer Redsural Forum, Tis Hazari letter dated 16.12.2002 regarding Auto-Rickshaw's (TSR) – passenger.
7. Shri Ashok Kumar Tewari, President, Tipahiya Chalak Sanyukat Morcha letter dated 18.12.2002 regarding increase in auto fare.
8. Prof. Dinesh Mohan, Indian Institute of Technology letter dated 13.12.2002 regarding suggestion in regard to auto fare.
9. Shri Veer Singh Chauhan, President, Bhartiya Tipahiya Chalak Sangh letter dated 18.12.2002 regarding memorandum against drive initiated by the government against auto/owners operators.
10. Shri Jai Bhagwan Goyal, President, Mahanagar Transport Sena letter dated 18.12.2002 regarding memorandum in favour of demand of auto-drivers.
11. Newspaper cutting of Times of India dated 18.12.02 entitled" Allow new autos to break cartel's monopoly : Govt."
12. Col. B.B. Sharan, President, Nyayabhoomi letter dated 13.12.2002 regarding auto fare.
13. Shri Sanjay Kaul, President People's Action letter dated 16.12.2002 regarding recommendation in view of the auto strike etc.
14. Ms. Suchi Dubey letter dated nil regarding support to government against auto strike.
15. Shri I.J. Sharma letter dated 10.12.2002 regarding auto rickshaw & taxi fare.
16. Shri L.L. Shorey telegram dated 13.12.2002 regarding not to succumb against auto strike.
17. Shri R.K. Bharani letter dated 12.12.2002 regarding threat and menace from auto rickshaw drivers.
18. Shri Dinesh Jain, President, Delhi Citizens Forum letter dated 12.12.2002 regarding auto fares.
19. Auto Rickshaw Operators of Raghubir Nagar Fax letter dated 12.12.02 regarding auto fare.
20. Lt. Col. B.B. sharan, President, Nyayabhoomi letter dated 12.12.2002 regarding resolving auto rickshaw drivers problems.
21. Sardar Mohan Singh, Pradhan, Uttar Delhi Auto Rickshaw Chalak Sangh letter dated nil regarding consent to run their autos as per meter.
22. Shri Veer Singh Chauhan, President, Bhartiya Tipahiya Chalak Sangh letter dated 18.12.2002 regarding consent to run their autos as per meter.

23. Shri Hari Ram Yadav, President, Rajdhani Lohiavahini Auto Sangarsh letter dated 19.12.2002 regarding consent to run their autos as per meter.

Annexure-2

Item	Description	Equip Cost	Labour Cost	Total per km
Servicing	Every 5000 km	-	121	0.02
Engine Oil	1500 ml per 5000 km + 80 ml daily topping	Rs.100 per litre	160	0.12
Oil Filter element	Replacement after 5000 km	20.9	0	0.00
Differential Oil	250 ml per 10000 km	Rs.100 per litre	100	0.00
All cleaner element	Replace after 15000 km	152.9	0	0.01
Spark plug	Replace after 10000 km	26.2	0.	0.00
Brake Oil	Replace after 1 year	50	150	0.00
Shaft, slider, block	Replace after 1 year	44	100	0.00
Steering overhaul	Every 25000 km		150	0.01
Front Suspension	Every month		50	0.01
Tyres	4 tyres every 50000 km	Rs.684 per tyre		0.05
Bearing	Every Year	200	50	0.01
Brake shoe	Every Year	250	50	0.01
Piston ring	Every Year	290	100	0.02
Piston assembly	Every Year	1130	100	0.06
Clutch plate	Every Year	580	150	0.02
Denting etc.	Every Year		1500	0.43

Total				1077.967
Km per day		137.5		

Annexure-3**ANNUAL CHARGES (in Rs.)**

Insurance	2300
Road tax	305
Permit fees	100
Fitness fees	200
Pollution checks	100
Total annual charges	3005

Annexure – 4AUTO FARES IN THREE METRO CITIES

City	Auto fares	Other charges
Chennai	Rs.7 up to 2 Kms. Rs.3.50 for every km. After 2 kms.	Waiting – 0.20 paise every five minutes Night charges – normal + 25%
Delhi	Rs.5 for first Km Rs.2.50 for every km after first km.	Waiting – Nil Night Charges – 20% extra Luggage charges – up to 20 Kg. free Subsequent articles of weight 5 kg and above – 50 p per article
Mumbai	Rs.8 for 1.6 kms. Rs.5 for every km. After 1.6 kms.	
