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AIRLINE COMPETITION POLICY IN NEPAL

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Introduction

The government of Nepal recently took steps to end Royal Nepal Airlines' (RNAC) monopoly position as the sole provider of domestic air service in Nepal by registering three private airlines. Although this change can be viewed as part of a broader economic liberalization plan, it was also intended to address certain problems in the domestic aviation sector. For many years the tourist industry has argued that the service provided by RNAC, characterized by a shortage of flights, frequent cancellations, etc., discouraged tourists from coming to Nepal and discouraged those who did come from leaving the Kathmandu valley. Private airlines and competition for RNAC were seen as means to attract more (and bigger spending) tourists and to spread tourism beyond Kathmandu.

The United States Agency for International Development Mission in Nepal, through its contract with the IRIS Center at the University of Maryland (Institutional Reform and the Informal Sector) asked me to advise the Department of Civil Aviation in the Ministry of Tourism on airline pricing policy for the new private airlines. However, because I believe that pricing policy cannot be viewed in isolation from entry policy and subsidy policy, all three of these issues are dealt with below.

To summarize my recommendations: Entry into the airline industry and into particular routes should be free. Airlines should be free to charge whatever prices they wish to tourists. If a subsidy for Nepali air travelers is necessary, the government should establish the service standards that it deems appropriate (e.g., flight frequency and fare) and solicit bids from carriers for the amount of subsidy that would be required. Economists today recognize that markets are not perfect. However, experience has convinced most economists that free markets, with their imperfections, are superior to government regulation.

Entry

The issue of entry relates both to entry into the airline industry and entry of existing carriers into specific routes. Because safety information is difficult for passengers to gather

and interpret, it is a legitimate role of government to set safety standards that airlines must demonstrate an ability to meet to become licensed. (Licensing should be considered distinct from registration. A potential airline would register at the Department of Industry like any other business. However, the Department of Civil Aviation would then license the carrier if it demonstrated the ability to operate safely.) However, the process of licensing should be as transparent as possible, with published standards, deadlines for decisions, etc. Furthermore, only minimal economic data should be required for licensing. The purpose of licensing is to make sure that the carrier can operate safely. It should not be a guise for economic regulation of entry. Concerns about the alleged degradation of safety in the face of competition (e.g., skimping on maintenance) should be dealt with directly through vigorous safety regulation, rather than indirectly through entry (or price) regulation.

Although licensing airlines for safety purposes makes sense, once a carrier has demonstrated that it can operate safely, it should be allowed to enter any route it wants. This recommendation applies to all types of carriers: scheduled, charter, and helicopter. If there are route-specific safety requirements, then route licensing may be called for. The nature of some airports and routes in Nepal is such that (or so some people I spoke with told me) there must be some oversight by government. For example, the Pokhara-Jomsom route involves flying through a narrow valley with only “room” for one flight at a time (regardless of direction). This may require some government oversight/coordination. Of course, a U.S.-style “slot” system is possible, in which the government determines the capacity of the route based on safety considerations and allocates these rights to the carriers involved. This allocation could be done in several ways, but auctioning the rights has the appeal that they would go to the highest bidders---the airlines that value the rights the most---and it would raise revenue for the government.

Airline markets, like other markets, will only support a given number of competitors. Should the government or the market be the arbiter of how many carriers and which carriers serve each route? This is a task at which the market excels and at which government---any

government ---does not. The question of how many firms a market can support is a question only the market can answer. If the market has too few competitors (and thus has high prices and profits) other firms will enter in the quest for profits. Likewise, if a market has too many firms, some will exit in search of better opportunities elsewhere. Government, on the other hand, can only second guess what a market outcome would be. Which particular firms serve a market is also best determined by the market. The market favors those firms that provide the best product or service at the lowest cost. The best a government could do, once again, is second guess the market outcome. At worst, government could assign rights to firms based on political factors unrelated to the efficiency of the firms involved. When government is in a position to bestow profit opportunities on firms, corruption is likely to follow.

Entry policy and price policy are closely linked. The more freedom that is granted in pricing, the more important it is that entry be easy. Government policy should be directed to making entry by new carriers (and by existing carriers into new routes) as easy as possible. This condition has implications for access to foreign exchange, etc.

Pricing

The issue of pricing can be divided into the issue of pricing on tourist routes (and to tourists in general) and pricing for locals. Pricing for locals is examined in the subsidy section below, so this section deals only with pricing for tourist traffic. Private airlines (and **RNAC**) should be able to charge any price they wish to tourists. Why should airlines be different from hotels? Although by law the Nepalese government must approve RNAC's fares, I was told that its tourist fares generally are approved as submitted as a matter of course. The new airline owners agree (partly, see below) they should have pricing freedom. So do the user groups who believe pricing freedom will result in lower fares. However, the owners want a floor below which they may not price to prevent "chaos." Partly this reflects their desire to reduce competition.

Any fears that airline operators would collude to set high prices should be dealt with

directly through sanctions for collusive behavior, rather than by fare regulation, which often results in a government sanctioned cartel in which price competition is forbidden.

Strict regulation of fares can lead to problems. Air transportation is a complicated service that can be produced at different levels of quality. Perhaps the most important quality dimension is frequency or service and its impact on the probability that a passenger can get a seat on the flight of his choice. If fares are tightly regulated, the only competitive outlet is the quality of service. If fares are set too high, carriers will compete by adding additional flights to attract more passengers. The result of high fares will be high frequency service with many empty seats. If fares are set too low, carriers will reduce frequency making it difficult for passengers to obtain a seat of flights of their choice. If carriers are free to set fares, they can compete on the basis of price and quality, achieving the right combination of the two.

If some form of control of tourist fares is deemed necessary, I recommend a concept called a "zone of reasonableness, " which was used in the U.S. during the transition from strict regulation to complete deregulation. This approach specifies (by distance or by route) a maximum permissible fare and a minimum permissible fare. An airline may charge any fare that falls within the zone without government approval. Airlines wishing to charge fares above or below this zone would be required to present a case to the government justifying their request. This zone could be worked out in great detail, or current RNAC fares could form the basis. (See below for details.) If the zone were wide enough, carriers would have enough flexibility to innovate (e.g., peak period pricing, directional pricing, tiers of service) and adapt to changing circumstances, and those who seek some government regulation would be appeased.

I have developed an example of such a fare formula and zone of reasonableness. Table 1 shows the results of a regression in which current RNAC fares are expressed as a function of scheduled trip time (and a constant term). This indicates that the line that best fits the current RNAC fares as a function of travel time is $\text{Fare} = \mathbf{21.85} + 0.987 \text{ Time}$. Note that the R^2 of 0.79 means that time explains 79 percent of the variation in fares across routes, indicating that

other factors are also important. (Flight distance would be a better variable than time to use for regulatory purposes (since it is not under airline control), but I did not have access to that data.) In Figure 1, I have plotted actual fares as a function of time (the scatter of * symbols), the regression line mentioned above, and the upper and lower bounds of a proposed zone of reasonableness. This particular zone is the regression line plus and minus 45 percent. This 45 percent figure is arbitrary. However, I chose it as the narrowest band that included all the fares currently charged by RNAC. Appendix A contains a list of routes, the current RNAC fare, the regression formula fare, and the upper and lower bound fares.

With any fare formula, even one initially derived from current fares, some mechanism must be available to adjust the formula for changes in airline costs. In the U.S. this was done by adjusting the original formula based on changes in airlines' cost per available seat mile. This could be done in Nepal, but would require further regulatory apparatus in which carriers would have to submit financial data to government. Alternatively, a cruder approach could adjust the original zone based on changes in fuel costs, labor costs, etc., (as gathered by the Rastra Bank).

Subsidy

RNAC, as an instrument of government policy, charges two different fares on each route, one for tourists (quoted in U.S. dollars) and the other (quoted in Rupees) for locals-and foreigners who have lived in Nepal for over six months are entitled to travel on local fares. Local fares range from eleven percent to thirty percent of tourist fares. RNAC effects this subsidy through internal cross subsidization, i.e., profits from international routes and from tourist routes are used to subsidize air travel by **Nepalis** (and foreign residents). Table 1 also shows a regression of local fares as a function of scheduled trip time. Figure 2 plots the data and the regression line. With local seats selling so cheaply (and in short supply), a black market has developed, where locals buy tickets in advance at the local fare and resell them at higher prices to other locals whose plans necessitated waiting until no alternative ticket source

was available. How important this is is not known, but it is not at all clear that the beneficiaries of the subsidy are in fact the local flying population.

Before discussing ways to effect a subsidy in the new competitive environment, I would like to address the economic effects of a subsidy. In a competitive environment without subsidy, prices equal cost (including an appropriate return on invested capital). A person deciding to fly (or buy any good or service) decides whether the trip is worth the expenditure. When prices equal cost, this person is (implicitly) comparing the benefit he will receive from the trip with the cost to society of providing it. If the benefits exceed the cost, he flies. If not, he uses an alternative mode or does not travel. This ensures that society's resources are only allocated to endeavors that generate more benefits than the cost to society of the resources used. With a subsidy this mechanism breaks down. The consumer no longer faces prices that reflect the costs of production. This will induce some consumers, for whom benefits fall short of costs, to fly, even though the trip uses more of society's resources than the benefit they receive. For example, suppose the \$61 tourist fare (approximately 2800 Rupees) from Kathmandu to Pokhara reflects the cost of providing service. The subsidized local fare is 750 Rupees. Suppose a traveler values the trip by air at 1000 Rupees. Without a subsidy he would take the bus or not travel. With a subsidy he uses 2800 Rupees of society's resources and receives a benefit of 1000 Rupees---wasting 1800 Rupees.

There is, however, an economic argument in favor of subsidies. If consumption of the good or service in question provides benefits beyond those enjoyed by the actual consumer, a subsidy may be justified. In transport the benefits that accrue to others (called externalities) are said by some to be enhanced political and cultural unity. So, it may be that the person in the example above only values the trip from Kathmandu to Pokhara at 1000 Rupees, but society at large receives an additional benefit of 1800 Rupees, so the benefits are not less than the costs. Although it is possible that such external benefits exist, they are impossible to calculate. Without any means to quantify the magnitude of the benefits to society at large, this justification for subsidy can result in any subsidy being "justified." So, it is prudent to be

skeptical of such “justifications. ” In any case, it seems reasonable to limit subsidy to those routes where an alternative to air (other than walking) is not available. Finally, with any subsidy, the question of its effect on the distribution of income arises. I heard from many Nepalis, both in and out of government, that Nepalis who fly---even at the subsidized rate---are reasonably well off---well off enough to afford the tourist fare so subsidy is not necessary. Certainly, none of the pro-subsidy arguments applies to foreigners who live in Nepal. Foreign residents of Nepal should not be eligible to receive any subsidy.

If it is deemed appropriate to subsidize local passengers, the issue is how to accomplish this in as efficient a way as possible. I propose that the government set standards of service and fares (e.g., one flight per week and a fare of 300 Rupees) and solicit bids from carriers for what subsidy they would require to serve each route. This is the method used in the U.S. in the Essential Air Service Program. (Carriers could be required to submit proposals and provide service for a given number of flight hours per month, for which they would be paid, thus ensuring that routes were, in fact, served.) These subsidies could be funded by taxes on tourists (see below) that would go into a trust fund that could only be used to subsidize local air transportation. By “auctioning” the subsidy and having carriers compete for the subsidy, the costs of subsidization are minimized. With a subsidy, carriers would have an incentive to provide service, which is not the case with internal cross subsidization. Also, with this plan the subsidy is explicit, not hidden. This way its costs and benefits are more likely to be compared with other government programs. For example, would it be better to increase subsidization for route A or route B? Would the money spent on subsidizing air travel be better used to subsidize food or to spend more on education? With internal cross subsidization the subsidy is hidden and alternative uses for the subsidy cannot be debated.

The funds to pay the subsidy to carriers could be generated by various taxes on tourists that would be paid into a trust fund, which could only be used to fund the subsidy. The ideal tax is one that raises revenue without discouraging tourists from coming to Nepal in the first place. This implies taxing wealthier tourists more than less affluent ones. Since measuring wealth in

this context is impossible, the tax could be levied on tourist expenditures, with the more affluent tourists being more likely to spend more. There could be a tax on hotel rooms, a tax on restaurant meals, a tax on air travel (by tourists), etc.

The government proposal is to require the new airlines to fly 40 percent of their flight hours on public service routes (i.e., not profitable) in return for the right to fly the remaining 60 percent of their flight hours on profitable tourist routes. It is my understanding that the government would not dictate which tourist or public service routes a carrier served. Government is not sure what routes would be involved. Furthermore, they are not sure what pricing policy to adopt for locals (on both the public service routes and on the tourist routes). They have talked about setting fares at a breakeven level, but have not decided how to operationalize such a concept. One airline owner suggested (whatever definition of breakeven is used) it be set equal to the breakeven level for the highest cost carrier. This is a sure way to legislate inefficiency. A better solution (within keeping of this framework) is to set breakeven fares at the average of each carrier's breakeven rate. This also legislates inefficiency, but less than the other approach. However, it appears that data collection and processing is very difficult and expensive, making such data intensive regulatory methods difficult or expensive.

Whatever subsidy scheme is used, a basis for setting local fares must be developed. A simple approach is to set them to a given percent of tourist fares. This would treat each route equally and set fares on a rational basis rather than on an *ad hoc* political basis.

Although the 60/40 rule has been proposed, little thought has been given to what time period the 60/40 rule would apply to. Would 40 percent of a carrier's weekly schedule have to be in the public sector (however defined) or should 40 percent of its annual schedule, or something in between? To the extent that local routes and tourist routes peak at different times of the year, if defined over a short time period, this rule would add unneeded capacity to local routes simply because tourist routes were peaking and, ironically, in need of the capacity.

The whole issue of subsidy and the 60/40 rule is confounded by the forthcoming entry of at least one charter carrier (and a helicopter carrier). There is disagreement whether charter

carriers can or should be subject to the 60/40 rule (or any other possible rule). I'm not sure how feasible it is to have them subject to the rule. On the other hand, the existence of carriers not subject to the rule may well undermine the internal cross subsidization on which the 60/40 rule is based. "Charter" carriers, that operate in a fashion indistinguishable from scheduled carriers may develop to skirt the regulation. With the explicit subsidy proposal above this problem would not develop. Airlines can live with the 60/40 rule but clearly would prefer not to. User groups see this rule as taking capacity away from the tourist routes where it is needed.

Miscellaneous

If a tax on tourist tickets was used to fund a subsidy (or for any purpose) I recommend that it (and current airport departure fees) be included in the price of the tickets. Such fees exist in many parts of the world, but are included in the ticket price. Making passengers pay separately at time of departure takes many people by surprise.

Also, from what I learned about landing fees (charged to airlines) in Nepal, they are very low. I believe they should be raised to reflect the cost of the service rendered.

Table 1

Fare Regressions

LS // Dependent Variable is TOURIST FARE (in U.S. dollars)
Number of observations: 102

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	21.851132	2.2763459	9.5992141	0.0000
TIME	0.9867938	0.0505335	19.527516	0.0000
R-squared	0.792240	Mean of dependent var		61.27451
Adjusted R-squared	0.790162	S.D. of dependent var		23.18593
S.E. of regression	10.62103	Sum of squared resid		11280.62
Log likelihood	-384.7310	F-statistic		381.3239
Durbin-Watson stat	1.843585	Prob(F-statistic)		0.000000

LS // Dependent Variable is LOCAL FARE (in Rupees)
Number of observations: 102

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	88.494316	21.630359	4.0912089	0.0001
TIME	10.154007	0.4801809	21.146214	0.0000
R-squared	0.817239	Mean of dependent var		494.1569
Adjusted R-squared	0.815411	S.D. of dependent var		234.9034
S.E. of regression	100.9234	Sum of squared resid		1018554.
Log likelihood	-614.3867	F-statistic		447.1623
Durbin-Watson stat	1.872876	Prob(F-statistic)		0.000000

Figure 1

Relationship of Tourist Fares (dollars) to Minutes of Flight

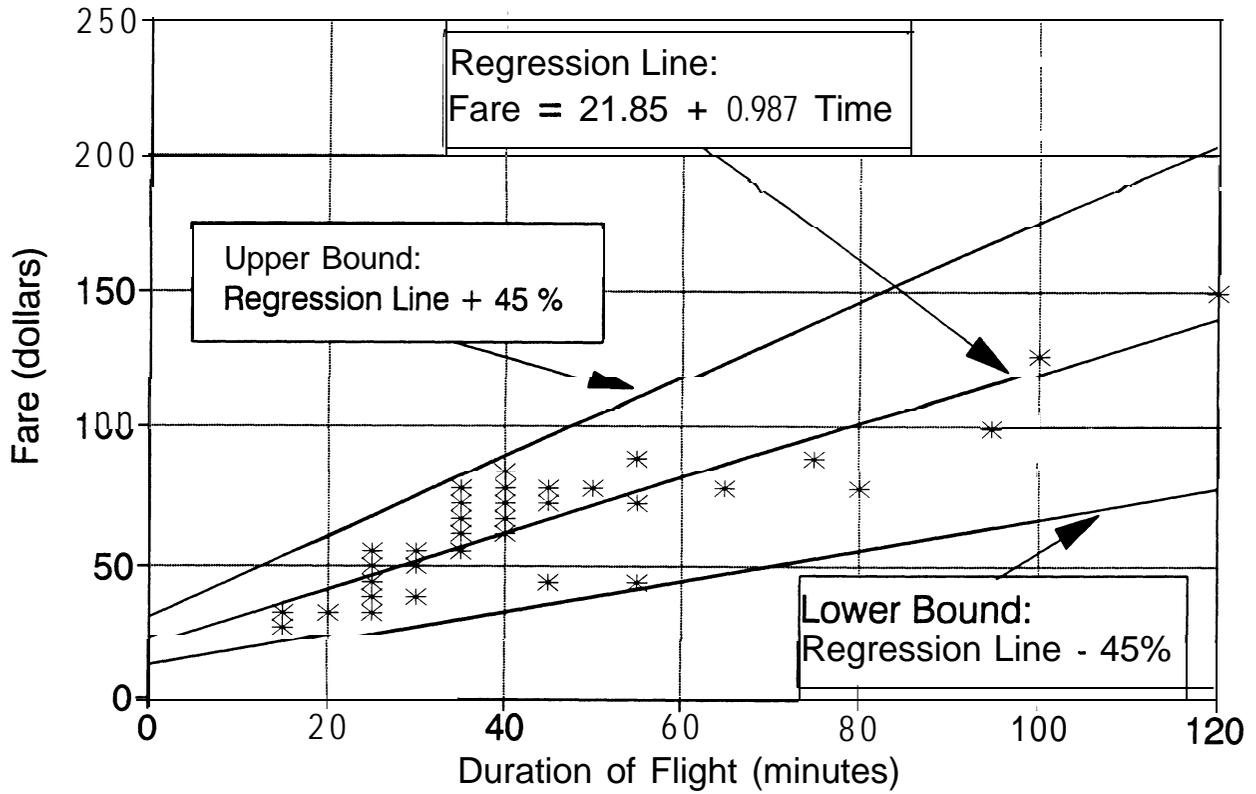
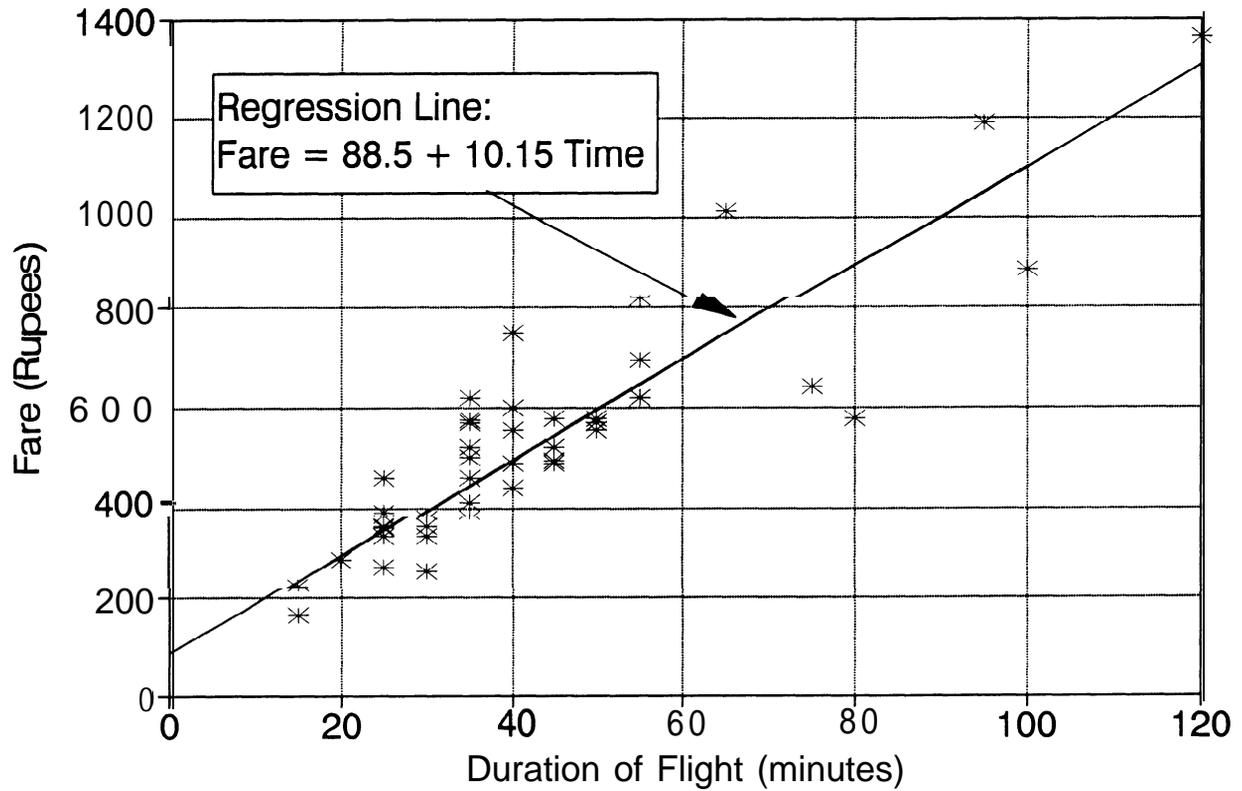


Figure 2

Relationship of Local Fares (Rupees)
to Minutes of Flight



Appendix A

Current Tourist Fares and Formula Fares

<u>Route</u>	<u>Current Tourist Fare</u>	<u>Formula Fare</u>	<u>Lower Bound Fare</u>	<u>Upper Bound Fare</u>
Baglung-Kathmandu	77	61	34	89
Baglung-Pokhara	28	37	20	53
Baitadi-Mahendrangar	33	42	23	60
Baitadi-Nepalgunj	77	101	55	146
Bajhang-Dhangadhi	61	56	31	82
Bajhang-Mahendrangar	55	56	31	82
Bajhang-Nepalgunj	77	71	39	103
Bajura-Dhangadhi	72	61	34	89
Bajura-Nepalgunj	72	66	36	96
Bhairawa-Kathmandu	72	76	42	110
Bharatpur-Kathmandu	50	47	26	67
Bhojpur-Biratnagar	39	47	26	67
Bhojpur-Kathmandu	77	71	39	103
Biratnagar-Bhojpur	39	47	26	67
Biratnagar-Kathmandu	77	86	47	125
Biratnagar-Lamidanda	50	51	28	75
Biratnagar-Phaplu	66	56	31	82
Biratnagar-Rumjatar	55	51	28	75
Biratnagar-Taplejung	50	47	26	67
Biratnagar-Tumlingtar	33	47	26	67
Chaurjhari-Dang	33	37	20	53
Chaurjhari-Nepalgunj	39	47	26	67
Dang-Chaurjhari	33	37	20	53
Darchula-Dhangadhi	55	51	28	75
Darchula-Nepalgunj	88	96	53	139
Dhangadhi-Bajhang	61	56	31	82
Dhangadhi-Bajura	72	61	34	89
Dhangadhi-Darchula	55	51	28	75
Dhangadhi-Kathmandu	149	140	77	203
Dhangadhi-Nepalgunj	55	51	28	75
Dhangadhi-Sanfebagar	39	47	26	67
Dhangadhi-Silgadhiodoti	33	47	26	67
Dolpa-Nepalgunj	77	66	36	96
Janakupur-Kathmandu	55	56	31	82
Janakupur-Rumjatar	39	51	28	75

<u>Route</u>	<u>Current Tourist Fare</u>	<u>Formula Fare</u>	<u>Lower Bound Fare</u>	<u>Upper Bound Fare</u>
Jomsum-Pokhara	50	47	26	67
Jumla-Kathmandu	127	121	66	175
Jumla-Napalgunj	44	66	36	96
Jumla-Surkhet	50	51	28	75
Kathmandu-Baglung	77	71	39	103
Kathmandu-Bhairawa	72	76	42	110
Kathmandu-Bharatpur	50	47	26	67
Kathmandu-Bhojpur	77	71	39	103
Kathmandu-Biratnagar	77	86	47	125
Kathmandu-Dhangadhi	149	140	77	203
Kathmandu-Janakpur	55	56	31	82
Kathmandu-Jumla	127	121	66	175
Kathmandu-Lamidanda	66	56	31	82
Kathmandu-Lukla	83	61	34	89
Kathmandu-Meghauli	72	56	31	82
Kathmandu-Nepalgunj	99	116	64	168
Kathmandu-Phaplu	77	56	31	82
Kathmandu-Pokhara	61	61	34	89
Kathmandu-Ramechhap	39	47	26	67
Kathmandu-Rumjatar	55	47	26	67
Kathmandu-Simara	44	47	26	67
Kathmandu-Tumlingtar	44	76	42	110
Lamidanda-Biratnagar	50	51	28	75
Lamidanda-Kathmandu	66	56	31	82
Lukla-Kathmandu	83	61	34	89
Mahendranagar-Baitadi	33	42	23	60
Mahendranagar-Bajhang	55	56	31	82
Mahendranagar-Nepalgunj	77	66	36	96
Mahendranagar-Sanfebagar	50	51	28	75
Manang-Pokhara	50	47	26	67
Meghauli-Kathmandu	72	56	31	82
Nepalgunj-Baitadi	77	66	36	96
Nepalgunj-Bajhang	77	71	39	103
Nepalgunj-Bajura	72	66	36	96
Nepalgunj-Chaurjhari	39	47	26	67
Nepalgunj-Darchula	88	96	53	139
Nepalgunj-Dhangadhi	55	51	28	75
Nepalgunj-Dolpa	77	66	36	96
Nepalgunj-Jumla	44	66	36	96
Nepalgunj-Kathmandu	99	116	64	168
Nepalgunj-Mahendranagar	77	66	36	96
Nepalgunj-Sanfebagar	61	56	31	82
Nepalgunj-Silgadhiodoti	66	61	34	89
Nepalgunj-Simikot	88	76	42	110

<u>Route</u>	<u>Current Tourist Fare</u>	<u>Formula Fare</u>	<u>Lower Bound Fare</u>	<u>Upper Bound Fare</u>
Phaplu-Biratnagar	66	56	31	82
Phaplu-Kathmandu	77	56	32	82
Pokhara-Baglung	28	37	20	53
Pokhara-Jomsom	50	47	26	67
Pokhara-Kathmandu	61	61	34	89
Pokhara-Manang	50	47	26	67
Ramechhap-Kathmandu	39	47	26	67
Rumjatar-Biratnagar	55	51	28	75
Rumjatar-Janakpur	39	51	28	75
Rumjatar-Kathmandu	55	56	31	82
Sanfebagar-Dhangadhi	39	47	26	67
Sanfebagar-Mahendranagar	50	51	28	75
Sanfebagar-Nepalgunj	61	56	31	82
Sanfebagar-Tikapur	39	47	26	67
Silgadhidoti-Dhangadhi	33	47	26	67
Silgadhidoti-Nepalgunj	66	61	34	89
Simara-Kathmandu	44	47	26	67
Simikot-Nepalgunj	88	76	42	110
Surkhet-Jumla	50	51	28	75
Taplejung-Biratnagar	50	47	26	67
Tikapur-Sanfebagar	39	47	26	67
Tumlingtar-Biratnagar	33	47	26	67
Tumlingtar-Kathmandu	44	76	42	110