

Fiscal policies and taxation incentives for improved public bus systems in India

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EXECUTIVE SUMMARY

Unprecedented vehicular growth in India has resulted in chronic congestion across most urban centres. Traditional measures to mitigate congestion – through road-widening and the construction of flyovers – have failed to solve the problem. In this context, the Government of India recognised the importance of using road space more efficiently by releasing the National Urban Transport Policies (NUTP) in 2006 and 2014; policies aiming to prioritise public transport.

In India, buses form the mainstay of intra and intercity public transport, catering to almost 75% of total trips. However, the poor financial condition of the numerous State Road Transport Undertakings (SRTUs) providing bus-based public transport in India is cause for concern. The extent of their loss-making precludes the ability to constantly invest in improving the quality and frequency of bus services. With no significant improvements in bus services, commuters have little incentive to move to – or remain using – public buses, exacerbating the trend of private vehicles clogging Indian roads.

A major cause of SRTU loss-making is the extant tax framework prevailing at both the state and union level. High taxes on both inputs and revenues push SRTUs into losses, and funding for improving bus-based public transport is erratic. This appears to contradict the NUTP in many ways.

This paper analyses recent trends in both direct and indirect taxes on SRTUs, noting that many state SRTUs would report a state of financial autonomy in the absence of direct levies. Variations in the rate and computation of direct taxes such as Motor Vehicle Tax across states result in little parity in SRTU taxation across India. The rates of Motor Vehicle Tax per SRTU bus on a lifetime basis are far higher than for private two or four wheelers, indicating a bias against public transport. Increases in Excise Duty on diesel have also resulted in a higher tax component of inputs being reported by SRTUs in recent years. Unlike several countries across the world, India does not use fuel taxation as instrument to promote public transport; rather, taxing both SRTUs and private users at the same rate. This paper also finds that despite carrying the bulk of public transport passengers, SRTUs do not receive the numerous tax exemptions granted to other mass-rapid transit systems such as metro rail networks.

As such, with current fiscal policy actually favouring private transport, there is a need to institute a friendlier tax environment for SRTUs to keep bus fares constant and modernise bus facilities. As SRTU contributions to Excise Duty form a relatively small component of total Excise collections on fuel, this paper advocates a reduction in fuel taxes for SRTUs. It also advocates the simplification and harmonising of Motor Vehicle Tax computations for SRTUs across states, and recommends the use of direct tax rebates linked to improvements in SRTU performance, reducing the need for SRTUs to request grants from state and central governments.

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ABBREVIATIONS USED

Abbreviation	Full Form
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
APSRTC	Andhra Pradesh State Road Transport Corporation
ASRTU	Association of State Road Transport Undertakings
BEST	Brihanmumbai Electric Supply and Transport
BMTC	Bangalore Metropolitan Transport Corporation
CIRT	Central Institute of Road Transport (Pune)
CSTC	Calcutta State Transport Corporation
DTC	Delhi Transport Corporation
GSRTC	Gujarat State Road Transport Corporation
GST	Goods and Service Tax
JnNURM	Jawaharlal Nehru National Urban Renewal Mission
KSRTC	Karnataka State Road Transport Corporation
MoPNG	Ministry of Petroleum and Natural Gases
MORTH	Ministry of Road Transport and Highways
MTC	Metropolitan Transport Corporation, Chennai
NUTP	National Urban Transport Policy
PPAC	Petroleum Planning and Analysis Cell
RSRTC	Rajasthan State Road Transport Corporation
UPSRTC	Uttar Pradesh State Road Transport Corporation
VAT	Value Added Tax

1. CONTEXT AND PROBLEM SETTING

1.1 VEHICULAR GROWTH, CONGESTION, AND PUBLIC TRANSPORT IN INDIA

Exponential vehicular growth in India – a 6.2-fold increase¹ in two decades, driven primarily by increases in private vehicles – has resulted in reduced traffic speeds and endemic congestion across most urban areas² in the country. The economic cost of freight transport delays *alone* as a result of congestion has been estimated at INR 1,384 billion³ annually, without accounting for the loss of productivity of citizens delayed in traffic, the health costs of increased vehicular emissions, or the cost of lives lost in increasing road accidents.

Across the world, it has been recognised that congestion cannot be alleviated by widening roads or constructing flyovers and underpasses; that the optimal approach to combat congestion combines improving urban public transport *and* discouraging private vehicle use⁴. Indian policy announcements in the past decade appear to have followed this context. The National Urban Transport Policies (NUTP) of 2006 and 2014 have prioritised public transport on Indian roads⁵. Both the erstwhile Jawaharlal Nehru National Urban Renewal Mission and current Atal Mission for Rejuvenation and Urban Transformation include urban public transport as a focus area⁶, and an important component of a ‘smart city’ in the recent Smart Cities Mission is sustainable public transport and last-mile connectivity⁷.

Indian public transport thus will have to play a critical role in containing urban traffic congestion. Historically and currently, public transport in India has been bus-based. As of 2014-15, public bus operators ferried an estimated 74% of total passenger-trips by formal public transport in India, detailed in Table A of the appendix. The majority of *formal* bus public transport in India is provided by a total of 62 government-owned Road Transport Corporations⁸, referred to as State Road Transport Undertakings (SRTUs) in this paper.

Larger cities have recently begun to introduce rail-based modes of mass transit such as metro rail systems. While these ferry a higher number of passengers per kilometre of network than public buses, they are extremely capital-intensive and require high passenger demand along their corridors to remain viable. It is impossible for mass rapid rail transport systems to effectively serve all areas of a city, requiring a feeder transit service to effectively broaden their reach. As of today, it is estimated that around 64% of public transport trips in Delhi – the city with the country’s most extensive metro rail network – are made by bus, and that close to 38% of metro trips involve buses as first and/or last-mile connectivity⁹. Buses thus play – and will continue to play – the most important role in Indian public transport, and in this context, the poor financial position of most SRTUs in recent years is particularly worrisome.

1.2 SRTU FINANCIAL POSITIONS

Table 1.2.1 below highlights the financial position of 42 reporting SRTUs for the years 2012-15. SRTUs have been divided into city-specific and state-wide (intercity and intra-city) operators for the purpose of this paper, given the different operating conditions faced (congestion, frequency of stops) by the two.

Table 1.2.1: SRTU Financial Positions 2012-15^{10, 11, 12}

Sl.	Year	Operator Type	Percentage of Reporting Operators		
			Declaring Surplus/ Breaking Even	Declaring Losses of <INR 1 Billion	Declaring Losses of >INR 1 Billion
1	2012-13	City SRTU	0.00%	33.33%	66.67%
		State SRTU	12.12%	66.67%	21.21%
2	2013-14	City SRTU	0.00%	33.33%	66.67%
		State SRTU	2.94%	55.88%	41.18%
3	2014-15	City SRTU	0.00%	44.45%	55.55%
		State SRTU	11.76%	50.00%	38.24%

As this table indicates, most SRTUs have reported heavy losses in recent years, with at least half of all city operators declaring losses in excess of INR 1 billion a year. Financially unstable SRTUs usually lack the resources to invest in enhancing bus services, improving customer service, or augmenting fleet; leading to insufficient bus frequencies, poor maintenance, and the plying of ageing, uncomfortable and unsafe buses. This serves as a poor incentive to switch to public transport; rather, it incentivises moving *from* public transport to two wheelers or other private vehicles. In this context, it is not particularly surprising that the mode-share of bus-based public transport has begun to decline since the early 2000s¹³, an unhealthy trend especially when juxtaposed with the growth in private vehicles.

There are multiple reasons for this precarious financial condition. As SRTUs have not been established with a purely commercial aim, they are not free to set their own fares; these fares determined by the relevant state government – often at levels significantly below cost recovery. SRTUs also need to fulfil various social obligations such as operating on low-demand, uneconomical routes and providing a wide range of concessions to different vulnerable groups¹⁴. Steep increases in the cost of operations, combined with the inability to raise fares, have placed most SRTUs in an unstable financial position.

A noticeable drain on SRTU revenues, however, are multiple direct taxes levied by the state and central governments on bus operations. Given that the cost of many critical inputs for SRTUs also includes a tax component, taxation on SRTUs both inflates operating costs and reduces revenues. In 2008, Kharola & Tiwari concluded that government levies, in the form of various taxes, comprised close to 20% of the average SRTU's cost¹⁵. **In essence, this appears a policy contradiction – while the NUTP emphasises the need to prioritise public transport on roads, the current fiscal environment for public buses curtails their finances, hampering the process of service enhancement and augmentation.** While SRTUs can apply for funding from central schemes, Urban Transport Funds or budgetary grants from the state, such funding is never guaranteed and varies widely across years and political climates, making it difficult to prepare long-term plans for fleet enhancement based on such grants¹⁶.

The following section discusses the current tax policy framework for bus services in India. Based on available data, it focusses on the extent to which taxes exacerbate the financial instability of SRTUs. It then compares the tax environment for buses with that of (a) private vehicles and (b) other forms of mass transit, thus evaluating whether the existing fiscal policy encourages bus transport use. Policy alternatives are then discussed, along with recommendations for tax reform.

2. THE CURRENT TAX FRAMEWORK FOR SRTUs

2.1 TAXES LEVIED

SRTUs are liable for a multitude of taxes on capital assets as well as operations. Both the central and state governments levy taxes on SRTU operations. However, as transport is a State Subject of the Indian Constitution¹⁷, the majority of taxes faced by SRTUs are levied by the state.

It is also necessary to distinguish between direct and indirect taxes levied on SRTUs. Direct taxes are usually levied on SRTU revenues (from transporting passengers, or revenue gained from advertising). Indirect taxes are taxes built into inputs consumed by SRTUs as part of regular operations, for example, diesel and spare parts.

Table 2.1.1 below classifies taxes paid by SRTUs into direct, indirect, central and state taxes. A more detailed table of taxes and their descriptions is provided in the appendix. Taxes that are levied on employee incomes – such as professional and income tax – are not included in the analysis as they neither affect SRTU revenues nor are passed on to commuters.

Table 2.1.1: Taxes Levied on SRTUs¹⁸

	State Tax	Central Tax
Direct Tax	(1) Motor Vehicle Tax (2) Passenger Tax (3) Advertisement Tax (4) Stamp Duty (5) Property Tax (6) Municipal Levies	(11) Service Tax ¹⁹
Indirect Tax	(7) Value Added Tax/Sales Tax (8) Entry Tax (9) Octroi (10) Labour Cess	(12) Customs Duty (13) Central Excise Duty

Given the complexity involved in estimating indirect taxes – which are not accounted for separately by SRTUs, this paper will focus on the following five forms of taxes, which form the majority of SRTU tax payments:

- **Motor Vehicle Tax and Passenger Tax** which form the bulk of direct taxes on most operators, and for which data is available;
- **Central Excise Duty, Entry Tax, Sales Tax/VAT** on fuel, the most significant taxable commodity consumed by operators. While Customs Duty also serves as a levy on fuel purchases, the timing of the levy – before it is sold to the dealer – makes any suggestion for changes in this duty for fuel consumed by SRTUs difficult. As the other duties are levied *after* fuel is received by the dealer, it is significantly more feasible on the accounting front to recommend policy changes.

A total of ten SRTUs have been selected for this analysis. Of these ten, five are city bus operators, each operating in one of India's most populated cities (Bengaluru, Chennai, Delhi,

Kolkata and Mumbai). The remaining five operators (Andhra Pradesh State Road Transport Corporation, Gujarat State Road Transport Corporation, Karnataka State Road Transport Corporation, Rajasthan State Road Transport Corporation, and Uttar Pradesh State Road Transport Corporation) are state operators running a combination of urban and rural services. In distributing cases of city and state operators equally, this research sought to understand whether city operators face a different tax regime from state-wide providers²⁰.

2.2 DIRECT TAXATION AND SRTU FINANCIAL INSTABILITY

The most significant direct tax levied on SRTUs is Motor Vehicle Tax, a state tax levied to meet the costs of construction and maintenance of roadways²¹. With the exception of Calcutta State Transport Corporation (which is exempted from Motor Vehicle Tax in the state of West Bengal), all SRTUs are liable to pay Motor Vehicle Tax. Certain states also levy a Passenger Tax on revenue earned from ferrying passengers. These taxes, combined, form the bulk of direct tax payments.

Previous research up to 2011 highlighted the increase in direct taxes as a prime cause for SRTU fiscal losses. In this context, data from 2010 to 2015 is analysed below to ascertain whether the same trend has continued.

In analysing ‘increasing’ direct taxes, solely evaluating whether SRTUs have paid higher tax in 2014-15 than in 2010-11 is disingenuous. Direct taxes, in general, are correlated with changes in the revenue of SRTUs; increases in total direct taxes paid could simply reflect higher SRTU revenues over the years. A more accurate indicator of the ‘burden’ of direct taxes on SRTUs is whether direct taxes have been increasing at a higher rate than revenue increases of SRTUs, thus leaving less revenue available for the SRTU to invest in operations and improvements. This is expressed as the tax/revenue ratio, illustrated (as a percentage) in figures 2.2.1 and 2.2.2 below:

Figure 2.2.1 Tax/Revenue Ratio (City SRTUs)²²

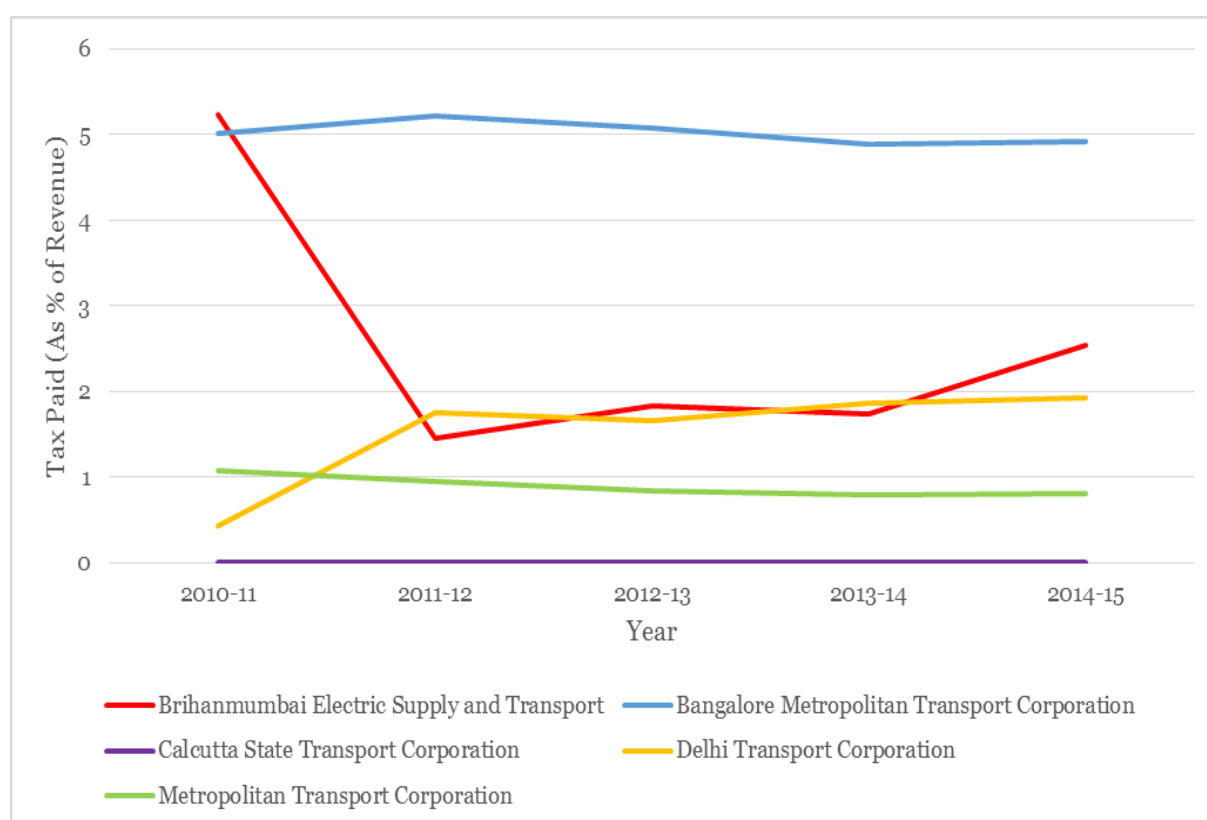
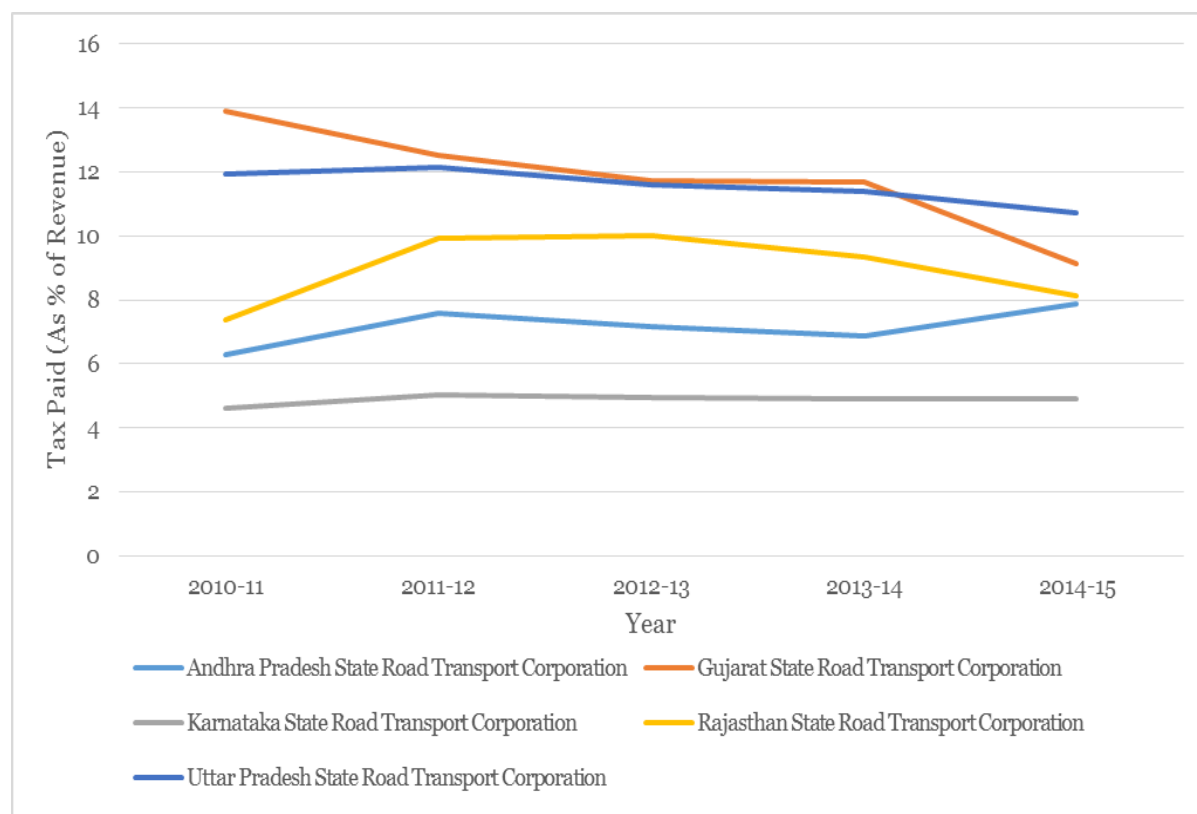


Figure 2.2.2 Tax/Revenue Ratio (State SRTUs)²³



While trends vary across SRTUs, the general observation is that – barring DTC and APSRTC – the direct tax environment has not become significantly more restrictive since 2010-11; that revenues have risen faster than direct tax collections. It is however important to note that direct taxes were already extremely high for state operators in 2010-11, and that as of 2015, four out of the five state SRTUs surveyed in this research forego close to 10% of their revenue in direct taxes alone. While city SRTUs are liable for a relatively lower rate of direct taxes than their state counterparts, they are also subject to significantly more difficult service conditions that result in higher operating costs. In this context, the impact of any loss in revenue due to direct taxes is far more severe.

Direct taxes thus reduce SRTU revenues, increasing financial instability. However, distinct variation exists across city and state operators. For most state operators surveyed in this research, their direct tax arrears are greater than their yearly losses, indicating that a simple reduction in direct taxes could provide them a degree of financial autonomy. City operators' tax-to-losses proportion – barring BMTC – do not usually exceed 10% of their yearly losses, which suggests a multi-pronged approach to improve their financial viability will need to be taken. The detailed tables (E and F) are provided in the appendix.

2.3 VARIATIONS IN DIRECT TAX ACROSS STATES

As Motor Vehicle Tax – the most significant direct tax – is a state tax, both the rate of tax as well as the method of computation varies widely across states. While different states can present different operating climates and revenue earning prospects for SRTUs, the extent of variation in Motor Vehicle Tax across states far exceeds any conceivable variation in either of

these parameters across states. Broadly speaking, the method of Motor Vehicle Tax computation can be classified into four categories:

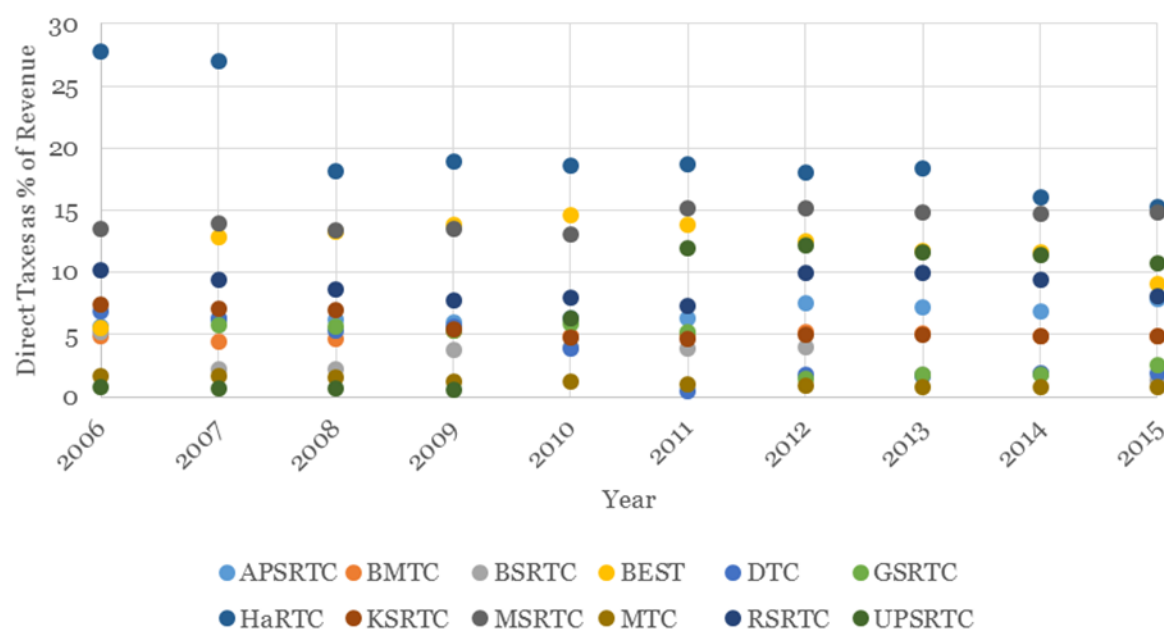
Table 2.3.1: Methods of Computing Motor Vehicle Tax²³

Sl.	Method	Description
1	Revenue	- As a percentage of traffic revenue of the SRTU;
2	Capacity	- Based on the total number of bus seats being offered by the SRTU; - Based on the total capacity (seats + standees) offered by the SRTU;
3	Route type	- As a function of the type of route being served (city, suburban, ghat, 'A' class, 'B' class etc); - As a function of the total distance of the route;
4	Bus type	- Taxation derived from the class of service being operated (ordinary, deluxe, express etc); - Taxation based on whether the bus is intended for regular operation or is a spare.

Some states follow a combination of several of these methods. For example, in Tamil Nadu, Motor Vehicle Tax is levied based on the total seating capacity of each bus, with different rates for buses operating on 'city', 'mofussil', 'town' and 'ghat' routes. Added to this, spare buses are charged at a lower rate than regular buses. Details are provided in the appendix.

Apart from being complicated, the current MV Tax structure results in an extremely heterogeneous tax environment for SRTUs across the country. This is exacerbated by the fact that certain states charge a Passenger Tax on revenue earned from passenger transport by SRTUs, whereas others do not. Figure 2.3.1 below depicts the variations in direct tax rates (as a percentage of revenue) for 12 SRTUs over a period of 10 years:

Figure 2.3.1: Variations in Direct Tax Rates (As Percentage of Revenue)²⁴



Each dot in the figure above indicates the effective rate of direct tax paid by an SRTU for a particular year. As is visible, the range of rates from the lowest to highest tax rate for a year is not insignificant – for example, Haryana Road Transport Corporation (HaRTC)’s effective direct tax rate for 2006, at 28%, was *28 times* that of the rate faced by the Uttar Pradesh State Road Transport Corporation (UPSRTC) – which effectively paid 1% of its revenue in direct taxes. There is little justification for such high variance in tax rates or methods of computing such tax.

2.4 MOTOR VEHICLE TAX – PRIVATE AND PUBLIC VEHICLES

Unlike private vehicles, SRTUs do not pay Motor Vehicle Tax as a one-time payment on the value of buses purchased by them; rather, they are levied Motor Vehicle Taxes on a quarterly or annual basis depending on the state in question. As such, SRTUs pay a significantly higher rate of tax on a per-vehicle basis than private users in most Indian states.

Table 2.4.1 compares the effective rate of tax paid over the lifetime of a bus in four states: Gujarat, Karnataka, Maharashtra and Punjab, with a mix of city and state SRTUs. For this calculation, the lifespan of a bus is taken as 8 years, and the cost of a new, UBS-II compliant bus is taken as INR 3.5 million. For simplicity, the effective Motor Vehicle Tax per bus is held constant for 8 years, based on 2014-15 tax rates:

Table 2.4.1: Effective Motor Vehicle Tax Rate for SRTU Buses²⁵

State	SRTU	Total Motor Vehicle Tax 2014-15 (INR)	Fleet Size	Tax/Bus (INR)	Tax/Bus (Lifetime) (INR)	% Value of Bus
Gujarat	GSRTC	2607.8 million	7765	335,840.3	2.69 million	76.76%
Karnataka	KSRTC	1579.1 million	8321	189,772.9	1.52 million	43.38%
Maharashtra	BEST	383.55 million	4247	90,310.8	0.72 million	20.64%
Punjab	PUNBUS	856.2 million	1242	689,329.3	5.51 million	157.56%

The effective lifetime tax rates for private vehicles in the following states are as follows:

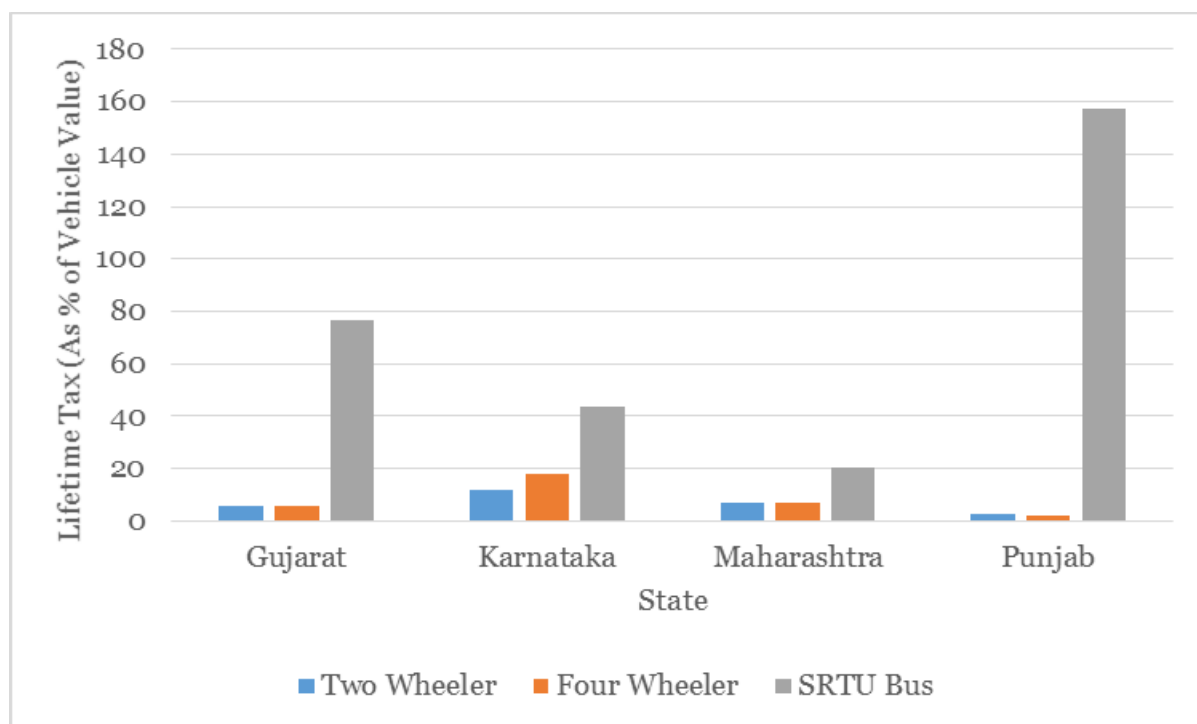
Table 2.4.2: Motor Vehicle Tax Rates for Two and Four Wheelers

State	Two Wheeler Tax Rate	Four Wheeler Tax Rate
Gujarat ²⁶	6% of vehicle value	6% of vehicle value
Karnataka ^{27, 28}	10-12% of vehicle value	13-18% of vehicle value
Maharashtra ²⁹	7% of vehicle value	7% of vehicle value
Punjab ³⁰	1.5-3% of vehicle value	2% of vehicle value

Figure 2.4.1 on the following page compares the lifetime rate of taxation for private vehicles and SRTU buses. While not every state exhibits the extent of variation seen in Punjab, none of the surveyed states tax SRTU buses at a lower effective rate than private vehicles. It could be argued that SRTU buses, as transport vehicles, earn revenue during their service, thus justifying this higher rate of taxation. There are two flaws with this argument; first, certain

states already tax passenger revenue through Passenger Tax, making the imposition of higher rates of Motor Vehicle Tax a case of dual taxation. Even in states that do not levy Passenger Tax, if SRTUs were allowed to function on purely commercial lines, this line of argument might be sustained. However, given their constraints on fare-setting, the numerous concessions granted, and their requirement to operate not just on profitable routes renders their service far from strictly commercial, and does not support the proposition to tax them on commercial grounds.

Figure 2.4.1: Comparison of Lifetime Tax Rates for Private Vehicles and SRTU Buses



2.5 TRENDS IN INDIRECT TAXATION

For the analysis of indirect taxes levied on SRTUs, this paper focusses on fuel taxes. The two major components of fuel tax are Excise Duty (a central tax) and Sales Tax or VAT at the state level. As crude oil prices declined sharply post-2014, the government decided to increase Excise Duty rates on fuel to increase revenue, rather than passing on the benefit to consumers. This steep increase in duty is visible in figure 2.5.1 on the following page.

As the government increased Excise Duty at a time when crude oil prices were falling sharply, this increase in taxes does not translate to a significant increase in overall fuel expenditure by operators. However, the *tax* component of fuel has increased substantially, especially since 2015.

Unlike the case of direct taxes, all operators have witnessed a higher fuel tax-to-revenue ratio in 2014-15 compared to 2012-13 (Figures 2.5.2 and 2.5.3), indicating an increasing burden of fuel taxation. Unfortunately, insufficient data is available post 2015 to estimate precise expenditure on fuel taxes; however, given the increase in Excise Duty, it is certain that SRTU expenditure on fuel taxes has increased substantially.

Figure 2.5.1: Excise Duty Revisions³¹

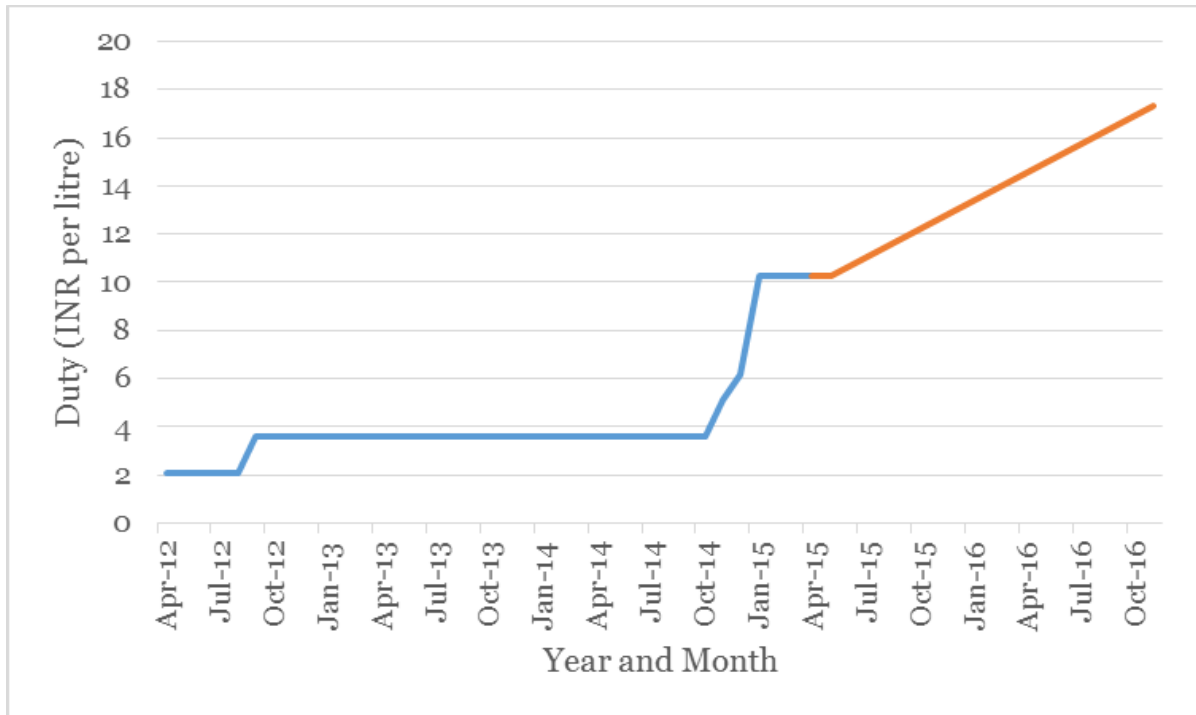


Figure 2.5.2: Tax/Revenue Ratio (City SRTUs)³²

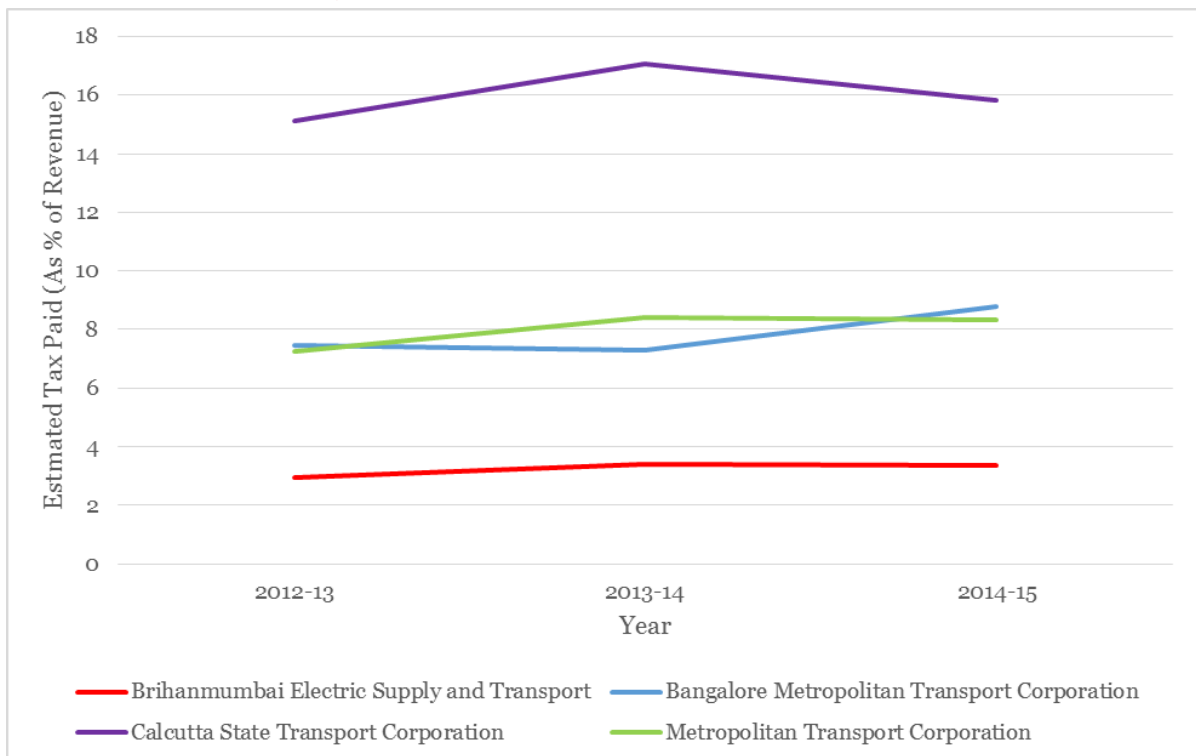
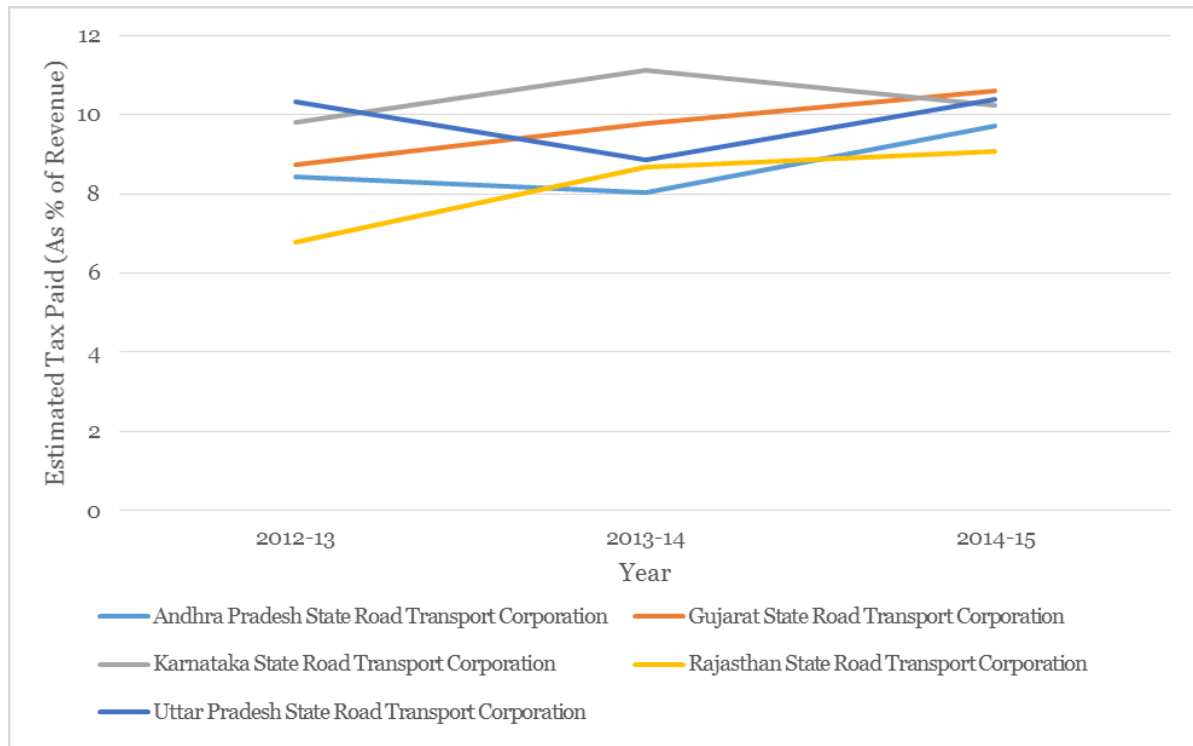


Figure 2.5.3 Tax/Revenue Ratio (State SRTUs)³³



Unlike the nominal impact of direct taxes on SRTU losses for city operators, the effect of fuel taxes is stark; lowered fuel taxes could greatly reduce financial losses. For state operators, the impact of fuel taxes is similar to that of direct taxes. Tables J and K in the appendix detail this impact. Fuel taxes, thus, impact city operators more than their state counterparts:

Figure 2.5.4 Composition of Taxes (City SRTUs)

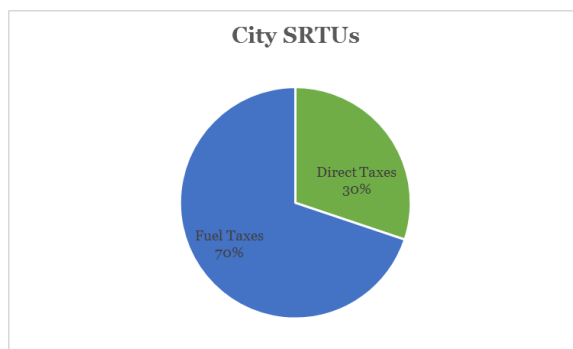
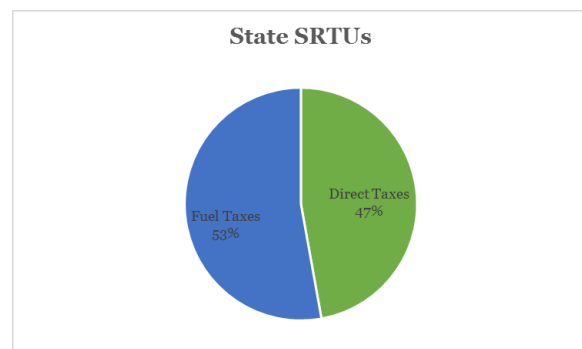


Figure 2.5.5 Composition of Taxes (State SRTUs)



The greater impact of fuel taxes for city operators can be attributed to their lower fuel efficiency, given city traffic conditions. **This suggests that interventions in fuel taxation will yield significantly greater impact for city operators than their state-level counterparts.**

2.6 FUEL TAX: PRIVATE AND PUBLIC VEHICLES

As of today in India, there exists no difference in fuel tax rates for retail consumers and SRTUs, barring Rajasthan, which offers a VAT discount on fuel supplied to RSRTC. From a fiscal perspective, there is thus no distinction between private vehicle users and SRTUs in terms of fuel taxation. However, it is also relevant to briefly analyse the ‘dual-pricing’ scheme for fuel introduced by the then UPA government in 2013, extant until 2015. Facing soaring crude oil prices, mounting under-recoveries by Oil Marketing Companies (OMCs) and a spiralling subsidy bill, the government decided to bring the prices of diesel in India to market rates. This was carried out using two methods:

- (a) Allowing OMCs to increase the price of diesel at retail bunks by INR 0.50 until parity was reached with market rates;
- (b) Entirely removing the subsidy on diesel supplied to bulk consumers³⁴

The subsidy component per litre of High Speed Diesel from 2012 to 2015 was as follows:

Table 2.6.1: Subsidy Component per Litre of High Speed Diesel 2012-15³⁵

Sl	Year	Subsidy Component per Litre of High Speed Diesel (INR)
1	2012-13	11.26
2	2013-14	8.39
3	2014-15	2.70

As prominent bulk consumers include SRTUs and the railways, this scheme effectively amounted to subsidising retail consumers – consumers with their own vehicles – at the cost of public transport users. Thus, rather than using fuel fiscal policy as an instrument to incentivise public transport – by increasing taxes or reducing subsidies on fuel for private vehicle owners – the Government of India has preferred to opt for the reverse policy in the recent past, primarily due to political expediency.

2.7 THE TAX FRAMEWORK: BUSES AND OTHER MASS TRANSIT

As mentioned at the outset of this section, SRTUs are liable for up to 13 different taxes, with few or no tax exemptions. Newer mass transit modes such as metro rail systems have, however, witnessed a significantly more favourable fiscal climate. The Delhi Metro, for example, is exempt from all taxes except Wealth Tax and Fringe Benefit Tax, also enjoying exemptions from electricity duty³⁶. As of 2014-15, the Delhi Metro was liable for a total tax of INR 2.53 million on revenue of INR 35.62 billion – **i.e. DMRC’s tax liability was less than 0.0001% of its revenues or costs³⁷**. Newer metro projects are also exempted from most prevailing taxes, though slight differences can apply across states.

Given that 75% of public transport in India is bus-based; and that buses are likely to remain the mainstay of Indian public transport for several decades more, the lack of fiscal support for SRTUs is a policy distortion against public transport. While metro rail networks do provide ‘cleaner’ transit than road-based modes, their lack of flexibility precludes them from

becoming a viable public transport system for cities as a whole. In this context, there is an urgent need to promote bus-based public transport through all means possible, including fiscal incentives.

It is thus evident that multiple distortions exist in the current tax framework for bus-based public transport in India; that SRTUs are subject to higher tax liabilities than both private vehicles and other forms of mass transit.

3. POLICY ALTERNATIVES

3.1 FEASIBILITY OF ALTERNATIVE FISCAL POLICY OPTIONS

The previous section has highlighted several distortions in the current tax framework faced by SRTUs; that taxes often mean the difference between a revenue surplus and significant loss-making, and that neither direct nor fuel taxes provide any incentive for commuters to shift to bus-based public transport from private modes; often favouring private transport instead. In essence, the current fiscal policy contradicts the National Urban Transport Policy by curbing the ability of SRTUs to innovate, resulting in poorer bus facilities being provided to the travelling public, and by not providing strong disincentives to private vehicle usage.

In highlighting policy alternatives, it is important to evaluate the extent to which they achieve the following objectives:

- Reducing the financial instability of SRTUs;
- Allowing SRTUs greater autonomy in fleet augmentation and service quality enhancement;
- Encouraging public transport usage and discouraging the use of private vehicles.

Any alternative fiscal policy suggestion also needs to be feasible at two levels:

- *Financial:* While the reduction of taxes on bus-based public transport will lead to multiple benefits, it is critical to understand the extent to which tax revenues from SRTUs contribute to overall tax revenues. If the contribution is minor, the revenue loss from reduced SRTU taxation can easily be offset by marginally raising taxes for private vehicle users. If, however, the contribution is major, it is significantly more difficult to offset losses from lower SRTU taxation by increasing taxes on private users – given that it is rarely politically viable to steeply increase taxes on private vehicles. This thus necessitates other methods to increase fiscal revenue to counteract the reduced revenue from SRTUs.
- *Implementation:* The ability and ease with which any tax reduction for SRTUs can actually be implemented on the ground, and restricted purely to SRTUs, is an important aspect of any alternative fiscal policy suggestion. For example, while it might be financially feasible to reduce taxes on spare parts procured by SRTUs, preventing arbitrage (reselling) of tax-exempt spare parts sold to SRTUs, or ensuring that tax-exempt spare parts are sold *only* to SRTUs is an extremely difficult endeavour.

The following sections detail alternative policy options for (a) fuel taxes and (b) direct taxes.

3.2 FUEL TAXES

Table 3.2.1 on the following page indicates the contributions of SRTUs to total Excise Duty collections on fuel for the year 2013-14, the latest year for which data is available. Of 62 SRTUs, data on fuel consumption of the 28 largest operators was reported. Even assuming an increase in fuel consumption by 75% when including the remaining 34 SRTUs – an optimistic estimate considering many of the non-reporting SRTUs operate very small fleets – it is estimated that SRTUs contribute only 3.36% of total Excise revenues on petroleum products:

Table 3.2.1: SRTU Contributions to Excise Duty Collections³⁸

Sl.	Revenue from Excise Duty on Petrol and Diesel	Revenue from 28 Largest SRTUs	Estimated Revenue from 62 SRTUs	% of Revenue from SRTU Taxes
1	INR 495.7 billion	INR 9.49 billion	INR 14.87 billion	3.36%

Given the relatively insignificant contribution of SRTUs to total collections, there is a strong case to be made for Excise Duty rebates to SRTUs, *especially for city operators that manage lower fuel efficiency due to congestion*. Table 3.2.2 below indicates the extra Excise Duty retail purchasers would need to pay to mitigate revenue losses from concessions to public transport. As is visible, even with a full rebate on Excise Duty to SRTUs, the increase in Excise Duty for retail purchasers remains within manageable levels.

Table 3.2.2: Effects of Excise Duty Rebates on Retail Consumers

Sl.	Policy Alternative - Excise Duty Rebate for SRTU	Revenue Shortfall in Excise Duty Collections	Increase in Excise Duty on Retail Purchasers to Cover Shortfall
1	0% - business as usual	0%	0
2	25%	0.84%	15 paise/litre
3	50%	1.68%	30 paise/litre
4	75%	2.52%	45 paise/litre
5	100%	3.36%	61 paise/litre

However, a uniform increase in Excise Duty for both petrol and diesel, as illustrated above, might prove counterproductive, as the price of diesel strongly impacts the freight transport industry as well. In this context, focussing the majority of Excise Duty increases on *petrol* to counteract revenue loss from reduced SRTU taxation is likely to yield a more important objective – reducing private vehicle utilisation and encouraging public transport.

Research by Agrawal (2012) indicates a long-run price elasticity of petrol of -0.85; that is, a 1% increase in the price of petrol will lead to a 0.85% contraction in petrol consumption in the long run³⁹. Apart from reducing non-essential travel and decongesting roads, a decline in petrol consumption will help lessen the outflow of foreign exchange from the central exchequer. While precise data on SRTU contributions to taxes on fuel at the state level isn't currently available, there is already precedent for an Indian state providing VAT rebates on fuel supplied to SRTUs, as is the case in Rajasthan. Combined fuel tax rebates at both the central and state level will go a long way in alleviating SRTU financial instability, as Tables J and K in the appendix illustrate.

In order to prevent arbitrage – along with increasing efficiency, Excise Duty rebates for SRTUs should be linked with improvements in refuelling practices, ideally through the SRTU tendering out its refuelling requirements in bulk, a condition of which must include electronic monitoring of fuelling practices.

3.3 DIRECT TAXES

Table 3.3.1 below identifies the contribution of SRTUs to the transport department of their state for the year 2014-15. As was the case with direct tax rates, there are wide variations in the contributions of SRTUs across states:

Table 3.3.1: SRTU Contributions to Transport Department Revenues⁴⁰

Sl.	State	Number of Reporting SRTUs	Transport Department Revenue (INR Million)	Revenue from SRTU Direct Tax (INR Million)	% of Revenue from SRTU Taxes
1	Andhra Pradesh	1	16,991.9	3,789.5	22.30%
2	Gujarat	2	28,175.3	2,620.2	09.30%
3	Karnataka	4	44,562.3	4,157.2	09.33%
4	Maharashtra	6	57,982.2	11,205.2	19.33%
5	NCT (Delhi)	1	13,869.6	213.7	01.54%
6	Rajasthan	1	22,320.3	1,492.6	06.68%
7	Tamil Nadu*	7	38,291.4	1,849.8	04.83%
8	Uttar Pradesh	1	37,969.6	3,520.9	09.27%
9	West Bengal	3	14,823.3	53.3	00.36%

* The different divisions of the Tamil Nadu State Transport Corporation have been treated separately for this analysis.

It is cause for concern that SRTU taxation accounts for close to a quarter of certain states' transport department collections. This indicates that the SRTU is regarded more as a source of revenue than an agent of public mobility. The centrality of SRTU tax receipts to Transport Department revenue in several of the states mentioned above also makes it extremely difficult to substitute the burden of SRTU tax reduction to other consumers. Variations in the importance of SRTU tax receipts across states also make it problematic to suggest *uniform* direct tax policy alternatives for the country.

What benefits would arise out of reducing or removing direct taxes for SRTUs? While the removal of direct taxes would certainly push many SRTUs closer towards financial autonomy, in the case of certain SRTUs, it would lead to an operational surplus being generated. In these instances, the impact of reducing or removing direct taxes could be measured in terms of the number of buses that could be purchased with this surplus, and the increase in daily passenger capacity generated. Table 3.3.2 below measures this impact for four of the ten SRTUs surveyed; SRTUs that would have declared a surplus in 2014-15 in the absence of direct taxes:

Table 3.3.2: Impact of Eliminating Direct Tax in Bus Purchase Terms⁴¹

Sl.	SRTU	Surplus without Direct Taxes (INR Million)	Number of Buses Obtainable with Surplus*
1	GSRTC	1272.87	363
2	KSRTC	1144.26	326
3	UPSRTC	3545.68	1013
4	BMTC	461.75	131

* The cost of a bus is assumed at INR 3.5 million.

With this information, it is also possible to evaluate the impact of direct tax reduction on the extra passenger capacity an SRTU could offer, were it to invest its surplus thus received into augmenting fleet. An ordinary bus catering to UBS-II standards offers 42 seats. As of 2014-15, city and state SRTUs reported an average daily vehicle utilisation of 164.58 and 259.52 kilometres respectively⁴². As such, Table 3.3.3 below highlights the extra **daily** capacity – in terms of passenger kilometres offered – possible with different levels of reduction in direct taxes.

Table 3.3.3: Impact of Eliminating Direct Tax in Increased Passenger Carrying Capacity

Sl.	SRTU	Increased Daily Passenger Kilometres Offered from Reducing Direct Taxes				
		0% Tax Reduction (BAU)	25% Tax Reduction	50% Tax Reduction	75% Tax Reduction	Removal of Direct Taxes
1	GSRTC	0 km	990,990 km	1.98 million km	2.97 million km	3.96 million km
2	KSRTC	0 km	889,980 km	1.78 million km	2.67 million km	3.56 million km
3	UPSRTC	0 km	2.77 million km	5.53 million km	8.30 million km	11.06 million km
4	BMTC	0 km	226,958 km	453,915 km	680,873 km	907,830 km

Thus, for SRTUs that would have reported a surplus in the absence of direct taxes, the effects of reducing or removing such taxes could be expressed in capacity increase terms, and treated as a recurring ‘grant’ to augment fleet by the state. However, exact proposals for changes in direct taxes will need to be taken at the state level, given the wide variations in SRTU direct tax contributions to the respective state exchequers.

Extant direct tax policies, in charging private vehicle users a lower rate of taxation than SRTU operators, have created an implicit subsidy towards private transport. While reducing direct taxes for SRTUs and increasing direct taxes on private vehicles can incentivise the use of public transport, this fiscal measure is less likely to reduce congestion on roads than fuel tax measures. This is because it provides no incentive to use personal vehicles *less frequently* once purchased. While direct taxes do increase the cost of buying a private vehicle, research suggests the price elasticity of vehicles to be lower in general than the price elasticity of fuel⁴³. Reducing direct taxes can however go a long way in improving SRTU financial autonomy, as indicated by Tables G and H in the appendix.

This section has provided policy alternatives for both fuel and direct taxes on SRTUs, highlighting both the benefits caused by such alternatives as well as the impact they will have on the relevant state or central exchequer. The following section sets out policy recommendations for reform of the existing fiscal policy towards SRTUs.

4. POLICY RECOMMENDATIONS

The previous two sections have contrasted the existing tax policy for SRTUs in India with potential policy alternatives, listing out the costs and benefits of each alternative. Drawing from these two sections, the following policy changes are recommended:

- Using fuel taxation to encourage mode-shifts towards public and bus transport

Fiscal policies around fuel are often used by countries that wish to promote public transport and greener forms of transit. In the UK, for example, the Bus Operator's Service Grant (BSOG) is a subsidy provided by local councils to offset fuel taxes paid by the operator. It performs the dual objective of helping operators maintain affordable fare levels and enabling operators to run services that might not otherwise have been profitable, leading to cancellations⁴⁴.

In India, however, fiscal policies around fuel have not been used to subsidise public transport or disincentivise private vehicle use; rather, the dual-pricing scheme prevalent between 2013 and 2015 effectively subsidised private users at the cost of bus-based public transport. As previously discussed, the removal of Excise Duty even in its entirety for SRTUs would not significantly impact Excise Duty collections on fuel, and can be offset by a modest increase in Excise Duty for retail consumers. This will both drive down retail fuel demand and facilitate mode-shifts towards buses. In this context, a TERI (2007) report estimates that increasing the mode-share of buses to 70% could reduce India's fuel demand by as much as 18%, saving the exchequer significant foreign exchange⁴⁵.

This policy change thus fulfils several objectives; it reduces SRTU costs, also reducing their dependence on government grants to function; it reduces congestion by making non-essential commutes by private vehicles uneconomical. It is also financially feasible, and can be implemented with enough safeguards to prevent arbitrage of tax-exempt fuel sold to SRTUs.

- Gradually eliminating the Motor Vehicle Tax 'subsidy' provided to private vehicles

The current state of affairs, wherein several states' Transport Departments depend heavily on revenue collected from SRTU taxation, is extremely unsustainable. As of today, the higher effective rates of Motor Vehicle Tax for SRTU buses than for private vehicles creates a perverse subsidy towards private vehicle ownership. It is thus necessary to gradually bring about parity in these rates – by progressively reducing Motor Vehicle Taxes on SRTUs, and increasing them for private vehicles. Lower Motor Vehicle Tax liabilities by SRTUs reduce their financial instability, and in some cases, allow them to add capacity to cater to growing public demand. States can also link reductions in Motor Vehicle Taxes on SRTUs to improved performance metrics by the operators, thus using fiscal policy to improve SRTU efficiency within the state.

- Reducing the difference in Motor Vehicle Tax rates across states

There is a strong need to reduce the extent of variation in Motor Vehicle Taxation for SRTUs across states to ensure a level playing field for SRTUs. A single method of computation should ideally be followed across states. Of the existing methods to compute Motor Vehicle

Tax in India, affixing it as a portion of the SRTU's overall traffic revenue requires the least amount of administrative work, and is considerably less error-prone than levying it based on the total capacity offered by the SRTU. However, if this method is followed, care should be taken to ensure that the 'effective' rate of tax paid by an SRTU does not exceed that paid by private operators, who are usually taxed based on capacity.

■ Abolishing Passenger Tax for SRTUs

Passenger Tax is levied on SRTUs in certain states – on the revenue gained from transporting passengers. While private buses, and in some cases, taxis, are also liable for this tax, the latter two are allowed to operate on commercial principles, which SRTUs by nature of their operations are not permitted to do. As SRTUs are far from operating on purely commercial terms, the levy of a tax that treats them as such is not justified. The revenue lost through abolishing of Passenger Tax on SRTU operations can be offset through higher taxation on other commercial passenger vehicles in the state.

■ Providing greater fiscal support to city SRTUs

SRTUs that operate purely within the boundaries of a city face significantly more challenging operating conditions than state-wide operators. Traffic congestion increases bus idling time, resulting in lower fuel efficiencies and vehicle productivity, both of which cause operating costs to rise. City operators thus tend to be significantly less financially stable than other operators, and thus merit additional financial or fiscal relief from the government.

These five policy recommendations, taken together, can realise the objective of promoting sustainable public transport in India – by discouraging the use of private vehicles on Indian roads, and by providing SRTUs greater financial autonomy in augmenting and improving services. Apart from the benefits of reducing congestion, containing emissions and reducing traffic fatalities mentioned at the start of this paper, other benefits associated with a reduction of taxes on SRTUs include:

(a) Reduced administrative work for state governments and faster decision making

Under the current tax framework, many state operators report surpluses before direct taxes are levied. Post tax payments, they report losses and require subsidy payments from the state in question. This convoluted flow of money entails significant administrative work for both the state government as well as the SRTU, wasting numerous man-hours in accounting and budgeting. Loss-making SRTUs also require government financial assistance even for relatively minor projects, given their lack of capital. This requires government approvals and processing, resulting in delays across projects and systemic improvements. Financially stable SRTUs can unilaterally invest in improving systems, leading to faster, more visible improvements in the quality of service.

(b) Keeping fares low

Most SRTUs in India base fare revisions on the cost of operations. While SRTUs cannot raise fares unilaterally, when fare increases are approved, the higher cost of operations (which includes tax components) is passed on to the commuter. In reducing taxes, requests for fare increases also decline, allowing fares to remain stable or even reduce. From a political perspective, keeping fares stable is often welcomed, given the negative press bus fare increases generate.

5. CONCLUSION

The unprecedented growth in demand for personal vehicles in India, prompted by rising personal income, has resulted in Indian urban road infrastructure being put under heavy stress. Noting the rising congestion – and the failure of conventional, road infrastructure-based solutions to such congestion – the Government of India had sought to prioritise public transport through multiple policy announcements and schemes in the past decade.

As has been discussed, the existing fiscal policy towards bus-based public transport has contradicted this resolve to improve public transport. The current Motor Vehicle Tax structure for public buses is significantly higher than for private vehicles. Unlike several other countries across the world, India does not use fuel taxation as a method to encourage public transport use. Newer forms of mass transit that serve a much smaller section of India's commuting population have been granted extensive tax exemptions, all of which have been denied to SRTUs.

The current fiscal approach – or business as usual – hampers the speed at which SRTUs can enhance services. Stagnant service quality further hampers the ability of bus-based public transport to attract new commuters or retain existing users. Thus, business as usual exacerbates the problem of increasing private vehicle usage, resulting in further congestion.

This situation, however, is not irreversible. Fiscal policies can be changed to provide greater financial support to SRTUs, and a more restrictive approach toward private vehicle ownership and utilisation. These changes, though beneficial in both the short and long-run, will require great political will to implement.

NOTE ON GST

At the time of publishing this paper, the GST Council is yet to arrive at a conclusive agreement on the rates of GST as well as its exclusions.

From the point of view of this paper, the subsuming of indirect taxes into GST on buses and bus spare parts is unlikely to significantly impact the findings of this research. However, if GST is eventually extended to cover petroleum products, the subsuming of Excise Duty and Sales Tax/VAT on diesel into GST can affect the financial position of SRTUs. However, it appears likely that the Central Government will be able to offer fuel tax rebates to SRTUs even under the GST, allowing for a more favourable taxation policy towards public transport.

6. APPENDIX

Table A: Estimated Public Transport (PT) Passenger-trips 2014-15

Sl.	Transport Mode	Passenger-trips 2014-15	Trips Ferried (As % of Total PT Trips)
1	Bus – Reporting SRTUs	25.43 billion ⁴⁶	74%
2	Rail	8.04 billion ⁴⁷	23%
3	All Metro (Bengaluru, Delhi, Kolkata, Mumbai)	1.16 billion ⁴⁸	03%

Table B: Taxes Levied on SRTUs⁴⁹

Sl.	Tax	Area of Levy
1	Advertisement Tax	Revenue from advertisements placed on buses/at stations
2	Central Excise Duty	Purchase of new buses and/or chasses Purchase of spare parts Diesel consumed
3	Customs Duty	Imported buses or spare parts Diesel consumed
4	Entry Tax	Same as (2)
5	Labour Cess	On building and construction work carried out by a contractor
6	Motor Vehicle Tax	Operation of buses on roads (road tax)
7	Municipal Levies	As defined by the municipal body
8	Octroi	Same as (2)
9	Passenger Tax	Revenue earned from transporting passengers
10	Property Tax	Immovable properties owned by the SRTU
11	Service Tax	Chartered services Commercial revenue
12	Stamp Duty	Acquisition of land
13	Value Added Tax/Sales Tax	Same as (2), also on scrap items and minor civil bills

Figure A: Average Cost Breakup 2014-15: All Reporting Operators⁵⁰

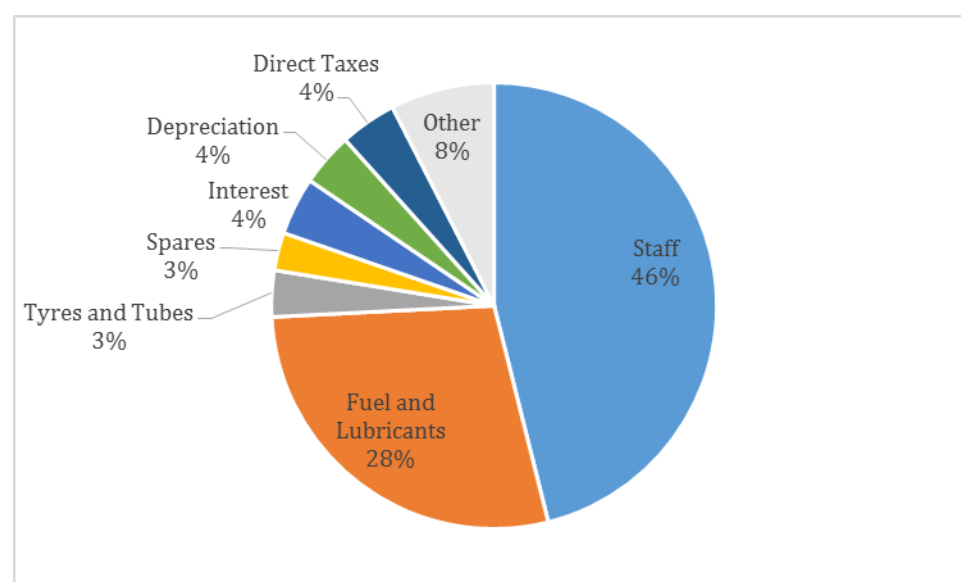


Table C: Direct Tax Payments: City Operators⁵¹

Sl.	Operator	Direct Tax Payments (INR Million)				
		Figures in brackets represent direct taxes as a percentage of revenue				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	Brihanmumbai Electric Supply and Transport (BEST)	582.2 (5.23%)	192.2 (1.46%)	261.6 (1.83%)	248.4 (1.73%)	383.5 (2.54%)
2	Bangalore Metropolitan Transport Corporation (BMTc)	666.2 (5.01%)	773.5 (5.21%)	841.4 (5.07%)	983.6 (4.88%)	1110.8 (4.92%)
3	Calcutta State Transport Corporation (CSTC)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
4	Delhi Transport Corporation (DTC)	43.1 (0.43%)	224.4 (1.76%)	216.9 (1.66%)	225 (1.86%)	213.7 (1.92%)
5	Metropolitan Transport Corporation, Chennai (MTC)	97.3 (1.07%)	99.2 (0.95%)	105.4 (0.84%)	107.0 (0.79%)	111.8 (0.81%)

Table D: Direct Tax as a Percentage of Revenue: (State Operators)⁵²

Sl.	Operator	Direct Tax Payments (INR Million)				
		Figures in brackets represent direct taxes as a percentage of revenue				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	Andhra Pradesh State Road Transport Corporation (APSRTC)	3269.1 (6.27%)	4320.8 (7.58%)	4778.9 (7.17%)	5106.2 (6.86%)	3789.5 (7.88%)
2	Gujarat State Road Transport Corporation (GSRTC)	2734.6 (13.89%)	2748.7 (12.51%)	2914.6 (11.72%)	3242.2 (11.67%)	2607.8 (9.11%)
3	Karnataka State Road Transport Corporation (KSRTC)	975.6 (4.63%)	1168.3 (5.04%)	1281.3 (4.94%)	1454.2 (4.90%)	1579.2 (4.92%)
4	Rajasthan State Road Transport Corporation (RSRTC)	897.3 (7.37%)	1397.8 (9.93%)	1442.3 (9.99%)	1508.9 (9.36%)	1492.6 (8.12%)
5	Uttar Pradesh State Road Transport Corporation (UPSRTC)	2418.5 (11.93%)	2770.9 (12.14%)	2936.6 (11.61%)	3380.1 (11.38%)	3520.9 (10.74%)

Table E: Direct Tax Contribution to SRTU Losses: City Operators⁵³

Sl.	Operator	Taxes as % of Losses				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	Brihanmumbai Electric Supply and Transport (BEST)	15.27%	5.22%	4.15%	3.32%	4.53%
2	Bangalore Metropolitan Transport Corporation (BMTc)	Profit	Profit	56.87%	66.65%	171.15%
3	Calcutta State Transport Corporation (CSTC)	0%	0%	0%	0%	0%
4	Delhi Transport Corporation (DTC)	0.18%	0.92%	0.72%	0.65%	0.54%
5	Metropolitan Transport Corporation, Chennai (MTC)	4.23%	4.27%	9.06%	7.54%	5.09%

Table F: Direct Tax Contribution to SRTU Losses: State Operators⁵⁴

Sl.	Operator	Taxes as % of Losses				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	Andhra Pradesh State Road Transport Corporation (APSRTC)	121.62%	81.73%	128.7%	56.57%	63.67%
2	Gujarat State Road Transport Corporation (GSRTC)	170.38%	68.32%	123.59%	167.6%	195.34%
3	Karnataka State Road Transport Corporation (KSRTC)	Profit	Profit	Profit	604.71%	720.01%
4	Rajasthan State Road Transport Corporation (RSRTC)	46.21%	143.18%	22.24%	35.31%	48.06%
5	Uttar Pradesh State Road Transport Corporation (UPSRTC)	499.11%	Profit	355.52%	256.97%	Profit

Table G: Estimated Fuel Tax (Excise Duty and VAT) Paid 2012-15 (City Operators)⁵⁵

Sl.	Operator	Fuel Tax Paid (In Million INR)		
		2012-2013	2013-2014	2014-2015
1	Brihanmumbai Electric Supply and Transport (BEST)	417.71	487.49	509.02
2	Bangalore Metropolitan Transport Corporation (BMTC)	1,236.75	1,469.11	1,985.54
3	Calcutta State Transport Corporation (CSTC)	106.51	105.77	114.67
4	Metropolitan Transport Corporation, Chennai (MTC)	905.82	1,139.21	1,146.32

Table H: Estimated Fuel Tax (Excise Duty and VAT) Paid 2012-15 (State Operators)⁵⁶

Sl.	Operator	Fuel Tax Paid (In Million INR)		
		2012-2013	2013-2014	2014-2015
1	Andhra Pradesh State Road Transport Corporation (APSRTC)	5,610.00	5,973.00	4,673.03
2	Gujarat State Road Transport Corporation (GSRTC)	2,168.43	2,714.71	3,035.31
3	Karnataka State Road Transport Corporation (KSRTC)	2,540.57	3,301.13	3,276.18
4	Rajasthan State Road Transport Corporation (RSRTC)	977.43	1,395.24	1,666.18
5	Uttar Pradesh State Road Transport Corporation (UPSRTC)	2,607.69	2,625.37	3,404.98

Table J: Fuel Tax Contribution to SRTU Losses: City Operators⁵⁷

Sl.	Operator	Taxes as % of Losses				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	Brihanmumbai Electric Supply and Transport (BEST)	No data	No data	6.63%	6.51%	6.01%
2	Bangalore Metropolitan Transport Corporation (BMTc)	No data	No data	83.59%	99.54%	305.92%
3	Calcutta State Transport Corporation (CSTC)	No data	No data	7.19%	6.27%	7.19%
4	Metropolitan Transport Corporation, Chennai (MTC)	No data	No data	77.92%	80.26%	52.23%

Table K: Fuel Tax Contribution to SRTU Losses: State Operators⁵⁸

Sl.	Operator	Taxes as % of Losses				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	Andhra Pradesh State Road Transport Corporation (APSRTC)	No data	No data	151.08%	66.17%	78.52%
2	Gujarat State Road Transport Corporation (GSRTC)	No data	No data	91.95%	140.33%	227.36%
3	Karnataka State Road Transport Corporation (KSRTC)	No data	No data	Profit	1373%	1493%
4	Rajasthan State Road Transport Corporation (RSRTC)	No data	No data	15.07%	32.65%	53.65%
5	Uttar Pradesh State Road Transport Corporation (UPSRTC)	No data	No data	315.7%	199.59%	Profit

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¹⁸ Data sources: Central Institute of Road Transport. (2016). State Transport Undertakings Profile and Performance 2013-14. Pune: Central Institute of Road Transport; also internal communications from the BMTC accounts department.

¹⁹ Service tax, can, in some cases, be considered an indirect tax for an SRTU if the tax forms a component of the cost charged to it by a contractor.

²⁰ Differences in the tax regime can arise out of two factors; (a) different tax rates and additional/fewer cesses for city operators vis-à-vis their state counterparts, and (b) different operating conditions that influence consumption of taxable inputs such as fuel and spare parts.

²¹ Madegowda, J., & Mahalingu. (2011). Impact of Motor Vehicle Taxation on the Financial Viability of STUs in India. *Indian Journal of Transport Management*, 32-41.

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⁴⁸ This calculation is the aggregate of ridership figures for the (as of 2015) four operating metros in India; Bengaluru, Delhi, Kolkata and Mumbai. Unfortunately, neither the Bengaluru nor the Mumbai Metro publish ridership data on their website, with figures for these two cities only available from newspaper articles. The sources for this figure are as follows:

(a) The Hindu. (2016, 10 20). Metro to complete 5 years of operations. Retrieved from The Hindu: <http://www.thehindu.com/news/cities/bangalore/Metro-to-complete-5-years-of-operations/article16076589.ece>

(b) Delhi Metro Rail Corporation. (2015). Annual Report 2014-15. New Delhi. Retrieved from <http://delhimetrorail.com/OtherDocuments/DELHI1-92english.pdf>

(c) Ministry of Railways. (2016, 3 31). *Month/Zone-wise Number of Passengers Booked on Indian Railways*. Retrieved from Indiastat: <http://www.indiastat.com/table/transport/30/monthwiserailwayearningsandtraffic19882015/449474/823095/data.aspx>

(d) TMRG. (2016, 10 15). *Response to RTI Reveals Mumbai Metro's Ridership & Revenue Figures for 2014-15*. Retrieved from The Metro Rail Guy: <http://themetrorailguy.com/2015/10/16/response-to-rti-reveals-mumbai-metros-ridership-revenue-figures-for-2014-15/>. Patronage for the April-June quarter of 2014 was estimated based on ridership trends from June 2014 to March 2015.

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