The Administration of Road User Taxes in Developing Countries

Roy Bahl

The causes of tax avoidance, of tax evasion, and of the failure to reach full revenue potential from road user taxes lie within tax structures and administrations — and those are the areas that need reform.
This paper — a product of the Transport Division, Infrastructure and Urban Development Department — is part of a larger departmental project on pricing, cost recovery, and efficient resource use in the road sub-sector. The report is based on a series of case studies carried out in Argentina, Bolivia, Ghana, India, and Yugoslavia — drawing also on studies carried out in Indonesia, Nepal, and Tanzania. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Jennifer Francis-O’Connor, room S10-063, extension 35205 (46 pages).

After studying the problems of administering road user taxes in 19 developing countries, Bahl reports the following, among other things:

- There is no single, correct structure for road user taxation since the various charges may play different roles in different national revenue systems.
- All effective tax administration requires a solid, uncomplicated tax structure.
- The substantial revenue potential of road user taxation rests on a growing tax base. Despite this, road user taxation remains an underused source of public finance in developing countries.
- Tax evasion and avoidance narrow the tax base, cost governments revenue, and compromise the efficiency and redistribution objectives of a tax system. Evasion may occur by nonfiling, underreporting, or smuggling. It generally increases with the tax rates (particularly the marginal tax rates) and decreases with a greater probability of detection and with a more severe penalty. Avoidance is the result of loopholes in a tax system that enable a taxpayer to reduce liability by adjusting the consumption or composition of received income, or by making different investment or production choices.
- The problems of evasion and avoidance must be approached simultaneously. If a tax administration narrows the possibility for successful evasion, the result may be an increase in avoidance.
- The four main types of road user charges are (1) fuel tax, (2) sales tax, excise tax, and import duty, (3) annual license and vehicle registration charges, and (4) tolls.
- Action should be taken under all four main reform options (1) to keep rate levels as low as possible, (2) to broaden the tax base, limit exemptions, and move toward a single uniform tax rate, (3) to simplify taxes to minimize ambiguity, ease administration, reduce administrative cost, and lower the compliance cost, and (4) to improve tax enforcement by improving tax collection, record-keeping, liability assessment, and identification of those liable to pay the tax.
- Transport fuel pricing needs to be better coordinated, and rate structures — especially for sales tax, excise tax, and import duty — could be lowered and made more uniform. In some countries there is scope for raising fuel tax and the annual license tax, provided it is accompanied by better enforcement. Evidence found in the case studies for this paper have not supported an incentives argument: that taxpayers will be more inclined to pay if they see a direct benefit between tax and spending.
THE ADMINISTRATION
OF ROAD USER TAXATION
IN DEVELOPING COUNTRIES

Roy Bahl
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ACKNOWLEDGEMENTS

This report was prepared as part of a project on pricing, cost recovery, and efficient resource use in transport under the overall direction of Ian G. Heggie. The report was prepared by Professor Roy Bahl (Consultant), based on a series of case studies carried out in Argentina, Bolivia, Ghana, India, and Yugoslavia. Roy Bahl is a Professor of Economics and Director of the Policy Research Program, Georgia State University, Atlanta, Georgia. The case studies were carried out by R. Carruthers (Consultant), K. L. Luthra (Consultant), and D. Walker (Consultant). Material also was used from other studies carried out in Indonesia, Nepal, and Tanzania.

The author would like to thank Ian Heggie for many helpful comments on this manuscript and for calling attention to much of the literature that underlies this research. The author also is indebted to Jim Furis, Sonya Gadoly, and Jim Reteneker for helping prepare the manuscript.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>c.i.f.</td>
<td>cost, insurance, and freight</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product, the</td>
</tr>
<tr>
<td>GNP</td>
<td>Gross National Product, the</td>
</tr>
<tr>
<td>LDC</td>
<td>Less Developed Country</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>RUT</td>
<td>Road User Taxation</td>
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<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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</table>
EXECUTIVE SUMMARY

i. The following chapters are based on research into the problems of road user tax administration in 19 developing countries. The introduction posits three concepts that underlie the work. First, there is no single, correct structure for road user taxation since the various charges may play different roles in any national revenue system. Second, all effective tax administration requires a solid, uncomplicated tax structure. Third, the revenue potential of road user taxation is not only substantial, but rests on a growing tax base. In spite of this, road user taxation remains an under-used source of public finance in less developed countries.

General Background

ii. Parts I and II place road user taxation in the context of the broader fiscal problems facing developing countries. These problems include debt burdens, high inflation, budgetary imbalances, deficient public services, high marginal tax rates, and varying rates of economic growth. Contributing to these are tax evasion and tax avoidance. The most frequent response to revenue shortfalls in developing countries is to use increased customs duties, higher sales and excise tax rates, and highly progressive income tax structures. All of these are thought to have a negative economic impact and to incite non-compliance with the tax system.

iii. Evasion and avoidance narrow the tax base, cost governments revenue, and compromise the efficiency and redistribution objectives of a tax system. Evasion may occur by non-filing, under-reporting, or smuggling. It generally increases with the tax rates (particularly the marginal tax rates), and decreases with a greater probability of detection and with a more severe penalty. Avoidance is the result of loopholes in a tax system that enable a taxpayer to reduce liability by adjusting the consumption or composition of received income, or by making different investment or production choices.

iv. The problems of evasion and avoidance need to be approached simultaneously. If a tax administration greatly narrows the possibility for successful evasion, the result may be an increase in avoidance. Strategies to improve tax administration and reduce evasion and avoidance center on: (1) lowering marginal tax rates; (2) broadening tax bases by eliminating exemptions and many preferential treatments; (3) increasing the transaction cost for using legal loopholes; (4) tightening the control of the tax authority and monitoring questionable cases; (5) discouraging under-reporting by using presumptive assessments and regular audits; (6) preparing a full tax roll and reducing compliance cost; and (7) increasing penalty rates, discouraging negotiated settlements and tax amnesties, and increasing (government) willingness to prosecute.

Road Transport Taxation

v. Transport taxes are divided into two broad categories — general revenue taxes and road user charges. The former are levied on transport related activities as part of national revenue policy, while the latter are differentially higher taxes levied on the transport sector. Part III focuses on the four main sets of road user charges: (1) fuel tax; (2) sales tax, excise
tax, and import duty; (3) annual license and vehicle registration charges; and (4) tolls. Within each of these are many types of specific levies.

vi. Fuel tax. Fuel tax is the dominant source of revenue received from the transport sector, often accounting for half of all transport related revenues. The attraction of fuel tax is that it has a large tax base that grows in proportion to GDP, is relatively price inelastic in demand, and is easily administered with relatively few distributors and few points of distribution (fuel tax may be income elastic if a specific (per gallon) tax rate is not levied and if governments do not allow the taxable price to increase with the market price). The taxpayer is easily identified, compliance is easily monitored, and levels of evasion and avoidance are low. Fuel tax, however, is not usually designed as a proportional benefits levy. The relationship between total collection and total road expenditure varies widely. Fuel is taxed in several ways. Imported petroleum is subject to customs duty; domestic refineries are subject to excise tax; the state monopoly on petroleum products may be taxed on its retained earnings; retail sales tax may be imposed on the pump price; and the pump price may be set above (below) production cost, implying a tax (subsidy). Some countries use one of these tax forms and others use a combination. The aim of fuel rate differentiation centers on income distribution, subsidizing public transportation, keeping prices for non-transport fuel use low, and encouraging industrial development. However, differential fuel prices between contiguous countries and alternative transport fuels will encourage evasion and avoidance. Gasoline users avoid paying high tax by switching to diesel-engined vehicles, or adulterating fuel with a cheaper substitute. They evade paying tax by illegally misclassifying their use under an exempt category (such as agriculture), or smuggling fuel to/from other countries.

vii. Sales tax, excise tax, and import duty. Motor vehicles and motor vehicle parts may be taxed at point of sale, at point of manufacture, and at point of import. Most countries use all three stages. Tax rate, base size, and the extent of preferential treatment vary greatly between countries. Revenue from these taxes is rarely earmarked for expenditure on transportation services, but contributes to general revenue and general economic policy.

viii. General sales tax is among the most difficult to administer. The system is complicated and the tax rate is often high. Of the large number of potential taxpayers, many fail to register. Loopholes, ambiguities, and a high tax rate encourage avoidance. Taxpayers look for an opportunity to shift their purchase or production to an exempt activity, or to one subject to a lower tax rate. They may submit exaggerated refund claims, make unrecorded cash sales, claim ineligible credits, and under-report sales.

ix. Import duty may be the most difficult to administer. The rate structure is usually complex, rates are high, compliance cost may be high, and administration is often weak. The result is considerable scope for undervaluation and misclassification (into lower rate categories). Discretionary exemptions and a low probability of detection aid avoidance. Customs staff are not fully trained, do not use proper procedures, and often are responsible for making classification decisions. Contact between customs officers and taxpayers encourages corruption and negotiated settlements.
Excise tax and manufacturer's sales tax are easier to administer and have a high collection rate. This is due to fewer taxpayers, to less ambiguity (excise tax is due when goods are moved), and to the physical control of goods at the manufacturing site, making monitoring and enforcement easier.

Annual license and vehicle registration charges. Vehicles are subject to a registration charge when purchased, and an annual tax thereafter. Revenue from these charges varies from insignificant in most of the countries studied here, to about one-fifth of transport sector revenue in India. The annual license tax is difficult to administer. It reaches a broad and growing base, but usually with a low specific rate. The structure is complex, record keeping is poor, enforcement is lax, and penalty is low. The compliance cost is usually high, often requiring documented proof of compliance with numerous other regulations before the license tax may be paid.

Tolls. Toll charges are easy to administer, but costly to collect. Monitoring is difficult, compliance cost is high, and toll-booth operators are easily corrupted. In most countries, tolls are a minor revenue source, usually related to a specific project. Electronic toll collection systems could reduce some evasion and are now relatively inexpensive to install.

Reform Options

The realization of greater revenue potential from transport sector taxation requires a combination of administrative and policy changes. Many of the present systems were developed to satisfy a variety of macroeconomic and political objectives, only one of which might be the improvement of road transport services. A choice to strengthen transport sector taxation may require a tradeoff with other objectives. Two themes must underpin any reform plans. First, the tax structure must be set right before the administration can be redesigned. Second, governments should think in terms of policies that reduce the incentives to non-compliance and policies that increase the expected cost of evasion. Part IV focuses on four interrelated elements of tax reform.

Rate levels. Rate levels, particularly marginal tax rate levels, should be kept as low as possible to reduce the incentive for evasion, for avoidance, and for changing consumption patterns. However, high rates are not a major cause for the failure of transport tax to realize full revenue potential. Motor fuel, the most important base, is probably under-taxed in most countries, and a rate increase could likely be absorbed with little, if any, loss in collection efficiency. Stricter enforcement, rather than increased rates, is the better approach.

Uniformity. Tax reform should concentrate on broadening the tax base, limiting exemptions, and moving toward a single uniform tax rate. Rate differentiation should be limited. The lower price and the lower tax rate on diesel do not clearly result in cost equity for the poorer consumers — they bring a revenue loss and subsidize the largest beneficiary of road expenditure (industrial and commercial trucks).
xvi. **Simplification.** Tax reform should emphasize simplification of the tax structure to minimize ambiguity, to ease administration, to reduce administrative cost, and to lower compliance cost. A tax structure with only a few rates and classifications would increase the probability of detection for importers undervaluing goods, and reduce the avenues for goods reclassification. Sales taxation could be simplified by using the value-added tax or the retail sales tax. Several suggestions have been made to simplify the annual license tax, but none of those tried is sufficient on its own and several have drawbacks.

xvii. **Enforcement and penalty.** These are the keys to better tax administration. Taxpayers will not respond to lower rates and a simpler rate structure alone. Improving enforcement requires improving four steps in the administration of any tax: collection, record-keeping, assessment of tax liability, and identification of those liable to pay the tax.

**Transport Taxation Reform**

xviii. Better administration of road user taxes requires action under all four of the above headings. In particular, transport fuel pricing needs to be better coordinated, and rate structures — especially for sales tax, excise tax, and import duty — could be lowered and made more uniform. In some countries there is scope for raising fuel tax and the annual license tax, provided it is accompanied by better enforcement. An incentives argument that taxpayers will be more inclined to pay if they see a direct benefit between tax and expenditure has not shown itself in the case studies for this paper to be viable. The causes of avoidance, of evasion, and of the failure to reach full revenue potential are within tax structures and administrations. Here is where reforms must be made.
I. INTRODUCTION

1. Road User Taxation (RUT) is an underutilized source of public financing in developing countries. The base of the tax (motor fuel consumption and the number and value of motor vehicles) is growing. The general view is that road users can pay more tax, that to charge them on the basis of vehicle size or gasoline consumption is fair, that higher transport tax reduces congestion and pollution, and that motor fuel tax is easily administered.

2. Despite meeting all of these maxims, RUT is rarely a mainstay of tax systems in developing countries. Some of the reasons for this include political opposition, fear that increased transport tax might cripple economic development, assessment and collection difficulties with the non-fuel components of RUT, and problems with the rate and base structure. This paper deals principally with the latter two constraints, and about the policy and administration options open to move RUT toward full realization of its revenue potential.

3. Three questions underlie this work. First, do successful country practice and normative principles tell us there is a right way to structure RUT? No. These taxes and charges play many different roles in national revenue systems. In one country, the objective of RUT may be rationing road use, in another it may be financing construction and maintenance of the highway network, and in others it may be general revenue support. To complicate matters further, taxes on the transport sector may be driven by macroeconomic policies, such as the need to conserve foreign exchange or protect domestic industry.

4. Second, are there generic rules that lead to better administration of RUT? Yes. A key rule is that effective administration requires a solid tax structure. On the basis of the case studies reviewed here, there are correctable problems in all areas of tax administration: assessment, collection, record keeping, and identification of tax bases.

5. Third, what is the revenue potential of RUT? Though statistics are not always available (governments tend to collect revenue data by type of tax rather than by object), the comparisons in Table 1 suggest an 11 percent share in total taxes is not unusual; a share in the neighborhood of 19 percent, as in India and Costa Rica, is possible. Five countries, in this sample of 19, tax the transport sector at a rate greater than 2 percent of GDP. Using these benchmarks, and recognizing that even these higher numbers do not take into account evasion and avoidance, one concludes that many less developed countries (LDCs) have a substantial capacity to expand RUT.

6. The next section examines the general setting for evaluating tax administration in the transport sector. The topics covered include the nature of the evasion/avoidance problem for LDC taxes in general, the standard remedies for non-compliance, and the directions in which tax policy has turned in recent years. Those interested in transport tax system reform would do well to start here. A general model of tax evasion/avoidance is summarized in Section III and presented in more detail in Annex A.
7. The present practice of transport sector taxation is described in some detail in Section IV, with reference to eight case studies prepared for this Project. These cases show wide variations in compliance, revenue performance, administrative practice, the use of tax instruments, and rate and base structure. The final section looks at policy and administrative reform. Has the LDC experience with tax administration in general, and transport tax in particular, taught us how best to structure and administer a system of taxes and charges on motor vehicles and roadways?

8. Some caveats should be mentioned. This report discusses transport tax, but is primarily concerned with motor vehicles and road use. Airports are mentioned only in passing, and railroads and seaports are not discussed. Heavy reliance is placed on the results from a small number of case studies that may or may not be representative. Where possible, the results from other country studies are reviewed, but these are neither comparable in the sense of the questions asked, nor are they presented in the same level of detail. Finally, in some of the discussion the terms tax and charge are loosely used. This is partly a shorthand convenience and partly because the traditional distinctions are blurred among several of the commonly used instruments of transport taxation. Where the distinction is important it is clearly made.

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1/ Argentina, Bolivia, Ghana, India, Indonesia, Nepal, Tanzania and Yugoslavia.
Table 1: Motor Fuel and Total Transport Tax in Nineteen Developing Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Tax on Motor Fuel</th>
<th>Total Transport Tax</th>
<th>Percentage of Road Expenditure collected</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
<td>Percent of Total Tax</td>
<td>Percent of GDP</td>
<td>Per Capita</td>
</tr>
<tr>
<td>1. Algeria</td>
<td>1984</td>
<td>0.0</td>
<td>0.7</td>
<td>0.0</td>
</tr>
<tr>
<td>2. Argentina</td>
<td>1987</td>
<td>6.6</td>
<td>1.7</td>
<td>11.4</td>
</tr>
<tr>
<td>3. Bolivia</td>
<td>1988</td>
<td>0.5</td>
<td>3.3</td>
<td>0.6</td>
</tr>
<tr>
<td>4. Colombia</td>
<td>1986</td>
<td>2.3</td>
<td>0.2</td>
<td>6.4</td>
</tr>
<tr>
<td>5. Costa Rica</td>
<td>1986</td>
<td>16.7</td>
<td>3.1</td>
<td>18.8</td>
</tr>
<tr>
<td>6. Ethiopia</td>
<td>1985</td>
<td>2.4</td>
<td>0.4</td>
<td>5.2</td>
</tr>
<tr>
<td>7. Ghana</td>
<td>1988</td>
<td>1.3</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>1987</td>
<td>4.5</td>
<td>0.6</td>
<td>2.0</td>
</tr>
<tr>
<td>8. Guatemala</td>
<td>1988</td>
<td>7.9</td>
<td>0.9</td>
<td>6.8</td>
</tr>
<tr>
<td>9. India</td>
<td>1988</td>
<td>7.9</td>
<td>0.9</td>
<td>0.1</td>
</tr>
<tr>
<td>10. Indonesia</td>
<td>1986</td>
<td>4.0</td>
<td>0.6</td>
<td>2.5</td>
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<tr>
<td>11. Jamaica</td>
<td>1986</td>
<td>7.5</td>
<td>1.7</td>
<td>3.4</td>
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<tr>
<td>12. Nepal</td>
<td>1985</td>
<td>4.3</td>
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<td>0.5</td>
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<tr>
<td>13. Pakistan</td>
<td>1985</td>
<td>5.2</td>
<td>0.6</td>
<td>2.0</td>
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<tr>
<td>14. Philippines</td>
<td>1986</td>
<td>9.1</td>
<td>1.0</td>
<td>5.1</td>
</tr>
<tr>
<td>15. Sri Lanka</td>
<td>1985</td>
<td>7.8</td>
<td>1.4</td>
<td>5.5</td>
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<tr>
<td>16. Tanzania</td>
<td>1986</td>
<td>3.4</td>
<td>0.4</td>
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<tr>
<td></td>
<td>1987</td>
<td>3.4</td>
<td>0.4</td>
<td>0.9</td>
</tr>
<tr>
<td>17. Thailand</td>
<td>1985</td>
<td>9.0</td>
<td>1.3</td>
<td>9.4</td>
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<tr>
<td>18. Tunisia</td>
<td>1985</td>
<td>2.7</td>
<td>0.7</td>
<td>7.6</td>
</tr>
<tr>
<td>19. Zaire</td>
<td>1985</td>
<td>7.1</td>
<td>1.2</td>
<td>1.7</td>
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<tr>
<td>Median</td>
<td></td>
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<td>Mean</td>
<td></td>
<td>6.1</td>
<td>0.9</td>
<td>7.4</td>
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[^1] Road fund only. The total is estimated to be three times this amount.
II. THE PROBLEM

9. This report tries to answer the following questions on the use of transport tax and the problems of evasion and avoidance:

- How urgent is the need to improve tax effort in developing countries?
- What is the magnitude of tax evasion in the transport sector, and are there significant gains to be had from better enforcement?
- What policy instruments are currently used for dealing with compliance and what role can they play as part of an agenda for improving enforcement of transport tax?
- How can policy makers reconcile the revenue raising and resource allocation objectives of transport tax?

Fiscal Problems in LDCs

10. The 1988 World Development Report (World Bank, p. 182), describes the poor conduct of fiscal policy in developing countries as leading to "... heavy foreign borrowing, high inflation, and stagnant private investment". The economic patterns and fiscal problems facing low-income countries vary and in each produce a different response, making generalizations difficult. However, some fiscal situations occur repeatedly in many countries.

11. One is that government expenditure drives the problems of budgetary imbalance in low income countries. In most cases, the ratio of tax to GNP is remarkably stable, but the expenditure share may increase dramatically over short periods of time. This creates short run (in some cases long run), situations of substantial deficit and inflationary financing. The following common situations explaining the inability of governments to control spending are observed in LDCs:

- Public services are deficient, and pressure to upgrade and fill the most severe gaps is intense. In response, governments often spend for capital improvements even when their forecasted tax revenue will not support the expenditures. Governments borrow without the capacity to repay, do not adequately maintain existing capital stock, and do not operate some facilities to proper standards.

- Central government budgets are squeezed by public employee compensation demands, demands to increase transfers to local governments, and the increasing price of non-labor inputs (utilities, asphalt, gasoline, and so on). Inflation exacerbates these pressures.
• Debt repayment exerts a fixed and often substantial claim on available resources.

• Government budgets are politicized and tend to expand during elections. Often public employment rolls are "padded" as governments take on the role of employer of last resort.

• Inefficient service delivery adds to the burden.

12. Some governments are unwilling to exert a tax effort to close the public services gap. The Philippines and Guatemala are countries whose tax burden is inordinately low by world standards. A normal tax effort in either of these countries would all but eliminate the budget deficit.\(^2\) In other cases the average tax rate, relative to GDP, is not low, but the gap persists. This could be due to one or both of the following reasons: First, the deficit is primarily a problem of overspending relative to revenue intake; second, the high (or even normal), average tax rate translates into a high marginal rate because only a narrow segment of economic activity is taxed.

Avoidance and Evasion

13. Individuals and companies reduce their tax liabilities by a variety of legal and illegal means. Avoiding or evading taxes hinders the public sector's revenue generation. This is especially true in developing countries where tax enforcement is weak and where the informal sector of the economy is hard to tax.\(^3\) The revenue loss from noncompliance exacerbates a serious problem resulting from deficient infrastructure, low taxable capacity, inadequate public services, and substantial debt repayment obligations. Developing countries often respond to the revenue shortfall by raising sales and excise taxes, increasing customs duty, and enforcing highly progressive income tax structures. However, high marginal rates of taxation are thought to discourage some productive activities, to distort some economic decisions, and to provide further incentive for noncompliance. As a way out of this dilemma, virtually every fiscal reform program for developing and developed countries recommends base expansion, removing exemptions, lowering tax rates, and improving tax administration.

14. Exemptions. Under personal income tax, it is not uncommon for interest income from bank deposits to be tax free. Other commonly exempted items are capital gains and income from fringe benefits. In most countries the income tax base from companies is eroded by tax

\(^2\) The United States faces much the same situation.

\(^3\) Thorough statements of developing country fiscal and tax administration problems can be found in Richard Goode (1984), Richard Bird (1983), and G. K. Shaw (1981).
incentives that grant several forms of preferential treatment to qualifying firms in an attempt to increase economic development.

15. The indirect tax base is also diluted by exemptions and preferential tax treatment. A variety of imports are duty-free, or are taxed at preferential rates. The value-added tax (VAT) in most LDCs exempts a good part of the service sector, zero rates many commodities, and either does not tax smaller firms, or taxes them at nominal rates.

16. A key problem in designing tax reform — particularly income tax reform — is the poorly understood relationship between tax structure and tax compliance. An examination of the role that the income tax structure of developing countries plays in tax compliance may provide lessons that could be applied to the transport tax structure.

17. A formal model, presented in Annex A, makes several propositions about the determinants of tax evasion and tax avoidance. The rate of evasion will increase with the rate of tax. A greater probability of detection, a more severe penalty if caught, and the enforced loss of benefits accrued by claiming tax payment, can reduce evasion. Tax avoidance, on the other hand, is the legal exploitation of loopholes in the system. Loopholes or exemptions enable a taxpayer to reduce liability by adjusting the consumption or the composition of received income, or by making different investment or production choices. A policy to reduce tax avoidance must include lower marginal tax rates, broader tax bases to eliminate preferential treatment of certain activities, increased transaction costs to taxpayers who use legal loopholes, and stricter monitoring of questionable cases.

18. The problems of evasion and avoidance must be approached simultaneously. Other things being equal, a reduction in the rate of tax evasion can increase the rate of tax avoidance, and vice versa. For example, if the price of evasion becomes too high, taxpayers will seek other ways to reduce their burden. Commensurately, in the absence of tighter enforcement, closing loopholes to reduce tax avoidance will increase tax evasion.

19. High marginal tax rates increase the rewards for evasion and avoidance. At lower marginal tax rates, individuals or businesses are less willing to risk being caught and punished for tax evasion. Avoidance at lower rates may also be less attractive, since there are costs involved in using exemptions and deductions. For example, time is needed for accountants and lawyers to prepare the case; there are administrative costs for changing the compensation package of employees toward non-taxable fringe benefits; there are transaction costs for reallocating an investment portfolio; and there are costs for shifting production activities into categories given preferential tax treatment.

20. There are two qualifiers to the proposition that rate reduction will improve compliance. First, the increase in compliance may not be large without a simultaneous increase in enforcement. If an evader feels there is little probability of detection, he may not be drawn in,
regardless of a rate reduction. An evader might feel that, because of the lower rate, the government will be even more lax in pursuing evaders. Second, rate reduction should not imply any reduction in the provision of public services. Rather, the aim is to reduce rates while increasing the size of the base. In other words, a revenue neutral adjustment is sought. Otherwise, rate reduction may be perceived as a reduction in the benefits from taxes paid. Other things being equal, such a reduction in benefits would increase resistance to paying tax.

21. The probability of detection may be increased in many ways, most of which are within the capabilities of tax administrations in LDCs. The identification of a full tax roll is the most promising. The registration of all individuals, businesses, and properties subject to taxation may be accomplished by door-to-door surveys, by using third party information (import licenses, property transfers, utility connections, motor vehicle registrations, and many other sources), and by integrating all tax records. This requires a unique taxpayer numbering system, which many low-income countries do not have.

22. Detecting under-reporting is as important as detecting non-filing. Under-declaration may be detected by developing a presumptive assessment system for the hard-to-tax and for the self-employed. A strong audit program is another important protection against under-reporting. Measures for increasing revenue from customs and excise duty include better inspection procedures and the use of an up-to-date import valuation data system. Underlying these proposals should be a stronger training program, computerization, and better advancement possibilities for the tax administration staff.

23. These detection methods will also reduce tax avoidance as taxpayers note the increased probability that border line cases will be rejected. The added cost of preparing an adequate case will also discourage avoidance.

24. An increase in the use of penalties is essential to reducing evasion. In too many low-income countries the penalty is nominal, or rarely applied. The interest penalty on the underpayment of tax can be below market rates, penalty on under-declaration of imported goods is often minimal, and, though property tax delinquency may be penalized with the seizure of property, this rarely occurs. In some countries court delays create further incentives. The problem is compounded where tax amnesties are common, or where non-compliance is settled out of court.

25. The key to better enforcement is government resolve to impose severe penalties on those who do not pay. In most instances laws are adequate — the problem is with enforcement. One way to cope with court delays is to make the taxpayer remit the assessed amount pending the legal decision. Another approach is to publicly announce the names of delinquents.
III. ROAD TRANSPORT TAXATION

26. A road transport tax has no clear-cut definition. If RUT is evaluated as tax on a sector, the evaluation might include whether tax matches the benefits from roadway expenditure; whether revenue collection is in step with growth in the potential transport tax base; whether the various types of RUT are having the desired allocative effects; and whether the right RUT "tax handles" are being used to make administration efficient and fair. The following pages outline the use of each form of transport tax and charge. The discussion focuses on administrative procedures, experiences with evasion and avoidance, RUT revenue \( \cdot \)ld and elasticity, the definition of rate and base, the revenue split between central and local government, and problems with the structure and administration of the tax.

Defining Road Transport Taxation

27. In the eight case studies on which this paper is based, the scope of transport tax includes charges related to the ownership and operation of motor vehicles, and charges related to road use. By this general classification, RUT can be divided into the following categories:

- motor fuel tax;
- excise tax, sales tax, and import duty;
- annual licenses and vehicle registration charges;
- vehicle tolls and tax on the movement of goods;
- income tax on transport-related activities.

28. Within these categories, many types of levies are used. A road transport study in Indonesia, prepared by consultants in 1982, identified 22 types of RUT in the revenue structure (Table 2). Still, ambiguities persist about what counts as a tax on the transport sector. For example, should income tax on companies involved in the production and sale of motor vehicles and transport services be included? Some argue that this is a general tax on income earned by any business meeting the exemption test, and is not specific to any sector. A similar study of India, prepared as background for this report, does not count company income tax on road transport operators as a road user charge because it "is not a tax levied on inputs or outputs of the road transport industry". The Indonesia study, by contrast, does count corporate income tax on importers or domestic assemblers as transport tax.

29. Some studies view the separation of general taxes from those related to the use of roads as necessary. The Indonesia study separates transport tax into the broad categories of general revenue taxes and road user charges. The former are levied on the transport sector as part of national revenue policy, while the latter are differentially higher taxes levied on the transport sector. For example, the general rate of customs duty on
Table 2: Indonesia: Motor Vehicle Tax Structure (1978)

<table>
<thead>
<tr>
<th>Type of Tax</th>
<th>General Revenue Tax</th>
<th>Specific User Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fixed Admin. Revenue</td>
</tr>
</tbody>
</table>

**A. Motor Vehicles and Parts**

1. Customs Duty
2. Importers corporate tax
3. Import sales tax
4. Manufacturing sales tax
5. Dealers corporate tax
6. Ownership transfer tax
7. Vehicle tax

**B. Vehicle Operations**

1. Duty on imported lubricants
2. Importers corporate tax on lubs.
3. Import sales tax on lubs.
4. Dealers corporate tax on lubs.
5. Sales tax on lubricants
6. Sales tax on spare parts
7. Sales tax on tyres and tubes
8. Drivers license fees
9. Tax on fuel
10. Rural road levies
11. Toll road levies

**C. Other Charges**

1. Weigh bridge fees
2. Vehicle inspection fees
3. Parking fees
4. Commercial route license fees
an automobile, or the general rate of value added tax on an automobile part, comes under the heading of general revenue tax. Any differentially higher rate of duty or VAT would be classified as a specific road user charge. Specific road user charges are further subdivided into fixed charges, vehicle sales tax, an initial registration fee — or taxes levied periodically, such as import duty — and taxes that vary with vehicle use, such as fuel tax.

**Motor Fuels**

30. Motor fuel tax is the dominant source of revenue from the transport sector. In the percentage comparisons between developing countries, it commonly accounts for half of all transport tax revenue. Percentages for the eight countries studied are:

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>1988</td>
<td>56 percent</td>
</tr>
<tr>
<td>Bolivia</td>
<td>1988</td>
<td>62 percent</td>
</tr>
<tr>
<td>Ghana</td>
<td>1988</td>
<td>90 percent</td>
</tr>
<tr>
<td>Guatemala</td>
<td>1988</td>
<td>49 percent</td>
</tr>
<tr>
<td>India</td>
<td>1988</td>
<td>47 percent</td>
</tr>
<tr>
<td>Nepal</td>
<td>1985</td>
<td>37 percent</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1986</td>
<td>32 percent</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>1988</td>
<td>63 percent</td>
</tr>
</tbody>
</table>

The evidence presented in Table 1 suggests that motor fuel tax accounts for about 6 percent, on average, of total national tax and is equivalent to around 1 percent of GDP. The reliance can be greater. In Costa Rica, motor fuel tax accounts for more than 16 percent of total national tax and 3 percent of GDP.

31. **Revenue performance.** The potential base of motor fuel taxation is broad enough to yield significant revenue at modest rates. Yet the ceiling for rates depends on political constraints and the need to avoid placing an undue tax burden on non-road users of petroleum products.

32. The revenue performance of a tax might also be evaluated by its income elasticity, in this case whether automatic growth in motor fuel revenue is more or less in proportion to GDP. Most observers believe that revenue from tax on motor fuel is buoyant, that is, it automatically increases, at least in proportion to GNP. This assumes that the monetary value of petroleum consumption over the long-run will increase faster than GNP. However, motor fuel tax is not always income elastic. For example, income elasticity of motor fuel tax in Guatemala between 1984 and 1989 was less than 0.9 percent. In real per capita terms, motor fuel revenue was 30 percent lower in 1989 than 1986. In Jamaica between 1978 and 1983 (Smith, 1984), there was a decline in the real value of tax on a gallon of gasoline. Why is this? Consider that revenue income elasticity of motor fuel tax has three components, as described below:
\[
\frac{dT}{dY} = \frac{dT}{dTB} \cdot \frac{dTB}{dB} \cdot \frac{dB}{dY}
\]

where \(dT\) = percentage change in motor fuel tax revenue;
\(dY\) = percentage change in GDP;
\(dTB\) = percentage change in the taxable base;
\(dB\) = percentage change in the true market value base;

Buoyancy from the first component \(\frac{dT}{dTB}\) is derived from the rate structure of motor fuel tax. Under a flat rate ad valorem tax, rate elasticity would be unity. One reason for inelasticity of motor fuel tax observed in many LDCs, is that a specific (per gallon) tax rate is levied; hence, periodic discretionary adjustments are required for revenue to keep pace with the rising price of imported petroleum. Such adjustments are politically difficult, and failure to make them frequently stalls the revenue growth of motor vehicle tax. For example, in Yugoslavia, failing to adequately index the tax rate reduced road user tax revenue by about one-half between January 1987 and March 1988. This problem has led Yugoslavia, and also Argentina, to adopt ad valorem tax rates in recent years.

33. The second component in this simple formula \(\frac{dTB}{dB}\) is taxable base elasticity — that is, the extent to which the taxable value of motor fuel consumption proportionately increases with the market value of motor fuel consumed. This is, potentially, another source of revenue inelasticity. In most LDCs, the central government fixes gasoline prices, determining the size of taxable base elasticity. Taxable base elasticity is less than unity in most LDCs if the government does not let the taxable price increase with the market price. In Indonesia, for example, one nationally owned oil company (Pertamina), is responsible for all production, but the price of motor fuel is set by Presidential decree. In practice, the gas tax (subsidy) is set by

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\(\text{If a specific tax rate (t cents per gallon) is levied, then revenue from a tax at the pump will increase by } tdG\)

\[\text{where } dG = \text{change in gallons of consumption, no matter what the value increase of the potential taxable base (P}_gG)\]

\[\text{where } P_g \text{ is the pump price.}\]

Since \(tdG < d(P_gG)\) in most cases, the rate elasticity will be less than unity for any given average tax rate \(\left[\frac{T}{TB} = \frac{tG}{P_gG}\right]\).
the difference between the administered retail price of motor fuel and the production cost. The same is true in Argentina, where the government sets the gas tax as the difference between the motor fuel retail price and the retention price for the oil company. The central governments of all the countries in this sample, set and regulate the price of fuel.

34. The third component of this formula \( \frac{dB}{dY} \) is base elasticity of motor fuel tax — that is, the ratio of the percent increase in the market value of motor fuel consumed to the percent increase in GNP. Two factors effect this component — changes in the market price of motor fuel, and changes in the amount of fuel consumed. The fall in average fuel consumption during the past 18 years (largely due to fuel economy measures) has dampened base elasticity.

35. **Economic Justification.** Three justifications are commonly given for the heavy use of motor fuel tax in less developed countries. First is a straightforward revenue argument. Fuel consumption is a large tax base, is relatively price inelastic in demand, and is easily administered at the point of importation or at the refinery. Second is that, since most countries are oil importers, a high petroleum tax is supported on balance of payments grounds. Third is efficiency: Gasoline tax is a rough charge for the use of transport services, especially highways. The benefits justification contains important weaknesses, which are magnified in LDCs. Despite the rhetoric, in most LDCs the tax on motor fuel is not usually designed as a benefits levy.

36. A true benefits levy would approximate the following conditions:

- Nonpayment would mean exclusion from the benefits of highway services;
- Consumers of highway services would pay according to the benefits they derived;
- Proceeds of the tax/charge would be spent primarily on highway services;
- Demand for more or less highway service would be expressed through public willingness to consume the service at the price set by the authorities.

37. In LDCs all of these principles are usually violated. First, not all who benefit from the business use of improved transport services share the gas tax burden. Nonpaying beneficiaries are those whose business profits, property values, and general quality of life are improved by

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\( \frac{dB}{dY} \) In the United States, total highway expenditure at all levels of government is approximately equal to total gasoline tax collection (Musgrave and Musgrave, pp. 230-231).

\( \frac{dB}{dY} \) A thorough discussion is in Shoup, pp. 118-126.
better access to highway services. Inequity from the use of gas tax as a benefits charge occurs in developing and developed countries alike.

38. Second, the gasoline tax does not recognize that different users of highway services impose different costs on the highway system. Among the variables not usually accounted for are different speeds of travel, different levels of congestion, different vehicle weights and different road surfaces. Third, all gasoline tax revenue is not always designated for the road fund. For example, in Ghana, only about 20 percent of the specific levy on gasoline is earmarked as a charge for highway services. This implies that the remainder is considered a general revenue tax and/or a penalty for luxury consumption. Using only part of the gasoline tax for the road fund suggests in some countries that the tax is levied primarily to conserve foreign exchange, or to promote macroeconomic or industrial policy objectives. The relationship between total collection from motor fuel tax and total road expenditure varies widely, as may be seen from the right column of Table 1. Of the countries surveyed for this comparison, the median share is about 80 percent.

39. Finally, the benefits levy is not set by, nor does it signify, demand for more, less or different transport services. If road users want improved or changed services, they must act through the political process. If they want lower gasoline prices (the pressure more likely brought to bear on the political process), they may threaten to strike, boycott, or even publicly protest. Despite low levels of automobile ownership and gasoline tax, the public in developing countries is sensitive to sharp increases in gasoline prices. The principal users of the transport system — automobile owners and taxi drivers, mini-van owners, and their customers — are usually educated and often politically vocal and influential (see also Due, 1988, Chapter 4).

40. The motor fuel tax must serve several functions; policy makers see it as a way to improve resource allocation, to redress an unequal distribution of income, and to raise revenue. In most countries fuel tax gives preferential treatment for some activities and penalizes others. Ease of administration encourages reliance on motor fuel tax, but preferential treatment and the political problems inherent in raising gasoline tax imposes constraints on its use.

41. Rate and base. Motor fuel is taxed in several ways. Imported petroleum is subject to a customs duty; domestic refineries are subject to an excise tax; the state monopoly on petroleum products may be taxed retained earnings; a retail sales tax may be imposed on the pump price; and the pump price may be set above (below), production cost.

Not all industrial countries earmark the gasoline tax for the transportation service. Tait and Morgan (1980) note that of 10 (Organization for Economic Cooperation and Development (OECD) countries studied, only six devoted all or part of their excise on petroleum to financing highways.
42. Some countries use only one of these tax forms and others use a combination. For example, Bolivia taxes domestic production and use of motor fuel through a production tax, a value-added tax, a transaction tax, a royalty, and the transfer to the government of a share of state oil monopoly profits. Indonesian law provides for a 10 percent excise tax and a 10 percent sales tax on motor fuel consumed, but in practice neither is levied. Instead, the Indonesian government sets the tax (subsidy) rate as the differential between production cost and retail price.

43. In most countries, the tax rate on motor fuel is specific rather than ad valorem. As noted above, the problem with a specific rate is that it must be indexed to the base price to maintain revenue elasticity. If this is not done, the government must make periodic, unpopular, tax hikes. For countries deriving gasoline revenue from a tax rather than from the profits of the state monopoly, the solution to the elasticity problem has been an ad valorem rate. Assessment under a value-based tax need not be more complicated. Petroleum prices are fixed, and physical methods of control may be used, but revenue growth becomes automatic.

44. Though a specific rate is still widely used, there is a trend toward establishing ad valorem rate structures. Of the eight countries covered here, the adoption of ad valorem in Yugoslavia and Argentina has been mentioned; Nepal has established a percent rate sales tax on motor fuel (but not import duty); and Indonesia has an ad valorem rate in theory, if not practice.

45. Some argue that with an ad valorem rate structure, revenue falls when petroleum prices fall, and inflation is stimulated when petroleum prices rise. The stability argument has been proven. However, there is less evidence that fuel tax increases drive up general consumer prices. Hughes (1987), has compared the price effects of revenue neutral increases in fuel tax and a general consumption tax in Tunisia, Indonesia, and Thailand. His results are partly based on input-output tables for those countries, taking into account direct and indirect effects. The results show that a general consumption tax leads to a larger price rise than does an equal tax yield on gasoline. Thus, factor income rather than consumption carries a majority of the fuel tax increase burden. Repeating the experiment using the various fuel taxes, Hughes finds that only kerosene yields a significant price effect.

46. Rate structures in LDCs tend to be differentiated according to type of fuel.\textsuperscript{\textdagger} The usual practice ignores road use efficiency maintaining a higher petrol tax rate than the rate on diesel fuel (and fuel used for non-road purposes). Diesel-powered vehicles tend to be heavier, impose a greater road maintenance cost, and travel greater distances per gallon of gasoline consumed. This suggests that diesel consumers should carry the greater tax burden. Either way, the introduction of a differential rate structure immediately complicates tax administration. At

\textsuperscript{\textdagger} This is different from the practice in most industrialized countries, which tax both at the same rate. Singapore, however, has not taxed diesel fuel since 1979.
present, it encourages users to switch to diesel-driven vehicles, and opens the door for unintended preferential treatment.

47. In the face of these problems, why do governments differentiate between fuel rates? Three reasons are often cited. First concerns income distribution — lower diesel rates subsidize public transportation, which is mainly used by the poor, and higher gasoline tax rates are borne disproportionately by higher income people who are most likely to own and operate vehicles. Second, the present system leaves private transportation underpriced. The short run marginal costs imposed by motor vehicles on roadways are not covered by existing user charges. Therefore, a reduction in the price of public transportation through lower diesel cost aims to keep the relative fuel prices socially balanced.

48. The third reason governments differentiate is to give favored treatment to non-transport diesel (including home heating fuel) use. The aim is to protect low income families and avoid compromising industrial development. The counter-argument is that a blanket subsidy to diesel fuel is a subsidy to road haulers and shippers, and to beneficiaries of these services. Different fuel prices also distort transportation choices against alternatives such as rail, and they may distort location choices for production facilities by lowering transportation costs. Finding an equitable rate structure is difficult. For example, instituting the correct policy of lower rates for off-highway diesel use (farming, industry, railroads, electricity generation, and so on), creates complex administrative problems (Due 1988, pp. 78-79).

49. Exemptions are another departure from the broad base, flat rate maxim that characterizes efficient taxation. No pattern or general rule appears for motor fuel tax exemptions. For example, Yugoslavia exempts use by the army, by the marines, and use for agricultural purposes; Nepal exempts only diplomatic use; and Ghana provides no exemptions. For the case study countries, no data are available on how much the tax base is compromised by exemptions.

50. **Intergovernmental sharing.** For many sound reasons, motor fuel tax is levied by central government in most developing countries. Gas prices are politically sensitive and motor fuel taxation is too big a national revenue source to turn over to local government control. Allowing local government to affect prices, even at the margin, can be dangerous. If inter-local variations in gas prices were large enough, fuel carrying would result.

51. This said, in some countries local government does benefit from motor fuel tax. In Argentina, Guatemala, Indonesia, and India, a portion of receipts is distributed to the state and local government sectors. Allocation and distribution formulas vary among countries. In Argentina, an *excess* profit on motor fuel is defined as one-half the difference between retention price and government-defined market price. The former is roughly a breakeven figure. Approximately 9 percent of the *excess* profit is distributed to the provinces as their share of the fuel fund. Guatemalan municipalities share 2 cents per gallon of the gasoline tax.
52. Some local/provincial governments are given power to tax motor fuel and retain the revenue. In Indonesia, provincial government is, in theory, allowed to levy fuel tax, but this power is not used. Bahl and Linn (forthcoming) surveyed the local government use of motor fuel tax in the 1970s and 1980s. They found fuel tax was levied by a few large urban governments in LDCs.

53. **Administration.** A major attraction of motor fuel taxation is ease of administration. Since there are relatively few distribution points, and few distributors, the liable taxpayer is easily identified and policed. In Indonesia, for example, the nationally owned oil company (Pertamina), assesses and collects all domestic tax on motor fuel. The situation is similar in Nepal. Tax on motor fuel in Ghana is paid by a small number of distributors. The tax is based on their supply from the National Petroleum Company, which is the sole importer. In Yugoslavia, the tax is administered by a few petrol companies, that own and operate petrol stations. Input and output prices remain centrally determined. Fuel price is centrally regulated in India, where the government collects the tax at its source as part of import or ex-factory prices. Since input and output prices are usually fixed, collection cost is borne by distributors or factories. As the compliance controls are straightforward, collection cost is not high. Due (1988, p. 79), notes that inspectors at refineries are not necessary. In Bolivia, collection cost is estimated to be less than 1 percent of collected fuel tax revenue.

54. **Evasion, avoidance, and revenue potential.** Problems with evasion or avoidance of motor fuel tax in the eight sample countries are rare — all report a collection rate of 100 percent. But a 100 percent collection rate means only that the total billed amount is collected. This implies that as far as tax collection is concerned, evasion is not a problem. Neither is assessment a problem, since taxpayers and petroleum suppliers are easily identified, and assessment methods are straightforward.

55. The bigger issues in transport tax administration are whether the fuel tax base is assessed fully and whether legal tax avoidance occurs. The evasion of motor fuel tax through smuggling is discussed later.

56. The first gap between revenue potential and revenue collection lies within the legal definition of the tax base, that is, the level at which market price is defined. Among LDCs, any commonality of practice in fuel pricing is the placement of diesel and kerosene below border prices and the placement of gasoline at a higher level. One recent World Bank study in Tanzania estimates that, on average, diesel and kerosene are set at 25 to 40 percent below international border prices, and that gasoline, on average, is set at 50 percent above. The ideal

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2/ An interesting exception is Chad where the government failed to pay for its deliveries and the oil companies responded by withholding their tax payments.
is a motor fuel tax with a large enough yield to cover state monopoly losses and contribute to
the general budget or to transportation network financing.

57. When the net-of-tax economic price for fuel is above the net-of-tax administered price, the financial tax levied may be partially or fully offset by subsidy. The result may be a net transport sector subsidy, rather than a road use tax. In Indonesia, a 9 percent subsidy to petrol and a 67 percent subsidy to diesel were only partially offset by gas tax and led to real revenue loss from motor fuel taxation. In Ghana too, all categories of fuel appear to be subsidized. This results in motor fuel taxation far below its economic potential in most LDCs. This taxation dilemma is part of what led governments to subsidize gasoline prices.

58. Tax avoidance is the other cause for fuel tax falling short of revenue potential. The tax structure allows users to reduce motor fuel tax liability by altering business practices; for example, claiming exemption, or using cheaper fuel or different transportation modes. Fuel carrying is another example. By driving to a rural area, motor fuel may be purchased cheaper. There is no evidence of rural-urban fuel carrying in the cases examined here. Bahl and Linn (forthcoming), argue that the high cost and low return on fuel carrying make differentially higher urban fuel prices quite feasible. Other ways of avoiding paying higher motor fuel tax such as purchasing small vehicles, and making greater use of public transportation, are thought to be in the government’s interest.

59. Some features of the motor fuel tax in LDCs provide incentive for evasion. Complicated administration increases evaders’ probability of success. For example, exemption for certain classes of fuel users encourages reclassifying activities to exempt categories. In Yugoslavia, army, marine, agricultural, and public bus operators are partially, totally, or fully exempt from fuel tax. By comparison with fully taxed use of fuel, marine use is 47 percent cheaper, agricultural use is 40 percent cheaper, and bus use is 39 percent cheaper. The incentive for illegally classifying other private sector activities as exempt, or engaging in some form of transfer pricing, is strong. However, in Yugoslavia, it is argued that little or no evasion occurs because the penalties are said to be severe enough to be an effective deterrent.

60. Differential prices for diesel, kerosene, premium and regular gasoline, open another door for evasion. The differentials are often large, inciting petroleum adulteration. One approach for dealing with this problem, taken by the government of Ghana, imposes a differentially higher excise on regular gasoline to equalize wholesale prices. Other, more administrative approaches are coloring types of fuel for easier identification, using additives to discourage improper blending, or restricting the quantity sold at any one time.

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10/ Low fuel prices also give rise to other problems. For example, in Tanzania the combination of a low fuel price and a low margin to cover transport cost discourages the hauling of fuel to inland locations.
61. Smuggling due to fuel price differentials between countries is another problem. The price of gasoline in Tanzania is well below that of neighboring Kenya. Fuel is smuggled between the two. The problem in Tanzania was complicated in 1987 by an overvalued exchange rate. As one World Bank study noted, "...fuel is imported into Tanzania, paid for in foreign currency, and then resold over the border for local currency." The cost to the Tanzanian government is a revenue loss, assuming that motor fuel is set below market price. Fuel prices in Ghana are also relatively low. This leads to fuel carrying from Ghana to neighboring Ivory Coast. It is estimated that such leakage is around 1 percent of total domestic sales with a concentration on kerosene. Thus, rather than undercollecting the Government of Ghana is modestly overcollecting. However, with Ghana's ex-refinery prices well below world prices, it is doubtful if the tax revenue collected on illegally exported fuels compensates for the subsidy lost.

Purchase Taxation: Duty and Sales Tax

62. Tax on the sale and purchase of motor vehicles and parts are collected in four different forms: import duty, general sales tax, excise on domestic production, and income tax on manufacturers and dealers. Though the motor vehicle share of these tax bases is significant, it may not be meeting full revenue potential. To determine the extent of revenue potential reached, the tax base definitions and rate structures in various countries must be reviewed and matched against modern norms for a good tax. An evaluation of administrative practice, and an exploration of divisions of responsibility for these taxes among central and subnational governments is also required. Lastly, we take up the reduction of avoidance and evasion.

63. Revenue importance. The revenue importance of sales and production taxes, as a share of GNP and as a share of total transport tax, is described for a small sample of countries in Table 3. Based on this small sample, one-third of all revenue collected from transportation activity seems a feasible level.

<p>| Table 3: Revenue from Customs Duty, Sales Taxes and Excises on Motor Vehicles and Motor Vehicle Parts |
|-------------------------------------------------|----------------|----------------|</p>
<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Percent of GDP</th>
<th>Percent of Total Transport Taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Argentina</td>
<td>1987</td>
<td>0.7</td>
<td>22.4</td>
</tr>
<tr>
<td>2. Nepal</td>
<td>1985</td>
<td>0.3</td>
<td>33.7</td>
</tr>
<tr>
<td>3. Tanzania</td>
<td>1986</td>
<td>1.1</td>
<td>64.6</td>
</tr>
<tr>
<td>4. India</td>
<td>1988</td>
<td>0.4</td>
<td>19.2</td>
</tr>
<tr>
<td>5. Guatemala</td>
<td>1988</td>
<td>0.6</td>
<td>32.2</td>
</tr>
<tr>
<td>6. Indonesia</td>
<td>1980</td>
<td>0.4</td>
<td>n.a.</td>
</tr>
<tr>
<td>7. Jamaica</td>
<td>1984</td>
<td>1.0</td>
<td>33.0</td>
</tr>
</tbody>
</table>

64. Revenue from these taxes is rarely earmarked for expenditure on transportation services. The evaluation of practices in this area centers on the contribution of these transport taxes to general revenue, and to increasing their contribution through improved administration.
**Base and rate structure.** There are three points at which the value of motor vehicles and motor vehicle parts can be taxed: at point of sale, at point of import, and at point of manufacture. Nearly all countries make use of all three stages. Beyond this, however, it is difficult to describe a common pattern for taxing the purchase and production of motor vehicles and parts. Every country develops an approach consistent with its economic goals, with its existing tax structure, with its foreign exchange position, with the skills of its tax administration, and with the degree to which it is trying to protect domestic manufacture or assembly of motor vehicles. The degree of rate and base variations is evident from a summary review of practices followed in several of the case study countries. Indonesia takes the broadest approach, levying the following taxes on the purchase and production of motor vehicles:

- customs duty;
- income tax on importers;
- sales tax on imports;
- manufacturer's sales tax;
- income tax on dealers;
- owner-hip transfer tax.

Indonesia also may tax the narrowest base in that many motor vehicle purchases are subject to preferential treatment. Most importantly, all commercial vehicles (all pickups) and all government purchases are exempt from sales tax and from customs duty. Parts imported for assembly (*completely knocked down units*) also are exempt from customs duty. The rate structures for customs duty and for sales tax are complicated, but generally favorable to the transport sector. Completely knocked down units are given a preferential sales tax rate. The highest rate is levied on completely built-up units — twice the rate on unassembled units.

65. India uses a combination of excise duty, sales tax, and customs duty to tax the production and purchase of motor vehicles and motor vehicle parts. The Indian system is the most complicated of those considered. The central government levies customs duty on all imported vehicles and parts, and levies excise duty on the domestic manufacture of motor vehicles and parts. A credit is allowed vehicle manufacturers for certain taxes paid on inputs — excise duty, special excise duty, and additional customs duty. There are several restrictions on the use of this credit. For example, credit is valid for a manufacturing site rather than for a firm, and the inputs must be included in an identifiable output unit. This involves complicated recordkeeping and classification. The rates of customs duty and excise duty vary according to the component being imported or produced, with the highest rate for imported, assembled vehicles.

66. Sales tax in India is levied at the wholesale and/or retail level by state governments and central government. State governments may set their own sales tax rate, restricted only in that (1) the tax rate may not exceed 4 percent on interstate transactions, and (2) the tax may not discriminate against goods produced outside the state. Commodities are the tax base and most
services (including transport), are exempt. Central sales tax is levied on interstate trade at a rate of 4 percent, or at the level applied in the state where the sale takes place, whichever rate is lowest.

67. Three taxes are levied on vehicles and parts purchases in Tanzania. In theory, import duty is payable on all motor vehicles, but discretionary relief is granted. The result is that about half the tax due on imports is collected. The rate structure varies, depending on the import, but the duty is 100 percent for vehicles with large engines. Sales tax, collected at the import stage, has the same rate as customs duty, except for the tax on spare parts, which is twice the customs duty rate. Sales tax on vehicle transfers is based on a schedule, with rate graduated according to vehicle age, weight, and engine size.

68. Nepal derives about one-third of its tax on the transport sector from motor vehicles and parts. Three levies are involved: sales tax, import duty, and import license tax. Customs duty is levied on vehicles, spare parts, and tires at a high rate relative to the other sample countries — except for imports from India, which are taxed at a lower rate. Also, for qualified imports, Indian excise duty legally may be refunded. Import license fees are sold at three rates: 5 percent of cost, insurance, and freight (c.i.f.) value (trucks and buses), 10 percent of c.i.f. value (jeeps and motorcycles), and 25 percent of c.i.f. value (automobiles). Vehicles and parts purchased by government or by privileged educational and social organizations are exempt from duty, license fee, and sales tax. Sales tax base is the sum of c.i.f. value, customs duty, and a markup on c.i.f. plus customs. For most vehicles the markup is 100 percent, for Indian imports it is 15 percent, and for government and government corporations, there is no markup. Sales tax rate varies from 20 percent on cars to 15 percent on trucks and buses, and to 10 percent on tires and spare parts.

69. In Ghana, taxation on motor vehicle purchases is light, and in recent years import duty has been reduced or abolished. There is no duty on trucks, buses, small-engine cars, or commercial vehicles. Large-engine cars are subject to a 15 percent or 25 percent rate, depending on engine size. Spare parts are subject to a 10 percent rate. All vehicles more than five years old are subject to import duty at ascending rates reaching 100 percent for vehicles more than 10 years old. Import duty rates on vehicles are in line with those levied on other imported commodities. Vehicles or parts subject to import duty are also subject to a sales tax of 10 percent of c.i.f. value (or selling price, if domestically produced).

70. In Yugoslavia, the main objective of import duty is to protect domestic industry. Import duty rates range between 25 percent for automobiles and 20 percent for buses, trucks, parts, and tires. An equalization tax of 10 percent and a special tax of 4.8 percent are additionally applied to duty-paid value. Sales tax is levied at the retail level, except for direct sales from manufacturers, with whom liability for collection resides. Sales to commercial enterprises are
exempt. There are separate sales tax levies at federal, state, and local levels. The federal rate is 15 percent on vehicles and 17 percent on spare parts. The state rate varies widely.

71. In Argentina, six taxes are levied on the production or purchase of new vehicles. The rates are high relative to the other sample countries. The structure of customs duty is driven more by import control than by revenue-raising. The import duty rate ranges from 20 percent to 55 percent for most products, with motor vehicles at the top of this range. In addition to customs duty, all imports pay a statistical charge (3 percent of customs valuation), and an export promotion tax (0.5 percent of customs valuation). The Argentinean value-added tax is levied at a basic rate of 15 percent. In addition, there are special taxes on the purchase and production of new cars. The excise tax rate varies with fuel consumption, but between 4 and 8 percent of list price. The highest rate on domestically produced automobiles is 12 percent. All imports must pay a rate of 21 percent of list price. The National Highway Fund also earmarks a tax equivalent to 7 percent of purchase price. Tires are subject to three sales taxes, with a consolidated rate of 27 percent of retail price. There is no central tax on used car sales.

72. About 20 percent of Bolivia's import duty in 1987 was attributable to motor vehicles and spare parts. In recent years, the number and type of imported vehicles and the effectiveness of customs administration varied widely. Hence, revenue yield has been volatile. Value-added tax is charged on all new car sales, and accounts for about 5 percent of total VAT collection. A uniform VAT rate of 10 percent applies to all sales through the retail level (for covered firms). A transaction tax of 1 percent of the value of every commercial transaction also is levied on new car sales and transfers. Finally, before a new vehicle may be registered, municipalities charge a fee equivalent to 5 percent of assessed import value.

73. **Intergovernmental sharing.** For most countries, vehicle purchase and production taxes are levied by central government. Except in large federations, import and excise duties and general sales tax are usually reserved for the central government. Still, local governments do benefit from special levies, from the property transfer tax, from shares of central taxes, and from vehicle purchase and production taxes.

74. The Indian federation is a case where state and local government are heavily involved in vehicle purchase taxation. Approximately 25 percent of total purchase tax is collected directly by state government in the form of sales tax. As noted above, states may set general sales tax rates (which also apply to motor vehicles), subject only to the constraints that they do not discriminate against interstate trade, and do not exceed the 4 percent federal rate on interstate transactions. Liability for tax payment is with the seller; hence states must register all dealers, oversee necessary recordkeeping, and be responsible for assessment and collection.
75. Yugoslavia gives its provincial and local governments considerable revenue-raising latitude. There are separate sales tax rates for central, state and local government, with some state rates higher than those levied at the center.

76. Bolivian municipalities impose a fee equivalent to 5 percent of assessed import value for registration of any new car. They also receive a 10 percent share of the national government's 1 percent transaction tax. Local government in Argentina gave up its claim on independent local taxing powers in exchange for a share in central revenue. However, municipalities may still levy a transfer tax on the sale of used cars. Provincial government in Indonesia also levies a tax on the transfer of motor vehicle ownership. The transfer of ownership yielded less than 3 percent of total provincial government revenue in 1982. Since the tax rate is high — 5 percent on ordinary vehicles and 10 percent on luxury vehicles — this is surprising. New car purchases are included in the base.

77. The local governments of Tanzania and Ghana play a minimal role in transport sector taxation. Local government participation in most developing countries consists largely of annual licenses, registration, and toll charges.

78. **Evasion, avoidance and revenue potential.** Vehicle purchase tax is less easily collected and enforced than is tax on motor fuel. This situation is caused by a greater number of collection points, a greater need for active enforcement of the tax, and a greater need for discretion in establishing the taxable base. Unfortunately, no detailed data exist for a study of each country's ability to collect potential revenue from vehicle purchase tax. The case studies do make it possible to understand why tax evasion and tax avoidance occur, and clarify which steps will bring revenue from purchase tax closer to its potential.

79. Avoidance of vehicle purchase tax occurs for two reasons. First, a high enough tax rate gives the seller/purchaser an incentive to escape a portion of the tax; the savings are worth the cost of the adjustment. A dangerously prohibitively tax rate (combined with weak administration), is reported for Tanzania. High import duty and sales tax rates on motor vehicles encourage more applications for discretionary exemption or preferential treatment, and increased evasion. The result, described in Figure 1, is that the amount of duty collected falls as the duty rate increases. Though no other factors are taken into account, the results are striking. For example, when duty payable is 20 percent, duty collected averages about 40 percent of payable. When duty payable is raised to 80 percent, duty collected falls to only 13 percent. Thus, a lower tax rate could actually increase revenue collection.

80. The second reason for avoidance is a tax structure complicated with loopholes or ambiguities. Taxpayers look for an opportunity to shift their purchase or production to an exempt activity or to one subject to a lower tax rate. Import duty on motor vehicles in Ghana
Figure 1: Tax Avoidance: Vehicle Import Duty

Source: Customs research.
is a case in point. All cars with a capacity less than 1600 cubic centimeters (if petrol driven), and less than 1800 cubic centimeters (if diesel driven), are exempt. Because the duty rate on non-exempt vehicles is high, importers frequently mis-declare cubic capacity. Another point where flaws in the tax structure open the door for tax avoidance and evasion is the state sales tax in India. The tax rate is high and the system is complicated. Two examples illustrate the problem:

- State sales tax rates are generally higher than the central sales tax rate. In an interstate sale, the seller is subject to the central rate only. When the same trader or manufacturer transfers goods to another site, there is no tax, even if the other site is in a different state. Buyers and sellers take full advantage of this, frequently arranging purchases from out-of-state vendors and vertically integrating activities.

- To eliminate double taxation, the government provides credit for tax paid on certain inputs against tax paid on total output. However, determining which taxes may be credited is complicated and involves an extensive recordkeeping system. Further, the system contains ambiguities. For example, some duties are variable depending on the final use of the input in production; hence, the amount of credit is uncertain. Out of such complications come various forms of transfer pricing to reduce overall tax liability.

81. The chief avenue for avoidance is exemption. It is estimated that the collection rate\textsuperscript{11} on import duty in Tanzania is only about 45 percent — not accounting for evasion. About one-third of this shortfall is due to discretionary exemption. In Indonesia, where there are many exemptions for various types of motor vehicles, only about 75 percent of potential tax revenue is collected.

82. The determinants for tax evasion overlap with those for tax avoidance. Unlike avoidance, however, evasion is the illegal result of taxpayers failing to file, underdeclaring tax liability, or failing to remit taxes that are due. Several characteristics make a tax regime prone to a high rate of evasion:

- A high tax rate (and perhaps high compliance cost);
- A poor or corrupt administration, where detection is unlikely;
- A complicated tax structure and ambiguous tax legislation;
- A low penalty rate for non-compliance;
- A government unwilling to enforce the tax and stringently apply the penalties;

\textsuperscript{11} The collection rate is defined as the ratio of collection to the full value of imported motor vehicles.
A history of frequent amnesties.

This list describes the tax system of many developing countries, and the dynamics of vehicle purchase taxation in some of the case studies.

83. Customs administration problems can be traced to four root causes, all of which contribute to the failure to realize full revenue potential from import duty on motor vehicles. First is misclassification to evade import duty. Under complicated tariff structures, customs officers are responsible for making classification decisions. This system may result in different rates of duty. The taxpayer's incentive to mis-report contents, and the difficulty in detecting misreporting increase with the degree of rate differentiation.

84. Second, staff are not fully trained, do not use proper procedures, and often undervalue imports. This form of evasion is highly successful, since customs inspectors in developing countries must rely on invoice reviews and available information on current market values. The lack of officer training in import valuation and the lack of up-to-date valuation information means undervaluation is likely to remain an important source of import duty evasion. Adequate staff and proper procedures could better police another form of evasion: the importation of a vehicle on a temporary basis, with intent to keep it in the country indefinitely. This form of evasion is most easily accomplished where there are entry points by land.

85. Third, customs administration is often corrupt. Smuggling may offer a return of more than 100 percent, especially with little probability of detection. The probability of detection can be lowered with the collaboration of customs officials — they may be easily enlisted if their salaries are low. Smuggling is also aided by the often lax physical control of goods through customs.

86. Collection rate on excise from domestically produced automobiles is high due in part to the physical control of goods at the manufacturing site. The evasion of sales tax is more problematic. Since a substantial portion of sales tax is collected at the import level, evasion of import duty is compounded with like evasion of sales tax. There are many ways that domestic traders (especially in parts and tires), might evade general sales tax. Tait (1988, chapter 14), lists the more common approaches as: failure to register, underreported sales, exaggerated refund claims, unrecorded cash purchases, and claiming ineligible credits.

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12/ Due, 1988, p. 51, states problems of customs corruption. "Customs work is more vulnerable to bribery than most other types of tax collection. There are frequent chances for differences of opinion, and there is close contact between the importer (or his broker) and customs personnel. The importer cannot obtain his goods until the assessed duty is paid; the officer is therefore in a position to seek a bribe, and the importer may regard the bribe as cheaper than higher duties and penalties and endless delay..."
87. The state sales tax in India presents an especially difficult problem, because proper enforcement requires interstate cooperation. Some firms falsely declare their sales as interstate to avoid state sales tax — an easy evasion technique, since officials have no physical proof that goods did not pass out of the state. An attempt at control requires the importer to hold a license, issued by his home state, if making an interstate purchase. However, verification of a licensed importer requires the cooperation of the importing state, which stands neither to gain nor to lose revenue since liability is with the seller. The result is rampant evasion. A 1981 evaluation of the Bihar sales tax system by the National Institute of Public Finance and Policy found that in most years revenue collection from motor parts was less than half of the estimated tax potential (as reported by Acharya, 1985). A more recent study of the sales tax collection rate in all of India shows a lower rate of revenue realization for state government tax than for central government tax (Government of India, 1989, Chapter IV). The tax recovery rates from this study, shown below, define leakages from full taxation as the sum of exemptions and evasion:

<table>
<thead>
<tr>
<th>Product</th>
<th>Central Government</th>
<th>State Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tires</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>Maintenance and parts</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Vehicle purchase</td>
<td>100</td>
<td>85</td>
</tr>
</tbody>
</table>

88. Vehicle purchase tax in Argentina is relatively simple and claims a low rate of evasion. The main leakage on the new vehicle tax is in the area of concessionary sales by manufacturers. Otherwise, the tax is collected with relative ease from a small number of manufacturers/dealers. There is some evasion in the sale of spare parts because more establishments are involved. The total revenue loss due to evasion of the purchase tax on motor vehicles and parts is estimated at about 10 percent of tax collection.
The Annual License and Motor Vehicle Registration Charges

89. In most countries, motor vehicles must be registered when first purchased, and they are subject to an annual tax.\textsuperscript{13} The latter usually takes the form of a license, though in Bolivia (among the countries in this sample), a property tax is levied on the assessed value of automobiles.\textsuperscript{14} Revenue from registration and from the annual tax on motor vehicles varies from insignificant in most of the countries studied, to about one-fifth of transport sector revenue in India (see Table 4). However, the annual license is often assigned to local government for whom it may be a significant revenue source. For example, in Indonesia,

Table 4: Revenue Yield from Registration and Annual Taxes on Motor Vehicles

\begin{center}
\begin{tabular}{|l|l|l|l|}
\hline
\textbf{Country} & \textbf{Year} & \textbf{Percent of GDP} & \textbf{Percent of Total Transport Tax} \\
\hline
1. Argentina & 1987 & 0.1 & 4.9 \\
2. Ghana & 1987 & 0.0 & 4.32 \\
3. Guatemala & 1988 & 0.1 & 6.5 \\
4. India & 1988 & 0.4 & 19.0 \\
5. Indonesia & 1980 & 0.1 & n.a. \\
6. Jamaica & 1984 & 0.3 & 1.1 \\
7. Nepal & 1985 & 0.1 & 6.7 \\
8. Tanzania & 1986 & 0.2 & 9.2 \\
\hline
\end{tabular}
\end{center}

the annual license accounts for 20 percent of all local government transport tax revenue (which itself accounts for nearly half of all the revenue raised by local government). The automatic revenue-income elasticity of the annual vehicle tax depends on base elasticity — whether vehicle numbers grow faster than GNP — and on the administration’s ability to register vehicles. Automatic revenue - elasticity of GNP (E) 1/n is the ratio of the percent change in revenue (net

\textsuperscript{13} It is appropriate to consider registration fee and annual tax together. The enforcement of the annual tax is very much dependent on registration statistics, and the administration of each (and perhaps of the tax on the transfer of used vehicles) often overlaps. The registration fee also may be considered a capitalized form of the annual tax. As noted below, India is considering converting its annual tax to a one time payment.

\textsuperscript{14} Personal property tax is not an uncommon practice in industrial countries. For example, it is levied in several American States.
of any discretionary actions), to the percent change in GNP. Since motor vehicles are subject to annual tax on a specific rate basis, the rate elasticity \((E_r)\) is the ratio of the percent change in revenue \((R)\) to the percent change in vehicles \((V)\) numbers. A rate elasticity greater than unity means there is faster growth in vehicles subject to a higher tax rate. The base elasticity \((E_b)\) is the ratio of the percent change in vehicle numbers to the percent change in GNP. The total elasticity is the product,

\[
E = (E_r) \cdot (E_b).
\]

90. Expectations that base elasticity might be a source of revenue growth are supported by little evidence. A recent review of motor vehicle demand in Guatemala reports that it is highly income elastic, increasing at a substantially more rapid rate than GNP. Rate elasticity, as defined here, will be unity if tax rate is stated in specific terms, or about unity if rate differentials are small, or if all vehicle classes are growing at about the same rate.

91. In practice, revenue growth seems to be dependent on discretionary change in the tax rates, but evidence on the effectiveness of tax rate increases is mixed. In Ghana, it is reported that after a sharp increase in the annual license fee, the collection rate dropped by 40 percent. On the other hand, in the Yugoslavian republics, the license fee has been raised six or eight times since 1986 with no fear of reducing collection efficiency.

92. Though the registration fee produces revenue for some local governments, it is primarily a regulatory instrument. The registration fee facilitates the yearly inspection of vehicles for safety and/or insurance coverage; as a record of the growth in vehicle numbers it also facilitates road planning and vehicle control. Registration fee administration is usually separate from that of the annual license, and is often a responsibility of the police (as in Ghana).

93. **Rate, base and administration.** The annual license tax is complicated and difficult to administer. It reaches a broad and growing base, but usually with a very low specific rate, and minimal revenue yield. As is the case with other taxes, recordkeeping for the annual license is usually poor; enforcement of the tax is weak, and penalties for non-compliance are low; and enforcement costs are high. The chief virtue of the annual license tax as a revenue instrument seems to be its wide availability — an important characteristic for financially strapped local governments.

94. In India, though the annual license tax is generally governed by a federal act, rate setting and administration are left to the states. The result is great variation in rates and in choice of a base. State governments tax vehicles according to weight, to flat rates, to engine capacity, to carrying capacity, to types of tires, to whether or not they are diesel-driven, or to some combination of these. There are also state registrations (valid forever, even if state of residence
or business location changes), driver's licenses, change of ownership fees, an annual city wheel tax, and national permits for interstate trade.

95. For enforcement, India's state governments use mobile squads with the power to stop vehicles and inspect documents. These squads may levy fines, and in some cases suspend registration and permits. Yet, the evasion rate is high. It is estimated that 30 to 40 percent of private vehicles and two-wheelers do not pay. Reasons for non-payment are a low fine, a high compliance cost, and a low probability of detection. Conversely, only about 2 percent of commercial vehicles are thought to be delinquent, in part because of a heavier fine and more frequent roadside checks.

96. A similar situation holds for the provincial and the municipal annual license tax in Argentina. Here it is estimated that about 30 percent of all vehicles are unlicensed and up to 60 percent of the annual license tax is evaded. The reasons are similar to those cited for India. Compliance cost is high in that all documentation regarding ownership and registration must be in order before payment of the annual tax may be made. Moreover, enforcement is sporadic. If evasion is detected, individuals may make retroactive payment and some consideration payment to the detecting authorities. There is no penalty for failing to register a vehicle. The issue of high compliance cost also arises in Nepal, where it is estimated that total cost to payers is equal to about 6 percent of the annual revenue collected (Louis Berger, 1987, p. 46). In Bolivia, it is estimated that about 20 separate transactions are necessary to register a vehicle—a prerequisite for the annual license. The annual vehicle capital tax has a collection cost equal to 5 percent of revenue collected and a collection efficiency of only 60 percent.

97. The license tax payment ratio in Nepal is 65 percent for cars, 55 percent for trucks, and 80 percent for buses. The budget of the annual license division in Ghana is equal to 12 percent of revenue collected from the annual tax, but evasion is equal to more than one-third of collection. The tax is simple—it is levied at a flat rate—but enforcement is lax.

98. Yugoslavia is a special case. The annual license tax is levied separately and at widely different rates, by three levels of government. There is relatively little effective recordkeeping. Yet authorities report (but cannot statistically verify) no evasion, asserting that enforcement is sufficient. Police involvement means a high probability of detection and a severe penalty. However, avoidance is reported: some individuals purchase their licenses in other republics or municipalities to avoid a high tax at home.

**Tax on the Movement of Goods and Passengers**

99. Taxes on the movement of goods and passengers can generate significant revenue. The most important is octroi, a tax levied on goods entering a city for local processing or final
Octroi is found in many of the local jurisdictions in India, Pakistan, Nepal, and until 1981, Bangladesh. In Calcutta the octroi was introduced by the state government for the entire metropolitan area, with its revenue to be shared among the various local bodies and the Calcutta Metropolitan Development Authority. Despite the revenue success enjoyed by octroi in India and Pakistan, there are strong movements to abolish it. The Indian states of Gujarat, Karnataka, and Madhya Pradesh, have abolished octroi. Further, it has been condemned regularly by analysts of local government finance, including numerous commissions established by the Government of India (Bahl and Linn, forthcoming, Chapter 8). A major problem is that octroi may greatly increase transport time and costs, and may therefore increase the price of imported goods. The magnitude of time lost is exemplified by the Mysore Taxation Enquiry estimate that "between Bangalore and Mangalore, about 800 km, a vehicle has to stop for 36 hours and 40 minutes at checkpoints."

100. The octroi base is the value, the weight, or the number of items entering a local jurisdiction. In Bombay, the tax is imposed according to value for some commodities, according to weight for others, and on a specific basis for oil entering the city via a pipeline. In Karachi, the tax is imposed according to weight for commodities entering by road, but according to value for commodities entering via the city's port. Rates vary according to complicated schedules, and some goods and commodities in transit are exempt. The tax is collected by clerks at octroi stations: These are located at checkpoints on roads at jurisdictional borders, at railroad stations, at airports, and at docks. In Ahmadabad, India (a city of over 2 million), there were 34 octroi stations in the 1970s — 18 rail checkpoints, 15 road checkpoints, and 1 air checkpoint. There is usually no assessment problem when the levy is specific; however, an invoice is required. Ahmadabad assessors are equipped with a manual of market values for double-checking invoiced amounts (Bahl and Linn, forthcoming).

101. Other problems with the octroi, such as spoilage of merchandise and bribery of octroi staff, occur frequently. Nanjundappa (1973) estimated that in India delays to vehicles at border crossings reduced annual vehicle utilization and increased variable vehicle operating costs by approximately 25 percent. Not all of this cost can be directly ascribed to octroi, but the magnitude of the figure indicates a considerable loss in efficiency.

102. Octroi therefore gives locally produced commodities a pricing advantage over commodities imported from outside the metropolitan area. Octroi may curtail even intra-metropolitan trade if a metropolitan area has grown beyond the boundaries of the taxing jurisdiction. As a final irony, the tax can provide a cogent disincentive for metropolitan integration under an area-wide authority — consolidation of fragmented local authorities would

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15/ Parts of the discussion on octroi is taken from Roy Bahl and Johannes Linn, Urban Public Finance and Administration in Developing Countries, (forthcoming).
automatically reduce the octroi tax base by detaxing intra-metropolitan commodity flows. From the standpoint of efficiency, octroi is an unmitigated disaster.

103. In terms of tax equity, the situation is more complicated and depends on local practice. In the cities of Pakistan, attempts have been made to structure the tax so that it falls heavily on luxury items rather than on food and other essentials. In Ahmadabad and Bombay, where the rate structure was less progressive, octroi was probably more regressive than state sales tax.

104. In view of its many problems — high administration cost; considerable road transport delays; unknown, but probably poor collection efficiency; and collection methods that invite corruption — why does octroi continue to be used by local government in South Asia? First, octroi can produce substantial local government revenue. In many Indian and Pakistani cities, it dominates the revenue structure. For example, in 1986 octroi accounted for 80 percent of total tax in Karachi and was 70 percent of total tax in Ahmadabad in 1984. In aggregate, octroi still accounts for more than one-third of all local government revenue in India.

105. Octroi is also a highly buoyant revenue source. Between 1979 and 1986, octroi revenue in Karachi increased by 239 percent compared with a 124 percent increase for property tax. Between 1977 and 1984 the respective revenue increases in Ahmadabad were 199 percent and 49 percent. This buoyancy is caused in part by automatic growth in the base as inter-city trade expands in value and volume. It is caused also by local government efforts to increase revenue by raising and restructuring octroi rates.

106. A second reason for continued reliance on octroi is the absence of a sufficient alternative. Other forms of taxation, such as automobile tax, income tax, sales tax, and road user charges, are of only minor importance to the revenue structure of cities in India and Pakistan. Insufficient grants or subsidies from the central and state governments of India and Pakistan also contribute to local government reliance on octroi. Octroi is the only major tax base (besides property) not claimed by the higher-level authorities. In Bangladesh, and in those Indian states where octroi was abolished, it was not replaced by an equally productive and buoyant revenue source. And, in India and Pakistan the octroi is more politically acceptable than road user charges.

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16/ Recent proposals have centered on the *entry tax* as a replacement. This tax would be collected from sellers as an ad valorem rate against goods imported from outside the taxing jurisdiction. It does eliminate the octroi checkpoints, but still has the undesirable feature of discriminating against goods that are not locally produced, and imposing a substantial administrative burden. Nath (1988) provides a helpful discussion.

17/ Schroeder (1989) reports that the octroi was replaced by a compensating grant in Bangladesh, but that the grant was neither equal in yield, nor was it as buoyant.
107. Besides octroi, some Indian local authorities levy a vehicle and passenger entrance charge. Cities in other countries have comparable charges, but these appear to be linked mainly to the provision of public bus terminal facilities (for example, in Indonesia and Jamaica), and to the airport departure tax. In the evaluation of an entrance charge, one must distinguish between tax related to road transport and tax related to air travel.

108. A public bus terminal tax is efficient if it covers the marginal cost imposed by each bus or passenger using the station. If terminal tax exceeds the marginal cost, it will introduce a bias in favor of private automobiles and reduce bus passenger traffic. The extent of such a loss in efficiency depends on price elasticity of demand for inter-city transport. There is little reason to use this tax base, even if elasticity is low and efficiency loss is minimal. It is narrow and subject to fluctuations, administration is difficult, and revenue is negligible. Higher automotive taxation is a better alternative on grounds of efficiency and revenue-raising. Automotive taxation is also likely to be less regressive, since higher-income people tend to use motor vehicles, whereas lower-income people often are restricted to public transportation.

109. In a number of countries foreign vehicles are charged for their period of stay. This is a minor source of revenue in Yugoslavia, and in Nepal, where it is primarily a tax on commercial vehicles with Indian registration. In Tanzania, this tax is levied at a flat rate on cars (payable in $US) for a short term permit, but commercial vehicles pay a variable fee according to truck size. For the amount of revenue raised, the system is complicated and provides considerable incentive for evasion.

110. A number of minor taxes/licenses are levied on the movement of goods and people. India and Nepal charge a goods or route permit tax on commercial vehicles — either on a per kilometer basis or as an annual fee. Other examples are a special tax on heavy loads in Yugoslavia, a provincial commercial route license fee in Indonesia, and a fee for driver's licenses in all countries. These charges are levied primarily for regulation rather than for revenue.

111. A related case is the administration of airport charges in Tanzania. Three sets of charges are levied: (1) a fee for airport use; (2) a passenger departure service charge; and (3) a civil aviation fee for regulation and certification of aircraft, pilots, and mechanics. The total amount due in 1986 was equal to about 10 percent of total road user tax in that year. However, only about 53 percent of the amount due was actually collected (an estimated 63 percent from the landing and parking fee, 51 percent from the passenger departure fee, and 30 percent from the civil aviation fee). The reasons cited for the poor revenue collection are lack of incentive (there

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18/ In Yugoslavia, the proceeds are distributed among the republics according to main road mileage in each.
is no relationship between amount collected and airport expenditure), and a lack of adequate control procedures.

**Tolls**

112. Tolls are viewed as a control on urban traffic or as a revenue instrument. In LDCs, however, toll systems may not be effective. Tolls are not generally an appropriate instrument for congestion pricing. For a toll system to work, roadway entry and exit points must be limited. With the exception of a few limited-access expressways, this is typically not the case for congested urban streets. Further, toll collection is costly to administer and may itself contribute to congestion by creating a bottleneck at the tollgate. New electronic metering systems avoid this problem, but the technology is too complicated for most low income countries. As a revenue source, tolls may be adequate for financing bridges, tunnels, or special urban expressways, but probably not road systems.

113. Compared with other road user charges, tolls do not generate much revenue in LDCs, and their administrative cost appears to be high. Yugoslavia has the most extensive national toll road financing system of the countries studied. Tolls generate about 18 percent of total road user charge revenue, with responsibility for the system divided between central and local (republic) government. The experience of one contractor, operating a section of the Belgrade roadway, is that collection cost equals about one-third of total revenue collected. The government estimates that evasion and operator errors cost approximately 6 percent of potential revenue.

114. Tanzania also has an extensive toll road system. Toll stations are located at 13 points around the nation, and generate about 3.5 percent of total road user charge revenue. The collection rate is only 60 percent, owing to the corruption that stems from poor financial controls and collectors' low wages. The poor financial control is due to monitoring difficulty at remote stations and to the absence of any way to accurately check the amount of vehicle traffic. It has been suggested that the toll system be replaced by an increase in the fuel tax. The proposal has the merit of easier administration and a 100 percent collection rate, but the (political) disadvantage of affecting the price of gasoline.

115. Bolivia makes heavy use of tolls as a revenue source. There are 48 toll stations on inter-urban roads. Tolls collected account for 6 percent of total road user charges, even though the collection rate is only about 60 percent. Evasion is largely attributed to the abuse of power by toll booth operators. One estimate places the additional income of toll booth operators at six times the national average income. Compliance cost is extremely high — it is estimated that the value of time lost waiting to pay toll is four times the revenue collected.
116. In most countries, tolls are related to financing a specific road or bridge project, or they are imposed on limited-access roads and bridges. Tolls tend to be a minor revenue source, and may or may not be earmarked for roadway expenditure. In India, for example, tolls on national roads are paid to the national government general account, less a 12 percent collection fee, while tolls on certain state roads or bridges are dedicated to financing those facilities. Administrative problems seem to be common. The collection rate is reported to be about 40 percent on toll roads and bridges in Ghana, because of undercollection due to equipment failure and informal exemptions by collectors. In Argentina, where use of tolls is minimal, evasion is thought to be high because of the toll booth operators' low salaries, and because of the absence of toll collection monitoring.19/
IV. REFORM OPTIONS

117. The transport sector has high untapped revenue potential. The level of transport tax is equal to 1.7 percent of the GDP in the 20 countries compared. The individual percentage can vary greatly. The effective tax rate in Argentina and in Costa Rica is over 3 percent.

118. Many of the administrative reforms necessary to increase revenue intake from the transport sector are feasible and are within the capabilities of most LDC tax authorities. However, the revenue impact from these actions alone will not lead to full realization of revenue potential. The big returns are from the combination of administrative and policy changes. Simplification of the tax structure will make administration easier and in some cases will reduce the incentive for evasion. It is broadening the tax base and rationalizing the rate structure that will increase revenue most significantly. However, such changes are not easy since many of the current policies were put in place to satisfy other macroeconomic and political objectives. For example:

- Motor fuel pricing is controlled for political and equity reasons, with the result that gasoline is subsidized rather than taxed in some countries;
- Automobile sales tax is driven by foreign exchange and equity concerns, as well as by revenue considerations;
- Automobile registration has primarily a regulatory goal;
- Customs corruption is so institutionalized in some countries that it is almost a national policy.

Thus, strengthening transport sector taxation depends on tradeoffs between good transport sector taxation and these macro policies.

119. The best methods for improving transport sector taxation are reviewed below. Two themes underlie this discussion. First, policy and administrative reforms must go together; the tax structure must be corrected before the administration can be redesigned. Second, governments should design policies that increase the expected cost of evasion and reduce the incentives to non-compliance.

**Tax Rate Levels**

120. High tax rates provide the incentive to evade or to avoid tax payment. They invite corruption of public officials by making bribery viable, and they encourage smuggling. Increasing tax rates may also cause consumers or producers to curtail activity to a point where revenue is actually reduced. A key question is whether transport tax and road user charges can be reduced without compromising economic policy, and if rates were lowered, would the gain be equal to the economic policy cost?
121. The price of motor fuel is the central issue. The real motor fuel tax rate should be viewed as the ratio of revenue collected to taxable sales valued at a non-subsidized level. Using this calculation, the tax rate on motor fuel is very low in many developing countries and negative in some. Fuel is often subsidized because of perceptions of equity, general price impacts, and the potential political cost of allowing the fuel price to rise.

122. Bearing in mind the reasons for the present motor fuel taxation system, what would be gained from increasing the real fuel tax rate?

- The amount of gas tax revenue would increase in proportion to price elasticity of demand for motor fuel. To the extent reduced truck hauling and private automobile use curtailed gasoline consumption — by taking the place of rail shipment and public transportation — revenue from all taxes on motor vehicles would be reduced.

- A foreign exchange gain could be realized in oil-importing countries.

- There would be a general shift of national resources away from transport to other sectors of the economy.

- The return from smuggling lower priced fuel across national boundaries would be reduced or eliminated. Other anomalies associated with low fuel prices might also be corrected. For example, in Tanzania, carrying fuel to the countryside is not profitable, because transportation costs outweigh the fuel-carrying gain.

- Motor fuel tax collection rate is virtually 100 percent, with low administrative and compliance costs. The shift to higher motor fuel tax (and presumably to lower tax on something else), is thus a gain in administrative efficiency.

123. Tax rates on the purchase of motor vehicles and parts are another pricing issue. The reasons for the high rates typical in most developing countries are: (1) automobiles are a luxury and a differentially higher tax rate on their purchase is progressive; (2) high tax rates discourage automobile consumption and redirect consumer savings into more productive investments; (3) the country may benefit from less congestion, foreign exchange savings, reduced use of imported motor fuel, and less demand for public investment in roadways; and (4) motor vehicles — imported or domestically produced — are easily reached by the tax administration system, and in that sense are an easy source of revenue.

124. There is no compelling argument for lowering tax rates on the purchase of motor vehicles. It is true that evasion incentives increase with higher rates, especially if detection probability is low or if the penalty is not severe. Evasion is relatively easy in Central American countries, where overland entry from an automobile producing country is possible. But this probably argues less for a reduction in rates than for a tightening of administration. Conversely,
some countries (such as Ghana), already have very low motor vehicle tax rates and can potentially realize greater revenue from the transport sector.

125. The annual license tax and the registration fee on motor vehicles are a third issue concerning rates. On the one hand, there are arguments, such as in Ghana, that increases in the annual license tax reduce compliance. There are real costs to a reduction in compliance, including a loss of control over safety inspections, automobile insurance, information about the motor vehicle fleet, and checks on ownership transfers. Yet there is evidence (such as in India), that a higher rate (accompanied by proper enforcement), can increase compliance. In either case, the rate levels are low on the annual license tax and on the registration fee, making it questionable that the tax rate makes much difference in the decision to pay. One other consideration is important: some local governments derive a substantial share of their revenue from such taxes and fees. Lower rates would compromise their financial position.

126. High rates are not a major problem underlying the failure of transport to realize its full revenue potential. The most important base — motor fuel — is probably undertaxed in most countries, and a rate increase could likely be absorbed with little, if any, loss in collection efficiency. The switch to an ad valorem rate could preserve the gas tax revenue position, and spare governments from periodically having to raise rates. To discourage smuggling, motor vehicle tax rates might be lowered for sales tax purposes. However, enforcement is a better way of discouraging evasion. Someone who evaded a high tax rate is not likely to comply simply because the rate has been halved. For the other forms of transport tax, the rates/charges are presently so low that it seems unlikely compliance will be affected by further reductions.

**Tax Treatment Uniformity**

127. A broad tax base with few exemptions and a single rate offer the best possibilities for tax enforcement and the fewest avenues for avoidance. Rate differentiation and exemptions introduce nonuniformity. A nonuniform tax system gives payers an opportunity to avoid taxation by changing or appearing to change production or consumption. Decreases in the uniformity of a tax system increase the gap between actual tax collection and revenue potential.

128. This is not to say there should be no rate differentiation in transport taxation. Differential rates and a program of exemptions are common, and exist for important reasons. Some of the most common are:

- A higher tax rate for petrol than diesel;
- Motor fuel tax exemption for government, agriculture, and other preferred sectors;
- Preferential import duty and sales tax treatment for government, commercial companies, diplomats, vehicles purchased for foreign-financed projects, and small, fuel efficient cars;
- Government vehicles exempted from tolls;
Higher taxation on goods in transit than on those locally produced.

129. The differential tax treatment of motor fuels, leading to various pump prices for diesel, premium, and regular petrol has two consequences. First, it appears to encourage adulteration. However, this form of evasion can often be controlled through fuel coloration, or the use of special additives. Second, the lower charge for diesel fuel benefits the group of users imposing the greatest cost on highway use. Equity is the justification for this rate differentiation. A higher price for gasoline subsidizes diesel consumption (and therefore public transportation), and home fuels, such as kerosene. The problems with differential rates for motor fuels are well-known: some private automobiles use diesel; some public transportation is fueled by gasoline; diesel powered vehicles may be fueled by kerosene; cheaper road transport charges discriminate against the rail system and impose a high cost on road maintenance; and gasoline prices may be set below market prices (meaning that the subsidy runs to diesel, to home heating, and to the entire road sector).

130. It is difficult to justify the lower price and the lower tax rate on diesel. It is not clear that equity is achieved, revenue is lost, and subsidizing the largest beneficiary of road expenditure (per mile) is inefficient. This is another case where politics are paramount.

131. The octroi in India is an important differential tax. It imposes a tax on goods in transit, but not on goods produced within local jurisdictional boundaries. As discussed earlier, octroi encourages evasion and avoidance. The high compliance cost and subjective assessment method encourage pay offs to evade tax. To avoid tax, business activity has begun to develop outside jurisdictional boundaries. These are only a few of the flaws associated with octroi, but give the flavor of what is wrong.

132. Finally, too many exemptions are a major source of nonuniformity. The greater the number of exempt categories and the higher the rate on taxed categories, the greater the probability of evasion and avoidance. The exemption of small-engine cars from import duty in Ghana, and the exemption of commercial vehicles from import duty in Indonesia are examples of an incentive for misdeclaration. Government exemptions from vehicle tax from motor fuel tax, and even from tolls is common. Such exemptions form an incentive for government overuse of transport services and for the transference of special treatment to other sectors. They invite abuse and provide uncertain equity and efficiency gains.

**Tax Structure Simplification**

133. Complex tax systems increase tax administration cost, weaken tax administration effectiveness, and impose a high compliance cost on taxpayers. In short, complexity incites evasion, lowers the probability of detection, and reduces transport tax collection. The high compliance cost imposed on taxpayers is usually due to the outside help needed, to the onerous bookkeeping requirements, or to the inordinate amount of time spent paying the tax. High compliance cost results in increased tax avoidance or tax evasion.
134. The complicated tariff structure in most low-income countries involves numerous rates and classifications for goods. The great amount of time customs officials must spend on goods classification costs time that could be spent on more productive activities, such as valuation. Complicated tariff structures also lower the probability of detection for importers undervaluing goods, and create more avenues for goods reclassification and lower duties. A structure with only a few rates and classifications would close these avenues.

135. Sales tax also could be simplified, but this may involve tradeoffs with other objectives of tax reform. Excise tax, which generally is levied on a specific rather than an ad valorem basis, is probably the easiest of the indirect taxes to administer. Its assessment and collection are easily controlled, since the tax is levied when a good is moved. However, because excise is levied at an early stage of the production process, it cascades forward and creates price distortions. A manufacturer's sales tax generally is levied on an ad valorem basis and is therefore elastic. The tax is relatively easy to administer, but is subject to the same cascading. The more modern approaches to general sales taxation are the value-added tax or the retail sales tax. Of the countries in this sample, Yugoslavia and India make some use of a retail sales tax on automobile purchases; Argentina and Bolivia use a value-added tax on automobile purchases; the other countries impose a sales tax on imports or use a manufacturer's sales tax.

136. The Indian, Pakistani, and Nepalese octroi is a form of sales tax that is complicated and difficult to administer. Some of the studies on octroi propose replacing it with an equal yield tax on motor fuel, which would simplify the local tax system. Other studies propose an entry tax, which would place a sales tax surcharge on goods not locally produced; or a business property tax. Neither of these taxes would make the system any less complex.

137. Most countries have some sort of sales tax on the transfer of used vehicles. This is often a local government tax, such as in Indonesia. Transfer tax on used automobiles brings in little revenue, is notoriously difficult to administer, and is often complicated.

138. Finally, the most complicated transport sector charges are the license tax and the registration fee. The administration of these charges requires following a long procedure, and involves a lot of manual checking. The simplification of the license tax and the system of the registration fee is beginning. Proposed and actual changes in administrative practice are described below.

**Do Incentives Matter?**

139. In theory a taxpayer is more willing to pay if a visible benefit is attached to the tax or charge, and if there is no free ride. In this case, tax rates may be set higher with the expectation of a corresponding increase in rates. This leads to the question of whether collection in the transport sector could be increased by earmarking road user taxation entirely to benefit road users.
140. From data presented in the case studies, there is no evidence that collection efficiency is higher in countries where road user taxation covers a greater share of roadway cost (or that collection efficiency is lower where road user taxation covers more than full roadway cost). Basic causes of evasion and avoidance come from within the tax structure and the tax administration — areas that must be improved before developing a program that will stimulate a greater willingness to pay for road use.

141. There is another way to look at the incentives argument. Earmarking taxes may not increase willingness to pay, but it may increase willingness to collect. The collection authority at Tanzania's airport saw no relationship between the amount of tax collected and the expenditure allocation for airport services. In India, interstate cooperation in the collection of motor vehicle sales tax faces face a similar problem — the policing state may receive none of the benefits of the increased enforcement.

**Compliance Cost**

142. The question of motor fuel taxation, which usually has a 100 percent collection rate, is whether governments can base proposals for raising gasoline tax on a user benefits argument. The answer, from Table 1, implies it would be difficult to sell. Motor fuel tax already accounts for a substantial share of road expenditure in most of the countries considered.

143. Tax payment will be resisted when the cost of compliance is high. Procedures, including recordkeeping (as with India's modified value added program), may be too complicated, or corruption may invite noncompliance. Compliance costs for motor fuel tax and excise taxes on motor vehicle production are lower than for other charges.

144. Corruption affects several types of charges. In terms of the amount of money involved, import duty on automobiles is probably the biggest problem. Tolls are a problem because of the lack of toll booth operator supervision. In Bolivia the cost of compliance (measured in time lost), was as much as four times the revenue collected. There is no satisfactory solution to the toll problem for low-income countries. Electronic metering devices can solve some of the evasion problems. The substitution of a general tax for tolls, as proposed in Tanzania, is a solution to the administration problem, but it fails to charge users for the cost of a particular road service.

145. The registration fee and annual license tax impose a heavy time cost on those who comply. Numerous forms must be filled out and the taxpayer must demonstrate compliance with several other regulations. Such cross-checking is a good enforcement instrument, but is burdensome enough to discourage tax compliance. The payment rate is low in most countries. However, the annual license tax will continue to be levied — it is an available source of revenue and is levied on an expanding base.
146. To simplify these charges and reduce compliance and administration costs, a one-time payment has been proposed by several Indian states. Under this program, private vehicle owners would pay a lifetime annual charge at the time of registration. This approach dramatically reduces compliance and administrative costs and, when imposed in relation to the value of the vehicles, a higher rate may seem less objectionable. The lifetime charge does have important flaws: (1) data from the annual license tax could no longer be used as a record of the number of vehicles on the road; (2) the annual license tax could no longer be used to force the recording of ownership changes; and (3) without the annual license tax, it would not be as easy to do an annual check on insurance coverage. Another problem is that the cost of this program would be prohibitive for most commercial vehicles. One-time payment would probably have to be limited to private automobiles and two-wheelers. Thus, some of the potential administrative savings would not be realized.

147. A suggested approach to annual license tax simplification in Tanzania was to reduce the number of vehicle categories in the tax structure and to reduce the tax rate. Unification of several permit, license, and registration certificates was recommended for Nepal to reduce compliance cost and eliminate some duplication of administrative effort. Neither of these proposals was implemented.

148. Some inroads to improved administration have been made in Maharashtra State (India). Records on vehicle registration and licenses have been computerized, billings are automatically generated, and delinquency lists are printed. To reduce compliance cost, payment may be made at banks.

149. Several other administrative practices provide clues that might help improve the annual license tax. In Yugoslavia, tough enforcement appears to generate a lower evasion rate. In India, where enforcement is tougher on commercial vehicles than on private vehicles, the evasion rate on the commercial vehicles is much lower. Ghana's flat rate tax, while easy and cheap to administer, may not be so appealing from a benefits point-of-view (that is, heavier vehicles should pay more, and so on).

**Enforcement and Penalty**

150. Evasion is discouraged by a high likelihood of detection and by a severe penalty. Of the countries in this sample, Yugoslavia seems to have concentrated most on the penalty approach, and little evasion is reported — even of the annual license tax, when neither a dated number plate nor a displayed registration sticker is required. Success could be due to a no-nonsense approach to dealing with evaders, the fact that there is often little personal gain from evasion in a socialist state, or simply that the government’s statistics are not accurate enough to identify

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20/ Since 1987, the Government of Maharashtra has levied a one time charge on two-wheelers and tricycles. Gujarat and U.P. have adopted the one time system for personal vehicles, and Tamil Nadu and U.T. Delhi will introduce this system soon (Government of India, 1989, Chapter III).
the amount of evasion occurring. In none of the other countries was penalty reported to be an effective deterrent.

151. Most efforts to control evasion have concentrated on increasing probability of detection. This requires improvements in collection, recordkeeping, assessment of tax liability, and identification of those liable to pay the tax.

**Intergovernmental Relations**

152. In most countries, the decision about how to divide responsibility for taxing the transport sector between central and subnational government depends on whether there is a tradition of local government taxation. In India's federal system, where there is such a tradition, about 45 percent of all road user charges accrue to local government. Where countries operate under highly centralized fiscal systems, local government may not have well developed tax administration systems. Under such circumstances, taxation of the transport sector remains with the central government.

153. Most low-income countries are decentralizing their revenue systems and are searching for revenue sources that are appropriate for administration at the local level. A first step in evaluating the feasibility of local level transport tax is an identification of the problems that have arisen with local taxation in general and with local transport tax in particular. The basic problems center on the inability of local government to effectively administer transport tax, the difficulty of inter-local tax enforcement cooperation, and the case with which local residents or businesses can legally avoid payment by making purchases or sales in other jurisdictions.

154. From this, and from basic principles of multi-level finance, one might offer the following guidelines for defining a local government role in transport sector taxation. First, local government in developing countries can be most effective in taxing road use and in controlling vehicle licensing and vehicle registration. Motor vehicle production tax and purchase tax should be left to the central government. There is no place for the taxation of goods in transit at either level. The taxation of motor fuel presents a special case. Because of macroeconomic considerations — revenue needs, foreign exchange problems, and the political sensitivity of gasoline prices — tax on motor fuel will continue to be a central government levy in most developing countries. However, there is a case for local government sharing in the revenue, and even for local government partaking in the rate setting. The case for allowing local government participation rests on four factors: (1) motor fuel is a growing tax base related to urbanization; (2) local officials will have an idea what is fair and of urban consumers' willingness to pay; (3) local government must bear part of the street maintenance and traffic control costs associated with more vehicle use; and (4) responsibility for pollution and congestion control usually rests with local government.
155. Second, local or state governments in LDCs should not have the authority to choose differential rates and bases. This is not because differential taxation in different regions of the country is a bad idea, but because local administrators may not be up to the job. Where local governments in India have set differential rates, leakages have occurred because of problems arising from interstate trade. In Yugoslavia, where local government is given similar freedom to set rates, a much less severe problem with leakages is reported.

156. Third, it is useful to have some transport sector taxes administered by the local government. Local familiarity and access are important to the identification and assessment of certain taxes, such as tolls, vehicle transfers, and annual licenses. The alternative is a shared tax system where central government assumes responsibility for all or most taxes on automobiles, and in return guarantees local government a share of the proceeds. There are some problems with this approach:

- It does not enable local governments to tax road users at a higher rate, when a higher rate may be needed, for example, in cities;
- Familiarity in the assessment and enforcement process is lost, for example, in the identification of those liable for motor vehicle license tax, and in the use of flying squads to enforce licensing, registration, and the sale of special permits;
- The central government may withhold or reduce the local share of revenue, a problem presently being faced in Argentina.
REFERENCES


Alm, James, Roy Bahl and Matthew N. Murray, "Tax Base Erosion in Developing Countries", Economic Development and Cultural Change, forthcoming.


International Monetary Fund, Tax Administration in Developing Countries: Strategies and Tools of Implementation, August 1989.


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